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**Implicit and explicit attitudes and beliefs towards male and female leaders in New Zealand organizations.**

A thesis

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of the requirements for the degree

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## **Abstract**

This research aims to present insight into current gender leader beliefs, in New Zealand. In particular the research design supported the inclusion of both implicit and explicit measures of gender leader beliefs, in order to analyse the difference between what we say (explicit) and what we believe (implicit). The study quantified the implicit and explicit beliefs and attitudes towards leaders in New Zealand organizations based on leader gender, in addition to, examining the relationship between the responses to these measures. Furthermore, this study sought to understand how current women leaders influence employee's implicit gender leader beliefs. That is, it assessed whether organizational factors, such as, direct report's gender and organizational leadership profile, have the potential to influence implicit gender leader beliefs. To achieve this the study utilised an online version of the Gender Leader Implicit Association Test (GL-IAT) and a series of questionnaires.

Participants were recruited from organizations across New Zealand via an online survey sent to a number of organizations including both private and public organizations (e.g., AUT, Bell Gully, Russell McVeagh, Free FM, Bay of Plenty DHB, Hawkes Bay DHB, TompkinsWake, the University of Waikato). 552 valid participants responded (male = 26.4%, female = 73.6%), with the majority working full time (42.2%). Both implicit and explicit measures were subject to SSPS analysis etc.

A variation of Implicit Association Test (IAT), the GL-IAT, which measures people's unconscious beliefs towards males and females as leaders (Dasgupta & Asgari, 2004) was used to assess implicit gender leader beliefs. The IAT records response times pairing target categories (e.g., "Josh" and "Emily") with attribute labels (e.g., "Leader" and "Supporter"). Faster responses indicate the target category and attribute label are highly implicitly associated, whereas slower responses indicate the target category and attribute label are less implicitly associated (Greenwald, Nosek, & Banaji, 2003). Three surveys that explicitly measure gender equality beliefs and attitudes, the Gender Equality Scale (GEAS)

(Houkamau & Boxall, 2011), Women as Managers Scale (WAMS) (Peters, Terborg, & Taynor, 1974), and the Gender Leader Index (GLI) (Rudman & Kilianski, 2000), were used to measure explicit beliefs and attitudes regarding men and women as leaders.

The research demonstrated that, despite self-reporting explicitly positive attitudes towards leaders, our implicitly held stereotypes associate men with leaders, more so than women, and women with supporters, more so than men. Surprisingly, female direct reports or saturation of female senior leaders were not found to influence follower's implicit gender bias, it is likely that the more that females are accepted into leadership roles, the easier it will become for women pursuing and performing leadership roles. The results of this study emphasise, to practitioners, Human Resource (HR) managers and researchers, that the scarcity of women within leadership may be, at least in part, due to implicitly held stereotypes, that disassociate women from leaders, and therefore implicit gender bias needs to be recognised within New Zealand organizations as a real barrier to women's progression. Efforts to reduce the impact of implicit bias should be undertaken.

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# Chapter One

## Introduction

Over the last century we have seen a significant shift in the numbers of women attaining positions of power and influence both in society and across the world as leaders. Many of today's great leaders are women, including, Angela Merkel (Chancellor, Germany), Aung Suu Kyi (State Counsellor, Myanmar), Ellen Johnson Sirleaf (President, Liberia), Sheikh Hasina Wajed (Prime Minister, Bangladesh), Michelle Bachelet (President, Chile). Despite this, there is a continued lack of access to power and leadership positions for women when compared with men. In New Zealand, for example, although we have seen two female Prime Ministers, Jennifer Shipley and Helen Clark, the proportion of men and women in parliament has remained unchanged since the mid nineties with the proportion of women remaining at 30% (Statistics New Zealand, 2014). In spite of the lack of female leadership representation, women achieve great success academically. In the United States for example, women earn nearly 60% of Bachelor degrees and just as many Master degrees as men (Elmer, 2015). Similarly, in New Zealand women earn 62% of Bachelor degrees and outnumbering men graduating from business, management, sales, marketing, law, teaching and nursing (Hyman, 2011). While the proportion of women in middle management positions has shown a significant increase over the past few decades women still lag behind men for senior management positions. So despite the plentiful supply of educated and experienced women the gender gap remains stubbornly high in leadership positions. Indeed, there is a persisting hiring discrimination favoring men over women for high status roles (L. M. Jackson, Esses, & Burris, 2001). This effect can be seen on international boards where gender diversity remains low, with merely 13% representation of women across all board directorships, equating to an average of 1.5 female directors per board, when each board is made up of on average 10 members (McAteer, 2014). New Zealand shows a similar

trend with 14.75% representation of women directors on New Zealand's top listed companies (New Zealand Human Rights Commission, 2012).

Originally, the metaphor a "glass ceiling" was suggested to describe this invisible barrier preventing women's progress within organizations. (Hymowitz & Schellhardt, 1986, March 24, p. 1). However, more recently Eagly and Carli (2007, September, p. 2) suggest that the "glass ceiling" is an incomplete metaphor, instead suggesting women have to navigate a "leadership labyrinth". That is, facing multiple barriers throughout their careers, and not just as they approach the top. Unfortunately, even in the face of documented organizational gains due to diversity, women continue to be devalued in business settings. Women consistently earn considerably less than their male colleagues, with women in the United States earning 80-83% of the male full time wage during the last decade and the average hourly pay gap in earnings of men and women close to 12% in New Zealand (Statistics New Zealand, 2015; U.S. Bureau of Labour Statistics, 2015). Additionally, while male CEO's bonuses are tied to tangible performance indicators, such as, company performance, it has been found that female CEOs receive bonuses based on abstract personality constructs, such as, charisma (Kulich, Ryan, & Haslam, 2007).

Although these statistics seem bleak, trying to achieve gender parity in senior management has not only been described as the right thing to do but also the "bright" thing to do (Thornton, 2012, p. 2). Indeed, there are several reasons why leadership diversity should be an active goal for organizations. Organizations showing a real commitment to equal employment opportunities (EEO) will experience fewer losses in employee attitudes and turnover, as well as, decreased legal costs associated with discrimination law suits (Goldman, Gutek, Stein, & Lewis, 2006; Nunez-Smith et al., 2009). Organizational gender diversity has been associated with improved financial performance, where saturation of women leaders equates to financial success (Catalyst, 2004). Research has consistently found organizations with women on their boards out perform those without women (Catalyst, 2004; McKinsey & Co, 2007). In fact organizations with

more than three female board members on average outperform those with fewer, on return of equity (11.5%), return on sale (11.5%) and return on invested capital (10%) (Catalyst, 2004). Additionally, in a meta-analysis, Orlitzky, Schmidt, and Rynes (2003) found diversity management to be positively related to financial corporate performance. This impact goes further than just performance, as it is suggested that organizations visibly committed to diversity will reap the reputational rewards of being a preferred employer (Goldman et al., 2006). Why then, when it is recognized how beneficial diversity is in organizational leadership, do women remain so scarce in leadership?

## **Gender and leadership**

“Think manager, think male” was a phenomenon first introduced in classical gender leader research (Schein, 1973, 1975). In these studies, both male and female middle managers perceived the attitudes, characteristics, and temperament of successful managers to be more often attributed generally to men than to women. Further, this research highlighted the importance placed on employees’ perceptions of leader’s attitudes, characteristics and temperament. This led to the term implicit leadership theory, which suggests behavioral ratings of leaders are actually based on employees preconceptions of leadership (Eden & Leviatan, 1975). That is, it is not necessarily leaders actions or characteristics that matter, but how employees’ perceive their leader, and how the leader’s gender dictates ‘appropriate’ leader behavior through the eyes of the employee. Further, classical research found the presence of men to influence women’s self emergence into leadership, that is, when males were present women were much less likely to self select into leadership roles (Megargee, 1969). In this study, even dominant women paired with low dominance men appointed their male partners as leaders more than 90% of the time. These studies introduced a wave of leadership theory and research emphasizing the importance of gender role stereotypes and how they influence perceptions of leaders (Lord, Day, Zaccaro, Avolio, & Eagly, 2017).

A meta-analysis conducted by Eagly and Karau (1991) concluded that gender stereotypes dictate the emergence of males and females as leaders. They found several gender stereotypic contexts where emergence of female leaders was more likely, for example, for tasks high in social complexity and for tasks requiring skills more commonly attributed to women, however, similarly to the original research they found an overall tendency for men to emerge as leaders in leaderless groups, more frequently than women. A plausible explanation for this is Social Role Theory (SRT), which suggests that gender stereotypes are maintained and learned through the unequal observation of men and women performing various social roles (Eagly & Steffen, 1984). Thus, emergence of male leaders more frequently than females is likely due to societal tendency for men to undertake leadership roles. Social role information may also influence follower's perceptions; they may see typical male behaviors as synonymous with leader behaviors, such as those assigned to task-oriented behaviors. On the other hand, there is a devaluation of socially facilitative behaviors in leadership more often associated with females (Eagly & Karau, 1991). Further research has confirmed that people are biased in the way they evaluate male and female leaders, in a meta-analysis of leader evaluations the devaluation of female leaders was clear relative to male leaders (Eagly, Makhijani, & Klonsky, 1992). Women's leadership was particularly devalued by others when, firstly, they occupied male dominated roles, secondly, when they used masculine leadership styles (e.g., autocratic, directive), and finally, when evaluators were male.

Combined these meta-analyses suggest gender not only influences the emergence of leaders but the evaluation of leaders. This influence can be interpreted through Role Congruity Theory (RCT), in which, gender bias is a result of stereotypical beliefs about members of a particular group diverging from expectations about their social role (Eagly et al., 1992; Hoyt & Burnette, 2013). In this perspective women are negatively evaluated in leadership because the perceived role of a leader is incongruent with the stereotypical female gender role. Similarly, Heilman (2001) in a review of

gender-leader stereotypes suggested perceptions of women and of male-typed leadership roles create gendered bias in others' evaluations of female leaders. Preconceptions about gender roles and leader roles or implicit (unconscious) gender leader biases create an expectation of failure, the perception that women will be unsuccessful leaders. This affects women in two ways, it decreases the likelihood of women being selected for leadership positions and suggests that women performing leadership roles, especially using masculine leadership styles or in roles traditionally dominated by men, will be judged more harshly than male counterparts (Heilman, 2001).

Gender stereotypes not only dictate how women should be (e.g., nurturing and people oriented) but also how they should not be (e.g., assertive and achievement oriented) (Heilman, 2001). A stereotype is part of the broader belief concept and is defined as "a culturally shared association linking most or all members of a group with a particular characteristic" (Blair, 2002; Dasgupta & Asgari, 2004, p. 643). Cultural gender stereotypes not only shape expectations of appropriate behavior of women but of men as well (Eagly, 2007). Males are regarded as more agentic, exhibiting aggressiveness, ambition, self-direction, independence and self-confident traits traditionally affiliated with effective leadership. Females, on the other hand, are viewed as more communal, exhibiting warmth and gentleness, traits traditionally not associated with leadership (Duehr & Bono, 2006; Eagly, 2007). A relatively recent review (2011) found leader stereotypes were persistent, they found leadership to be stereotyped as "quite similar to men but not very similar to women, as more agentic than communal, and as more masculine than feminine" (Koenig, Eagly, Mitchell, & Ristikari, 2011). Despite gender stereotypes restricting emergence and evaluation of female leaders, when given the opportunity, women are as effective as men in leadership. A quantitative review of 49 years of research, investigating the relationship between gender and leadership effectiveness, found no significant difference of actual leadership effectiveness due to gender, when all leadership contexts were considered concurrently (Paustian-Underdahl, Walker, &

Woehr, 2014). So although no real differences in effectiveness were found, women are still not being promoted to leadership positions to the same extent as men. This begs the question why women are not receiving the equal recognition for their efforts?

## **Workplace discrimination**

Traditionally explicitly negative attitudes toward women in the workplace have manifested in acts of overt discrimination and workplace behavior that reflected “blatant antipathy, beliefs that women are inherently inferior, endorsement of pejorative stereotypes and support for open acts of discrimination” (Cortina, 2008, p. 59). Although these forms of discrimination are becoming less and less common in modern day organizations, subtle forms of discrimination towards women persist. Jones, Peddie, Gilrane, King, and Gray (2013, p. 2) suggest that while this form of discrimination is termed ‘subtle’ it may well be just as detrimental to the targets as the more overt and easily recognizable discrimination evident in the past. Subtle discrimination is defined as encompassing low-intensity acts, that are difficult to detect and lack a clear intent to harm, these acts can be unintentional by the perpetrators but nevertheless adversely effect targeted employees (Cortina, 2008; Jones et al., 2013). Furthermore, subtle discrimination has been investigated under a number of labels, such as, microaggressions (Sue, Bucceri, Lin, Nadal, & Torino, 2007), everyday sexism (Swim, Hyers, Cohen, & Ferguson, 2001) and benevolent sexism (Glick & Fiske, 1996). These low intensity acts of discrimination can be caused by implicit gender biases, which, as discussed, form expectations of gender roles and thus, influence our behavior towards men and women enacting different roles, such as leadership roles. Implicit gender leader bias can present subtle discrimination towards women leaders and women pursuing leadership roles. This discrimination is particularly harmful as implicit bias is a complex issue, it can be held by both men and women, and can produce this so called ‘subtle’ form of discrimination, which can be unconscious to the perpetrator, and not be easily identified as unfair (Ellemers, 2014).

Gender stereotypes are considered direct antecedents of workplace discrimination (Dovidio & Hebl, 2005). Negative effects from gender stereotypes, which inform implicit gender biases, are apparent for women in particular. For instance, in a diary study of college students, Swim et al. (2001) found women to experience everyday sexism to a greater extent than men. They warn that even incidents thought to be mundane in nature negatively affect the target's well being, and hence should not be diminished. Providing us with more evidence that the effects of subtle discrimination may be as, if not more harmful for the targets than traditional overt discrimination. Jones et al. (2013) in a meta-analysis investigating the effects of both overt and subtle discrimination found larger absolute effect sizes for organizationally relevant correlates, individual work correlates and psychological correlates for subtle discrimination, when compared with overt forms of discrimination. These findings are troubling considering that subtler forms of discrimination are often dismissed, compared with overt forms. For the individual subtle discrimination can result in decreased psychological health leading to depression and anxiety, furthermore targets can experience negative impacts on physical health, they may turn to maladaptive coping, such as, smoking and experience higher blood pressure (Jones et al., 2013). Whereas at work the individual may experience decreased job satisfaction and increased stress (Jones et al., 2013). Subtle discrimination is particularly dangerous to the individual as unlike overt discrimination targets of subtle discrimination are more likely to internalize attributions of negative experiences (Jones et al., 2013). Subtle discrimination therefore clearly negatively impacts individuals. Unsurprisingly this is not the only outcome, organizations where subtle discrimination is prevalent are also impacted negatively and are likely to experience increased employee turnover intentions, decreased employee performance and decreased overall performance (Jones et al., 2013). Given these consequences, not only for individuals, but for organizations as well, understanding the mechanisms that lead to subtle discrimination is important, in order to manage the impact and many implications of this form of discrimination.

## **Female leaders and stereotypes**

Stereotypes can operate outside of an individual's awareness and can be considered automatic (Bargh, 1999). As discussed, women pursuing and within leadership roles may be negatively affected by gender role stereotypes. These automatic beliefs may result in implicit biases and play a role in maintaining the unequal representation of men and women in leadership. Traditional gender stereotypes depict men as similar to leaders (i.e., the traits considered necessary for leadership are the same as those used to describe men in general) and women as less suited to leadership (i.e., the mismatch in traits considered necessary for leadership and those used to describe women in general) (Schein, 1973, 1975). This belief forms an expectation about performance of male and female leaders, which creates an implicit bias that men will perform leadership roles better than women. This implicit bias negatively affects women both pursuing and currently delivering leadership roles. For instance, it can create a self-fulfilling prophecy for women leaders such that reduced performance expectations may lead to a reduction in actual performance (Heilman, 2001). Additionally, evaluators may engage in cognitive distortion to match female leadership performance to their gendered expectations regardless of actual performance (Heilman, 2001). It is a tough road to leadership for women and even for those who do succeed, their success is much more likely to be attributed to luck rather than to skill (Deaux & Emswiller, 1974; Heilman, 2001).

Not only are women described as less suited to be leaders, but also as mentioned above, gender stereotypes dictate not only how women should be, but also, how they should not be. Women leaders, both emergent and current, face repercussions for enacting agentic characteristics, associated with men and effective leadership, and for demonstrating competence in leadership tasks. For example, Heilman, Block, and Martell (1995) found ratings of successful male and female managers to coincide on competence and independence, yet differ on interpersonal hostility ratings, with successful females much more likely to

be rated as quarrelsome, selfish and bitter. Although competent male managers are seen as simply not possessing communal characteristics, competent female managers are seen to be deficient in communal characteristics to the point that they are regarded as cold, and bitter (Heilman, 2001). Additionally, competent female leaders are less liked more than competent male managers (Heilman, 2001). Hence, competent female managers face multiple social sanctions, which undoubtedly adversely affect the individual female leaders as well as females pursuing leadership roles. In balance, considering the benefits of diversity and the negative consequences of discrimination, organisations can waste no time in dealing with the impact that implicitly held stereotypical gender views could be having on their own emergent and current woman leaders.

With the numbers of women in leadership positions increasing, albeit, slowly, it is important to track how gender leader stereotypes may be changing. To explore current explicit, self-reported gender stereotypes Duehr and Bono (2006) used a revised version of the Descriptive Index used in the classical research of Schein (1973) as described above. They wanted to assess how explicit stereotypes of men, women and managers had changed over a 30-year period. They administered the Index to a manager and student sample. In contrast to Schein's work (1973,1975), both male and female managers saw men and women as equally possessing many of the traits necessary for successful middle management. Male managers demonstrated the biggest transformation to their self-reported gender leader beliefs. In the 1970's studies the sample of male managers rated characteristic of women in general as dissimilar to those of managers, whereas in the Duehr and Bono (2006) study the sample of male managers explicitly rated women and managers similarly. Female managers in the later sample, similarly demonstrated an overlap in ratings of women in general and managers, but the change in effect size was smaller. Less change was evident in the student sample. Male students in the 2006 sample disassociated characteristics of women in general to those of managers, this was the same result as found 17 years prior in the Schein, Mueller, and Jacobson (1989) research investigating

student's sex role and manager stereotypes. In contrast, female students in both samples (1989 and 2006) rated the characteristics of women in general as moderately similar to those of managers. Although this research is important as it shows a dramatic shift in managers reported perceptions of the traits men and women possess and how those traits relate to leadership, one should be wary of interpreting this as an absolute change in gender role stereotypes, because of the explicit nature of the questionnaires these changes may only reflect a change in socially acceptable or politically correct responses. Self-report measures, although widely used, may be problematic because people may not be willing or able to report their attitudes and beliefs (Duehr & Bono, 2006; Latu et al., 2011), for example, people may try to fake responses that are not socially desirable, such as, negative attitudes towards women. Duehr and Bono (2006) themselves call for research examining implicit gender and managerial stereotypes to address these issues.

Implicit stereotypes, alternatively, are defined by Greenwald and Banaji (1995, p. 15) as "introspectively unidentified (or inaccurately identified) traces of past experience that mediate attributions of qualities to members of a social category". Original research on the Implicit Association Test (IAT) found some concordance between explicit (self-reported) attitudes and implicit attitudes towards non-controversial objects, such as, flowers and insects (Greenwald, McGhee, & Schwartz, 1998), with participants showing a more positive association to flowers than to insects, consistent with self-reports. Moreover, implicit scores regarding math versus arts and the 2000 United States of America presidential election candidates (Gore versus Bush) have been found to correlate substantially with explicit self-reported preferences (Nosek, Banaji, & Greenwald, 2002). In contrast, when the attitudes in question are sensitive in nature (e.g., racial bias, ageism, and gender stereotypes), studies have found weak and non-significant correlations between implicit and explicit measures (Dasgupta & Asgari, 2004; Nosek et al., 2002). Thus, it has been suggested that this dissociation between implicit and explicit responses is more likely to occur when measuring attitudes and beliefs

about prejudice against minorities, and related sensitive topics (Fazio & Olson, 2003; Green et al., 2016).

It is important to investigate the dissociation in explicit and implicit responses because our judgements and behaviours can be based on both our explicit attitudes and beliefs, as well as, our implicit attitudes and beliefs. Fazio (1990) suggested people's behaviour and judgements were based on explicit or implicit attitudes and beliefs depending on one's motivation and opportunity to deliberate, they called this the MODE model. As discussed, explicit responses to socially sensitive topics are much more likely to be guided by social norms, they are more controllable and can be deliberately reported (Shoda, McConnell, & Rydell, 2014). According to the MODE model, one's behaviour and judgements are more likely to be guided by these explicitly expressed attitudes and beliefs when one is "motivated to engage in cognitive effort and have the opportunity to do so" (Fazio & Olson, 2003, p. 302). On the other hand, implicit responses are uncontrollably activated and association based, they may give us more information about true attitudes and beliefs about socially sensitive topics (Shoda et al., 2014). Based on the MODE model, behaviour and judgements are based on implicit attitudes and beliefs when one does not have the time, resources and motivation to deliberate. Further research on implicit leader stereotypes is needed to understand responses to explicit measures, such as the reported change in explicit gender stereotypes found in the Duehr and Bono (2006) research, in addition to, investigating possible distinctions between the two types of measures.

### **Studies assessing implicit and explicit leader bias**

Explicit bias is when we consciously attend to our bias when making decisions, but implicit bias presents unconsciously, due to the implicitly held stereotypes, it affects our decisions and interactions automatically (Bargh, 1999). Several studies have sought to understand contemporary gender bias in leadership and specifically how people's explicitly reported gender leader attitudes and beliefs relate to those held

implicitly (Dasgupta & Asgari, 2004; Latu et al., 2011; Rudman & Kilianski, 2000). For example, Rudman and Kilianski (2000) investigated implicit and explicit attitudes toward female authority using a version of the IAT designed to measure implicit associations of men and women to authority. This Gender Authority IAT consisted of 44 stimulus words, 6 high-status occupational roles (boss, executive, expert, leader, authority, and supervisor) and 6 low-status occupational roles (assistant, secretary, clerk, subordinate, aid, helper), as well as, 15 male names (e.g., Brian, Kevin, Paul) and 15 female names (e.g., Meg, Karen, Ann). The participants (university students) in a series of timed trials assigned these stimulus words. Congruent trials had participants sort the words into high status and male using the same response key, and low status and female using the same response key, whereas, incongruent trials had participants sort words into low status and male using the same response key, and high status and female using the same response key. Positive association scores indicated a greater association of males, compared to females, with high authority, and negative association scores indicated a greater association of females, compared to males, with high authority<sup>1</sup>. Additionally, they completed a Gender Authority index (explicit), where they rated the high and low status authority words used in the Gender Authority IAT on a 7-point scale ranging from -3 (more true of women) to +3 (more true of men). Both male and female students implicitly associated men with high authority roles and women with low authority roles. Moreover this pattern of association was stronger for male participants than female participants. Similarly on the explicit measure, males and females, rated high-status authority words as more true of men and low-status authority words as more true of women. Furthermore, showing a similar pattern to the implicit findings, males were more explicitly biased than females.

In similar research, Latu et al. (2011) investigated implicit and explicit gender stereotypes of successful managers using a version of the

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<sup>1</sup> For a full explanation of IAT methodology see page 26 in the method section.

IAT designed to measure implicit associations of men and women with successful and unsuccessful manager traits. This successful manager IAT had 26 stimulus words, ten successful manager traits (boss, competent, executive, productive, innovative, helpful, cooperative, creative, knowledgeable, skilled), ten unsuccessful manager traits (slacker, freeloader, wordy, lackluster, boring, unwise, dim-witted, rambling, dawdling, unoriginal), as well as, 3 female words (female, she, her) and 3 male words (male, he, him). Similarly to the study described above, the participants (university students) sorted these stimulus words in a series of timed trials, which resulted in an implicit association score. In their first study they found male participants to associate men, more than women, with successful manager traits. Contrary to expected, women demonstrated the opposite, albeit weaker pattern of association, associating women, more than men, with successful manager traits. In a second study, participants completed a modified successful manager IAT, identical except they used different successful and unsuccessful manager stimulus words; modified successful manager words (leader, competent, knowledgeable, consistent, self-confident, trustworthy, self-controlled, well-informed, intelligent, fair, purposeful, skilled) and modified unsuccessful manager words (follower, incompetent, ignorant, inconsistent, insecure, dishonest, reckless, uninformed, dense, biased, aimless, unskilled). Additionally, participants also completed an explicit measure, which required them to indicate the percentage of men and women in the business setting who possessed each of the successful/unsuccessful manager traits used in the IAT. Again, male participants held a strong association of men with successful managers, more so than women. Women, again, showed the opposite pattern of association of women with successful managers, more so than men. Interestingly, on the explicit measure they found both male and female participants perceived women to be more likely than men to possess successful manager traits, and conversely men to be more likely than women to possess unsuccessful manager traits. This is consistent with research finding explicit ratings of women to be more positive than explicit ratings of men (Eagly & Mladinic, 1994). However, one major limitation of

this research is that successful manager attributes had a positive valence, and the unsuccessful manager words had a negative valence, in both of the implicit measures used in this research, this could have confounded the results because the association may have been solely between males and females and positive and negative words, rather than successful and unsuccessful manager concepts. One interpretation of the implicit results could be that in-group bias causes both men and women to view their own gender more positively than the out group, hence, these results may simply tell us that both genders are more implicitly positive about themselves but not which gender they most implicitly associate with successful managers.

Given the influence of gender leader stereotypes, Dasgupta and Asgari (2004) were interested in whether social environments could undermine women's automatic gender stereotypical beliefs. In a series of studies they used a version of the IAT used to assess association of men and women to leadership. This Gender Leader IAT (GL-IAT) had 20 stimulus words, five leader words (leader, ambitious, determined, dynamic, assertive), five supporter words (supporter, helpful, understanding, sympathetic, compassionate), as well as, five female names (Emily, Donna, Debbie, Katherine, Jane) and five male names (Josh, Brandon, Peter, Ian, Andrew). Again, participants had to assign these stimulus words in a series of timed trials. In both, an experimental study, in which, women were given pictures and biographies of famous women leaders and, in a field study, in which the environments differed in the proportion of women in leadership roles (i.e., a women's college and a co-educational college), participants stereotypical gender beliefs were inhibited. In the first study, female participants primed with photos and descriptions of famous female leaders were significantly faster to associate females with leadership attributes compared with those who had seen control exemplars (photos and descriptions of flowers). In fact, those primed with famous females expressed, not only less stereotypic beliefs but, more counterstereotypic beliefs, they were significantly faster at associating women with leader attributes than supporter attributes,

compared with men. Conversely, the control group expressed stereotypical implicit gender leader beliefs. They concluded that exposure to admired members of disadvantaged groups may reduce traditional gender stereotypes or even activate more counterstereotypical stereotypes (Dasgupta & Asgari, 2004). Their second study took place in a naturally occurring environment; a women's college, where there is significantly more women in counterstereotypic leadership positions and a co-educational college. This was a within subjects design as they measured female students stereotype in their first months (first year) at college and then a year later. At the start of the study all participants expressed similar stereotypical leader beliefs, however one year later the participants in the women's college expressed no automatic bias. Hence, exposure to more women in leadership positions (college environment) played a significant role in shaping their non-conscious (implicit) beliefs about leaders. Combined these results present substantial evidence that women's local environments can influence their automatic gender stereotypic beliefs.

### **Purpose of research**

The purpose of this research was to investigate gender leader stereotypes existing in the New Zealand workplace. The aim is to better understand barriers that women leaders face, and in particular, the role of implicit and explicit bias within an organizational setting. Furthermore, this study sought to understand how current women leaders influence people's implicit gender leader beliefs. With women consistently underrepresented in leadership, both overseas, and in New Zealand, it is vital to advance our understanding of what is causing this continued inequality. The reported relationship between implicit and explicit measures of attitudes and beliefs has been inconsistent with less correspondence between implicit and explicit responses for socially sensitive topics. Fazio and Olson (2003) suggest we should be asking when and under what circumstances there is a relationship, as opposed to if a relationship exists. This study will further add to this research by investigating explicit and implicit gender leader

beliefs and attitudes using three differing leadership questionnaires and an implicit gender leader beliefs measure. To date no applied research investigates how current women leaders influence employee's implicit gender leader beliefs within a work setting or the existence of implicit gender leader bias in New Zealand organizations (Lenton, Bruder, & Sedikides, 2009). The current research is largely based on the work of Rudman and Kilianski (2000), Latu et al. (2011) and Dasgupta and Asgari (2004), with the rationale for the hypotheses presented below.

### **Gender and implicit gender leader bias.**

Past research found both, males and females to hold traditional gender biases, in that they implicitly associate men with careers and science and females with family and liberal arts (Nosek et al., 2002). Furthermore, the work of Rudman and Kilianski (2000) clearly demonstrated that males are more implicitly associated with business domains than females. The current research used the GL-IAT, first developed in the Dasgupta and Asgari (2004) research, to investigate implicit gender leader beliefs. Of the four IATs described above the GL-IAT is the most appropriate to investigate leadership perceptions and leadership bias towards men, rather than women, as found in past research (Dasgupta & Asgari, 2004; Rudman & Kilianski, 2000). Furthermore, all stimulus words used in the GL-IAT have a positive valence, both the leader and supporter words are positive (i.e., dynamic, determined, helpful, understanding), and thus did not present the same limitations as the Successful Manager IATs, outlined above. Based on the above research it was hypothesised that:

***Hypothesis 1.*** Men will be more associated (implicitly) with leaders and females with supporters.

Although both males and females associate men with business domains more than women, past research found this pattern of association to be stronger for male participants (Latu et al., 2011; Rudman & Kilianski, 2000). Hence, it was further hypothesised that:

**Hypothesis 1a.** This association will be greater for male participants than for female participants.

### **Gender and explicit gender leader attitudes and beliefs.**

As discussed, explicit measures of gender leader beliefs and attitudes may be affected by social desirability, participants may be unwilling to share explicit negative attitudes and beliefs about women (Duehr & Bono, 2006). Furthermore, research has often demonstrated a tendency for men and women to evaluate women more positively than males on explicit measures, both, generally, and on leadership specific scales (Eagly & Mladinic, 1994; Latu et al., 2011). Based on the above research it was hypothesised that:

**Hypothesis 2.** There will be positive explicit attitudes/beliefs towards women as leaders.

**Hypothesis 2a.** Both, male and female participants will report positive beliefs to women as leaders on the Gender Leader Index (GLI).

**Hypothesis 2b.** Both, male and female participants will report positive attitudes to women as leaders on the Women as Managers Scale (WAMS).

**Hypothesis 2c.** Both, male and female participants will report positive attitudes to women as leaders on the Gender Equality Attitude Scale (GEAS).

### **Implicit measure and explicit measures.**

Many studies examining gender bias have found discordance between implicit and explicit beliefs and attitudes, often reporting weak and non-significant correlations (Dasgupta & Asgari, 2004; S. M. Jackson, Hillard, & Schneider, 2014; Rudman & Kilianski, 2000). Fazio and Olson (2003) emphasize that this discordance is more likely to occur when attitudes and beliefs in question are sensitive in nature. Given the social

sensitivity of gender research, especially, when investigating advantage or disadvantage, it is likely that there will be discordance between the implicit and explicit measures used in the current research. Based on the above research it was hypothesised that:

**Hypothesis 3.** There will be a weak correlation between the implicit measure (GL-IAT) and the explicit measures (Gender Leader Index (GLI), Gender Equality Attitude Scale (GEAS), and the Women as Managers Scale (WAMS)).

**Hypothesis 3a.** There will be a weak correlation between the GL-IAT and the GLI.

**Hypothesis 3b.** There will be a weak correlation between the GL-IAT and the WAMS.

**Hypothesis 3c.** There will be a weak correlation between the GL-IAT and the GEAS.

The GLI was based on the Gender Authority Index developed in the Rudman and Kilianski (2000) research. In a meta-analysis investigating correspondence between IATs and self-report measures Hofmann, Gawronski, Gschwendner, Le, and Schmitt (2005) found correlations of IATs with self-report measures increase as a function of how directly related the measures are to each other. Of the three explicit measures used in the current research the GLI shares the greatest conceptual correspondence to the GL-IAT, as participants are asked to rate attribute labels, taken directly from the GL-IAT. Furthermore, Hofmann et al. (2005) found that explicit measures that assessed relative, as opposed to absolute judgements, shared greater correlations with IATs. The GLI was worded so that judgements of the attribute labels were relative (i.e., more true of women to more true of men). Hence, it was further hypothesised that:

**Hypothesis 3d.** There will be a significant and positive correlation between the GL-IAT and the GLI.

## **Organization leader profile and malleability of implicit gender leader bias.**

According to SRT gender stereotypes (beliefs) will not change until people equally divide social roles, such as, care for dependents and share responsibility for paid employment. Although past research found gender stereotypes to be resistant to change, more recent research found gender stereotypes to be dynamic, in that they change when people observe men and women occupying more counterstereotypical roles. Following this reasoning and the research by Dasgupta and Asgari (2004), which demonstrated greater exposure to female leaders decreased women's automatic gender leader beliefs, it is reasonable to expect that as the numbers of women in leadership positions continues to increase, traditional gender leader stereotypes about women will decrease. Based on the above research it was hypothesised that:

**Hypothesis 4.** Greater exposure to women in positions of leadership will weaken the association of males with leader and females with supporter (traditional stereotype). Conversely, greater exposure to men in positions of leadership will strengthen the association of males with leader and females with supporter.

**Hypothesis 4a.** Female participants with a female direct report will have decreased associations of males with leader and females with supporter, than female participants who have a male direct report.

**Hypothesis 4b.** Male participants with a female direct report will have decreased associations of males with leader and females with supporter, than male participants who have a male direct report.

**Hypothesis 4c.** Associations of males with leader and females with supporter will be stronger in organizations with male dominant leadership profiles.

**Hypothesis 4d.** Associations of females with leader and males with supporter will be stronger in organizations with female dominant leadership profiles.

In summary, the first aim of the present study was to explore the implicit and explicit beliefs and attitudes towards leaders in New Zealand organizations based on leader gender. The second aim was to determine whether or not organizational factors, such as, participant's direct reports gender and organization leadership profiles have the potential to influence participants automatic gender leader beliefs. To achieve these aims this study utilised an online version of the GL-IAT and a series of questionnaires.

## **Summary of hypotheses**

### **Gender and implicit gender leader bias.**

**Hypothesis 1.** Men will be more associated (implicitly) with leaders and females with supporters.

**Hypothesis 1a.** This association will be greater for male participants than for female participants.

### **Gender and explicit gender leader attitudes and beliefs.**

**Hypothesis 2.** There will be positive explicit attitudes/beliefs towards women as leaders.

**Hypothesis 2a.** Both, male and female participants will report positive beliefs to women as leaders on the GLI.

**Hypothesis 2b.** Both, male and female participants will report positive attitudes to women as leaders on the GEAS.

**Hypothesis 2c.** Both, male and female participants will report positive attitudes to women as leaders on the WAMS.

### **Implicit measure and explicit measures.**

**Hypothesis 3.** There will be a weak correlation between the implicit measure (GL-IAT) and the explicit measures (GEAS, WAMS, GLI).

**Hypothesis 3a.** There will be a weak correlation between the G-L IAT and the GEAS.

**Hypothesis 3b.** There will be a weak correlation between the G-L IAT and the WAMS.

**Hypothesis 3c.** There will be a weak correlation between the GL-IAT and the GLI.

**Hypothesis 3d.** There will be a significant and positive correlation between the GL-IAT and the GLI.

### **Organization leader profile and malleability of implicit gender leader bias.**

**Hypothesis 4.** Greater exposure to women in positions of leadership will weaken the association of males with leader and females with supporter (traditional stereotype). Conversely, greater exposure to men in positions of leadership will strengthen the association of males with leader and females with supporter.

**Hypothesis 4a.** Female participants with a female direct report will have decreased associations of males with leader and females with supporter, than female participants who have a male direct report.

**Hypothesis 4b.** Male participants with a female direct report will have decreased associations of males with leader and females with supporter, than male participants who have a male direct report.

**Hypothesis 4c.** Associations of males with leader and females with supporter will be stronger in organizations with male dominant leadership profiles.

***Hypothesis 4d.*** Associations of females with leader and males with supporter will be stronger in organizations with female dominant leadership profiles.

## Chapter Two

### Method

The current cross-sectional research investigated the attitudes and stereotypes of men and women working in New Zealand towards leaders based on their gender. Participants were recruited from across organizations within New Zealand. Those who chose to participate completed a version of the online Implicit Association Test and a series of questionnaires.

#### Participants

Overall 584 participants took part in this study, 32 participants were removed for not reporting their gender, leaving 552 participants with valid data, 146 (26.4%) male and 406 (73.6%) female. Initially 80 organizations were identified from a website that ranked the top 100 companies in New Zealand by number of employees (Kompas). These organizations were invited by email to participate in this research and asked to distribute the research advert to their employees. This led to 80 organizations being approached to circulate the study, eight organizations agreed, eight declined and 64 did not respond to the invitation. Of those who did agree, they were largely from the law, education and health sectors. The participants were a convenience sample who saw the study advertised as described above and volunteered to participate.

Demographic information of the sample is provided in Table 1. Nearly half of the participants were within the 20-29 age group. Most participants identified with New Zealand European/Pakeha followed by Maori, other ethnicities included Pasifika and Asian. A large majority of the sample were students, in addition to their employment. A large majority of the sample worked full time, followed by part time, then casual and self-employed or contracting. Weekly hours of work were quite diverse, with the least number of participants working over 51 hours and the largest number of participants working less than ten hours. A quarter of the

sample worked within the education sector, followed by healthcare, other sectors included administration, hospitality and professional services. Chi square analysis revealed a larger proportion of women working in healthcare and social services than men. Most participants worked for private organizations followed by public, then not-for-profit. A larger proportion of women worked for private organizations than men, with a larger proportion of men working in public and not-for-profit organizations than women. The average tenure among participants in their organizations was 3.61 (SD = 5.13) years, there was no significant difference in tenure for male or female participant,  $t(544) = .22, p = .03$ . Furthermore, no significant difference between participant age, ethnicity, student status, and weekly hours of employment were found based on gender (see Table 1).

**Table 1. Demographic information of the male and female groups**

	Participant gender		Test of difference
	(n, %)		
	Male	Female	
	145 (26.4)	406 (73.6)	
<u>Age</u>			
<19	14 (9.6)	29 (7.2)	
20-29	70 (47.9)	175 (43.3)	
30-39	13 (8.9)	55 (13.6)	
40-49	19 (13.0)	68 (16.8)	
50-59	21 (14.4)	57 (14.1)	
60-69	7 (4.8)	20 (5.0)	
70+	2 (1.4)	0 (0.0)	$\chi^2(6) = 9.77, p = .14$
<u>Ethnicity</u>			
NZ European/Pakeha	101 (72.1)	266 (66.3)	
Maori	17 (12.1)	64 (16.0)	
Pasifica	5 (3.6)	9 (2.2)	
Asian	5 (3.6)	24 (6.0)	
Other	12 (8.6)	38 (9.5)	$\chi^2(4) = 3.45, p = .49$
<u>Student</u>			
Student	108 (74.0)	272 (67.2)	
Non-student	38 (26.0)	133 (32.8)	$\chi^2(1) = 2.33, p = .13$

**Table 1. Demographic information of the male and female groups continued.**

	Participant gender		Test of difference
	(n, %)		
	Male	Female	
<u>Hour worked</u>			
<10	44 (30.6)	91 (22.6)	
11-20	31 (21.5)	85 (21.1)	
21-30	10 (6.9)	47 (11.7)	
31-40	24 (16.7)	97 (24.1)	
41-50	25 (17.4)	69 (17.1)	
51+	10 (6.9)	14 (3.5)	$\chi^2(5) = 10.55,$ $p = .06$
<u>Sector</u>			
Administrative and support	7 (4.9%)	29 (7.2%)	
Education/training	40 (27.8%)	98 (24.3%)	
Healthcare/social services	14 (9.7%)	88 (21.8%)	
Hospitality	13 (9.0%)	38 (9.4%)	
Professional/scientific/technical	14 (9.7%)	35 (8.7%)	$\chi^2(5) = 13.34,$
Other	56 (38.9)	116 (28.7)	$p = .02$
<u>Organization type</u>			
Private	65 (44.8)	236 (58.9)	
Public	57 (39.3)	107 (26.7)	
Not-for-profit	13 (9.0)	10 (2.5)	$\chi^2(3) = 19.64,$ $p < .001$

*Note.* n = number of participants.

## Measures

Participants completed the Gender Leader Implicit Association Test, an experimental task designed to assess an individual's unconscious (implicit) belief about gender and leadership. Directly following this task they completed three self-report questionnaires: the Gender Equality

Attitude Scale, the Gender Leader Index and Women as Managers Scale. These assess an individual's conscious (explicit) attitudes and beliefs regarding gender equality, beliefs about gender and leadership and traditional or counterstereotypical stereotype of female managers, respectively. Finally, the participants completed a demographic questionnaire.

### **Gender Leader Implicit Association Test (IAT).**

Greenwald et al. (1998) developed the first IAT; this test measures the association of an attribute with two different target concepts. Since then many different versions have been developed to measure peoples implicit attitudes toward a variety of different concepts, such as, ageism, racial bias and gender bias (Rudman, Greenwald, Mellott, & Schwartz, 1999; Sibley, Liu, & Khan, 2008; Webb, Sheeran, & Pepper, 2012). The premise of the IAT is that respondents should be faster to respond when the target category and the attribute are highly associated, and slower to respond when the target category and the attribute are less associated (Greenwald et al., 1998).

All participants in this study completed a PC version (Malcolm, 2016) of the Gender Leader IAT adapted from prior research (Dasgupta & Asgari, 2004). It is a relative measure of beliefs towards the two target categories (male and female), against the attribute labels (leader and supporter). 20 stimulus words were used: five female names (e.g., Emily, Donna) and five male names (e.g., Josh, Brandon), five leader attributes (e.g., ambitious, determined) and five supporter attributes (e.g., helpful, understanding). The full IAT stimuli used can be found in Appendix A. The test consisted of 180 timed trials, in which participants were required to assign stimuli words into varying combinations of the attribute labels and the target categories. The congruent trials were those in which 'leader words' and 'male names', and 'supporter words' and 'female names' shared a response key. The incongruent trials were those in which 'supporter words' and 'male names', and 'leader words' and 'female names' shared a response key. A series of practice blocks were presented

to ensure the participant understood the task before completing the critical blocks (congruent and incongruent). Thus, faster responses to congruent trials represent traditional gender stereotypes, whereas, faster responses to incongruent trials represent counter-traditional gender leader stereotypes. Refer to Table 2 for block order. All blocks involved stimulus words appearing in the center of the screen to be assigned into the correct category using the allocated computer key.

**Table 2. Block order of the Gender Leader Implicit Association Test**

Block number	Number of trials	Block type	Task
One	20	Practice	Participants categorize male and female names by pressing the right or left keys on the computer keyboard
Two	20	Practice	Participants categorize leader and supporter words by pressing the right or left keys on the computer keyboard
Three	60	Critical	Participants categorize male names and leader words with the left key and female names and supporter words with the right key (combined categorization task - congruent)
Four	20	Practice	Participants categorize male and female names by pressing the right or left keys on the computer keyboard (order reversed to block one)
Five	60	Critical	Participants categorize female names and leader words with the left key and male names and supporter words with the right key (combined categorization task - incongruent)

\*Block order was counter-balanced between participants by switching block one with block four and block three with block five. All trials within blocks are randomized.

Before beginning the task participants were instructed which stimulus words belong to each attribute label (leader and supporter) and each target category (male and female) as well as important things to keep in mind while completing the task (e.g. The test is invalid if you go slow – Please try to go as fast as you can). Before each block participants received further instructions about which response keys ('e' or 'i') to use to categorize attribute labels and target categories. Practice blocks (one, two

and four) required the participant to do a simple categorization task, whereas the critical blocks (three and five) required participants to complete a combined categorization task (Table 2). Correct responses commenced the next trial, whereas, any incorrect responses led to a red 'x' appearing underneath the stimulus word. Participants were required to make the correct categorisation before moving onto the next trial. On each of the trials the first response made (first response key pressed) and the time it took to make that response were recorded. Only response times from critical blocks were used to calculate final scores. Full participant instructions can be found in Appendix B.

Gender Leader IAT scores were calculated using the new scoring algorithm outlined by Greenwald et al. (2003). A detailed explanation of this process can be found in Appendix C. Essentially the IAT D-score is calculated by subtracting participant's mean response time for the congruent block (women + supporter/men + leader) from the mean response time for the incongruent block (women + leader/men + supporter). A positive IAT D-score indicates a greater association with men as leaders and females as supporters whereas a negative IAT D-score indicates the opposite. The greater the number in either direction indicates a greater implicit association between the two concepts.

### **Gender Equality Attitude Scale (GEAS).**

The GEAS was developed by Houkamau and Boxall (2011) for use in diversity management research (Appendix D). It measures work gender equality explicit attitudes. We used this measure for several reasons, (1) it was developed in New Zealand for use on New Zealand samples, (2) the questions are related to the workplace and leadership and (3) the scale is short and was easy to incorporate into this study. Participants were required to use a Likert scale to indicate level of agreement/disagreement with the three statements (e.g., I don't care whether my supervisor is male or female). Scores were calculated by taking the average score of the three items, with a possible range of 1 to 5. Higher scores indicate greater

gender egalitarian explicit attitudes where as low scores indicate less gender egalitarian explicit attitudes.

### **Gender Leader Index (GLI).**

The GLI was used to provide a measure of explicit gender beliefs regarding leadership. Following the Rudman and Kilianski (2000) Gender Authority index, a Gender Leader Index was created using the leader words (Leader, Ambitious, Determined, Dynamic, Assertive) and the supporter words (Supporter, Helpful, Understanding, Sympathetic, Compassionate) that had been used in the Gender Leader IAT (Appendix E). We used this measure because it is designed to complement the Gender leader IAT. Participants were required to rate these words on a 7-point scale ranging from -3 (more true of women) to 3 (more true of men), with a mid point of 0. Mean judgements of supporter concepts were subtracted from mean judgements of leader concepts. Thus, higher scores indicated an explicit association of men as leaders and women as supporters and lower scores indicated an explicit association of females as leaders and men as supporters. This index has a possible range of -6 explicitly associating women with leaders to +6 explicitly associating men with leaders (Rudman & Kilianski, 2000).

### **Women as Managers Scale (WAMS).**

The WAMS was used to provide a measure of traditional or counterstereotypical stereotypes of women managers (Appendix F). Peters et al. (1974) developed the Women as Managers Scale as a measure of explicit stereotypical attitudes towards women as managers. It was originally developed to better understand the resistance experienced by women moving into management positions. Participants were required to respond to 21 items, which assess their explicit attitudes towards women in management. Participants were required to rate these statements using a 7-point Likert scale ranging from strongly disagree to strongly agree (e.g., Men and women should be given equal opportunity for participation in management training programs). Ten negatively worded

questions were reverse coded, then the final score was calculated by summing the 21 items, this was in compliance with Peters et al. (1974). Higher scores indicated a more positive attitude to women as managers and lower scores indicated a more negative attitude to women as managers. Possible scores on the WAMS range from 21 to 147, with a mid-point of 84.

### **Demographic questionnaire.**

Finally, participants completed a demographic questionnaire (Appendix G), which asked them to provide information about themselves (e.g., age, gender), and information about their work (e.g., industry sector, employment status). Participants were asked to give the gender of their direct report (categorized as male direct report or female direct report), their perceptions of themselves as a gender minority within their workplace (gender minority or not gender minority) and their perception of the gender profile of the leadership team in their organization. Leadership profile was measured using a single item, which asked participants to give a numerical estimation of the percentage of men and women in senior management within their organization. Interquartile ranges were used to transform the data, such that the lower quartile of male and female responses were regarded to be a minority leader status and the upper quartile of male and female responses were regarded to be majority leader. This led to the creation of two variables, one that describe the male leader profile of the organizations (i.e. those with a minority of male leaders and those with a majority of male leaders), and a second, that describe the female leader profile of the organizations (i.e., those with a minority of female leaders and those with a majority of female leaders).

### **Procedure**

The School of Psychology Research and Ethics Committee of the Faculty of Arts and Social Sciences at the University of Waikato granted approval for this research. Participation in this research was voluntary. Those interested in taking part were directed to a web page, which

provided a detailed overview of the study and who was conducting the research (Appendix H). After completing two eligibility questions, participants were required to be at least 16 years of age and be currently employed in some form of employment, as well as confirming they wanted to take part in the study, participants were lead to the start of the study. They received instructions prior to each of the four tasks described above in the measures section (Appendix B, D, E, F). The final screen of the study thanked the participants, assured them of the anonymity of their responses and asked for their consent to use their data for research purposes (Appendix I). Additionally, participants could request to receive a summary of the research findings.

### **Statistical analysis**

The current study used a cross sectional design, it used an experimental measure along with a questionnaire to assess the hypotheses presented on pages 20 to 21. The study used IBM Statistical Package for Social Sciences (SPSS) version 22 to analyse the data. The p value of  $p < .05$  was considered to demonstrate statistical significance in the current study.

Initially, Cronbach's alpha was computed for all scales to assess their reliability. Measures with a Cronbach's Alpha over .70 were considered acceptable for this study (Field, 2013). After this, exploratory factor analysis of two of the explicit measures (WAMS and GLI) was conducted to measure internal validity. As the Gender Equality Attitudes Scale (GEAS) scale only has three items a reliability analysis for the scale was performed; results are presented in chapter three.

Differences between males and females in implicit and explicit bias were examined using a series of t-tests. Potential relationships between the implicit measure and the explicit measures were assessed using Pearson's correlation. To explore possible influence of organizational leadership on implicit bias a series of analyses were conducted. First, to assess possible effect of direct report gender descriptive statistics and t-

tests were used. Second, to assess the possible effect of participant gender and organizations with a majority of male or female leadership, an ANOVA was performed to examine any possible interactions.

## Chapter Three

### Results

The chapter is organised by hypothesis order and a summary of how the findings relate to the hypotheses is provided at the end of the chapter.

#### **Preliminary analyses**

As reported in the method, 32 participants were excluded due to not reporting gender. Seven participant responses were missing from the implicit measure due to not completing the task satisfactorily (Greenwald et al., 2003). In the explicit measures there were five missing responses for the Gender Equality Attitude Scale, and three missing responses from the Gender Leader index, this was due to participants not completing at least 80 per cent of the measure. Data was initially explored to determine if it was normally distributed, using histograms and boxplots, as well as looking at extreme outliers. Furthermore, skew and kurtosis was examined and were found to be under the absolute values of 2 for skew and 7 for kurtosis recommended by Kim (2013) for use on samples larger than 300. Skewness for all variables was between -1.06 and 0.58, whereas kurtosis values ranged between -0.15 and 1.22. This satisfied the assumptions of normality; therefore, no data transformations were required.

#### ***The Gender Leader Implicit Association Test (GL-IAT).***

The GL-IAT was calculated using the improved algorithm recommended by Greenwald et al. (2003). Initial analysis on the block order (congruent/incongruent block first) found no difference on IAT effect and hence, is not included in subsequent analyses. The mean error rate for IAT data was 10.8%, which was slightly larger than past studies that found mean error rates of around 5% (Greenwald et al., 1998; Rudman & Kilianski, 2000).

### **Exploratory factor analysis.**

Factor analysis is used to understand structure of latent variables (Field, 2013); in this case factor analysis was used as preparatory analysis to ensure the explicit measures in this study demonstrate a similar factor structure and hence, similar internal validity, to past research. In order to explore the factor structure of the explicit measures in the current sample, the Gender Leader Index (GLI) and the Women as Managers Scale (WAMS), two separate factor analyses were conducted. Principle axis factoring (PAF) with oblique rotation (direct oblimer) was used for all scales. As recommended by (Stevens, 2012) factor loadings that were about .40 were used to interpret the factors. Kaiser-Meyer-Olkin measures were above the minimum criterion of .50 (Kaiser, 1970), they were .63, and .84, respectively. The Bartlett's test of sphericity was significant for both scales, indicating it was appropriate to continue with factor analyses.

#### ***The Gender Leader Index (GLI).***

PAF was run on the 10 items within the Gender Leader Index. Previous research suggests that this scale has two sub-scales, one that measures gendered beliefs about leader traits and one that measures gendered beliefs about supporter traits (Rudman & Kilianski, 2000). The current analysis supported a two-factor structure, which accounted for 55.2% of the total variance. The factor loadings ranged from .37 to .88. Examination of the scree plot supported two dominant factors (Appendix J). Furthermore, examination of the pattern matrix suggested independence between the two factors representing leader and supporter (Appendix K). Additionally, there was a weak relationship between the two factors, ( $r(549) = .15$ ,  $p = .001$ ), further supporting the two factor structure. Although two items had factor loadings slightly less than .40, (GLIL2 = .39, GLIL4 = .37), these items were retained because of the large sample size (Field, 2013). The internal reliability for each sub-scale was acceptable when considering the number of items, with Cronbach's alpha reliability coefficients of .58 for the leaders sub-scale and .90 for the supporters sub-scale. Past research only reports the Cronbach's Alpha for the full scale

(.78), when all items are included the present research finds a similar statistic (.74) (Rudman & Kilianski, 2000)<sup>2</sup>. Combined, this supports the scoring for the Gender Leader Index in which a participant's mean score on supporter items are subtracted from their mean score of leader items. Hence, the final difference score, yielded by subtracting the leader subscale from the supporter subscale, was used for the current analyses.

***The Women as Managers Scale (WAMS).***

PAF was run on the 21 items within the Peters et al. (1974) Women as Managers Scale. The findings did not present a strong case for a one-factor or a three-factor structure suggested in prior research (Ilgen & Moore, 1983; Stockdale & Leong, 1994). Kaiser's criterion suggested extraction of five factors, however, average communalities after extraction were .42, and thus, Kaiser's rule was inappropriate. Analysis of the scree plot suggested a two or five-factor structure (Appendix L). As there was no prior support for either of these factor structures, we treated the scale as unidimensional as was suggested by the original developers of the scale Peters et al. (1974) and researchers Ilgen and Moore (1983). A secondary PAF was run on the scale, which was fixed to extract one factor. Rotation was not required. Examination of the factor matrix revealed items 11, 14, 15 and 21 were loading slightly less than .40, (.39, .36, .37, .39), these items were retained because of the large sample size (Field, 2013) (Appendix M). This final structure accounted for 27.0% of the total variance. The factor loadings ranged from .36 to .65. Cronbach's Alpha for this scale was good, .85. Therefore, one factor was retained for further analysis and scoring was completed in accordance with Peters et al. (1974) (described under the measure section in Chapter Two).

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<sup>2</sup> It should be noted, the scale in the current research was modelled off the Gender Authority Index, it uses stimulus words directly from the GL-IAT and hence, is not identical to the one used in the Rudman and Kilianski (2000) research.

## **Reliability analysis.**

### ***The Gender Equality Attitudes Scale.***

A reliability analysis was conducted on the Houkamau and Boxall (2011) Gender Equality Attitudes Scale. The scale had good item total correlations for each of the three items, ranging between .48 and .66. The internal reliability for this measure was acceptable, with a Cronbach's Alpha reliability coefficient of .73. This coefficient was similar to the one found by Houkamau and Boxall (2011).

## **Gender differences in main outcome measures**

The overall means and standard deviations for the implicit measure (GL-IAT) and the three explicit measures (GLI, WAMS and GEAS) are shown in Table 3, as well as, those for the male and female participant groups. Positive mean scores on the implicit measure indicated participant's held more traditional gender stereotypes at the implicit level. An independent t-test found significant gender differences on the implicit measure, with male participants, on average, implicitly associating leadership with men more than women, more than female participants (see Table 3). In contrast to the implicit measure participant's self-reported explicit responses indicated more counterstereotypical gender stereotypes, with each of the group means falling above the mid point for two of the three explicit attitude scales (WAMS and GEAS). The GEAS was the only explicit measure that an independent t-test revealed gender differences in stereotype, contrary to the implicit responses, males on average reported greater gender egalitarian attitudes than females (see Table 3). Detailed results for each measure are presented below.

**Table 3. Means, standard deviations and difference statistic for each measure**

<b>Measure</b>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Difference</u>
	Mean (SD)	Mean (SD)	Mean (SD)	Independent samples <i>t</i> -test
GL-IAT	0.23 (0.34)	0.28 (0.31)	0.21 (0.35)	<i>t</i> (543) = 2.16, <i>p</i> = .03
GLI	1.26 (1.17)	1.32 (1.18)	1.24 (1.17)	<i>t</i> (547) = 0.70, <i>p</i> = .48
WAMS	125.26 (15.17)	126.17 (14.90)	124.94 (15.27)	<i>t</i> (550) = 0.84, <i>p</i> = .40
GEAS	4.09 (0.85)	4.25 (0.81)	4.03 (0.85)	<i>t</i> (545) = 2.73, <i>p</i> = .006

*Note.* SD = standard deviation, GL-IAT = Gender Leader Implicit Association Test, GLI = Gender Leader Index, WAMS = Women as Managers Scale, GEAS = Gender Equality Attitudes Scale.

### **Implicit bias assessment.**

The first goal of this study was to investigate the hypothesis that participants would implicitly associate men, more than women, with leader traits and women, more than men with supporter traits. An initial one sample *t*-test showed that the overall implicit score was positive (see Table 3 for mean and standard deviation) and significantly different from zero,  $t(544) = 15.66, p < 0.001$ , suggesting that considered together male and female participants differentially associate gender with leadership. Follow up one sample *t*-tests showed that both male and female participants implicitly held traditional gendered leader stereotypes, with males demonstrating a stronger positive pattern of association,  $t(143) = 10.92, p < 0.001$ , than females,  $t(400) = 12.00, p < 0.001$ . A further independent samples *t*-test qualified that this difference in pattern of association between males and females was significant. Implicit association means and standard deviations overall and as a function of gender are reported in Table 3, as well as, the gender difference *t*-statistic.

In other words both male and female participants, implicitly associated men with leader characteristics, relative to women and implicitly associated women with supporter characteristics, relative to men, supporting hypothesis 1. Furthermore, this pattern of association was stronger for male participants than female participants, supporting hypothesis 1a.

### **Explicit beliefs and attitudes.**

The second goal was to investigate the hypothesis that participants would report positive attitudes towards women as leaders on the three explicit measures.

The GLI scores were small and positive overall, as shown in Table 3, for both males and females, indicating that participants explicitly rate leader characteristics as slightly more true of males, relative to females and supporter characteristics as slightly more true of females, relative to males. An independent sample *t*-test found no difference in response due to participant gender (see Table 3). Although means for the GLI are relatively low (compared with the upper limit of + 6), a one sample *t*-test confirmed that the overall mean and means for male and female participants differed significantly from the neutral point, all *ts* > 13.00, *df* males = 144, females = 403, *p* <.001. Therefore, it was concluded that participants did not report counterstereotypical stereotypes on this measure, and did not report positive leadership attitudes towards women. These findings parallel those from the implicit measure (GL-IAT). Based on this result no support found for hypothesis 2a. Participant's scores on this measure ranged from -2.40 to 6.00.

The WAMS scores were well above the midpoint for both male and female participants, as shown in Table 3, indicating that both male and female participants reported counterstereotypical gender leader stereotypes, and positive leadership attitudes towards women, supporting hypothesis 2b. An independent sample *t*-test found no difference in

response due to participant gender (see Table 3). Participant's scores on this measure ranged from 61 to 147.

The GEAS scores were positive overall (i.e. above the mid-point) for both males and females, as shown in Table 3, indicating that participants had no explicit preference for males or female leaders, and hence, demonstrated positive leadership attitudes towards women, supporting hypothesis 2c. There was a significant difference between male and female participants (Table 3), indicating that male participants reported more gender egalitarian explicit attitudes than female participants. Participant's scores on this measure ranged from one to five.

Hence, the results from the explicit measures only partially supported hypothesis 2; this will be further discussed in Chapter Four.

### **Relationship between the implicit and explicit measures**

The third goal was to investigate the hypotheses that there would be weak relationships between the implicit measure and each explicit measure. Pearson's correlation coefficients between the implicit and explicit measures were calculated and presented in Table 4. All correlations between the implicit measure and the three explicit measures were weak, as expected (Table 4, column 1). Specifically, correlations between the GL- IAT and the three explicit attitude and belief measures ranged from  $-.04$  to  $.11$  (average  $r = .02$ ). Hence, score on the implicit measure largely do not correlate with the explicit measures, supporting hypotheses 3a, 3b, and 3c. However, there was a significant, positive, weak correlation between the GL-IAT and the GLI, indicating the measures are marginally related, supporting hypothesis 3d. However, the statistical significance is due to the large sample size, the correlation, and hence variance explained, is small.

**Table 4. Correlations of the implicit and explicit measures**

	1	2	3	4
1 GL-IAT	1.00			
2 GLI	.11**	1.00		
3 WAMS	.00	-.06	1.00	
4 GEAS	-.04	-.07	-.02	1.00

\*\*p> .01

### **Organizational factors that influence implicit bias**

Consistent with the fourth goal of this research to investigate the hypotheses that greater exposure to women leaders decreases traditional gender stereotypes (implicit bias), and greater exposure to men leaders increases traditional gender stereotypes, this section explores whether the gender of the direct report or the senior leadership profile (gender minority/majority) influenced participant's scores on the implicit measure.

The relationship between gender, participants' direct report gender, senior leadership profile of participants organization, as well as, self identified minority status are presented in Table 5. A significantly greater proportion of males reported having a male direct report (53%), while a significantly greater proportion of females reported having a female direct report (61%). In terms of leadership profiles, the difference between males and females working in organizations with male leader minority/female leader majority and male leader majority/female leader minority was not statistically significant (for a full explanation of how these groups were established, see Appendix N). A large majority of the sample did not report being a gender minority in their immediate work group, however for those who did, a significantly greater proportion of male participants (26%) self identified with gender minority status than female participants (15%).

**Table 5. Relationship between gender and gender of direct report, senior leadership profiles and minority status**

	Participant gender		Chi value	Square
	Male	Female		
	<i>n</i> (%) within gender)	<i>n</i> (%) within gender)		
<u>Gender of direct report</u>				
Male	71 (53.0)	147 (38.6)		
Female	63 (47.0)	234 (61.4)	$\chi^2(1) = 8.42, p = .004$	
<u>Workplace leader profile</u>				
Male leader majority / female leader minority	47 (51.1)	121 (55.8)		
Female leader majority and leader minority /	45 (48.9)	96 (44.2)	$\chi^2(1) = 0.57, p = .45$	
<u>Minority status</u>				
Minority	34 (25.6)	58 (15.1)		
Non-minority	99 (74.4)	326 (84.9)	$\chi^2(1) = 7.40, p = .01$	

*Note.* *n* = number of participants.

### **Manager gender and implicit bias.**

To test for differences between participant's implicit leader belief scores based on participant's direct report gender independent t-tests were carried out. Table 6 presents the GL-IAT means and standard deviations for participants with a male direct report and participants with a female direct report, as well as the difference statistic within participant gender. Independent samples t-tests revealed no effect of direct report gender on implicit D-scores for both male and female participants, which shows the gender of the participants direct report made no difference to their scores on the implicit measure (see Table 6). Therefore, the difference in participant D-score based on direct report gender was not

statistically significant for male or female participants. Thus, female participants with a female direct report did not express less implicit bias than female participants with a male direct report. Likewise, male participants with a female direct report did not express less implicit bias than male participants with male direct reports. That is, gender of the direct report made no difference to implicit bias scores of male or female participants, hence, no support was given to hypothesis 4a and 4b.

**Table 6. Gender Leader Implicit Association Test scores for participants with male and female direct reports**

	Direct report male Mean (SD)	Direct report female Mean (SD)	Difference  Independent samples <i>t</i> -test
Males	0.30 (0.31)	0.28 (0.37)	$t(130) = 0.47, p = .64$
Females	0.22 (0.37)	0.21 (0.35)	$t(374) = 0.06, p = .95$

*Note.* SD = standard deviation.

### **Senior leadership profile and implicit bias.**

Senior leadership profile was calculated using the last item of the demographic questionnaire (Appendix G), which asked participants to estimate the percentage of males and females within top leadership within their organization. Several steps were required to identify participants in organizations with a male leader majority and male leader minority in senior leadership and to identify participants in organizations with female leader majority and female leader minority in senior leadership (Appendix N). Explained simply, the lower quartile of male and female responses were regarded to be a minority leader status and the upper quartile of male and female responses were regarded to be majority leader.

Table 7 clearly shows the difference between male and female participants in the percentages of male and female that make up minority and majority status in leadership. For male participants, male leaders were considered minorities when they made up less than half of senior

leadership, whereas female leaders were considered minorities when they made up less than 20 percent of senior leadership. In contrast, for male participants male leaders were considered a majority in leadership when they made up more than 80 percent of senior leaders, whereas females leaders were considered a majority in leadership when they made up more than half of senior leadership. This is because male participants generally worked in organizations with a high saturation of males within senior leadership. For female participants, the percentages of male and female leaders considered minorities and majorities was much more consistent, with minority in senior leadership falling around 30 percent or less for both genders and majority in senior leadership falling around 70 percent and above for both genders.

*Table 7. Percentages of senior leaders considered minority and majority by gender (based on interquartile ranges)*

Senior profile	Leadership	Minority/Majority status	Participant Gender	
			Male	Female
<b>Male Profile</b>	<b>Leadership</b>	Male minority	0-50%	0-33%
		Male majority	80-100%	70-100%
<b>Female Profile</b>	<b>Leadership</b>	Female minority	0-20%	0-30%
		Female majority	50-100%	67-100%

To test for differences in participant's implicit leader belief scores based on the organization senior leadership profiles two two-way ANOVA were conducted. These analyses investigated the hypotheses exploring whether there was an effect of male dominant or female dominant senior leadership profiles on participants implicit bias (D-score).

**Male leadership profile.**

To test whether working in organizations with a majority of male leaders (male dominant) and organizations with a minority of male leaders influenced participant's implicit leader belief scores, a two-way ANOVA was conducted. Table 8 presents the GL-IAT means and standard deviations for participants working in organizations with a majority of male leaders and a minority of male leaders, as well as the number of participants in each of the groups. The main effect of participant gender on the amount of implicit bias expressed by the participants was not statistically significant,  $F(1, 296) = 2.78, p = .10, \eta_p^2 = .009$ . The main effect of males making up the majority or minority of senior leadership on the amount of implicit bias expressed by the participants was not statistically significant,  $F(1, 296) = .00, p = .98, \eta_p^2 = .000$ . Furthermore, the interaction between participant gender and male leadership profile was not statistically significant,  $F(1, 296) = .19, p = .66, \eta_p^2 = .001$ . Therefore, traditional leader stereotypes, associating males with leaders and females with supporters, were not stronger for participants working in organizations with male dominant leadership; hence, no support was given to hypothesis 4c.

**Table 8. Gender Leader Implicit Association Test scores for participants with minority male and majority male in senior leadership**

Gender	Senior Leadership profile	Participants (n)	Mean		SD	
			(GL-IAT score)	D-	(GL-IAT score)	D-
Males	Male minority	leader 42	.30		.34	
	Male majority	leader 45	.29		.33	
Females	Male minority	leader 95	.21		.35	
	Male majority	leader 118	.23		.36	

***Female leadership profile.***

To test whether working in organizations with a majority of female leaders (female dominant) and organizations with a minority of female leaders influenced participant's implicit leader belief scores, a two-way ANOVA was conducted. Table 9 presents the GL-IAT means and standard deviations for participants working in organizations with a majority of female leaders and a minority of female leaders, as well as the number of participants in each of the groups. The main effect of participant gender on the amount of implicit bias expressed by the participants was not statistically significant,  $F(1, 299) = 2.53, p = .11, \eta_p^2 = .008$ . The main effect of females making up the majority or minority of senior leadership on the amount of implicit bias expressed by the participants was not statistically significant,  $F(1, 299) = .00, p = .98, \eta_p^2 = .000$ . Furthermore, interaction between participant gender and female leadership profile was not statistically significant,  $F(1, 299) = .20, p = .66, \eta_p^2 = .001$ . Therefore, counterstereotypical leader stereotypes, associating females with leaders and males with supporters, were not stronger for participants working in organizations with female dominant leadership; hence, no support was given to hypothesis 4d.

***Table 9. Gender Leader Implicit Association Test scores for participants with minority female and majority female in senior leadership***

Gender	Senior Leadership profile		Participants (n)	Mean		SD	
				(GL-IAT score)	D-	(GL-IAT score)	D-
<b>Males</b>	Female minority	leader	47	.28		.32	
	Female majority	leader	43	.30		.33	
<b>Female</b>	Female minority	leader	118	.23		.36	
	Female majority	leader	95	.21		.35	

## Summary

This chapter described the findings on the relationships between gender, organizational leadership and implicit and explicit gender beliefs and attitudes. Firstly, means were explored for the implicit measure. This provided support for implicit bias towards leaders, such that, men were more implicitly associated with leaders and women with supporters. T-tests comparing means for men and women found that this implicit bias was significantly stronger for male participants (support for hypothesis 1). Further exploration of the means for the explicit measures provided partial support for positive leadership attitudes towards women, with means falling above the mid-point for the WAMS and GEAS, indicating positive explicit attitudes toward women as leaders. However, mean scores on the GLI indicated more traditional beliefs regarding leaders with leadership words being regarded as more male than female, and supporter words being regarded as more female than male (partial support for hypothesis 2). Furthermore, correlational analyses provided support for all relationships between the implicit measure and the three explicit measures. As expected the effect size were weak, with largest found between the GLI and the GL-IAT, which are designed to overlap with each other (support for hypothesis 3). No hypotheses regarding organizational leadership decreasing or increasing implicit bias were supported (no support for hypothesis 4).

## Chapter Four

### Discussion

Vast and extant literature investigates gender leader stereotypes explicitly, using self-report measures (for a review, see Koenig et al., 2011). However, the issue with these measures is that people commonly choose to respond in a socially desirable way, especially when the topic is socially sensitive (e.g., prejudice against minorities) (Duehr & Bono, 2006). Although recent applied research has begun to qualify the difference between implicit and explicit gender leader beliefs and attitudes more research has been called for as necessary to understand the complexity around these relationships (Latu et al., 2011). This research provides a better understanding of implicit and explicit leader attitudes and beliefs in New Zealand, as well as, exposing that men *and* women in the New Zealand workforce still hold traditional implicit gender leader beliefs. Finally, this research examined organizational factors (i.e., female direct reports, gender minority/majority in leadership) to examine whether female leaders buffered employees' traditional implicit gender leader stereotypes.

#### **Implicit and explicit gender leader beliefs and attitudes**

This study demonstrated that men and women among New Zealand organizations hold traditional gender leader stereotypes, at least at the implicit level. This is consistent with past research that found men and women hold traditional gender leader stereotypes (Rudman & Kilianski, 2000). Although, both men and women held traditional gender leader beliefs implicitly, the pattern of association was stronger for the male participants. This can be understood using Social Role Theory (SRT) and in-group versus out-group theory. Firstly, as suggested by SRT gender leader stereotypes are likely maintained by the unequal observation of men and women performing social roles (Eagly & Steffen, 1984). The sample of participants worked in organizations with slightly more male leaders (54.3%) on average, than female leaders (45.7%), which would support the results from the Implicit Association Test (IAT).

Secondly, using, in-group versus out-group theory, it is likely that in-group bias played a part in the difference in implicit bias between men and women. In-group bias for males appeared to strengthen implicit gender leader bias. This is said to be due to men's interest in protecting the status quo (Latu et al., 2011). In-group bias for females appeared to weaken implicit bias. However, although women may think more positively of other women compared to men, this bias was not sufficient to counteract social role information, (usually associated with the devaluing of women in leadership) (Latu et al., 2011). However, instead of expressing counterstereotypic associations or no stereotype, female participant implicit gender leader bias was simply weaker, compared to male participants. Interestingly, although Latu et al. (2011) expected findings similar to those of the current research, their study found women held counterstereotypic implicit gender leader beliefs. It is possible that the version of the IAT, the successful manager IAT (SM-IAT) used in the Latu et al. (2011) research confounded the responses from female participant to the implicit measure. The SM-IAT used attribute words for successful managers that had a positive valence (innovative, creative, skilled), and, attribute words for unsuccessful managers that had a negative valence (boring, dim-witted, slacker). Hence, implicit responses may simply reflect participant's in-group bias to respond more positively to their own gender rather than actual gender leader beliefs. Future research regarding implicit gender leader bias should keep valences equal across each attribute label to avoid this possible confound (as in the current study).

Scores from two out of the three explicit measures indicated that women and men held positive attitudes towards women as leaders, at the explicit level. These two scales, the Gender Equality Attitudes Scale (GEAS) and the Women as Managers Scale (WAMS), assessed participant's egalitarian attitudes in the workplace and towards leadership, as well as, how competent women in leadership positions are and how deserving they are of leadership positions. These findings suggest that either participants do hold gender egalitarian leader explicit attitudes or that they were motivated to respond to the questionnaire, in a socially

desirable manner, as suggested in past research (Duehr & Bono, 2006). Worthy of note is that unlike the other explicit scales, the WAMS items only investigated attitudes to women as leaders. It did not compare female leaders with male leaders. One possibility is that when participants are only thinking about women, they can view them as leaders, whereas, in a comparison of women to men, perhaps people do not rate women as highly. On the Gender Leader Index (GLI), an adaption of the implicit task, participants reported traditional explicit beliefs of leadership, reporting leader attributes as slightly more true of males than of females and supporter attributes as slightly more true of females than of males. Perhaps, because all attribute labels had a positive valence this questionnaire was less influenced by social desirability. Furthermore, the GLI scale was a continuum from more true of women to more true of men so it forced the participant to make a choice regarding which gender they explicitly associated the attribute with. Overall, peoples explicit beliefs and attitudes towards women in leadership is complex, this research suggests that women can be seen as leaders under certain conditions (when they are considered apart from men and under the context of equality and fairness). However, people more commonly explicitly associate traditional leadership attributes with men, and traditional supporter attributes with women.

The main aim of this research was to map out the difference between what we “say” (explicit beliefs and attitudes) and what we “believe” (implicit beliefs). This demonstrated the predicted dissociation between self-reported gender leader beliefs and attitudes and experimentally sourced implicit gender leader beliefs. This discordance may have occurred because of the social sensitivity of this research (Fazio & Olson, 2003). The self-report measures gave the participants ample time to deliberate over their responses and although the study was anonymous, social norms of equality may have influenced participants’ responses, particularly on the GEAS and WAMS where statements relate largely to fairness and women’s competence in leadership. Interestingly, a small but significant correlation was found between the Gender Leader

Index and the Gender Leader Implicit Association Test. Consistent with past research, there could be two reasons for this relationship, firstly, the GLI shared the greatest conceptual correspondence to the implicit measure used in the current research (Gender Leader IAT), and secondly, the GLI was worded so that judgements of the attribute labels were relative (Hofmann et al., 2005).

The findings from the implicit and explicit measures in the current research can be interpreted through the MODE model, in which, one's motivation and opportunity to deliberate influence whether one's behaviour and judgement are based on implicit or explicit beliefs and attitudes (Fazio, 1990; Fazio & Olson, 2003). Through this lens the findings suggest that people are likely to act in a fair manner and generally regard women as competent and worthy leaders when they have the motivation and resources necessary to do so. However, when motivation and opportunity are low, judgements of women may rely more heavily on implicit responses, which find them less suited to leadership than their male counterparts. This may be particularly prudent to selection and promotion of women into leadership. If those in hiring positions do not take sufficient time to consider their bias in decision-making and why they are choosing a male over a female with similar credentials then gender inequality within leadership is likely to persist. Further research is needed to investigate the behavioural response to the differential found between explicit and implicit measures.

### **Organizational factors that influence bias**

Exposure to counterstereotypical leader information has been found to reduce implicit gender leader bias. Dasgupta and Asgari (2004) found young women enrolled in a women's college expressed significantly less implicit gender leader stereotype in their second year of college than those enrolled in a co-educational college. Similarly, Blair, Ma, and Lenton (2001) found that engaging in counterstereotypical mental imagery mediated automatic stereotype of university students. However, to my knowledge no such research has been conducted with a working sample (Lenton et al.,

2009). The current research sought to investigate whether gender of one's direct report inhibited or enhanced one's traditional implicit gender leader stereotypes. In the sample, participant's direct reports were more often than not the same gender, however gender of the direct report made no difference in participant's implicit stereotype. Several explanations can be posed as to why this research did not find a similar result to the research described above. Firstly, the samples were very different, samples in the aforementioned studies were conducted in American colleges and universities, whereas, the current sample was sourced from organizations throughout New Zealand, all participants were working, albeit a number were students who were also working. One possibility is that the current sample was older and hence, their stereotypes less susceptible to influence from their social environment (Lenton et al., 2009). Secondly, several factors that were not measured could be confounding this result. The amount of time participants had been reporting to their direct report, or on average how much time they spent with them was not measured. It is probable that amount of time with counterstereotypical leaders plays a role in deactivation of automatic (implicit) stereotypes. For example, in the Dasgupta and Asgari (2004) study they found that frequency of exposure to counterstereotypical women leaders decreased implicit bias over a period of a year. Furthermore, participants were not asked to indicate how much they admired or liked their direct reports, whereas, a past study on racial bias found exposure to admired and liked individuals of the counterstereotypical group (pro-black exemplars) decreased automatic racial bias (Dasgupta & Greenwald, 2001).

It was further hypothesized that organizational leadership profiles would influence participant's implicit stereotype, such that, organizations with female dominant senior leadership would decrease employees traditional implicit gender leader beliefs, and, organizations with male dominant senior leadership would increase traditional implicit gender leader beliefs. Groups of participants working in organizations with female dominant senior leadership (majority of female senior leaders versus minority of female senior leader) and male dominant senior leadership

(majority of male senior leaders versus minority of male senior leaders) were established from the sample. This, again, was based on research that found social environments influence implicit gender leader beliefs (Dasgupta & Asgari, 2004). However, the current analysis revealed no difference in participants' implicit bias in organizations with male dominant leadership or female dominant leadership. Leadership profiles were estimated for a single point in time, it is possible that these profiles are not stable over time and hence, may not provide a stable enough environment to influence implicit beliefs. Furthermore, the number of women making up female dominant senior leadership profiles may not have been great enough in the current sample to provide a critical mass of counterstereotypical female leaders to influence employees' implicit gender leader beliefs. This is particularly probable for those male participants working in organizations with a 'majority of female senior leaders', as this grouping only required females to make up more than 50% of leadership positions. Further research should be conducted in organizations with stable extremes of men and women in senior leadership positions to shed further light on whether or not a critical mass of female leaders influences employees' implicit gender leader stereotypes.

Perhaps, rather than exposure to women leaders reducing implicit bias, it instead activates stereotype threat. This could work to strengthen or maintain traditional stereotypes in two ways. Firstly, it is possible that women view their female direct reports and senior female women as dissimilar to themselves and hence, exposure to female leaders does not change the traditional gender leader stereotypes they hold. Secondly, males may discount the competence of female leaders or believe that they have not become leaders due to their own abilities but rather due to organizational diversity policies, such as, affirmative action. This would maintain the traditional gender leader stereotype in the face of contradictory information such as reporting to a female manager or having a larger proportion of female senior leadership, compared to males, within your organization. Further research is needed to ascertain the extent to

which each of these explanations is able to describe the effects of female leaders on employees' implicit gender leader beliefs.

### **Practical implications**

This research uncovered that implicit gender leader bias exists within New Zealand organizations, which provides some support for training and education around unconscious (implicit) gender bias. This training could be especially beneficial because participants largely self reported that they held egalitarian work views and viewed women as competent leaders, they may be unaware of the automatic associations they hold, which contradict these egalitarian attitudes. Training and education around gender bias may be particularly prudent for those making hiring and promoting decisions in organizations. Increased awareness to the individual of the attitudes and beliefs they hold may be a good way to decrease workplace discrimination (Greenwald & Banaji, 1995). Greenwald and Banaji (1995) suggested that raising awareness of one's bias increases the likelihood one will recognise when bias is influencing their decisions, and therefore, action can be taken to reduce discrimination. Organizations wanting to mitigate losses from female talent leaving before they can reach leadership positions need to understand and combat the detrimental effects of implicit gender bias.

As discussed, implicit and explicit measures were largely not related in this research, implicit beliefs revealed both men and women associate leadership with men, compared to women, whereas, participants explicitly reported egalitarian attitudes of women on the WAMS and the GEAS. This highlights the importance of assessing attitudes and beliefs using, both, implicit and explicit measures. Organizations should be wary of using self-reported measures to assess the need for gender bias training, especially when employees have ample time to deliberate and when the socially desirable response is obvious (Duehr & Bono, 2006). Participant's reported more traditional gender leader beliefs on the GLI, they judged leader attributes as more true of men than of women. Perhaps, a measure like the GLI is more appropriate to assess how

people judge men and women on leader characteristics. The GLI is a relative measure, which does not assess negative or positive beliefs but rather assesses how much a person judges leader and supporter concepts as more true of men relative to women, and the reverse. Hence, this measure is less affected by social desirability concerns because there is not an obvious socially desirable response.

Combined, the above findings endorse the use of implicit assessment strategies, such as, a computerised IAT, as well as, explicit measures that assess relative attitudes and beliefs, as methods for, assessing the need for gender diversity training within organizations and providing an effective manner to assess their success. Gender diversity training has been shown to be an effective training tool and increases positive attitudes towards referent groups (S. M. Jackson et al., 2014).

## **Strengths and limitations**

### **Strengths.**

A strength of the present study is that beliefs and attitudes towards leaders based on gender were measured using an experimental implicit measure (GL-IAT) and several self-reported questionnaires (WAMS, GEAS, and GLI). By incorporating both implicit and explicit measures, the research was able to assess the difference between what people say, their explicit attitudes and beliefs about leadership, and what people believe, their implicit and unconscious beliefs about leadership.

A further strength of this study is that it further adds to what is known about the relationship between implicit and explicit attitude and belief measures. Specifically, the use of three explicit measures aided in the understanding of when and under what circumstances there is a relationship between explicit and implicit measures (Fazio & Olson, 2003).

Lastly, the current research differs to previous research, as it explored the influence of current female leaders on employee's implicit gender beliefs in an applied organizational setting. Furthermore, it

demonstrated the existence of implicit gender bias in perceptions of leadership in New Zealand.

### **Limitations.**

The present study has a number of limitations. The greatest being that the stimulus words used in the GL-IAT (leader, ambitious, determined, dynamic, assertive, supporter, helpful, understanding, sympathetic, compassionate) may not represent present day definitions of leadership and supportership. In a meta-analysis, Koenig et al. (2011, p. 634) determined that “leadership now, more than in the past, appears to incorporate more feminine relational qualities, such as, sensitivity, warmth, and understanding”. Future researchers should use stimulus words that reflect current perceptions of good leaders and good supporters. Perhaps, IAT’s that also assess current perceptions of bad leaders and bad supporters would give more information about the nuances of gender bias within leadership.

Another limitation is that participants were asked to estimate the gender percentages in senior leadership within their organization. It is possible that the statistics may be inaccurate, as the participants may simply not know the percentage. To mitigate this limitation in future, researchers could investigate effects of senior leadership profiles in organizations where actual numbers are provided by management. Furthermore, it would be preferable to assess employees who had been employed for at least a year in organizations with relatively stable leadership profiles.

Lastly, the WAMS, one of the explicit measures, did not present a similar factor structure to past research. A one-factor structure was retained as suggested by the developers of the scale, however, the final structure accounted for a small per cent of the total variance. Hence, caution should be applied when interpreting the results related to this measure.

## **Future research**

Potential future research could investigate implicit and explicit gender leader beliefs and attitudes within specific organizations or professions rather than with individuals. This is because organizations and types of work differ in whether they are considered traditionally masculine or feminine. This will provide researchers and practitioners with an understanding of how implicit gender bias restricts women's entry to leadership across specific professions. By better understanding the influence work environments and organizational structures have on implicit gender bias, Human Resource (HR) managers will be more equipped to support gender diversity trainings.

Research found traditional gender leader stereotypes to create a pro-male bias in leader evaluations and lead to a greater allocation of organizational rewards to male managers (Hoyt & Burnette, 2013; Latu et al., 2011). Further research could investigate how implicit gender leader bias relates to discriminatory behaviours in organizations within New Zealand. Furthermore, research is needed to investigate under what conditions behavioural responses relate to explicitly reported attitudes and beliefs and when they relate to implicitly held beliefs.

Lastly, past research found implicit racial bias to lead to employment discrimination against ethnic minorities (Ziegert & Hanges, 2005). Women, who also identify as an ethnic minority, may face even more discrimination pursuing and performing leadership roles. Future research should investigate the implications of gender leader bias for women who further identify with an ethnic minority status.

## **Conclusion**

In conclusion, the study investigated the relationship between gender and implicit and explicit attitudes and beliefs among New Zealand workers. The research demonstrated that, despite self-reporting explicitly positive attitudes towards leaders, our implicitly held stereotypes associate men with leaders, more so than women, and women with supporters,

more so than men. Although, presence of female direct reports or saturation of females in senior leadership was not found to influence employee's implicit gender leader bias, it is likely that the more that females are accepted into leadership roles, the easier it will become for women pursuing and performing leadership roles. The results of this study emphasise, to practitioners, HR managers and researchers, that the scarcity of women within leadership may be, at least in part, due to implicitly held stereotypes, that disassociate women from leaders, and therefore implicit gender bias needs to be recognised within New Zealand organizations as a real barrier to women's progression. Efforts to reduce the impact of implicit gender bias should be undertaken.

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# Appendices

## Appendix A – Gender Leader Implicit Association Test items

### Leader words

Leader  
Ambitious  
Determined  
Dynamic  
Assertive

### Supporter words

Supporter  
Helpful  
Understanding  
Sympathetic  
Compassionate

### Male names

Josh  
Brandon  
Peter  
Ian  
Andrew

### Female names

Emily  
Donna  
Debbie  
Katherine  
Jane

## **Appendix B – Gender Leader Implicit Association Test instructions**

### First screen instructions

You will be presented with a set of words or images to classify into groups.

This task requires that you classify items as quickly as you can while making as few mistakes as possible.

Take some time to read which of the items fit into the different categories.

### Category Items

Leader LEADER, AMBITIOUS, DETERMINED, DYNAMIC, ASSERTIVE  
Supporter SUPPORTER, HELPFUL, UNDERSTANDING,  
SYMPATHETIC, COMPASSIONATE

Male JOSH, BRANDON, PETER, IAN, ANDREW

Female EMILY, DONNA, DEBBIE, KATHERINE, JANE

### Keep in mind

During the task keep your index fingers on the keyboard to enable rapid response. Two labels at the top will tell you which words or images go with each key. Each word or image has a correct classification. Most of these are easy. The test is invalid if you go slow -- Please try to go as fast as possible. Expect to make a few mistakes because of going fast. That's OK.

For best results, avoid distractions and stay focused.

### Block instructions

**FEMALE**

**MALE**

Press the E Key for **FEMALE**.  
Press the I key for **MALE**.

Go as fast as you can

Press the space bar to begin

(Block 1 of 7)

If the keys do not work, click the mouse inside the white box and try again.

If the red X appears, press the other key to make the red X go away.

**LEADER**

**SUPPORTER**

Press the E Key for **LEADER** words.  
Press the I key for **SUPPORTER** words.

Go as fast as you can

Press the space bar to begin

(Block 2 of 7)

If the keys do not work, click the mouse inside the white box and try again.

If the red X appears, press the other key to make the red X go away.

**FEMALE**  
**LEADER**

**MALE**  
**SUPPORTER**

Press the E Key for **FEMALE** or LEADER words.  
Press the I key for **MALE** or SUPPORTER words.

Go as fast as you can

Press the space bar to begin

(Block 3 and 4 of 7)

If the keys do not work, click the mouse inside the white box and try again.

If the red X appears, press the other key to make the red X go away.

**MALE**

**FEMALE**

Notice that the 2 categories have switched positions.

Press the E Key for **MALE**.  
Press the I key for **FEMALE**.

Go as fast as you can

Press the space bar to begin

(Block 5 of 7)

If the keys do not work, click the mouse inside the white box and try again.

If the red X appears, press the other key to make the red X go away.

**MALE**  
**LEADER**

**FEMALE**  
**SUPPORTER**

Press the E Key for **MALE** or **LEADER** words.  
Press the I key for **FEMALE** or **SUPPORTER** words.

Go as fast as you can

Press the space bar to begin

(Block 6 and 7 of 7)

If the keys do not work, click the mouse inside the white box and try again.

If the red **X** appears, press the other key to make the red **X** go away.

## **Appendix C – Gender Leader Implicit Association Test scoring instructions**

Scoring for the IAT was done using the new scoring algorithm outlined by Greenwald et al. (2003). Please note that we reported 5 blocks in the method to aid with understanding but there are actually 7 blocks, Table 10 shows the differences for scoring purposes.

*Table 10, Block numbers for scoring*

Blocks within method section	Actual blocks
1 (20 trials)	1 (20 trials)
2 (20 trials)	2 (20 trials)
3 (60 trials)	3 (20 trials), 4 (40 trials)
4 (20 trials)	5 (20 trials)
5 (60 trials)	6 (20 trials), 7 (40 trials)

### **Step one**

All data from critical trial blocks 3, 4, 6 and 7 was kept. All practise trials were discarded. This meant removing data for blocks 1, 2 and 5.

### **Step two**

Any trials with latencies of more than 10,000ms were deleted. This meant eliminating all trials with response times greater than 10,000ms.

### **Step three**

Subjects whom for more that 10% of the trials had a latency of less than 300ms were removed from the study. This meant eliminating any participants whose responses were less than 300ms for more than 10% of the total trials for the critical blocks.

### **Step four**

A mean of correct response times was computed for each for each block. This meant averaging the response time for each block using only the latencies for trials participants had answered correctly the first time.

### Step five

A combined standard deviation for all trials in block 3 and block 6 was computed (from all responses both correct and incorrect). In order to do this it meant working out the number of trials for each block ( $n$ ), mean for each block ( $\mu$ ), and standard deviation for each block ( $\sigma$ ).

Equation to combine standard deviations is:

$$s = \sqrt{\frac{(n_1-1)s_1^2 + (n_2-1)s_2^2 + n_1(\bar{y}_1 - \bar{y})^2 + n_2(\bar{y}_2 - \bar{y})^2}{n_1 + n_2 - 1}}$$

### Step six

A combined standard deviation for all trials in block 4 and block 7 was computed (from all responses both correct and incorrect). In order to do this it meant working out the number of trials for each block ( $n$ ), mean for each block ( $\mu$ ), and standard deviation for each block ( $\sigma$ ).

Equation to combine standard deviations is:

$$s = \sqrt{\frac{(n_1-1)s_1^2 + (n_2-1)s_2^2 + n_1(\bar{y}_1 - \bar{y})^2 + n_2(\bar{y}_2 - \bar{y})^2}{n_1 + n_2 - 1}}$$

### Step seven

Error latencies were replaced by their corresponding block mean plus 600ms. In order to do this each response time for trials participants had answered incorrectly the first time were replaced by their corresponding block mean (computed in step four) plus 600ms.

### Step eight

The resulting values for each of the blocks were averaged. This meant averaging each of the four blocks using the correct response times and the response times we corrected for in step 7.

### **Step nine**

Two differences were computed. This meant using the averages calculated in step 8:

- a) Block 6 – Block 3.
- b) Block 7 – Block 4.

### **Step ten**

Each difference was divided by its combined standard deviation.

- a) The first difference worked out in step nine (i.e.,  $B_6 - B_3$ ) was divided by its standard deviation worked out in step 5.
- b) The second difference worked out in step nine (i.e.,  $B_7 - B_4$ ) was divided by its standard deviation worked out in step 6.

### **Step eleven**

The two quotients were averaged. This meant averaging the two numbers from step ten. This gives the D-score.

## **Appendix D – The Gender Equality Attitude Scale**

### **Leadership Questionnaire**

For the next task use your mouse to click on your answer. Your responses are completely anonymous so please answer honestly and without thinking it over. Your first response is likely to be the best answer.

Q1. I enjoy working with both men and women equally

Strongly Disagree

Disagree

Neither Agree nor disagree

Agree

Strongly agree

I don't know

I prefer not to answer

Q2. I don't care whether my supervisor is male or female

Strongly Disagree

Disagree

Neither Agree nor disagree

Agree

Strongly agree

I don't know

I prefer not to answer

Q3. Gender has nothing to do with whether people are good leaders at work.

Strongly Disagree

Disagree

Neither Agree nor disagree

Agree

Strongly agree

I don't know

I prefer not to answer

## **Appendix E – The Gender Leader Index**

### **Leadership Questionnaire**

Next, using the continuum below, we would like you to give your honest opinion of how characteristic the following are of females in comparison to males.

Q4. Leader

(More true of women) -3 -2 -1 0 1 2 3 (More true of men)

Q5. Ambitious

(More true of women) -3 -2 -1 0 1 2 3 (More true of men)

Q6. Determined

(More true of women) -3 -2 -1 0 1 2 3 (More true of men)

Q7. Assertive

(More true of women) -3 -2 -1 0 1 2 3 (More true of men)

Q8. Dynamic

(More true of women) -3 -2 -1 0 1 2 3 (More true of men)

### **Leadership Questionnaire**

(Continued from the previous page...)

Next, using the continuum below, we would like you to give your honest opinion of how characteristic the following are of females in comparison to males.

Q9. Supporter

(More true of women) -3 -2 -1 0 1 2 3 (More true of men)

Q10. Helpful

(More true of women) -3 -2 -1 0 1 2 3 (More true of men)

Q11. Understanding

(More true of women) -3 -2 -1 0 1 2 3 (More true of men)

Q12. Sympathetic

(More true of women) -3 -2 -1 0 1 2 3 (More true of men)

Q13. Compassionate

(More true of women) -3 -2 -1 0 1 2 3 (More true of men)

## **Appendix F – The Women as Managers Scale**

### **Leadership Questionnaire**

The following items are an attempt to assess the attitudes you have about women in management. The best answer to each statement is your honest personal opinion. The statements cover many different and opposing points of view; you may find yourself agreeing strongly with some of the statement, disagreeing just as strongly with others, and perhaps uncertain about others. Whether you agree or disagree with any statement, you can be sure that many people feel the same way you do. Using the number from 1 to 7 on the rating scale, indicate your personal opinion about each statement by clicking the appropriate number from the scale given underneath the statement. Remember, give your personal opinion according to how much you agree or disagree with each item. Please respond to all items.

Q14. It is less desirable for women than for men to have a job that requires responsibility.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neither Agree or Disagree 5 Somewhat Agree 6 Agree 7 Strongly Agree

Q15. Women have the objectivity required to evaluate business situations properly.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neither Agree or Disagree 5 Somewhat Agree 6 Agree 7 Strongly Agree

Q16. Challenging work is more important to men than it is to women.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neither Agree or Disagree 5 Somewhat Agree 6 Agree 7 Strongly Agree

Q17. Men and women should be given equal opportunity for participation in management training programs.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neither Agree or Disagree 5 Somewhat Agree 6 Agree 7 Strongly Agree

Q18. Women have the capability to acquire the necessary skills to be successful managers.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neither Agree or Disagree 5 Somewhat Agree 6 Agree 7 Strongly Agree

### **Leadership Questionnaire**

(Continued from the previous page...)

Q19. On average, women managers are less capable of contributing to an organization's overall goals than are men.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neither Agree or Disagree 5 Somewhat Agree 6 Agree 7 Strongly Agree

Q20. It is not acceptable for women to assume leadership roles as often as men.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neither Agree or Disagree 5 Somewhat Agree 6 Agree 7 Strongly Agree

Q21. The development community should someday accept women in key managerial positions.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neither Agree or Disagree 5 Somewhat Agree 6 Agree 7 Strongly Agree

Q22. Society should regard work by female managers as valuable as work by male managers.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neither Agree or Disagree 5 Somewhat Agree 6 Agree 7 Strongly Agree

Q23. It is acceptable for women to compete with men for top executive positions.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neither Agree or Disagree 5 Somewhat Agree 6 Agree 7 Strongly Agree

### **Leadership Questionnaire**

(Continued from the previous page...)

Q24. The possibility of pregnancy does not make women less desirable employees than men.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neither Agree or Disagree 5 Somewhat Agree 6 Agree 7 Strongly Agree

Q25. Problems associated with menstruation should not make women less desirable than men as employees.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neither Agree or Disagree 5 Somewhat Agree 6 Agree 7 Strongly Agree

Q26. To be a successful executive, a women does not have to sacrifice some of her femininity.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neither Agree or Disagree 5 Somewhat Agree 6 Agree 7 Strongly Agree

Q27. On the average, a women who stays at home all the time with her children is a better mother than a woman who works outside the home at least half time.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neither Agree or Disagree 5 Somewhat Agree 6 Agree 7 Strongly Agree

Q28. Women are less capable of learning mathematical and mechanical skills than are men.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neither Agree or Disagree 5 Somewhat Agree 6 Agree 7 Strongly Agree

### **Leadership Questionnaire**

(Continued from the previous page...)

Q29. Women are not ambitious enough to be successful in the working world.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neither Agree or Disagree 5 Somewhat Agree 6 Agree 7 Strongly Agree

Q30. Women cannot be assertive in business situations that demand it.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neither Agree or Disagree 5 Somewhat Agree 6 Agree 7 Strongly Agree

Q31. Women possess self- confidence required of a good leader.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neither Agree or Disagree 5 Somewhat Agree 6 Agree 7 Strongly Agree

Q32. Women are not competitive enough to be successful in the working world.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neither Agree or Disagree 5 Somewhat Agree 6 Agree 7 Strongly Agree

Q33. Women cannot be aggressive in business situations that demand it.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neither Agree or Disagree 5 Somewhat Agree 6 Agree 7 Strongly Agree

Q34. Women would no more allow their emotions to influence their managerial behavior than would men.

1 Strongly Disagree 2 Disagree 3 Somewhat Disagree 4 Neither Agree or Disagree 5 Somewhat Agree 6 Agree 7 Strongly Agree

## **Appendix G – Demographic questionnaire**

### **Leadership Questionnaire**

Nearly finished, now we would just like to know some information about you...

What is your age?

<=19

20-29

30-39

40-49

50-59

60-69

70-79

80+

Which Ethnicity/ies do you identify with?

New Zealand European/Pakeha

Other European

Maori

Pasifica

Chinese

Indian

Prefer not to answer

Other (please specify):

What gender do you identify with?

Male

Female

Other

Are you currently a student?

Yes No

If you are a student, what is your enrollment status?

Full time study

Part time study

How would you best describe your employment? (If you have more than one job, think of your main job when answering the following questions)

Self-employed

Casual

Part time (< 30 hours/week)

Full time (> 30 hours/week)

Contractor

Other (please specify):

How many hours do you work on a typical week?

<=10

11-20

21-30

31-40

41-50

51+

Which industry sectors do you work in?

Accommodation

Administrative and support services

Agriculture, forestry and fishing

Arts and recreational services

Construction

Education and training

Electricity, gas, water and waste services

Financial and insurance services

Health care and social assistance

Hospitality

Information media and telecommunications

Manufacturing

Mining

Professional, scientific and technical services

Public administration and safety

Retail, hiring and real estate

Retail trade

Transport, postal and warehousing

Wholesale trade

Other industry sector:

The organization you work for is which of the following?

Public sector

Private sector

Not-for-profit

Don't know

Other (please specify):

Do you perceive yourself to be part of a gender minority within your immediate work unit?

Yes

No

Prefer not to answer

What gender is your direct report/manager at work?

Male

Female

Not applicable, I don't have a direct report/manager

Prefer not to answer

Are you a direct report/manager to other employees?

No

Yes

If yes, approximately how many employees report to you?

Which of the following best describes your job title within your organization?

General employee

Supervisor

Middle manager

Senior manager

CEO/ C-level executive

Other (please specify):

How long have you been in your current position?

year(s)

month(s)

Approximately what are the percentages of males and females in your immediate work unit?

% Male

% Female

Approximately what are the percentages of males and females in senior management within your organization?

% Male

% Female

## Appendix H – Information sheet

### Attitudes on Gender

### and Leadership

### in New Zealand



THE UNIVERSITY OF  
**WAIKATO**  
*Te Whare Wānanga o Waikato*

This study is trying to explore attitudes towards male and female leaders within New Zealand. You are requested to complete one word-association task followed by a leadership survey and a short demographic questionnaire. There are no wrong or right answers to the questions. We are interested in your honest personal opinions. To take part in this study you must be at least 16 years of age and currently employed in some form of paid work in New Zealand.

This study will take approximately 15-20 minutes to complete. Any answers that you provide are anonymous and cannot be linked to your name in any way. You can withdraw from this study at any time by closing your browser window. The findings of this study will be used as part of a master's thesis, written up for publication and will be presented at relevant conferences. This study is being undertaken as part of a Master of Applied Psychology research thesis at the University of Waikato and has received ethical approval from the School of Psychology Research and Ethics Committee of the Faculty of Arts and Social Sciences. Any questions about the ethical conduct of this research may be sent to the convener of the Research and Ethics Committee (currently Dr. Rebecca Sargisson, phone 07 557 8673, email: [rebeccas@waikato.ac.nz](mailto:rebeccas@waikato.ac.nz)).

If you would like any further information about the study please contact the principal researcher (Tara Roopra, [tara.roopra@gmail.com](mailto:tara.roopra@gmail.com)) or the research supervisors (Dr. Maree Roche, [mroche@waikato.ac.nz](mailto:mroche@waikato.ac.nz) or Assoc. Professor Nicola Starkey, [nstarkey@waikato.ac.nz](mailto:nstarkey@waikato.ac.nz)).

Consent:

1. Would you like to take part in this study?

Yes

No

2. Are you 16 years of age or over?

Yes

No

3. Are you currently in any form of paid employment within New Zealand?

Yes

No

## **Appendix I – Last screen of survey**

### **Leadership Questionnaire Thank you for completing this study.**

Please indicate if you would like to receive a summary of the findings?  
Please be assured that your name / any identifying information cannot be linked with your responses.

Yes No

Please indicate if you would like to go in the draw to win a \$50 warehouse voucher

Yes No

Please indicate if you would like to receive course credit for participating in this research.

Yes No

(Please note: **You cannot enter the draw and get course credit.** You have to be a Waikato student enrolled in one of the following for semester 2, 2016, PSYC229, PSYC317, PSYC208, PSYC319. After pushing submit you will be forwarded to another page to allocate your credit.)

If you answered yes to any of the above, please enter your email address below. Email address:

Thank you very much for completing this study. We appreciate you taking the time to respond to these issues. Please submit your completed study using the 'Submit' button below. By submitting this study you give consent for the researchers to use the data you have provided.

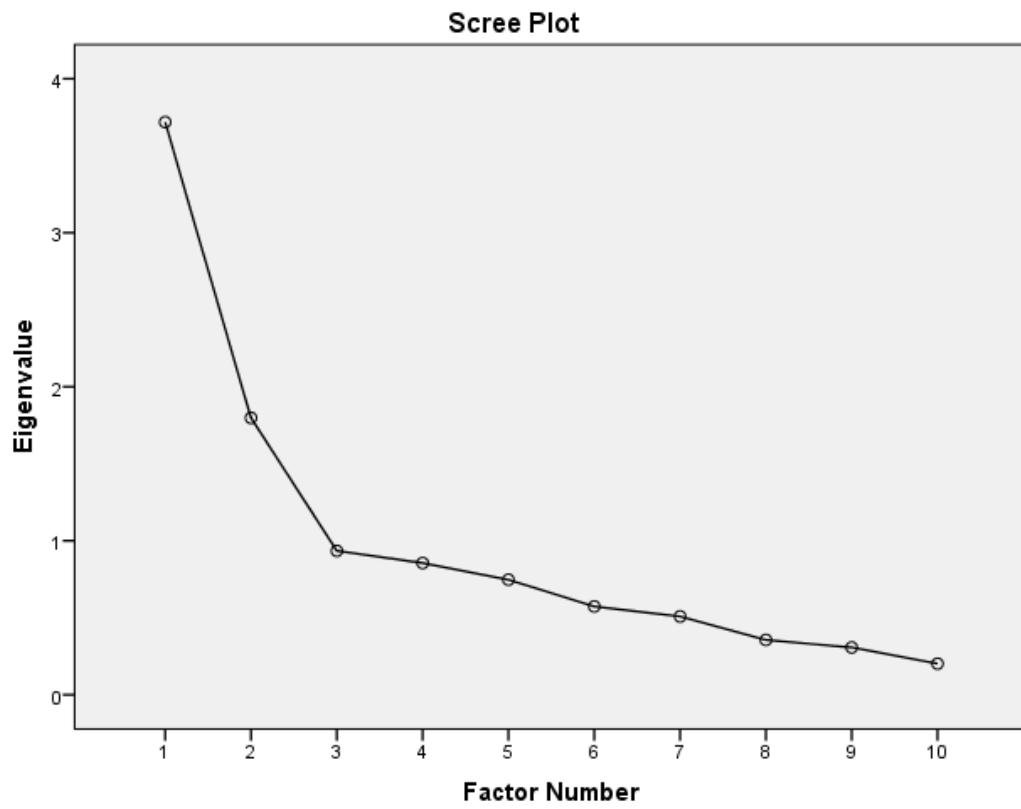
Submit

If you have any questions about this research please contact one of the principle researcher:

Tara Roopra (tara.roopra@gmail.com),

or research supervisors: AProf. Nicola Starkey (nstarkey@waikato.ac.nz), Dr. Maree Roche (mroche@waikato.ac.nz). Any questions about the ethical conduct of this research may be sent to the convener of the Research and Ethics Committee (currently Dr. Rebecca Sargisson, phone 07 557 8673, email: rebeccas@waikato.ac.nz).

## Appendix J – Gender Leader Index scree plot



## Appendix K – Gender Leader Index pattern matrix

Pattern Matrix<sup>a</sup>

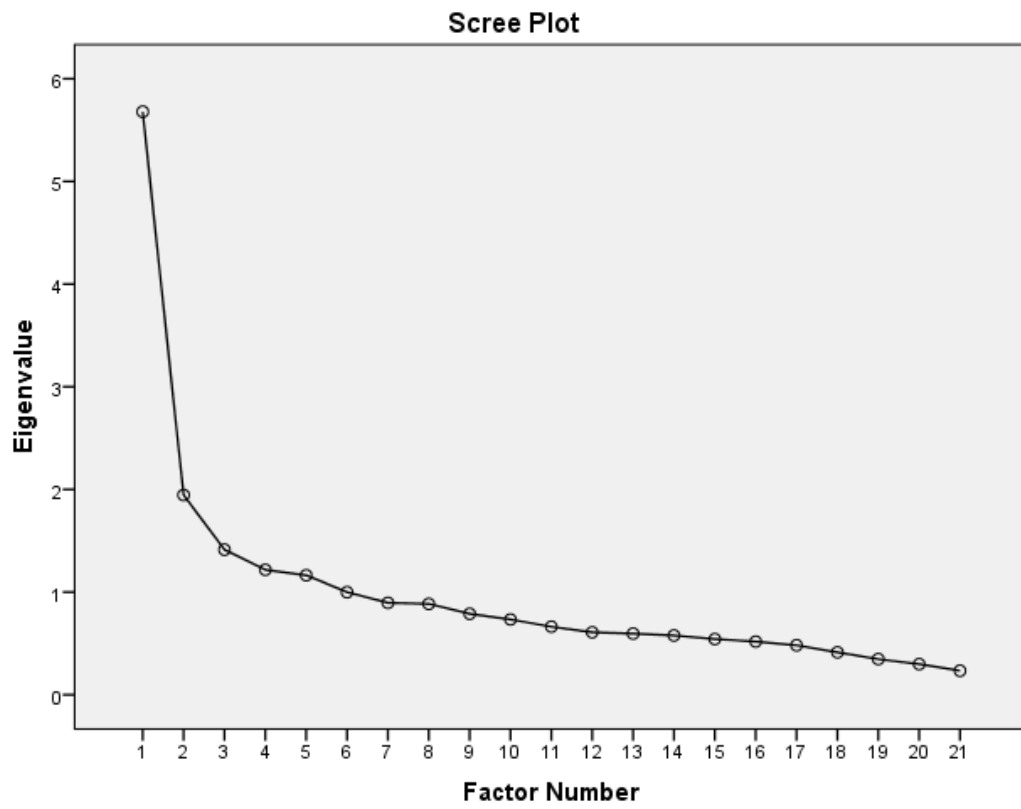
	Factor	
	1	2
GLIL1		.521
GLIL2		.392
GLIL3		.580
GLIL4		.365
GLIL5		.467
GLIS1	.688	
GLIS2	.754	
GLIS3	.795	
GLIS4	.878	
GLIS5	.878	

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 3 iterations.

## Appendix L – Women as Managers Scale scree plot



## Appendix M – Women as Managers Scale factor matrix

Factor Matrix<sup>a</sup>

	Factor
	1
WAMS1R	.429
WAMS2	.426
WAMS3R	.573
WAMS4	.416
WAMS5	.415
WAMS6R	.644
WAMS7R	.496
WAMS8	.435
WAMS9	.532
WAMS10	.549
WAMS11	.393
WAMS12	.526
WAMS13	.441
WAMS14R	.361
WAMS15R	.367
WAMS16R	.508
WAMS17R	.653
WAMS18	.459
WAMS19R	.453
WAMS20R	.561
WAMS21	.391

Extraction Method:

Principal Axis

Factoring.

a. 1 factors extracted. 4 iterations required.

## Appendix N – Steps to establish organizational senior leadership profiles

*Table 11. Step to establish organizational senior leadership profiles*

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Step one	Using splitfile analysis on SPSS data was split by gender.
Step two	Using frequencies interquartile ranges were calculated for reported percentages of males in senior leadership and reported percentages of females in senior leadership.
Step three	<u>To create the male leader profile:</u> the lower quartile of the reported percentages of male leadership led to male responses of less than 50% male leaders being included and female responses of less than 33% male leaders being included and recoded as 'male leader minority'; the upper quartile of the reported percentages of male leadership led to male responses of more than 80% male leaders and female responses of more than 70% male leaders being included and recoded 'male leader majority'.
Step four	<u>To create the female leader profile:</u> the lower quartile of the reported percentages of female leadership led to male responses of less than 20% female leaders being included and female responses of less than 30% female leaders being included and recoded as 'female leader minority'; the upper quartile of the reported percentages of female leadership led to male responses of more than 50% female leaders and female responses of more than 67% female leaders being included and recoded 'female leader majority'.

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