Allow me to be an intrapreneur.

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

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1. Introduction

1.1 Background & context

In today's world, organisations need to stay ahead of their competition. To do so, they need to remain and gain a competitive advantage over their competition. Already in 1986 Tushman & Nadler stressed that "organisations can gain competitive advantage only by managing effectively for today while simultaneously creating innovation for tomorrow". Innovativeness is a key differentiator for organisations to thrive in this competitive world. A pressing problem for managers is to ensure sustained innovation (Tushman & Nadler, 1986). Years later managers still tend to be myopic, untrained, or constrained by lack of experience (Braganza et al., 2009). It is up to managers to ensure organisations innovate and cope with the changing environment.

A way for organisations to achieve sustained innovation is to promote intrapreneurship. Intrapreneurship is a bottom-up 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). It argues that intrapreneurial employees self-start initiatives. As it are these employees who are aware of external trends and events.

Intrapreneurial employees contribute to the competitive advantage of an organisation. Intrapreneurs are becoming an important factor to innovation and economic growth (Elert & Stenkula, 2020; Gawke et al., 2019). To be an intrapreneur, employees should display different behaviours. According to Bowen (2016) employees should not be passive recipients of changing jobs and products. They need to adapt to roles as innovators and differentiators. Adopting a more intrapreneurial way of working is required for employees. It allows them to deal with or even start changing requirements. As such, impacting the strategic direction of a firm (Peters & Waterman, 1984).

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 influences the intrapreneur. On that same note, de Jong et al. (2015) found that job autonomy relates to innovative and proactive behaviour. Both sub-dimensions of intrapreneurial behaviour. Underlying premise in the research of de Jong is that job autonomy is provided by the organisation. Yet, 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).

An increase in autonomy has proved to be beneficial for subjective well-being and work efficiency. Still, it does have a tipping point. Both E. Zhou (2020) and Stiglbauer & Kovacs (2018) discovered a "too-much-of-a-good-thing" effect occurred when autonomy exceeded the threshold of an individual. Resulting into a sharp decrease in subjective well-being. Following the model of Job Demands-Resources, autonomy can be perceived as a resource for an individual or a demand. Many researches has looked into the various perspectives of job autonomy (Jong & Ford, 2021; Simmering et al., 2003; Sørlie et al., 2022; Yu & Davis, 2016). Yet, no prior research has investigated the topic of autonomy (mis)fit and its influences on intrapreneurial behaviour. A gap in academic literature that this research attempts to fill.

Although people have an innate need to fit to their environment, a perfect fit seldom exists (van Vianen, 2018). Meaning that most individuals and organisations will experience misfit. Misfits are not necessarily bad. 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.

Intrapreneurial behaviour is often measured on individual level. Yet, the act of getting intrapreneurial outcomes is often a team effort. Team members have to work and learn collaboratively to achieve 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 take more risks, share more information, seek more feedback, and perform better. Having a positive influence on 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. 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. Yet, none of these consider the personal needs for autonomy. Different forms of experienced misfits can have different effects on intrapreneurial behaviour. Additionally, a psychological safe team can moderate the effect of misfit on intrapreneurial behaviour.

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

The study follows a quantitive design to analyse correlating effects between the variables. A diary study is the primary method to collect the data. Software development teams filled in a daily questionnaire for 10 consecutive working days. The resulting data is analysed via structural equation modelling.

2. Literature research

The theoretical framework of this study is centred around the key concepts discussed in the problem statement. The concepts are further detailed and explained using literature study. A visual model of this study can be seen in fig. 2.

@@ Rewrite and re-structure hypothesis

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)". In academic literature "intrapreneurship" usually refers to individual workers rather than organisations or boardroom-level decision makers (de Jong et al, 2011). This thesis 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 thesis 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)". 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 in what way 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).

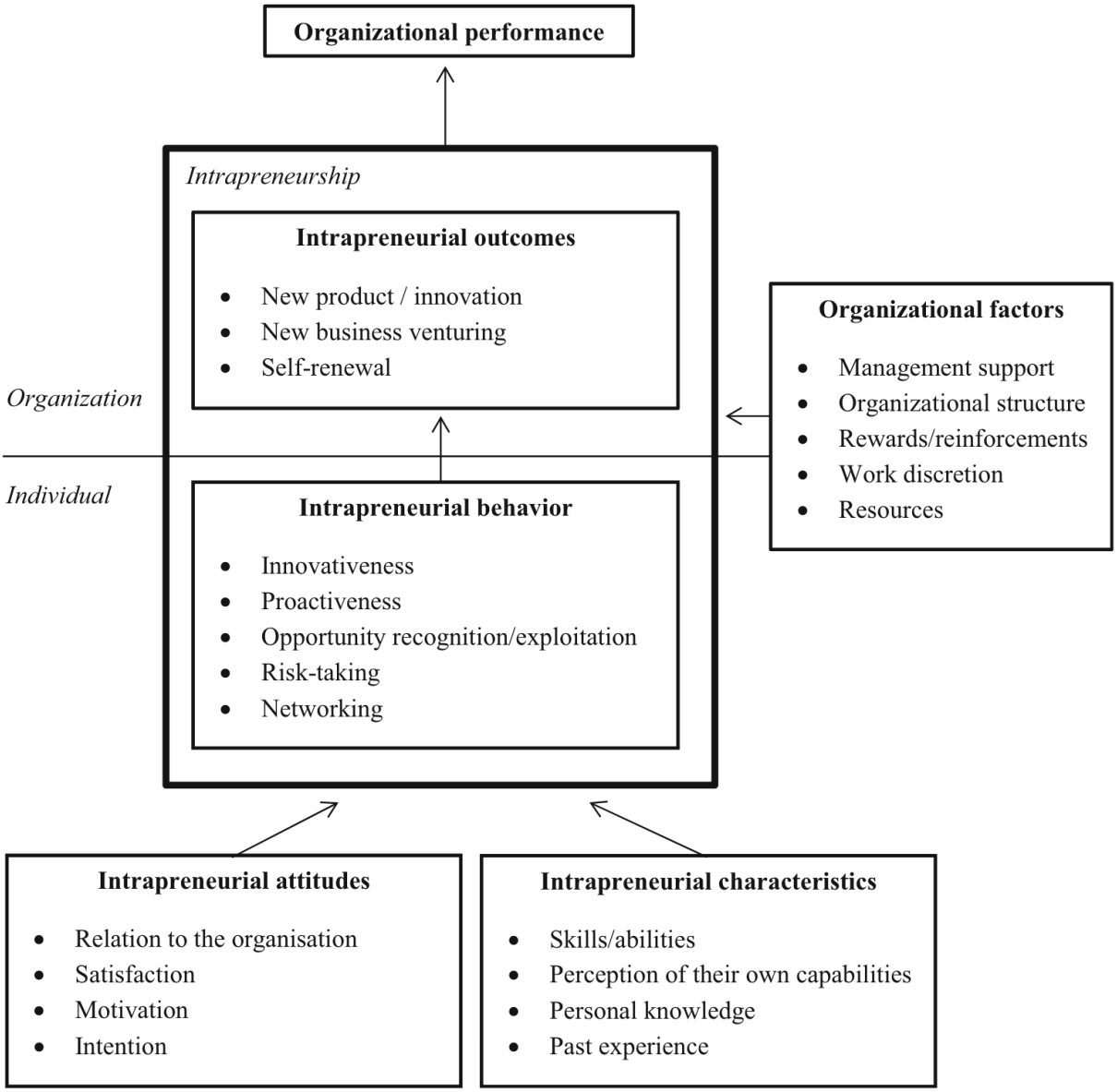

Figure 1: Framework of intrapreneurship by Neessen et al. (2019)

The framework of Neessen et al. (2019) displays intrapreneurship as the sum of intrapreneurial behaviour and corporate entrepreneurship. The dimensions of intrapreneurial behaviours are defined as proactivity, innovativeness, risk-taking, opportunity recognition and exploitation, and networking. A review of Gawke et al. (2019) found three prominent conceptualisations of employee intrapreneurship in academic literature. Intrapreneurship can be seen as the employees participation in organisation's intrapreneurial pursuits (the intrapreneurial outcomes approach), the contribution of employee activities to strategic renewal and new ventures of an organisation

(the behaviour-based approach) or as the employees' entrepreneurial orientation. This entrepreneurial orientation is conceptualised as the tendency toward innovativeness, risk taking and personal initiative. This last conceptualisation is commonly accepted in the literature to measure intrapreneurial behaviour (de Jong et al, 2011; Gawke et al., 2019; Neessen et al., 2019; Stam et al., 2012). As we are primarily concerned with the behaviour of an individual and not the outcomes of that behaviour, this research follows the entrepreneurial orientation by adopting the view point of de Jong et al (2011) on intrapreneurial behaviour. These authors describe intrapreneurial behaviour "as the identification and exploitation of opportunities by individual workers that (also) advance the organisation".

2.2 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. Additionally reactions on high autonomy levels strongly depend upon individual and/or contextual characteristics (Stiglbauer & Kovacs, 2018). 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.

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)". 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. 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.

To answer the 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) 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). Regarding the effects of (mis)fit two opposing views are prevalent. The affective-consistency 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.

2.2.1 The affective-consistency based view

Prevalent idea in the affective-cognitive based view is that a needs-supplies fit is required in order to be motivated (Yu & Davis, 2016). The view posits that when a person experience positive work-based emotions, the person would be inclined to adjust or perceive that aspect so that a person-environment fit exists. Likewise, negative emotions would lead a person to be inclined that a misfit exists (Yu, 2009). To illustrate with an example, when an individual has had a good period of work with the flexibility to schedule its own day and make its own decisions, this person would likely perceive a fit of autonomy. For an individual that has been told what to do for a period of time, and haven't been allowed to make its own decisions, while being custom to it, a misfit is most likely to be perceived.

Many researches has implicitly or explicitly researched this affective-consistency based view. A fit between the autonomy needs and supplies can be viewed from the existing literature that treats autonomy from a job design perspective. Although the person-environment fit is not directly used in this existing research, it does display an underlying assumption that providing autonomy will lead to positive work experiences and as such enhance the perceived 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. Yet, underlying in all these positive outcomes is a fit between the autonomy needs and supplies. Meaning, as an individual when I get the right level of autonomy I will show higher levels of intrapreneurial behaviour, compared to those who feel they either lack or have too much autonomy.

> Hypothesis 1a: A perceived needs-supplies fit on autonomy will positively effect intrapreneurial behaviour

> Hypothesis 1b: A perceived needs-supplies misfit on autonomy will negatively effect intrapreneurial behaviour

Nevertheless, the nature of this research discards the desire to have autonomy in contrast 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.

2.2.2 The self-regulatory view

Core principle of the self-regulating view is its focus on a negative feedback loop. This loop is essential to minimise differences between aspects of the environment and relevant reference criteria of the individual (Edwards, 1992). The core premise is the realisation that an individuals experience leads to a negative effect and consequently leads to an action or intervention to improve. An example provided by Edwards (1992) argues that the experience of stress by an individual has a negative effect on well-being. This leads to negative feelings and kickstarts a coping behaviour to improve that well-being. Just like a thermostat recognising that the temperature is not on the desired level, it triggers the boiler to heat up and get the room to the desired temperature.

Following the self-regulatory view a perceived misfit of autonomy is required to get individuals in motion. Likewise van Vianen (2018) states that experiencing misfit as an individual will lead to adaptation. 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). 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). Arguing the case for the self-regulatory view of needs-supplies misfit. Consequently, if misfit is required to get people into motion, a needs-supplies fit will lead people to not show intrapreneurial behaviour or less. As such I hypothesise:

> Hypothesis 2a: A perceived needs-supplies fit on autonomy will negatively effect intrapreneurial behaviour

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. An individual can be affected by a lack of autonomy (deficiency) or be troubled due to an oversupply of autonomy (excess). Which type of misfit is experienced will make a difference on their impact. 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, attitudes or outcome.

Various studies argued a linear relationship between the deficiency of autonomy and its impact on behaviour. Stiglbauer & Kovacs (2018) showed that deficient misfit had a linear effect on well-being, meaning that any increase from a deficient misfit to fit leads to an equal improvement on well-being. Additionally, the research showed that slight deficiency misfit actually foster employees growth and well-being, confirming the self-regulatory view. In a study of employee's online sharing of knowledge, the authors found an equal linear effect on job autonomy (Pee & Min, 2017).

> Hypothesis 2b: The relationship between a deficiency of autonomy misfit and intrapreneurial behaviour (P > E) is linear

It is believed that an excess of misfit will do less harm then a deficient misfit (van Vianen, 2018). The research of Yu & Davis (2016) 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, meaning more autonomy provided then desired, leads to stronger adoption of the individual to belong in the organisation (Yu & Davis, 2016).

A "too-much-of-a-good-thing" effect exist for autonomy. E. Zhou (2020) discovered that giving too much autonomy to an individual has a tipping point. When exceeding that tipping point too much of autonomy displayed to be detrimental for the individual. Substantial levels of excess autonomy has shown to decrease an individuals well-being (Stiglbauer & Kovacs, 2018). E. Zhou (2020) argues that an increase of autonomy leads to a depletion of job resources and consequently the subjective well-being of an individual will decline.

An excess of autonomy therefore is unproblematic, but not indefinitely. At some point the individual will perceive the autonomy as a burden and from that moment negatively impact intrapreneurial behaviour. The effect of excess autonomy on intrapreneurial behaviour is deemed to be curvilinear instead of linear.

> Hypothesis 2c: The relationship between an excess of autonomy misfit and intrapreneurial behaviour (E > P) is curvilinear

2.3 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)".

2.4 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 the author hypothesises that a relation between psychological safety and the complete construct of intrapreneurial behaviour exists. To the author's knowledge there has not been any distinctive research that linked psychological safety to the complete construct of intrapreneurial behaviour.

> Hypothesis 3: Psychological safety is positively related to intrapreneurial behaviour

2.5 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.

2.5.1 Psychological safety in the affective-consistency based view

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". 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 4a: Psychological safety strengthens the positive effect of autonomy fit towards intrapreneurial behaviour

The premise of the affective-consistency based view is that positive work experience lead to perceived fit by the individual (Yu, 2009). Consequently, it is likely that a psychological safe team would lead to positive work experiences. Resulting into a team of which it members perceive a needs-supplies fit on autonomy. Following that logic it can be hypothesised that according to the affective-consistency based view, psychological safety would not moderate the negative effect of autonomy misfit. Contributing to that hypothesis is the expectation of Newman et al. (2017) that autonomy will have a negative influence on team learning and performance for teams with high autonomy.

> Hypothesis 4b: Psychological safety does not influence the negative effect of autonomy misfit towards intrapreneurial behaviour

2.5.2 Psychological safety in the self-regulatory based view

A negative experience is required in the self-regulatory view in order to get individuals in motion. Proponents of this view argue that needs-supplies misfit is required to ignite the negative feedback loop. Consequently, fit will not trigger any feedback loop and people will not act differently. As such, the author hypothesise that psychological safety will not influence the effect of autonomy fit in the self-regulatory based view.

> Hypothesis 4c: Psychological safety does not influence the effect of autonomy fit on intrapreneurial behaviour

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 4d: 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 (J. 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.”

> Hypothesis 4e: Psychological safety strengthens the positive effect of a deficient autonomy misfit towards intrapreneurial behaviour

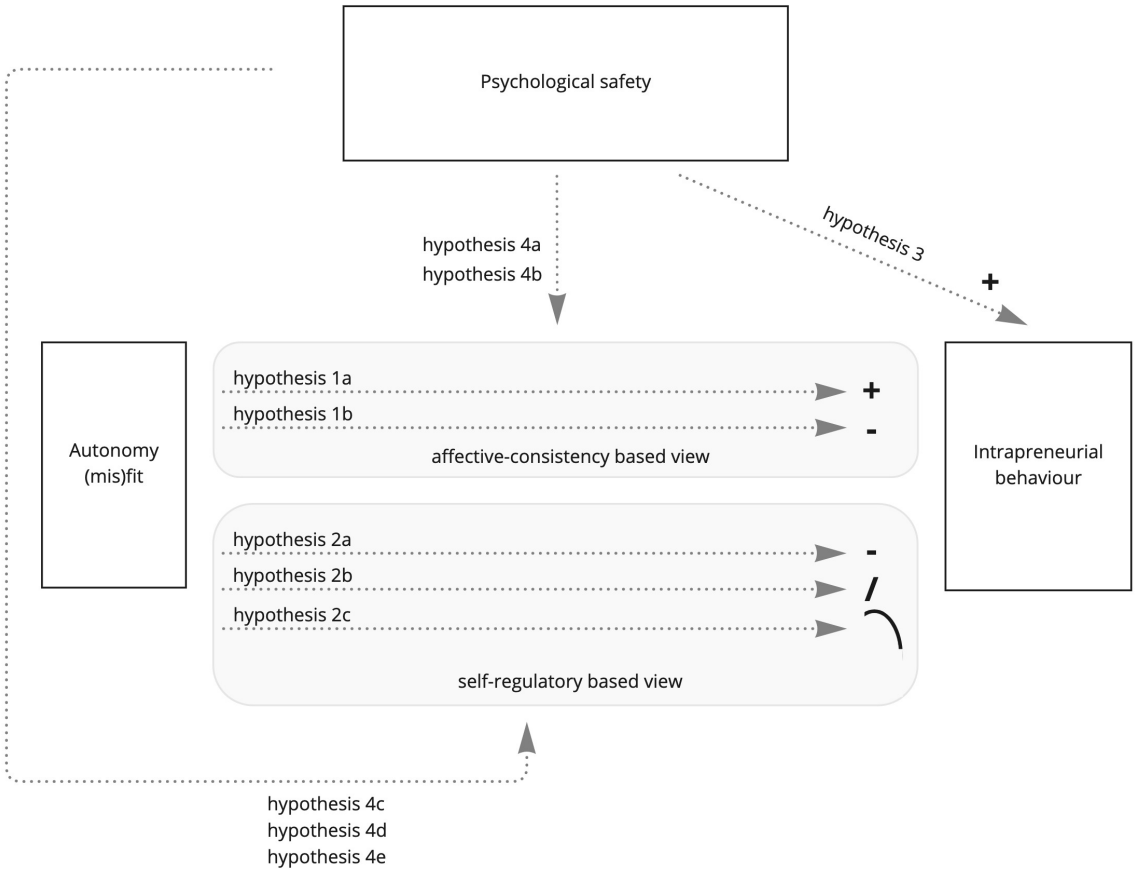

Figure 2: Research framework

3. Methodology

3.1 Research design

A descriptive research design is being used for this study. Collecting the data will be done utilising diary studies. Two primary reasons lead 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 will be 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 daily questionnaires will be capped to 10, as done by other research (see Vleugels et al., 2018). The daily assessments will be 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 will be sent to the members of the team and the team's supervisor. The closing survey of the team is 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).

Teams are recruited via the network of the researcher via direct requests, public LinkedIn messages,

and internal messages at the communication channels of the employer of the researcher. 72 organisations are contacted, of which 14 (19%) agreed to participate with a single team or more.

3.2 Data collection

3.2.1 Sample frame

@@ The collected data for this research will be gathered with teams active in software development. Software development teams commonly work according agile methodologies like Scrum or Kanban. 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.

3.2.2 Collection procedure

The collection for this research is separated in three phases (tbl. 1). The study recognises two types of respondents, team members and supervisors. Team members are those actively participating in the teams development efforts. This could be software developers, engineers, or UX designers. Supervisors are people overseeing or steering the activities of the team, for example Team Leads of Product Owners. The collection period was chosen by the team itself in correspondence with the researcher.

Table 1: Phased approach of data collection

Phase	Survey	Who	When
T0	Introduction survey	Team members	Week before start of the sprint
Dailies	Daily survey	Team members	Each day at 15:30
T1	Final survey	Team members & supervisors	Next working day after the last daily

All surveys were sent digitally via e-mail. The digital surveys were programmed in the software Qualtrics. The T0 survey was sent a week for the start of the sprint and had to be filled in before the first daily.All dailies were sent at 15:30 and only active for the day they have been sent out. Participants were free to ignore a survey due to a day off or work for another team. Lastly a T1 survey was sent directly after the dailies phase. For both the T0 and T1 a reminder has been send on the third day (@@ check if correct). Participants had the option to opt-out on any e-mail send to them, effectively stopping their participation in the survey.

During a period of data collection surveys will be distributed by e-mail for 10 consecutive working days at 15:30. This daily survey will hold questions for all variables that are being researched. All members of the team will receive this e-mail notification, expect for the team supervisor. The supervisor receives a notification on the 10th day of the collection period. The focus of this survey is to answer questions with regards to the perceived intrapreneurial behaviour of the entire team. These surveys will be 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. This measurement is used in both the daily as the T1 survey. The construct in the T1 survey, both team member and supervisor, 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 A. For the daily a shorter three item construct (de Jong et al., 2015) is used.

The daily construct has an α of .65. Typically a score higher then .7 is deemed acceptable (@@ nunnely?). Removing any items would not increase the reliability and removes the measurement of the variables proactive, innovativeness, and risk-taking. In the T1 survey the nine-item construct has an α of .97 for the team members. In the supervisor survey the construct scored an α of .98.

3.3.2 Autonomy (mis)fit

To determine the (mis)fit of autonomy for an individual the construct of (Spreitzer, 1995) is used. The construct is used in T0 and the daily surveys. In order to determine both the need and the supply, the same three items are asked with a different prefix. For the need, each item in the daily survey started with: "Today, I found…". "Today, I had…" was the prefix for the supply construct in the daily survey. The T0 survey had "I have/can…" as prefix for the supply, and "I find…" as prefix for the need.

This validated measurement consists out of three questions, 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 A. The alpha's for the various surveys are reported in tbl. 2

Table 2: Alpha's for autonomy needs and supplies construct in T0 and daily surveys

Survey	Need or Supply	α
T0	Need	.93
T0	Supply	.94
T1	Need	.92
T1	Supply	.89

3.3.3 Psychological safety

Psychological safety is measured via the well-proven construct of Edmondson (1999). As part of the T0 survey, a 7-point Likert scale (1= very inaccurate, 7 = very accurate) required the participants 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 A.

The construct of psychological safety has an α of .67, which is doubtful. Removing an item would not yield an higher reliability score.

3.3.4 Control variables

@@ dependent on answer Jana

Additionally the tenure of the team member at the organisation will be used as control in the analysis. As newcomers to an organisation tend to display socialisation behaviour (Yu & Davis, 2016), and as such additional proactivity, the tenure is used to correct for this period of time.

3.4 Data analysis

The analysis of data is done via the program 'RStudio' and the R packages 'lavaan' and 'multcomp'. Lavaan enables latent variable modelling and provides a large variety of multivariate statistical models. Multcomp offers tests and confidence intervals for general linear hypothesis.

The reliability of the constructs in the survey is tested by calculating Cronbach's alpha (α). The internal consistency is deemed valid enough at a score of .7 or higher.

The analysis of relations and effect between the variables is done by polynomial regression equations (Edwards & Parry, 1993). Polynomial regression analysis allows researchers to the effects of two predictor variables in relationship with an outcome (Shanock et al., 2010). As an analytical technique it is often used to study person-environment fit (e.g. Edwards & Cable (2009), Kristof-Brown et al. (2005), Yu & Davis (2016)). Predominantly interesting is that polynomial regression equations allow for three-dimensional investigations of the effect of autonomy needs and supply on intrapreneurial behaviour. Polynomial regression analyses are generally performed using the equation 1, where N = individual autonomy needs and S = organisational autonomy supplied.

$$Z = b_0 + b_1N + b_2S + b_3N^2 + b_4NS + b_5S^2 \quad (1)$$

For this research the emphasis is not only on the interaction between needs and supplies on intrapreneurial behaviour, but also to assess a potential moderating effect of psychological safety. To test this effect, psychological safety needs to be added to the main model and interaction. This is done by multiplying each factor in our model, as done priorly by Vogel et al. (2016). The equation including moderating is shown in equation **??**, where PS being psychological safety. Before multiplication the values of psychological safety were standardised to a mean of 0 and a standard deviation of 1.

$$

Z = b_0 + b_1N + b_2S + b_3Nˆ2 + b_4NS + b_5Sˆ2 + b_6PS + b_7PSxN + b_8PSxS + b_9PSxNˆ2 + b_10PSxNS + b_11PSxSˆ2

$$ {#eq:moderated_poly}

@@ The results of the polynomial regression analysis are plotted in a three-dimensional space following Edwards & Parry (1993). The three dimensional view allows for more explanatory potential than traditional moderated regression analyses (Shanock et al., 2010). It visualises the relationship of two predictor variables on the outcome variable along the line of congruence and incongruence. The resulting surfaces are helpful in the explanation and understanding of the discovered findings. Computation for the slope and curvature of the surface, across low and high levels of psychological safety, were compute by substituting values one standard deviation above and below the mean of intrapreneurial behaviour (Cohen et al., 2014).

3.4.1 Dataset preparation

In preparation of the analysis all data is exported from Qualtrics into Google Sheets. Relevant data is merged into a single worksheet in a short row format. The daily surveys acted as the base for the worksheet. Each daily was a single row with extra data like psychological safety from the T0 survey added as additional columns. Resulting into a workable dataset for polynomial regression analysis in RStudio. Partial surveys are deleted from the dataset. For the dailies 8 unfinished surveys were deleted, resulting into 336 useful datapoints.

A total of 24 teams participated in the daily studies. The number of unique participants is 79 of which 57% filled in the daily survey at least 4 times or more. Only 2 participants (2.53%) filled in all 10 surveys. For this study a 135 participants were registered to participate. With 79 unique persons responding, the response rate is 59%.

Not all respondents of the daily survey has filled in the T0 survey. 19 participants did not fill in the T0 survey, resulting into missing information on psychological safety. As RStudio can cope with partial information, and the data is still useful for hypothesis 1 and hypothesis 2 the daily surveys of these 19 people have not been removed for analysis. The T0 is opened by 73 respondents of which only 59 completed the survey (81%).

3.4.2 Characteristics survey participants

@@ think about this one

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 will be executed.

Non-response In order to prevent non-response the recommendations of Ohly et al. (2010) have been incorporated in its research design. Setting a maximum of surveys and reducing the effort to complete them attributes to not burden the participants during the process. Starting from the fourth distribution group a personal introduction e-mail is sent to the participants. The e-mail outlined the goals of the survey and allowed for easier communication with the researcher in case of questions.

@@ to add more, look into the book of Saunders

$$

4. Results

New hypothesis - for reference

1 A perceived needs-supplies (congruent) fit on autonomy will positively relate to intrapreneurial behaviour

2 A perceived needs-supplies (incongruent) misfit on autonomy will positively relate to intrapreneurial behaviour

3 Psychological safety is positively related to intrapreneurial behaviour

4a The positive relation of needs-supplies fit on autonomy will be stronger when psychological safety is high then when it is low

4b The positive relation of needs-supplies misfit on autonomy will be stronger when psychological safety is high then when it is low

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The means, standard deviations, and zero-order correlations for our variables are presented in table 3. It shows significant relations between individual autonomy needed and autonomy supplied, and between both autonomy variables intrapreneurial behaviour. Means and standard deviations for all variables suggest considerable variations and little evidence of floor or ceiling effects.

For our control variables only a significant relation between psychological safety and education has found. As all other correlations are insignificant the control variables are ignored for further analysis of the data.

Table 3: Means, Standard Deviations, and Correlations among the Study variables

Variables	Mean	SD	1	2	3	4	5	6
Study variables								
1. Autonomy desired	5.12	1.44	-					
2. Autonomy perceived	5.74	1.15	.43	-				
3. Intrapreneurial behaviour	3.27	1.35	.15 **	-.11 *	-			
4. Psychological safety	5.49	.49	.08	.14 *	.02	-		
Control variables								
5. Education	4.4	.91	.09	.08	0	-.19 **	-	
6. First job	1.88	.33	.07	.04	-.12	.13	-.07	-

Signif. codes: 0 '*' **0.001** '' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Confirmatory factor analyses showed that the four-factor model in which the study variables were kept separate was a better fit to the data. The four-factor model (χ2 (98, N=269) = 401.566, ρ < 0.001; comparative fit index (CFI) = .873; root mean square error of approximation (RMSEA) = .107; standardised root mean square residual (SRMR) = .037) compared better then the one-factor model (x2 (104, N=269) = 1443.527, ρ < 0.001; CFI = .44; RMSEA = .219; SRMR = .17). An ANOVA test between the models showed a $\Delta\chi$2 of 1042 with a ρ < 0.001. The results of the four-factor model support the distinctiveness of the measures used in the study.

Contradictory the individual autonomy needs relate positively to intrapreneurial behaviour whereas supplied organisational autonomy relates negatively. This suggests that both needs and supply of autonomy has no congruent and incongruent effect [@@]. Multiple linear regression analysis (χ2 = 0.0423, F (266) = 5.874, ρ < 0.01) confirms the contradictory findings. For every 1% increase in individual autonomy need an 0.24% increase of intrapreneurial behaviour is found (ρ < 0.01). On organisational supplied autonomy each 1% increase leads to 0.17% decrease of intrapreneurial behaviour (ρ < 0.05).

Results from polynomial regression analysis is displayed in table 4. R^2 results suggest that both models account for significant variance. For both models low R^2 values are reported. These low values indicate high variability in the collected data. As this study tests congruence hypothesis the values of R^2 are not informative. To test the hypothesis the pattern in the coefficients is crucial, which is not displayed by R^2.

Table 4: Polynomial regression results of intrapreneurial behaviour on individual autonomy (N) and organisational supplied autonomy (S)

	Step 1		*Step 2*	
Variables	**b**	**SE**	**b**	**SE**
Individual autonomy needs (N)	.23	.15	.41 *	.19
Organisational autonomy supplied (S)	-.09	.12	-.20	.15
N^2	-.03	.04	-.15 **	.05
N x S	.02	.07	.08	.08
S^2	-.03	.04	0	.06
Psychological Safety (PS)			0	.23
PSxN			-.21	.23
PSxS			.24	.15
$PSxN^2$			.16 *	.07
PSxNxS			-.15 .	.09
$PSxS^2$			.05	.05
F-statistic	2.61 *		2.28 *	
R^2	.05 *		.08 *	
ΔR^2			-.03	

Hypothesis 1 argues that a fit of autonomy needed and supplied will lead to intrapreneurial behaviour. The opposite is argued by Hypothesis 2, which states that misfit relates to intrapreneurial behaviour. Response surface methodology (Edwards & Parry, 1993) was used to test these hypothesis. This methodology is centred around a two lines of interest. The line of congruence ($Y = X$) that represents the degree of fit between individual autonomy needs (X) and organisational supplied autonomy (Y) on the outcome of intrapreneurial behaviour (IB). The line of incongruence ($Y = -X$) displays the effect of misfit between individual needs and organisational supply.

Hypothesis 3 argues that psychological safety positively relates to intrapreneurial behaviour. An individual regression analysis for the relation between psychological safety and intrapreneurial behaviour has been run to test this hypothesis. It showed an insignificant effect of .05 (χ2 = 0.0006, F (267) = 0.154, ρ < 0.695). As such hypothesis 3 lacks evidence to be supported.

For better understanding of the surface modelling three-dimensional illustrations are supplied. Analysis for our main model is reported in table 5 and illustrated in figure 3. The results of the polynomial regression are evaluated with regard to four surface test values: $a1$, $a2$, $a3$, and $a4$.

The first two test variables are centred around the line of perfect agreement between the two predictor variables. The latter two are centred around the line of incongruence. Where $a1$ and $a3$ are both concerned with the slope of each line, $a2$ and $a4$ evaluate the curvature of each corresponding line. Hypothesis 1 and hypothesis 2 are both concerned with the line of perfect agreement, as such the values of $a1$ and $a2$ are under scrutiny. Both values are insignificant. As such both **hypothesis 1** and **hypothesis 2** lack evidence to be supported.

Table 5: Surface response analysis

	Main model	Low psychological safety	High psychological safety
a1	.14	.19	.25
a2	-.04	-.05	-.09
a3	.31	1.06 * (ρ = .03)	.16
a4	-.08	-.52 * (ρ = 0.35)	.05

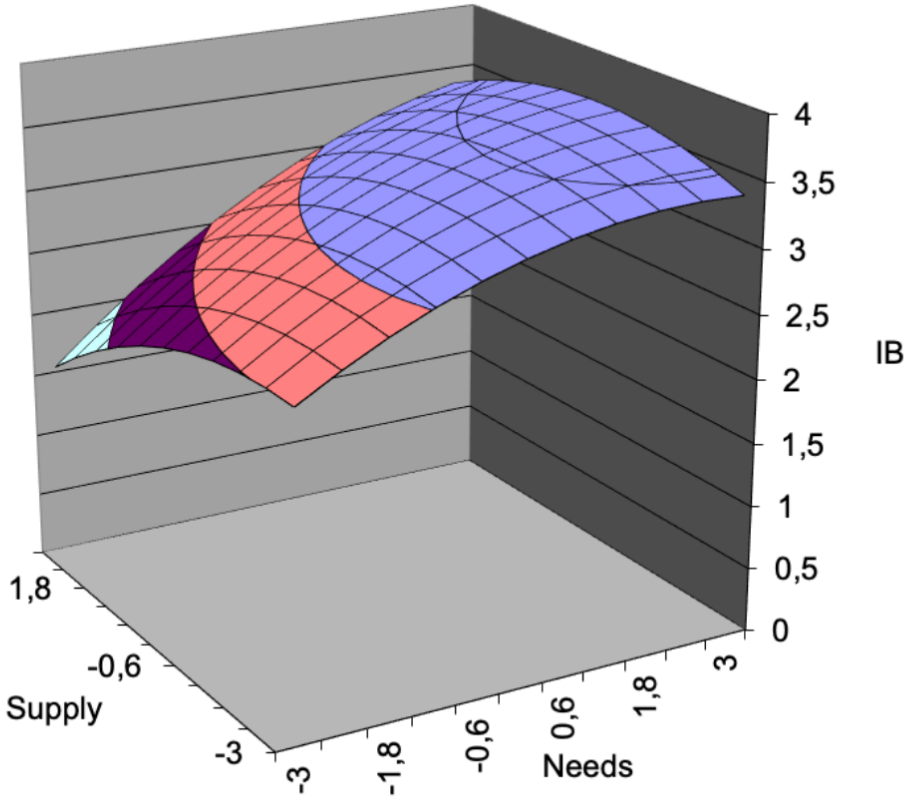

Figure 3: Response surface linking our main model of needs-supplies fit on autonomy and intrapreneurial behaviour

For low psychological safety significant results where found for $a3$ and $a4$. The equations for the slope and curvature along the line of incongruence. The negative value of a4 shows that intrapreneurial behaviour declines more sharply as the discrepancy between needs and supplies increases. Figure 4 shows that the negative consequence on intrapreneurial behaviour exists in situations of excess. Which is confirmed by the significant and positive value of a3. For high levels of psychological safety no significant results are found. Figure 4 illustrates the response surface for high psychological safety.

Given these findings for both **hypothesis 4a** and **hypothesis 4b** no evidence could be found, given the lack of significant results for the high psychological safety.

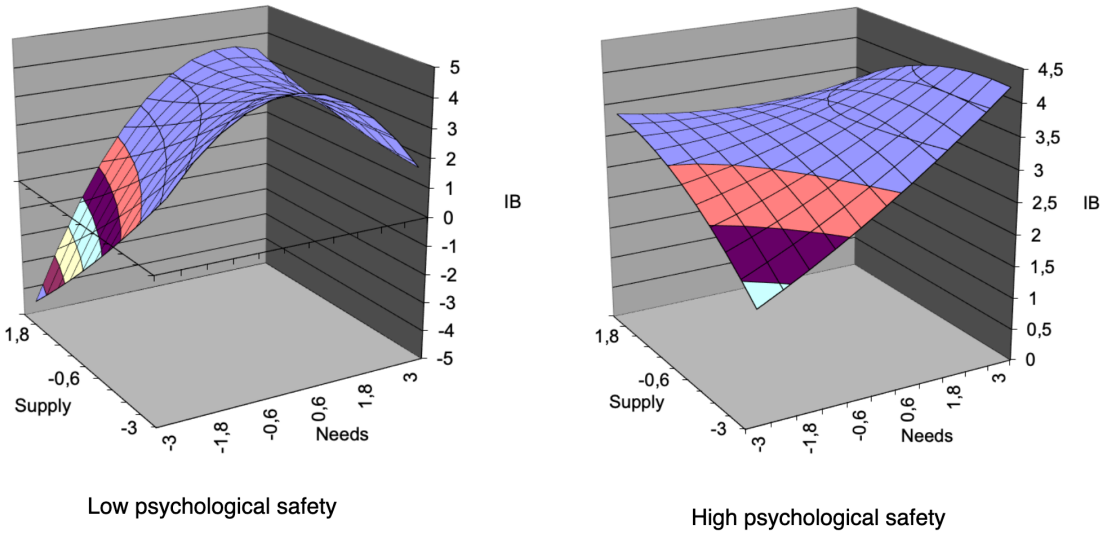

Figure 4: Relationship between autonomy and intrapreneurial behaviour at Low and High levels of psychological safety

5 Conclusion, discussion, and recommendations

5.1 Conclusion

5.2 Discussion

5.3 Recommendations for practice

5.4 Recommendations for research

@@ for in conclusions For better understanding of the surface modelling three-dimensional illustrations are supplied. Analysis for our main model is reported in table 5 and illustrated in figure ‘ 3. For all 4 a’s the main model yielded insignificant results. This suggests that a (mis)fit of autonomy on intrapreneurial behaviour - the interaction between N and S - is influenced by other factors. As such both **hypothesis 1** and **hypothesis 2** lack evidence.

tl;dr on conclusions

Given these results we can conclude:

- Contradicting effects happen for autonomy needs and supply in regards to IB. This suggests that autonomy NS-fit on intrapreneurial behaviour is irrelevant, and has to be seen as two distinct variables
  - This claim is based on the lack of significance between N and S when they interact (NxS)
  - And it moving the opposite direction in case of 1% increases; e.g. it is interesting that IB decreases on an increase of org supply
  - @@ Jana; could above be explained by some weird outliers?
- The effect of autonomy (needs and supply) on intrapreneurial behaviour is clouded by effects not studied in these thesis
  - There is no direct relation between autonomy and IB, there are other/different constructs mediating/moderating between these two variables
  - This allows for opportunities to further research the moderating or mediating effects between autonomy and intrapreneurial behaviour
- In a low psychological safety environment supplying high levels of autonomy has a negative effect on individuals with low desire for autonomy
- A relation between psychological safety and IB has not been found in this study.

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Appendix A: Measures

Intrapreneurial behaviour (de Jong et al, 2011)

Code	Question (1-7 Likert scale)	Dutch translation
IBI1	…generate creative ideas	…genereer creatieve ideeën
IBI2	…search out new techniques, technologies and or product ideas	…zoek naar nieuwe technieken, technologieeën en/of productideeën.
IBI3	…promotes and champions ideas to others	…promoot en verdedig mijn ideeën tegenover anderen.
IBP1	…identifies long term opportunities and threats for the company	…identificeer opportuniteiten op lange termijn alsook gevaren voor het bedrijf.
IBP2	…is known as a successful issue seller	…ben gekend als een succesvol verdediger van belangrijke kwesties.
IBP3	…puts effort in pursuing new business opportunities	…probeer nieuwe kansen voor het bedrijf te verkrijgen.
IBR1	…takes risks in his/her job	…neem risico's in mijn job.
IBR2	…when large interests are at stake, goes for the 'big win' even when things could go seriously wrong	…ga voor de grote winst wanneer er grote belangen op het spel staan, zelfs wanneer dit serieus fout kan gaan.
IBR3	…first acts and then asks for approval, even if he/she knows that would annoy other people	…handel eerst en vraag dan goedkeuring, zelfs als ik weet dat dat anderen zou storen.

Daily intrapreneurial behaviour

Code	Question (1-7 Likert scale)	Dutch translation
IBI3	…promotes and champions ideas to others	…ideeën promoot en verdedigt bij anderen
IBP3	…puts effort in pursuing new business opportunities	…zich inspant om nieuwe zakelijke kansen na te streven

Code	Question (1-7 Likert scale)	Dutch translation
IBR3	…first acts and then asks for approval, even if he/she knows that would annoy other people	…eerst handelt en nadien goedkeuring vraagt, zelfs als hij/zij weet dat andere mensen dat zou kunnen irriteren

Autonomy (misfit) (Spreitzer, 1995)

@@ Translate properly!

Questions for the need

Code	Question (1-7 Likert scale)	Dutch translation
AUT1	Today, I found it important to have significant autonomy in determining how I do my job.	Ik heb de mogelijkheid om te bepalen hoe ik mijn baan doe.
AUT2	Today, I found it important to decide on my own how to go about doing my work.	Ik heb de kans om te beslissen hoe ik mijn eigen werk uitvoer.
AUT3	Today, I found it important to have considerable opportunity for independence and freedom in how I do my job.	

Questions for the supply

Code	Question (1-7 Likert scale)	Dutch translation
AUT1	Today, I had significant autonomy in determining how I do my job.	Ik heb de mogelijkheid om te bepalen hoe ik mijn baan doe.
AUT2	Today, I could decide on my own how to go about doing my work.	Ik heb de kans om te beslissen hoe ik mijn eigen werk uitvoer.
AUT3	Today, I had considerable opportunity for independence and freedom in how I do my job.	Ik heb de mogelijkheid om onafhankelijk en vrij te beslissen hoe ik mijn baan doe.

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

Big Five (Rammstedt & John, 2007)

Code	How well does each of the following statements describe your personality? I see myself as someone who … (1 = strongly disagree, 7 = strongly agree)	Hoe goed passen de volgende beschrijvingen bij u? Ik zie mezelf als iemand die…
PERS_E1	1. … is reserved (extraversion - reverse scored item).	Ik zie mezelf als iemand die gereserveerd is.
PERS_A1	2. … is generally trusting (agreeableness).	Ik zie mezelf als iemand die over het algemeen mensen vertrouwd.
PERS_C1	3. … tends to be lazy (conscientiousness - reverse scored item).	Ik zie mezelf als iemand die de neiging heeft lui te zijn.
PERS_N1	4. … is relaxed, handles stress well (neuroticism - reverse scored item).	Ik zie mezelf als iemand die rustig is en goed met stress om kan.
PERS_O1	5. … has few artistic interests (openness - reverse scored item).	Ik zie mezelf als iemand die weinig artistieke neigingen heeft.

Code	How well does each of the following statements describe your personality? I see myself as someone who … (1 = strongly disagree, 7 = strongly agree)	Hoe goed passen de volgende beschrijvingen bij u? Ik zie mezelf als iemand die…
PERS_E2	6. … is outgoing, sociable (extraversion).	Ik zie mezelf als iemand die sociaal en enthousiast is.
PERS_A2	7. … tends to find fault with others (agreeableness -reverse scored item).	Ik zie mezelf als iemand die vaak fouten in anderen zoekt.
PERS_C2	8. … does a thorough job (conscientiousness).	Ik zie mezelf als iemand die werk grondig doet.
PERS_N2	9. … gets nervous easily (neuroticism).	Ik zie mezelf als iemand die makkelijk nerveus wordt.
PERS_O2	10. … has an active imagination (openness).	Ik zie mezelf als iemand die een actieve verbeelding heeft.