Higher levels of intrapreneurial behaviour in a team due to an imperfect fit of autonomy.

How does autonomy misfit, together with psychological safety in a team, contribute to intrapreneurial behaviour?

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Contents

1. Introduction

1.1 Background & context

In today's world organisations need to stay ahead of their competition. In order to do so they need to remain and gain a competitive advantage over their competition. Tushman & Nadler (1986) stressed that "organisations can gain competitive advantage only by managing effectively for today while simultaneously creating innovation for tomorrow" (p. 19). Being innovative is a key differentiator for organisation to thrive in this competitive world. A pressing problem for managers is to ensure sustained innovation (Tushman & Nadler, 1986). Employees in an organisation are increasingly required to be innovative and to contribute to the ever changing goals of the organisations. These intrapreneurs are more and more deemed as an important factor to innovation and economic growth (Elert & Stenkula, 2020; Gawke et al., 2019).

Intrapreneurs contribute to the competitive advantage of the organisation. Organisations uphold different expectations of their employees. Bowen (2016) states that employees should not be passive recipients of changing jobs and products, they need to adopt to roles as *innovators* and *differentiators*. Adopting a more intrapreneurial way of working is required for employees to deal with or even initiate changing requirements and impact the strategic direction of a firm (Peters & Waterman, 1984).

Organisations benefit from higher levels of intrapreneurship. Intrapreneurship is a process of recognising and exploiting opportunities by being innovative, proactive and taking risks (de Jong et al., 2015; Elert & Stenkula, 2020; Gawke et al., 2019; Neessen et al., 2019). Rather then being driven from the top - like corporate entrepreneurship - intrapreneurship is a bottom-up multilevel construct (Neessen et al., 2019). Being innovative, proactive, and risk-taking describe the behavioural dimensions of intrapreneurship (de Jong et al., 2015; Neessen et al., 2019). Gawke et al. (2019) names this proclivity to these behaviours the *entrepreneurial orientation*. This orientation argues that intrapreneurial employees self-start initiatives due to awareness of external trends and events.

1.2 Problem statement

In an organisation not all employees will behave as intrapreneurs. Neessen et al. (2019) stated in their systematic literature review that employee autonomy is one of various dimensions that influence the intrapreneur. On that same note de Jong et al. (2015) found that *job autonomy* is directly related to innovative and proactive behaviour. Underlying premise in the research of de Jong is that job autonomy is provided by the organisation. However, this is only part of the story. Although an environment provides a certain level of characteristics, it can be questionable whether this will engage the employee into certain behaviour. Autonomy, for example, can be given by an organisation, but some employees will thrive in it and others will be unhappy. It is generally assumed that a fit should exist between the characteristics desired by an employee and provided by an organisation (Lambert et al., 2003; van Vianen, 2018). In this context of intrapreneurship and job autonomy we are looking specifically to *autonomy (mis)fit*.

Although people have an innate need to fit to their environment, a perfect fit seldomly exists (van Vianen, 2018). Meaning that most individuals and organisations will experience misfit. Misfits, however, are not necessarily bad as experiencing misfit will lead individuals to adapt to their situation (van Vianen, 2018). Understanding the effect of adaptation, in the case of autonomy misfit, towards intrapreneurial

behaviour can help organisations to influence intrapreneurship in their organisation.

Regarding the topic of job autonomy many perspectives has been researched (Jong & Ford, 2021; Simmering et al., 2003; Sørlie et al., 2022; Yu & Davis, 2016). However, no prior research has been done on the topic of autonomy (mis)fit and its influences on intrapreneurial behaviour. A gap in academic literature that this research attempts to fill.

Although intrapreneurial behaviour is often measured on individual level, the act of getting intrapreneurial outcomes is often a team effort. Members of the team have to work and learn collaboratively to achieve the desired outcomes (Edmondson & Lei, 2014). In times of uncertainty and collaboration, psychological safety has shown to enhance the performance of the team (Edmondson & Lei, 2014; Frazier et al., 2017; Newman et al., 2017). Psychological safety is a shared belief held by members of a team that the team is safe for interpersonal risk raking (Edmondson, 1999). Teams with high levels of psychological safety have shown to take more risk, share more information, seek more feedback, and perform better with regards to innovation, process improvements, knowledge creation, and successful technology implementations (Edmondson, 1999; Edmondson & Lei, 2014; Frazier et al., 2017; Newman et al., 2017).

Both autonomy fit and misfit has shown to influence dimensions of intrapreneurial behaviour. Yu & Davis (2016), for example, showed that autonomy misfit leads to higher levels of proactivity. De Stobbeleir et al. (2020) found a positive effect between psychological safety and feedback seeking. In case of autonomy fit, psychological safety has influenced creativity, risk taking, and motivation to engage in learning (Choo et al., 2007). Given these findings, psychological safety might influence the effects of autonomy (mis)fit in relation with intrapreneurial behaviour.

Summarising, autonomy has been researched as a contributing factor to intrapreneurship in various researches. However, none of these take into the personal needs to autonomy in relation to what is supplied by the organisation. As perfect fit seldomly exists (van Vianen, 2018), it is interesting to research what the effects are of autonomy (mis)fit on intrapreneurial behaviour. Potentially psychological safety can be found to moderate these effects.

1.3 Academic & practical relevance

In the current academic literature not much is known about the relation and effects of autonomy (mis)fit, psychological safety, and intrapreneurial behaviour. Although the elements on their own have been subject of many researches, the trilogy of these elements have not been examined. The contribution of this research as such is multifold.

1.3.1 Academic relevance

The contribution of this paper to the academics is twofold. First, a recurring question in the field of intrapreneurship is the influence of teams on intrapreneurial behaviour (de Jong et al., 2015; Neessen et al., 2019). The answers of this research contribute to the field by displaying if and how the team affects intrapreneurial behaviour of an individual. Specifically, if a psychological safe team environment acts as a catalyst or as a coping mechanism in the case of autonomy (mis)fit for the individual. Secondly, this also answers a question raised by van Vianen (2018): “which environmental and individual factors mitigate experienced misfits?” In the case of this research the question is if psychological safety mitigates the experienced autonomy misfit.

1.3.2 Practical relevance

Organisations has shown to benefit from innovation and other means of gaining competitive advantage (Elert & Stenkula, 2020; Peters & Waterman, 1984). Ensuring sustained innovation is a pressing problem for managers (Tushman & Nadler, 1986). Attracting, retaining, and growing intrapreneurs in the organisation is a vivid question for organisation. This research aims to show whether or not autonomy (mis)fit and/or psychological safety is beneficial to increase intrapreneurial behaviour of employees. Especially for organisations that are active in the field of software development, the context of this research. These

insights could lead to adoption of recruitment strategies by selecting adaptable minds that can cope with misfit between levels of needs and supplies of autonomy (van Vianen, 2018; Yu & Davis, 2016).

Besides providing advice & insights to the attraction and selection of employees, this research tries to contribute to the field of job design. de Jong et al. (2015) already showed that job autonomy is an influencing factor to entrepreneurial behaviour. However, in that research employees are seen as an homogeneous group. This research attempts to complement that insight by acknowledging the personal needs of autonomy compared to what is supplied. This additional knowledge can help organisations to develop strategies and mechanisms to smartly design their jobs to promote and enhance intrapreneurship for different individuals.

1.4 Method of research

A quantitative study will be used to collect the data for this study. This data will be analysed using regression analysis.

Literature research

2.1 What is intrapreneurship & intrapreneurial behaviour?

"Intrapreneurship is a process whereby employee(s) recognise and exploit opportunities by being innovative, proactive and by taking risks, in order for the organisation to create new products, processes and services, initiate self-renewal or venture new businesses to enhance the competitiveness and performance of the organisation (Neessen et al., 2019, p. 7)." In academic literature "intrapreneurship" usually refers to individual workers rather than organisations or boardroom-level decision makers (de Jong et al, 2011). This paper adopts this points of view that intrapreneurship is a bottom-up approach (de Jong et al, 2011; Neessen et al., 2019). A common label of intrapreneurship is *corporate entrepreneurship* (de Jong et al, 2011). In line with de Jong et al (2011) this paper regards corporate entrepreneurship as a top-down process that can be used by business owners and general manages to foster new ventures, innovation, and strategic renewal (de Jong et al, 2011).

Characteristically intrapreneurship should be seen as a process. Intrapreneurship "is about a set of activities of an individual or an organisation to get from point A to point B in time, with an increased competitiveness and performance of the organisation as the end goal (Neessen et al., 2019, p. 8)." This definition shows that intrapreneurship is not simply a behaviour of an individual or an organisation, but rather a complex construct of various activities. The complexity of this construct is shown in an integrative framework of intrapreneurship as created by Neessen et al. (2019) (fig. 1) that displays the various constructs that together constitute intrapreneurship. The framework makes a clear distinction between organisational and individual constructs. For example the support of management or how the organisation is structured influences intrapreneurship in the organisation. Attitudes and characteristics of individuals likewise influence intrapreneurship by impacting the behaviour of individuals. When individuals behave intrapreneurially it will lead to outcomes as new product / innovation, new business venturing, or self-renewal (Neessen et al., 2019).

de Jong et al (2011) describes *intrapreneurial behaviour* "as the identification and exploitation of opportunities by individual workers that (also) advance the organisation. (p. 4)." Intrapreneurial behaviour is commonly defined by the dimensions of *proactivity*, *innovativeness*, and *risk-taking* (de Jong et al, 2011; Gawke et al., 2019; Neessen et al., 2019). Additionally Neessen et al. (2019) found *opportunity recognition and exploitation* and *networking* to be characteristic dimensions of intrapreneurial behaviour. These characterisation of intrapreneurship fits the entrepreneurial orientation as typed by Gawke et al. (2019).

> @@ dieper ingaan op de drie stromingen van Gawke et al. (2019), of bewaren voor conclusie / aanbevelingen?

As intrapreneurship is a bottom-up approach it can only be achieved if employees display intrapreneurial behaviour. Predicting if an individual will engage in certain human behaviour is a core tenet of the person-environment fit theory (van Vianen, 2018). It researches, and emphasises, the compatibility between workers and their work environment (Kristof, 1996). The theory of person-environment fit suggests that individual attitudes, behaviours, and other outcomes result not from the person or environment separately, but from the relationship between the two (Edwards, 1996).

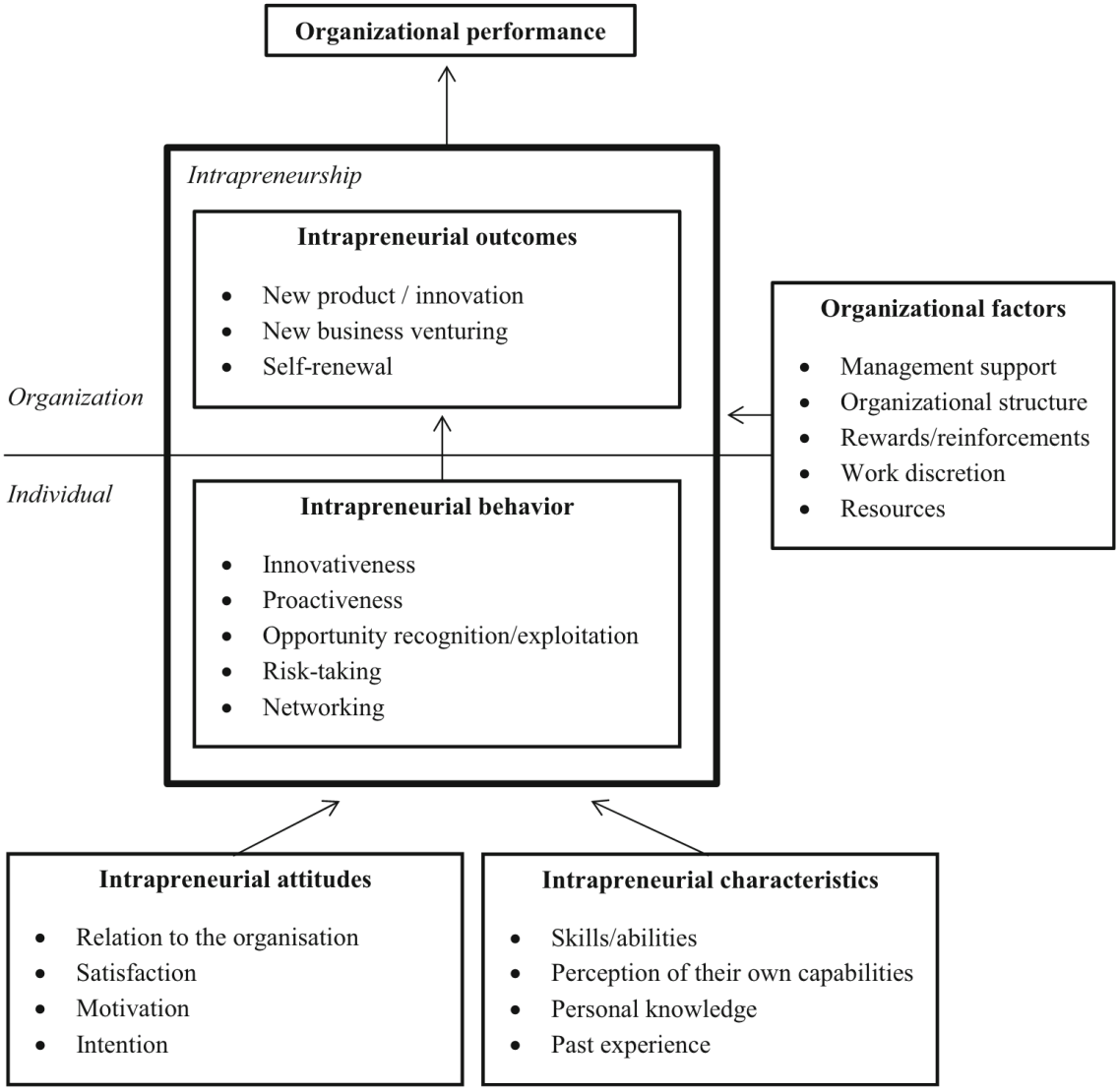

Figure 1: Framework of intrapreneurship by Neessen et al. (2019)

2.2 Person-environment fit perspective

Not all individuals will display the same behaviour, even when they are in the same environment. To find possible reasons for this difference a popular theory is Person-Environment fit theory. "Person-Environment fit is generally defined as the compatibility between individuals and their environment (van Vianen, 2018, p. 76)." The theory suggests that the attitudes, behaviours, and other outcomes, do not result from the person or environment separately, but rather from the relationship between the two (Jong & Ford, 2021). Meaning, if the characteristics of an individual are aligned with those of the environment, it will lead to a certain outcome in behaviour. Person-environment fit theory examines how job attitudes are explained by the fit between individuals and their work situation (Jong & Ford, 2021).

Key assumption of person-environment fit theory is that people have an innate need to fit their environments (van Vianen, 2018). Having a fit allows individuals to better understand the behaviours of others and facilitates interpersonal interactions. They compare themselves with other people in their social environment (van Vianen, 2018). Perfect fit, however, is a rare circumstance (van Vianen, 2018). People make suboptimal choices, and individuals and their environments change over time (van Vianen, 2018). A dominant model in current person-environment fit theory is Schneider (1987) attraction-selection-attrition (ASA) model (Simmering et al., 2003). This model posits that employees are attracted to organisations that provide a high level of fit, are selected by organisations that recognise this fit, and leave the organisation when misfit occurs. This deemphasises the possibility that individuals might change themselves rather then just leave the organisation (Simmering et al., 2003). Although individuals and organisations might strive for fit during attraction and selection, researching misfits might provide organisations with more tangible advise and insights to change their selection strategies, or to help new hires to adopt to their situation.

A wide range of fit concepts exist in the context of work. The most prominent fit concepts are "person-job fit (fit between individual abilities and needs and the demands and supplies of the job), person-organisation fit (fit between individual and organisational values), person-team fit (fit between individual attributes and those of the group), and person-supervisor fit (fit between individual attributes and those of the supervisor)" (van Vianen, 2018). Each of these fit concepts investigate a specific congruence between the person and environment.

To answer our main hypothesis in this research the fit concept of needs-supplies is chosen. Needs-supplies fit displays the alignment of the employees needs, desires, or preferences and the supply provided by the job they perform (Kristof-Brown et al., 2005) It is a fit that belongs to the person-job concept (van Vianen, 2018). The reason for this is twofold: 1) autonomy is typically researched in the context of person-job fit (van Vianen, 2018), and 2) needs-supplies fit has the greatest impact on job attitudes (Kristof-Brown et al., 2005). By investigating the fit or misfit regarding regarding autonomy needs and supplies will tell us of this affects the attitude towards intrapreneurial behaviour.

2.3 The role of autonomy

Labor market conditions are changing. Rapid technological progress, increased employee tenure, a rise in high-skilled job, and request for more flexibility all indicate an increased need for autonomy (Stiglbauer & Kovacs, 2018). Companies are advised to grant employees a greater span of control in order to leverage digital technologies and employee's expertise (Muecke & Iseke, 2019). As autonomy is becoming a more prominent work characteristic it can be of value to further investigate its relationship with intrapreneurial behaviour.

Autonomy is an influencing factor for intrapreneurial behaviour (Neessen et al., 2019). Giving employees the freedom to design its own work and make decisions results into more intrapreneurial activities and higher levels of *self-efficacy* (Neessen et al., 2019). On that same note de Jong et al. (2015) found that job autonomy leads to higher levels of intrapreneurial behaviour, especially on its innovation and proactivity dimensions.

However, Gerards et al. (2021) states that the positive relation between autonomy and intrapreneurial behaviour is ambiguous. One stream states that autonomy has shown to influence intrapreneurial behaviour thru the mediating effect of a transformational leadership style (Gerards et al., 2021). Another

stream states that employees will be reluctant to show initiative when organisations and leaders emphasise efficiency and flawlessness, even when given autonomy (Jung et al., 2003; Yukl, 2001). Additionally, both autonomy and innovative behaviour have shown meaningful variability on daily basis (Zacher & Wilden, 2014). On days of perceived high autonomy employees are more likely to generate novel ideas, proactively tackle work-related problems and be more inclined to innovate (Ohly & Fritz, 2010; Orth & Volmer, 2017).

Much of the existing literature researches autonomy from the provisioning aspect of an organisation (e.g. de Jong et al., 2015). These studies see the relation between autonomy and intrapreneurial behaviour thru the lens of job design (see de Jong et al., 2015; Gawke et al., 2019; Rigtering & Weitzel, 2013). Although the organisation can offer autonomy, whether the autonomy will be taken will depend on the individual. Jong & Ford (2021) argues that it is critical to not only examine job autonomy on its own, but to examine the congruence between autonomy and preference for autonomy. The person-environment theory offers a perspective to research this congruence. Seen in simple terms, the needs and supplies of autonomy can be either a fit or a misfit.

Regarding the effects of (mis)fit two opposing views are prevalent. The affective-cognitive based view states that a needs-supplies fit gives rise to positive attitudes, which in turn acts as motivators (Yu & Davis, 2016). The view of self-regulation holds an opposite perspective. Within this view the core principle of cybernetics is followed that a negative feedback loop is required to get in motion (Edwards, 1992). In other words, there has to be a misfit in order to engage in certain behaviour. The research of Yu & Davis (2016) showed that a misfit of autonomy yields proactive behaviour at an individual, supporting the self-regulatory view.

2.3.1 When needs & supplies of autonomy are a fit

A fit between the autonomy needs and supplies can be viewed from the existing literature that treats autonomy as a job resource or job design perspective. Although the person-environment fit is not directly used in this research, it does display the effects when needs and supplies of autonomy are a fit.

de Jong et al. (2015) found that job autonomy was directly related to the intrapreneurial dimensions of innovativeness and proactiveness. Job autonomy in this research made a difference towards entrepreneurial behaviour. Job performance is also affected by job autonomy. Muecke & Iseke (2019) found that job autonomy leads to better performance as it enhance work motivation and reduces mental strain. In conjunction with high-quality leader-member exchange, job autonomy strengthens the effect of this exchange on creative work. Summarising, job autonomy has been found to have positive outcomes on a variety of perspectives.

Nevertheless, the nature of this research discards the desire to have autonomy in contract to the autonomy supplied by the organisation. de Jong et al. (2015) for example, already mentioned the limitation that highly entrepreneurial employees may be the ones that obtain high-autonomy functions. This potentially skews it findings. Investigating the effects of job autonomy on intrapreneurship warrants a person-environment fit view.

2.3.2 Needs and supplies are not always aligned

The needs of an employee regarding autonomy is not always matched by organisations. In these cases PE-fit literature speaks of a misfit. Experiencing misfit as an individual will lead to adaptation (van Vianen, 2018). Depending on the misfit perception, opportunities to repair the misfit, and environmental and individual mitigating factors it might motivate individuals to leave the job or adapt to the situation (van Vianen, 2018).

Although people have a need to fit their environments (van Vianen, 2018), academic literature holds powerful examples of beneficial misfits. For example, in a study that examines autonomy fit and personal development, Simmering et al. (2003) found that autonomy misfit is essential to create the need for personal development by the individual. Autonomy misfit for newcomers has shown to lead to higher levels of proactive behaviour (Yu & Davis, 2016). Providing support for the self-regulatory view of needs-supplies misfit.

The exact nature of misfit might yield to different outcomes. Misfit can either be an excess of supply or be a deficiency of what the individual needs. Which type of misfit is experienced will make a difference on their impact (Lambert et al., 2003; van Vianen, 2018; Yu & Davis, 2016). An excess of misfit will do less harm then a deficient misfit (van Vianen, 2018). Additionally Lambert et al. (2003) showed that not all experienced misfits is of importance for the individual. Meaning, that although there is a misfit, it does not have a consequence on behaviour or outcome.

That excess of misfit does less harm is shown by Yu & Davis (2016). Their research investigated the level of proactivity for newcomers in an organisation, based on their personal needs for autonomy and what was supplied by the organisation. Here, the authors found that an excess of autonomy misfit lead to higher levels of proactivity compared to fit and deficient misfit. This shows that in case of an excess misfit, more autonomy provided then desired, leads to stronger adoption of the individual to belong (Yu & Davis, 2016).

Stiglbauer & Kovacs (2018) found that an excess of autonomy misfit on a person's well-being only decreased when the misfit was substantial. For deficient misfit the effect was linear, meaning that any increase from a deficient misfit to fit leads to an equal improvement on well-being. Individuals that were lacking autonomy in this study, while having a high need for autonomy suffered on well-being. Important to note here is that the portion of people that experienced an excess misfit was very small in the study (Stiglbauer & Kovacs, 2018).

Summarising, autonomy is an influencing organisational factor to stimulate intrapreneurial behaviour (Neessen et al., 2019). Similarly, autonomy misfit has proven to contribute to dimensions of intrapreneurial behaviour (fig. 1). As such, I hypothesise that a misfit of needs-supplies regarding autonomy will influence intrapreneurial behaviour depending on the type of misfit.

> Hypothesis 1a: An excess of autonomy misfit (P < E) is positively related to intrapreneurial behaviour
>
> Hypothesis 1b: A deficiency of autonomy misfit (P > E) is negatively related to intrapreneurial behaviour

2.4 Psychological safety

Today's business environment accomplishes much of its work in collaboration (Edmondson & Lei, 2014; Frazier et al., 2017; Newman et al., 2017). Rather then being individuals at work, multi-disciplined teams are working collectively to accomplish their goals. Product design, patient care, strategy development, and rescue operations are a few examples that call for collaborative work (Edmondson & Lei, 2014). The field of organisational research has identified psychological safety as an important factor in how people collaborate to achieve a shared outcome (Edmondson & Lei, 2014).

Psychological safety is the shared belief by members of the team that the team is safe for interpersonal risk-taking (Edmondson, 1999; Edmondson & Lei, 2014; Frazier et al., 2017; Newman et al., 2017). Individuals that feel psychologically safe in a team will be less concerned with the way others might react when introducing a new idea or when voicing a concern. High levels of psychological safety has been linked to higher levels of creative thinking and risk-taking, innovation in R&D teams, process improvements in manufacturing, knowledge creation, and successful implementation of technology (Newman et al., 2017). Frazier et al. (2017) recognises that psychological safety is a key factor in facilitating the process of learning, collaborating, and employee engagement.

The performance enabling role of psychological safety has consistently been found in numerous studies (Edmondson & Lei, 2014). Especially when organisational learning is of importance, psychological safety is relevant (Edmondson & Lei, 2014). Much of today's organisational learning happens between the interactions of interdependent individuals. Individual's concerns about interpersonal risk or consequences could limit the learning behaviours of these individuals. High levels of psychological safety can reduce these concerns and as such contribute to organisational learning.

Psychological safety is both an individual-level and team level construct (Edmondson & Lei, 2014; Frazier et al., 2017). However, Edmondson & Lei (2014) argues that the group is the appropriate level

to measure psychological safety. "Starting with Edmondson (1999), studies have found statistically significant variance in psychological safety between groups within organisations; that is, people working closely together tend to have similar perceptions of psychological safety, which vary across groups within the same organisation. This body of work thereby supports the idea that psychological safety in organisational life can best be considered a phenomenon that lives at the group level. (Edmondson & Lei, 2014, p. 37)."

2.5 Psychological safety impacting intrapreneurial behaviour

Individual elements of the intrapreneurial behaviour construct has been linked to psychological safety. Risk-taking, for example, is enhanced by psychological safety (Edmondson, 1999; Newman et al., 2017). Likewise, enhancements of creative thinking, innovation, process improvements are outcomes of teams that have a high level of psychological safety (Newman et al., 2017). Members of a team in a psychologically safe climate share more information, speak up with suggestion for organisational improvements, and are found to take initiative to develop new products and services (Edmondson & Lei, 2014).

De Stobbeleir et al. (2020) discovered that in psychological safe teams members engage in feedback seeking among team members. This type of feedback seeking can be labeled as "relational proactivity," aligning well with the networking dimension of intrapreneurial behaviour. Feedback seeking positively contributes to experimentation and learning. Psychological safety is strongly related to team learning and performance in environments that benefit from learning (Sanner & Bunderson, 2015). An appropriate culture that allows experimentations, feedback, and learning by trial and error is one of the two required aspects to unfold intrapreneurs' potential (Gawke et al., 2019). The other aspect being proactive intrapreneurs.

Psychological safety has been found to effect components of intrapreneurial behaviour and intrapreneurial outcomes as described in the framework (fig. 1) of Neessen et al. (2019). Given the impact on these isolated components I hypothesise that there is a relation between psychological safety and the complete construct of intrapreneurial behaviour. To my knowledge there has not been any distinctive research that linked psychological safety to the complete construct of intrapreneurial behaviour.

Hypothesis 2: Psychological safety is positively related to intrapreneurial behaviour

2.6 Psychological safety to influence the effects of autonomy misfit

Getting to intrapreneurial outcomes like new products or self-renewal isn't an individual effort, but a team effort. As today's work is mostly accomplished in collaboration (Edmondson & Lei, 2014; Frazier et al., 2017; Newman et al., 2017), the effects of an individual autonomy misfit can be influenced by others in the group. As individuals work in teams, it's the reaction of those team members to the individual that potentially impacts its attitude to the job. As such, the team can be influential in supporting an individual towards intrapreneurial behaviour. Whether or not the psychological safety in a team influences an individuals intrapreneurial behaviour answers a call for further research by Neessen et al. (2019).

Moderating effects of psychological safety has been proven extensively in academic literature. In their systematic literature review Newman et al. (2017) already summarised that psychological safety weakens the negative relationship between role conceptualisation and achievement orientation, expertise diversity influence the team performance, and the relationship between process innovativeness and profitability. This moderating effect has been found on individual, team, and organisational level. This prior research gives viability to a potentially moderating effect of psychological safety between autonomy (mis)fit and intrapreneurial behaviour.

2.6.1 When needs and supplies of fit are unbalanced

An excess of misfit has shown to lead individuals to adapt to the situation. Yu & Davis (2016) discovered that an excess of misfit lead to higher levels of proactive behaviour by the individual. Ashford & Black (1996) identified seven key types of change-oriented proactive behaviours: feedback seeking; information seeking; job change negotiation; positive framing; general socialising; building relationships with the

boss; and networking. Especially information seeking and feedback seeking has been found to be influenced by psychological safety (De Stobbeleir et al., 2020; van Vianen, 2018). Feedback seeking may be beneficial for individuals to cope with the misfit of autonomy (van Vianen, 2018). Teams with high levels of psychological safety ensure that information will be sought within the team, where in teams with low levels of psychological safety information will be sought outside the team (De Stobbeleir et al., 2020; Safdar et al., 2017).

Following the self-regulatory view, an excess of autonomy will give individuals an impetus to engage in intrapreneurial behaviour. Given that an excess of autonomy misfit leads to higher levels of proactivity, proactivity being a key behavioural dimension of intrapreneurship, and acknowledging the existing literature on the influencing effect psychological safety has on proactivity, I hypothesise:

> Hypothesis 3a: Psychological safety strengthens the positive effect of an excess autonomy misfit towards intrapreneurial behaviour

Additionally, Yu & Davis (2016) showed that also a deficiency of misfit yields to proactive behaviour, although lower then the case of excess misfit. Clarification for this difference has not been provided by the authors. A possible explanation can be found in the findings of Lambert et al. (2003) that deficient misfit leads to greater job dissatisfaction for specific inducements. The dissatisfaction of work has been found to lead to creativity (Zhou & George, 2001), Likewise, van Vianen (2018) noted that "Seeking feedback may help individuals to better cope with misfit by putting effort into learning or adjusting to the job demands (p.96)."

> Hypothesis 3b: Psychological safety strengthens the positive effect of an excess autonomy misfit towards intrapreneurial behaviour

2.6.2 When autonomy is a fit

Following the job design perspective that autonomy fit leads to more intrapreneurial behaviour (de Jong et al., 2015) and better performance (Muecke & Iseke, 2019), it can be hypothesised that psychological safety will have a positive influence on the intrapreneurial behaviour of members in a team with autonomy fit. Psychological safety has proven to have positive effect on the learning behaviour of teams (Edmondson, 1999; Edmondson & Lei, 2014; Frazier et al., 2017). Learning behaviour is described by Edmondson (1999) as "learning at the group level of analysis as an ongoing process of reflection and action, characterised by asking questions, seeking feedback, experimenting,reflecting on results, and discussing errors or unexpected outcomes of actions (p. 353)." These behaviours are positively related with the performance of the team (Edmondson, 1999; Edmondson & Lei, 2014; Frazier et al., 2017). Choo et al. (2007) found that psychological safety influenced creativity, divergent thinking, risk taking, and motivates engagement in learning, increasing the performance of the team as such. Additionally, Frazier et al. (2017), found that work design characteristics (including autonomy) positively influence psychological safety.

> Hypothesis 3c: Psychological safety strengthens the positive effect of autonomy fit towards intrapreneurial behaviour

The concepts and relationships of this research have been visualised in the research framework (fig. 2).

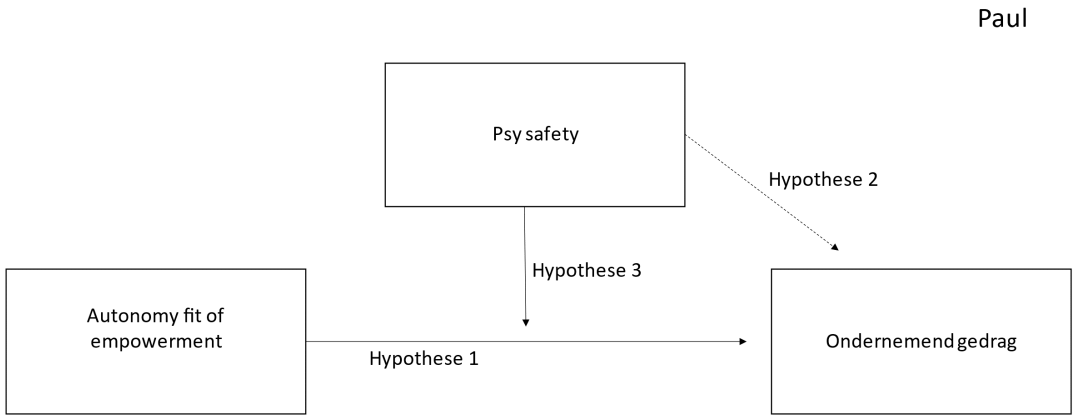

Figure 2: Research framework

3. Methodology

3.1 Research design

A descriptive research design is being used for this study. Collecting the data was done utilising diary studies. Two primary reasons led to the practice of using diary studies. First of all, diary studies are helpful to collect data on working environment characteristics that are subject to fluctuations (Bakker, 2014). Secondly, using diary studies help to prevent common rater bias, a pronounced effect in PE-fit studies (Kristof-Brown et al., 2005). Common rater bias are conscious or unconscious tendencies that affect supplied ratings. By using a diary study, and thus collecting responses on multiple days this bias can be prevented. The developed hypothesis are concerned about the relationships of fluctuating states and are typical research questions to be answered by a diary study (Ohly et al., 2010).

As psychological safety is primarily a team construct (Edmondson, 1999) and getting to intrapreneurial outcomes is a team effort, the research design is focused on team behaviour as well. Teams are asked to collect data during a sprint. Sprints are a fixed period of time in which a teams tries to fulfil their commitments to work items, promised at the start of the sprint. The concept of sprints are part of Scrum, an agile methodology of work. Typically, sprints last for two weeks. When a sprint starts for the team, the data collection period starts as well.

From the start of the sprint team members are asked to answer a daily questionnaire. Using daily diaries might increase retrospective bias compared to using experience-sampling methods (Ohly et al., 2010). For this research, using experience-sampling is not required as we are not searching for affective or cognitive observations for specific events during the day. Rather, the research aims to get an overall perceived assessment of the day. Using daily diaries as such suffices and enables the participants to enter the survey at their own convenience, positively adding to the response rate. To further reduce nonresponse and dropout, as diary studies can be burdensome for the participants (Ohly et al., 2010), the number of questionnaires is capped to 10, as done by other research (see Vleugels et al., 2018). The daily assessments are capped to a maximum of 5-7 minutes to not affect the willingness of participants as suggested by Ohly et al. (2010).

At the end of the sprint a closing survey is sent to the members of the team and the team's supervisor. The closing survey of the team was an extended version compared to the daily surveys. The survey for the team supervisor is focused on assessing the perceived intrapreneurial behaviour of team. The supervisors answers ensure triangulation of the perceived data of the time, as such increasing the validity of the findings and preventing common rater bias (Kristof-Brown et al., 2005).

3.2 Data collection

The collected for this research is gathered with teams active in software development team. Software development teams commonly work according the Scrum methodology. Key philosophy in the Scrum Guide is becoming more proficient, as team, in the leading values of Scrum, namely: commitment; focus; openness; respect; and courage, in order to be successful (Schwaber & Sutherland, 2020). The primary focus of the team is to make the best possible progress towards the goals that are set by the team. Given the Scrum values and its goal for the Scrum team, researching these hypothesis in software development teams is expected to yield interesting results. Companies using Scrum are likely to expect

innovative behaviour of their teams as adaptation and self-management is an essential pillar of Scrum (Schwaber & Sutherland, 2020). Additionally, Scrum teams are typically together for a longer period of time. This prevents diluting effects of socialisation behaviour typically seen at newcomers in an organisation (Vleugels et al., 2022; Yu & Davis, 2016).

To narrow the diversity of organisations participating in the research, participating teams are required to work in a commercial, for-profit organisation. At least 30 teams will participate in the research. Given the often multi-national composition of teams the survey will be held in English to enhance the possibility of participation.

During a period of data collection surveys were distributed by e-mail for 10 consecutive working days at 15:30. This daily survey held questions for all variables that are being researched. All members of the team received this e-mail notification, expect for the team supervisor. The supervisor received a notification on the 10th day of the collection period. The focus of this survey was to answer questions with regards to the perceived intrapreneurial behaviour of the entire team. These surveys were programmed, collected, and distributed by using the software Qualtrics.

3.3 Measures

3.3.1 Intrapreneurial behaviour

Intrapreneurial behaviour is measured using the validated measurement of (de Jong et al., 2015). This measurement is proven to measure the dimensions of proactive, innovativeness and risk-taking. The construct exists out of nine questions which are answered using a 7-point Likert scale (1= not at all, 7 = at all). An example question of the construct is: “I generate creative ideas,” all questions can be read in appendix A1.

3.3.2 Autonomy (mis)fit

To determine the (mis)fit of autonomy for an individual the construct of (Spreitzer, 1995) is used. This validated measurement consists out of three question, all answered via a 7-point Likert scale (1= not at all, 7 = at all). “The opportunity to determine how I do my job” is an example question, all other questions can be read in appendix A2.

3.3.3 Psychological safety

Psychological safety is measured via the well-proven construct of Edmondson (1999). Using a 7-point Likert scale (1= very inaccurate, 7 = very accurate) the participants need to answer 7 questions. Example questions are “Members of this team are able to bring up problems and tough issues” and “Working with members of this team, my unique skills and talents are value and utilised.” The full list of questions is available in appendix A3.

3.4 Data analysis

The analysis of data will be done via the program RStudio. Analysing and discovering relations and effects between the variables will be done utilising multiple regression analysis.

3.5 Methodological issues

Conducting research can lead to various methodological issues that potentially harm the reliability of the research. In order to prevent the occurrence of this research a number of preventive actions have been executed.

In order to prevent non-response the recommendations of Ohly et al. (2010) have been incorporated. Setting a maximum of surveys and reducing the effort to complete them attributes to not burden the participants during the process.

Bibliography

Ashford, S. J., & Black, J. S. (1996). Proactivity During Organizational Entry: The Role of Desire for Control. *Journal of Applied Psychology*, *81*(2), 199–214.

Bakker, A. B. (2014). Daily Fluctuations in Work Engagement: An Overview and Current Directions. *European Psychologist*, *19*(4), 227–236. https://doi.org/10.1027/1016-9040/a000160

Bowen, D. E. (2016). The changing role of employees in service theory and practice: An interdisciplinary view. *Human Resource Management Review*, *26*(1), 4–13. https://doi.org/10.1016/j.hrmr.2015.09.002

Choo, A. S., Linderman, K. W., & Schroeder, R. G. (2007). Method and Psychological Effects on Learning Behaviors and Knowledge Creation in Quality Improvement Projects. *Management Science*, *53*(3), 437–450. https://doi.org/10.1287/mnsc.1060.0635

de Jong et al. (2011). *Corporate entrepreneurship at the individual level: Measurement and determinants*. EIM research reports.

de Jong, J. P. J., Parker, S. K., Wennekers, S., & Wu, C.-H. (2015). Entrepreneurial Behavior in Organizations: Does Job Design Matter? *Entrepreneurship Theory and Practice*, *39*(4), 981–995. https://doi.org/10.1111/etap.12084

De Stobbeleir, K., Ashford, S., & Zhang, C. (2020). Shifting focus: Antecedents and outcomes of proactive feedback seeking from peers. *Human Relations*, *73*(3), 303–325. https://doi.org/10.1177/0018726719828448

Edmondson, A. (1999). Psychological Safety and Learning Behavior in Work Teams. *Administrative Science Quarterly*, *44*(2), 350–383. https://doi.org/10.2307/2666999

Edmondson, A., & Lei, Z. (2014). Psychological Safety: The History, Renaissance, and Future of an Interpersonal Construct. *Annual Review of Organizational Psychology and Organizational Behavior*, *1*(1), 23–43. https://doi.org/10.1146/annurev-orgpsych-031413-091305

Edwards, J. R. (1992). A Cybernetic Theory of Stress, Coping, and Well-Being in Organizations. *Academy of Management Review*, *17*(2), 238–274. https://doi.org/10.5465/amr.1992.4279536

Edwards, J. R. (1996). An Examination of Competing Versions of the Person-Environment Fit Approach to Stress. *Academy of Management Journal*, 48.

Elert, N., & Stenkula, M. (2020). Intrapreneurship: Productive and Non-Productive. *Entrepreneurship Theory and Practice*, 104225872096418. https://doi.org/10.1177/1042258720964181

Frazier, M. L., Fainshmidt, S., Klinger, R. L., Pezeshkan, A., & Vracheva, V. (2017). Psychological Safety: A Meta-Analytic Review and Extension: PERSONNEL PSYCHOLOGY. *Personnel Psychology*, *70*(1), 113–165. https://doi.org/10.1111/peps.12183

Gawke, J. C., Gorgievski, M. J., & Bakker, A. B. (2019). Measuring intrapreneurship at the individual level: Development and validation of the Employee Intrapreneurship Scale (EIS). *European Management Journal*, *37*(6), 806–817. https://doi.org/10.1016/j.emj.2019.03.001

Gerards, R., van Wetten, S., & van Sambeek, C. (2021). New ways of working and intrapreneurial behaviour: The mediating role of transformational leadership and social interaction. *Review of Managerial Science*, *15*(7), 2075–2110. https://doi.org/10.1007/s11846-020-00412-1

Jong, J., & Ford, M. (2021). An Exploration of the Relationship Between Autonomy Congruence, Perceived Supervisor Individualized Consideration, and Employee Outcomes. *Review of Public Personnel Administration*, *41*(3), 566–592. https://doi.org/10.1177/0734371X20917185

Jung, D. I., Chow, C., & Wu, A. (2003). The role of transformational leadership in enhancing organizational innovation: Hypotheses and some preliminary findings. *The Leadership Quarterly*, *14*(4-5), 525–544. https://doi.org/10.1016/S1048-9843(03)00050-X

Kristof, A. L. (1996). PERSON-ORGANIZATION FIT: AN INTEGRATIVE REVIEW OF ITS CONCEPTU-

ALIZATIONS, MEASUREMENT, AND IMPLICATIONS. *Personnel Psychology*, *49*(1), 1–49. https://doi.org/10.1111/j.1744-6570.1996.tb01790.x

Kristof-Brown, A. L., Zimmerman, R. D., & Johnson, E. C. (2005). CONSEQUENCES OF INDIVIDUALS' FIT AT WORK: A META-ANALYSIS OF PERSON-JOB, PERSON-ORGANIZATION, PERSON-GROUP, AND PERSON-SUPERVISOR FIT. *Personnel Psychology*, *58*(2), 281–342. https://doi.org/10.1111/j.1744-6570.2005.00672.x

Lambert, L. S., Edwards, J. R., & Cable, D. M. (2003). BREACH AND FULFILLMENT OF THE PSYCHOLOGICAL CONTRACT: A COMPARISON OF TRADITIONAL AND EXPANDED VIEWS. *Personnel Psychology*, *56*(4), 895–934. https://doi.org/10.1111/j.1744-6570.2003.tb00244.x

Muecke, S., & Iseke, A. (2019). How Does Job Autonomy Influence Job Performance? A Meta-analytic Test of Theoretical Mechanisms. *Academy of Management Proceedings*, *2019*(1), 14632. https://doi.org/10.5465/AMBPP.2019.145

Neessen, P. C. M., Caniëls, M. C. J., Vos, B., & de Jong, J. P. (2019). The intrapreneurial employee: Toward an integrated model of intrapreneurship and research agenda. *International Entrepreneurship and Management Journal*, *15*(2), 545–571. https://doi.org/10.1007/s11365-018-0552-1

Newman, A., Donohue, R., & Eva, N. (2017). Psychological safety: A systematic review of the literature. *Human Resource Management Review*, *27*(3), 521–535. https://doi.org/10.1016/j.hrmr.2017.01.001

Ohly, S., & Fritz, C. (2010). Work characteristics, challenge appraisal, creativity, and proactive behavior: A multi-level study: A MULTI-LEVEL STUDY OF CHALLENGING WORK. *Journal of Organizational Behavior*, *31*(4), 543–565. https://doi.org/10.1002/job.633

Ohly, S., Sonnentag, S., Niessen, C., & Zapf, D. (2010). Diary Studies in Organizational Research: An Introduction and Some Practical Recommendations. *Journal of Personnel Psychology*, *9*(2), 79–93. https://doi.org/10.1027/1866-5888/a000009

Orth, M., & Volmer, J. (2017). Daily within-person effects of job autonomy and work engagement on innovative behaviour: The cross-level moderating role of creative self-efficacy. *European Journal of Work and Organizational Psychology*, *26*(4), 601–612. https://doi.org/10.1080/1359432X.2017.1332042

Peters, T. J., & Waterman, R. H. (1984). In search of excellence. *Nursing Administration Quarterly*, *8*(3), 85–86.

Rigtering, J. P. C., & Weitzel, U. (2013). Work context and employee behaviour as antecedents for intrapreneurship. *International Entrepreneurship and Management Journal*, *9*(3), 337–360. https://doi.org/10.1007/s11365-013-0258-3

Safdar, U., Badir, Y. F., & Afsar, B. (2017). Who can I ask? How psychological safety affects knowledge sourcing among new product development team members. *The Journal of High Technology Management Research*, *28*(1), 79–92. https://doi.org/10.1016/j.hitech.2017.04.006

Sanner, B., & Bunderson, J. S. (2015). When feeling safe isn't enough: Contextualizing models of safety and learning in teams. *Organizational Psychology Review*, *5*(3), 224–243. https://doi.org/10.1177/2041386614565145

Schneider, B. (1987). THE PEOPLE MAKE THE PLACE. *Personnel Psychology*, *40*(3), 437–453. https://doi.org/10.1111/j.1744-6570.1987.tb00609.x

Schwaber, K., & Sutherland, J. (2020). Scrum Guide | Scrum Guides. In *The 2020 Scrum Guide*. https://scrumguides.org/scrum-guide.html.

Simmering, M. J., Colquitt, J. A., Noe, R. A., & Porter, C. O. L. H. (2003). Conscientiousness, autonomy fit, and development: A longitudinal study. *Journal of Applied Psychology*, *88*(5), 954–963. https://doi.org/10.1037/0021-9010.88.5.954

Sørlie, H. O., Hetland, J., Bakker, A. B., Espevik, R., & Olsen, O. K. (2022). Daily autonomy and job performance: Does person-organization fit act as a key resource? *Journal of Vocational Behavior*, *133*, 103691. https://doi.org/10.1016/j.jvb.2022.103691

Spreitzer, G. M. (1995). PSYCHOLOGICAL EMPOWERMENT IN THE WORKPLACE: DIMENSIONS, MEASUREMENT, AND VALIDATION. *Academy of Management Journal*, 25.

Stiglbauer, B., & Kovacs, C. (2018). The more, the better? Curvilinear effects of job autonomy on well-being from vitamin model and PE-fit theory perspectives. *Journal of Occupational Health Psychology*, *23*(4), 520–536. https://doi.org/10.1037/ocp0000107

Tushman, M., & Nadler, D. (1986). Organizing for Innovation. *California Management Review*, *XXVII*(3), 20.

van Vianen, A. E. M. (2018). Person–Environment Fit: A Review of Its Basic Tenets. *Annual Review of Organizational Psychology and Organizational Behavior*, *5*(1), 75–101. https://doi.org/10.1146/annu

rev-orgpsych-032117-104702

Vleugels, W., De Cooman, R., Verbruggen, M., & Solinger, O. (2018). Understanding dynamic change in perceptions of person-environment fit: An exploration of competing theoretical perspectives. *Journal of Organizational Behavior*, *39*(9), 1066–1080. https://doi.org/10.1002/job.2294

Vleugels, W., Verbruggen, M., De Cooman, R., & Billsberry, J. (2022). A systematic review of temporal person-environment fit research: Trends, developments, obstacles, and opportunities for future research. *Journal of Organizational Behavior*, job.2607. https://doi.org/10.1002/job.2607

Yu, K. Y. T., & Davis, H. M. (2016). Autonomy's impact on newcomer proactive behaviour and socialization: A needs-supplies fit perspective. *Journal of Occupational and Organizational Psychology*, *89*(1), 172–197. https://doi.org/10.1111/joop.12116

Yukl, G. (2001). *Leadership in Organizations,*. Prentice-Hall, New Jersey.

Zacher, H., & Wilden, R. G. (2014). A daily diary study on ambidextrous leadership and self-reported employee innovation. *Journal of Occupational and Organizational Psychology*, *87*(4), 813–820. https://doi.org/10.1111/joop.12070

Zhou, J., & George, J. M. (2001). WHEN JOB DISSATISFACTION LEADS TO CREATIVITY: ENCOURAGING THE EXPRESSION OF VOICE. *Academy of Management Journal*, *44*(4), 682–696. https://doi.org/10.2307/3069410

Appendix A: Measures

Appendix A1: Intrapreneurial behaviour (de Jong et al, 2011)

Code	Question (1-7 Likert scale)
IBI1	...generate creative ideas
IBI2	...search out new techniques, technologies and or product ideas
IBI3	...promotes and champions ideas to others
IBP1	...identifies long term opportunities and threats for the company
IBP2	...is known as a successful issue seller
IBP3	...puts effort in pursuing new business opportunities
IBR1	...takes risks in his/her job
IBR2	...when large interests are at stake, goes for the 'big win' even when things could go seriously wrong
IBR3	...first acts and then asks for approval, even if he/she knows that would annoy other people

Appendix A2: Autonomy (misfit) (Spreitzer, 1995)

Code	Question (1-7 Likert scale)
AUT1	The opportunity to determine how I do my job
AUT2	The opportunity to decide on my own how to go about doing my work
AUT3	The opportunity for independence and freedom in how I do my job

Appendix A3: Psychological safety (Edmondson, 1999)

Code	Question (1-7 Likert scale)
CPS_1_R	If you make a mistake on this team, it is often held against you
CPS_2	Members of this team are able to bring up problems and tough issues
CPS_3_R	People on this team sometimes rejects others for being different
CPS_4	It is safe to take a risk on this team
CPS_5_R	It is difficult to ask other members of this team for help
CPS_6	No one on this team would deliberately act in a way that undermines my efforts
CPS_7	Working with members of this team, my unique skills and talents are value and utilised