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Extraversion and social competence in New Zealand dairy farmers

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Abstract

Extraverts are purportedly more socially competent than introverts, which may allow them greater access to social resources. As social support is a key predictor of individual resilience, this implies introverts are less resilient than extraverts. This descriptive research with New Zealand dairy farmers explored how extraversion-introversion was related to three factors of social competence: (a) social confidence, (b) social intelligence and (c) social skills. The study also analysed how social competence is defined by a commonly used measure of individual resilience, the Resilience Scale for Adults, and how the connection between extraversion and social competence influences access to social support. A concurrent nested design informed the collection of data via an online survey and the use of bivariate correlation, multiple regression and relational analyses. Social competence demonstrated a large positive relationship ($r = .679-.747, p < .01$) with extraversion except in relation to enjoying company, which suggests introversion is not associated with social disinterest. Extraversion had a particularly significant correlation with social confidence ($r = .773, p < .01$), which surpassed the associations with social skill ($r = .645, p < .01$) and social intelligence ($r = .433, p < .01$). A moderate positive correlation between extraversion and social support ($r = .457, p < .01$) was identified, yet this relationship appears to be mediated by social competence. The findings indicate introversion may be associated with low perceived social self-efficacy in novel social situations with unfamiliar social partners, not a lack of capability. Like extraversion, the Resilience Scale for Adults' social competence subscale showed a larger relationship with social confidence ($r = .628, p < .01$) than social intelligence ($r = .522, p < .01$) and skill ($r = .575, p < .01$). Due to the small sample size ($n = 56$), the study is limited in its inferences.

Preface and Acknowledgements

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The Massey University Ethics Committee were notified of this research (notification number 4000020430) as a low-risk, peer-reviewed study, prior to commencement.

Keywords: social competence; extraversion; introversion; dairy farmer; New Zealand

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Chapter 1. Introduction

Forming and maintaining social connections is critical for individual wellbeing (Windle, Bennett, & Noyes, 2011). Socially connected individuals tend to live longer (Comstock, 2018b), face fewer capability, family, social acceptance and academic problems and experience less loneliness (Nasab & Makvandi, 2016). Support from family and friends (e.g., having a confidante to divulge thoughts and feelings to, intimacy, opportunities to reciprocate support) is core to coping with and protection from stress (Hjemdal et al., 2011). Interpersonal relationships are also vital for the development and improvement of social interaction capabilities across the lifespan (Nasab & Makvandi, 2016).

Success in social interactions is dependent on a combination of personality traits, abilities and social environment features, including the level of social support available to the person (Hettema & Deary, 1993). Personality traits are defined as the behavioural patterns and inner processes repeatedly invoked by the individual across contexts and times (Ercan, 2017). According to Bandura (1986), traits such as extraversion determine the social circles a person moves in, thereby influencing the kind of chance social encounters the person will meet. Yet, people alter their actions to align with the particular demands of each interpersonal interaction. This ability, termed social competence, involves the use of social intelligence, social skills and social confidence (Ten Dam & Volman, 2007). Social intelligence (i.e., awareness of the self and others, social cue processing) is a prerequisite for an individual to effectively select the necessary social skills from their skillset. The individual then decides to implement their chosen behaviour based on their perceived self-efficacy (i.e., social confidence) and adjust their behaviour to align with the social cues they are monitoring.

Social competence is considered an important predictor of individual resilience due to its positive association with access to social support, a key protective factor for individual resilience (Garmezy & Rutter, 1983; Morote, Hjemdal, Martinez Uribe, & Corveleyn, 2017; Windle et al., 2011). International research with urban samples indicates extraverts tend to be more socially competent than introverts (e.g., Friborg, Barlaug, Martinussen, Rosenvinge, & Hjemdal, 2005), which implies introverts are less socially competent and therefore less resilient than extraverts. New Zealand's agrarian workers are thought to be traditionally introverted (Avery & Thomson, 2017), yet they require high individual resilience to surmount the challenges they regularly face due to the time and resource limitations involved in dairying (i.e., dairy farming).

Increased transiency means farm employees and contractors are less involved in the traditional family farmstead social life (J. Jonker, Rural Support Trust, personal communication, 11 April 2019). Although the number of New Zealand's family-owned and corporate dairy farms has decreased 23.5% since 2002, the land area used for dairying has increased 22.6%, indicating farms are increasingly being merged and expanded (Ministry for the Environment & Stats NZ, 2018). Farm conglomeration and commercialisation encourage dairy farm employees and contractors to shift between farms more frequently than previous generations, in pursuit of better employment opportunities. Moving to a different rural community makes forming new supportive relationships and maintaining established connections from the previous community difficult, especially for young farmers without children (Farmstrong, 2018a, 2018b). Farmers report that challenges in important relationships (e.g., partner, parents, farm owner) cause a moderate negative impact on their wellbeing with 44% of young farming women and 30% of young farming men having only a few people to discuss issues with (Farmstrong, 2018a, 2018b). Thus, the alteration in farming as an occupation and lifestyle has led to a decline in social cohesion.

If introversion is linked to weaker social competence, introverts are more likely to have issues with social acceptance, isolation, family connections and stress. Thus, it is important to understand the complexities of the relationship between extraversion-introversion and social competence for the welfare of New Zealand's dairy farmers. This study intends to explore this relationship and how it relates to access to social support. Furthermore, if social competence is a key predictor of resilience, it is necessary to analyse the theoretical construct of social competence incorporated into one of the leading measures of resilience, the Resilience Scale for Adults (Friborg, Hjemdal, Rosenvinge, & Martinussen, 2003). For this study, a dairy farmer is defined as a person engaged in the production of milk from dairy cows primarily fed with pasture. This includes roles such as farm owner, herd manager, farm manager, sharemilker, contract milker and milk harvester.

Chapter 2. Literature Review

Extraversion-Introversion

Extraversion, or "extroversion", is a circumplex model of interpersonal behaviour and one of the central building blocks of personality (H. J. Eysenck, 2006; Goldberg, 1981). Extraversion remains a broad dimension composed of several primary traits (i.e., sociability, assertiveness, positive emotionality) inferred from empirically observed covariations as

specific definitions of introversion and extraversion are yet to be agreed upon (Watson et al., 2019). Sociability is one of the most consistently recurring themes within extraversion theory (Watson & Clark, 1997). Due to this close relationship, Heymanns depicted the dimension of extraversion as a continuum of “weak” (i.e., introverted) to “strong” (i.e., extraverted) social functioning (Wilt & Revelle, 2009). It has a relatively normal distribution with the majority of people displaying a mixture of extraverted and introverted characteristics, classified as ambiversion (H. J. Eysenck, 2006; Zelenski, Sobocko, & Whelan, 2014). For linguistic convenience, individuals who report higher levels of extraversion are henceforth referred to as extraverts and those who display greater introversion (i.e., low extraversion) will be referred to as introverts.

Jung (1921/2017) is frequently credited with conceptualising extraversion and its opposing pole, introversion. Nevertheless, Jung is one of several personality theorists, such as Sigmund Freud, Alfred Binet, Furneaux Jordan and William Stern, who recorded differences in extraverted and introverted features (H. J. Eysenck, 2006; Falzeder & Beebe, 2013). Jung theorised introverts draw energy from their subjective being while extraverts feel replenished by the objective outer world (Cain, 2012). However, Jung’s hypothesis has been misinterpreted as an indication of introverts’ disinterestedness in social engagement.

Jung (1921/2017) depicted extraverts as people who escape from their inner psyche into the reality of the external world, to which they attach great value (Falzeder & Beebe, 2013). Their attention, thoughts and feelings are therefore directed towards objective (i.e., immediately observable) conditions more than the subjective (Conklin, 1923). Consequently, they avoid solitude as being alone leads them to self-reflection and offers them little stimulation (Cain, 2012; Jung, 1984).

According to Eysenck and Eysenck’s (1967) physiological explanation, founded on Corcoran’s (1964) lemon juice reactivity test, extraverts are naturally under-stimulated and seek risky and social activities to satisfy their deficit in stimulation. Filling this need through social interaction produces a sense of reward for extraverts and restores their energy (Cain, 2012; Lucas & Diener, 2001). Their enthusiastic social engagement may in turn evoke notice from potential social partners (Ashton, Lee, & Paunonen, 2002). Consequently, extraverts are described as craving excitement, risk-takers (Cameron & Myers, 1966), outgoing and at ease in social situations (Matthews, Deary, & Whiteman, 2003; Zelenski et al., 2014).

Extraverts revel in making new connections so they generally enjoy a wide circle of friends and acquaintances (Cain, 2012) and spend more time in social situations than introverts (H. J. Eysenck & Eysenck, 1985; Zelenski et al., 2014). They tend to prefer talking rather than listening, are less likely to listen or think before acting and readily speak publicly with little preparation (Cain, 2012; Matthews et al., 2003; Zelenski et al., 2014). Extraverts are therefore attributed with greater social success due to their dispositional attention to the outside world (Jung, 1921/2017), stimulation-seeking behaviour (H. J. Eysenck, 1973) and more frequent social encounters which provide more opportunities to gain the necessary social expertise (Allport, 1924). Consequently, they are considered more assertive and capable of handling conflict than their introverted peers (Matthews et al., 2003; Zelenski et al., 2014). Moreover, it is widely believed that extraverts enjoy the company of others more than introverts (Watson & Clark, 1997).

In contrast, Jung (1921/2017) theorised introverts detach from reality and turn inward, where the inner world of their psyche becomes their principal source of interest and motivation (Falzeder & Beebe, 2013). Their attention is therefore more controlled by the subjective conditions (i.e., personal perceptions of external events) than the objective, causing disparity between the objective and subjective (Conklin, 1923). H. J. Eysenck (2006) explains this behaviour is due to the introvert's lower sensory threshold, whereby their stimulation needs are met more readily than an extravert's so an introvert can quickly become over-stimulated in highly social contexts. To avoid or recover from over-stimulation, introverts prefer quieter activities such as listening to music at a low volume or being alone or with a small group of familiar people (Cain, 2012). Introverts are therefore characterised as quiet (Zelenski et al., 2014), cautious, contemplative (Cain, 2012), serious, skilled at emotional regulation and more fond of literature than people (Matthews et al., 2003). They tend to listen more often than talk, prefer written communication forms rather than speaking, circumvent conflict and favour deep discussions over small talk (Cain, 2012).

When introversion is conceptualised as the opposite of extraversion, introverts are depicted as passive, silent and shy people who shrink from social contact (Henjum, 1982). While research supports the notion introverts experience more periods of solitude than extraverts (e.g., Leary, Herbst, & McCrary, 2003; Long, Seburn, Averill, & More, 2003), authors question whether introversion equates to timidity or is a result of various other reasons like social inability, unsociability or an enjoyment of solitary activities (e.g., Coplan & Armer, 2007; Henjum, 1982; Leary et al., 2003). Yet, outgoing extraverted behaviours are easier to

observe and measure than the introspective activities of introversion so the individual's inner processes are inferred from the supposedly resultant behaviour (Aron & Aron, 1997; Bandura, 1986).

Extraversion-introversion is indicative of a dispositional inclination (R. L. Thorndike & Stein, 1937), which suggests internal determinants of behaviour will ensure a person's actions are generally consistent across different contexts and time (Bandura, 1986). However, individuals can and consciously adapt their behaviour to situational circumstances, suggesting behaviour is also influenced by their ability or social competence (Bandura, 1986; R. L. Thorndike & Stein, 1937). People persistently engage in activities in which they are skilled, believe they are competent and derive pleasure (Matthews, 1997). Consequently, it is necessary to understand how extraversion-introversion is linked to social competence and its subconstruct social confidence (see Q1).

Q1. How does social competence relate to extraversion-introversion?

In his review of early literature on personality, Conklin (1923) expressed concern about the use of the term extraversion to represent normal behaviour and the inference introversion was therefore abnormal and morbid. This reflects the extraversion ideal held by society, whereby people are expected to be outgoing and socially driven despite the commonality of ambiverts (Cain, 2012; Conklin, 1923; Henjum, 1982). Introverts may respond to this anxiety-provoking social rejection by retreating from social situations (Cain, 2012). By distancing themselves from social interaction, introverts avoid confronting their self-perception of social ineptitude and may be perceived by others as less socially able or interested than their extraverted peers.

Some social contexts may obscure the possibility that introverts can possess social skills equal to those of extraverts (Lieberman & Rosenthal, 2001) and enjoy social occasions as much or more than extraverts (Fleeson, Malanos, & Achille, 2002; Lucas, Le, & Dyrenforth, 2008). A key difference may be introverts enjoy companionship in different ways and contexts than extraverts such as preferring the company of close friends, family and known colleagues (Cain, 2012). However, the assumption that introverts avoid spending time with people underpins most personality measures of extraversion, which include items such as "I enjoy being with people" where a positive response counts toward greater extraversion. This is misleading if both introverts and extraverts enjoy being with people and differ in their interpretation of the question based on their preferred company size and make-up.

Social Competence

Definition.

Social competence is broadly defined as a person's effectiveness in interpersonal interactions (Rose-Krasnor, 1997). Theories generally subscribe to four inter-related approaches, where social competence is determined by social skills, functional outcomes, sociometric status and transactional relationships (Rose-Krasnor, 1997). A social skills approach conceptualises social competence as a set of desirable abilities which an individual may possess. The functional outcomes method expands upon the former approach by integrating several components of social skill into a developmental process model of competence to consider the social goals, processes (i.e., problem-solving) and outcomes of a person's behaviour. Consequently, the social skills and functional outcomes theories attend to social competence at a personal level. In contrast, the sociometric status and transactional relationships assess social competence as the product of interpersonal engagement. From the sociometric status viewpoint, an individual's social competence is ascertained by measuring how popular or well liked he or she is by others. Similarly, the transactional relationship approach sees social competence as emerging from interpersonal interactions where success is determined by the response of others to the person's behaviour. It looks at the contribution of social learning to each social partner in an interaction and the resultant quality of the relationship.

In this study, a combined focus on social skills and functional outcomes was adopted to explore the intrapersonal and interpersonal qualities that influence an individual's effectiveness in social interactions. Social competence is understood to be a person's ability to comprehend their thoughts, feelings and behaviours and those of others in interpersonal situations, and to then act appropriately in social contexts (Knopp, 2018; Marlowe, 1986; Silvera, Martinussen, & Dahl, 2001). This perspective emphasises the self while accounting for the influence of and on others (Boyatzis, Goleman, & Rhee, 2000; Rose-Krasnor, 1997). Although the sociometric status method is useful for identifying a potential lack of social competence exists, it does not identify specific areas of ineffectiveness. Furthermore, the sociometric status and transactional relationship approaches require a comparison of self- and peer-ratings, which was beyond the scope of this project.

Three subconstructs of social competence highlighted in the literature are social intelligence, social skills and social confidence. Social intelligence involves social knowledge

(Ten Dam & Volman, 2007), social awareness (Albrecht, 2006; Boyatzis et al., 2000) and social information processing (Knopp, 2018; Silvera et al., 2001). Social intelligence is a prerequisite for the effective use of social skills such as social-communicative, perspective-changing, empathy and relationship management skills (Albrecht, 2006; Boyatzis et al., 2000; Marlowe, 1986; Rose-Krasnor, 1997; Ten Dam & Volman, 2007). The individual then decides to act or adjust their behaviour based on their perceived self-efficacy (i.e., confidence in their ability) and monitoring the reactions of others (Albrecht, 2006; Kemple, 2017; Marlowe, 1986; Ten Dam & Volman, 2007). Social competence is not tied to a person's success in any particular relationship or context as a person's needs can be satisfied by a variety of different relationships (Rose-Krasnor, 1997). Thus, effective social performance relates to a person's potential and enacted appropriate social performance across contexts (Hampel, Weis, Hiller, & Witthöft, 2011).

Social intelligence.

Social intelligence was initially determined to be an ability, not a trait, by E. L. Thorndike (1920), a stance supported by an expanding body of empirical research (Knopp, 2018). Social intelligence entails a person's ability to understand their own and others' thoughts, emotions and actions in interpersonal situations (Kemple, 2017; Marlowe, 1986; Silvera et al., 2001). This includes the ability to comprehend social rules, expectations, customs, situations and contexts and identify the use of influence and power in social hierarchies (Mayer, Caruso, & Salovey, 2016). Therefore, social intelligence plays a key role in a person's influence over and understanding of their social acceptance (Mayer et al., 2016).

Researchers continue to debate the exact facets of social intelligence (Knopp, 2018), yet two components are generally accepted as key to the construct: social awareness and social information processing (Silvera et al., 2001). Social awareness is often referred to in social intelligence literature but rarely explored (Knopp, 2018). It is thought to involve the possession of social etiquette knowledge (Wong, Day, Maxwell, & Meara, 1995), sensitivity to social cues and contexts, perspective-taking and interpersonal awareness such as one's role in social interactions (Ford & Tisak, 1983; Knopp, 2018). An individual must possess self-awareness and awareness of their surroundings to understand the pairing of stimulus and consequence (Bandura, 1986).

Yet, people do not simply react. They selectively attend to and process sensory data indicating social behaviour is cognitively mediated (Bandura, 1986). Social information

processing signifies a person's ability to interpret social cues and their implications (Ford & Tisak, 1983; Silvera et al., 2001; Weis & Süß, 2007). It requires a person to successfully perceive, understand, decode and remember social cues, contexts and information and choose the appropriate behaviours for certain contexts based on their appraisal of the likely responses of others (Dowswell & Chessor, 2014; Qualter, Gardner, & Whiteley, 2007; Wong et al., 1995). Studies suggest this ability begins as early as 7-months-old, when infants can distinguish between fearful and non-fearful gazes (Jessen & Grossmann, 2014).

People consciously process the auditory and visual information they receive to determine which cues are the most relevant to the present context based on past experience (Bandura, 1986). Environmental regularities become cues that provide information about the likely outcome, thereby forming personal social rules. Knowledge of these conditional associations informs personal predictions of the consequences and enables foresightful behaviour, removing the need to act blindly (Bandura, 1986). These cues and expected outcomes are then generalised to other contexts. Instant like and dislike reactions to new people and situations tend to stem from selective attention to particular cues associated with powerful expectations of outcomes learned through personal experience or vicariously (Bandura, 1986). Thus, introverts may learn to dislike large social gatherings due to feeling overwhelmed by selective attention to negative social cues and anticipating negative outcomes. This could encourage introverts to avoid similar social situations in future when possible.

Social skills.

Social awareness and information processing capabilities alone are insufficient to guarantee social effectiveness (Knopp, 2018). An individual's social skills determine the successful utilisation of their social intelligence (Ford & Tisak, 1983). Social skill denotes a person's ability to manage social situations and the skills they use to achieve desired social goals such as improving one's social hierarchy status (Carreras et al., 2014; Dowswell & Chessor, 2014; Ford & Tisak, 1983). Thus, socially competent behaviour use varies by context (Rose-Krasnor, 1997).

Little consensus has been reached in the literature regarding the precise verbal and non-verbal behaviours that constitute social skills (Bundock & Hewitt, 2017). Moreover, studies of social skills focus on the development of social abilities in children or targeted social skill deficits in adolescents and adults with mental health or developmental disorders. From a review of this literature, the key areas of social skills appear to be relationship initiation and

social engagement, assertiveness and self-control (Knopp, 2018; Walton & Ingersoll, 2013). However, the boundaries of these areas are not clear cut.

The area of relationship initiation and social engagement is vast. One of the critical skillsets that underpins this area is social communication, which includes initiating and maintaining conversation, listening, sharing ideas and emotions, responding appropriately, making eye contact and interpreting facial expressions (Griffin, Epstein, Botvin, & Spoth, 2001; Ke, Whalon, & Yun, 2017; Knopp, 2018; Kuhn, Matson, Mayville, & Matson, 2001; Mason, Rispoli, Ganz, Boles, & Orr, 2012; Tse, Strulovitch, Tagalakis, Meng, & Fombonne, 2007; Wehmeyer & Shogren, 2017). Most social communication is nonverbal (Trimboli & Walker, 1987) and nonverbal cues are a valuable source of information about others' affects (Patterson, 1995; Scherer, 1981; Swann, Stein-Seroussi, & McNulty, 1992). Thus, social communicative skills enable a person's empathy in understanding others' feelings and viewing the situation from the other person's perspective, which are essential capabilities for social interaction (Bailey, Henry, & Hippel, 2008; Beadle et al., 2012; Bukowski, Rubin, & Parker, 2001; Gresham & Elliott, 1998; Wargo Aikens & Litwack, 2011). These skills are also part of showing kindness towards others both spontaneously and when they ask for help, thereby building cooperative relationships (Bukowski et al., 2001; Knopp, 2018; Wargo Aikens & Litwack, 2011).

Many personality theorists (e.g., Allport, 1924; S. B. G. Eysenck & Eysenck, 1967; Jung, 1921/2017) infer extraverts' superior social competence is derived from greater nonverbal communication decoding skill (i.e., interpreting facial expressions and body language). Yet, research has found little difference in the general social cue decoding capabilities of introverts and extraverts (Lieberman & Rosenthal, 2001). Researchers suggest introverts equal or may even surpass extraverts in decoding nonverbal cues when interacting with one or two others (Hecht, 1995; Riggio & Friedman, 1982). However, extraverts appear to best introverts in social communication decoding when the situation calls for multitasking skills such as interacting with large groups of people (Lieberman & Rosenthal, 2001).

Wilt and Revelle (2009) theorised extraverts possess particular social abilities that introverts lack such as decoding multiple sources of nonverbal communication cues in large groups of people (Lieberman & Rosenthal, 2001). This could be because extraverts are less aroused than introverts in such situations, which enables extraverts to process more extraneous cues while the highly aroused introverts may fail to process enough critical cues (Revelle, 2016;

Yerkes & Dodson, 1908). Extraverts may therefore prosper in environments with high information flows (i.e., parties of strangers) where other people simultaneously provide multiple and ambiguous stimuli in verbal and nonverbal forms (Matthews & Dorn, 1995). If extraverts are better able to handle social situations with high information flows more than their introverted peers, the extraverts may be more confident in engaging with new acquaintances (Matthews, 1997).

Assertiveness is a key factor of social skills (Gresham & Elliott, 1998; Rose-Krasnor, 1997; Ten Dam & Volman, 2007). Being assertive means asking for help when it is needed, starting a conversation with strangers and making friends, inviting others to join a conversation or event, negotiating with or persuading others and self-advocacy. A person's social assertiveness is associated with their perception of the situation, their ability to choose responses from a potential variety of behaviours and the expected consequences of the response alternatives (Eisler, Frederiksen, & Peterson, 1978; Mischel, 1973). Consequently, the direction and degree of assertiveness expressed depends on various perceptual and situational factors such as the perceived status of and degree of intimacy with the immediate social partner (Eisler, Hersen, Miller, & Blanchard, 1975; MacDonald, 1975). Behaviourally assertive people expect more positive or reinforcing outcomes from their social interactions and are more aware of socially appropriate responses than unassertive people. Thus, a lack of assertiveness can lead to inappropriate or passive response alternative choices and an inability to adjust one's response to the changing demands of a situation (Eisler et al., 1978).

Assertiveness is also a sub-trait of extraversion. In a population-based sample, Bienvu et al. (2004) discovered people diagnosed with social anxiety disorder scored significantly lower on trait-based assertiveness as measured by the Revised NEO Personality Inventory (Costa & McCrae, 1992). This suggests a positive association exists between measures of assertiveness as an ability and as a trait. As extraverts are depicted as dominant and thrive on being the centre of attention, they are typically deemed to be assertive (Costa & McCrae, 1992; Watson et al., 2019; Watson, Stasik, Ellickson-Larew, & Stanton, 2015). Conversely, introverts are thought to be unassertive and shy away from interaction.

Self-control is defined as a person's ability to control their behaviour, mood and morality in line with their expectations of the potential rewards or punishment associated with the action, as per the expectancy-valence model (Bandura, 1986; Bukowski et al., 2001; Vroom, 1964). Self-control skills include regulating one's emotions, disagreeing with another

person while avoiding interpersonal conflict, compromising, taking turns in a conversation and problem-solving (Wehmeyer & Shogren 2017; Knopp 2018; Gresham; Mason et al 2012; Schmidt & Stichter 2012; Kuhn et al 2001). Self-awareness and observation are therefore prerequisites for altering personal behaviour to adapt to a situation (Bandura, 1986). Nonetheless, self-monitoring can evoke affective reactions that distort self-perceptions during the interaction and in later recollections, which may affect future self-confidence and social performance (Bandura, 1986).

Each social exchange forms a context and the associates a person regularly interacts with influence the behavioural response standards the person adopts (Hess, Fuller, & Campbell, 2009). Regular reinforcement of these connections strengthens habits and complex skill use (Hart & Risley, 1980; Risley & Hart, 1968). As introverts require less stimulation to reach the cortical arousal necessary for conditioning, they may be more amenable to learning social rules than extraverts (H. J. Eysenck, 1957; S. B. G. Eysenck & Eysenck, 1967; Franks, 1956, 1957). H. J. Eysenck (1960) reasoned this was the cause of overly inhibited behaviour in very introverted people and unsocialised aggression in overly extraverted individuals.

Perceived social self-efficacy.

Despite strong social capabilities and knowledge, people often do not behave optimally (Bandura, 1986). Perceived social self-efficacy (PSSE), also known as social confidence, determines the initial and maintained use of social skills in response to accumulated social intelligence (Bucich & MacCann, 2019; Nasab & Makvandi, 2016; Ten Dam & Volman, 2007). Bandura (1986) defines perceived self-efficacy as a person's appraisal of and confidence in their ability to organise and execute courses of action required to achieve the necessary type of performance. It is informed by the judgments a person makes about their potential performance attainment based on the skills and strategies they possess, where success is often a product of persistent enactment.

According to Bandura (1986), the reactions of one's social partners become predictors for outcomes in future interactions and social incentives (i.e., social approval, avoiding wrath) or disincentives to engage. The significance placed on the reaction depends on how influential the reacting other is on the individual's life. Consequently, an event that produces a single effect will have less impact than one which portends a variety of possible outcomes. However, the element of unpredictability in every response protects social incentives from becoming ineffective over time (Mowrer, 1960).

Self-beliefs are partly influenced by remembrances of similar past experiences, perceived competence and social knowledge and the anticipated outcomes (Barling & Beattie, 1983; Godding & Glasgow, 1985). Self-awareness and monitoring of the situation allow the individual to change their performance in real time and increase the probability of achieving positive outcomes (Bandura, 1986). Self-monitoring can also invoke affective reactions and impact thought patterns which may distort self-perceptions as the behaviour is occurring and subsequent recollections. People who perceive themselves to be highly effective view difficult tasks as challenges to overcome and persist in their attempts to prevail (Nasab & Makvandi, 2016). Optimistic self-beliefs reduce stress reactions when the person is challenged and, when a successful performance is attained, their self-evaluation is boosted through internal attribution (Langer, 1975). In contrast, negative self-judgments form cognitive biases that distort the perception of events and capabilities, subsequently decreasing the likelihood of persistent enactment.

People who believe they lack the ability to manage social situations, despite the veracity of their judgment, perceive and exaggerate the dangers in a situation (Bandura, 1986). Negative self-efficacy can invalidate the most tempting outcome expectations and people who doubt their ability are more inclined to use safety behaviours (i.e., retreating from social interaction) and quickly abort testing alternative courses of action if their primary efforts are unsuccessful. (Hampel et al., 2011). Consequently, low PSSE can cause the person to shun enriching environments and opportunities to develop, shielding their negative self-belief from being challenged and potentially leading to psychological dysfunction like social anxiety disorder.

Research (e.g., Nasab & Makvandi, 2016) has identified a significant positive correlation between communication skills and perceived self-efficacy in university student samples. Students who had greater belief in their self-efficacy tended to display better communication skills while their less confident peers were less competent communicators. Similarly, young adults with language impairments tended to report lower PSSE and be shier than their more able peers (Durkin, Toseeb, Botting, Pickles, & Conti-Ramsden, 2017). Yet, some studies (e.g., Glasgow & Arkowitz, 1975) found anxious and avoidant people reported substantially weaker PSSE but differed little in their actual skills from their socially confident peers. Thus, believing one can act competently may be of greater importance than knowing how to act when initiating social interaction (Bucich & MacCann, 2019).

Significant positive relationships have been found between extraversion and PSSE. These results suggest introverts typically report lower PSSE than extraverts ($r = .39-.67, p < .01$; Rottinghaus, Lindley, Green, & Borgen, 2002; Daly & Thompson, 2017). Consequently, introverts are less likely to continue testing alternative courses of action and more likely to cease engagement with a social partner earlier than extraverts due to their lower PSSE.

Dairy Farmers' Extraversion-Introversion and Social Competence and the Resilience Scale for Adults

According to Avery and Thomson (2017), New Zealand farmers in all sectors are traditionally introverts. However, there is little empirical evidence of the personality of farmers in New Zealand to support this opinion. Surveys conducted in 2009 (Nuthall, 2009) and 2013 (Nuthall, 2018; Nuthall & Old, 2017) in New Zealand created questions regarding farm management styles loosely based on qualities of the Big Five model. In their factor analysis, Nuthall and colleagues aligned two management style factors with extraversion, one related to involvement with the community and the other to family and friends. Yet, a formal measure of the respondents' extraversion-introversion was absent. Jose and Crumly (1993) completed similar research on the management style of Nebraskan farm managers. Jose and Crumly measured extraversion-introversion with the Myers-Briggs Type Indicator (K. C. Briggs, 1987), which identified 59.25% of their sample as introverted and supports Avery and Thomson's proposition.

If an important element of extraversion-introversion is a person's comfort with solitude, an inference can be drawn from elsewhere. An informative study conducted by Firth, Williams, Herbison and McGee (2007) on the stresses experienced by New Zealand farmers found they were not distressed by geographical isolation. When the stressful factors were ranked by participants, four of the five least stressful conditions were related to isolation such as having few close or farming neighbours due to land use changes, not talking to another person all day, and feelings of isolation while on the farm. This suggests farmers are comfortable without regular social contact and may be inclined towards introversion.

Farmers' social competence remains largely unexplored in New Zealand and internationally. The New Zealand based research on "social performance" or "social competence" appears to focus on social indicators of the farm's performance, not the farmer at a personal level. This could be because social competence is a new research area in the

agricultural sector, as attention has only recently begun to be paid to the health and wellbeing of individual farmers.

In a prior pilot study (Neill, 2018), the dairy farmer respondents reported significantly lower scores on the Resilience Scale for Adults' ([RSA], Friborg et al., 2003) social competence subscale than international studies (e.g., Hjemdal et al., 2011; Morote et al., 2017). Three possible explanations were: (a) dairy farmers' resilience is less reliant on social competence than international urban dwellers, (b) the RSA was ineffective in gauging the social competence of the sample or (c) dairy farmers' individual resilience may rely on established familial and social bonds rather than an ability to form new connections. Therefore, this study will explore the foundations of the RSA social competence subscale and whether it measures social competence as an ability or a dispositional trait (see Q2).

Q2. What elements of social competence underpin the Resilience Scale for Adults' social competence construct?

At face value, the RSA's measure of social competence relates to both disposition and ability. Two items (i.e., "I enjoy being: with other people / by myself" and "When I am with others: I easily laugh / I seldom laugh") are aligned with personality trait items (e.g., Goldberg, 1981). Another three items (i.e., "New friendships are something: I make easily / I have difficulty making", "Meeting new people is: "difficult for me / something I am good at" and "For me, thinking of good topics for conversation is: difficult / easy") reflect self-perceived ability. The final item of the subscale reflects Bar-On's (2006) inclusion of flexibility skills in social situations, meaning one can adjust their thoughts, feelings and behaviours to changing conditions. However, the wording of the question (i.e., "To be flexible in social settings: is not important to me / is really important to me") is arguably asking what value the respondent places on the skill. Consequently, the RSA social competence subscale contains numerous approaches to the construct.

S. R. Briggs and Cheek (1986) warn the presence of multiple factors in a scale intending to measure one psychological construct clouds the meaning of the scale's total score. When this is the case, the scale can correlate significantly with several criterion behaviours, even obviously disparate pairs. Thus, it is likely for one factor to predict relevant criteria better than the total scale score. For instance, O'Connor and Little (2003) found measures of the similar construct emotional intelligence correlated with cognitive ability or personality traits depending on how it was measured (i.e., ability-based or self-report).

From their research with military college applicants ($n = 482$), Friborg et al. (2005) inferred extraverted individuals are more socially competent ($r = .68, p < .001$) than introverts. This was largely due to the strong correlations between social skills and extraversion ($r = .71, p < .001$) and RSA social competence ($r = .88, p < .001$). Conversely, extraversion and RSA social competence were weakly associated with the social intelligence aspects of social information processing ($r = .35$ and $r = .29$ respectively, $p < .001$) and social awareness ($r = .25$ and $r = .35$ respectively, $p < .001$).

Access to Social Resources

The need to belong is considered a primary and powerful human need in social psychology (e.g., Maslow, 1968; Schacter, 1959). According to Baumeister and Leary (1995), to satisfy the need to belong a person must have relatively frequent, non-aversive interactions with at least a few other individuals and these social interactions must occur within a context of enduring concern for each other's welfare. Both criteria must be met to fulfil the need to belong as neither one-off positive interactions nor long-term relationships lacking regular positive contact will satisfy. Failure to meet this need can incur marked distress in the short- and long-term. The need to belong motivates people to engage with other individuals to form and maintain enduring bonds, rather than mere instances of social contact (Over, 2016). Establishing strong relationships with select others enables people to attempt to maximise the potential benefits and minimise risks of engaging with others, as per social exchange theory (Homans, 1961).

A bi-directional relationship exists between social competence and social connections (Merrell, 1999). The initiation and development of successful family and peer relationships depend on social competence, yet interpersonal relationships in turn facilitate social skill acquisition and development (Flannery & Smith, 2017; Smart & Sanson, 2003). Relationships provide positive emotional adjustment and offer companionship, intimacy, socialisation, acceptance, encouragement and support (Flannery & Smith, 2017; Hartup & Stevens, 1999; Larson, Whitton, Hauser, & Allen, 2007). In addition to these positive outcomes, interpersonal relationships require but also provide opportunities to develop the ability to foster intimacy through skills such as appropriate self-disclosure and emotion regulation (Bauminger et al., 2008; Larson et al., 2007; Oden & Asher, 1977). Consequently, strong social competence is related to more satisfying and supportive relationships with friends and family (Buhrmester, 1990; Buhrmester, Furman, Wittenberg, & Reis, 1988; Festa, Barry, Sherman, & Grover, 2012; Smart & Sanson, 2003).

Smart and Sanson (2003) found highly socially competent adults had better quality relationships with their parents and friends. Socially competent people perceive greater emotional and material support, demonstrate better communication, experience less conflict with and feel less alienated from their friends and family than their less socially competent peers. Smart and Sanson's findings reflect those of Bell and colleagues who reported highly socially competent university students were emotionally closer to their parents (Bell, Avery, Jenkins, Feld, & Schoenrock, 1985) and broader family connectedness and support were powerful correlates of social competence (Schoenrock, Bell, Sun, & Avery, 1999).

The availability of support from family and friends (i.e., having a confidante to divulge thoughts and feelings to, intimacy, opportunities to reciprocate support) are core to an individual's ability to cope with and protection from stress (Hjemdal et al., 2011). Feelings of social connection lend people to attribute their social success to personal action and social gaffes to bad luck, while perceived social isolation typically causes individuals to perceive small mistakes as catastrophes (Cacioppo & Patrick, 2008). Having at least one friend can protect against loneliness, low self-esteem and peer victimisation (Bishop & Inderbitzen, 1995; Parker & Asher, 1993; Schmidt & Bagwell, 2007). Yet, forming and maintaining positive relationships with peers requires greater social competence than within the family as peers can be less forgiving than family members when social interactions are less than ideal (Rubin et al., 2006).

Researchers (e.g., Friborg et al., 2003; Jowkar, Friborg, & Hjemdal, 2010) discovered a moderate relationship between social competence and access to social resources. A similarly significant correlation was found between social competence and extraversion. If extraverts possess greater social capabilities, they may also have greater access to social resources. However, studies have achieved mixed findings on this relationship. Several researchers (e.g., Asendorpf & Wilpers, 1998; Berry, Willingham, & Thayer, 2000) discovered extraverted participants felt closer to their friends and reported better quality friendships than introverted participants. For instance, Ercan (2017) found a significant correlation between extraversion and social competence ($r = .48, p < .01$) and between extraversion and social resources ($r = .25, p < .01$) using the RSA. These findings are consistent with previous studies (e.g., Campbell-Sills, Cohan, & Stein, 2006; Çetin, Yeloğlu, & Basim, 2015; Shi, Liu, Wang, & Wang, 2015). As extraverts are thought to be predisposed to positive emotions, maintaining relationships, strong social skills and high social interaction, these factors may permit

extraverts greater access to social support during stressful experiences (Rutter, 1985; Tugade & Fredrickson, 2004).

Other researchers (e.g., Festa et al., 2012; Friborg et al., 2003; Jowkar et al., 2010) highlight the weak association between extraversion and access to quality social support. Festa and colleagues suggest this is likely due to social competence accounting for a large portion of the correlation between social support and personality traits like extraversion. Festa et al. propose the high correlation between extraversion and interaction initiation skills ($r = .76$) indicates a construct overlap. Another possibility is temperament factors like extraversion may be of greater relevance in the beginning of a relationship but fail to boost the relationship quality over time. It is therefore necessary to consider whether extraversion-introversion influences one's access to social support and how the relationship is affected by social competence (see Q3).

Q3. How does social competence mediate the relationship between social resources and sociability temperament?

Socially competent people elicit positive responses from the individuals they interact with (Smart & Sanson, 2003). As extraverts are more likely to positively influence the engagement, affect and interpersonal judgments of the people they interact with, extraverts are reported to behave more socially than their introverted peers (Eaton & Funder, 2003). In addition, extraverts may interact more frequently with their peers and construct larger social networks, however this does not appear to influence the closeness of their relationships (Asendorpf & Wilpers, 1998; Pollet, Roberts, & Dunbar, 2011).

Chapter 3. Method

Data Collection

The purpose of this descriptive research was complementarity (Greene, Caracelli, & Graham, 1989), thus a mixed method approach was considered appropriate. Data collection involved a concurrent nested method, whereby an online survey in Google Forms collected quantitative and qualitative data. The survey began with a short vignette and two open-ended questions followed by an amalgamation of 34 questions adapted from five self-report measures relating to extraversion-introversion and social competence. Items from the social competence subscale and access to social resources subscale of the Resilience Scale for Adults were then presented.

The survey concluded by asking participants to provide their gender, age, ethnicity, relationship status, distance from the nearest urban centre, time spent working with others each day and how long the person has maintained this proportion of time working with others. Gender, age and ethnicity were requested to describe the sample. Participants' relationship status, distance from urban areas and time working alone were included as basic measures of isolation. Gender was coded as female, male or other. Age, distance to the nearest urban centre, what proportion of the respondent's work day is spent with other people and how long this has occurred for were recorded as continuous measures. Current relationship status was coded as per the three main categories used by Statistics New Zealand (2008): married / civil union (not separated), separated / dissolved / widowed / surviving partner and never married and never in a civil union. Ethnicity was also coded as per the six categories used by Statistics New Zealand (2005): New Zealand European, Māori, Pacific Peoples, Asian, Middle Eastern / Latin American / African, and other.

The survey was presented to all participants in the same order and partially completed, non-submitted responses were not recorded due to the limited functionality of Google Forms. Respondents were limited to one response per question except for ethnicity, where multiple selections were permitted. Participants were asked to provide an email address if they wished to enter the prize draw for twenty NZ\$40 Amazon gift vouchers to demonstrate appreciation for their contribution. All email addresses were separated from the survey data prior to analysis to maintain anonymity. A list of helpline phone numbers was presented to participants before they submitted the survey to ensure they knew who they could call if they were distressed by the survey's content.

Measures

Extraversion-introversion.

Extraversion-introversion was assessed with 12 Likert-scale items selected from the extraversion scale of Goldberg's (1992) Big-Five Factor Markers. Eight items (i.e., "am skilled in handling social situations", "am the life of the party", "don't like to draw attention to myself", "feel comfortable around people", "find it difficult to approach others", "have little to say", "know how to captivate people", "talk to a lot of different people at parties") were chosen from the original list of 20 questions. These items were selected as they are included in the Revised NEO Personality Inventory (Costa & McCrae, 1992), which was used by Friberg et al. (2005) to assess extraversion in relation to the RSA. Goldberg (1999) also demonstrated his Big-Five Factor Markers were akin to the Revised NEO Personality Inventory. The

remaining four questions (i.e., “am a very private person”, “am quiet around strangers”, “bottle up my feelings”, “often feel uncomfortable around others”) were chosen as they were unique to Goldberg’s Big-Five Factor Markers introversion scale and most aligned with the literature reviewed. These four questions were also absent from the chosen social competence measures and therefore considered to reflect temperament, not ability.

To create alignment in the compiled survey, the 12 chosen items were altered to begin with “I” (i.e., “I am skilled in handling social situations”). The Likert-scale item responses ranged from “Strongly Agree” (value of 4) to “Strongly Disagree” (value of 1) and seven of the items were negatively keyed. This replaced the original scale of “Very Inaccurate” (value of 1) to “Very Accurate” (value of 5) and meant the item and responses could fit on a smartphone screen. Approximately 70% of New Zealand’s population use a smartphone so it was considered necessary to enhance accessibility on these mobile devices (Research New Zealand, 2015). Total scores above 30 indicated a tendency towards extraversion while scores below 30 were understood to reflect introverted tendencies.

Social competence.

A vignette was posed to the participants to explore their analysis of and potential responses to a social situation (Visser, Ashton, & Vernon, 2006). In developing the vignette, consideration was given to internal validity, appropriateness, the participants and interest, relevance, realism and timing (Hughes & Huby, 2004). Content was drawn from the reviewed literature to form six different scenarios depicting various settings (i.e., agricultural exhibition day, sports field, clubhouse) the participants were likely to be familiar with and interactions between one or two characters and the reader. These scenarios were designed to reflect real, relevant and mundane instances likely to occur in the participants’ lives to increase their effectiveness (Finch, 1987; Hughes & Huby, 2004). Short written vignettes of three to four sentences were preferred to minimise the number of cues participants could draw on.

The vignettes were reviewed with the project’s supervisor, peers and select members of the third-party organisations involved in recruitment for readability and applicability to the dairy farming community. One vignette successfully passed this vetting process due to its greater sense of realism and relatability. After reading the vignette, participants were asked two open-ended questions about how they would respond to the situation if the person was a stranger and how their response would change if the vignette character was someone they knew. The vignette read:

While you're getting lunch at Fieldays, you see someone you don't know being talked at. They are obviously very uncomfortable and looking around for support. They catch your eye...

Social competence was also measured with a series of closed questions. As a brief and reliable test of social competence for able-bodied adults is not yet available, 22 items were adapted from four self-report measures to assess the broad dimensions of social confidence, social skills and social intelligence. The measure of social competence consisted of:

- a) Questions 1, 2, 4, 7, 14, 17, 18, 21 and 24 of the Perceived Social Self-Efficacy Scale ([PSS]; Smith & Betz, 2000) in relation to social confidence;
- b) Question 37 of the Interpersonal Competence Questionnaire ([ICQ]; Buhrmester et al., 1988), questions 15 and 28 of the Interpersonal Reactivity Index's ([IRI]; Davis, 1980) perspective-taking subscale and items 10, 12 and 15 of the Tromsø Social Intelligence Scale's ([TSIS]; Silvera et al., 2001) social performance subscale to measure social skills; and
- c) Questions 1, 2, 6, 11, 13, 16 and 19 of the TSIS' (Silvera et al., 2001) social information processing and social awareness subscales to gauge social intelligence.

The TSIS was selected especially as Friberg et al. (2005) used it to measure the correlation between the RSA social competence subscale and social intelligence. As for the other three measures, the PSS is commonly used to assess confidence in social interactions and the ICQ and IRI provided different aspects of social skills seen to be important for inclusion (i.e., perspective-taking, assertiveness, disclosure). A list of 98 questions was created from the four self-reports. Twenty-three items were chosen from this list to form a condensed mixture of (a) questions replicated across two or more self-reports and (b) items unique to each social competence dimension. It was particularly important for the assessment of social skills to blend several measures to include skills in initiating contact, assertiveness, disclosing personal information, providing emotional support and resolving conflict. Preference was given to items which referred to generic relationship contexts, rather than focus on certain interpersonal relationships such as romantic interests. Then, questions with a similar meaning were removed. For example, questions relating to initiating relationships in the ICQ (i.e., "Asking or suggesting to someone new that you get together and do something, e.g., go out together") were replaced by a similar question from the PSS (i.e., "Call someone you've met and would like to know better").

All questions drawn from the PSS were altered to create statements beginning with “I am confident...” or “I can confidently...”. In addition, two questions were reworded to enhance their relevance to the surveyed age group and culture. Question 21 of the PSS (i.e., “Make friends in a group where everyone else already knows each other”) was adjusted to read “I am confident to join a group where everyone else already knows each other”. Similarly, question 37 of the ICQ was altered from “Telling an acquaintance that he or she has done something that made you angry” to read “I can confidently tell someone that he or she has done something make me angry.” Moreover, questions 1 (i.e., “I can predict other people’s behaviour”) and 17 (i.e., “I can predict how others will react to my behaviour”) of the TSIS were combined to create one item (i.e., “I can predict other people’s behaviour and reactions”) due to their shared meaning.

For the final list of 22 items, the 4-point Likert-scale responses were aligned to range from “Strongly Agree” (value of 4) to “Strongly Disagree” (value of 1). This replaced the various original 5-point Likert-scales of each self-report measure to create consistency within the social competence component and with the personality measure. The 5-point scale was also reduced to four points to facilitate comprehensive viewing on small smartphone screens. Six of the TSIS questions and one of the IRI items selected were negatively keyed to reduce the likelihood of acquiescent responses. Higher scores were considered to reflect greater social competence.

Resilience Scale for Adults.

The Resilience Scale for Adults (Friborg et al., 2003) subscales demonstrate good internal consistency with Cronbach’s alphas of .75 for the social competence subscale and .77 for the social resources subscale (Hjemdal, Friborg, Stiles, Rosenvinge, & Martinussen, 2006). It is also a stable instrument, reporting test-retest reliabilities of .83 for social competence and .74 for social resources (Pearson’s r , $p < .01$ (two-tailed); Morote et al., 2017). Each subscale contains six and seven (respectively) five-point semantic differential items with a positive (value of 5) and a negative (value of 1) attribute at opposing ends of the scale (Friborg, Hjemdal, Martinussen, & Rosenvinge, 2009). Half of the items on each scale are reversed to minimise acquiescence (Hjemdal, Roazzi, Dias, & Friborg, 2015). Scores are averaged by subscale and higher scores are indicative of greater social competence and social support.

Participants

The study used simple random sampling. Participants were recruited through third party agricultural organisations (i.e., Fonterra, Dairy Women's Network, DairyNZ, Young Farmers, Federated Farmers, Grass Roots Media and Rural Support Trust) and an advertisement in the Farmers Weekly newspaper. The author was personally connected to a contractor at the Ministry of Primary Industries who provided connections within the third-party organisations. The organisations distributed the link to the online survey via Facebook, e-newsletters, email and paper flyers at monthly meetings between 20 May 2019 and 29 July 2019. Respondents 16 years old and older who live and/or work on a dairy farm in New Zealand were eligible to participate. An estimated 6,000 dairy farmers were included in the sampling frame, yet only 56 people responded to the online survey. As a proportion of the sampling frame, this was an unexpectedly small response rate and had significant implications for the findings of this research.

Data Analysis Procedure

For the quantitative data, standard multiple linear regression and Pearson's product-moment correlation coefficient were calculated to provide an indication of what relationships could be present in the sample. Due to the small sample size, it was not possible for the null hypotheses to be rejected. Multiple regression was used to gauge the relationship between extraversion-introversion, social competence and social support for each measure of social competence. Pearson's product-moment correlation coefficients were calculated for the associations between all variables. The correlation coefficients were cross-validated with Spearman's rho to examine the robustness of the findings. Significance for all analyses was set at .05.

As a small sample, this study has little external validity. However, the principle of robustness was met as each group analysed contained more than five people (Petersen, 2008). This study also failed to meet the predetermined minimum sample size of 67 participants necessary for multiple regression testing and 85 people for correlation coefficients with expected moderate effect sizes ($.15 \leq f^2 < .35$ and $r = .30-.35$ respectively) and an alpha of .05 (Cohen, 1992; Crano, Brewer, & Lac, 2015). Norman (2010) demonstrated a statistically significant effect size in a small sample is still valid despite the greater difficulty to achieve such a result so larger effects were necessary to achieve statistical significance. Thus, the sample size was sufficient for correlations of .40 and greater with a two-tailed alpha of .05 and

power of .80, and surpassed the minimum needed ($n = 30$) for multiple regression with two independent variables and a large effect size ($f^2 \geq .35$; Cohen 1992).

This research intended to perform an exploratory factor analysis of the social competence items and a one-way analysis of the variance due to demographic attributes. The sample size ($n = 56$) was significantly less than the threshold of 200 participants required for exploratory factor analysis under good conditions (Comrey & Lee, 1992; Leandre, Fabrigar, & Wegener, 2012). Moreover, the participant groups for the demographic characteristics mostly contained less than five people or demonstrated inconsistent variances. Consequently, an exploratory factor analysis was not conducted and demographic characteristics were provided only to describe the sample.

Statistical summaries of the participants' demographic information were compiled in Microsoft Excel for Office 365 version 1808 (Excel). Then, the collected Likert-scale responses were transformed into numeric values (scale range 1-4) and all negatively keyed questions were reverse coded in Excel. Less than 0.01% of the data were missing so the figures were imputed using the mean, median and mode scores for the item, with respect to the participant's answers across the subscale or measure.

Statistical analyses were performed in SPSS Statistics for Windows, Version 25.0.0.1 (SPSS). Cronbach's alphas and descriptive statistics were calculated for each measure then assumption tests were performed for Pearson's correlation coefficient and Spearman's rho. Each variable contained interval values, every participant had a pair of values, the one outlier was removed from the related calculations and scatterplots produced in Excel were visually inspected for linearity and homoscedasticity. To test the normal distribution of errors, the Shapiro-Wilk test statistic was calculated for each variable and each variable's residual quantile-quantile plot was graphically inspected. From these tests, four variables were identified as lacking normality. No transformation was conducted as Pearson's correlation is insensitive to extreme violations of the assumption of normality (Havlicek & Peterson, 1976; Norman, 2010).

Pearson's product-moment correlation coefficient and the non-parametric equivalent Spearman's rho were calculated for the relationships between the total scores of each measure. The results of the two tests were compared to highlight associations of potential significance. Pearson correlation coefficients were then calculated for the relationships between each set of subscale items and the remaining subscales' total scores. Correlations were classified as small

($r = .10 - .29$), moderate ($r = .30 - .49$) and strong ($r \geq .50$) in alignment with Cohen (1988). The stability of the correlation coefficients was estimated by bias-corrected and accelerated bootstrapping with simple sampling of 1000 samples and a significance of 0.05 in SPSS. The bootstrapped confidence intervals were compared to the correlation coefficients to evaluate the correlational significance for variables with a lack of normality.

Non-parametric independent sample testing was conducted in SPSS to compare the impact of extraversion-introversion on the other variables. Participants were split into three groups according to their extraversion -introversion score: (a) introverts, who scored less than 30; (b) extraverts, who scored more than 30; and (c) those who scored 30 and were removed from the test. As the introverts group contained less than 25 participants, a Kolmogorov-Smirnov test of normality was performed. The test indicated only the scores for social confidence, $D(56) = 0.10$, $p = 0.200$, and RSA social competence, $D(56) = 0.11$, $p = 0.091$, followed a normal distribution. Thus, the normality assumption for t-tests was violated and the Mann-Whitney U test was used instead to assess the difference in scores for extraverts and introverts.

A standard multiple linear regression analysis assessed the usefulness of social competence and extraversion scores as predictors of social support. The analysis was replicated with RSA social competence and extraversion as predictors of social support. Multiple regression assumption tests for normality, linearity, homoscedasticity and absence of collinearity and multiple regression calculations were performed simultaneously in SPSS. The predicted-probability plots of standardised residuals were examined for normality, homoscedasticity and linearity. Collinearity tolerance, the variance inflation factor and the Durbin-Watson test statistic were then computed to test for collinearity in the predictor variables and an analysis of variance tested the significance of the results. Due to the small sample, the adjusted coefficients of determination were favoured over the non-adjusted coefficients and the coefficients' stability was estimated by bias-corrected and accelerated bootstrapping (Petersen, 2008; Prescott, 1987). The bootstrapping used simple sampling of 1000 samples with a significance of 0.05. Effect sizes (f^2) of .02, .15 and .35 were deemed small, medium and large respectively, as per Cohen (1988). In addition, commonality analysis was performed to determine the contribution of each predictor variable to the regression models.

Most participants ($n = 55$) provided responses to the two open-ended questions and therefore adequate information for a relational analysis (Krippendorff, 2004; Patton, 2002). A manifest analysis was performed on the word sense contained in the responses whereby the frequency of mentions was counted. Concepts were inductively coded and irrelevant data such as one- or two-word responses (i.e., “yes”, “probably”, “not sure”) were ignored. Similar meanings (i.e., “ask if they’re ok”, “ask how they were”) were grouped together for coding. In the subsequent proximity analysis, a concept matrix was developed for the frequency of coded word senses and the relationships between them, including an evaluation of the relationship strength, sign and direction. Relationship strength was determined by the frequency of co-mentions with strong relationships considered to have more than two occurrences. The relationship sign was based on the word sense of the pairing and the direction was determined by the order in which the terms were mentioned in each response. The change in relationship with the vignette character between the two open-ended questions and the subsequent responses were also coded for. Associations were then coded for positive relationships. The concept matrix and notes were repeatedly compared with the original submissions to recontextualise the content and review the coding for intra-coder reliability.

Ethics

The study was peer-reviewed and considered low risk subject to the maintenance of participant anonymity, their ability to withdraw at any time and the minimisation of harm to participants. A summary of the study was submitted to the Massey University Human Ethics Committee (notification number 4000020430) prior to commencement. All participants were adults and consented to participation by progressing with the survey.

Chapter 4. Results

Demographics

Most participants were women and the average age was 42 years old ($SD = 13$ years; see Table 1). One respondent provided their age as 50+ so this response was separated from the categorisation and excluded from the descriptive statistics. Most respondents listed their ethnicity as European (94.6%) and were married or in a civil union (76.4%). Half of the sample lived within 20 kilometres of their nearest urban centre and one participant commented they lived in a city but worked on a dairy farm. Six participants provided the place name of their nearest urban settlement (e.g., Christchurch, Hamilton) but not the distance from their

residence to the settlement. As no other location data was gathered, it was not possible to judge their distance from an urban settlement.

Approximately a quarter of participants ($n = 13$) spent 0-10% of their time working with others and another quarter ($n = 14$) worked with company 41-50% of the time. One respondent noted that the proportion of time they worked with others varied by season and the work completed as tasks other than milking were largely completed independently. Moreover, some participants held non-dairying occupations. For instance, one participant commented she lived with her husband on their dairy farm and relief milked on the weekends and during the week, yet her full-time occupation involved managing an early childhood centre while her husband farmed full time.

Over half of the respondents maintained the same proportion time working with others for 10 years or less. Six participants worked the same amount of time with others for 25 years or more with two participants reporting it had remained the same for 50 years. Another 11 respondents stated the split between time working alone and time working with others remained constant throughout their career while three participants noted the proportion varies with the season.

Internal Consistency

All four key measures achieved acceptable internal consistency with Cronbach's alphas of more than .80, indicating acceptable reliability (Nunnally, 1978). The RSA social competence (*Cronbach's $\alpha = .809$*) and social resources subscales (*Cronbach's $\alpha = .899$*) and the extraversion-introversion scale (*Cronbach's $\alpha = .883$*) demonstrated good internal consistency. The social competence scale also reported a Cronbach's alpha of .895 overall, while the internal consistency of the three subscales varied. Although the internal consistency of the social confidence subscale (*Cronbach's $\alpha = .860$*) and social intelligence subscale (*Cronbach's $\alpha = .812$*) were acceptable, the internal consistency of the social skills subscale (*Cronbach's $\alpha = .585$*) was poor. This may be due to the small number of items in the social skills subscale or a lack of construct unidimensionality, as the subscale's internal consistency surpassed .70 when any single item was removed.

Table 1

Demographic Characteristics of Participants

Variable	Participants	
	<i>n</i>	%
Gender (<i>n</i> = 55)		
Female	43	78.2%
Male	12	21.8%
Age (years old; <i>n</i> = 54)		
16-25	5	9.3%
26-35	15	27.8%
36-45	15	27.8%
46-55	12	22.2%
56-65	4	7.4%
>65	3	5.6%
Relationship status (<i>n</i> = 55)		
Married / civil union (never separated)	42	76.4%
Separated / dissolved / widowed / surviving partner	1	1.8%
Never married and never in a civil union	12	21.8%
Ethnicity (<i>n</i> = 55)		
European	47	85.5%
Māori	1	1.8%
European and Māori	5	9.1%
Other	2	3.6%
Distance to nearest urban centre (<i>n</i> = 56)		
0-9km	14	25.0%
10-19km	14	25.0%
20-29km	13	23.2%
30-39km	5	8.9%
40-45km	4	7.1%
Location place name given	6	10.7%
Period of consistent proportion of time working with others (<i>n</i> = 52)		
< 1 year	5	9.6%
1-5 years	13	25.0%
6-10 years	7	13.5%
11-15 years	4	7.7%
16-20 years	3	5.8%
25+ years	6	11.4%
Response: "Always" / "Forever" / "Years" / "Most of my career"	11	21.2%
Response: "Varies with the season"	3	5.8%

Table 1 (continued)

Demographic Characteristics of Participants

Variable	Participants	
	<i>n</i>	%
Proportion of time working with others (<i>n</i> = 56)		
0-10%	13	23.2%
11-20%	6	10.7%
21-30%	2	3.6%
31-40%	2	3.6%
41-50%	14	25%
51-60%	2	3.6%
61-70%	2	3.6%
71-80%	3	5.4%
81-90%	4	7.1%
91-100%	6	10.7%
Response: "Little"	1	1.8%
Response: "Varies"	1	1.8%

Descriptive Statistics and Bivariate Correlations

Participants' scores for extraversion, social confidence and RSA social competence were normally distributed with minimal skewness and kurtosis. In contrast, the social intelligence, social skills, social competence and RSA social resources scores were negatively skewed and leptokurtic. These results were reflected in the quantile-quantile plots. Moreover, the significance values of the Shapiro-Wilk statistics for the non-normally distributed variables were less than 0.05.

Participants scored an average of 30.22 ($SD = 5.69$; scale range 12-48) on the extraversion measure with 57% of participants reporting a score above the mid-point of 30, signifying extraverted tendencies. The maximum reached was 42 with an upper quartile of 34, a lower quartile of 26 and a minimum of 16. This suggests the sample were generally ambiverted with a slight tendency towards extraversion. Participants who scored less than 30 are henceforth referred to as introverts and those who scored more than 30 are classified as extraverts.

Most participants (80%) reported social competence above the mid-point ($M = 60.43$, $SD = 8.69$; scale range 22-88). These results were replicated in the RSA social competence scores, with 75% of respondents exceeding the mid-point ($M = 21.23$, $SD = 4.71$; scale range

6-30). At a subscale level, respondents indicated greater social skills and social intelligence than social confidence. Three-quarters of the participants exceeded the mid-point for social skills ($M = 16.32$, $SD = 2.30$; scale range 6-24) and 79% of participants were above the mid-point for social intelligence ($M = 19.98$, $SD = 3.42$; scale range 7-28). Similarly, almost two-thirds of the respondents reported moderate to high social confidence ($M = 24.13$, $SD = 4.47$; scale range 9-36). Only one anomaly was identified in the dataset, which was a low total score for social skills. This outlier was removed from the correlation calculations involving social skills.

In contrast, the social resources scores were extremely negatively skewed with a mean of 29.27 ($SD = 5.70$; scale range 7-35). More than 90% of participants reported social support above the mid-point with a maximum of 35 reported, an upper quartile of 34, lower quartile of 27 and a minimum of 11. Thus, social support was high for most participants regardless of their other scores.

Table 2 lists the score medians and ranges of the introverts and extraverts on each measure. A Mann-Whitney U test indicated the extraverted participants rated their social competence significantly greater than the introverts, $U = 33$, $p < .001$, $r = .759$. More specifically, the extraverts' self-perceived social confidence was significantly higher than the introverts', $U = 23.5$, $p < .001$, $r = .784$, as was their social skill, $U = 87.5$, $p < .001$, $r = .632$ and social competence measured by the RSA subscale, $U = 112.5$, $p < .001$, $r = .561$. The difference between the extraverts' and introverts' scores for social support, $U = 167$, $p = .002$, $r = .424$, and social intelligence, $U = 204$, $p = .016$, $r = .332$, was smaller albeit significant.

Table 2

Comparison of Median Scores and Ranges for the Extraverts and Introverts

Variable	Extraverts ($n = 32$)			Introverts ($n = 21$)		
	<i>Mdn</i>	<i>Min</i>	<i>Max</i>	<i>Mdn</i>	<i>Min</i>	<i>Max</i>
Social Skills	17	14	20	15	7	17
Social Intelligence	21	16	28	19	9	26
Social Confidence	26	22	35	21	12	25
Social Competence	65	55	76	57	32	61
RSA Social Competence	23	18	29	18	8	29
Social Support	32	22	35	29	11	34

Note. Extraverts scored higher than 30 and introverts scored below 30 on the extraversion-introversion scale. Participants who scored 30 have been excluded.

To check if the assumptions for the Pearson's product-moment correlation analysis were met, scatterplots of each potential correlation were viewed for homoscedasticity and linearity. All associations were homoscedastic. Linearity was also present for all relationships except for the associations between social confidence and social intelligence, social resources and extraversion, and social resources and RSA social competence. Although the assumptions for Pearson's correlation coefficient calculation were not met, the analysis was performed as the calculation can withstand severe assumption violations. In addition, as the relationships between the variables were monotonic, the assumption for Spearman's rho was met.

All the Pearson correlations showed large significant effect sizes, except for the relationships between extraversion and social intelligence, extraversion and social resources, and social intelligence and social confidence, which achieved moderately significant correlations (see Table 3). Social competence had the strongest correlations with the other variables. Within the social competence subscales, the strongest correlation was between social confidence and social skill. The relationships between social intelligence and the two other social competence subscales were more moderate albeit statistically significant. Social intelligence also had the weakest significant relationships with the other variables.

For all variables, the bootstrapped confidence intervals for Pearson's correlations were greater than zero. This included the bootstrapped confidence intervals for correlations containing the non-normally distributed social intelligence, social skill, social competence and social resources (see Table 4). This suggests all the correlations were statistically significant.

Table 3

Pearson's Correlations and Spearman's Rho Coefficients for All Measures

Measure	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Extraversion	–	.645	.433	.773	.747	.679	.457
(2) Social Skills ($n = 55$)	.669	–	.532	.713	.854	.575	.512
(3) Social Intelligence	.326*	.364	–	.451	.795	.522	.621
(4) Social Confidence	.736	.679	.323*	–	.881	.628	.523
(5) Social Competence Total	.740	.799	.657	.879	–	.690	.676
(6) RSA Social Competence	.654	.455	.349	.552	.541	–	.565
(7) RSA Social Resources	.366	.392	.520	.459	.539	.406	–

Note. Pearson's product-moment correlations are presented above the diagonal and Spearman's rho coefficients are presented below the diagonal. RSA = Resilience Scale for Adults. All correlations were significant at the .01 level except where indicated as * $p < .05$.

Similar patterns were identified in the Spearman's rho correlations. As shown in Table 3, there were weak, positive monotonic correlations between social intelligence and social skill, RSA social competence, extraversion and social confidence. Social resources also had weak, positive monotonic correlations with social skills and extraversion. Moreover, social resources were moderately positively related to social competence, social intelligence, social confidence and RSA social competence. Similarly, RSA social competence had moderate positive associations with social confidence, social competence and social skills.

Extraversion, social competence and the social competence subscales reported the greatest correlations. There were strong, positive monotonic correlations between extraversion and social competence, social confidence, social skill and RSA social competence. Social skill was also strongly positively correlated with social competence and social confidence. Moreover, social competence had a strong, positive monotonic relationship with social confidence and social intelligence.

Extraversion had large significant correlations with social skills, social confidence and RSA social competence and a significant moderate relationship with social intelligence. Within the extraversion-introversion items, feeling comfortable around and approaching others and being skilled at handling social situations had the greatest correlations with the other measures (see Table 5). Moreover, social confidence and RSA social competence had large and significant associations with not being quiet around strangers. RSA social competence was the only subscale to have a large significant correlation with talking to many different people at parties, while social confidence was the only subscale to have a strong significant relationship with wanting to draw attention to oneself. Being the life of the party was not significantly related to any measure of social competence or social support. Unlike the other measures, social support lacked a significant correlation with knowing how to captivate people.

As shown in Table 6, strong significant correlations were discovered between extraversion and the RSA social competence items relating to the participants' ease in making new friendships, meeting new people, laughing when with company, and thinking of good conversation topics. Yet, extraversion was not significantly related to whether participants enjoyed being alone or with others and was only weakly, albeit significantly, related to the importance of being flexible in social settings.

Table 4

Bootstrapped 95% Confidence Intervals for the Pearson's Correlations of All Measures

Measure	(1)	(2)	(3)	(4)	(5)	(6)
(1) Extraversion	-					
(2) Social Skills	(0.51, 0.79)	-				
(3) Social Intelligence	(0.10, 0.68)	(0.36, 0.80)	-			
(4) Social Confidence	(0.64, 0.86)	(0.56, 0.82)	(0.11, 0.67)	-		
(5) Social Competence Total	(0.62, 0.84)	(0.79, 0.94)	(0.61, 0.89)	(0.80, 0.94)	-	
(6) RSA Social Competence	(0.48, 0.83)	(0.37, 0.75)	(0.21, 0.71)	(0.39, 0.79)	(0.48, 0.82)	-
(7) RSA Social Resources	(0.21, 0.64)	(0.35, 0.76)	(0.36, 0.77)	(0.29, 0.69)	(0.43, 0.81)	(0.30, 0.74)

Table 5

Bivariate Correlation of the Extraversion Items with Social Competence, RSA Social Competence and Social Resources

Extraversion-Introversion Question	SK (n = 55)	SI	PSSE	GSC	RSA SC	RSA SS
I'm a very private person (-)	.314*	.174	.403**	.358**	.317*	.397**
I'm quiet around strangers (-)	.349*	.279*	.625***	.547***	.524***	.366**
I'm skilled at handling social situations	.557***	.392**	.572***	.589***	.532***	.309*
I'm the life of the party	.161	.139	.154	.198	.146	.005
I bottle up my feelings (-)	.371*	.334*	.503***	.506***	.536***	.482***
I don't like to draw attention to myself (-)	.271*	.105	.536***	.407**	.358**	.219
I feel comfortable around people	.612***	.364**	.663***	.645***	.441***	.345*
I find it difficult to approach others (-)	.614***	.395**	.674***	.674***	.561***	.393**
I have little to say (-)	.493***	.244	.495***	.460***	.415**	.277*
I know how to captivate people	.357*	.282*	.464***	.443***	.375**	.118
I often feel uncomfortable around others (-)	.615***	.416**	.666***	.680***	.510***	.398**
I talk to a lot of different people at parties	.346*	.307*	.420**	.445***	.614***	.296*

Note. Six questions were negatively keyed (-) and reversed so higher scores on all questions indicate greater extraversion. SK = social skills. SI = social intelligence. PSSE = social confidence. GSC = general social competence. RSA SC = Resilience Scale for Adults' social competence subscale. RSA SS = Resilience Scale for Adults' social resources subscale. * $p < .05$. ** $p < .01$. *** $p < .001$.

Similar associations were evident in the Pearson's correlations between the RSA social competence items and the social competence subscales. Participants' enjoyment of company or solitude was insignificantly correlated with each social competence subscale, the overarching social competence measure and access to social resources. This is evident in the responses received, whereby seven introverted (33.3%) and 16 extraverted (50%) respondents enjoyed company, while another 10 introverted (47.6%) and 11 extraverted (34.4%) participants had no preference. The importance of flexibility in social settings was also weakly and significantly correlated with social skills, social confidence and overall social competence but not social intelligence. Although, social support had a significant moderate relationship with this item. The four remaining questions were at least moderately and significantly correlated with social support and all three elements of social competence. Only the ease of thinking up new conversation topics demonstrated weaker yet significant relationships with social intelligence and social support.

Of the social support items, "My close friends / family members: appreciate my qualities / dislike my qualities" and "The bonds among my friends are: weak / strong" demonstrated the greatest correlations with social competence and extraversion, as shown in Table 7. Most social support items had stronger associations with the measures of social competence than extraversion. This appears to be due to the large positive correlations between social intelligence and several of the social support questions. Social skills and social confidence showed weaker positive correlations with social support than social intelligence, yet social skills and confidence surpassed social intelligence on one item ("When needed, I have: no one who can help me / always someone who can help me"). In comparison, extraversion achieved only weak to moderate positive correlations with most social support items except for one item ("The bonds among my friends are: weak / strong").

Table 8 displays the Pearson product-moment correlations between each social competence item with RSA social competence, access to social resources and extraversion. Three of the social confidence items showed strong significant correlations with RSA social competence, while five of the social confidence items correlated strongly and significantly with extraversion. Only confidence in asking for help and beginning a conversation with someone had large significant correlations with social support. The remaining social confidence questions achieved weak to moderate significant correlations with RSA social competence, social support and extraversion, except "I am confident expressing my opinion to a group of

people discussing a subject I find interesting”. This item was not significantly related to RSA social competence or social support.

Four social intelligence items (i.e., “I can predict other people’s behaviour and reactions”, “I understand other people’s feelings”, “I find people unpredictable”, “I can often understand what others really mean through their expression, body language, etc”) were moderately and significantly correlated with extraversion and RSA social competence. However, neither “I often feel it’s difficult to understand others’ choices” nor “It seems as though people are often angry or irritated when I say what I think” were significantly associated with extraversion, although they showed weak to moderate associations with RSA social competence. Furthermore, “I have often hurt others without realising it” did not significantly correlate with RSA social competence or extraversion. Social support showed significant moderate correlations with most of the social intelligence items, except for understanding others’ choices and true meanings through non-verbal cues.

Of the social skill items, only “I’m good at entering new situations and meeting people for the first time” showed a large significant correlation with both RSA social competence and extraversion. In contrast, this item was moderately correlated with social resources. Similarly, “It takes a long time for me to get to know others well” had significant moderate associations with RSA social competence and social support as well as a large significant relationship with extraversion. Both “I have a hard time getting along with other people” and “I can confidently tell someone that he or she has done something to make me angry” achieved moderate significant correlations with RSA social competence and extraversion. Although the former had a significantly strong association with social support, the latter was weakly correlated with social support. Conversely, “Before criticising somebody, I try to imagine how I would feel if I were in their place” demonstrated a moderate significant relationship with extraversion and social resources, but no significant association with RSA social competence. Furthermore, there was no relationship between “If I’m sure I’m right about something, I don’t waste much time listening to other people’s arguments” and RSA social competence, extraversion or social resources. Most participants ($n = 35, 61.8\%$) disagreed with this item regardless of their other scores.

Table 6

Bivariate Correlation of the RSA Social Competence Items with Extraversion, Social Competence and Social Support

RSA Social Competence Question	Ext	SK (n = 55)	SI	PSSE	GSC	RSA SS
I enjoy being: together with other people / by myself (-)	.207	.111	.229	.257	.254	.234
To be flexible in social settings: is not important to me / is really important to me	.268*	.267*	.258	.320*	.339*	.378**
New friendships are something: I make easily / I have difficulty making (-)	.610***	.593***	.451***	.558***	.629***	.477***
Meeting new people is: difficult for me / something I am good at	.694***	.547***	.485***	.691***	.706***	.517***
When I am with others: I easily laugh / I seldom laugh (-)	.524***	.424**	.517***	.475***	.585***	.506***
For me, thinking of good topics is: difficult / easy	.588***	.490***	.329*	.409**	.465***	.354*

Note. Three questions were negatively keyed (-) and reversed so higher scores on all items indicate greater social competence. Ext = extraversion.

SK = social skills. SI = social intelligence. PSSE = social confidence. GSC = general social competence. RSA SS = Resilience Scale for Adults' social resources subscale. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 7

Bivariate Correlation of the Social Resources Items with Social Competence and Extraversion

RSA Social Resources Question	Ext	SK (n = 55)	SI	PSSE	GSC	RSA SC
I can discuss personal issues with: no one / friends/family members	.410**	.441***	.545***	.433***	.554***	.334*
Those who are good at encouraging me are: some close friends/family member / nowhere (-)	.263	.167	.418**	.326*	.428**	.402**
The bonds among my friends are: weak / strong	.505***	.525***	.667***	.503***	.684***	.653***
When a family member experiences a crisis/emergency: I am informed right away / it takes quite a while before I am told (-)	.280*	.193	.362**	.265*	.369**	.404**
I get support from: friends/family members / no one (-)	.276*	.497***	.498***	.415**	.561***	.464***
When needed, I have: no one who can help me / always someone who can help me	.329*	.453***	.340*	.450***	.507***	.340*
My close friends / family members: appreciate my qualities / dislike my qualities (-)	.496***	.515***	.639***	.549***	.692***	.557***

Note. Four questions were negatively keyed (-) and reversed so higher scores on all items indicate greater social support. Ext = extraversion. SK = social skills. SI = social intelligence. PSSE = social confidence. GSC = general social competence. RSA SC = Resilience Scale for Adults' social competence subscale. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 8

Bivariate Correlation of the Social Competence Items with RSA Social Competence, Extraversion and Social Support

Item	Ext	RSA SC	RSA SS
Social Confidence			
I am confident starting a conversation with someone I don't know very well	.689***	.530***	.511***
I am confident expressing my opinion to a group of people discussing a subject I find interesting	.478***	.226	.079
I am confident helping to make someone I've recently met feel comfortable with my friends	.362**	.436***	.295*
I am confident volunteering to help organise an event	.338*	.376**	.280*
I am confident expressing my feelings to someone else	.555***	.466***	.456***
I confidently go to events or social functions where I probably won't know anyone	.687***	.507***	.381**
I confidently ask people for help when I need it	.615***	.450***	.548***
I can confidently join a group where everyone else already knows each other	.705***	.536***	.311*
I am confident about calling someone I've met and would like to know better	.333*	.336*	.315*
Social Intelligence			
I can predict other people's behaviour and reactions	.371**	.433***	.476***
I often feel it's difficult to understand others' choices (-)	.180	.326*	.166
I understand other people's feelings	.448***	.455***	.489***
It seems as though people are often angry or irritated when I say what I think (-)	.186	.291*	.576***
I find people unpredictable (-)	.365**	.462***	.492***
I have often hurt others without realising it (-)	.218	.253	.462***
I can often understand what others really mean through their expression, body language, etc	.338*	.312*	.298*
Social Skills			
I'm good at entering new situations and meeting people for the first time	.842***	.664***	.417**
I have a hard time getting along with other people (-)	.327*	.404**	.571***
It takes a long time for me to get to know others well (-)	.562***	.456***	.358**
If I'm sure I'm right about something, I don't waste much time listening to other people's arguments (-)	-.088	-.029	.186
Before criticising somebody, I try to imagine how I would feel if I were in their place	.334*	.208	.343**
I can confidently tell someone that he or she has done something to make me angry	.318*	.360**	.231

Note. Seven questions were negatively keyed (-) so higher scores on all items indicate greater social competence. Ext = extraversion. RSA SC = Resilience Scale for Adults' social competence subscale. RSA SS = Resilience Scale for Adults' social resources subscale.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Multiple Regression

Social competence and extraversion were tested as predictors of social support in a multiple regression analysis. The analysis was replicated with RSA social competence and extraversion as predictors of social support. The predicted-probability plots demonstrated normal distribution, linearity and homoscedasticity of the regression standardised residuals for each set of analysed variables. For the first regression with extraversion and social competence as predictor variables, the Durbin-Watson statistic ($DW = 1.698$), variance inflation factor ($VIF = 2.266$) and tolerance statistic (0.441) indicated an absence of collinearity. A similar absence of collinearity was evident in the Durbin-Watson statistic ($DW = 2.02$), variance inflation factor ($VIF = 1.857$) and tolerance statistic (0.539) for the second regression with extraversion and RSA social competence as predictor variables. No outliers or suppressing variables were identified.

The first regression model of extraversion and social competence as predictors of social resources was statistically significant, $R^2 = .463$, adjusted $R^2 = .442$, $F(2, 53) = 22.819$, $p < .001$. The adjusted R^2 value suggests 44.2% of the variability in social support for this sample was predicted by introversion (i.e., low extraversion) and social competence. According to Cohen (1988), the effect size ($f^2_B = .792$) based on the adjusted R^2 was large. Social support was primarily predicted by greater social competence and to a lesser extent by introversion. Table 9 displays the raw and standardised regression coefficients, standard error, squared semi-partial correlations and structure coefficients of the predictors. Social competence contributed significantly to the model ($b^* = 0.758$, $p < .001$) but extraversion did not ($b^* = -0.109$, $p > .05$). Social competence ($r_s^2 = 0.988$) also had greater predictive power than extraversion ($r_s^2 = 0.452$), yet the structure coefficients indicated a degree of shared explained variance. Similarly, the regression coefficient for social competence differed significantly from zero, 95% CI [0.30, 0.70], while the regression coefficient for extraversion did not, 95% CI [-0.42, 0.20]. Bootstrapped confidence intervals also illustrated the importance of social competence in predicting social support as the confidence interval did not include zero, 95% CI [0.26, 0.68], $p < .01$. However, the bootstrapped confidence interval for extraversion predicting social support included zero, 95% CI [-0.44, 0.21], $p > .05$.

Table 9

Extraversion and Social Competence as Predictors of Social Support

Variable	<i>b</i>	<i>SE b</i>	<i>b*</i>	<i>sr</i> ²	<i>r_s</i>
Intercept	2.535	4.032			
Extraversion	-0.110	0.152	-0.109	0.005	0.672
Social Competence	0.497	0.099	0.758***	0.254	0.994

Note. *r_s* = structure coefficient. *** *p* < .001.

Although the bivariate correlation between extraversion and social resources was statistically different from zero, $r = .457$, $F(2,53) = 6.996$, $p < .01$, the squared semi-partial correlation ($sr^2 = 0.005$) was surprisingly low for extraversion and the beta coefficient for extraversion was negative. In addition, despite significant bivariate correlations between the predictors, social competence contributed significantly more ($sr^2 = 0.254$) to the variance in social resources. When extraversion was removed, the model remained largely unaffected, $R^2 = .457$, adjusted $R^2 = .447$, $F(1, 54) = 45.520$, $p < .001$.

In comparison, a simple regression with extraversion predicting social resources reported a statistically significant moderate relationship, $R^2 = .209$, adjusted $R^2 = .194$, $F(1, 54) = 14.269$, $p < .001$. In this simplified model, extraversion achieved a significant standardised beta ($b^* = 0.457$, $p < .001$). Yet, a simple regression of extraversion predicting social competence showed a large significant relationship, $R^2 = .559$, adjusted $R^2 = .550$, $F(1, 54) = 68.348$, $p < .001$. Thus, the relationship between extraversion and social resources may be partially mediated by social competence or redundant to the relationship between social support and social competence.

The second multiple linear regression was calculated to predict social support based on extraversion and social competence measured by the RSA subscale. This regression model was statistically significant, $R^2 = .329$, adjusted $R^2 = .304$, $F(2, 53) = 13.018$, $p < .001$. The adjusted R^2 value suggested 30.4% of the variability in social support for this sample was predicted by extraversion and RSA social competence and the effect size ($f^2_B = .437$) was considered large (Cohen, 1988). RSA social competence was a statistically significant predictor of social resources, but extraversion was not. Table 10 displays the raw and standardised regression coefficients, standard error, squared semi-partial correlations and structure coefficients of the predictors. RSA social competence was a statistically significant contributor ($b^* = 0.473$, $p < .01$) with the greatest predictive power ($r_s^2 = 0.968$) and the regression coefficient for RSA social competence differed significantly from zero, 95% CI [0.20, 0.94]. The contribution of extraversion to the model was statistically insignificant ($b^* =$

0.136, $p > .05$) and RSA social competence had greater predictive power than extraversion ($r_s^2 = 0.633$), although the structure coefficients suggest the presence of shared explained variance. Yet, the bootstrapped confidence intervals for RSA social competence, 95% CI [0.00, 1.02], and extraversion, 95% CI [-0.16, 0.56] included zero.

Table 10

Extraversion and RSA Social Competence as Predictors of Social Support

Variable	<i>b</i>	<i>SE b</i>	<i>b*</i>	<i>sr</i> ²	<i>r_s</i>
Intercept	12.997***	3.554			
Extraversion	0.136	0.154	0.136	0.001	0.796
RSA Social Competence	0.572	0.185	0.473**	0.120	0.984

Note. r_s = structure coefficient. ** $p < .01$. *** $p < .001$.

As occurred in the first regression, the unique contribution ($sr^2 = 0.001$) of extraversion to the second regression model was minimal despite a statistically significant bivariate correlation between extraversion and social resources, $r = .457$, $F(2, 53) = 6.996$, $p < .01$. The squared semi-partial correlations infer RSA social competence contributed more ($sr^2 = 0.120$) to the variance in social resources, yet the contribution was minimal. When extraversion was removed, the regression model remained largely unaffected, $R^2 = .319$, adjusted $R^2 = .307$, $F(1, 54) = 25.347$, $p < .001$. Nonetheless, a simple regression of extraversion predicting RSA social competence showed a similarly significant relationship, $R^2 = .461$, adjusted $R^2 = .451$, $F(1, 54) = 46.253$, $p < .001$.

Both regression models suggest the relationship between extraversion and social resources in this sample may be partially mediated by social competence. Although extraversion was significantly correlated with social competence, social competence continued to predict social resources after controlling for extraversion. Moreover, the relationship between extraversion and social resources was diminished when social competence was added (Tabachnick & Fidell, 2013). This indicates social competence is a partial mediator of the association between extraversion and social resources (Judd & Kenny, 1981). Yet, neither regression model displayed a sufficiently good fit to reject the null hypothesis. While both social competence measures achieved standardised coefficients statistically significant from zero, extraversion was statistically insignificant in both models. This suggests sampling variation was an influential factor and a more precise model is needed to ensure more accurate regression coefficients are identified.

Relational Analysis

Fifty-one participants provided a response containing more than one word amenable to analysis for each vignette-based question. Of the 51 participants, 29 indicated extraverted tendencies, 20 reported introverted tendencies and two were classified as ambiverts. However, only minor distinctions were identified between the introverted and extraverted participants' choices in response to the vignette.

Two assumptions were made while analysing the responses. First, greeting the vignette character being talked at (i.e., the recipient) and asking if they were ok or needed help were coded as the participant choosing to interrupt the conversation between the recipient and the person talking at the recipient (i.e., the talker). Second, only comments specifically describing the participant becoming physically closer to the recipient (i.e., “*go over*”, “*walk closer*”) were coded as approaching or moving closer to the recipient. Interrupting the conversation was kept separate from this category despite the need for the participant to approach the recipient to do so. The coding of the vignette responses was reviewed five times to ensure intra-coder reliability and the coding for five subthemes was altered twice from the original coding sheet due to implicit extraction. The findings demonstrated adequate construct validity despite the short responses.

The change in relationship intimacy with the vignette character produced noticeable differences in the responses. Although 29 participants (56.9%) alluded to intervening when the recipient was depicted as a stranger, a strong relationship was identified between pausing to assess the situation and intervening. Twelve respondents (23.5%) stated they would stand back to observe the situation before deciding to personally intervene, signal to the recipient or ignore the situation. Some participants did not wish to approach the unknown recipient and chose to send a non-verbal signal to the recipient, encouraging the recipient to draw near instead of the participant interrupting and potentially appearing rude or awkward. Nonetheless, three people felt uncomfortable about the recipient's attempts to interact with them and nine participants decided to avoid engaging in the posed social interaction by choosing to do nothing, walking away, ignoring the recipient or pretending not to see them.

There was a degree of ambiguity in a small number of the responses. For instance, one participant commented they would either join the conversation or ignore it, but they did not explain what would impact their decision. A second participant mentioned they might look on or keep walking. This may reflect the purposeful lack of social cues within the vignette and

the importance of greater social cue availability in a real-time context to choose a suitable response.

The two non-verbal social communication skills commonly referred to were moving physically closer to or away from the recipient and nonverbal communication through eye contact or smiling. Moving closer to the recipient was generally posed as encouraging the recipient to approach the participant or as the first step of intervening. Likewise, those who chose to walk or look away terminated the recipient's attempts to engage their involvement by increasing their metaphysical distance from the recipient.

There was little variation in the number of extraverts and introverts who mentioned making eye contact, yet introverted participants more frequently mentioned smiling and looking away from the unknown recipient than their extraverted peers. Seven introverts (35%) mentioned smiling at the recipient, compared to three extraverts (10.3%). Furthermore, four introverted respondents (20%) and one extraverted person (3.5%) communicated their wish to disengage by breaking eye contact. Participants conveyed various emotion-loaded messages to the recipient in their chosen type of engagement, such as *smile awkwardly*, *smile kindly*, *smile of encouragement*, *sympathetic smile* and *smile knowingly*. This reflects the social intelligence and skill of the participants and their expectations of the recipient in decoding the message, whether the message suggested the recipient was welcome to approach or to halt the recipient's further attempts to engage. Some participants then waited for the recipient to respond or approach the respondent before deciding how to proceed.

For those who decided to personally intervene, their means of intervention were primarily related to joining the conversation or interrupting or defusing the situation. This included pretending the recipient was someone the participant knew, greeting the recipient (e.g., "say hi"), asking if they were ok or needed assistance, making a joke and asking the recipient for help with a fake request (e.g., "ask if they knew where a particular site was"). The various means described by participants reflected different perspectives in what their choice of intervention meant for socially appropriate behaviour and varying aims. For instance, some who chose to interrupt would only do so:

...if there is a reason for me to interrupt their conversation without making the situation more awkward (female, 37 years old, extraverted ($X_E = 34$))

Two extraverted participants specifically mentioned they would "quietly" or "privately" approach the unknown recipient to ask if they were ok, rather than in front of the

talker. This reflected a fear of being perceived as interfering. Yet, an ambiverted respondent and an extraverted respondent said they would highlight the inappropriateness of the behaviour to the talker or let it be known that the talker's behaviour was being witnessed.

Strong positive relationships were identified between the participant's decisions to move closer to the recipient, intervene, say hello, ask if the recipient needed help and provide support. Many responses offered this sequence of decision making, commonly preceded by the participant pausing to observe and assess the context before moving. The association between approaching, intervening, saying hello and asking if assistance was desired transcended the transition from an unknown recipient to an established acquaintance.

Another strong positive association existed between the participants choosing to intervene and pretending the recipient was someone they knew. Consequently, it was not surprising the speed and likelihood of the participant intervening increased when the recipient was someone the participant knew. Eight people (15.7%) indicated they would intervene sooner if they knew the recipient and the number of participants who mentioned intervening increased to 30 (58.8%). Less frequent use of "maybe", "probably" and conditional responses inferred there was less uncertainty about the appropriateness of interrupting when the recipient was known to the participant. As one participant explained, she felt a greater sense of responsibility for the known recipient than for the stranger and:

...would take more ownership of the fact that I know that person and that they are my friend/acquaintance/neighbour and would probably be more vocal about stepping in and supporting them... (female, 35 years old, extraverted ($X_E = 32$))

When the recipient was a known other, participants more actively interrupted the conversation and were less inclined to watch the situation as often or for as long as with an unknown recipient. Saying hello and asking if the recipient was ok remained the most common strategies for interrupting the conversation between the talker and recipient. Participants also felt more comfortable about personally intervening for someone they knew, whereas some participants sought support from other parties for the unknown recipient as well as or instead of intervening themselves. Thus, participants were generally less hesitant to step in and mediate the situation when they knew the recipient. For example, one participant said she would:

smile and hope that [sic] excuse themselves to come over (female, 61 years old, introverted ($X_E = 29$))

for the recipient as a stranger, while her response for a known other would be:

much the same but probable [sic] walk passed and say hi to give them a reason to escape (female, 61 years old, introverted ($X_E = 29$))

This indicates particular social rules guide interactions. Six participants chose conditional responses that depended on how the known recipient responded to the participant's signals (i.e., moving closer, eye contact, waving, saying hello) or proffered choices (i.e., asking if the recipient wished to stay or leave with the participant). These findings suggest feelings of loyalty to protect the known recipient are in place due to the existing relationship and the established understandings or social protocols within the relationship. Thus, a prior relationship might remove some of the ambiguity and conflictual nature of the social cues needing to be processed by the participant and reduce the number of social cues to be processed. For instance, one person asked for greater information about the known recipient prior to deciding to act:

...is she a vehement anti-vaxxer who has prodded a doctor? Or is she a breast-feeding Mum in a quiet corner? (male, 73 years old, extraverted ($X_E = 33$))

Neither extraversion nor introversion altered the likelihood of a participant's decision to approach the recipient. Nonetheless, two of the three people who mentioned disengaging as they felt uncomfortable in the hypothetical social setting achieved low extraversion scores, inferring they are introverted. Yet, the three participants provided different explanations for their discomfort. For the extraverted participant ($X_E = 34$), intervening between two strangers would mean risking her personal safety and the perceived risk outweighed the possible benefit. This concern was removed and intervening became a certainty when the recipient was a known other. One of the two introverted participants ($X_E = 24$) mentioned looking away uncomfortably from the unknown recipient, but she considered intervening for someone she knew if she would not be perceived as rude for doing so. Respondents were more hesitant to approach or interact with a stranger than a known recipient, thus the decision to intercede was influenced by the participants' intimacy with the recipient. The most introverted ($X_E = 18$) of the three participants commented she felt uncomfortable in all social settings and would avoid involvement regardless of whether she knew the recipient or not. She also reported the second lowest social confidence score ($X_{PSSSE} = 16$) of the sample. This suggests PSSE or unassertiveness played a role in the participants' willingness to engage. It may also relate to

different perspectives on the importance of social manners and the perception that any interruption of a conversation would be rude or awkward, for example:

...more inclined to listen and step in if I was certain I wasn't being rude (female, 35 years old, introverted ($X_E = 24$))

Awkwardly join conversation (female, 27 years old, extraverted ($X_E = 34$))

For some, a safer and less awkward means of intervening and supporting the known recipient was to provide a physical presence:

...walk passed and say hi to give them a reason to escape (female, 61 years old, introverted ($X_E = 29$))

...immediately go to their side and touch their arm or similar... (female, 52 years old, extraverted ($X_E = 34$))

In contrast, 17 (33.3%) people suggested their actions would not change whether they knew the recipient or not, despite many indicating minor ways in which their approach would alter with a known recipient. These differences included the content and depth of their conversation with the recipient, being nicer to the recipient, a more direct approach with the talker, greeting the recipient by name and contacting the known recipient afterwards to check on their wellbeing. Thus, most participants altered their approach in accordance with their relationship with the recipient.

Chapter 5. Discussion

By exploring how social competence is associated with extraverted traits, a better understanding of why dairy farmers may or may not engage socially based on their personality, abilities and confidence can be produced. It was anticipated the connection between social ability and extraversion would also impact access to social support. As access to social competence is a key predictor for individual resilience by measures such as the RSA, it was important to examine how social competence is encapsulated by the RSA.

Social Competence in Relation to Extraversion-Introversion

The sample demonstrated a slight tendency towards extraversion, in contrast to Avery and Thomson (2017), and most respondents reported moderate to strong social competence, especially social skill and social intelligence. Like Friberg et al. (2005), a strong positive relationship was evident between extraversion and social competence. Yet, in this study the

correlation was largely due to the extraverted participants reporting greater self-perceived social confidence and skill than the introverts. This difference was predominantly related to the extraverts' perceived ease and skill in meeting people in new social situations.

Three key aspects of extraversion, namely, feeling comfortable around and approaching others and handling social situations, had strong positive correlations with social confidence, social skills, social intelligence and social competence. This included the extraverts feeling more confident in starting a conversation with a stranger, attending events with unknown guests and joining a group of unfamiliar people who are already acquainted than the introverted participants. These findings correspond with descriptions provided by Matthews et al. (2003) and Zelenski et al. (2014) of extraverts as more assertive, at ease in social situations and outgoing than introverts. Festa et al. (2012) also found a large positive correlation between extraversion and interaction initiation skills ($r = .76$). Extraverts may purposefully seek out new connections as social interaction replenishes their energy and provides them with a sense of reward (Cain, 2012; Lucas & Diener, 2001). Their enthusiastic engagement in social situations is likely to encourage people to engage with them more in return, reinforcing their perception of social performance success and social confidence (Ashton et al., 2002).

A person's PSSE (i.e., social confidence) is necessary for the initial and maintained use of appropriate social skills, as informed by their social intelligence, for effective social performances. According to Bandura (1977), it is influenced by self-assessments of potential success based on the skills and strategies they possess, whereby success is often due to persistent enactment. Thus, the extraverts' greater confidence may be a result of more social performance successes and positive self-perceptions of their abilities, which encourage them to persevere longer than introverts in new social interactions. Conversely, low social confidence can nullify even the most tempting outcome expectations so introverted participants who doubt their ability may be less likely to try alternative behaviours if their initial efforts are rebuffed (Bandura, 1986).

In this study, the introverts reported feeling less comfortable around others, approaching other people or handling social scenarios than their extraverted counterparts. Introverted respondents were less certain about their ease in making new friendships, laughing when with company and thinking of good conversation topics. The introverts also conveyed they take a longer time to become well acquainted with others and have greater difficulty with confronting someone who has angered them (i.e., low negative assertion). Compared to

extraverts, introverts can quickly become overwhelmed by stimuli (H. J. Eysenck, 2006) so they tend to be more passive in new social situations (Henjum, 1982) and avoid confrontation (Cain, 2012). For instance, social confidence and RSA social competence demonstrated large negative correlations with the introversion-related trait of being quiet around strangers. This was reflected in the vignette responses of two introverted participants who mentioned feeling uncomfortable in the hypothetical social setting. The more introverted of the two commented they would avoid engaging with the hypothetical social partner regardless of their familiarity with the recipient, while the less introverted person mentioned engaging only with someone they knew. Therefore, introverts' discomfort in social scenarios may depend on their association with the people surrounding them in a particular setting, highlighting the potential for variation within the expression of the introversion trait in terms of confidence.

Furthermore, the difference in self-perceived social confidence between the introverted and extraverted respondents was not consistent for all areas. There were weaker connections between extraversion and confidence in volunteering for event management, introducing a new acquaintance to friends and contacting a newly formed acquaintance, indicating the introverts and extraverts reported similar confidence in these activities. This suggests further research is necessary to explore how the covariation in social confidence and extraversion is mediated by context.

Although the extraverts reported greater ability to predict and understand others' behaviour, reactions and feelings, the participants scored themselves similarly high for social intelligence regardless of their extraverted-introverted disposition and other social competence scores. This insinuates introverts and extraverts may have comparable knowledge of social etiquette and abilities in interpreting social cues and their implications. Therefore, the similarity in social intelligence implies the difference in participants' comfort around and approaching others and ease in handling social situations lies in their PSSE. People are typically poor estimators of their own social competence as they judge their ability based on their confidence, self-esteem, personal misunderstandings of the meaning of social competence and wishful thinking (Mayer et al., 2016). Thus, while the introverts in this sample seemed less confident in their social capabilities, in practice they may possess social skills equal to those of the extraverts (Kruger & Dunning, 1999; Lieberman & Rosenthal, 2001).

A possible similarity in skill level was reflected in the vignette responses. Irrespective of their extraversion-introversion disposition, most participants chose to pause and assess the

social situation before deciding how to act, indicating the importance of social awareness and information processing for the effective use of social skills. To behave sufficiently and effectively in social interactions, a person must process social information and accurately perceive and decode social cues to determine suitable behavioural responses (Knopp, 2018). Evaluating the context may affirm the person's belief that the action is correct and their capabilities are sufficient for the situation before proceeding, implicating the role of their PSSE as the final checkpoint prior to acting (Albrecht, 2006; Kemple, 2017; Marlowe, 1986; Ten Dam & Volman, 2007).

Several social skills were mentioned in the participants' responses including social communication, empathy and relationship management, which fitted into a decision-making sequence followed by most participants after gathering and processing relevant social cues. This pattern remained consistent for the extraverted and introverted participants alike, despite variation in the enacted behaviour. The typical steps in the decision-making process were whether to (a) move closer, (b) intervene, (c) greet the recipient and / or ask if they require assistance, and then (d) provide support.

Respondents who chose to move closer to the recipient had various intentions. For some, a safer and less awkward means of supporting the recipient was to provide a physical presence or non-verbally invite the recipient to approach by creating space for them to occupy. Others decided not to approach and communicated non-verbally with the recipient from a distance. Non-verbal social communication provides valuable information regarding the affect of the self and others (Patterson, 1995; Scherer, 1981; Swann et al., 1992). Thus, several participants who chose to remain in place spoke of conveying various sentiments, including empathy, encouragement, kindness and awkwardness, in smiles and eye contact designed to either encourage the recipient to move towards the participant or disengage. The introverted participants reported using non-verbal communication more frequently than the extraverts with seven introverts (35%) mentioning smiling at the unknown recipient, compared to three extraverts (10.3%). Introverted respondents ($n = 4$, 20%) were also more likely to look away from the situation involving a stranger while only one extravert did so (3.5%). These participants chose to ignore or remove themselves from the scenario and terminated the recipient's attempts at interaction by breaking eye contact and increasing the physical distance between them. However, there was little difference in the number of extraverts and introverts who mentioned making positive eye contact with the unknown recipient.

Making eye contact and interpreting facial expressions enable perspective-taking and empathy skills, which are necessary for social engagement and relationship initiation (Bailey et al., 2008; Beadle et al., 2012; Bukowski et al., 2001; Gresham & Elliott, 1998; Wargo Aikens & Litwack, 2011). Therefore, some of the introverts may possess perspective-taking and empathy abilities comparable to the extraverts in this sample. Another possible explanation is introverts may rely more on non-verbal communication from a distance when engaging with new social partners in settings involving large numbers of people due to heightened arousal and weaker PSSE. Introverts could be overwhelmed by such contexts because of the associated high information flows curtailing their information processing capabilities, while the extraverts may thrive in such an environment (Matthews & Dorn, 1995; Wilt & Revelle, 2009).

If introverts believe they will be ineffective in the situation, they may be more inclined to engage in safety behaviours such as retreating from social interaction (Hampel et al., 2011). This could explain the actions of the two introverted respondents who expressed discomfort in the vignette scenario, as they might have perceived managing the situation was beyond their capabilities. Although one avoided all engagement regardless of who the recipient was, the other mentioned considering intervening for the known recipient if they could avoid scorn for rudeness. In contrast, the extraverted participant who noted they would avoid interacting with a stranger explained the ambiguity of the situation caused them concern for their personal safety. These findings reflect a recurring theme of the influence of the participant's relationship with the recipient on their decision to approach or interact.

Despite Festa et al. (2012) noting a high correlation between extraversion and interaction initiation skills, in this study the association appeared to be affected by the participant's relationship with the hypothetical social partner. The extraverted respondents ($n = 18$, 62%) more frequently chose to intervene for the unknown recipient than the introverts ($n = 7$, 35%). When the recipient was an established acquaintance, the likelihood of intervention for both the extraverts ($n = 23$, 79.3%) and introverts ($n = 17$, 85%) increased to similarly high rates. A comparable trend was identified in the small group of participants ($n = 4$) who decided to provide support to the recipient beyond interrupting the conversation. The extraverted and introverted participants were as likely to provide support to the unknown recipient. Yet, the extraverts commonly opted to provide a physical presence in the situation while the introverts planned to help the recipient escape the situation. This contrast in approach was repeated when the recipient became a known other, although the number of participants offering support in this manner increased from two to three extraverts and from two to five introverts. This

suggests the participants possess comparable social knowledge and capabilities, but the extraverts could be more assertive in instigating interaction when the social partner is a stranger.

Once a participant decided to intervene, they generally chose to interrupt the conversation by greeting the recipient and asking if they needed assistance. These decisions reflect several social skills including social communication (i.e., saying hello), empathy (i.e., offering assistance) and assertiveness (i.e., starting a conversation). Introverts and extraverts equally reported saying hello or creating an excuse to interrupt by asking the unknown recipient an unrelated question. One key difference was the extraverts ($n = 9, 31\%$) mentioned explicitly asking the recipient if they required support more often than the introverts ($n = 5, 25\%$). A possible explanation for these findings is the influence of participants' confidence on the expression of their social abilities.

Social intelligence, skill and confidence work together to determine social competence, but social confidence is necessary to act based on the analysis of social cues. A significant link between these social competence subconstructs was highlighted in the relational analysis and bivariate correlations, although social confidence and social skill had a greater connection than either claimed with social intelligence. This is likely to be a result of the close association between self-confidence and assertiveness as a social skill, which both exist within the dimension of self-esteem (Renger, 2018).

Self-confidence is a general belief in one's self, abilities and judgement including the ability to regulate personal thoughts, emotions and actions in social situations (i.e., perceived social self-efficacy; Eisler et al., 1978; Mischel, 1973). Assertiveness is the ability to communicate with confidence and self-assurance to stand up for one's rights (Rose-Krasnor, 1997; Ten Dam & Volman, 2007). It involves effectively employing other social skills such as showing kindness, assisting others, asking for help and beginning and maintaining conversations, all of which require confidence (Gresham & Elliott, 1998; Rose-Krasnor, 1997; Ten Dam & Volman, 2007). Research suggests assertiveness has a significant negative relationship with social anxiety ($r = -.53$), characterised as low social confidence (Comstock, 2018a; Renger, 2018; Watson et al., 2015). Thus, the dependence of assertiveness on confidence may account for the strong correlation between social skills and PSSE.

Yet, assertiveness is also referred to as a sub-trait of extraversion, which is reflected in extraversion's strong associations with PSSE and social skills in this study. For example,

extraverts are thought to thrive in the limelight (Costa & McCrae, 1992; Watson et al., 2019; Watson et al., 2015). This suggests extraverts possess greater self-confidence and may explain the strong positive correlation between enjoying being the centre of attention and PSSE ($r = .536, p < .001$). However, the social skills subscale had a weakly significant relationship with this item ($r = .271, p < .05$), inferring social skill is less associated with the desire to be the centre of attention. A possible reason for this finding is the limited assertiveness related items included in the social skill subscale for this study.

People who are behaviourally assertive have greater social awareness and expect more favourable outcomes from their social engagement. Thus, the extraverts' perceived greater confidence in starting a conversation with a stranger could be a result of anticipating more positive consequences than the introverts. Conversely, unassertive individuals may believe assertive behaviour is inappropriate or expect more favourable outcomes from passive responses such as retreating from or avoiding the situation (Eisler et al., 1978). Two extraverted participants considered interrupting the interaction between the talker and recipient to be rude or awkward and chose to “*quietly*” or “*privately*” approach the unknown recipient to ask if they were ok. This suggests assertiveness may vary within the expression of extraversion traits as well as introversion.

Fleeson et al. (2002) highlight the frequent deviations in people's behaviour from their typical trait-driven or preferred behaviour. Dispositional introverts may act extraverted to meet situational demands (e.g., public-speaking) or other personal goals (e.g., get a date) and vice versa (Zelenski et al., 2014). For instance, one self-reported extravert ($X_E = 34$) stated they are outgoing but quite introverted by nature. Likewise, an ambiverted participant commented they compensate for the hours they work alone by actively choosing to participate in a variety of voluntary community activities (e.g., Dairy Women's Network, church, sports teams, school boards). This stops them from becoming overly focused on their problems and forces them to be social. Thus, the participants could have altered their responses to align with the perceived situational factors in the vignette or implied by the self-report items.

Perceived and situational factors such as the relationship intimacy with a social partner determine how a person's assertiveness is expressed (Eisler et al., 1975; MacDonald, 1975). Environmental regularities become cues which provide information about the likely outcome, thereby forming personal social rules (Bandura, 1986). Consequently, the regular associates of an individual affect the response patterns he or she assumes and repetitive engagement

reinforces these patterns (Hart & Risley, 1980; Hess et al., 2009; Risley & Hart, 1968). Having a pre-set foundation of social protocols in an established relationship can reduce an individual's uncertainty about correctly interpreting cues and potential outcomes, removing the need to act blindly (Bandura, 1986). This could explain why respondents conveyed greater confidence in the appropriateness of interrupting when the recipient was an established acquaintance, or the participant pretended they were. Respondents appeared to feel a greater sense of responsibility for the known recipient's wellbeing due to their existing relationship, as implied by the shift in intervention method chosen due to the change in relationship type with the hypothetical social partner. For a known social partner, participants were less inclined to watch the situation as often or for as long as with the unknown recipient and more likely to personally interrupt the conversation. In contrast, two extraverted participants sought help from third parties such as a Fieldays representative for the unknown recipient in place of direct intervention. This supports MacDonald, Eisler and colleagues' finding that a person's relationship with the intended social partner influences how assertiveness is expressed. As assertiveness, confidence and extraversion are closely linked, relationship intimacy may also affect the manifestation of extraverted traits and social confidence.

An important finding from the data was the lack of a significant relationship between extraversion-introversion and whether participants enjoyed being alone or with company. Most theories and measures of extraversion assume introverts dislike spending time with other people while extraverts relish company (Watson & Clark, 1997; Watson, Nus, & Wu, 2017). In this study, most participants either enjoyed company ($n = 24$) or had no preference ($n = 21$) regardless of their extraverted tendencies, suggesting introverts and extraverts appreciate both solitude and company. Thus, the characterisation of introverts as solitude seekers and extraverts as desiring company may be too simplistic. A difference in preference could depend on the setting, activity, frequency of occurrence and number of and relationship with the people involved. As one extraverted participant commented, it is easier to relate to other farming people. Consequently, some dairy farmers may prefer to associate with farming community members or rely on professional agricultural consultants such as large animal veterinarians for support (Nuthall & Old, 2017; Stanley-Clarke, 2019). If a positive response on items regarding enjoying company is counted towards greater extraversion, self-report measures could overestimate the extraverted nature of a sample. Moreover, this finding contradicts some of the personality theorists by inferring introverts in this sample may not be socially disinterested.

Therefore, the findings from this study suggest introversion is less associated with social disinterest or a deficit in general social skill or intelligence. Instead, it appears introversion could be related to a lack of social confidence in situations involving unknown social partners. This supports Bucich and MacCann's (2019) finding that confidence in one's ability to act competently appears to be more important than knowing how to act when initiating social interaction with a stranger.

Resilience Scale for Adults' Social Competence Construct

While the two social competence measures had a moderate positive relationship overall, the RSA social competence subscale had stronger ties to social confidence than social skills or social intelligence. In particular, the RSA social competence subscale was significantly associated with confidence in starting a conversation with a stranger, joining an established group of unknown people and attending functions where the guests are unknown. Yet, the confidence to express an opinion to a group discussing an interesting subject was not significantly related to RSA social competence. It was unclear from the item whether the group consisted of known or unknown others. Therefore, respondents could have interpreted the question as a group of people they were acquainted with, suggesting RSA social competence may be predominantly related to confidence in meeting new people in new situations.

As discussed in section 2.3, the RSA social competence subscale appears to consist of three approaches to the construct of social competence. Two items (i.e., "I enjoy being: with other people / by myself" and "When I am with others: I easily laugh / I seldom laugh") reflect common personality trait items (e.g., Goldberg, 1981). In contrast, three items (i.e., "New friendships are something: I make easily / I have difficulty making", "Meeting new people is: difficult for me / something I am good at" and "For me, thinking of good topics for conversation is: difficult / easy") ask the respondent to rate their social ability. The final item (i.e., "To be flexible in social settings: is really/not important to me") relates to the value the respondent places on the ability to be flexible.

The greatest associations between social competence and RSA social competence items related to meeting new people and the ability to make new friendships, mostly due to the participants' social confidence and social skill. There were also strong relationships between social competence and the ease of laughing in social situations and thinking of good conversation topics. Thus, the foundation of social competence for the RSA measure appears to be the ability to meet new people and form new friendships. This is reflected in the social

skill items, whereby abilities in entering new situations, meeting new people and getting along with and to know others well had significant correlations with RSA social competence.

However, the RSA social competence subscale was not significantly related to the two social skill perspective-taking items (i.e., “If I'm sure I'm right about something, I don't waste much time listening to other people's arguments”, “Before criticising somebody, I try to imagine how I would feel if I were in their place”). A similarly insignificant correlation was evident for the social intelligence item that paralleled perspective-taking, namely, understanding others' choices. Yet, RSA social competence had a moderate positive relationship with participants' social intelligence abilities in predicting and understanding other people's behaviour, reactions and feelings. Such capabilities require the participant to assume the view of the person they are interacting with (Beadle et al., 2012; Bukowski et al., 2001; Knopp, 2018). This suggests the insignificant relationship with perspective-taking may be a result of social desirability bias. Perspective-taking is generally accepted as socially appropriate behaviour and participants' answers for these items may have been manipulated to account for social customs, rather than reflecting the actual abilities of the participants.

Of the RSA social competence items, the importance of being flexible in social settings had weak significant relationships with social skills, social confidence and overall social competence, but was insignificantly associated with social intelligence. Being flexible in social situations means someone can adjust their thoughts, feelings and behaviours to changing conditions in a social context (Bar-On, 2006). As this definition reflects social intelligence and general social competence abilities, the lack of more significant correlations indicates the participants might not have understood the meaning of the question and therefore could not nominate a value for this ability. Moreover, valuing an ability is not equivalent to possessing that ability. To value an ability is to appreciate the importance of the ability, whereas possession infers the ability is an existing part of the person's skill set. Thus, this RSA social competence question may need to be reworded or be accompanied by an explanation of the meaning of flexibility in social contexts for further research with New Zealand samples.

Similarly, participants' enjoyment of company over solitude was not significantly associated with social confidence, social intelligence, social skill or general social competence. As appeared in the relationship with extraversion, most participants either enjoyed company ($n = 24$) or had no preference ($n = 21$). People may enjoy certain activities alone (e.g., reading) and other activities with company (e.g., eating) and vary in their preference for who they enjoy

being with when they do desire company (Fleeson et al., 2002; Lucas et al., 2008). Consequently, this RSA social competence item may be too simplistic to capture the complexity of individuals' preferences for being alone or with others and how these preferences relate to being socially competent.

Overall, the most significant correlations related to the RSA subscale's three social ability items and the ease of laughing in social situations, indicating the RSA may measure social competence as both an ability and a dispositional trait. This appears to be reflected in the internal consistency of the subscale (*Cronbach's* $\alpha = .809$). In addition, the RSA social competence subscale and extraversion seem to contain similar questions and share a focus on forming new social connections. This may explain the strong correlation between RSA social competence and extraversion previously identified in the literature (e.g., Friberg et al., 2005). However, the presence of multiple approaches to the construct of social competence within the subscale allow it to correlate significantly with multiple criteria, clouding the meaning of the subscale's total score.

Social Competence as a Mediator of Extraversion-Introversion and Social Resources

Extraversion and social competence were most associated with the two social support items regarding bonds with friends and feeling appreciated by close friends and family members. Together, extraversion-introversion and social competence may account for 30-44% of the variance in social support for this sample. Yet, as Festa et al. (2012) discovered, social support was primarily predicted by greater social competence. As per previous research, a large positive relationship was discovered between social competence and access to social resources (e.g., Friberg et al., 2003; Jowkar et al., 2010). A similarly significant correlation was found between social competence and extraversion, comparable to other studies (e.g., Campbell-Sills et al., 2006; Çetin et al., 2015; Ercan, 2017; Shi et al., 2015). The Mann-Whitney U tests suggest the extraverts rated their social competence on both measures more highly than the introverts, yet the difference in self-ratings of social support for the extraverts and introverts was less significant as most respondents reported strong social resource access. Moreover, the unique contribution of extraversion-introversion to the regression models was minimal and seemed contradictory in this sample. In the first regression model, social support was predicted by introversion while the second regression indicated extraversion predicted social support. Despite a moderate correlation between extraversion and social resources, they each had a stronger association with social competence. This infers the relationship between

extraversion and social support is mediated by social competence. However, neither regression model displayed sufficient goodness of fit to reject the null hypothesis.

One possible reason for the insignificant role of extraversion-introversion in the regression models is the limited period in which extraversion-related traits and abilities are likely to have an impact on interpersonal relationships. Social support relates to establishing and retaining strong relationships with select others to maximise the benefits of social interaction and satisfy the need to belong (Homans, 1961). Personality traits like extraversion can determine the social circles a person moves in, thereby influencing the kinds and frequency of chance encounters the person will meet (Bandura, 1986). Pollet et al. (2011) showed extraverts reported having larger support and sympathy groups than introverts but there was no association between extraversion and emotional closeness to those within their network. Moreover, extraversion appears to be more important for friendship satisfaction than romantic relationship satisfaction (R. E. Wilson, Harris, & Vazire, 2015). For instance, in this study social support had a moderate positive correlation with the extraverted trait of disclosing feelings to others but no relationship with being the life of the party. The former is arguably important for relationship intimacy while the latter may be an attractive characteristic of a potential new social partner. Therefore, extraversion may be primarily related to interaction initiation skills, which are of greater relevance in the beginning of a relationship but unlikely to alter relationship quality over time (Festa et al., 2012).

Interpersonal relationships require regular interaction with select others in non-aversive ways within a context of enduring concern for each other's welfare (Baumeister & Leary, 1995). The initiation and development of successful family and peer relationships depend on social competence and interpersonal relationships in turn facilitate social skill acquisition and advancement over time, creating a symbiotic relationship (Merrell, 1999). Consequently, strong social competence is linked to more satisfying and supportive relationships with friends and family (Buhrmester, 1990; Buhrmester et al., 1988; Festa et al., 2012; Smart & Sanson, 2003), a larger social support network (Bierman & McCauley, 1987) and better quality interactions with others (Ciarrochi, Scott, Deane, & Heaven, 2003). These qualities and the ability to initiate and maintain social support then offer further opportunities for social engagement. Therefore, social competence seems to have a more prolonged influence on social resource access.

Within social competence, social intelligence had the greatest correlation with social support, suggesting social intelligence may be more important to relationship maintenance than social confidence. Perceived social confidence correlated significantly with ease in meeting new people and making new friendships, which implies social confidence, or the lack of, may be most vital when initiating interaction (Buhrmester et al., 1988). If environmental regularities inform personal predictions of the anticipated outcomes (Bandura, 1986), participants may be reassured by their confidence in an established relationship that presents fewer ambiguous cues and consequences rather than relying on self-confidence.

Conversely, maintaining relationships is an ongoing process that is likely to require social intelligence. Social intelligence involves understanding and regulating personal and others' thoughts, emotions and actions in interpersonal situations (Marlowe, 1986; Silvera et al., 2001), including comprehension of social rules, expectations, customs, situations and hierarchies (Mayer et al., 2016). This begins with an awareness of and continues in the form of monitoring the self, others and environment. Personal adjustments can then be made to ensure one's thoughts, feelings and behaviour are aligned with the context. This would explain the moderate positive correlations between social support and the social intelligence items relating to awareness of others' feelings, behaviour and reactions. In addition, social intelligence was strongly related to discussing personal issues with family and friends, strong bonds with friends and feeling one's personal qualities are appreciated by others. Consequently, social intelligence could play a key role in a person's understanding of and their ability to influence their social acceptance (Mayer et al., 2016).

Once social intelligence has been initiated, social skills such as communication, perspective-taking, empathy, requesting assistance and showing kindness can be utilised to increase the effectiveness and satisfying nature of the relationship (Albrecht, 2006; Boyatzis et al., 2000; Marlowe, 1986; Rose-Krasnor, 1997; Ten Dam & Volman, 2007). Positive correlations identified in this study between social skills and social support items relating to receiving support from friends and family add credence to this connection. For instance, to show and feel empathy, a person must first attempt to understand others' feelings and perspectives (Bailey et al., 2008; Beadle et al., 2012; Bukowski et al., 2001; Gresham & Elliott, 1998; Wargo Aikens & Litwack, 2011). These skills are also part of showing kindness towards others spontaneously or when asked for help, thereby building cooperative relationships (Bukowski et al., 2001; Knopp, 2018; Wargo Aikens & Litwack, 2011). This aligns with the significant correlation between participants' self-reported social support and their PSSE in

seeking assistance when needed. However, the social confidence and social support scales contained similar items regarding asking for help and the availability of help when needed, which may have created a significant correlation due to overlapping content.

In general, the findings generated in this study imply social competence is likely to mediate the connection between extraversion-introversion and access to social resources. Extraversion may be of greater import when first engaging with a new social partner but social competence, especially social intelligence and social skill, appears to be necessary for maintaining relationships. This suggests social capabilities may compensate for trait-driven behaviours.

Limitations

Four key limitations of this study were the small sample size, sample representativeness, self-report format and reliability of two of the subscales. Due to the small sample recruited, generalisation of the significant findings is not possible. Beta weights are likely to fluctuate when the sample size is small so those reported in this study remain specific to this sample (Ziglar, 2017). Furthermore, data skewness and kurtosis are significantly impacted by sample size and, as no adjustment was made for these effects in four of the variables, the correlational findings may be weakened by a lack of normality. Another issue with small sample sizes is the insufficient power to achieve weak to moderate significant effect sizes (Petersen, 2008). Thus, the multiple regression and correlation coefficients with weak to moderate effect sizes ($f^2 \leq .15$; $r \leq .35$) had insufficient power due to failing to meet the minimum sample size necessary (Cohen, 1992; Crano et al., 2015).

However, Norman (2010) demonstrated a statistically significant large effect size in a small sample is still valid despite the greater difficulty to achieve such a result. Thus, the sample was sufficient for correlations of .40 and greater with an alpha of .05 as well as the multiple regression models with two independent variables and a large effect size ($f^2 \geq .35$; Cohen 1992). Many of the correlations achieved statistical significance and as the accumulated sample contained more than five people per group analysed, the principle of robustness was met (Petersen, 2008). Despite the small sample size, the Pearson's correlations, Spearman's rho coefficients and bootstrapped confidence intervals imply there are likely to be genuine relationships between all the measured variables in the general population. Therefore, this piece of research can still offer insights into the correlations between extraversion, social competence and social support.

Another limitation was the sample's representativeness. Most participants (78.2%) were women, yet only approximately 33% of dairy farmers in New Zealand are female (J. Wilson & Tipples, 2008). Women tend to assume the role of rural family gatekeepers so they perform administrative tasks such as checking emails more frequently than men, which may explain the predominantly female sample (Greenhill, King, Lane, & MacDougall, 2009). Moreover, the number of introverted respondents was expected to be higher than the extraverted participants as introverts are noted as more persistent, focussed and amenable to written communication than extraverts (Cain, 2012; H. J. Eysenck, 2006). Conversely, it appears more extraverts responded than introverts, potentially because of a greater willingness to assist a stranger (i.e., the researcher) or their contact at the recruiting organisation by responding to the survey request. Another possibility is the participants altered the expression of their dispositional traits while answering the questions causing greater extraverted tendencies, indicating potential methodological issues.

While self-report methods offer easy administration, Brown et al. (2019) highlight several critical weaknesses they present. Self-report measures are susceptible to response distortion (Tett & Christiansen, 2007) and confounding variables like self-confidence (Harter, 1990; Mayer et al., 2016; Phillips & Zimmerman, 1990). Thus, the social competencies stated may not reflect the actual abilities of the participants surveyed. Self-rated skills are often weakly correlated with actual behaviour (Kruger & Dunning, 1999). Others' views of a person's ability tend to be more reliable than self-reports as individuals may overestimate their ability and boost their self-ratings. This suggests future research should adopt different measurement techniques to minimise these limitations and test the associations suggested in this research and related literature.

Another limitation of the measures selected relates to the reliability of the social skills and RSA social competence subscales incorporated into this study. The social skills subscale constructed for this study demonstrated poor internal consistency (*Cronbach's* $\alpha = .585$), which might be due to the small number of items or the diversity of the social skills construct (e.g., assertiveness, communication, perspective-taking). Similarly, the RSA social competence subscale may contain multiple dimensions, despite showing acceptable internal consistency (*Cronbach's* $\alpha = .809$). Consequently, the scores on both subscales may be misleading in their interpretation as representative of social skill and social competence respectively.

Strengths and Implications

Several strengths are posed by this study. Firstly, this study joins the growing body of literature (e.g., Coplan & Armer, 2007; Henjum, 1982; Leary et al., 2003) questioning the association of introversion with social avoidance and incompetence. The role of confidence in social competence and extraversion highlighted in the findings implies introversion is not necessarily related to social disinterest or a skill deficit. Instead, a lack of self-confidence may give the impression introverts do not enjoy company and are deficient in their ability to engage socially. Further exploration is needed to enable a more comprehensive understanding of the role of confidence in extraversion-introversion.

Secondly, the findings support previous research in suggesting the relationship between extraversion and access to social support is mediated by social competence (e.g., Festa et al., 2012). This challenges the assumption that the wider support networks attributed by extraverts are a result of their inherent sociability traits. Additional investigation is necessary to compare how extraversion and introversion relate to relationship quality in the formation phase and when well established.

Finally, by exploring the foundation of the RSA social competence subscale, this study advocates for greater analysis of the measure's construct of social competence and how this affects representations of individual resilience. As the subscale may reflect traits and abilities, the meaning of the subscale's total score is unclear. Allowances should also be made for the cross-cultural application of the English translation of some subscale items. For instance, the meaning of being flexible in social settings might not be immediately clear to New Zealand participants. In addition, as the participants' enjoyment of company was not significantly related to their social competence, it might be necessary to consider incorporating further questions relating to such preferences in future analyses of resilience for New Zealand samples.

Future Research

Further exploration with a larger sample or qualitative focus is necessary to support these findings. One option is to arrange face-to-face interviews or discussion groups through an agricultural organisation to facilitate direct observation or dyadic evaluation of participants' enacted behaviour. This would enable a deeper investigation of how social confidence influences social competence in association with extraversion-introversion.

Future studies could also explore the conditions under which extraverts and introverts prefer to be alone or in company. This may include who they enjoy spending time with when

they choose not to be alone and the type of activities they enjoy performing with or without others. Moreover, few studies have discussed how the importance of extraverted characteristics fluctuates over time in relation to interpersonal relationships. Comparing multiple contexts or time samples may create greater opportunities for analysis of how trait-driven behaviour varies by setting and over time.

Moreover, additional research is needed to verify that the foundation the RSA social competence subscale is the ability to meet new people and establish new friendships. If skills in maintaining existing relationships are excluded from this subscale, it is important to understand whether it is factored into another aspect of the RSA measure. Given the significant role of friends and family in predicting individual resilience, it seems critical to understand how those support networks are retained.

Chapter 6. Conclusion

Extraversion and social competence demonstrated a significant positive association, primarily due to the extraverts' greater self-perceived confidence in meeting new people in new social situations. While the results support international research in implying extraverts are typically more socially competent than introverts, this study suggests this difference is dependent on the context and person's level of confidence. If the definition of social competence was restricted to effectiveness in initial interactions, then extraverts would appear more socially competent than their introverted peers due to their greater confidence when engaging with unknown social partners.

As PSSE is necessary for the effective use of social intelligence and skills, extraverts may seem more socially competent because they perceive themselves to be so, not because introverts are lacking in ability or social intelligence. Thus, confidence in one's ability to act competently could be more important than knowing how to act. Differences in social confidence were most evident in situations involving unknown social partners, indicating relationship intimacy influences the manifestation of confidence in social contexts. The extraverted participants seemed more comfortable engaging with strangers than introverts as more introverts chose to use safety behaviours such as retreating from the situation when faced with an unknown other. These dissimilarities were minimised when the participants were hypothetically interacting with a known social partner. This insinuates extraverts and introverts could possess comparable social confidence in familiar contexts with established acquaintances.

Extraverted traits might help to form new social connections and increase a person's social network size. Yet, these traits seem less likely to alter relationship quality and reliable access to social support over time as the introverted participants reported similar levels of social support to their extraverted peers. This suggests social competence could mediate the connection between extraversion and access to social resources. Furthermore, this study was unable to identify a significant difference between the introverts' and extraverts' enjoyment of being with people. Thus, characterising introverts as solitude seekers and extraverts as desirous of constant company may fail to account for varying context preferences.

While this study supports previous findings of a positive association between social competence and access to social support, this identified connection was predominantly due to social intelligence. Understanding the thoughts, feelings and actions of the self and others (i.e., social intelligence) enables social skills such as empathy and perspective-taking. The importance of these abilities may exceed that of confidence when engaging with family and friends. This suggests the pathway from social competence to social support and subsequent individual resilience is multifaceted.

Socially competent adults report better quality interpersonal relationships with friends and family. The availability of support from these relationships is a key component of an individual's ability to cope with and protection from stress (i.e., resilience). One of the common measures of individual resilience, the Resilience Scale for Adults (Friborg et al., 2003), appears to construe social competence as social confidence in contexts involving new people and new settings. Thus, the measure's social competence subscale seems to share a similar focus to extraversion and part of social ability, thereby ignoring an individual's capability to maintain established familial and social bonds. Furthermore, the subscale may be too simplistic to capture the complexity of individuals' enjoyment of company and how it relates to social competence.

In this sample of New Zealand dairy farmers, the findings infer introversion is associated with low social confidence, not social disinterest or a deficiency in ability. More specifically, introverts could be characterised by weaker self-beliefs in their ability to manage interactions with strangers in unfamiliar situations. Introverts' lower social confidence may obscure their actual competency and social interests. Therefore, if social competence mediates the relationship between extraversion-introversion and access to social support, introverts may

possess similar individual resilience to extraverts depending on how their social competence is determined.

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