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Dissertation

**A culture of genius or a culture of  
development?**

**How an organisation's mindset shapes  
workplace climate and employee behaviour**

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**Declaration**

I declare that this dissertation is all my own work and the sources of information and material I have used (including the Internet) have been fully identified and properly acknowledged as required.

## **Abstract**

The purpose of this study was to investigate the relationships between organisational mindset – whether a company is perceived to view talent as fixed or malleable (Murphy & Dweck, 2010; Canning et al., 2018) – psychological safety climate (Edmondson, 1999) and resilient and innovative work behaviour. An additional aim was to explore whether psychological safety climate mediates the relationship between an organisation’s mindset and employee resilience and innovation. The study was conducted by using a cross-sectional survey design including 103 UK workers from a variety of job roles and industries. To examine the hypotheses correlation and linear regression analyses were conducted. Consistent with the expectations, organisational mindset was found to predict psychological safety, and psychological safety was found to predict employee resilience and two forms of innovation – namely idea search and involving others. However, the mediation of the relationships between organisational mindset and employee innovation and resilience through psychological safety was not supported. This study extends the literature on organisational mindset and helps to advance our understanding of the micro-foundations of company culture (Schein, 2010; Canning et al., 2018). Theoretical and practical implications are discussed alongside study limitations.

## Table of Contents

<b>Chapter 1 - Introduction.....</b>	<b>1</b>
1.1 Introduction and rationale .....	1
1.2 Research aims, objectives and contribution .....	4
<b>Chapter 2 – Literature review .....</b>	<b>5</b>
2.1. Two views of human nature: incremental and entity theories of intelligence .....	5
2.1.1. Growth mindset theory: self-theories and goals foster resilient versus helpless responses .....	6
2.2. A culture of genius or a culture of development? – organisational mindset as a core belief .....	9
2.3. Organisational mindset and resilient and innovative work behaviour .....	11
2.3.1. The definition of resilient and innovative work behaviour .....	11
2.3.2. Organisational mindset and resilient work behaviour .....	12
2.3.3. Organisational mindset and employee innovation .....	14
2.4. Psychological safety – a climate conducive to learning .....	14
2.4.1. Organisational mindset beliefs and psychological safety climate.....	16
2.4.2. Psychological safety climate and resilient work behaviour .....	18
2.4.3. Psychological safety and innovative behaviour .....	18
Summary.....	19
<b>Chapter 3 – Methods.....</b>	<b>20</b>
3.1. Participant Sample .....	20
3.2. Procedure.....	21
3.2.1. Research aims and research method .....	21
3.2.2. Procedures .....	22
3.2.3. Ethical considerations .....	22
3.3. Measures.....	23
3.3.1. Organisational lay theories of intelligence.....	23
3.3.2. Psychological safety climate .....	23
3.3.3. Employee resilience .....	24
3.3.4 Innovative work behaviour .....	24
3.4. Data analysis .....	25
<b>Chapter 4 – Findings.....</b>	<b>26</b>
4.1. Descriptive statistics .....	27

4.2. Correlation analyses.....	27
4.2.1. Organisational mindset and employee resilience .....	28
4.2.2. Organisational mindset and innovative behaviour .....	28
4.2.3. Organisational mindset and psychological safety climate .....	29
4.2.4. Psychological safety and employee resilience .....	29
4.2.5. Psychological safety and innovative behaviour .....	30
4.3. Hypothesis testing.....	30
4.3.1. Hypothesis 1: Organisational growth mindset will be positively related to psychological safety.....	31
4.3.2. Hypothesis 2: Psychological safety will be positively related to employee resilience .....	31
4.3.3. Hypothesis 3: Psychological safety will be positively related to employee innovative behaviour. ....	32
4.3.4. Hypothesis 4: Psychological safety will mediate the relationship between organisational growth mindset and employee resilience.....	33
4.3.5. Hypothesis 5: Psychological safety will mediate the relationship between organisational growth mindset and employee innovative behaviour. ....	33
Summary.....	33
<b>Chapter 5 – Discussion .....</b>	<b>34</b>
5.1. Limitations .....	40
5.2. Strengths.....	41
5.3. Practical implications .....	42
5.4. Recommendations for future research.....	44
<b>Chapter 6 – Conclusion .....</b>	<b>44</b>
<b>References.....</b>	<b>46</b>
<b>Appendices.....</b>	<b>55</b>

# Chapter 1 - Introduction

## 1.1 Introduction and rationale

The contemporary business environment is often referred to as the 'VUCA world'. 'VUCA' is an acronym that stands for volatility, uncertainty, complexity and ambiguity and it describes the challenges organisations must face in the globalised knowledge era (Edmondson, 2018). Given this increasingly complex and turbulent business climate, it is through constant learning that organisations can adapt to the changes in the environment. The need for employees to engage in behaviours that enable learning to occur – such as voicing new ideas, collaborating with other members of the organisation and experimenting with new ways of doing things – is probably more prevalent than ever before (Edmondson, 1999; Nembhard & Edmondson, 2011). Posing a challenge to companies to manage threats inherent in employees voicing concerns, opinions or simply being different (Edmondson & Lei, 2014). In the last two decades, this increased need for learning has drawn the attention of organisational research to psychological safety. Psychological safety refers to the shared belief held by employees that the work environment is safe for interpersonal risk-taking (Edmondson, 1999). Studies consistently show that by effectively mitigating the perceived risks of learning, psychological safety climate facilitates key learning behaviours, such as speaking up, collaboration, and experimentation (Nembhard & Edmondson, 2011). Furthermore, recent research suggests that these activities promote the additional highly desired employee behaviours – of innovation (Gu, Wang & Wang, 2013; Post, 2012) and resilience (Carmeli, 2007; Carmeli & Gittell, 2009; Schein & Bennis, 1965; Schein, 1985).

Employee resilience and innovation have been identified as essential to organisational adaptability in today's uncertain and dynamic business environment (Tonkin, Malinen, Näswall & Kuntz, 2018; West & Farr, 1989). Innovative work behaviour is described as "behaviours through which employees generate or adopt new ideas and make subsequent efforts to implement them" (Lukes & Stephan, 2017 p. 4), whereas employee resilience has been recently defined as the ability to effectively learn from mistakes and continually adapt at work (Näswall, Kuntz & Malinen, 2015). This definition therefore views employee resilience as a developable capacity, rather than a stable trait, suggesting that employee resilience is facilitated by the organisational context, including organisational culture and leadership (Näswall, Kuntz & Malinen, 2015). It is important to note that studies suggest the contextual nature of both innovative and resilient employee behaviour. More specifically, research has found that learning-oriented, collaborative and supportive culture fosters employee resilience and innovation (Kuntz et al., 2016; Nilakant et al., 2016; Park et al., 2014; Patterson et al., 2005).

Although psychological safety climate – and the resilient and innovative behaviour it promotes – have been argued to be vital to the survival of companies in today's ever-changing business environment (e.g. Edmondson, 1999; Nembhard & Edmondson, 2011), there has been a limited integration of theory to explain the underlying processes by which psychological safety develops and influences workplace outcomes (Newman, Donohue & Eva, 2017).

These underlying processes might originate from the deeply held and largely unconscious layer of the organisational culture – the core beliefs. Schein (2010) argues that culture is to a group what personality is to an individual. The behaviour that results is visible, but the forces underneath that cause certain kinds of behaviour cannot be seen. According to Schein, basic assumptions are

at the deepest layer of the culture and have become taken for granted. In this sense, they are implicit beliefs that guide behaviour, determining how organisational members perceive, think about, and feel about things (Schein, 2010; Argyris & Schon, 1996).

One set of implicit theories which have been shown to shape motivational and behavioural responses to situations, both as a personal and as an organisational core belief, are the core assumptions about the malleability of human intelligence and ability (Dweck, 1999; Murphy & Dweck, 2010; Emerson, 2015).

Traditionally conceptualised as an individual difference, lay theories can vary between people from more of a fixed or entity theory of intelligence to more of a malleable or incremental theory (Dweck & Leggett, 1988). Individuals with more of an entity theory of intelligence see intellectual ability as something innate and largely fixed. Whereas, at the other end of the spectrum, those with more of an incremental theory see intellectual ability as something that can be developed with time and effort (Dweck, 1999). Studies suggest that an incremental theory of intelligence inspires learning goals such as a focus on self-improvement, and thereby promotes resilient responses to difficulty (Blackwell et al., 2007). Furthermore, research found a positive relationship between learning orientation (achievement goal closely tied to the incremental theory of intelligence) and innovative behaviour (Janssen & Van Yperen, 2004).

One of the most exciting findings of recent research by Canning et al., (2018), is that organisational mindset – whether a company is perceived to view talent as fixed or malleable (Murphy & Dweck, 2010) – functions as an organisational core belief shaping cultural norms and values (Schein, 2010). In a recent laboratory study, just as incremental theorists, growth mindset organisations were perceived to primarily endorse mastery goals, that is, value and focus on

learning. Subsequently, organisations with incremental beliefs are likely to promote a climate conducive to learning (psychological safety) that fosters employee resilience and innovation.

Based on the above outlined argument, this dissertation proposed organisational mindset theory to explain the underlying processes through which psychological safety develops and influences work outcomes.

## **1.2 Research aims, objectives and contribution**

This study seeks to investigate the relationship between organisational mindset – whether a company is perceived to view talent as fixed or malleable (Murphy & Dweck, 2010; Canning et al., 2018) – psychological safety climate (Edmondson, 1999) and resilient and innovative work behaviour. An additional aim is to explore whether psychological safety climate mediates the relationship between an organisation's mindset and resilient and innovative work behaviour.

There have only been a few laboratory studies (Murphy & Dweck, 2010; Emerson & Murphy, 2014; Emerson & Murphy, 2015; Emerson, 2015, Murphy & Dweck, 2016) and one field study (Canning et al., 2018) exploring the effects of organisational mindset, given that it is a fairly new concept. Therefore, this study contributes to a new and less explored area of research, and it may help to advance our understanding of the micro-foundations of organisational culture (Schein, 2010; Canning et al., 2018). Furthermore, this study seeks to address a gap in the literature by proposing organisational mindset theory to explain the underlying processes through which psychological safety develops and influences work outcomes.

One of the most valuable contributions of this research is that it suggests a new lever for intervention for organisations – shaping the core mindset beliefs

(Canning et al., 2018). Decades of research suggest that people's personal mindset beliefs are malleable (e.g., Dweck, 1999), therefore organisational mindset beliefs are likely to be similarly malleable (Murphy & Dweck, 2010). In addition, this study may help organisations by providing a framework for understanding psychological safety climate and employees' innovative and resilient work behaviour.

## **Chapter 2 – Literature review**

This chapter provides an overview of the current literature on relevant topics. It includes personal and organisational lay theories of intelligence, psychological safety climate and resilient and innovative work behaviour. Furthermore, the definitions and theories of each concept are discussed and it is explored how these concepts are interrelated.

### **2.1. Two views of human nature: incremental and entity theories of intelligence**

“Whether you think you can or think you can't—you are right. “(popularly attributed to Henry Ford)

There are a plethora of quotes on the power of beliefs and the human mind. Today, science has caught up and proven that individuals' implicit beliefs of human nature – their self-theories – have important consequences for their motivation, behaviour and ultimately achievement (Dweck, 1999).

Lay or implicit theories of intelligence refer to the way individuals conceive of intelligence – individuals' personal philosophy about the malleability of human intelligence and ability (Dweck & Leggett, 1988).

People who believe that intellectual ability is malleable and something that can grow are often referred to as incremental theorists or growth-minded individuals. They believe intelligence is a work in progress, something that can evolve with practice, effort or experience. Whereas, on the other end of the spectrum, individuals who believe that intellectual ability is a fixed quality are referred to as entity theorists or fixed-minded people. They believe intelligence is something that cannot be changed, but rather a fixed, inborn trait (Dweck, 1999).

Self-theories have been found to be relatively stable individual differences (e.g., Robins & Pals, 2002), suggesting that they are real part of individuals' personality, intertwined with such things as their self-concept, identity and self-esteem (Epstein, 1990; Dweck, 1999). However, it is important to note that, similar to many knowledge structures, they can be taught or experimentally primed. This means that people's self-theories are malleable and highly dynamic (Dweck, 1999; Dweck & Grant, 2008).

### **2.1.1. Growth mindset theory: self-theories and goals foster resilient versus helpless responses**

The growth mindset theory proposes that self-theories influence outcomes, such as academic achievement, through the series of social-cognitive motivational factors (Dweck, 1999; Dweck & Grant, 2008). The different motivational factors and the processes through which self-theories produce their effects are discussed below.

**First**, studies suggest (e.g. Hong et al, 1999) that **self-theories inspire different achievement goals**. Entity theorists, who believe that intelligence is an innate, fixed quality that only some people possess, are more likely to adopt performance goals. This means that they tend to be concerned with winning

positive judgements of their competence and avoiding negative ones. In contrast, since incremental theorists believe in the malleability of intelligence, they tend to pursue learning goals and focus on increasing their competence (Elliott & Dweck, 1988; Dweck, 1999). It is important to note that this relationship between self-theories and achievement goals is a direct, causal relationship (Dweck, 1999). In studies where individuals were experimentally primed with either an entity or incremental theory, the self-theory in question predicted their goal choices. This means that changing individuals' self-theories (temporarily) also changed their goals (Dweck & Leggett, 1988).

**Second, self-theories and goals together set up a framework that shapes individuals' beliefs about effort and attributions for setbacks** (Dweck & Grant, 2008). Within the entity-theory framework, effort measures intelligence and if someone has to work hard at something, it means they are not good at it. In contrast, within the incremental-theory framework, effort is what allows people to fully use their ability and realise their potential (Leggett & Dweck, 1986 as cited in Dweck, 1999). Furthermore, entity and incremental theorists have different attributions for setbacks and failures. Entity theorists are more likely to have helpless attributions for setbacks. This means that they tend to attribute their failure to a lack of ability, a stable cause outside one's influence (Weiner, 1985; Peterson & Seligman, 1984; Blackwell et al., 2007). In the incremental-theory framework, by contrast, setbacks are an expected part of long-term learning, providing valuable information about how to improve and therefore are not really failures (Dweck, 1999).

Studies suggest that individuals' **self-theories and goals**, through the above discussed different beliefs and attributions, **foster mastery-oriented versus helpless responses to difficulty** (Dweck, 1999). Yeager and Dweck (2012) defined mastery-oriented or resilient responses as any behavioural, attributional or emotional response to a challenge that is positive or beneficial

for development. Whereas, they describe helpless responses, as any response to a challenge that is negative or not beneficial for development.

Within the entity-theory framework, individuals are focused on measuring themselves from their performance and so when they encounter failure, they are more likely to fall into a helpless response (Dweck, 1999). For instance, studies found that entity theorists tend to be vulnerable to negative feedback, prone to disengage from challenging learning opportunities, or have the intent to cheat (Mangels et al., 2006; Hong et al., 1999; Blackwell et al., 2007). In contrast, incremental theorists tend to be less threatened by the potential of failure, as it is not viewed as indicting their abilities. Therefore, in case of difficulty they are more likely to adopt a mastery-oriented response, exerting resilience and perseverance in the face of setbacks (Dweck, 1999; Yeager & Dweck, 2012). More specifically, research has found that incremental theorists are more likely to pursue remedial action aimed at improving future performance (Hong et al., 1999), or to seek and apply new strategies in the face of setbacks (Blackwell et al., 2007; Robins & Pals, 2002).

However, it is important to note that, although self-theories are closely tied to certain achievement goals, they predict helpless versus mastery responses to difficulty both directly and non-directly (by encouraging certain goals) (Erdley, Cain, Loomis, Dumas-Hines & Dweck, 1997; Dweck & Grant, 2008). Furthermore, it is also worth noting that both performance and learning goals are desirable and are essential to success. The problem arises when proving ability becomes so important to individuals that it drives out learning goals (Dweck, 1999). For instance, in a study by Stone (1998), when asked about the value students placed on the performance and learning-goal task, entity and incremental theorists looked similar. However, when confronted with the choice, entity theorists opted for the performance task, where it was guaranteed that they would succeed, rather than risked invalidating their

intelligence by learning something difficult and potentially making mistakes. Moreover, studies suggest the sub-division of performance goals into approach and avoidance as a newer contribution to the elements in the theory (Emerson, 2015). These types of performance goals, performance-avoidance (valuing avoiding failure) and performance-approach (valuing achieving success) are theoretically distinct in their associated coping and self-esteem patterns (Elliot, 1999). However, much of self-theories research has conceptualised these goals as interchangeable (Dweck & Leggett, 1988; Elliott & Dweck, 1988), or has measured only one type of performance goal (e.g., Bong, 2008).

## **2.2. A culture of genius or a culture of development? – organisational mindset as a core belief**

Recent research (Canning et al., 2018; Murphy & Dweck, 2010) suggests that through their values and norms, organisations can also endorse a culture of genius and talent or a culture of growth and development. Organisational lay theories of intelligence refer to the shared beliefs of individuals within a company that intelligence and ability is either a malleable quality or a fixed and stable trait (Murphy & Dweck, 2010). For instance, organisations may espouse a growth mindset by focusing on fostering and rewarding the development of employees. Alternatively, other organisations may be perceived as endorsing a fixed mindset by primarily focusing on recruiting and promoting individuals believed to be naturally talented (Canning et al., 2018). Individuals' perceptions of these organisational lay theories of intelligence, like personal mindsets, have been shown to shape people's cognition, affect and behaviour in important ways. For instance, previous laboratory research by Murphy & Dweck (2010) showed that organisational mindset shapes individuals' self-presentations when applying to

organisations. When applying to entity organisations, individuals displayed their intelligence and individual awards. In contrast, they displayed their passion and history of overcoming obstacles when applying to incremental ones. Accordingly, recent research by Canning et al. (2018), conducted with over 500 employees of seven Fortune 1000 companies, suggests that organisational mindset functions as a core belief (Schein, 2010) that predicts cultural norms of organisations.

It is in line with the argument made by Schein (2010) on the analogy between an individual and an organisation. He argues that basic assumptions, which he defines as the essence and deepest layer of culture, are like implicit beliefs that guide behaviour, determining how organisational members perceive, think about and feel about things (Schein, 2010; Argyris & Schon, 1996). Schein describes culture as “a pattern of shared basic assumptions learned by a group as it solved its problems of external adaptation and internal integration, which has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems” (Schein, 2010 p. 18). Therefore, it suggests that culture is a set of core beliefs, such as the organisational belief about the fixedness or malleability of intelligence, that shape members’ perceptions, affect and behaviour (Schein, 2010). What are the employee behaviours that organisational lay theories of intelligence might influence? In the current research, it was explored whether organisational mindset might impact important organisational outcomes that are often tied to personal lay theories of intelligence (or their allied achievement goals) – resilient and innovative work behaviour.

### **2.3. Organisational mindset and resilient and innovative work behaviour**

This section explores the interrelations between organisational lay theories of intelligence and resilient and innovative work behaviour. However, at first, it is important to clarify the definitions that are adopted in this dissertation.

#### **2.3.1. The definition of resilient and innovative work behaviour**

In this dissertation, employee resilience is conceptualised as an “employee capability, facilitated and supported by the organisation, to utilise resources to continually adapt and flourish at work, even if/when faced with challenging circumstances” (Näswall, Kuntz & Malinen, 2015 p. 1). This definition of employee resilience is in line with the contemporary view of resilience as a dynamic capability that entails both ongoing development and preparedness for future adversity (Carvalho & Areal, 2015; Kuntz, Connell & Näswall, 2017). Most importantly, it views employee resilience as a behaviour capability that can be developed, rather than a stable trait (Hystad, Eid, Johnsen, Laberg, & Bartone, 2010). Therefore, it suggests that employee resilience is facilitated by the organisational context, including organisational culture and leadership (Näswall, Kuntz & Malinen, 2015).

Innovative behaviour is defined here as “behaviours through which employees generate or adopt new ideas and make subsequent efforts to implement them” (Lukes & Stephan, 2017 p. 4). Since creativity is often referred to as idea generation, it is often viewed as the first step of innovation (Amabile, 1996). However, it is worth noting that idea generation is not a prerequisite for innovation, as adopting new ideas from existing knowledge sources and implementing them also count as ways of engaging in innovation. In this sense, although creativity may underpin innovation, the two constructs are by no means identical (Anderson, De Dreu, & Nijstad, 2004).

Studies shed light on the contextual nature of both resilient and innovative behaviour. More specifically, research has found that learning-oriented, collaborative and supportive culture fosters employee resilience and innovation (Kuntz et al., 2016; Nilakant et al., 2016; Park et al., 2014; Patterson et al., 2005). Therefore, it supports the argument of this dissertation that organisational culture and its mindset are likely to play an important role in enabling these behaviours.

### **2.3.2. Organisational mindset and resilient work behaviour**

As initially outlined, self-theories and their allied goals foster helpless versus mastery-oriented responses to difficulty (e.g., Blackwell, 2007). Organisational mindset, through shaping organisational norms and values, is also likely to affect employees' goal choices and responses to setbacks. This is because individuals are motivated to embody the organisational norms and thereby reap the associated rewards through, for instance, promotions (Berson et al., 2008; Murphy & Dweck, 2010). In an entity organisation, members are likely to be rewarded for demonstrating their ability and talent. When employees perceive that the organisation holds fixed mindset beliefs, they are motivated to deliver high performance by showing successes and avoiding failures, which may result in a helpless response to difficulty. In contrast, in an incremental organisation, people are likely to be rewarded for developing their capabilities. Perceiving that the organisation holds growth mindset beliefs motivates employees to focus on learning and view failure as a learning opportunity (Murphy & Dweck, 2010, Canning et al., 2018).

A preliminary study (Emerson, 2015) examining the relationship between organisational lay theories of intelligence, perceived goal choices of the organisation and cheating behaviour – a form of self-defensive, helpless response to difficulty – provided some promising findings supporting this

argument. In this recent laboratory study, participants perceived the incremental organisation to give higher value to learning (endorse mastery goals) compared to the entity organisation, whereas, perceived the entity organisations to primarily value avoiding failure (endorse performance-avoidance goals). Furthermore, when faced with a demanding task, participants who learned about the entity organisation tended to self-enhance by inflating their performance more compared to the people who learned about the incremental organisation. Taken together, these findings suggest that, just as entity theorists, in an environment that espouse a belief that intelligence is a fixed trait, people may feel that they have to prove their intelligence at all times by avoiding failures at all costs (value avoiding failure). Therefore, they are more likely to have a helpless response (i.e., engage in cheating behaviour) to difficulty. In contrast, in an incremental organisation the emphasis is on learning and self-improvement (value learning), thus people are likely to be less concerned with looking smart, but rather focus on self-growth (less likely to cheat) (Murphy & Dweck, 2010; Emerson, 2015).

Hence, it can also be expected that people in incremental organisations, just like incremental theorists, respond with remedial actions after setbacks, such as attempting to learn from their mistakes (Murphy & Dweck, 2010; Emerson, 2015). Accordingly, as noted earlier, studies found that learning-oriented work cultures foster employee resilience (Kuntz et al., 2016; Nilakant et al., 2016).

Based on the above-outlined findings, this study expected to find a positive relationship between organisational mindset and employee resilience.

### **2.3.3. Organisational mindset and employee innovation**

As initially outlined, innovative behaviour is about the generation, adaptation and implementation of new ideas (Lukes & Stephan, 2017). Therefore, it requires risk-taking and experimentation (Anderson, Potočnik & Zhou, 2014). Research has shown that entity beliefs and performance goals reduce risk-taking and engagement with challenging tasks because people do not want to be seen as someone who lacks ability (Nussbaum & Dweck, 2008). Alternatively, research suggests that there is a positive relationship between mastery orientation and innovative behaviour (Janssen & Van Yperen, 2004). Consistent with these findings at the individual level, recent research on organisational mindsets (Canning et al., 2018) has shown that organisations embracing a growth mindset are evaluated as having a culture that supports innovation (Canning et al., 2018). Furthermore, studies on innovative behaviour suggest that learning-oriented and supportive work environments foster employee innovation (Park et al., 2014; Patterson et al., 2005).

Thus, this study expected to find a positive relationship between organisational mindset and innovative work behaviour.

### **2.4. Psychological safety – a climate conducive to learning**

Psychological safety is broadly defined as a work climate characterised by interpersonal trust and mutual respect in which individuals are comfortable being and expressing themselves. More specifically, psychological safety refers to employees' perception related to the degree of interpersonal threat in their work setting (Edmondson, 1999; Edmondson, 2018). It has been argued that people engage in a tacit calculus at micro-behavioural decision points, in which one assesses the interpersonal risk associated with a given behaviour. In this way, due to different expectations about the interpersonal

consequences, an action, such as asking for help or admitting a mistake, might be unthinkable in one work environment but readily taken in another (Edmondson, 2004; Nembhard & Edmondson, 2011). In psychologically safe environments, individuals feel that their actions and opinion are valued and will not result in negative consequences, therefore, they feel safe to take interpersonal risks. Studies consistently show that by effectively mitigating the perceived risks of learning, psychological safety is centrally tied to key learning behaviours, such as speaking up, collaboration, and experimentation (Nembhard & Edmondson, 2011).

The concept of psychological safety finds its roots in classic research on organisational change by Schein and Bennis (1965). Similarly to recent research, Schein (1985) argued that psychological safety plays an important role in enabling successful adaptation to change by mitigating defensiveness or “learning anxiety”, that occurs when employees are presented with data that contradicts their expectations.

Edmondson (1999) argued that psychological safety is a group-level phenomenon, as employees’ perceptions of feeling safe to speak up may vary from team to team. Some of this variance can be attributed to local managers’ behaviours, which may convey varying messages about the consequences of engaging in interpersonally risky behaviours, such as admitting error or asking for help (Edmondson & Lei, 2014). However, researchers have also studied psychological safety at the organisational levels of analysis (e.g., Baer & Frese, 2003; Carmeli, 2007). Psychological safety as an organisational climate refers to the formal and informal organisational practices supporting open interactions and fostering a work environment where employees feel safe to take interpersonal risks (Baer & Frese, 2003).

Nevertheless, for methodological reasons in the present study, psychological safety was conceptualised as employees' perceptions of organisational climate at the individual level.

#### **2.4.1. Organisational mindset beliefs and psychological safety climate**

According to Schein (2010), culture is a layered phenomenon, ranging from the deeply embedded, unconscious, basic assumptions to the very tangible, overt manifestations. The deepest layer is the level of assumptions, referring to the basic beliefs about reality and human nature, such as the core beliefs about the malleability of intelligence (Canning et al., 2018). The second level is constituted of values and social principles, and at the surface level are the artefacts, which are the visible and tangible phenomena grounded in values and assumptions. In Schein's conceptualisation, among these artefacts is the organisational climate, however, it is important to note, that some scholars view climate as equivalent to culture (e.g. Van Houtte, 2005). This dissertation followed Schein's definition and conceptualised organisational climate as the surface-level manifestation of values and core beliefs.

It can be argued that a core belief in the malleability of intelligence may manifest in a climate where the focus is on learning from challenges, rather than appearing flawless (Emerson, 2015). Thus, incremental organisational beliefs may foster a climate of psychological safety where people feel safe to engage in interpersonally risky learning behaviours. In contrast, an organisational belief that intelligence is a fixed quality may manifest in a climate where making a mistake signals one's lack of ability (Emerson, 2015). Thus, entity organisational beliefs may foster a climate where learning behaviours are limited because people have concerns about interpersonal consequences (Edmondson, 2004).

There is some evidence supporting this argument. As initially outlined, research has shown that, just as self-theories, organisational mindset beliefs give rise to divergent achievement goals (Emerson, 2015). Organisations with fixed mindset beliefs were perceived to primarily adopt performance-avoidance goals, that is, value avoiding failure, whereas, organisations with growth mindset beliefs were perceived to primarily pursue mastery goals, that is, value learning. Thus, it suggests that in entity environments people indeed tend to be concerned about the consequences of their (low) performance, while in incremental organisations the primary focus is on learning. Accordingly, Nembhard and Edmondson (2011) argue that performance-oriented organisational goals undermine psychological safety by highlighting the interpersonal risks of engaging in learning behaviours. For instance, organisational cues, such as financial bonuses for achieving a zero-failure rate, are likely to lead employees to infer that they must prove their abilities and low performance will have negative consequences (Nembhard & Edmondson, 2011).

Moreover, recent research has shown that incremental organisations have a culture that is supportive of collaboration (Canning et al., 2018), a form of learning behaviour often tied to psychological safety. Therefore, it supports the argument that incremental organisational beliefs may foster a climate conducive to learning, where people feel safe to take interpersonal risks.

Based on the above outlined argument, this study expected to find a positive relationship between organisational growth mindset and psychological safety.

#### **2.4.2. Psychological safety climate and resilient work behaviour**

As initially outlined, this dissertation conceptualised employee resilience as the ability to effectively learn from mistakes and continually adapt at work (Näswall, Kuntz & Malinen, 2015).

One form of learning behaviour closely tied to psychological safety is speaking up (Nembhard & Edmondson, 2011). Thus, in a psychologically safe environment, people are more likely to talk openly about and learn from their mistakes. Accordingly, research has shown that psychological safety assists individuals to learn from failure (Carmeli, 2007; Carmeli & Gittell, 2009). Furthermore, as initially noted, early research on organisational change found that psychological safety enables successful adaptation to change (Schein & Bennis, 1965; Schein, 1985).

Based on the above outlined findings, this study expected to find a positive relationship between psychological safety climate and employee resilience.

#### **2.4.3. Psychological safety and innovative behaviour**

Innovative behaviour is about generating or adopting, experimenting with and implementing new ideas (Lukes & Stephan, 2017). As initially outlined, by mitigating the perceived risks of engaging in learning behaviours, psychological safety is closely linked with experimentation, speaking up and collaboration (Nembhard & Edmondson, 2011). By promoting information sharing, psychological safety gives more knowledge with which to develop new ideas (Edmondson, 2004). Furthermore, in psychologically safe environments, where support for risk-taking and tolerance for mistakes is present, individuals experiment more (Nembhard & Edmondson, 2011) and have been found to engage in creativity (which can potentially lead to

innovation – Carmeli, Reiter-Palmon & Ziv, 2010; Kark & Carmeli, 2009) and innovation (Gu et al., 2013; Post, 2012).

Based on the above outlined findings, this study expected to find a positive relationship between psychological safety climate and innovative work behaviour.

## **Summary**

The literature review indicates that organisational growth mindset, as an organisational core belief, is a predictor of psychological safety climate, as well as the employee behaviours often tied to psychological safety – innovative and resilient work behaviour. Thus, this dissertation proposed organisational mindset theory to explain the underlying processes through which psychological safety develops and influences work outcomes.

Therefore, based on this argument the following relationships were predicted:

Hypothesis 1: Organisational growth mindset will be positively related to psychological safety.

Hypothesis 2: Psychological safety will be positively related to employee resilience.

Hypothesis 3: Psychological safety will be positively related to employee innovative behaviour.

Hypothesis 4: Psychological safety will mediate the relationship between organisational growth mindset and employee resilience.

Hypothesis 5: Psychological safety will mediate the relationship between organisational growth mindset and employee innovative behaviour.

## Chapter 3 – Methods

This section explains the methodology of the study, initially by discussing the participant sample and procedures. The chapter goes on to present the measures used in the research and evaluation of reliability and validity. Lastly, the methods of data analyses are discussed.

### 3.1. Participant Sample

The sample of this study included individuals who are over 18 and are currently working in the UK. They were attained through voluntary (social media and advertisements within companies shared by friends and acquaintances) and opportunity (friends and acquaintances) sampling. The sample consisted of 103 participants, of whom 45.6% percent (N=47) were men and 54.4% (N=56) were women. Thus, it is close to the representative gender ratio (UN, 2017). Participants' ages were grouped and ranged between the 18-24 and 55-64 age groups with the majority of the participants (43.7%) being 25-34-year olds. This again is closely representative of the working population in the UK (ONS, 2018). Individuals who took part in the study worked in a range of organisations, industries and job roles, making the findings more generalisable. More precisely, 34% (N=35) of the participants worked in Finance and Banking, 18.4% (N=19) in Technology, 10.7% (N=11) chose the option 'Other', 7.8% (N=8) worked in Charity, 6.8% (N=7) in Retail and Consumer, 5.8% (N=6) in Manufacturing, 4.9% (N=5) in Education, 3.9% (N=4) in Healthcare, 2.9% (N=3) in Energy and Business services respectively, and 1-1% (N=1-1) in Agriculture and in the Government. However, since the number of participants from each company varied largely, it was not possible to

consider the organisational (or group) level of analysis, which could have further improved the validity of the research.

A more detailed overview of the participant sample shows that the majority of the participants' highest educational level was a Bachelor's (50.5%, N=52) or a Master's level degree (37.9%, N=39), for 5.8% (N=6) it was A-levels, for 3.9% (N=4) Vocational apprenticeship and 1.9%(N=2) had a Doctoral degree. Most of the participants were employees (47.6%, N=49), followed by 21.4% (N=22) working as team leaders, 17.5% (N=18) were middle managers, 10.7% (N=11) occupied an executive role and 2.9% (N=3) of the participants chose the option 'Other' when were asked about their position in the company. Participants had been working at their companies for a minimum of 1 month and for a maximum of 23 years, with 5 years being the average for job tenure.

## **3.2. Procedure**

### **3.2.1. Research aims and research method**

The aim of this study is to investigate the role organisational mindset plays in shaping the workplace climate and thereby employee behaviour. Due to the scope of the research, and as it is concerned with testing mediation between variables, the quantitative research approach was more adoptable than the qualitative. The main strength of the qualitative research method is that it provides depth and richness of meaning and therefore can be suitable for studies concerned with understanding a phenomenon or uncovering a new topic (Babbie, 2013). In the case of the present study, a positivist, quantitative research approach was more appropriate as this research is concerned with using quantifiable measures of variables (in order to test the relationships between variables and mediation) and requires a research method which allows a wide scope of data collection (Babbie, 2013). Hence, a survey

questionnaire consisting of existing scales was used to collect data. This research strategy has a number of advantages. First of all, it is convenient for participants, they are able to complete the electronic survey online. Secondly, it can reach a larger pool of participants at a low cost. Finally, generally existing scales have been shown to have acceptable levels of reliability and validity (Sector, 1997).

### **3.2.2. Procedures**

The survey questionnaire was created using Google Docs. The survey was advertised on LinkedIn and distributed to friends and acquaintances, who were asked to share it within their companies (people who volunteered to share the survey within their companies were provided with a company code they could share with their colleagues).

### **3.2.3. Ethical considerations**

In the first section of the survey, participants were informed about the nature of the research and were assured that completing the survey is anonymous. Furthermore, they were advised that taking part in the study is completely voluntary. In the survey prior to the beginning of the questionnaires, an informed consent section appeared which clarified that by ticking the box people are agreeing to voluntarily participate in the study. Thus, the information sheet and consent form were part of the survey and were not sent out separately.

The study received ethical approval from Kingston University Ethics Committee (see a copy of the Ethics form in Appendix 2). The data from the study were stored in a password-protected computer and will be eliminated after the completion of the dissertation project in September 2019.

### **3.3. Measures**

#### **3.3.1. Organisational lay theories of intelligence**

Organisational mindset was measured using two items from the Theories of Intelligence Scale (Dweck, 1999) adapted by Canning et al., (2018) for the purpose of measuring organisational lay theories of intelligence. The two items were measured using a seven-point Likert-type scale, ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). A sample item included: "When it comes to being successful, this company seems to believe that people have a certain amount of talent, and they can't really do much to change it." As it is an entity-only scale – including only entity theory items –higher scores on organisational mindset reflect a more fixed mindset. Therefore, items were reverse coded as necessary. The Theories of Intelligence Scale has shown good reliability and validity (Dweck, 1999). In this study the Cronbach's alpha coefficient of this scale was  $\alpha = .87$  which indicates good reliability.

#### **3.3.2. Psychological safety climate**

Psychological safety climate was measured using Edmondson (1999) seven-item scale adapted by Baer & Frese (2002) to be used in organisational contexts. The scale measures employee perceptions of psychological safety within their organisation, based on items adapted from Edmondson's team-level measure. The questionnaire items were measured using a seven-point Likert scale, ranging from 1 (Very Inaccurate) to 7 (Very Accurate). A sample item included: "When someone in our company makes a mistake, it is often held against them." The scale contains three reversed items (1., 2., 4.). Edmondson's (1999) measure has shown strong content, criterion and construct validity, as well as very good internal consistency reliability estimates (Edmondson, 1999; Newman, Donohue & Eva, 2017). In this study the Cronbach's alpha

coefficient of this scale was  $\alpha = .74$ . which indicates an acceptable level of reliability.

### **3.3.3. Employee resilience**

Resilient work behaviour was measured using the nine-item Employee Resilience Scale developed by Näswall, Kuntz & Malinen (2015). The questionnaire items were measured on a seven-point Likert-type scale, ranging from 1 (Never) to 7 (Almost always). The scale is based on the conceptualisation of resilience as a developable capacity, rather than an innate quality (Hystad, Eid, Johnsen, Laberg, & Bartone, 2010). Hence, it is designed to tap into employees' behaviours (Näswall, Kuntz & Malinen, 2015). A sample item included: "I learn from mistakes at work and improve the way I do my job." The scale has shown good reliability and validity (Näswall, Kuntz & Malinen, 2015). In this study the Cronbach's alpha coefficient of this scale was  $\alpha = .77$ . which denotes good reliability.

### **3.3.4 Innovative work behaviour**

Innovative work behaviour was measured using the Innovative Behaviour Inventory (IBI) developed by Lukes & Stephan (2017). The questionnaire items were measured using a five-point Likert scale, ranging from 1 (Fully Disagree) to 5 (Fully Agree). The multidimensional measure of innovative employee behaviour includes six distinct innovative behaviours – namely, Idea generation, Idea search, Idea communication, Implementation starting activities, Involving others and Overcoming obstacles – and an independent measure of Innovation outputs. It consists of 23 items in seven scales. The Idea generation subscale consists of three items. A sample item included: "I prefer work that requires original thinking." The second subscale is Idea search that

consists of three items. A sample item included: "I search for new ideas of other people in order to try to implement the best ones." The Idea communication subscale consists of four items. A sample item included: "When I have a new idea, I try to involve people who are able to collaborate on it." The fourth subscale is Implementation starting activities that consists of three items. A sample item included: "I develop suitable plans and schedules for the implementation of new ideas." The Involving others subscale consists of three items. A sample item included: "When I have a new idea, I look for people who are able to push it through." The Overcoming obstacles subscale consists of four items. A sample item included: "I am able to persistently overcome obstacles when implementing an idea." The last subscale is the Innovation outputs that consists of three items. A sample item included: "I was often successful at work in implementing my ideas and putting them in practice." The scale has shown good factorial, discriminant, convergent and criterion validity, as well as good internal reliability (Lukes & Stephan, 2017). In this study the Cronbach's alpha coefficients of the subscales were as follows; Idea generation  $\alpha = .72$ , Idea search  $\alpha = .80$ , Idea communication  $\alpha = .83$ , Implementation starting activities  $\alpha = .77$ , Involving others  $\alpha = .76$ , Overcoming obstacles  $\alpha = .85$ , and Innovation outputs  $\alpha = .77$ . Thus, the alpha coefficients indicate that all subscales have a good level of internal consistency.

### **3.4. Data analysis**

The statistical analysis of the data was performed using Microsoft Excel 2016 and IBM SPSS Statistics version 24. As a first step, all raw data from the survey was exported from the Google Docs platform to an Excel file, where it was coded and some of the items were reverse-coded in preparation of the statistical analyses in SPSS. Second, all scales were evaluated for internal

reliability (the Cronbach’s alpha coefficients were shared for each measure in the previous section) and tested for normality using the Shapiro-Wilk test. The non-significant values of the Shapiro-Wilk test indicated the normal distribution of the psychological safety ( $p= .081$ ) and the employee resilience variables ( $p= .158$ ). However, the significant values indicated the non-normal distribution of the organisational mindset variable ( $p= .001$ ) and all subscales of the innovative behaviour measure (for all subscales  $p= .000$ ). As a next step, bivariate correlation and linear regression analyses were ran to test the relationships between variables (and in preparation for the mediation analyses).

## Chapter 4 – Findings

The following chapter aims to explain the findings of this dissertation project. The next sections provide information about the statistical analyses that were used to test the hypotheses. The standard deviations, means and correlations of variables are shown in Table 1.

**Table 1. Means (M), Standard Deviation (SD) and Correlation analyses**

	M	SD	1	2	3	4	5	6	7	8	9	10
1. Organisational mindset	9.20	2.94	-									
2. Psychological safety	28.68	6.60	.677**	-								
3. Employee resilience	52.13	5.03	.053	.197*	-							
4. Idea generation	11.86	1.85	.182	.219*	.319**	-						
5. Idea search	12.64	1.59	.156	.224*	.298**	.554**	-					
6. Idea communication	16.00	2.37	.057	.111	.331**	.462**	.497**	-				
7. Implementation starting activities	10.69	2.40	-.102	.062	.379**	.313**	.289**	.493**	-			
8. Involving others	11.86	1.89	.101	.226*	.506**	.366**	.413**	.430**	.508**	-		
9. Overcoming obstacles	15.10	2.84	-.081	-.135	.292**	.224*	-.009	.250*	.328**	.298**	-	
10. Innovation output	11.42	2.13	-.079	-.072	.407**	.434**	.290**	.445**	.548**	.474**	.540**	-

Red = not significant

\* Correlation is significant at the 0.05 level (2-tailed)

\*\* Correlation is significant at the 0.01 level (2-tailed)

#### **4.1. Descriptive statistics**

The mean score for organisational mindset, where the lowest score was 3 and the highest was 14, was 9.20 (SD=2.94). This indicates that the majority of participants perceived their companies to endorse more of a growth mindset. For psychological safety the scores ranged from 9 to 41 and the mean score was 28.68 with a standard deviation of 6.60. This suggests a high degree of variance amongst participants in respect of how they evaluated their organisational climate and that most of the people experienced a little higher than medium level of psychological safety in their companies. For employee resilience, the lowest score was 39 and the highest was 63, with a mean of 52.13 and a standard deviation of 5.03. This shows that the majority of the participants evaluated themselves as engaging in high levels of resilient behaviour. For the different forms of innovative behaviour, the minimum scores were between 3 and 7 and the maximum scores were between 15 and 20, with mean values around 11 and 12, and values of standard deviation around 1-2. For the mean values the exceptions were idea communication (M=16) and overcoming obstacles (M=15). These results indicate that most of the people evaluated themselves as exhibiting high levels of innovative behaviour.

#### **4.2. Correlation analyses**

Before testing the hypotheses and running the linear regression analyses, bivariate correlation analyses were conducted to test whether there were linear relationships between the variables (prerequisite for regression analysis). Table 1 displays the results and significance levels of the findings.

#### **4.2.1. Organisational mindset and employee resilience**

Due to the non-normal distribution of the organisational mindset variable (see Data analysis section in previous chapter) a Spearman's rank order correlation analysis was conducted to test the relationship between organisational mindset and employee resilience. As shown in Table 1, results indicated that there is no significant relationship between the variables ( $q = .053$ ,  $p = .593$ ). This finding suggests that higher levels of organisational growth mindset do not have a significant influence on employee resilience.

#### **4.2.2. Organisational mindset and innovative behaviour**

Both organisational mindset and all different forms of innovative behaviour were found to be non-normally distributed (see Data analysis section in previous chapter), thus, Spearman rank order correlation analyses were run to test the relationships between the variables. As Table 1 shows, results indicated that there are no significant interrelations between organisational mindset and the different forms of innovative behaviour – namely, idea generation ( $q = .182$ ,  $p = .066$ ), idea search ( $q = .156$ ,  $p = .116$ ), idea communication ( $q = .057$ ,  $p = .570$ ), implementation starting activities ( $q = -.102$ ,  $p = .306$ ), involving others ( $q = .101$ ,  $p = .312$ ), overcoming obstacles ( $q = -.081$ ,  $p = .418$ ) and innovation outputs ( $q = -.079$ ,  $p = .430$ ). These findings indicate that higher levels of organisational growth mindset do not significantly affect innovative behaviour.

#### **4.2.3. Organisational mindset and psychological safety climate**

Due to the non-normal distribution of the organisational mindset variable, a Spearman's rank order correlation was used to examine the relationship between organisational mindset and psychological safety. As shown in Table 1, results indicated that there is a significant positive relationship between organisational mindset and psychological safety ( $\rho = .677, p = .001$ ). This finding provides preliminary support for Hypothesis 1 and suggests that employees who evaluate their organisation as having higher levels of growth mindset experience higher levels of psychological safety.

#### **4.2.4. Psychological safety and employee resilience**

Both psychological safety and employee resilience were found to be normally distributed (see Data analysis section in previous chapter), thus a Pearson's correlational analysis was conducted to test the relationship between psychological safety and employee resilience. As shown in Table 1, results indicated a significant positive relationship between psychological safety and employee resilience ( $r = .197, p = .046$ ). However, the relationship between psychological safety and employee resilience is very weak, and the high  $p$ -value indicates the low significance of the result, meaning that the likelihood that the result is due to chance alone is 4.6% (just below 5% which indicates significance). Despite the low significance and the almost negligible effect size this finding suggests that employees who experience higher levels of psychological safety are more likely to engage in resilient work behaviour. Thus, this result provides preliminary support for Hypothesis 2.

#### **4.2.5. Psychological safety and innovative behaviour**

Due to the non-normal distribution of the innovative behaviour variable, a Spearman's rank order correlation was used to examine the relationships between psychological safety and the different forms of employee innovative behaviour. As displayed in Table 1, results indicated that there are significant positive relationships between psychological safety and idea generation ( $\rho=.219, p = .046$ ), idea search ( $\rho=.224, p = .023$ ) and involving others ( $\rho=.226, p = .021$ ). Although, there were no significant relationships found between psychological safety and the other subscales – namely, idea communication ( $\rho=.111, p = .266$ ), implementation starting activities ( $\rho=.062, p = .534$ ), overcoming obstacles ( $\rho=-.135, p = .172$ ) and innovation outputs ( $\rho=-.072, p = .470$ ). Thus, results indicate very weak relationships between psychological safety climate and three forms of innovative behaviour – idea generation, idea search and involving others. These findings suggest that in environments with higher levels of psychological safety, employees are more likely to engage in idea generation, idea search and to look for support from others when trying to implement a new idea. Thus, these results provide partial preliminary support for Hypothesis 3.

#### **4.3. Hypothesis testing**

Linear regression analyses were used to further investigate the relationships between variables and test Hypothesis 1, 2 and 3. To test Hypothesis 4 and 5, the mediator role of psychological safety would have been tested between organisational mindset and employee resilience, as well as between organisational mindset and innovative behaviour, based on the 3-step process by Baron and Kenny (1986). However, as initially outlined, there were no significant relationships found with correlation between the predictor

(organisational mindset) and outcome (resilient and innovative behaviour) variables, therefore, Hypothesis 4 and 5 testing cannot be held.

#### **4.3.1. Hypothesis 1: Organisational growth mindset will be positively related to psychological safety.**

A linear regression analysis was used to test Hypothesis 1 and to examine the interrelation between organisational mindset and psychological safety. As noted earlier, the Shapiro-Wilk test confirmed the normal distribution of psychological safety (dependent variable). In addition, there was normality of residuals, homoscedasticity and linear relationships between variables, which satisfied the assumptions for linear regression analysis (see scatter plots and histogram in Appendix 4). Results indicated that there is a significant positive interrelation between organisational mindset and psychological safety ( $\beta=.664$ ,  $p =.000$ ,  $R^2=.441$ ). This result indicates that organisational mindset predicts psychological safety by 44.1%, or in other words, organisational mindset accounts for 44.1% of the variance in psychological safety. This is considered to be a moderate effect size (Moore et al., 2013), which was found to be highly significant ( $p =.000$ ). Thus, this evidence allows for Hypothesis 1 to be accepted. This finding suggests that organisational growth mindset – when employees perceive their organisations to endorse the belief that intelligence is malleable – predicts increased levels of psychological safety.

#### **4.3.2. Hypothesis 2: Psychological safety will be positively related to employee resilience.**

A linear regression analysis was used to examine the interrelation between psychological safety and employee resilience and to test Hypothesis 2. As

initially noted, the non-significant values of the Shapiro-Wilk test indicated both variables are normally distributed. Furthermore, there was normality of residuals, homoscedasticity and linear relationships between variables, which satisfied all assumptions for linear regression analysis (see scatter plots and histogram in Appendix 5). Results indicated that there is a significant positive interrelation between psychological safety and employee resilience ( $\beta = .197$ ,  $p = .046$ ,  $R^2 = .039$ ). This result suggests that psychological safety predicts employee resilience by 3.9%. This is considered to be a very weak effect size (Moore et al., 2013), and the high  $p$ -value indicates the low significance of the result ( $p = .046$ ). However, despite the low significance and the almost negligible effect size, this finding suggests that psychological safety predicts employee resilience. Thus, Hypothesis 2 was supported.

#### **4.3.3. Hypothesis 3: Psychological safety will be positively related to employee innovative behaviour.**

Linear regression analyses were used to test Hypothesis 3 and to examine the interrelations between psychological safety and three forms of innovative behaviour – namely, idea generation, idea search and involving others (aspects of innovative behaviour that were found to have positive relationships with psychological safety with the initial correlation analyses). As noted earlier, the innovative behaviour variable is not normally distributed; however, the residual plots indicated that the errors are approximately normally distributed. Other assumptions for linear regression – homoscedasticity and linear relationships between variables – were also met (see scatter plots and histogram in appendix 6). Results indicated that there are significant positive interrelations between psychological safety and idea search ( $\beta = .196$ ,  $p = .048$ ,  $R^2 = .038$ ) and involving others ( $\beta = .231$ ,  $p = .019$ ,  $R^2 = .054$ ). These results suggest that psychological safety predicts idea search by 3.8%, whereas

accounts for 5.4% of the variance in the involving others variable. Both are considered to be a very weak, negligible effect sizes (Moore et al., 2013). However, there was no significant relationship found between psychological safety and idea generation ( $\beta = .189, p = .056, R^2 = .036$ ). Thus, Hypothesis 3 was partially supported as the findings suggest that psychological safety predicts idea search and the act of looking for support from others when trying to implement a new idea.

#### **4.3.4. Hypothesis 4: Psychological safety will mediate the relationship between organisational growth mindset and employee resilience.**

Based on the 3-step model by Baron and Kenny (1986), the first step of testing mediation between variables is to regress the outcome variable (employee resilience) on the predictor variable (organisational mindset). However, as outlined earlier, there was no significant relationship found with correlation analysis between organisational mindset and employee resilience, therefore Hypothesis 4 testing cannot be held.

#### **4.3.5. Hypothesis 5: Psychological safety will mediate the relationship between organisational growth mindset and employee innovative behaviour.**

Just as with Hypothesis 4, Hypothesis 5 testing cannot be held as with correlation analysis there was no significant relationship found between organisational mindset (predictor variable) and innovative behaviour (outcome variable).

### **Summary**

In sum, consistent with Hypothesis 1, organisational mindset predicted psychological safety and the interrelation between the variables was found to

be a moderate effect size ( $R^2=.441$ ) and highly significant ( $p= .000$ ). Furthermore, despite the almost negligible effect size ( $R^2 = .039$ ) and low significance ( $p= .046$ ), consistent with Hypothesis 2, psychological safety was found to predict employee resilience. Hypothesis 3 was also partially supported as there were weak interrelations found between psychological safety and two forms of innovative behaviour – idea search ( $R^2 = .038$ ) and involving others ( $R^2 = .054$ ). Therefore, these results suggest that organisational mindset predicts psychological safety, and psychological safety predicts employee resilience and two forms of innovative behaviour. However, there were no relationships found with correlation between organisational mindset and resilient and innovative work behaviour. Thus, the mediator role of psychological safety cannot be tested between these variables, which means that Hypothesis 4 and 5 were not supported.

## **Chapter 5 – Discussion**

The purpose of this study was to investigate the relationships between organisational mindset – whether a company is perceived to view talent as fixed or malleable – psychological safety climate and resilient and innovative work behaviour. In addition, the present study aimed to explore whether psychological safety climate mediates the relationship between an organisation’s mindset and resilient and innovative work behaviour. This chapter presents a discussion of the research findings in relation to the existing literature and the organisational context. Furthermore, the limitations, strengths and implications of the study are considered.

Consistent with the expectation, **the results of this study provided support for Hypothesis 1 and found that organisational mindset predicted the levels of psychological safety in companies.** In other words, the more people viewed their organisations as endorsing a growth mindset (vs. fixed) – having the belief that intelligence is malleable – the higher they evaluated their organisational climate in psychological safety. This finding suggests that organisational mindset shapes the workplace climate, and therefore supports Canning et al's (2018) research in establishing organisational mindset as a core belief (Schein, 2010) of organisations. As initially outlined, core beliefs or basic assumptions are the deepest layer of the organisational culture, shaping the norms, values and thereby ultimately the climate of companies (Schein, 2010). Organisational mindsets focus on people's shared perception of the beliefs about the malleability of intelligence in organisational contexts, enabling employees to gauge whether a company believes that individuals can learn and develop their skills – or not. Thus, it may not be surprising that it influences the psychological experiences of employees (Canning et al., 2018). Accordingly, the finding of the present study suggests that incremental organisations that convey the belief (through their values and norms) that employees can learn and improve their abilities cultivate a climate where people feel safe to express themselves and engage in interpersonally risky learning behaviours. It is in line with the recent research finding that incremental organisations have a culture that supports collaboration, a learning behaviour often tied to psychological safety (Canning et al., 2018). Therefore, the finding of the present study suggests that the higher levels of collaboration may be linked to the higher levels of psychological safety in incremental companies.

Furthermore, the finding of the current study is also in line with the argument made by Nembhard and Edmondson (2011), that performance-oriented organisational goals may undermine psychological safety by highlighting the interpersonal risks of engaging in learning behaviours. Entity beliefs are closely linked with performance goals both at the personal and at the organisational level (Elliott & Dweck, 1988; Dweck, 1999; Emerson, 2015). Supporting the argument made by Nembhard and Edmondson (2011), the finding of the present study suggests that entity organisations (where the focus is on achieving success and avoiding failure – performance goals) indeed have lower levels of psychological safety. An explanation for this finding may be that an organisational belief in the fixedness of ability (and the focus on performance goals) is likely to convey the message to employees that making a mistake signals one's lack of ability (Emerson, 2015), subsequently resulting in lower levels of psychological safety. Thus, it can be argued that in the current economic climate, where there is complexity and most of the work is done in collaboration (Edmondson, 2018), it is imperative for companies to identify their core mindset beliefs and understand how those may impact the organisational climate and thereby employees' behaviour. The finding of the current study suggests that an incremental core belief, which (through values and norms) conveys to employees that they can learn and improve their abilities, may be one of the key antecedents of psychological safety.

**The results of this study provided marginal support for Hypothesis 2 and found that psychological safety was weakly related to resilient work behaviour.** When considering this finding, it is important to note that a small effect size (and low significance) was found. An explanation for this finding may be that other contextual factors, such as leadership, are more closely linked with employee resilience (Näswall, Kuntz & Malinen, 2015).

Supporting this line of argument, besides learning culture (such as psychological safety), supportive supervision was found as one of the key enablers of resilient work behaviour (Kuntz et al., 2016; Näswall, Kuntz, Hodliffe & Malinen, 2015). Nonetheless, the results of this study suggest that psychological safety is a predictor of employee resilience. In other words, the higher employees evaluated their organisations in psychological safety, the more likely they were to engage in resilient work behaviour. Employee resilience was conceptualised in this study as the ability to effectively learn from mistakes and continually adapt at work (Näswall, Kuntz & Malinen, 2015). Therefore, the finding of the current study suggests that in environments high in psychological safety, where people feel safe to speak up and there is an open discussion of problems, people are more likely to learn from mistakes and successfully adapt to change (Nembhard & Edmondson, 2011). This finding is also consistent with research by Carmeli (2007) and Carmeli & Gittel (2009) that found psychological safety to be related to learning from failure. More precisely, these studies conceptualised psychological safety at the organisational level and found that psychological safety climate mediated the relationship between high quality relationships and the ability to learn from mistakes in organisations. Furthermore, the finding of the present study can be linked to early research on organisational change, that found psychological safety to be essential in enabling successful adaptation to change (Schein & Bennis, 1965; Schein, 1985). Thus, the finding of the current research provides further evidence that cultivating a psychological safety climate may help organisations to foster employee resilience.

**The results of the current study provided partial and marginal support for Hypothesis 3 and found psychological safety to be weakly related to two**

**forms of innovative behaviour – namely idea search and involving others.**

Again, just as with Hypothesis 2, when considering this finding, it is important to note that small effect sizes were found. An explanation for the finding may be that other organisational contextual factors are more closely linked with employee innovation. For instance, in line with this argument, research by Lukes & Stephan (2017) found managerial support to be the most proximal contextual influence on employee innovation. Nevertheless, the results of this study suggest that psychological safety predicts two forms of innovative behaviour – idea search and involving others. Idea search can be described as the act of searching for novel ideas in the environment with the intention to adopt them from existing knowledge sources (Lukes & Stephan, 2017). Whereas, involving others refers to the act of looking for support from others when trying to implement a new idea (Howell et al., 2005; Lukes & Stephan, 2017). It is important to note that both of these aspects of innovative behaviour are largely under-researched (Park, Kim & Krishna, 2014; Lukes & Stephan, 2017). One reason for this is that past research does not differentiate between certain aspects of innovative behaviour, such as between idea generation and idea search or between idea communication and involving others in the implementation process (Lukes & Stephan, 2017). Thus, this gives the findings of the current research an incremental value. The relationship between psychological safety and idea search suggests that in an environment where employees feel safe to speak up and to share information, people are more likely to search for new ideas they can adopt. Whereas, the interrelation between psychological safety and the act of involving others indicates that when people feel interpersonally safe in their workplace, they are more likely to ask for help and involve others in the implementation of a new idea. Thus, the findings of the present study suggest that fostering psychological safety may help organisations to promote innovation. These findings can be linked to previous research that found positive relationships between psychological

safety and innovation. For instance, when psychological safety was measured at the team level, Gu et al., (2013) and Post (2012) found strong interrelations between psychological safety and innovation in R&D teams. Also, a couple of studies found positive relationships between psychological safety and creativity (e.g., Carmeli et al., 2010; Kark & Carmeli, 2009). However, these are not closely related to the findings of the current research, as the present study did not find a relationship between psychological safety and idea generation (which is often referred to as creativity).

**This study did not find relationships between organisational mindset and resilient and innovative work behaviour; therefore, it was not possible to test the mediator role of psychological safety between these variables. Thus, Hypothesis 4 and 5 were not supported.** The results of the present study indicated that organisational mindset predicts psychological safety and that psychological safety predicts employee resilience and two forms of innovative behaviour. However, there were no relationships found between organisational mindset and resilient and innovative behaviour. As organisational mindset is quite a new concept, no previous research looked at the relationship between organisational mindset beliefs and employee resilience and innovation. Nonetheless, research on personal mindsets and their closely tied achievement goals suggests that there is a positive interrelation between incremental beliefs and resilience (e.g., Blackwell et al., 2007), as well as between mastery goals and innovation (Janssen & Van Yperen, 2004). It is important to note that organisational mindset is the deepest layer of culture and an abstract concept (Schein, 2010) that can only influence employee behaviour through other psychological processes. Therefore, an explanation for the finding may be that the current study did not have enough statistical power (due to its limitations) to detect the indirect relationships

between organisational mindset and employee resilience and innovation. Thus, future research should replicate the current study and explore whether psychological safety climate mediates the relationship between organisational mindset and resilient and innovative work behaviour.

### **5.1. Limitations**

It is important to note that this study has some limitations.

One limitation of the current study is the small sample size (N=103). A larger sample would make the research findings more representative and would increase the statistical power of the study. This means that it would increase the likelihood of finding a statistical significance if the effect exists in the full population and therefore, would give more valid and reliable results (Cohen, 1988).

Furthermore, certain aspects of the study design might have impacted on the validity of the research.

First of all, since the number of participants from each company varied largely, it was not possible to consider the organisational (or group) level of analysis. Therefore, organisational mindset was conceptualised as employees' perceptions of the mindset beliefs at the individual level, instead of the organisational level of analysis. However, studies suggest that the intensity of cultural norms and consensus among employees are important in order to understand employee experiences in companies (Chatman et al., 2014; O'Reilly et al., 2014). Thus, the effects of organisational mindset might be most pronounced in case there is a greater consensus between employees on an organisation's mindset (Canning et al., 2018).

As with organisational mindset, psychological safety was conceptualised at the individual level as employees' perceptions of the organisational climate.

However, it is best understood as a group-level phenomenon (Edmondson, 1999). Research found significant differences in psychological safety climate between teams within the same organisation (Edmondson, 1999). Nonetheless, it is worth noting that a growing body of research (e.g., Baer & Frese, 2003; Carmeli, 2007) suggests that psychological safety can be understood as an organisational-level climate (this study is also concerned with individuals' perceptions of the company climate) and be measured at the organisational level of analysis (Newman, Donohue & Eva, 2017).

Moreover, it is important to recognise that in the current study, employee resilience and innovation were measured using only self-report questionnaires. Subsequently, the self-reported nature of the data may have resulted in a social desirability bias, which means that people may have presented themselves in a favourable light and not how they really felt about an issue (Moorman & Podsakoff, 1992). Therefore, in order to attain a more accurate representation of employee behaviours and to improve the validity of the data, future research should seek to incorporate supervisors' perceptions and evaluations of employees.

These limitations should be taken into consideration when interpreting the findings of the present study. For instance, an explanation for the small effect sizes and the non-significant results may be that the current study did not have enough statistical power due to its limitations.

## **5.2. Strengths**

There are several strengths to this study which are worth mentioning.

One of the main strengths of the present study is that it extends the literature on organisational mindset, which is a new concept in organisational research. As a second field study, it joins Canning et al's (2018) research in showing the

relevance of mindset beliefs in actual organisations. Thus, the present research strengthens the external validity of the organisational mindset concept, which has previously been mainly studied among convenience samples of college students who lack experience in workplace settings (Murphy & Dweck, 2010; Emerson & Murphy, 2015; Emerson, 2015, Murphy & Dweck, 2016).

The present study is also the first to explore the relationship between organisational mindset beliefs and psychological safety climate. A central challenge in organisational research on psychological safety is how to create this positive state (Edmondson, 2004). The finding that organisational mindset predicts psychological safety suggests a novel way to promote this positive climate – by shaping the core mindset beliefs (Canning et al., 2018). Thus, the present study helps to advance our understanding of the micro-foundations of company culture (Schein, 2010; Canning et al., 2018).

### **5.3. Practical implications**

The present study provides some significant implications for organisations.

Firstly, the findings of the current study suggest that cultivating a psychological safety climate may help companies to foster employee resilience and innovation – vital sources of competitive advantage in today's organisations (Anderson, De Dreu, & Nijstad, 2004; Näswall, Kuntz & Malinen, 2015). Therefore, this study contributes to a growing body of research which shed light on the human need to feel safe at work in order to learn, grow and contribute in the face of uncertainty and complexity (Edmondson & Lei, 2014; Edmondson, 2018). However, a central challenge to organisations is how to create psychologically safe workplaces (Edmondson, 2018).

Therefore, the most valuable contribution of the present study is that it suggests a new lever for intervention that may help companies to cultivate

psychologically safe work environments. The finding that organisational mindset beliefs predict psychological safety provides a framework for understanding organisational members' experiences and behaviour and suggests a novel way to promote psychological safety – by shaping the core mindset beliefs (Canning et al., 2018). Although, as with organisational change projects in general, this may be a long-term endeavour, research on personal mindsets suggests that mindset beliefs are malleable (e.g., Dweck, 1999). However, shifts from one core mindset belief to the other would likely require changes to the organisational practices, policies and leader-driven behaviour (Canning et al., 2018).

As a first step, it would be essential for companies to review their existing policies and practices in order to identify the core mindset beliefs. For instance, policies that emphasise performance goals (instead of learning goals), such as financial penalties for failing to meet a sales goal, are likely to convey to employees that they have to compete with their colleagues for the star status (Murphy & Dweck, 2010; Nembhard & Edmondson, 2011). Therefore, these policies are likely to reinforce an entity core belief – the belief in the fixedness of ability – and result in lower levels of psychological safety.

In creating incremental companies – which convey the belief to employees that they can learn and develop – leaders are likely to play a key role. The reason for this is that leaders are particularly influential in shaping employees' views about what the organisation values (Berson et al., 2008; Canning et al., 2018). Thus, growth mindset messages from powerful leaders in companies may be an effective way to communicate organisations' core mindset beliefs (Schein, 2010; Canning et al., 2018).

#### **5.4. Recommendations for future research**

Organisational mindset is a new concept and more research is clearly required to understand the ways it is able to shape workplace climate and employee behaviour. Future research should investigate the ways in which the organisational mindset beliefs are communicated through the practices and policies within companies (Canning et al., 2018). For instance, core mindset beliefs may be conveyed through the organisations' hiring criteria, promotion policies and evaluation processes (Murphy & Dweck, 2010; Canning et al., 2018). Furthermore, future research should replicate the present study (with bigger sample size and different study design) and explore whether psychological safety climate mediates the relationship between organisational mindset and resilient and innovative work behaviour.

## **Chapter 6 – Conclusion**

The aim of this study was to investigate whether organisational mindset beliefs shape the workplace climate (psychological safety), and thereby ultimately employee behaviour (employee innovation and resilience). The results of this study suggested that organisational mindset predicts psychological safety climate, and that psychological safety predicts employee innovation and resilience. However, the mediation of the relationships between organisational mindset and employee innovation and resilience through psychological safety were not supported.

The main finding of the present study was that organisational mindset predicts the levels of psychological safety in companies. In other words, this finding indicates that an incremental core belief, which (through values and norms) conveys to employees that they can learn and develop, may be one of

the key antecedents of psychological safety. This finding also supports Canning et al (2018) research in establishing organisational mindset as an organisational core belief (Schein, 2010).

Furthermore, this study found psychological safety to be a weak predictor of resilient work behaviour, as well as two forms of innovative behaviour – namely idea search and involving others. Thus, these findings suggest that cultivating a psychological safety climate may help organisations to foster employee resilience and innovation – vital sources of competitive advantage in today’s organisations (Anderson, De Dreu, & Nijstad, 2004; Näswall, Kuntz & Malinen, 2015).

Contrary to predictions, this study did not find relationships between organisational mindset and resilient and innovative work behaviour; therefore, it was not possible to test the mediator role of psychological safety between these variables. However, it is important to note that this study had some limitations (small sample size, different aspects of study design) that might have impacted on its statistical power and validity. Therefore, an explanation for the small effect sizes and the non-significant results may be that the current study did not have enough statistical power.

From a practical perspective, the most valuable contribution of the present study is that it suggests a new lever for intervention that may help companies to cultivate psychologically safe work environments – shaping the core mindset beliefs (Canning et al., 2018).

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# Appendices

## Appendix 1: Dissertation plan

A culture of genius or a culture of development?

How an organisation's mindset shapes workplace climate and employee behaviour

### Research aims and hypotheses

#### Research aims

The aim of this dissertation is to investigate the relationship between organisational mindset - whether a company is perceived to view talent as fixed or malleable (Murphy & Dweck, 2010; Canning et al., 2018) -, psychological safety climate (Edmondson, 1999), and employee behaviour (innovation and resilience). An additional aim is to explore whether psychological safety climate mediates the relationship between an organisation's mindset and resilient and innovative work behaviour.

#### Value

There have been only a few laboratory studies and one field study exploring the effects of organisational mindset – employees' perceptions of the organisation's belief about the fixed or developmental nature of talent and ability - given that it is a fairly new concept. One of the most exciting findings of the recent field research by Canning et al., (2018), is that organisational mindset functions as a core belief (Schein, 2004) that predicts cultural norms of organisations.

Therefore, my study contributes to a new and less explored area of research, and it may help to advance our understanding of how organisational mindset shapes organisational climate and thereby employee behaviour. Nonetheless, by supporting Canning et al., (2018) findings, that organisational mindset functions as a core belief, my research may help organisations by providing a framework for understanding employees' innovative and resilient work behaviour, as well as suggesting a novel

level for intervention – shaping these core mindset beliefs. It is important to note that in today's complex, ever-changing business world being innovative and resilient are highly desired employee behaviours by companies. Understanding how these behaviours are shaped by organisational mindset beliefs and the organisational climate may enable companies to shift their mindset and change their policies, practices and leader-driven behaviour accordingly to promote employee resilience and innovation.

## **Theoretical foundation and expected findings**

### **Personal and organisational lay theories of intelligence**

Implicit or lay theories of intelligence are defined as core assumptions about the malleability of intellectual abilities (Dweck & Leggett, 1988). Individuals can vary in their implicit theories, from more of a fixed or entity theory of intelligence to more of a malleable or incremental theory. Incremental theory of intelligence or growth mindset refers to the belief that intellectual abilities can be developed through individuals' efforts, whereas entity theory or fixed mindset is based on the belief that skills and intelligence are innate and largely fixed (Dweck, 1999).

The decades of research on personal lay theories of intelligence have shown that individuals' self-theories can create different psychological worlds, leading people to think, feel and act differently in identical situations. Most importantly studies have shown that mindsets inspire different goals; growth mindset orients people toward learning and mastery goals, whereas fixed mindset toward performance goals in which people strive to prove their abilities. Through these different goals, mindsets determine how individuals look at effort, challenges, failure and feedback, and have been shown to have important consequences for motivation and behaviour (Dweck, 1999).

Recent research (Canning et al., 2018; Murphy & Dweck, 2010) suggests, that through their values and norms, firms can also endorse a culture of genius and talent or a culture of growth and development. Organisational lay theories of intelligence refer to the shared beliefs of people within a company that intelligence and ability either a malleable quality or a fixed and stable trait (Murphy & Dweck, 2010). For example,

organisations may demonstrate a growth mindset by focusing on fostering and rewarding the development of employees. Alternatively, other organisations may be perceived as endorsing a fixed mindset by primarily focusing on recruiting and promoting individuals believed to be naturally talented (Canning et al., 2018). Individuals' perceptions of these organisational lay theories of intelligence, likewise personal mindsets, have been shown to shape people's cognition, affect and behaviour in important ways (Murphy & Dweck, 2010). Most importantly, recent research by Canning et al., (2018) suggests that organisational mindset functions as a core belief (Schein, 2004) that predicts cultural norms of organisations. Therefore, it may not be surprising that it influences the psychological experiences and behaviours of individuals within organisations (Canning et al., 2018).

#### Organisational mindset and psychological safety climate

Core beliefs, such as organisational beliefs about the malleability of intelligence, are at the deepest layer of the organisational culture, shaping the workplace climate and thereby ultimately employee behaviour (Schein, 2004; Canning et al., 2018).

Psychological safety climate is defined as a 'shared belief held by members of a team that the team is safe for interpersonal risk-taking' (Edmondson, 1999, 354.). In other words, psychological safety describes; "a team climate characterised by interpersonal trust and mutual respect in which people are comfortable being themselves," (Edmondson, 1999, 354.). Research suggests that in environments high in psychological safety, individuals engage in core learning behaviours, such as; collaboration, speaking-up and experimentation (Nembhard & Edmondson, 2011).

Recent research has found that incremental organisations value learning new things (i.e.: endorse mastery goals), whereas entity organisations endorse performance goals (Emerson, 2015). Studies have shown that performance goals at the individual level often block learning and lead to extreme competition (Dweck, 1999). Consistent with these research findings, recent research by Canning et al. (2018) suggests that entity organisations feature less collaborative norms and behaviour compared to incremental ones. Furthermore, this study has found that employees who perceived their organisations to endorse a fixed mindset reported less organisational trust.

*Therefore, it is likely that incremental organisational beliefs of intelligence, that endorse mastery goals, translate to a climate characterised by interpersonal trust and mutual respect - psychological safety climate- facilitating collaboration and learning. Thus, I expect a positive relationship between organisational growth mindset and psychological safety.*

#### Organisational mindset, psychological safety climate and employee resilience

In this research, employee resilience is defined as an “employee capability, facilitated and supported by the organisation, to utilise resources to continually adapt and flourish at work, even if/when faced with challenging circumstances” (Näswall, Kuntz & Malinen, 2015 p. 1). Therefore, resilience is viewed as a developable capacity, rather than a stable personality trait (Luthans, 2002).

Research on individuals’ mindsets has shown that growth mindsets are linked with resilience to setbacks (Yeager & Dweck, 2012). As noted earlier, research suggests that individuals who believe intelligence is fixed, tend to emphasise performance goals, which makes them vulnerable to negative feedback and likely to disengage from challenging learning opportunities. In contrast, incremental theorists tend to emphasise learning goals and view failure as potentially constructive feedback, and thereby likely to learn from their mistakes (Dweck, 1999). Consistent with these findings, neuroscientific research also suggests that growth mindsets are associated with adaptive responses to mistakes (Mangels et al., 2006; Moser et al., 2011).

Furthermore, consistent with the research findings at the individual level of theories and as initially outlined, study suggests that entity organisations value avoiding failure more (i.e.: endorse performance-avoidance goals) compared to incremental organisations, and incremental organisations value learning new things (i.e.: mastery goals) more compared to entity ones (Emerson, 2015). Therefore, these findings suggest that incremental organisations are more likely to facilitate learning from mistakes, which has been shown to promote resilience (Huang & Luthans 2015).

However, it is important to note, that climate is much more in the foreground of employees’ perceptions, whereas a core belief, such as organisational mindset, is more background (Burke & Litwin, 1992). A climate of psychological safety may

enable individuals to learn from failure, as they feel safe to speak up, admit mistakes, raise concerns, request help and seek feedback (Edmondson, 1999).

Accordingly, a recent study has found that learning-oriented organisational climate, in which failures and mistakes are positively framed and there is an open discussion of problems by employees, is positively related to employee resilience (Caniëls & Baaten, 2018). Furthermore, research suggests that psychological safety climate mediates the relationship between the strength of social networks between members of the organisation and their ability to learn from failure (Carmeli, 2007).

*Therefore, I expect that psychological safety will be positively related to employee resilience. Furthermore, I propose that psychological safety will mediate the relationship between organisational growth mindset and employee resilience.*

**Organisational mindset, psychological safety climate and innovative work behaviour**

Innovative work behaviour is defined as “the intentional creation, introduction and application of new ideas within a work role, group or organisation” (Janssen, 2000 p. 288).

Innovation is typically associated with experimentation and risk-taking (Anderson, Potočnik & Zhou, 2014). Research on individuals’ mindsets has shown that entity theory beliefs of intelligence, by endorsing performance goals, reduce risk-taking and engagement with challenging tasks (Nussbaum & Dweck, 2008). Alternatively, research suggests that there is a positive relationship between mastery orientation and innovative behaviour at the individual level (Janssen & Van Yperen, 2004). Consistent with these research findings at the individual level and as initially outlined, research suggests that entity organisations encourage individuals to avoid taking risks and incremental organisations endorse mastery goals (Emerson, 2015). In addition, recent research has shown that organisations embracing a fixed mindset are evaluated as having a culture that does not support innovation (Canning et al., 2018).

A climate of psychological safety may promote employee innovation by enabling individuals to challenge the status quo, speak up to suggest novel ideas or raise concerns (Edmondson, 1999). Accordingly, research suggests that psychological

safely climate promotes creative thinking (Palanski & Vogelgesang, 2011) and innovation (Gu et al., 2013; Post, 2012).

*Therefore, I expect to find a positive relationship between psychological safety climate and innovative work behaviour. Furthermore, I propose that psychological safety will mediate the relationship between organisational growth mindset and employee innovative behaviour.*

## Hypotheses

Hypothesis 1: Organisational growth mindset will be positively related to psychological safety.

Hypothesis 2: Psychological safety will be positively related to employee resilience.

Hypothesis 3: Psychological safety will be positively related to employee innovative behaviour.

Hypothesis 4: Psychological safety will mediate the relationship between organisational growth mindset and employee resilience.

Hypothesis 5: Psychological safety will mediate the relationship between organisational growth mindset and employee innovative behaviour.

## Research strategy/design

### Sample

The sample will consist of at least 100 individuals (the goal is 150 -200) who are over 18 and are currently working (boundaries of the project). Participants will be sampled from a range of organisations, industries and job roles in order to attain generalisable findings. They are going to be sourced through LinkedIn where an invitation to participate in the research will be placed for companies. In addition, I hope to access people from organisations through the help of my friends and acquaintances.

### Procedure

This research is concerned with hypothesis testing, using quantifiable measures of variables and generalising research findings to the larger population. Therefore, it will be a quantitative, positivist (knowledge is measurable) study and a questionnaire

survey will be used to collect data. Furthermore, it will be cross-sectional as data collection will be at one time point only. Survey as a research strategy is practical in respect of the participants needed to provide generalisable findings, as well as convenient for participants who can complete the electronic survey online. The scales used in the research will be combined into a Google Docs questionnaire which will be shared within companies.

## Measures

**Personal mindset** is going to be *measured as a covariate* to examine organisational mindset over and above participants' own personal mindsets. It is going to be measured using *two items from the Theories of Intelligence Scale (Dweck, 1999) adapted by Canning et al., (2018) to a work-related context*. The scale was developed to measure personal lay theories of intelligence. The two items are measured using a seven-point Likert type scale, ranging from 1 (strongly disagree) to 7 (strongly agree). As it is an entity-only scale – including only entity theory items - higher scores on personal mindset reflect a more fixed mindset. The scale has shown good reliability and validity (Dweck, 1999, Levy).

**Organisational mindset** is going to be measured using *two items from the Theories of Intelligence Scale (Dweck, 1999) adapted by Canning et al., (2018) for the purpose of measuring organisational lay theories of intelligence*. The items are measured on a 1 (strongly disagree) to 7 (strongly agree) scale. As it is an entity-only scale - including only entity theory items - higher scores on organisational mindset reflect a more fixed mindset.

**Psychological safety climate** is going to be measured using *Edmondson (1999) seven-item scale adapted by Baer & Frese (2002) to be used on the organisational level*. The scale measures employee perceptions of psychological safety within their organisation, based on items adapted from Edmondson's (1999) team-level measure. The questionnaire items are measured using a seven-point Likert-scale, ranging from 1 (very inaccurate) to 7 (very accurate). The scale contains three reversed items (1., 2., 4.). Edmondson's measure has strong content, criterion and construct validity, as well as very good internal consistency reliability estimates (Edmondson, 1999; Newman, Donohue & Eva, 2017).

**Resilient work behaviour** is going to be measured using the **nine-item Employee Resilience Scale developed by Näswall, Kuntz & Malinen (2015)**. Employee resilience is conceptualised as an “employee capability, facilitated and supported by the organisation, to utilize resources to continually adapt and flourish at work, even if/when faced with challenging circumstances” (Näswall, Kuntz & Malinen, 2015 p. 1). Therefore, resilience is viewed as a developable capacity, rather than a stable personality trait (Luthans, 2002). Hence the scale is designed to tap into employees’ behaviours. The questionnaire items are measured on a seven-point Likert type scale, ranging from 1 (*Never*) to 7 (*Almost always*). The scale has shown good reliability and validity (Näswall, Kuntz & Malinen, 2015).

**Innovative work behaviour** is going to be measured using the **Innovative Behaviour Inventory (IBI) developed by Lukes & Stephan (2017)**. Innovative work behaviour is conceptualised “as distinct from innovation outputs and as a multi-faceted behaviour rather than a simple count of ‘innovative acts’ by employees” (Lukes & Stephan, 2017 p. 2). The *Innovative Behaviour Inventory (IBI)* consists of twenty-three items in seven scales. The multidimensional measure of innovative employee behaviour includes six distinct innovative behaviours (*Idea generation, Idea search, Idea communication, Implementation starting activities, Involving others and Overcoming obstacles*) and an independent measure of *Innovation outputs*. The last scale, *Innovation outputs* is determined by the six key facets of employee innovative behaviour. The questionnaire items are measured using a five-point Likert-scale, ranging from 1 (fully disagree) to 5 (fully agree). The scale has shown good factorial, discriminant, convergent and criterion validity, as well as good internal reliability and equivalence across cultures (cross-cultural validity) (Lukes & Stephan, 2017).

#### Data Needs Analysis

SPSS software will be used for data analysis. To test the internal consistency (reliability) of the scales, Cronbach’s alpha coefficients will be determined.

*Hypothesis 1: Organisational growth mindset will be positively related to psychological safety.*

**Data collection methods:** Data will be collected using self-report measures of organisational mindset and psychological safety climate.

**Method of analysis:** I want to examine whether two metric variables are interrelated with each other, therefore a correlational analysis will be conducted. Prior to the correlational analysis, a normality test will be conducted to check whether the data is normally distributed.

*Hypothesis 2: Psychological safety will be positively related to employee resilience.*

**Data collection methods:** Data will be collected using self-report measures of psychological safety climate and employee resilience.

**Method of analysis:** I want to examine whether two metric variables are interrelated with each other, therefore a correlational analysis will be conducted. Prior to the correlational analysis, a normality test will be conducted to check whether the data is normally distributed.

*Hypothesis 3: Psychological safety will be positively related to employee innovative behaviour.*

**Data collection methods:** Data will be collected using self-report measures of psychological safety climate and employee innovative behaviour.

**Method of analysis:** I want to examine whether two metric variables are interrelated with each other, therefore a correlational analysis will be conducted. Prior to the correlational analysis, a normality test will be conducted to check whether the data is normally distributed.

*Hypothesis 4: Psychological safety will mediate the relationship between organisational growth mindset and employee resilience.*

**Data collection methods:** Data will be collected using self-report measures of organisational mindset, psychological safety climate and employee resilience.

**Method of analysis:** To test for mediation three regression analyses will be conducted. First, regressing the mediator (psychological safety climate) on the independent variable (organisational mindset); second, regressing the dependent variable (employee resilience) on the independent variable (organisational mindset); third, regressing the dependent variable (employee resilience) on both the independent variable (organisational mindset) and on the mediator (psychological safety climate). To confirm mediation, organisational mindset must predict psychological safety climate and employee resilience level, and the relationship between organisational mindset and employee resilience must be none or significantly reduced after controlling for psychological safety climate (Baron & Kenny, 1986).

*Hypothesis 5: Psychological safety will mediate the relationship between organisational growth mindset and employee innovative behaviour.*

**Data collection methods:** Data will be collected using self-report measures of organisational mindset, psychological safety climate and employee innovative behaviour.

**Method of analysis:** To test for mediation three regression analyses will be conducted. First, regressing the mediator (psychological safety climate) on the independent variable (organisational mindset); second, regressing the dependent variable (employee innovative behaviour) on the independent variable (organisational mindset); third, regressing the dependent variable (employee innovative behaviour) on both the independent variable (organisational mindset) and on the mediator (psychological safety climate). To confirm mediation, organisational mindset must predict psychological safety climate and employee innovative behaviour level, and the relationship between organisational mindset and employee

innovative behaviour must be none or significantly reduced after controlling for psychological safety climate (Baron & Kenny, 1986).

## Research ethics

The first section of the survey will include information about the research. Participants will be informed about the nature of my research, they will be assured that completing the survey is anonymous and individual respondents cannot be identified, and they will be provided with my contact details for any questions or concerns they may have. Furthermore, they will be explained that taking part in the survey is completely voluntary.

In the survey prior to the beginning of the questionnaires an informed consent section will appear, which will clarify that by ticking the box they are agreeing to participate in the study. Therefore, an information sheet and consent form will not be sent out separately.

Furthermore, the following steps will be taken to safeguard participants' confidentiality. No personal information will be collected in the study. Responses from the survey will be stored in a password protected computer that only the researcher and the supervisor will have access to. The data from the study will be only used for my dissertation research and all files will be deleted in September 2019.

## Resource and practical issues

### Time scale

Activities	Dates
Data collection Writing the literature review	01/07 – 01/08
Analyse data from questionnaires Submission of draft of literature review and correction	01/08 – 08/08
Write up research findings	09/08 – 16/08
Write conclusion	17/08-22/08
Submission of draft and correction	23/08 – 30/08
Final draft and correction Submission of final copy	First week of September

## Contingency plan

Difficulties are expected and can arise due to the limited amount of time for the study and the low response rate that often characterises surveys. In order to ensure that there will be enough participants taking part in my study, an invitation to participate in the research will be placed on LinkedIn for companies several times throughout the month of July. Furthermore, the survey will be distributed to my friends and acquaintances who will be asked to share it within their companies. Based on the response rate the survey will receive by the end of July, I will decide with the assistance of my supervisor to perhaps prolong the data collection with one more week or alternatively to reduce my ideal number of participants to a smaller, but reasonable sample size.

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## Appendix 2: Ethics form

**PLEASE REFER TO THE RE4 GUIDANCE NOTES AND SUPPLEMENTARY FORMS WHEN COMPLETING THIS APPLICATION**

### APPLICATION FORM FOR ETHICAL REVIEW RE4 FOR RESEARCH INVOLVING HUMAN PARTICIPANTS

#### SECTION A

Is this an application for a 'block release agreement':

Yes	X	No	
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If yes, please specify the name of the group/cohort and note who will be responsible for ethical oversight of projects in this area (the block release holder); this will usually be the module leader, supervisor or head of subject. This RE4 form should present a project *typical* to this group/cohort.

Dr Hans-Joachim Wolfram

MSc Occupational and Business Psychology Part-time 2017-2019

#### **Project title:**

A culture of genius or a culture of development? How an organisation's mindset shapes workplace climate and employee behaviour

#### **Name of the lead applicant:**

Name (Title / first name / surname):	Fanni Diana Szigetvari
Position held:	Student
Department/School/Faculty:	Kingston Business School
Telephone:	0754 944 7640
Email address:	K1742104@kingston.ac.uk

#### **Name of co-applicants:**

Name (Title / first name / surname):	
Position held:	
Department/School/Faculty:	
Telephone:	
Email address:	

Name (Title / first name / surname):	
Position held:	
Department/School/Faculty:	
Telephone:	
Email address:	

Name (Title / first name / surname):	
Position held:	
Department/School/Faculty:	
Telephone:	
Email address:	

<b>Is the project:</b>	Student research	Yes	X	No	
	KU Staff research	Yes		No	
	Research on KU premises	Yes		No	

**If it is STUDENT research:**

Course title	MSc Occupational and Business Psychology
Supervisor or Course/Module leader	Dr Anna Paolillo

**SECTION B General Data Protection Regulation (GDPR)**

**What is the lawful basis for processing personal data? Please select from the list below.**

*Note: There are 6 grounds for the processing of personal data, one of which **MUST** be present. The University expects that the majority of academic research will fall under the 'public interest' heading, and is unlikely to fall under the headings that are not emboldened.*

- Consent of the data subject**
- Necessary for the performance of a contract
- Legal obligation on KU
- Necessary to protect vital interests of the data subject
- Carried out in the public interest** or in the exercise of official authority
- Legitimate interest of KU**

**Please give a brief overview of how your work will be compliant with GDPR.**

This should direct the reviewer to the appropriate information in the later sections and in the attached documents (specifically, the proposal, consent form, information sheet and debrief).

In the first section of the survey, participants will be informed about the nature of my research, they will be assured that completing the survey is anonymous, and they will be provided with my contact details for any questions or concerns they may have. Furthermore, they will be explained that taking part in the survey is completely voluntary.

In the survey prior to the beginning of the questionnaires an informed consent section will appear, which will clarify that by ticking the box they are agreeing to participate in the study.

No personal information will be collected in the study. Responses from the survey will be stored in a password protected private computer that only the researcher and the supervisor will have access to. The data from the study will be only used for my dissertation research and all files will be deleted in September 2019.

### **Data Use**

Are there potential future uses for the data that go beyond the initial purposes of the research? If so, describe how you have prepared for such use and how the necessary permissions will be obtained and managed.

No personal information will be collected in the study. Responses from the survey will be stored in a password protected private computer that only the researcher and the supervisor will have access to. The data from the study will be only used for my dissertation research and all files will be deleted in September 2019.

**Storage, access and disposal of data**

It a requirement to plan and manage how and where research data will be stored, for what period of time, the measures that will be put in place to ensure security of the data, who will have access to the data, and the method and timing of disposal of the data.

Please attach your data management plan covering the use, storage and archiving of data.

**SECTION C** (Complete this section if another ethics committee has already granted approval for the project. Otherwise, proceed to Section D)

Committee that granted approval

Date of approval


Please attach evidence that the project has been fully approved (usually an approval letter). The original application should be retained on file in the Faculty for inspection where necessary. The Faculty Research Ethics Committee (FREC) may require further information or clarification from you and you should not embark on the project until you receive notification from the FREC that recognition of the approval has been granted. You should proceed directly to Section E of this form and submit this as a fast-track application.

**SECTION D**

**Provide a brief project description** (max. 150 words). This should be written for a lay audience

The aim of this dissertation is to investigate the relationship between organisational mindset - whether a company is perceived to view talent as fixed or malleable (Dweck & Murphy, 2010; Canning et al., 2018) -, psychological safety climate – whether employees feel that in their organisation they are safe to take interpersonal risks and they can raise concerns, admit mistakes or ask questions (Edmondson, 1999) -, and employee behaviour (innovation and resilience). An additional aim is to explore whether psychological safety climate mediates the relationship between an organisation’s mindset and resilient and innovative work behaviour.

**Estimated duration of the project (months)**

3 months

**State the source of funding**

None

**Is it collaborative research?**

Yes	<input type="checkbox"/>	No	X
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If YES, name of the collaborator institutions:

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

**Briefly describe the procedures to be used which involve human participants**

<p>Questionnaire distribution</p> <p>Participants will be informed about the nature of my research, they will be assured that completing the survey is anonymous and individual respondents cannot be identified, and they will be provided with my contact details for any questions or concerns they may have. Furthermore, they will be explained that taking part in the survey is completely voluntary.</p>
--

**Summarise the data sources to be used in the project**

<p>Participant and workplace demographics will be collected. Furthermore, data will be collected using self-report questionnaires.</p>
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**Risk Assessment Questionnaire: Does the proposed research involve any of the following?**

		YES	NO
0.	The use of human biological material?		X
1.	Children or young people under 18 years of age?		X
1.a	If YES, have you complied with the requirements of the DBS?		
2.	People with an intellectual or mental impairment, temporary or permanent?		X
3.	People highly dependent on medical care, e.g., emergency care, intensive care, neonatal intensive care, terminally ill, or unconscious?		X
4.	Prisoners, illegal immigrants or financially destitute?		X
5.	Women who are known to be pregnant?		X
6.	Will people from a specific ethnic, cultural or indigenous group be targeted in the proposed research, or is there potential that they may be targeted?		X
7.	Will any protected information be requested?		X
8.	Assisted reproductive technology?		X
9.	Human genetic research?		X
10.	Epidemiology research?		X
11.	Stem cell research?		X
12.	Use of environmentally toxic chemicals?		X
13.	Use of ionizing radiation?		X

14.	Ingestion of potentially harmful or harmful dose of foods, fluids or drugs?		X
15.	Contravention of social/cultural boundaries?		X
16.	Involves use of data without prior consent?		X
17.	Involves bodily contact?		X
18.	Compromising professional boundaries between participants and researchers?		X
19.	Deception of participants, concealment or covert observation?		X
20.	Will this research significantly affect the health* outcomes or health services of subjects or communities?		X
21.	Is there a significant risk of enduring physical and/or psychological harm/distress to participants?		X
22.	Does your research raise any issues of personal safety for you or other researchers involved? (especially if taking place outside working hours or off KU premises)		X
23.	Will the research be conducted without written informed consent being obtained from the participants except where tacit consent is given by completing a questionnaire?		X
24.	Will financial/in kind payments (other than reasonable expenses and compensation for time) be offered to participants? (Indicate in the proposal how much and on what basis)		X
25.	Is there a potential danger to participants in case of accidental unauthorised access to data?		X

[Note \*health is defined as not just the physical well-being of the individual but also the social, emotional and cultural well-being of the whole community].

**SECTION E (To be signed by all applicants)**

**Declaration to be signed by the applicant(s) and the supervisor (in the case of a student):**

- I confirm that the research will be undertaken in accordance with the Kingston University *Guidance and procedures for undertaking research involving human participants*.
- I will undertake to report formally to the relevant Faculty Research Ethics Committee for continuing review approval where required.
- I shall ensure that any changes in approved research protocols or membership of the research team are reported promptly for approval by the relevant Faculty Research Ethics Committee.
- I shall ensure that the research study complies with the law and University policy on Health and Safety.
- I confirm that the research study is compliant with the requirements of the Disclosure and Barring Service where applicable.
- I am satisfied that the research study is compliant with the Data Protection Act 2018, and that necessary arrangements have been, or will be made with regard to the storage and processing of participants' personal information and generally, to ensure confidentiality of such data supplied and generated in the course of the research.  
*(Further advice may be sought from the Data Protection Officer, [GDPR@kingston.ac.uk](mailto:GDPR@kingston.ac.uk))*
- I shall ensure that the research is undertaken in accordance with the University's Single Equality Scheme.
- I will ensure that all adverse or unforeseen problems arising from the research project are reported immediately to the Chair of the relevant Faculty Research Ethics Committee.
- I will undertake to provide notification when the study is complete and if it fails to start or is abandoned;
- (For supervisors, *if the applicant is a student*) I have met and advised the student on the ethical aspects of the study design, and am satisfied that it complies with the current professional (*where relevant*), departmental and University guidelines. I accept responsibility for the conduct of this research and the maintenance of any consent documents as required by this Committee.

- I understand that failure to provide accurate information can invalidate ethical approval.

**Is this an application for fast-track ethical approval?**

(Fast track is **only** available for projects either pre-approved by another ethics committee, or where you have accurately indicated 'No' to every question on the Risk Assessment Questionnaire – Pg4)

<b>Yes</b>	<b>X</b>	<b>No</b>	
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**Please sign and date**

*Signature*

*Date*

Lead applicant	Fanni Diana Szigetvari	19/06/2019
Co-applicant		
Co-applicant		
Co-applicant		
Supervisor	Anna Paolillo	20/06/2019

**NOTE**

**If this is a block release application and/or you have answered YES to any of the questions in the Risk Assessment, you must complete a full application for ethical approval and provide the information outlined in the checklist below. Your project proposal should show that there are adequate controls in place to address the issues raised in your Risk Assessment.**

**If you have answered NO to all of the questions in the Risk Assessment you may submit the form to your Faculty Ethics Administrator as a fast-track application. You must append your participant information sheet. The Faculty Research Ethics Committee (FREC) may require further information or clarification from you and you should not embark on the project until you receive notification from your Faculty that recognition of the approval has been granted.**

**CHECKLIST (Where a full application for ethical approval is required)**

Please complete the checklist and attach it to your full application for ethical approval:

Before submitting this application, please check that you have done the following: (N/A = not applicable)	Applicant			Committee use only		
	Yes	No	N/A	Yes	No	N/A
All questions have been answered	X					
All applicants have signed the application form	X					
The research proposal is attached	X					
The Data Management Plan is attached	X					
Informed Consent Form is attached	X					
Participant Information Sheets are attached	X					
All letters, advertisements, posters or other recruitment material to be used are attached	X					
All surveys, questionnaires, interview/focus group schedules, data sheets, etc, to be used in collecting data are attached	X					
Reference list attached, where applicable	X					

## Appendix 3: Questionnaire survey

- Introduction for the survey (participant information sheet)

The title of the survey: *The relationship between organisational context and employee behaviour*

Dear participant,

Thank you for choosing to contribute to my work by completing this questionnaire, I greatly appreciate your participation. This study aims to explore the relationship between different aspects of organisational context and employee behaviour, and the data from the experiment will be used for my dissertation research. Your participation in this survey is completely voluntary and all of your responses are anonymous. Your answers will be aggregated with other responses and statistically analysed; thus, individual respondents cannot be identified. Completing the survey takes approximately 10 minutes.

There are no right or wrong answers, please answer the below questions as honestly as possible.

If you have any questions regarding the research, feel free to contact me at:

[K1742104@kingston.ac.uk](mailto:K1742104@kingston.ac.uk)

Thank you,

Fanni Diana Szigetvari

### Consent \*

- I voluntarily consent to participation in this research.

## 1. Questionnaire Survey

### 1) Demographic questions

**Q 1, Motto:**

**Q 2, When were you born?**

**Q 3, What is your gender?**

- male
- female

**Q 4, What is the highest level of education you have completed?**

- GCSEs or equivalent
- A-levels or equivalent

- Vocational apprenticeship or equivalent
- University undergraduate programme (Bachelor's)
- University post-graduate programme (Master's)
- Doctoral degree (PhD)

**Q 5, Please give the code you were asked to use for your company:**

**Q 6, Which of the following best describes the principal industry of your company?**

- Technology
- Finance and Banking
- Energy
- Healthcare
- Manufacturing
- Retail and Consumer
- Hospitality and Leisure
- Government
- Real Estate
- Charity
- Business services
- Agriculture
- Education
- Engineering and Construction
- Other

**Q 7, How many years have you been working at your company?**

**Q 8, What is your position in the company?**

- Employee
- Team leader
- Middle manager
- Executive
- Other

**Q 9, What department are you working in?**

**2. Questionnaires**

**Q 10 Using the scale below, please indicate the extent to which you agree or disagree with each of the following statements. (2 items)**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>Strongly Disagree</b>						<b>Strongly Agree</b>

10.1, When it comes to being successful, this company seems to believe that people have a certain amount of talent, and they can't really do much to change it.

10.2, This company seems to believe that people can't really change how talented they are.

**Q 11 Please indicate how accurate the following statements are when thinking about your company. (7 items)**

<b>1</b> <b>Very</b> <b>Inaccurate</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b> <b>Very</b> <b>Accurate</b>
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11.1, In our company some employees are rejected for being different.

11.2, When someone in our company makes a mistake, it is often held against them.

11.3, No one in our company would deliberately act in a way that undermines others' efforts.

11.4, It is difficult to ask others for help in our company.

11.5, In our company one is free to take risks.

11.6, The people in our company value others' unique skills and talents.

11.7, As an employee in our company one is able to bring up problems and tough issues.

**Q 12 Using the scale below, please indicate the extent to which you agree or disagree with each of the following statements. (23 items)**

<b>1</b> <b>Fully Disagree</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b> <b>Fully Agree</b>
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12.1, I try new ways of doing things at work.

12.2, I prefer work that requires original thinking.

12.3, When something does not function well at work, I try to find new solution.

12.4, I try to get new ideas from colleagues or business partners.

12.5, I am interested in how things are done elsewhere in order to use acquired ideas in my own work.

12.6, I search for new ideas of other people in order to try to implement the best ones.

12.7, When I have a new idea, I try to persuade my colleagues of it.

12.8, When I have a new idea, I try to get support for it from management.

12.9, I try to show my colleagues positive sides of new ideas.

12.10, When I have a new idea, I try to involve people who are able to collaborate on it.

12.11, I develop suitable plans and schedules for the implementation of new ideas.

12.12, I look for and secure funds needed for the implementation of new ideas.

12.13, For the implementation of new ideas I search for new technologies, processes or procedures.

12.14, When problems occur during implementation, I get them into the hands of those who can solve them.

12.15, I try to involve key decision makers in the implementation of an idea.

12.16, When I have a new idea, I look for people who are able to push it through.

12.17, I am able to persistently overcome obstacles when implementing an idea.

12.18, I do not give up even when others say it cannot be done.

12.19, I usually do not finish until I accomplish the goal.

12.20, During idea implementation, I am able to persist even when work is not going well at the moment.

12.21, I was often successful at work in implementing my ideas and putting them in practice.

12.22, Many things I came up with are used in our organisation.

12.23, Whenever I worked somewhere, I improved something there.

**Q 13 Using the scale below, please rate how often you engage in the following behaviours. (9 items)**

<b>1</b> <b>Never</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b> <b>Almost</b> <b>Always</b>
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13.1, I effectively collaborate with others to handle unexpected challenges at work.

13.2, I successfully manage a high workload for long periods of time.

13.3, I resolve crises competently at work.

13.4, I learn from mistakes at work and improve the way I do my job.

13.5, I re-evaluate my performance and continually improve the way I do my work.

13.6, I effectively respond to feedback at work, even criticism.

13.7, I seek assistance to work when I need specific resources.

13.8, I approach managers when I need their support.

13.9, I use change at work as an opportunity for growth.

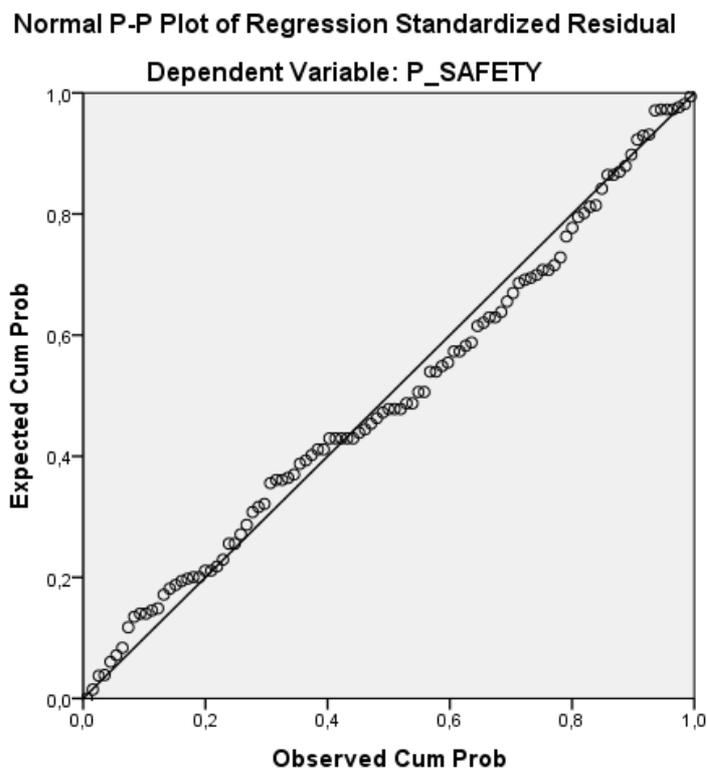
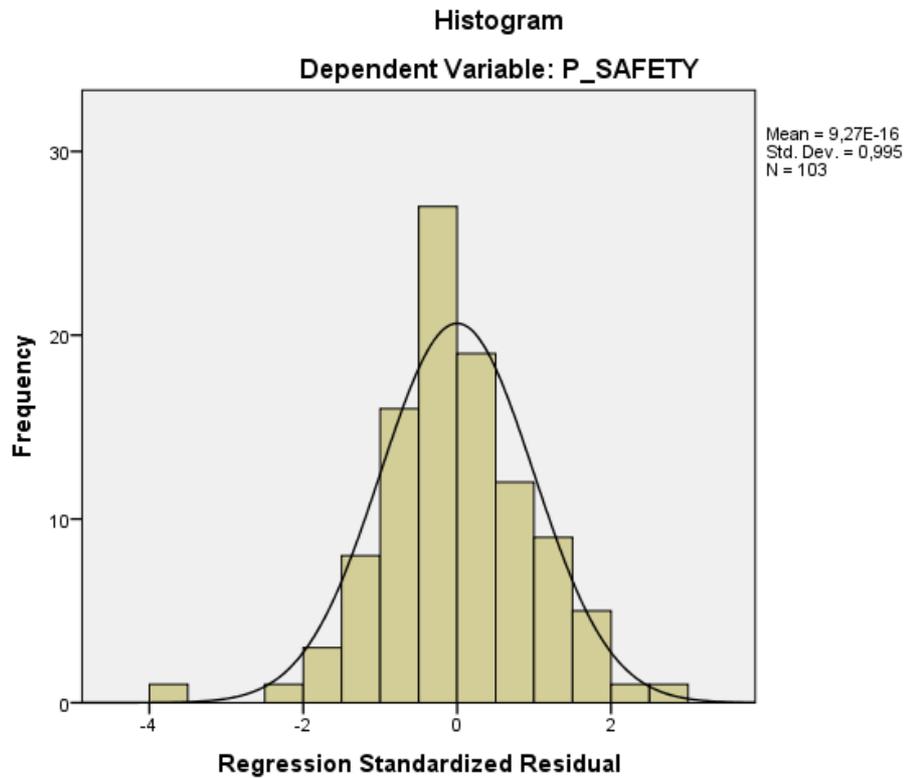
**Q 14 Using the scale below, please indicate the extent to which you agree or disagree with each of the following statements. (2 items)**

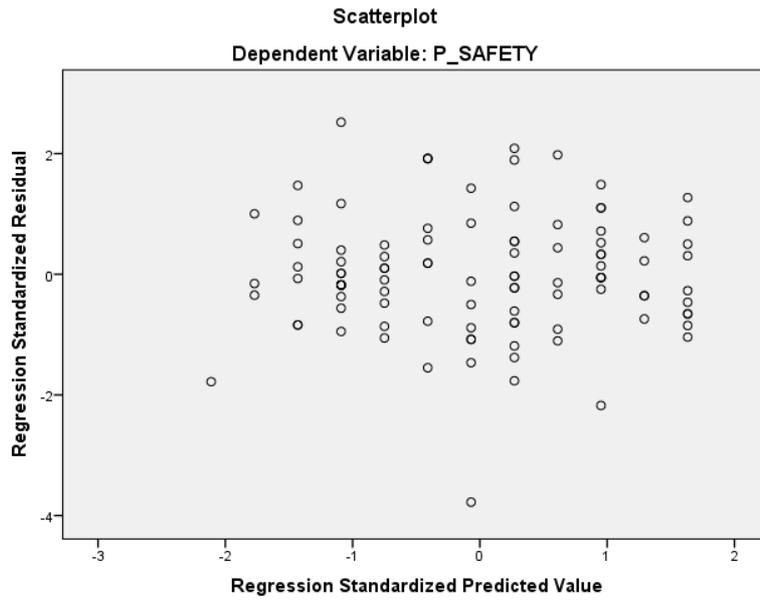
<b>1</b> <b>Strongly</b> <b>Disagree</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b> <b>Strongly</b> <b>Agree</b>
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14.1, When it comes to being successful in a job like mine, you have a certain amount of talent, and you can't really do much to change it.

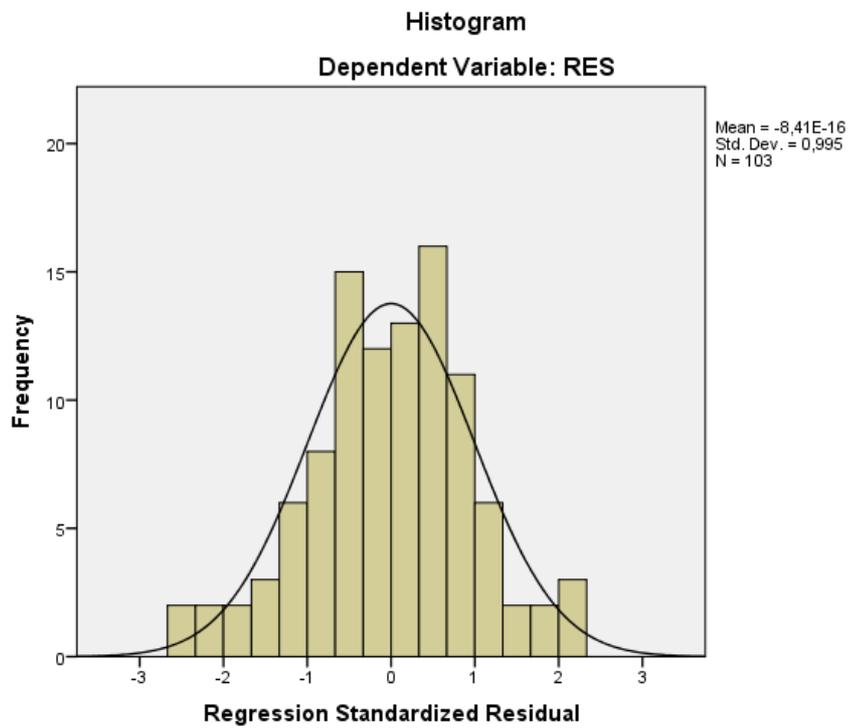
14.2, I believe that people can't really change how talented they are.

**Appendix 4: Linear regression: Organisational mindset – Psychological safety (histogram, normal P-P plot, scatterplot)**

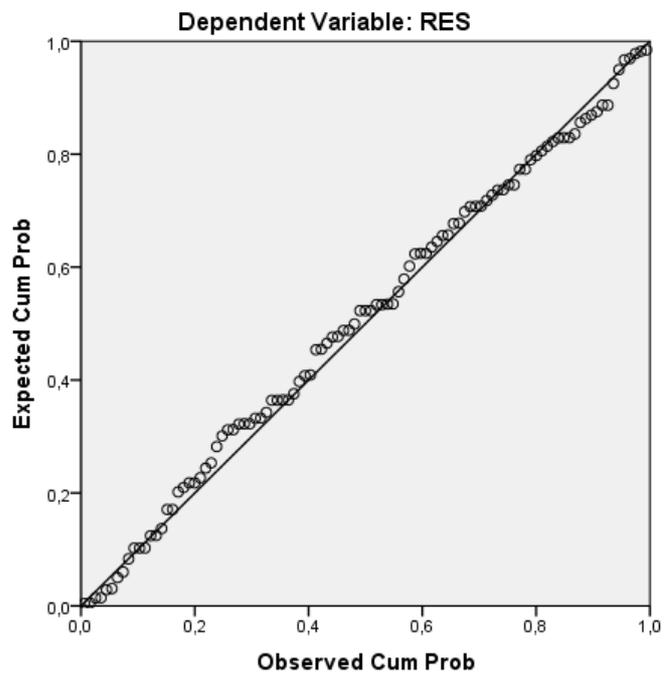




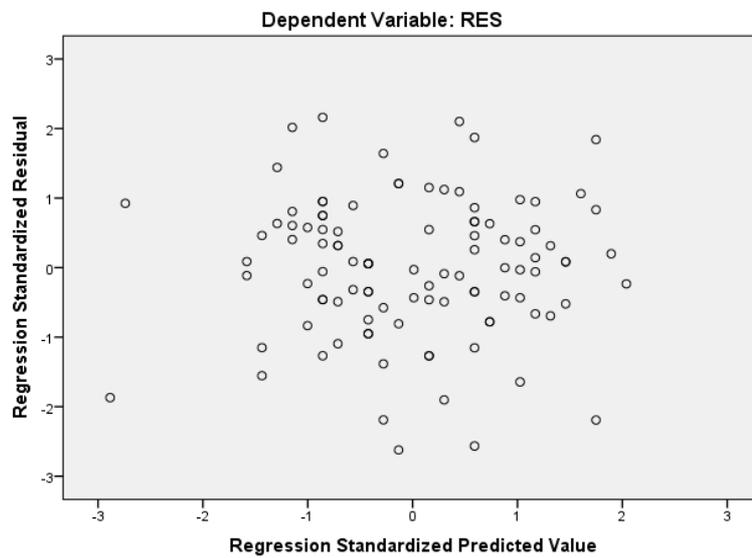
**Appendix 4: Linear regression: Psychological safety – Employee resilience (histogram, normal P-P plot, scatterplot)**



Normal P-P Plot of Regression Standardized Residual

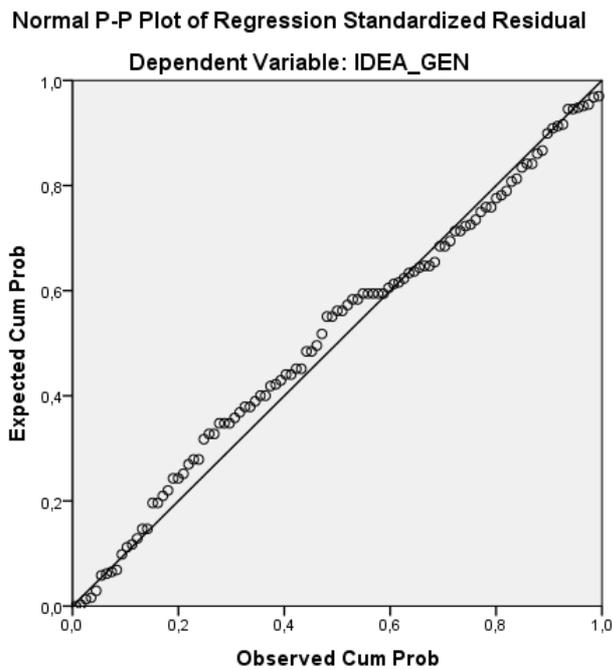
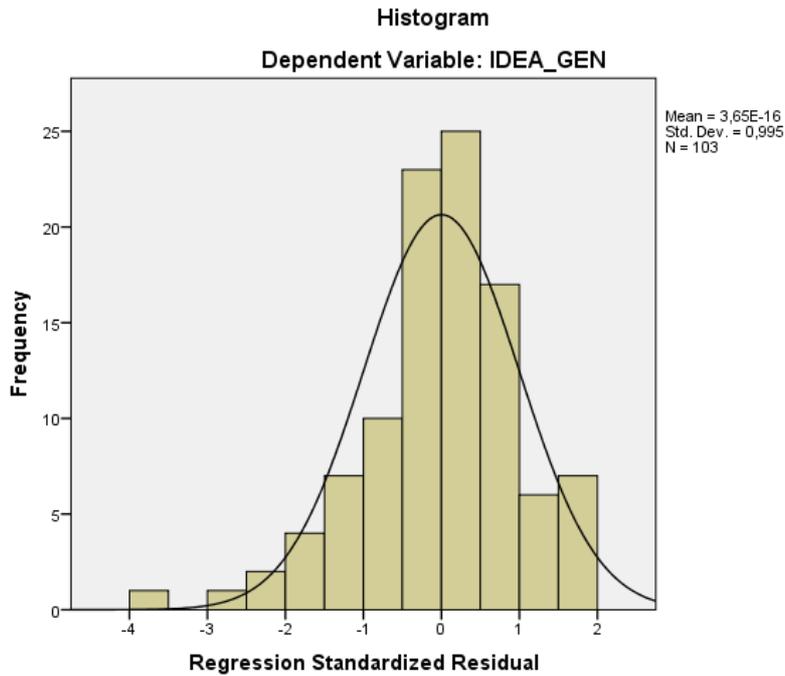


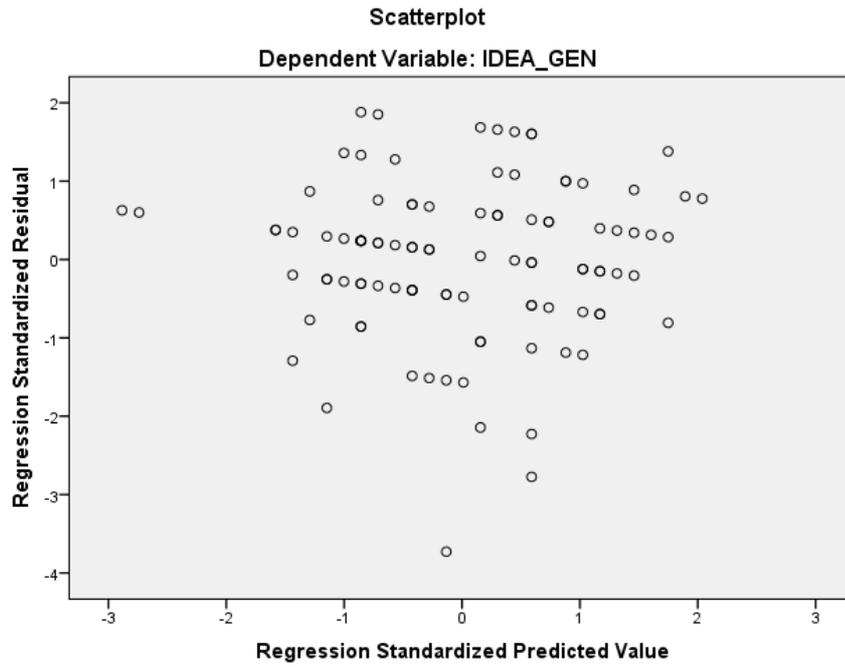
Scatterplot



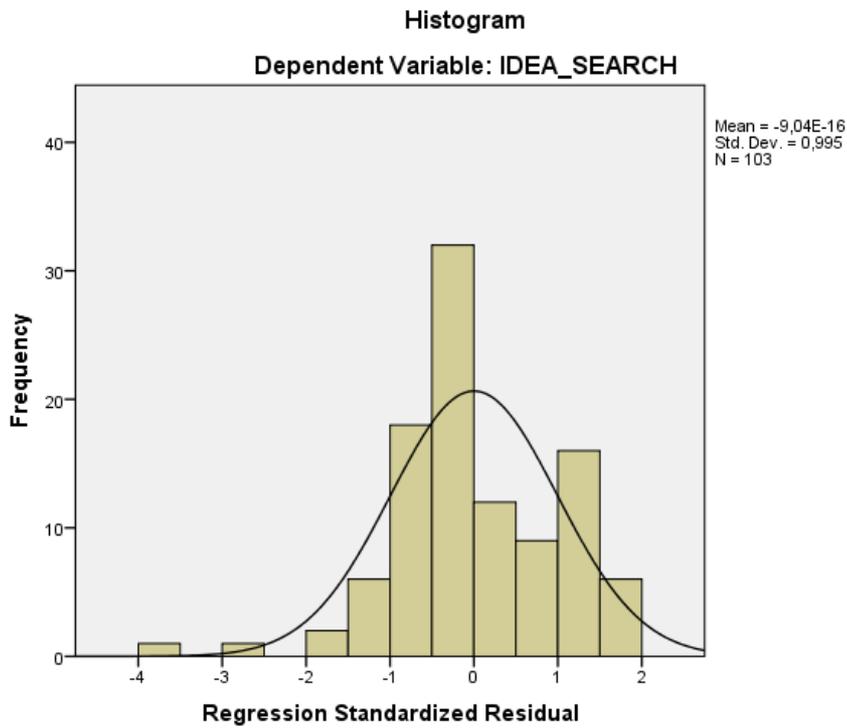
**Appendix 5: Linear regression: Psychological safety – Idea generation, Idea search and Involving others (histogram, normal P-P plot, scatterplot)**

**Psychological safety – Idea generation**



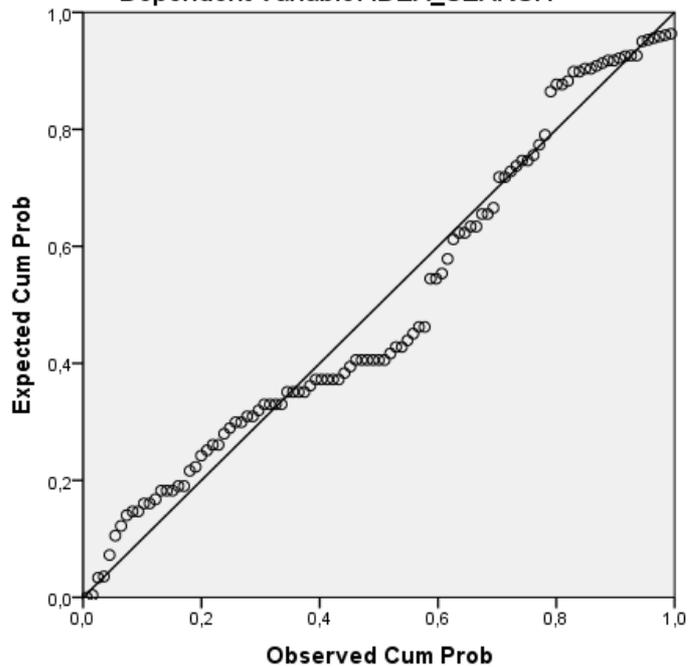


**Psychological safety – Idea search**



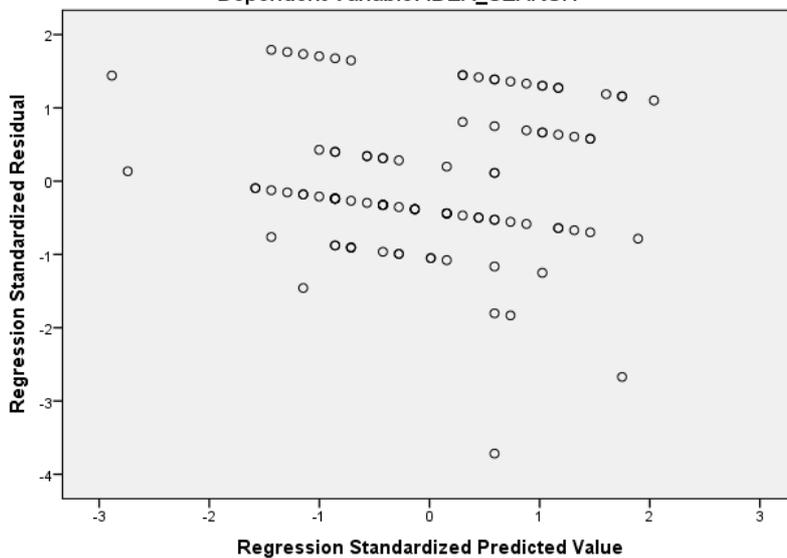
Normal P-P Plot of Regression Standardized Residual

Dependent Variable: IDEA\_SEARCH



Scatterplot

Dependent Variable: IDEA\_SEARCH



## Psychological safety – Involving others

