The Development and Validation of the Employee Resilience Scale (EmpRes): The Conceptualisation of a New Model

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Abstract

The need for an employee-specific measure of resilience has directed the development of the Employee Resilience Scale (EmpRes). The conceptualisation of employee resilience in the present study describes an employee capacity that organisations can help develop through the provision of enabling factors. The EmpRes Scale was developed and tested in three samples, and was found to have adequate measurement properties. Findings from two organisational samples also revealed that employee resilience is significantly associated with learning culture, empowering leadership, job engagement, job satisfaction and intentions to turnover, and unrelated to employee participation and corporate communication. The research indicated that employee resilience has a mediating effect on the relationships between learning culture and job engagement and job satisfaction, and empowering leadership and job engagement, job satisfaction and intentions to turnover. The findings suggest that organisations enable their employees to be more resilient by creating a learning oriented culture and building empowering leadership, which in turn leads to better organisational outcomes. Although future research is required, the present study shows preliminary support for the psychometric properties of the scale as well as the conceptual model.

Introduction

Contemporary work has become increasingly changeable, uncertain and market driven due to technological advancement, globalisation and competition (Allvin, Aronsson, Hagström, Johansson, & Lundberg, 2011). Organisations are required to swiftly and frequently conduct large-scale changes through downsizing, mergers, and acquisitions in order to survive and thrive (De Meuse, Marks, & Dai, 2011; Gordon, Stewart, Sweo, & Luker, 2000). In addition to market demands, the rising number of environmental disasters (Reser & Swim, 2011; Van Aalst, 2006) poses further challenges and uncertainties that require adaptability and strategic planning (Lee, Vargo, & Seville, 2013; Reser & Swim, 2011). As a response to the current business environment, organisations are required to be more flexible and agile than ever before (Lengnick-Hall, Beck, & Lengnick-Hall, 2011).

Recent research has highlighted the essential contributions that employees make during crises and organisational change processes (Shin, Taylor, & Seo, 2012). Without change buy-in and effort made by employees to adjust, transitions are likely to be unsuccessful (Bernerth, 2004). Similarly, employees' readiness or resistance influences change success (Piderit, 2000; Weiner, 2009); therefore, organisations need to understand and work with staff reactions during these times (Van Dam, Oreg, & Schyns, 2008). It is proposed that organisations can support employees going through change by providing resources that function as enabling conditions to enhance employee adaptability. Resilience amongst employees is suggested to be an adaptive and resource-utilising capacity, which makes employees more able to handle changes and adversity within the workplace (Rossi, Meurs, & Perrewé, 2013). As this capacity enhances an organisation's ability to adapt and thrive in the face of constant change and upheaval (DuBrin, 2013), it is essential that organisations gain a better understanding of both employee resilience and the organisational

factors that contribute to the development of resilience in the work environment (DuBrin, 2013; Harland, Harrison, Jones, & Reiter-Palmon, 2005).

Despite research suggesting that individuals who are more resilient cope better with adversity and change (Rossi et al., 2013), the available resilience measures, even those adapted to the work environment, are predominantly trait-based. Moving away from such conceptualisations to consider a developable perspective of resilience may be more productive as this enables organisations to foster resilience among their employees to create a robust and flexible workforce. Consequently, there is a need to develop an employee-centric measure of resilience using a framework that focuses on the organisational enabling conditions that help to enhance employee resilience. For this reason, the present study outlines the development of an employee resilience measure (EmpRes Scale), which organisations can use to understand employee reactions to challenges and change, and identify areas contributing to the development of employee resilience. Factors in the work environment that are expected to relate to resilience are investigated. A greater understanding of employee resilience will help to prepare employees, and subsequently their organisations, for the current and future demands of work (Maddi & Khoshaba, 2005).

Resilience

The conceptualisation of human resilience has not been uniform (Herrman et al., 2011; Luthar, Cicchetti, & Becker, 2000), and the plethora of operational definitions has varied across disciplines and over time as a result of increased scientific understanding (Rossi et al., 2013). Early conceptualisations of resilience were developed during clinical studies of children and adolescents (Anthony, 1974; Garmezy, 1974, 1981; Rutter, 1979, 1985; Werner & Smith, 1982). Researchers identified that some youngsters possessed an extraordinary inner strength and intrinsic adaptive capability which protected them from impairment and

allowed them to *thrive* despite their high risk circumstances (being schizophrenic, having parents with mental illness, living in poverty, dealing with maltreatment and violence) (Luthar et al., 2000; Masten, 2001). These resilient youngsters were initially considered *invincible* and *invulnerable* (Anthony, 1974; Werner & Smith, 1982) with "an inherent robustness that allow[ed] the gifted individual[s] an inordinate capacity to cope" (Anthony & Cohler, 1987, p. 41). As research evolved, the normality of the phenomena was acknowledged (Bonanno, 2004; Masten, 2001), and greater attention was placed on attributes of resilience rather than idealising resilient individuals. Some of the characteristics commonly associated with resilience were self-esteem, internal locus of control and self-efficacy (Masten & Garmezy, 1985).

As research extended to adult populations and various adversity contexts were considered, such as disaster and poverty contexts, the role of contextual factors associated with resilience was increasingly recognised. Nevertheless, trait based perspectives have remained popular, with Wagnild and Young (1993) more recently defining resilience as "…a personality characteristic that moderates the negative effects of stress and promotes adaption…"(p. 165). Moreover, there continues to be an emphasis on dispositional resilience in many resilience measures (Block & Kremen, 1996; Connor & Davidson, 2003) and studies (Benetti & Kambouropoulos, 2006; Cohn, Fredrickson, Brown, Mikels, & Conway, 2009; Fredrickson, Tugade, Waugh, & Larkin, 2003; Ong, Bergeman, Bisconti, & Wallace, 2006; Ong, Bergeman, & Boker, 2009; Tugade & Fredrickson, 2004). In addition, positive psychology continues to add to the extensive research on personal qualities, such as optimism (Masten & Reed, 2002; Peterson, 2000) and self-determination (Schwartz, 2000), which are argued to be crucial components of trait resilience (Ong et al., 2006).

Despite the prominence of these trait perspectives, it has been contended that individuals can only become resilient in the presence of adversity; therefore, resilience cannot

solely be an inborn trait (Rutter, 2007). As a consequence, resilience researchers have also recognised the contribution of external protective factors such as family, culture and community (Bonanno & Mancini, 2008; Cicchetti, 2010; Rutter, 1985; Werner & Smith, 1982) that help to ease the negative effects of adversity (Masten & Garmezy, 1985; Werner & Smith, 1982). According to Rutter (1985), there is an interplay between risk and protective factors, which essentially means that individuals shift between vulnerability and resilience depending on the presence and strength of these useful resources (Bonanno & Mancini, 2008). Individuals can utilize their resources to effectively cope and overcome challenges, making them less vulnerable (Shin et al., 2012) and more resilient. In addition, these resources make them more resilient by enhancing their belief that they have the means to adapt and cope with adversities and changes (Benight & Bandura, 2004), and therefore reduces any stress associated with these challenges (Shin et al., 2012).

Beyond the protective factors and traits of resilience, researchers have also identified different mechanisms that underlie resilient functioning. There have been three competing perspectives pertaining to the occurrence of resilience, defining it as either stability, reactive recovery, or transformation (Maguire & Cartwright, 2008). The stability perspective views resilience as the maintenance of a stable state of equilibrium following a traumatic event, through the absorption of the disturbance (Maguire & Cartwright, 2008). In support of resilience as stability, Bonanno (2004) stated that resilience ensured that physical and mental health was preserved despite the presence of an isolated traumatic event. Similarly, Home and Orr (1997) identified the importance of avoiding periods of regressive behaviour through the utilisation of resilience capacities to absorb the change. However, this theory disregards the difficulty of maintaining a stable level of performance and well-being during and immediately after devastating circumstances.

In contrast, the reactive recovery perspective identifies a period of regressive behaviour and dysfunction following a traumatic event before returning to one's original state. According to this theory, the faster the return to equilibrium, the greater the resilience. In agreement with the perspective of resilience as reactive recovery, Youssef and Luthans (2007) argue that during stressful situations "the capacity for resilience promotes the recognition and acknowledgement of such [disruptive] impact [from the stressor], allowing the affected individual the time, energy, and resource investment to recover, rebound, and return to an equilibrium point" (p. 779-780). The disruptive impact of the stressor may reveal itself as a period of impaired mental and/or physical health that may require either a short or long time to recover from. In line with this proposition, the Oxford Dictionary defines resilience as the "ability of a substance or object to spring back into shape" and "the capacity to recover quickly from difficulties; toughness" ("Resilience", 2013). This definition also identifies the period of disequilibrium that naturally follows disruption and how resilience enables one to spring back into shape or recover back to one's original level of functioning. The reactive recovery perspective is preferable to the stability perspective as it acknowledges the natural reaction of humans to emotionally challenging and unexpected disturbances. Nevertheless, the reactive recovery perspective does not account for any learning that may occur as a consequence of dealing with adversity.

More recent inquiries have looked beyond dispositional views of resilience through recognising the developable and transformational nature of resilience. This change in conceptualisation identifies the third and more contemporary perspective, that goes beyond restoration to focus on the development of new capabilities that allow individuals to capitalise on change and thrive in the new environment (Lengnick-Hall et al., 2011). Luthans (2002) defined it as the "developable capacity to rebound or bounce back from adversity, conflict, and failure" (p. 702). This was supported by Waite and Richardson's (2004)

transformational definition of resilience as "the process and experience of being disrupted by change, opportunities, stressors, and adversity and, after some introspection, ultimately accessing gifts and strengths [resilience] to grow stronger through the disruption" (p.178). This transformational view highlights that resilience during a disruptive event can stimulate positive growth and allow individuals to reach a new state rather than recovering to the level they were before. This capacity, to learn and develop from change, ensures that individuals are more adaptable and therefore can thrive when faced with change again. O'Leary and Ickovics (1995) and Richardson (2002) noted that repeated exposure to adversity, change and stress followed by successful adaptation allowed individuals to exceed their previous levels of coping. This was outlined as a proactive component of resilience that allowed individuals to surpass the point of equilibrium (Youssef & Luthans, 2007) and actually grow from adversity (Lengnick-Hall et al., 2011). Others argued that resilience could be improved through the development of coping strategies that allowed individuals to be more flexible and emotionally stable or rational when presented with change (Avey, Luthans, & Jensen, 2009; Tugade & Fredrickson, 2004; Tugade, Fredrickson, & Feldman Barrett, 2004). This developmental perspective of resilience is also supported by research by Steinhardt and Dolbier (2008) who created a resilience training intervention which successfully increased the resilience of college students. Similarly, Freeman and Carson (2007) identified the need to study resilience within the organisational context and found resilience training to be effective there too.

Organisation-level resilience

Research on resilience in the work context has often looked at resilience from an organisational rather than individual perspective. The models define organisational resilience as "a function of an organization's overall situation awareness, management of keystone

vulnerabilities, and adaptive capacity in a complex, dynamic, and interconnected environment" (McManus, Seville, Vargo, & Brunsdon, 2008, p. 82). This involves effective management, and overcoming adversity or crisis by operating in sometimes unfamiliar territory in order to fulfil organisational objectives (Seville et al., 2006). During organisational change, the maintenance of workflow, to provide goods and services and prevent financial losses, is important for ensuring competitiveness (Lee et al., 2013). According to the organisational resilience literature, resilience allows organisations to go beyond merely scraping through times of organisational instability and adversity, and instead allows them to thrive and capitalise on change and uncertainty (Lengnick-Hall et al., 2011). Hollnagel, Nemeth, and Dekker (2008) assert that organisations' ability to respond to disturbances and threats, monitor intra- and extra-organisational events, anticipate issues, and learn from experience, dictate the quality of their resilience.

Organisational resilience research identifies resilience as the combination of a positive work environment, as well as inherent and adaptive components (Baird, van Heugten, Walker & Nilakant, 2013; Chang-Richards, Vargo, & Seville, 2013). The positive work environment is based on three central dimensions: organisational leadership and culture that supports adaptability; networks and relationships that can be utilised when necessary; and change readiness developed by clear planning and direction (Chang-Richards et al., 2013). The inherent component of resilience is an organisation's ability to prepare for adverse events in order to minimise negative outcomes; whereas, adaptive resilience is an organisation's capacity to positively react and recover after adversity (Baird et al., 2013). Although researchers recognise the important role employees play in organisational resilience (Lee et al., 2013), few measures specifically identify resilience at the employee-level.

Employee-level resilience

Due to the increasing demand for flexibility and adaptability in the workplace (Pulakos, Arad, Donovan, & Plamondon, 2000), there is a need for an employee-level model of resilience that focuses on developable resources provided by the organisation rather than stable traits within the individual. Current workplace resilience research has been primarily organisation focused rather than employee based. This has made it difficult to determine the impact of employee resilience on the organisation's overall ability to adapt to change. Moreover, it has meant there is a lack of empirical evidence for how organisations can better equip employees to handle challenges at work. Although there has been research on individual-level resilience, early work generally focused on clinical models and measures with an emphasis on child and adolescent research samples (Sinclair & Wallston, 2004; Youssef & Luthans, 2007). These models often adopted trait based conceptualisations of resilience and subsequently failed to acknowledge the developable nature of resilience. Although there are some conceptualisations that recognise the interplay between protective resources and adversity (Bonanno & Mancini, 2008; Rutter, 1985), these models appear to demonstrate a more passive role of resources, instead of being actively enabling conditions. There have been a few exceptions in research where individual-level resilience has been examined in the work context. According to Maddi (1987), who defined resilience as hardiness, resilient individuals deal better with organisational downsizing than less resilient employees, resulting in better health and wellbeing. Moreover, Shin et al. (2012) identified that highly resilient employees were more committed to change due to the positive emotions experienced during the change process.

Psychological Capital

Another important exception is the research on Psychological Capital (PsyCap). PsyCap has been defined as a composite construct pertaining to "an individual's positive psychological state of development…" (Luthans, Youssef, & Avolio, 2006, p 3). The literature typically identifies four dimensions that the construct is comprised of: self-efficacy; optimism; hope; and resilience (Luthans, Avolio, Avey, & Norman, 2007; Luthans, Youssef, et al., 2006). It is understood that the combination of self-efficacy, optimism and hope enable individuals to utilise their resilience to bounce back and beyond where they were prior to a setback rather than merely recovering (Luthans et al., 2007). Researchers have identified positive relationships between PsyCap and performance, job satisfaction, organisational commitment and work happiness (Luthans, Avey, Avolio, & Peterson, 2010; Luthans et al., 2007; Luthans, Avolio, Walumbwa, & Li, 2005; Youssef & Luthans, 2007), suggesting that PsyCap's components are important for organisational success. While this model takes an individual perspective of resilience at work, the resilience measure focus on personal-level capacities and resources (talents, skills and social networks) and subsequently fails to account for the contextual environment which also enhances employee's capacity to be resilient. Although the researchers understand Psychological Capital to be developable (Luthans, Avey, Avolio, Norman, & Combs, 2006; Luthans et al., 2010), the focus on individual capacities and resources makes the items similar to trait based items, but with the addition of the word "work" to make the items context appropriate. Moreover, the focus on minimising risk factors in PsyCap development interventions (Luthans et al., 2010) undermines the developable nature of resilience, as one must experience adversity to become more resilient.

Employee Resilience and the EmpRes Scale

Building on theories of resilience and gaps in the literature, the current study conceptualises employee resilience as *the developable capacity of employees, facilitated and*

supported by the organisation, to utilise resources to positively cope, adapt and thrive in response to changing work circumstances. This definition incorporates Luthans's (2002) description of resilience as a developable capacity, rather than a stable personality trait. The current definition identifies resilience as a capacity, rather than a characteristic, capability or quality, as identified in some theorisations (Wagnild & Young, 1993), as this detaches the resilience concept from personality. The conceptualisation goes beyond early models of resilience as a recovery process, in which one returns back to one's original state of equilibrium (Youssef & Luthans, 2007). Although acknowledging the importance of positive coping, the definition in the present study also highlights the more contemporary view of resilience as a transformational process, in which individuals not only cope and successfully deal with change, but also learn from it and adapt accordingly to thrive in the new environment (Lengnick-Hall et al., 2011; O'Leary & Ickovics, 1995; Richardson, 2002). The development of this capacity means that employees can utilise past experiences with change and adversity to be more flexible and adaptable when facing new challenges (Avey et al., 2009; Tugade & Fredrickson, 2004). The aspect of the definition in the present study, focusing on the facilitation and support required by the organisation, goes beyond the PsyCap model by recognising that the utilisation of organisational practices and resources will influence employee resilience by providing enabling conditions for its development. Thus, the conceptualisation focuses on resilience at the individual-level, but not in isolation from the contextual environment, in this case the work environment.

This perspective provides a valuable contribution to the current resilience research as most previous organisational resilience models have not accounted for the perspective of employees together with their enabling work context. Furthermore, it presents a more positive view of resilience, with organisations assisting the development of an employees' capacity to thrive rather than merely identifying the protective factors that buffer the effects of adversity.

The new measure and model developed in this study is intended to assist organisations to identify the supportive and effective enabling factors needed to better prepare employees for future change, and ultimately will make the organisation more resilient. Assessing the relationship between employee resilience and organisational enabling factors as well as work-related outcomes will also be important for identifying how organisations can facilitate resilience development (e.g., formal practices), as well as evaluating the benefits of resilience for individuals and the workplace.

Antecedents of Employee Resilience

In order to enhance the resilience of employees, it is important to understand and identify the organisational enabling factors that foster employee resilience in the workplace. Although there is scarce research on any direct links, it is proposed that the presence of an open, supportive, collaborative, empowering and learning-oriented work environment fosters employee resilience (Bommer, Rich, & Rubin, 2005; Bouckenooghe, Devos, & Van den Broeck, 2009; Egan, Yang, & Bartlett, 2004; Gill, 2002; Marsick & Watkins, 2003). The factors investigated in the present study are learning culture, empowering leadership, employee participation and corporate communication. The examination of these factors in relation to employee resilience will also be used to measure the convergent validity of the new scale.

Learning culture

In response to the rising demands of marketplace competition, the need to develop an organisational learning culture has received significant attention (Davis & Daley, 2008; Garvin, Edmondson, & Gino, 2008). Learning organisations are agile as they are constantly learning and adapting in innovative ways in response to challenges and in anticipation of changing environmental conditions (Davis & Daley, 2008; Marsick & Watkins, 2003). The

aim of the culture is to break down barriers to learning and encourage proactive, strategic learning and growth at the individual, team and organisation-level. As a great deal of learning occurs through trial and error on the job, it is important that the organisation develops a culture which encourages, supports and rewards the learning process within everyday work routines (Marsick & Watkins, 2003). Development occurs when new practices and procedures are adopted which enhance performance (Davis & Daley, 2008). According to research, learning cultures positively influence employee productivity (Marsick & Watkins, 2003) and job satisfaction (Egan et al., 2004; Marsick & Watkins, 2003), and reduce propensity to turnover (Egan et al., 2004).

The adaptive capacity of the organisation, which has been identified as an important prerequisite for organisational resilience (Chang-Richards et al., 2013), is likely to be enhanced by a learning culture as the employees are constantly encouraged to address challenges and find innovative ways of dealing with changes. Additionally, the employees are likely to have enhanced change readiness due to a flexible mindset: the only constant thing is change (Sundblad, Älgevik, Wanther, & Lindmark, 2013). The proactive and development orientation of organisations with learning cultures and the emphasis on individual level learning suggests that employees within the culture are likely to be more flexible, prepared and supported to successfully adapt to unexpected changes. For this reason, it is expected that this type of organisational culture will make employees more resilient. Therefore, it is hypothesised that:

> Hypothesis 1: Perceptions of a learning culture will be associated with higher levels of employee resilience.

Empowering leadership

The quality and effectiveness of organisational leadership is crucial for the success of any organisational change process (Gill, 2002; A. Gilley, Dixon, & Gilley, 2008). As leaders

are the initial drivers and communicators of the change process it is essential that they appropriately introduce the change, and empower and motivate employees to develop a shared vision and buy into the change strategy (Gill, 2002; A. M. Gilley, 2005). According to Gill (2002), empowered employees are better able to deal with change as they are given the resources and support required to be flexible and adaptable. Employees are empowered by leaders through the provision of knowledge, participative capacity, autonomy, and the enhancement of self-confidence (Arnold, Sharon, Rhoades, & Drasgow, 2000; Gill, 2002). Employees who are made to feel self-efficacious and important are likely to be more resilient as they have a more positive outlook on change and their ability to cope (Harland et al., 2005). Moreover, they are more change ready and motivated as they have been incorporated into the process rather than having change forced onto them. According to Arnold, Sharon, Rhoades & Drasgow (2000), three classifications of leader behaviours that are important for enhancing employee empowerment are: participative decision-making; informing; and showing concern. Research by Gilley (2005) and Gilley, Dixon, & Gilley (2008) also attest that these abilities are important for effectively leading employees through change. Leaders' adoption of behaviours effective for empowering employees is expected to contribute to employees' adaptive capacity and thus enhance employee resilience. This is because empowering leadership provides employees with information on what is going on and an active role in the process which motivates them and provides them with the means to adapt to change. Therefore, it is hypothesised that:

Hypothesis 2: Perceptions of empowering leadership will be associated with higher levels of employee resilience

Employee participation

Employee participation during organisation change involves allowing employees to offer their own ideas in relation to decision making and problem solving, and then consider

these ideas within the change process (Bommer et al., 2005; Bouckenooghe et al., 2009; Gilley et al., 2008). The reciprocal process between the employee and organisation allows the employee to gain more information on matters that concern them directly (Bouckenooghe et al., 2009). Providing employees with a participative role in the change process helps to ensure that employees feel valued and perceive that their views are important to the organisation. This empowers employees and motivates them to support the change process (Bommer et al., 2005). Furthermore, participation helps employees to feel committed and loyal to the organisation, due to the belief in mutual trust and co-operation, and subsequently less resistant to change (Schneider, Brief & Guzzo, 1996; Burnes & James, 1995).

Research has found a positive relationship between employee perceptions of participation and involvement in decision-making, and readiness for organisational change (Eby, Adams, Russell, & Gaby, 2000; Madsen, Miller, & John, 2005; Wanous, Reichers, & Austin, 2000). Wanous, Reichers & Austin (2000) found that employees who perceived a lack of participation in decision-making; such as goal-setting, problem-solving and setting their own work procedures, experienced more cynicism about organisational change, resulting in lower organisational commitment and greater intentions to quit. Moreover, increasing participative decision-making through transformational leadership has been shown to effectively reduce cynicism (Bommer et al., 2005). Wanous, Reichers & Austin (2000) argue that participation reduces cynicism by allowing employees to gain greater understanding of decisions and ensuring that their opinions are accounted for, thus reducing blaming of leaders. Furthermore, Bommer, Rich, & Rubin (2005) state that participation helps employees to see that change is possible and enhances the perceived credibility and trustworthiness of leaders. As employees who have a participative role in change procedures have an enhanced sense of empowerment, change readiness and reduced resistance to change,

it is expected that employee participation will also be related to employee resilience. For this reason it is hypothesised that:

Hypothesis 3: Perceptions of adequate employee participation will be associated with higher levels of employee resilience.

Corporate communication

For organisational change processes to be successful, communication between management and employees is essential (Elving, 2005). Communicating the need and advantage of changing prior to the change process helps to develop change readiness and buy-in (Armenakis & Harris, 2002; Denning, 2005) as employees can see why adaptation is necessary. Outlining the discrepancy between the current state and the desired state of the organisation makes the incentives for change salient and enhances commitment to the change (Lewis, Schmisseur, Stephens, & Weir, 2006). Providing information about what will change and what will remain the same gives employees a clear vision of where the organisation is going and what is expected of them.

Open, detailed and honest communication helps to develop and maintain employee trust in the organisation as there is transparency about what is going to occur (Smith, 2005). When feelings of control of the situation are low, trust helps increase commitment (Neves & Caetano, 2006), and therefore, enhances an employee's propensity to adapt to the change due to the desire to remain within the organisation. Furthermore, it helps to reduce uncertainty and uninformed speculation (DiFonzo & Bordia, 1998). In addition, dialogue allows employees to feel comfortable to discuss their honest concerns and opposing views without negative repercussions (Schultz & John, 2007) and enables innovative alterations to be made to improve the change strategy based on concerns raised in conversation (Ford & Ford, 2010; Gilley et al., 2008). This enhances their perception of value to the organisation and makes the important role the employees play in facilitating the change process salient (Smith, 2005).

Effective communication and dissemination of accurate information throughout change processes has been shown to reduce resistance, uncertainty (Bordia, Hunt, Paulsen, Tourish, & DiFonzo, 2004; Klein, 1996) and anxiety (Miller & Monge, 1985). According to Bordia et al. (2004), communication enhances perceptions of control due to sufficient information about what is happening in the organisation. Therefore it is expected that frequent corporate communication will provide employees with an enhanced capacity to be resilient as they will be more prepared and less anxious about change. For this reason, it is hypothesised that:

Hypothesis 4: Perceptions of effective corporate communication will be associated with higher levels of employee resilience.

Work-related Outcomes of Employee Resilience

Investigating potential work-related outcomes of employee resilience, such as job satisfaction, job engagement, and intentions to turnover is important for determining the extent to which employee resilience is related to positive outcomes for the organisation and employees. Despite the scant research, it is expected that employee resilience will be related to more job engagement, job satisfaction and fewer intentions to turnover. The associations between the work-related outcomes and employee resilience will also be used to test the convergent validity of the EmpRes scale.

Job engagement

Job engagement has been defined as a fulfilling and positive dedication, enthusiasm and immersion in one's work (González-Romá, Schaufeli, Bakker, & Lloret, 2006). Job engagement has been found to lead to positive organisational outcomes such as enhanced performance (González-Romá et al., 2006) and reduced intentions to turnover (Saks, 2006; Schaufeli & Bakker, 2004). According to Saks (2006), engagement can be promoted by the organisation through enhancing organisational support and job characteristics. Moreover job

resources, such as co-worker support, autonomy, feedback on performance and the provision of learning opportunities, have been linked with higher levels of work engagement (Bakker & Demerouti, 2007; Bakker, Schaufeli, Leiter, & Taris, 2008). Longitudinal research by Grunberg, Moore, Greenberg and Sikora (2008) found that employees undergoing long-term change processes reported reduced work engagement and organisational commitment following the change. The researchers postulated that the change damaged the psychological contract between the employer and employees leading to reduced trust and loyalty, and subsequently poor engagement and commitment.

As resilient employees are believed to have the resources required to effectively adapt to change and challenges at work, it is expected that they will view change initiatives as learning and growth opportunities rather than catastrophes or extreme breaches of the psychological contract. For this reason it is expected that employees high in employee resilience will also be more engaged in their job than less resilient employees as they will perceive support from their employer which will encourage them to be dedicated to their work. Therefore it is hypothesised that:

Hypothesis 5: High levels of employee resilience will be associated with high levels of job engagement.

Job satisfaction

Job satisfaction has been defined as the global positive feeling an employee has about their job (Locke, 1976; Spector, 1997). When appraising one's job there are many aspects and interrelationships that lead to high or low satisfaction (Locke, 1976). During times of organisational change, which characterizes most contemporary workplaces, employee perceptions of how the organisation managed the planning of the change, carried out the change, and conducted the follow-up, significantly impacted employee satisfaction. Parlalis

(2011) found that a lack of prior consultation and up-to-date information provided about a proposed restructuring resulted in the majority of employees holding negative attitudes towards the change which hindered their satisfaction with work. In addition, uncertainty during organisational change processes leads to reduced job satisfaction due to a lack of control and consequences of the change being unknown (Nelson, 1995). During change processes employees may perceive uncertainty regarding their current job security, job conditions and role clarity and as a result, experience lowered job satisfaction (Oreg, 2006). As resilient employees behave more positively when confronted with change due to the presence of support and resources, they are better able to adapt to adversity without becoming anxious and overwhelmed. In accordance with findings by Youssef and Luthans (2007) it is hypothesised that:

> Hypothesis 6: High levels of employee resilience will be associated with high levels of job satisfaction.

Intention to turnover

Intention to turnover (propensity of employees to quit their job) has been found to be the best predictor of actual turnover (Kiyak, Namazi & Kahana, 1997). Individuals' evaluations and perceptions of their work conditions shape behavioural outcomes and subsequently can lead to resignation if job evaluations are negative (Barak, Nissly, & Levin, 2001). When employees become dissatisfied with their job and lose commitment toward the organisation, they begin to contemplate leaving. Perceived job availability and market conditions often dictate whether quitting is possible; therefore, turnover often occurs a while after the conscious decision to leave (Barak et al., 2001).

Vakola and Nikolaou (2005) found that highly stressed individuals were less committed to the organisation and had greater intentions to quit their job than less stressed employees. The stressed employees also demonstrated more negative attitudes towards

change interventions as they did not have the means to cope and adapt. In a recent study, high level of adversity quotient (ability to handle adversity and frustration) was associated with greater intentions to stay even when the individual experienced psychological contract breach (Chin & Hung, 2013). The authors argued that these "resilient" employees were able to perform better when confronted with adversity; therefore, they were less likely to want to leave.

Based on the research, it is expected that more resilient employees will have a lower intention to turnover as they will not become highly stressed in response to organisational change. Moreover, resilient employees will have adequate resources to cope with adversity and will subsequently remain satisfied and engaged and be less likely to want to quit. Based on these expectations, it is hypothesised that:

Hypothesis 7: High levels of employee resilience will be associated with low intentions to turnover.

In addition to the examination of these hypotheses, the mediating role of employee resilience in the relationship between organisational enabling factors and work-related outcomes will be investigated. The expected relationships are depicted in Figure 1. No hypothesis has been developed due to the lack of research on the specific nature of the mediating relationship, thus the following research questions is posed:

Does employee resilience have a mediating role in the relationship between organisational factors and work-related outcomes?

Figure 1.

Employee Resilience Mediation Model
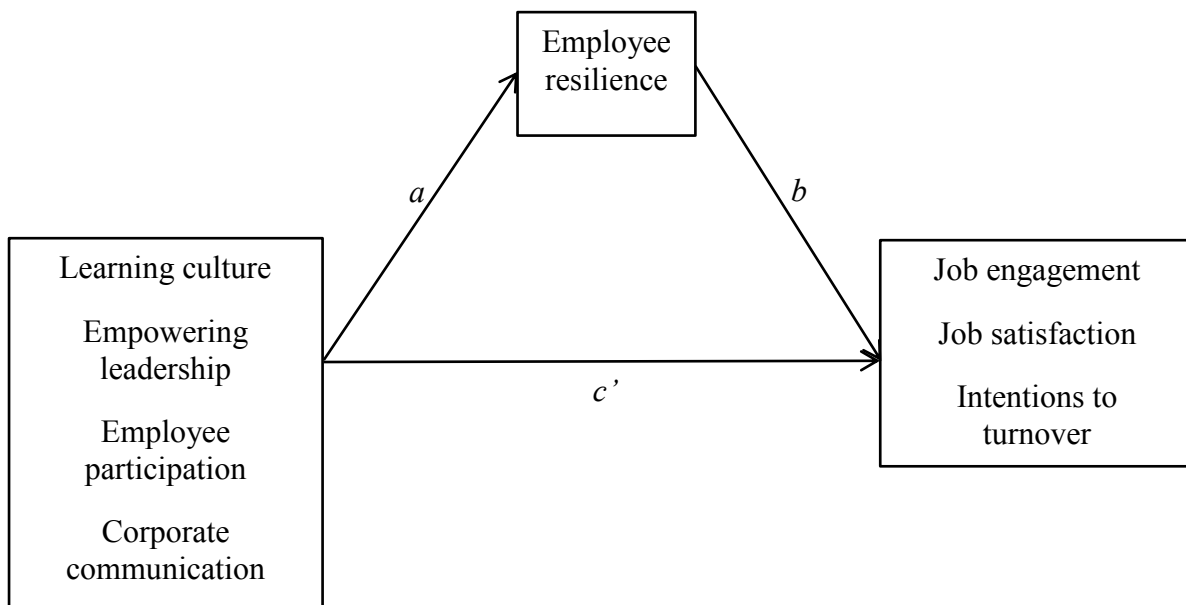
The Present Study

The development of an employee resilience measure is necessary to empirically explore employee resilience as it is defined in this study. Organisational resilience literature has been used to guide the development of the tool; however, the scale represents an employee perspective rather than that of the organisation. This new measure will identify organisational needs for enhancing supportive and effective enabling factors to better prepare their employees for future change and challenges. Assessing the relationship between employee resilience, organisational factors and work-related outcomes will also be important for identifying how organisations can facilitate resilience development, as well as evaluating the benefits of resilience for individuals and the workplace.

There are three central aims of this research. The first is to develop and validate an employee-centric measure of resilience using the conceptual framework previously outlined. The second aim is to investigate the relationship between organisational factors (learning culture, empowering leadership, employee participation and corporate communication) and

employee resilience. The third aim is to examine the relationship between employee resilience and work-related related outcomes (job engagement, job satisfaction and intentions to quit). These aims are investigated in three separate studies utilising data from one student sample and two organisational samples.

Method

Pilot Study

A deductive approach was used in the initial phase of scale development to produce a research informed theoretical definition of employee resilience. This involved combining, adapting and expanding definitions from former literature to conceptualise the specific meaning of the construct (Hinkin, 1995). Previous organisational research, in particular the Resilient Organisations Resilience Benchmark Survey by Resilient Organisations (Stephenson, Seville, Vargo, & Roger, 2010), was used as the basis for developing the main themes that were believed to comprise resilience. These themes guided scale development by providing a framework for generating items that addressed whether employees were resilient in accordance with the definition.

When developing the scale it was understood that for employees to be resilient two conditions must be met. Firstly, employees need to have the individual and organisational resources required to adapt and overcome challenging work circumstances. Several conceptualisations of resilience highlight the importance of sufficient resources to protect individuals from adversity and allow them to demonstrate resilience (Callan, 1993; Ahern, Kiehl, Sole, & Byers, 2006). The presence of adequate resources to deal with difficult situations influences how one cognitively appraises a change situation (Rafferty & Griffin, 2006). Individuals with sufficient resources believe they have what it takes to deal with

difficult situations and thus perceive challenges more positively than negatively. This helps to prevent employees from becoming stressed and overwhelmed, and instead encourages resilient coping. Nevertheless, the presence of resources does not guarantee that employees will utilise them. For this reason, the second condition of employee resilience is that employees actually use the resources. These conditions were considered when wording the scale items to ensure that content validity, an important consideration during item generation (Hinkin, 1995), was established. In total, six theoretically derived themes and twenty three items were developed.

In the second stage of development, the preliminary scale dimensions and items were adapted and improved with the assistance of two Subject Matter Experts (SMEs) from the Management Department at Canterbury University. The use of SMEs was to enhance the content validity of the scale (Sireci & Parker, 2006). Double-barrel items were shortened, and items were made clearer and more employee-specific. The dimensional labels were also altered to more accurately represent the components that were believed to comprise employee resilience. After several reviews of the preliminary scale, 18 items measuring five themes were chosen based on the recommendations from the SMEs and collective agreement by the research group. The themes identified were: *learning orientation*, *proactive posture*, *positive outlook*, *network leveraging* and *adaptive capacity.* An example of some of the items generated within the theoretical dimension of learning orientation include: "I learn from mistakes and improve the way I do my job" and "I re-evaluate my performance and continuously improve the way I do my work". Items for the network leveraging dimension include: "I approach managers when I need their expertise or support" and "I effectively collaborate with others to handle unexpected challenges". The 18 chosen items were compiled into a questionnaire using Qualtrics Survey Software to use for pilot testing.

Item reduction

A pilot study was conducted in order to identify unsuitable items and refine the scale. The reoccurrence of negative comments on scale items by participants was used to identify items that should be removed from the scale.

Pilot Study Participants

The preliminary pilot test of the scale was conducted with a pool of 127 Canterbury University Students, of which 64 % were female and 23 % were male (13% of the participants declined to state their gender). The sample group consisted of 14 postgraduate level students and 113 undergraduate level students. Within the sample, 95 of the students had jobs of which 85 considered 'short term interim jobs', 7 considered 'medium-long term careers' and 3 classified as 'long term interim' or 'volunteer' jobs. Thirty-two of the students did not work.

Pilot Study Procedure

The employee resilience items were presented within a questionnaire on Qualtrics and distributed to arts, business and science students as a link sent via email. The email described the purpose of the study and the prize draw they could enter after survey completion. The participants were advised that the scale would measure their work-related attitudes. They were not specifically informed that resilience was being assessed to ensure that the clarity of the items was the focus of their responses, rather than the construct that the items represented. The participants were asked to rate the extent to which they agreed or disagreed with the series of statements using a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). As the purpose of this pilot study was to identify any issues with item clarity, the participants were provided a space for comments under each item in the scale. The participants were instructed to use the comments section to discuss issues with any of the items and suggest alternative wording or structure for confusing or unclear items. All

participants were informed that their responses would be confidential. As the initial number of students that the research invitation was emailed to was unspecified, the response rate was unknown.

Pilot Study Results

In the comments, the pilot group identified four items that had issues with clarity and comprehensibility. Therefore, these items were removed from the scale before the factor structure was analysed. For example, for the question "I am able to handle a high workload in response to changing work circumstances" participants' comments included: "I think this is an unclear question. What does *changing work circumstances* mean?" and "It depends on what the change is." Five people commented that they did not understand the meaning of the question: "I monitor the market and get an early warning of emerging issues". Nevertheless, this particular item was retained for the next step of the evaluation in order to examine whether it was relevant for a sample of working professionals as opposed to a student sample. In total 14 items remained following the pilot test (see Table 1).

Table 1

14-Item EmpRes Scale

Items	
1.	I effectively adapt to change at work.
2.	I effectively collaborate with others to handle unexpected challenges
3.	I can handle a high workload for long periods of time.
4.	I strive to solve problems at work.
5.	I resolve crises competently at work
6.	I learn from mistakes and improve the way I do my job
7.	I continuously re-evaluate my performance and strive to improve the way I do my work.
8.	I effectively respond to feedback, even criticism
9.	I know who to contact at work when I need specific expertise or support.
10.	I approach managers when I need their expertise or support
11.	I monitor the market and get an early warning of emerging issues
12.	I view a close call at work as a chance for re-evaluation and improvement
13.	I typically perceive change as an opportunity for growth
14.	I tend to find positives from most difficult situations at work

Study 1

The scale was further examined using a sample of professional employees. The purpose of Study 1 was to assess the factor structure, reliability and divergent validity of the scale. In addition, data was collected for investigating the association between employee resilience and organisational factors and work-related outcomes to be explored in Study 2.

Study 1 Participants and Procedure

The sample of professional workers (Sample 1) consisted of 268 employees from an organisation within the finance sector, 62 % were female and 27 % were male (11 % of participants did not state their gender). Their ages ranged from 20 to 69 years, with a mean age of 43 years. The tenure of the participants varied from 3 months to 40 years, with a mean tenure of 7 years.

All employees in the organisation (including the senior management team) received an invitation to participate in the study. The invitation was sent out from the University of Canterbury research group directly to the employees' work email. The organisation was actively advocated the survey, as the survey was being used as their annual employee engagement survey. Out of the 302 employees invited, 268 participated, for a response rate of 89%.

A total of nine measures were collated into an online survey using Qualtrics. These included scales on the organisational factor variables, the Empres Scale, and the work-related outcome variables. The Psychological Empowerment Scale was included for validation purposes. At the start of the survey, the purpose of the research was outlined as well as the conditions under which participation would be carried out. All participants were informed that their responses would be confidential and that only the research team would have access to their responses. A space for comments was provided after each scale so that employees could choose to provide an explanation for their ratings or express their opinions about the scale or survey overall. The participants were not told that the Empres Scale would measure resilience, rather they were informed that it would measure their work related attitudes to ensure that they would not be primed to answer the scale in a particular way. Demographic information (gender, age and tenure) was also collected from participants whom were willing to supply it. Details of the EmpRes and Psychological Empowerment Scale are outlined below. However, the other scales are presented in Study 2 as this is where the collected data was analysed. This study was reviewed and approved by the University of Canterbury Human Ethics Committee.

Study 1 Measures

Each of the scales was rated using a 7-point Likert scale, ranging from *strongly disagree* (1) to *strongly agree* (7).

The 14-item Employee Resilience Scale (EmpRes) developed in the pilot study was used to measure *employee resilience*. Higher scores represent a more resilient employee.

Five items representing two dimensions of Spreitzer's (1995) Psychological Empowerment Scale were included in the questionnaire as a point of comparison to validate the EmpRes Scale against. Three of the items were from the 'competence' dimension which identifies the individual's belief in their capability to perform activities with skill. The other two items were from the 'self-determination' dimension which identifies an individual's autonomous choice to initiate and regulate action. Higher scores indicate a greater degree of psychological empowerment. Example items included: "I have significant autonomy in determining how I do my job" and "I am self-assured about my capabilities to perform my work activities". Two of the items were slightly adapted. Spreitzer (1995) obtained internal consistencies of $\alpha= .84$ and .83 for 'competence' and .80 and .79 for 'self-determination'. For study 1 the same two factors found by Spreitzer (1995) were identified and Cronbach's alphas of $\alpha= .84$ and .78 were obtained for competence and self-determination respectively.

Study 1 Results

The EmpRes Scale data was subjected to an exploratory factor analysis (principal axis factoring extraction) using an oblique (direct oblimin) rotation with Kaiser Normalisation to examine the dimensional structure of the construct. The Kaiser-Meyer-Olkin Measure of sampling adequacy was .93, indicating that a factor analysis was suitable. The items loaded onto two factors, see Table 2, based on Kaiser's criterion (1960) for retaining factors with Eigenvalues >1. Nevertheless, as the factors were so highly correlated r= .72, this suggests that they could be considered one factor rather than two. Also, the Scree Plot indicates a single general factor, as the point of inflection rests at component number two. Moreover, the second factor explains a very small proportion of the variance in resilience scores (factor 2= 4.10%) compared to that of the first factor (factor 1= 40.58%) which confirms that the items

primarily fall into one factor. Based on this premise, cross loadings were not considered

problematic; therefore, items with loadings above 0.3 on both factors were retained.

Moreover, according to Fabrigar, Wegener, MacCallum, and Strahan (1999), Kaisers

Criterion tends to over-extract factors; therefore, it was decided to re-run the analysis

extracting only one factor rather than using Kaisers Criterion for retaining factors. Items with

low loadings, below 0.3, were retained for this step to examine whether they loaded better

using a one-factor constraint.

Table 2

Principal Axis Factor Estimates of the Oblique (Direct Oblimin) Factor Loadings for the 14-Item EmpRes Scale.

		Factors	
Item		1	2
1.	I effectively adapt to change at work.	.75	.05
2.	I effectively collaborate with others to handle unexpected challenges	.38	.39
3.	I can handle a high workload for long periods of time.	.56	-.05
4.	I strive to solve problems at work.	-.02	.67
5.	I resolve crises competently at work	.48	.38
6.	I learn from mistakes and improve the way I do my job	.04	.68
7.	I continuously re-evaluate my performance and strive to improve the way I do my work	.15	.54
8.	I effectively respond to feedback, even criticism	.78	-.02
9.	I know who to contact at work when I need specific expertise or support.	.17	.28
10.	I approach managers when I need their expertise or support	-.11	.66
11.	I monitor the market and get an early warning of emerging issues	.20	.20
12.	I view a close call at work as a chance for re-evaluation and improvement	.16	.60
13.	I typically perceive change as an opportunity for growth	.65	.11
14.	I tend to find positives from most difficult situations at work	.75	-.01

Factor criterion: Eigenvalues >1.

The question "I monitor the market and get an early warning of emerging issues" was

removed from the scale due to having poor factor loadings in the initial factor analysis (below

0.3) as well as in the re-run factor analysis (below 0.4). Furthermore, the item hindered the

reliability of the scale. The removal of the item increased the Cronbach's alpha to α= .89,

thus improving the reliability of the scale. These findings were in line with the scepticism toward the item identified during the pilot study, and suggested that differing understandings and interpretations of the item may have made it unreliable. It is also relevant to note that the item may have been more appropriate for employees from high level management positions; therefore, its removal enhanced the generalizability of the scale for employees across organisational levels. Although the item "I know who to contact at work when I need specific expertise or support" had low loadings in the first factor analysis, its removal did not substantially improve the reliability of the scale (item removal only increased the reliability by .01); therefore, it was retained to ensure that the theoretical construct of employee resilience was adequately covered. Moreover, when factor analysed using the one-factor constraint, a sufficient loading was found (above 0.4). The final pool of 13 items and their factor loadings are reported in Table 3. The one-factor solution of the refined scale explains 42.51% of the total variance. An internal consistency of α= .89 was found.

Table 3

*Principal Axis Factor Estimates of the Oblique (Direct Oblimin) Factor Loadings for the 13
EmpRes Scale Items Retained (original numbering retained)*

Item		Factor 1
1.	I effectively adapt to change at work.	.75
2.	I effectively collaborate with others to handle unexpected challenges	.73
3.	I can handle a high workload for long periods of time.	.48
4.	I strive to solve problems at work.	.59
5.	I resolve crises competently at work	.79
6.	I learn from mistakes and improve the way I do my job	.65
7.	I continuously re-evaluate my performance and strive to improve the way I do my work	.63
8.	I effectively respond to feedback, even criticism	.71
9.	I know who to contact at work when I need specific expertise or support.	.42
10.	I approach managers when I need their expertise or support	.49
12.	I view a close call at work as a chance for re-evaluation and improvement	.69
13.	I typically perceive change as an opportunity for growth	.71
14.	I tend to find positives from most difficult situations at work	.68

Factor criterion: A one-factor solution was specified.

In order to test the discriminant validity of the EmpRes scale, a factor analysis
(principal axis factoring, oblique rotation) was conducted including the items assessing
Psychological Empowerment. This analysis showed that while the Psychological
Empowerment Subscales had positive relationships with Employee Resilience (r= .62, *p* <.01
and r= .37, *p* <.01), the items measuring each construct tended to load on different factors. As
shown in Table 4, the resilience items loaded on factors 1 and 2, whereas the 'self-
determination' items loaded on factor 3 and the 'competency' items loaded on factor 4.
Although the employee resilience items loaded on 2 dimensions rather than the preferred 1,
this two-factor structure was the same as in the earlier factor analysis including only the
employee resilience items, and there were no cross-loadings between the two constructs. The
results support that the EmpRes Scale measures a theoretically different construct from
Psychological Empowerment.

Table 4

Discriminant Validity Testing: Principal Axis Factor Estimates of the Oblique (Direct Oblimin) Factor Loadings for the 13-Item EmpRes Scale and Psychological Empowerment Scale

Item					
Employee resilience		1	2	3	4
1	I effectively adapt to change at work.	.05	**-.68**	.05	-.11
2	I effectively collaborate with others to handle unexpected challenges	.37	**-.45**	-.03	.01
3	I can handle a high workload for long periods of time.	-.02	**-.40**	-.19	-.31
4	I strive to solve problems at work.	**.68**	.01	-.14	-.09
5	I resolve crises competently at work	.37	**-.41**	-.02	-.15
6	I learn from mistakes and improve the way I do my job	**.61**	-.01	.10	-.14
7	I continuously re-evaluate my performance and strive to improve the way I do my work.	**.50**	-.21	.01	.00
8	I effectively respond to feedback, even criticism	.02	**-.75**	.07	.01
9	I know who to contact at work when I need specific expertise or support.	.19	-.16	.16	-.08
10	I approach managers when I need their expertise or support	**.52**	.05	.25	-.02
12	I view a close call at work as a chance for re-evaluation and improvement	**.61**	-.25	-.05	.07
13	I typically perceive change as an opportunity for growth	.10	**-.67**	.12	.06
14	I tend to find positives from most difficult situations at work	.03	**-.67**	.00	-.06
Psychological empowerment					
1	I have significant autonomy in determining how I do my job	.07	-.07	**.69**	-.15
3	I have a chance to use personal initiative in carrying out my work	-.04	-.04	**.86**	-.01
2	I am self-assured about my capabilities to perform my work activities	-.02	-.11	.28	**-.57**
4	I am confident in my ability to do my job	-.06	-.17	.10	**-.76**
5	My job is well within the scope of my abilities	.21	.11	-.03	**-.80**

Study 2

The second study was carried out to examine how the one-factor structure, identified in Study 1, functioned within another organisational sample using Confirmatory Factor

Analysis. Additionally, the reliability and convergent validity were assessed. As the study analysed the relationship between organisational enabling factors, employee resilience, and work-related outcomes across the two samples.

Study 2 Participants and procedure

The second sample (Sample 2) of professional workers was comprised of 115 employees from a civil engineering firm. Of the 115 participants, 80 % were male, 15 % were female and 5 % chose not to state their gender. The participants' ages ranged from 25 to 67 years, with a mean age of 47 years. The average tenure ranged from 2 to 45 years, with a mean tenure of 16 years. Of the 115 participant sample, 21 of the employees did not state their age and 40 declined to state their tenure.

Overall, 253 employees from the organisation received an invitation to participate in the study. These participants were chosen as they were contacts with significant connection to the manager endorsing the survey and provided a range of lower level employees up to top-level managers. The University of Canterbury research invitation was forwarded from the manager directly to the employees' work email. The manager promoted the research by including a personal message outlining the individual and organisational benefits of participating in the research. Out of the 253 employees invited, 115 participated, for a response rate of 45%.

The content of the survey was the same as for the sample in Study 1 (Sample 1) and was also administered using Qualtrics. Again, the questionnaire began with outlining the purpose of the research and the consent process. Then the same scales were included to measure learning culture, empowering leadership, employee participation, corporate communication, employee resilience, job engagement, job satisfaction, and intentions to turnover. The only change was the exclusion of the 'Psychological Empowerment Scale' as

the EmpRes Scale had already been validated with this measure. Lastly, participants were asked to enter demographic information on their gender, age and tenure and after which they were thanked for their participation.

Study 2 Measures

Descriptive statistics, correlations and reliabilities are presented in Table 6 and Table 7. The full questionnaire can be viewed in Appendix A.

All of the items were rated using a 7-point Likert scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Learning culture was measured using five items from Marsick and Watkins (2003) Dimensions of the Learning Organisation Questionnaire . The word "learning" in question four was slightly reworded to "exploring new and improved ways of working". Example items include: "In my organisation, people openly discuss mistakes in order to learn from them" and "In my organisation, people view problems in their work as opportunities to learn". Higher ratings correspond to a more learning oriented company culture. Reliability statistics obtained by Yang, Watkins, and Marsick (2004) identified Cronbach's alpha scores ranging between α= .80 and .87 for the three factors that the items were taken from. For Sample 1 and 2, Cronbach's alphas of α= .85 and .79 were found. For the two samples, the results of exploratory factor analyses (principal axis factoring) indicated that there was only one factor that made up the scale; therefore, the scale was analysed as a whole rather than according to the separate subscales. This decision was supported by the high correlations (r = .75, .74 and .71) between the subscales as identified in the study by Yang et al. (2004)

The Empowering Leadership Questionnaire (Arnold et al., 2000) was utilised to measure the level of *empowering leadership* within the organisation. Five questions across three dimensions ('participative decision-making', 'informing', and 'showing

concern/interacting with the team') were chosen from the orginal five dimension scale to measure empowering leadership. The words "my manager" were included at the top of the items to indicate that the following items referred to the employees perceptions of their manager. The phrase "work group" was adapted to "team" to make the questions clearer and shorter. A sixth item was developed in line with similar questions from the construct of 'informing'. This item was "my manager explains work-related documentation and procedures to the team". Other questions include: "my manager gives all team members a chance to voice their opinions" and "my manager shows concern for work group members' well-being". Higher scores indicate a greater degree of empowering leadership. Arnold and his colleagues found high Cronbach's alpha scores of α= .92, .91 and .94 for the three factors (Arnold et al., 2000). For these samples a high internal consistency was also obtained, with Cronbach's alpha scores of α= .95 and .93. Factor analyses revealed only one main factor, thus the scale was examined in its complete form rather than the separate dimensions identified by Arnold and colleagues (2000).

To measure *employee participation* in decision-making, items from Bouckenooghe's and colleagues Organizational Change Questionnaire-Climate of Change, Processes, and Readiness (Bouckenooghe et al., 2009) were used. Three of the eleven items from the 'participation' dimension of the scale were used and slightly adapted to the context. A fourth item was developed to assess employee influence over work processes: "my organisation encourages staff to discuss out-dated regulations and new ways of working". Other items included "my organisation takes staff comments/suggestions into account" and "my company has frequent consultation processes with its staff." Higher scores indicate a greater amount of employee participation. Reliability analyses in previous research found an internal consistency of α= .79 for the one-factor 'participation' subscale (Bouckenooghe et al., 2009).

Cronbach's alpha's of α= .85 and .79 were found for the samples of the present study. A factor analysis extracted one factor.

To assess the extent to which the senior management team communicated with the rest of the staff, a specific *corporate communication* scale was developed. The scale comprised four items which focused on whether the communication was regular, open and effective. Some of the items included: "There is frequent and effective communication from the leadership team" and "I receive regular communications regarding the company's objectives and the progress made against them". Higher scores indicate a greater extent of corporate communication. The internal consistencies ranged from α= .79 to .75 across the two samples and there was one main factor identified.

The 13 item Employee Resilience Scale (EmpRes) was used to measure *employee resilience*. High scores represent a more resilient employee. Results from Sample 1 and Sample 2 demonstrated high Cronbach's alphas of α= .89 and .85.

Saks (2006) Job Engagement Scale was used to measure *job engagement*. An additional item from Saks (2006) 'Organizational Engagement Scale' was also added to the five items. Responses for each of the statements were given on a 7-point Likert scale rather than a 5-point scale which had been used for the original scales. Modifying the scale from five anchors to seven was suitable as it was consistent with the other scales used in the questionnaire. Furthermore, the additional scale levels allowed for more variation. Higher scores indicate that employees are more engaged in their jobs. Examples of items were: "I really "throw" myself into my job" and "I am highly engaged in this organization". Saks (2006) obtained a high internal consistency of α= .82 and a two-factor structure. A slightly lower internal consistency was reported for this study with Cronbach's alphas of α= .78 and .76 across the two samples. For these samples, all items loaded onto a single factor.

Employee *job satisfaction* was measured using all three items from the Job Satisfaction Subscale of The Michigan Organizational Assessment Questionnaire (Cammann, Fichman, Jenkins, & Klesh, 1983). The items included "All in all, I am satisfied with my job", "In general, I do not like my job" and "In general, I like working here". High scores represent high job satisfaction for question 1 and 3. However, as item 2 was reverse coded, lower ratings on this item related to a greater degree of job satisfaction. A high Cronbach's alpha of α= 0.84 was found by Bowling and Hammond (2008). Lower internal consistencies were reported for these samples with scores of α= .76 and .62. In line with the one-factor structure identified by Cammann et al. (1983), this study also found that the scale comprised of one factor.

Employee's *intention to turnover* was measured using an adapted Turnover Intentions scale by Vandenberghe and Bentein (2009). The three scale items had been modified from those used by Hom and Griffeth (1991) and Jaros (1997). For the current study, the words "quit" and "quitting" were replaced with "leave" and "leaving" to reduce the likelihood of participants under reporting intentions to leave due to negative perceptions of the term "quit". The items included: "I often think about leaving my organisation" and "I intend to search for a position with another employer within the next year". An employee's intention to leave the organisation was measured using a 7-point Likert scale rather than a 5-point scale as used by Vandenberghe and Bentein (2009). This was to ensure that ratings were comparable across scales. Higher scores represent a high intention to turnover. Vandenberghe and Bentein (2009) found high internal consistency scores of α= .84 and .80. For these samples, even higher Cronbach's alphas were obtained, with scores of α= .91 and .93 for the one-factor scale.

Study 2 Results

Confirmatory factor analysis

A Confirmation Factor Analysis (CFA) using AMOS was conducted to examine whether the one-factor model could be reliably replicated in Sample 2. The goodness-of-fit indices confirmed that the one-factor structure provided a good fit to the data (CFI= .973, RMSEA= .036, Chi square= 74.352, df= 65, $p = 0.20$). In addition, all items loaded significantly onto the latent variable, with coefficients ranging from .34 to .71 (shown in table 5).

Table 5

Standardised Factor Loadings for Items from the One-Factor EmpRes Scale.

Item		Factor 1
1.	I effectively adapt to change at work	.66
2.	I effectively collaborate with others to handle unexpected challenges	.51
3.	I can handle a high workload for long periods of time	.56
4.	I strive to solve problems at work	.50
5.	I resolve crises competently at work	.40
6.	I learn from mistakes and improve the way I do my job	.62
7.	I continuously re-evaluate my performance and strive to improve the way I do my work	.66
8.	I effectively respond to feedback, even criticism	.47
9.	I know who to contact at work when I need specific expertise or support	.60
10.	I approach managers when I need their expertise or support	.34
12.	I view a close call at work as a chance for re-evaluation and improvement	.71
13.	I typically perceive change as an opportunity for growth	.61
14.	I tend to find positives from most difficult situations at work	.70

Factor criterion: Eigenvalues >1.

To ensure that the one-factor structure was a superior fit to the two-factor structure that was initially identified in Study 1, a second CFA was conducted. The results showed that the fit statistics were very similar to those for the one-factor structure; although marginally better for the two-factor structure (CFI= .975, RMSEA= 0.034, and Chi square= 72.579, df =

64, $p = 0.216$), the difference in Chi square was not significant. In addition, according to the model comparison criterion presented by Cheung and Rensvold (2002), a change in CFI that is smaller than or equal to 0.01 is acceptable in order to assume that the models are equivalent. The model comparison indicated a CFI change of 0.002 therefore this criterion is met and the models are not significantly different. Moreover, the two-factor structure has a very high covariance of 0.94 between the two factors, which suggests that the factors are not very distinct. These findings support the one-factor model of employee resilience postulated.

Descriptive Statistics

The descriptive statistics, correlations and reliabilities of the research variables for Sample 1 and Sample 2 are presented in Table 6 and Table 7, respectively. For Sample 1, significant, positive correlations were found between each organisational factor and employee resilience. Moreover, employee resilience was positively and significantly related to job engagement and job satisfaction, and negatively related to intentions to turnover. In Sample 2 employee resilience was positively related to all of the organisational factors; however, only significantly related to empowering leadership and corporate communication. As with Sample 1, Sample 2 had significant positive correlations between employee resilience and job engagement and job satisfaction, and significant negative correlations with intentions to turnover in Sample 2. These findings show some preliminary support for the hypotheses that higher levels of organisational factors are related to higher levels of employee resilience. Likewise, the correlations endorse the hypotheses that suggest higher levels of employee resilience are associated with higher levels of job engagement, job satisfaction and lower intentions to turnover.

Table 6

Sample 1 Means, Standard Deviations, Coefficient Alphas (in Brackets on the Diagonal), and Correlations between Variables.

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	42.43	10.69	-												
2. Gender	-	-	.02	-											
3. Tenure	6.96	6.43	.49**	-.03	-										
4. LC	4.49	1.12	.10	-.03	.13	(.85)									
5. EL	5.48	1.09	.01	.01	-.02	.31**	(.95)								
6. EP	4.66	1.14	.11	.03	.16*	.70**	.37**	(.85)							
7. CC	4.52	1.12	.00	.11	.04	.60**	.33**	.60**	(.79)						
8. ER	5.72	0.60	.08	.03	.11	.35**	.28**	.31**	.25**	(.89)					
9. PEC	5.95	0.81	.15*	.10	.03	.17*	.13*	.17*	.17*	.62*	(.84)				
10. PES	5.57	1.11	.16*	.08	.12	.34*	.31**	.39**	.25**	.37*	.45**	(.78)			
11. JE	5.12	0.86	.07	-.06	.20**	.36**	.26**	.33**	.27**	.46**	.26**	.30**	(.78)		
12. JS	5.53	1.05	.17*	.01	.23**	.47**	.31**	.42**	.36**	.34**	.28**	.39**	.55**	(.76)	
13. IT	3.13	1.66	.05	-.02	-.02	-.51**	-.31**	-.45**	-.31**	-.30**	-.24**	-.32**	-.45**	-.65**	(.93)

Note: N=268; * $p < .05$, ** $p < .01$; LC= Learning Culture; LE= Empowering Leadership; EP= Employee Participation; CC= Corporate Communication; ER = Employee Resilience; PEC= Psychological Empowerment Communication; PES= Psychological Empowerment Self-Determination; JE= Job Engagement; JS= Job Satisfaction; IT= Intentions to Turnover

Table 7

Sample 2 Means, Standard Deviations, Coefficient Alphas (in Brackets on the Diagonal), and Correlations between Variables.

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. Age	46.79	9.77	-										
2. Gender	-	-	.31	-									
3. Tenure	14.16	10.40	.48**	.04	-								
4. LC	4.62	0.91	.01	.03	-.07	(.79)							
5. EL	5.21	1.03	-.08	-.05	-.11	.35**	(.93)						
6. EP	4.81	0.93	.09	.13	.07	.55**	.38**	(.79)					
7. CC	4.60	1.02	.09	.22*	-.09	.56**	.29**	.57**	(.75)				
8. ER	5.71	0.55	.15	.11	.13	.14	.27**	.18	.25**	(.85)			
9. JE	5.28	0.80	.24*	.16	.25*	.29**	.20*	.24*	.30**	.62**	(.76)		
10. JS	5.65	0.92	.09	.13	.19	.37**	.22*	.35**	.36**	.27**	.56**	(.62)	
11. IT	2.55	1.38	-.18	-.25**	-.08	-.33**	-.35**	-.36**	-.34**	-.22*	.42**	.47**	(.91)

Note: N=115; * p <.05, ** p <.01; LC= Learning Culture; LE= Empowering Leadership; EP= Employee Participation; CC= Corporate Communications; ER = Employee Resilience; JE= Job Engagement; JS= Job Satisfaction; IT= Intentions to Turnover

When comparing across the samples, it is clear that the means and dispersion for the Empres Scale are very similar. Sample 1 and 2 obtained high means of M= 5.72 and 5.71, respectively, out of 7. The variation in scores was small and consistent across the samples, with standard deviations of SD= 0.60 and 0.55 respectively. The high Cronbach's alphas (α= .89 and .85 respectively) demonstrate that the items consistently measure the same construct. In both samples the EmpRes Scale is correlated with organisational factors and work-related outcomes in the expected direction which shows support for convergent validity.

Antecedents and work-related outcomes of employee resilience

To test the hypotheses and mediating effect of employee resilience, analyses were conducted using Hayes and Preacher's (2011) MEDIATE Macro for SPSS. This method allows for the calculation of bias-corrected bootstrap confidence intervals (.95) for the indirect effect, utilising 10,000 samples. Employee resilience was tested as the mediator of the relationship between the independent variables; learning culture, empowering leadership, participation and corporate communications; and the three dependent variables; job engagement, job satisfaction and intentions to turnover. This analytic strategy also allows for the testing of the hypotheses, as the mediation technique calculates the total, direct and indirect effects of the four organisational factors and the three organisational outcomes through the mediator of employee resilience. Significant indirect effects (if the confidence intervals did not include zero) were used to indicate mediation.

Samples 1 and 2 were combined, and organisational sample was controlled for during the analyses to ensure that the organisation-specific features did not mask the true effects. Participant demographics, such as gender, tenure and age were not controlled for individually as the samples were very different in these dimensions, especially gender and tenure, and; therefore, using the organisational sample as a covariate adequately accounted for these differences. In addition, many participants chose not to answer demographic questions so it

was deemed appropriate to control for the organisational sample instead. The results for each of the dependent variables (job engagement, job satisfaction, intentions to turnover) are presented in Appendix B, C and D.

Figure 1 depicts the research model and the different paths that were tested. These include the direct effect of the antecedents on the outcomes (c' path), the direct effect of the antecedents on the mediator (a path), and the direct effect of the mediator on the outcomes (b path). Relationships that were measured but not represented in the figure include the total effect (C path), and indirect effect (ab path) of the antecedents on the outcomes.

Direct effects

The total effect of the antecedents on the outcomes, when the mediator was not taken into account (C path), showed that learning culture and manager effectiveness had direct positive effects on job engagement ($b = .156$, $p <.01$ and $b = .098$, $p <.05$), job satisfaction ($b = .255$, $p <.01$ and $b = .120$, $p <.05$) and intentions to turnover ($b = .487$, $p <.01$ and $b = .240$, $p <.01$). Employee participation was not significantly related to job engagement (.068, $p = .14$) or job satisfaction, although approaching significance for the later ($b = .122$, $p = .051$); however, it did show a direct effect on intentions to turnover ($b = .243$, $p <.05$). Corporate communication was not significantly related to job engagement ($b = .051$, $p =.304$), job satisfaction ($b = .069$, $p = .221$) or intentions to turnover ($b = -.038$, $p = .662$).

With regard to the direct effects of predictors on the mediator (a path), higher levels of both learning culture and manager effectiveness significantly predicted higher levels of employee resilience ($b = .086$, $p < .05$ and $b = .096$, $p < .01$ respectively); therefore, hypotheses 1 and 2 were supported. Hypotheses 3 and 4 were not supported as employee participation and corporate communication were not significantly related to employee resilience ($b = .045$, $p = .25$ and $b = .024$, $p = .49$ respectively).

In accordance with hypotheses 5, 6 & 7, the associations between mediator and outcomes (*b* path) identified that employee resilience had a positive significant direct relationship with job engagement (*b* = .603, *p* < .01, job satisfaction (*b* = .303, *p* < .01) and intentions to turnover (*b* = .324, *p* <.05).

When assessing the direct effects of the antecedents while the mediator was controlled for (*c'* path), there was a positive direct effect of learning culture on job satisfaction. For intentions to turnover, there was a positive direct effect of learning culture, empowering leadership and employee participation when employee resilience was controlled for. No direct effects were present for job engagement when the mediator was held constant.

Indirect effects

With regards to the research question testing for the mediating role of employee resilience, the indirect effects of the antecedents via the mediator (*ab* path) indicated that employee resilience mediated the relationship between learning culture, and the dependent variables of job engagement (*b* = .052, *95%CI* [.001,.108]) and job satisfaction (*b* = .026, *95%CI* [.002,.061]), but not intentions to turnover. In essence, a greater learning culture is associated with higher employee resilience which in turn relates to more job engagement and job satisfaction. Additionally, employee resilience acted as a mediator in the relationships between the independent variable empowering leadership and the dependent variables job engagement (*b* = .058, *95%CI* [.019,.103]), job satisfaction (*b* = .029, *95%CI* [.007,.060]) and intentions to turnover (*b* = .031, *95%CI* [-.074,-.003]). This means that higher levels of empowering leadership predicts higher levels of employee resilience, which in turn relates to greater job engagement, job satisfaction and reduced intentions to turnover. Employee resilience did not have a mediating effect on the relationship between employee participation and corporate communication and work-related outcomes.

Discussion

The construct of resilience has become popular within research and practice due to organisations' increasing need to effectively adapt and overcome challenges during turbulent times (Lengnick-Hall et al., 2011; Shin et al., 2012). Despite employees contributing a great deal to the resilience of their organisations, resilience has scarcely been examined at the employee level whilst also accounting for organisational context. The aim of the present research was to construct a valid measure of employee resilience and to determine the relationship between employee resilience, organisational factors and work-related outcomes. It was predicted that a learning-oriented culture, empowering leadership, employee participation, and effective corporate communication would act as enabling conditions for the development of employee resilience, and therefore there would be a positive relationship between these factors and employee resilience. In addition, it was expected that high levels of employee resilience would be positively related to job engagement and job satisfaction, and negatively related to intentions to turnover.

Summary of Main Findings

Scale development

The initial EFA conducted in Study 1 on Sample 1 identified that the EmpRes Scale comprised two main dimensions. However, after further investigation of the high factor correlations, eigenvalues and recommendations about over-extraction by Fabrigar et al. (1999) it was decided that the scale best represented a single factor structure. The CFA conducted in Study 2 using Sample 2 confirmed that the one-factor structure provided a good fit. In addition, the scale demonstrated high internal consistency in both samples. Another EFA in Study 1 supported discriminant validity as the EmpRes Scale items assessed a different construct than both the Psychological Empowerment Subscales. Furthermore, the

EmpRes Scale showed convergent validity in Study 2 by being correlated in the expected direction with organisational factors and work-related outcomes.

Hypothesis testing- Antecedents and Outcomes

The hypotheses regarding the antecedents of employee resilience were partially supported. Learning culture (Hypothesis 1) and empowering leadership (Hypothesis 2) were positively related to employee resilience as expected, while employee participation (Hypothesis 3) and corporate communication (Hypothesis 4) were not significantly related to resilience. Support for Hypothesis 1 is in line with predictions that learning culture enhances adaptive capacity, an important characteristic of employee resilience. Although there is no previous empirical support, this finding suggests that the learning culture enables employees to be more resilient as they are accustomed to the process of constantly reflecting on and altering their behaviour in a flexible way. Support for Hypothesis 2 is consistent with expectations that leaders play an important role in empowering employees (Gill, 2002) and subsequently enhancing the capacity of employees to be resilient and adapt to change.

Lack of support for Hypothesis 3 was contrary to expectations based on other factors such as change readiness (Eby et al., 2000; Madsen et al., 2005; Wanous et al., 2000). While change readiness is a different construct to resilience, it was conceivable employees who have a participative role are more change ready and also more resilient. The lack of a significant relationship is surprising given that empowering leadership contains 'participative decision-making' items, and employee participation had a significant relationship with employee resilience. Nevertheless, as the questions in the empowering leadership scale are focused around the employee's manager rather than the company as a whole, this may be the cause of the discrepancy between findings. This would mean that the employees felt that, although their managers facilitated participation, the organisation and department were less forthcoming about including the employees in higher level decision-making. Further research

is needed to understand why the relationship between employee participation and employee resilience was obscured. An examination of the difference between organisational-level and manager-level enabling factors is also worth investigation.

The failure to support Hypothesis 4 is inconsistent with the expectation that communication enhances change readiness and reduces resistance, uncertainty (Klein, 1996) and anxiety (Miller & Monge, 1985) and therefore will lead to increased resilience. Lack of support was unexpected as the Empowering Leadership Scale includes items on 'informing' which are similar to items in the Corporate Communications Scale. Nevertheless, as the Corporate Communications Scale measures communication at the organisational, departmental and leadership team level rather than the managerial level, this may account for the variation in results. The employees may perceive good communication from their immediate manager; however, may not experience frequent and effective communication about what is happening in their department or organisation as a whole. As discussed, further research is required.

The three hypotheses predicting the relationship between employee resilience and work-related outcomes were all supported. Employee resilience was positively associated with job engagement (Hypothesis 5) and job satisfaction (Hypothesis 6), and negatively related to intentions to turnover (Hypothesis 7). Support for Hypothesis 5 is in line with previous research on the positive relationship between job resources and work engagement (Bakker & Demerouti, 2007; Bakker et al., 2008). Similarly, support for Hypothesis 6 is consistent with research by Youssef and Luthans (2007) in that employee resilience is associated with job satisfaction. Moreover, it shows some evidence for the prediction that the presence of resources and the flexible approach of resilient employees may make them less anxious and more satisfied during adversity and challenges. Support for Hypothesis 7 is in line with predictions that resilient employees will have fewer intentions to turnover.

Research Question - Indirect Effects

The study also examined whether employee resilience mediated the relationship between organisational factors and work-related outcomes. The results revealed that employee resilience mediated the relationship between learning culture and job engagement as well as learning culture and job satisfaction. Employee resilience also acted as a mediator for the relationship between empowering leadership and each of the three organisational outcomes (job engagement, job satisfaction and intentions to turnover). Even though there were still direct effects of learning culture on job engagement and job satisfaction, and of empowering leadership on intentions to turnover when controlling for employee resilience, it appears that resilience plays an important role in these relationships. Furthermore, it indicates that these organisational factors may impact employee levels of resilience, which in turn influences organisational outcomes. There were no mediating effects of employee resilience on the relationships between employee participation and corporate communication on the three organisational outcomes.

Implications

Taken together, the present studies provide several theoretical and practical implications. The main theoretical contribution of this research is the provision of a new model of employee resilience that identifies resilience at the employee level whilst simultaneously accounting for the organisational environment. This model takes a dynamic perspective of employee resilience by providing a framework for how organisations can provide enabling conditions to foster employee resilience and subsequently enhance work-related outcomes. This is a novel approach, as previous workplace resilience research has commonly focused on organisational resilience (McManus et al., 2008; Seville et al., 2006) (Baird et al, 2013; Chang-Richards, 2013), and trait oriented scales of individual resilience

(Block & Kremen, 1996; Connor & Davidson, 2003). The model demonstrates that a learning culture and empowering leadership provide appropriate conditions for the development of employee resilience, which results in more job engagement and job satisfaction. In addition it shows that empowering leadership leads to lower intentions to turnover when employee resilience is the mediator. Although the research findings only offer preliminary support for the model and the mechanisms through employee resilience relates to organisational factors and work-related outcomes, the new model adds to the research domain by providing a new perspective on resilience within the workplace.

Another implication of the research is the provision of a new tool to measure employee resilience that has shown initial evidence for adequate measurement properties. This makes a contribution to research by providing a means of measuring employee resilience in a reliable and valid way. A rigorous and empirically founded method for developing and refining scale items (Hinkin, 1995) resulted in a one-factor scale with good internal consistency across two organisational samples. Convergent validity was supported through relationships in the expected direction with other related constructs. Moreover, discriminant validity was supported through findings that employee resilience was a distinct construct to psychological empowerment. Preliminary support for the scale's reliability and validity in two organisations from different sectors suggests that the scale is generalizable; however, future research should continue to examine the scale within other organisations to further support this claim. It is recommended that the EmpRes Scale is assessed for convergent and discriminant validity using additional scales to make these findings more robust. Moreover, an examination of the criterion-related validity is proposed for future research.

The lack of support for relationships between employee participation, corporate communication and employee resilience should not be considered evidence that these

variables are not applicable to the model. Rather, these findings pose practical implications that are useful for future research. As previously discussed, these measures are mostly organisation focused while the participation and communication oriented items of the Empowering Leadership Scale are manager-oriented. Support for the manager-oriented relationships but not the organisational relationships suggest that employees perceive their manager as enabling more participation and better communication than the organisation. It is speculated that this could be due to the increased salience of the employee's closest manager whom they are likely to be in regular contact with. As a consequence, the manager-oriented factors may be more important for developing resilience than organisational factors. With that said, learning culture, an organisation related factor, was significantly associated with employee resilience. More research is required to examine whether manager factors are more important for employee resilience than organisational factors. Additionally, refinement of the measures and a better contextualisation of the organisation-level enablers may be useful for future research.

Considering the impact of job engagement, job satisfaction and intentions to turnover on organisational success and productivity (Baumruk, 2004; Chiok Foong Loke, 2001), the mediating relationships identified in this study are of practical importance. Although employee resilience did not fully explain all of the relationships, the mediating relationships show that organisations can have some effect on several important outcomes by fostering employee resilience. Based on these findings, organisations can introduce training to create a more enabling change environment (e.g., enhancing the learning culture and empowering leadership) and instruction on utilising organisational resources. Previous studies have outlined several methods for developing learning cultures which organisations could utilise, such as learning circle interventions (Walker, Henderson, Cooke, & Creedy, 2011) and action learning programmes (Faull, Hartley, & Kalliath, 2005). Based on recommendations by

Stinson, Pearson, and Lucas (2006), organisations should foster the creation a shared vision, promote knowledge sharing, encourage critical reflection on one's own work and that of others, and create a safe environment for mistakes to be made and learnt from. Moreover organisations should reward learning, creativity and innovation (Marsick & Watkins, 2003) to reinforce the learning culture. Likewise, research identifies the benefits of engaging in empowering leadership training to enhance organisational outcomes (Albrecht & Andreetta, 2011). Training could be used to teach managers to effectively communicate with their staff and encourage team members to voice their views, which would then be actively considered during decision making.

Recognition of the importance of resilience may influence recruitment, selection and training interventions. It has been suggested that as employee resilience leads to positive work-related outcomes, organisations may try to recruit and select for resilience in order to establish a workforce that is able to cope and perform effectively during stressful organisational changes (cf Shin et al., 2012). However, the present study demonstrates the important role of adequate resources and an enabling organisational environment for enhancing employee resilience therefore these factors may be targeted instead. As continuous organisational change is increasingly prevalent, it is more sustainable to create a resilience-fostering environment and provide training on how to utilise resources, rather than selecting based on a baseline level of competence. For this reason, organisations will benefit from developing a culture of learning and establishing empowering leadership. In addition, training employees on how to access resources and support, and ensuring that they do utilise them will all contribute to creating a more resilient workforce and subsequently a more resilient organisation.

Limitations and future research

Despite the interesting contributions of this research, it is important to acknowledge potential areas of weakness. Firstly, the self-report structure of the questionnaire means that ratings may have been susceptible to social desirability bias. According to Donaldson and Grant-Vallone (2002), participants tend to over-report desirable behaviours to portray a positive self-image to others. Likewise, the study respondents could have subconsciously or deliberately rated the resilience items high to make themselves seem more capable of dealing with changes than they are in reality. This may have subsequently inflated the strength of the relationships between employee resilience, organisational factors and work-related outcomes. Moreover, as the self-report ratings were the only data source and the EmpRes Scale only measures what the respondents say they do rather than measuring the display of actual resilient behaviours, there is no way to check employee ratings against the ratings given by others. Nevertheless, attempts were made to alleviate the risk of social desirability biases by not labelling the construct that was being measured. Due to this effort, the self-reported results are considered representative of employee resilience. To reduce the likelihood of bias in future research it may be useful to use ratings from multiple sources, such as managers, and examine the degree to which high resilience scores correspond to the display of resilient behaviours during challenging circumstances at work.

Another limitation of the study is the adoption of a cross-sectional design which hinders the ability to measure the developable nature of resilience. The results show that individuals who perceive a greater learning culture and empowering leadership demonstrate higher employee resilience; however, as employee resilience is only measured at one point in time it cannot be proven that enhancing these factors develops employee resilience. In addition, the cross-sectional design precludes claims of causality and directionality of the

relationships. Therefore it is unclear whether employee resilience impacts perceptions of the presence of enabling factors or whether the enabling factors dictate levels of resilience. Moreover, it is plausible that the work-related outcomes may actually be predictors of resilience. For example low intentions to turnover, due to a lack of alternative job prospects (Gleasonwynn & Mindel, 1999; Meyer & Allen, 1991), may result in increased motivation to be adaptive to ensure ones job is retained. As a result, individuals may be forced to be more resilient to cope with challenges and remain within their job. For future research, a longitudinal design is recommended to examine whether the construct can be developed and enable the assessment of relationship directionality.

The low proportion of variance explained by the EmpRes Scale is potentially another limitation of the study. The analysis revealed that the one factor solution only accounted for 42.51% of the overall variance in scores, which suggests that there may be other components that the scale fails to acknowledge. Although the 13 item scale accounts for less than half of the variance, it is considered an appropriate starting point for the development process of the scale. Future research should aim to further refine the scale to capture more of the variance in scores.

To continue the validation process of the scale it is recommended that the model is tested within organisations from different sectors and contexts. This will provide evidence as to whether the model is generalizable across different work settings. In addition, it may be interesting to measure other organisational factors, such as organisational justice, which may also create enabling conditions for enhancing employee resilience. This would help to provide a fuller understanding of how to foster resilience within the workforce. Moreover, an analysis of the mechanisms and processes through which the enabling factors lead to greater employee resilience is worth investigating as well as those that link employee resilience with

work-related outcomes. An understanding of these mechanisms would strengthen the model and provide insight into the functioning of resilience within the work context.

Conclusion

The present study was the first to develop an employee-specific scale of resilience within a conceptual framework that acknowledged the pivotal role of organisational enabling conditions. Through multiple analyses, the new tool has demonstrated adequate measurement properties as well as convergent and discriminant validity. Moreover, the findings have revealed initial support for the model linking employee resilience to organisational factors and work-related outcomes. These findings suggest that organisations play a role in enhancing their employees' resourcefulness and capacity to deal with challenges, which subsequently influences outcomes for the organisation. Employee resilience appears to be an important construct to look at for future research.

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    800.

Appendices

Appendix A- Online Questionnaire Content

Information and Consent Outline

Employee Work Perceptions and Attitudes Questionnaire

You are invited to take part in a survey regarding your views and attitudes towards your organisation and your role as an employee. The survey is completely anonymous.

You will be presented with a series of statements concerning different areas of work – click the response option that best reflects your opinion. You will also have the opportunity to write your comment more extensively on the topics covered if you wish. This will allow you to offer context for your responses to the items, or add information that you consider important and was not covered in the survey.

The survey should take 10-15 minutes to complete.

The results from the survey will be used to describe employee experiences and views of management strategies at your organisation. The general results of this survey may also be published in academic journals or conference proceedings.

Participant Rights

The survey is administered from the University of Canterbury, and the responses are kept on a secure server located at the University. **Your responses are completely anonymous – no one will know if you have responded unless you choose to tell them. You do not need to provide any identifying information, and your answers cannot be connected to you.**

Only the three researchers in the process, Morgana Hodliffe, Dr Katharina Näswall and Dr Joana Kuntz, will have access to your responses for the purpose of data collection and statistical processing. Nobody at your organisation will ever see individual responses. Your organisation will receive a final report, which will include only summarised data.

You may withdraw your participation, including answers already given, by closing the survey and not returning to submit your responses. Because the survey is anonymous, we cannot retrieve and remove your responses after submission.

If you wish to enter the **draw to win a $200 supermarket voucher** please enter your email address at the end of the survey. This information will be stored separately from the survey responses and cannot be linked to your survey answers.

Participant Consent

By completing the survey, you indicate that you have consented to a) having your responses added to a global summary of results for your organisaion's use, and b) the publication of the results on academic journals, with the understanding that your identity and responses are protected.

We hope to have you on board. Please do not hesitate to contact us if you experience technical difficulties or require further information regarding the survey process.

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Scales

> **Learning Culture** (These headings were not included in the questionnaire sent to participants)

We are interested in your opinion regarding the learning and development environment at your organisation. Please indicate your response to each question using the 7- point scales

(1- strongly disagree to 7- strongly agree):

1. At my organisation, people openly discuss mistakes in order to learn from them
2. At my organisation, people give open and honest feedback to each other
3. At my organisation, people view problems in their work as opportunities to learn
4. At my organisation, people are rewarded for exploring new and improved ways of working
5. My organisation enables people to get needed information at any time, quickly and easily

Do you have any comments regarding the work environment at your organisation?

> **Empowering Leadership**

We are interested in your perception of your manager. Please indicate your response to each question using the 7- point scales

(1- strongly disagree to 7- strongly agree):

My manager…

1. Encourages team members to express ideas/suggestions
2. Listens to my team's ideas and suggestions
3. Gives all team members a chance to voice their opinions
4. Explains his/her decisions to the team
5. Explains work-related documentation and procedures to the team
6. Explains rules and expectations to the team
7. Cares about team members' personal problems
8. Shows concern for team members' well-being
9. Treats team members as equals
10. Takes time to discuss team members' concerns patiently

Do you have any comments with regards to the questions above?

> **Employee Participation**

We would like to know the level of participation staff have in your organisation. Please indicate your response to each question using the 7- point scales

(1- strongly disagree to 7- strongly agree):

1. My organisation takes staff comments/suggestions into account

2. Front line staff can raise topics/issues for discussion
3. My organisation has frequent consultation processes with its staff
4. My organisation encourages staff to discuss out-dated regulations and new ways of working

Do you have any comments with regards to the questions above?

Corporate Communication

Now we would like to know your views on your organisation's communications. Please indicate your response to each question using the 7- point scales

(1- strongly disagree to 7- strongly agree):

1. I receive regular communications regarding my organisation's objectives and the progress made against them
2. Regular and open communications are a feature of my branch/department
3. There is frequent and effective communication between branches/departments
4. There is frequent and effective communication from my organisation's leadership team

Do you have any comments with regards to the questions above?

Employee Resilience

The following questions address how you manage challenges that arise as part of your role. Your honest and accurate self-assessment is very important to us. Please indicate your response to each question using the 7- point scales

(1- strongly disagree to 7- strongly agree):

1. I effectively adapt to change at work
2. I effectively collaborate with others to handle unexpected challenges
3. I can handle a high workload for long periods of time
4. I strive to solve problems at work
5. I resolve crises competently at work
6. I learn from mistakes and improve the way I do my job
7. I continuously re-evaluate my performance and strive to improve the way I do my work
8. I effectively respond to feedback, even criticism
9. I know who to contact at work when I need specific expertise or support
10. I approach managers when I need their expertise or support
11. I view a close call at work as a chance for re-evaluation and improvement
12. I typically perceive change as an opportunity for growth
13. I tend to find positives from most difficult situations at work

Do you have any comments that might assist us with the interpretation of your responses to the previous questions?

We would now like to know more about how you feel about your work. Please indicate your response to each question using the 7- point scales

(1- strongly disagree to 7- strongly agree):

Job engagement

1. I really throw myself into my job
2. Sometimes I am so into my job that I lose track of time
3. My job is all consuming; I am totally into it
4. My mind often wonders and I think of other things when doing my job
5. I am highly engaged in this job
6. I am highly engaged with my organisation

Job satisfaction

1. All in all, I am satisfied with my job
2. In general, I do not like my job
3. In general, I like working at my organisation

Intentions to turnover

1. I often think about leaving my organisation
2. I intend to search for a position with another employer within the next year
3. I intend to leave my organisation in the near future

Do you have any comments with regard to the questions above?

Demographic Information

Finally, we would like to know a little bit about you for research purposes. Please note that this information will be kept confidential.

1. What is your age?
2. What is your gender?
3. How long have you worked at this organisation (years)?

Below you can provide any further comments, concerning the survey or anything we have not asked about that you would like to express.

Predicting Job Engagement. Unstandardized Regression Coefficients for Direct and Indirect Effects (combined samples)

| | Employee Resilience | Dependent variable: Job Engagement | | Mediator: Employee Resilience | | |
| | Direct effects a path | Total effect C | Direct effects c1 and b path | Indirect effect ab path | CI indirect effect[a] | |
	Estimate (se)	Estimate (se)	Estimate (se)	Estimate (se)	LLCI	ULCI
Constant	4.488** 0.196	3.168** 0.279	0.461 0.396			
LC	0.086* 0.038	0.155** 0.055	0.103* 0.050	0.052* 0.027	0.001	0.108
EL	0.096** 0.029	0.098* 0.041	0.041 0.038	0.058* 0.021	0.019	0.103
EP	0.045 0.038	0.068 0.055	0.041 0.050	0.027 0.026	-0.024	0.078
CC	0.024 0.035	0.051 0.049	0.037 0.045	0.014 0.022	-0.027	0.059
OrgID	-0.001 0.063	0.162 0.091	0.163* 0.082			
Employee Resilience (b path)			0.603** 0.068			

Note: N = 377; 95% bias corrected confidence intervals; LLCI − Lower Limit of 95% Confidence Interval; ULCI − Upper Limit of 95% Confidence Interval; 10000 bootstrap samples; *p <.05, **p <.01. LC= Learning Culture; EL= Empowering Leadership; EP= Employee Participation; CC= Corporate Communications; ER = Employee Resilience; SE= Self Efficacy; JE= Job Engagement; JS= Job Satisfaction; IT= Intentions to Turnover

Appendix B- Mediation Analysis – Job Engagement

Predicting Job Satisfaction. Unstandardized Regression Coefficients for Direct and Indirect Effects (combined samples)

	Employee Resilience	Dependent variable: Job Satisfaction			
				Mediator: Employee Resilience	
	Direct effects a path	Total effect C	Direct effects c1 and b path	Indirect effect ab path	CI indirect effect[a]
	Estimate (se)	Estimate (se)	Estimate (se)	Estimate (se)	LLCI ULCI
Constant	4.488** 0.196	2.716** 0.318	1.358** 0.490		
LC	0.086* 0.038	0.255** 0.062	0.230** 0.062	0.026* 0.016	0.002 0.061
EL	0.096** 0.029	0.120* 0.047	0.091 0.047	0.029* 0.013	0.007 0.060
EP	0.045 0.038	0.122 0.062	0.109 0.062	0.014 0.014	-0.012 0.044
CC	0.024 0.035	0.069 0.056	0.062 0.056	0.007 0.011	-0.014 0.031
OrgID	-0.001 0.063	0.107 0.103	0.108 0.102		
Employee Resilience (b path)			0.303** 0.084		

Note: N = 377; 95% bias corrected confidence intervals; LLCI – Lower Limit of 95% Confidence Interval; ULCI – Upper Limit of 95% Confidence Interval; 10000 bootstrap samples; *p* <.05, **p* <.01. LC= Learning Culture; EL= Empowering Leadership; EP= Employee Participation; CC= Corporate Communications; ER = Employee Resilience; SE= Self Efficacy; JE= Job Engagement; JS= Job Satisfaction; IT= Intentions to Turnover

Intentions to Turnover. Unstandardized Regression Coefficients for Direct and Indirect Effects (combined samples).

	Employee Resilience	Dependent variable: Intentions to Turnover				
				Mediator: Employee Resilience		
	Direct effects a path	Total effect C	Direct effects c1 and b path	Indirect effect ab path	CI indirect effect[a]	
	Estimate (se)	Estimate (se)	Estimate (se)	Estimate (se)	LLCI	ULCI
Constant	4.488** 0.196	8.143 0.485	9.597** 0.753			
LC	0.086* 0.038	-0.487** 0.096	-0.459** 0.096	-0.028 0.020	-0.074	0.001
EL	0.096** 0.029	-0.240** 0.072	-0.209** 0.073	-0.031* 0.018	-0.074	-0.003
EP	0.045 0.038	-0.243* 0.095	-0.229* 0.095	-0.014 0.016	-0.050	0.014
CC	0.024 0.035	0.038 0.086	0.045 0.085	-0.008 0.013	-0.034	0.017
OrgID	-0.001 0.063	-0.544 0.157	-0.545** 0.156			
Employee Resilience (b path)			-0.324* 0.129			

Note: N = 377; 95% bias corrected confidence intervals; LLCI – Lower Limit of 95% Confidence Interval; ULCI – Upper Limit of 95% Confidence Interval; 10000 bootstrap samples; *p <.05, **p <.01. LC= Learning Culture; EL= Empowering Leadership; EP= Employee Participation; CC= Corporate Communications; ER = Employee Resilience; SE= Self Efficacy; JE= Job Engagement; JS= Job Satisfaction; IT= Intentions to Turnover

Appendix D- Mediation Analysis – Intentions to Turnover