

A Work Project, presented as part of the requirements for the Award of a Master's degree in
International Management from the Nova School of Business and Economics.

Which Human Resource Management Practices are Enhancing Intrapreneurial Behavior?
The Influence of High-Performance Work Systems on Intrapreneurial Behavior and the
Mediating Role of Recognized Company Support

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16/01/2023

Dedication

I want to dedicate my master's thesis to the memory of my dad. Thank you for always helping and supporting me with my scientific research papers and teaching me so much about essential life lessons. I wish you could have also experienced this journey with me.

Abstract

Prior research has explored the effects of high-performance work systems (HPWS). However, little research examined influences of HPWS on intrapreneurial behavior (IPB). This study examines recognized company support (RCS) as mediating effect on the relationship between HPWS and IPB. A survey sent to mature, big-sized German organizations generated data. HPWS comprised training, compensation, decision-making, and job security, RCS comprised emotional and material support. Mediation revealed a significant positive impact of HPWS on IPB. RCS mediated the effect partially. This research added value considering big-sized, mature German organizations previously disregarded by research. Moreover, material support was never considered as mediating variable.

Keywords: Intrapreneurship, Intrapreneurial Behavior, High-Performance Work Systems, Recognized Company Support, German Organizations

This work used infrastructure and resources funded by Fundação para a Ciência e a Tecnologia (UID/ECO/00124/2013, UID/ECO/00124/2019 and Social Sciences DataLab, Project 22209), POR Lisboa (LISBOA-01-0145-FEDER-007722 and Social Sciences DataLab, Project 22209) and POR Norte (Social Sciences DataLab, Project 22209).

Introduction

“Innovative solutions to new challenges seldom come from familiar places.”

— Gyan Nagpal 2015, 37

Nagpal (2015) mentioned that new challenges rarely emerge from everyday habits. Thus, new thought-provoking impulses need to be encouraged within employees of mature firms to conquer obsolete, inefficient habits and to create intrapreneurial behavior (IPB) within existing patterns. To do so, most organizations use incentives in many respects, engaging employees in steady enhancement and progression. Interestingly, the research found that entrepreneurs, hence independent business founders, use effectual reasoning in their thinking, thus focusing on affordable loss rather than expected return, meaning incentives need to be set differently (Sawilowsky 2009). Contrary to that and following research, IPB is evoked by setting monetary and non-monetary incentives and using human resource practices. Even though many human resource management practices (HRMP) aim to enhance IPB, an uncontested solution, a combination of several HRMP, still needs to be identified. Thus, it is disputable which combination of HRMP could commence and affirm IPB within mature organizations. The discrepancy between the past research and the various assumptions raises the question of which factors of high-performance work systems (HPWS) influence IPB the most. While some argue that factors such as compensation lead to higher IPB, others disprove the presumption (Brazeal 1993; Shehata, Montash, and Areda 2021). Furthermore, many argued about the effect of training and factors such as the organizations' support (Hornsby, Kuratko, and Zahra 2002; Shehata, Montash, and Areda 2021). Further, it must be determined if recognized company support (RCS) is mediating this effect.

Research Question and Value-added

Previous literature showed inconsistent results about which HRMP positively influence IPB within organizations. This research paper addresses the question of which

factors of HPWS positively influence IPB while likewise examining the mediating effect of RCS. While research has investigated many different sub-variables for HPWS, those mentioned in this research were not yet the subject of discussion in this constellation and combination. Furthermore, existing literature has sparsely focused on RCS, even though some findings in literature found RCS to have an important influence on IPB (Farrukh et al. 2021). The factors of HPWS and RCS have yet to be combined. This study aims to complete the existing literature by analyzing the mediating effect of RCS on the influence of HPWS on IPB. Secondly, many studies focused on the combined factors of HPWS and RCS. However, more research must be done investigating the combined and standalone factors.

To meet the goals, a survey was conducted with 202 participants from big, traditional, entrenched German companies. Respondents were asked about their entrepreneurial traits leading to IPB, their perception of HPWS, job security, involvement in decision-making processes, compensation, training, and RCS, comprised of emotional (ES) and material support (MS), followed by an analysis of the standalone and combined factors.

Structure of the Thesis

The central part of the thesis will start with a review and definition of intrapreneurship and HPWS. The literature concerning the research question is reviewed, and important aspects of the existing literature are summarized. Subsequently, the mediation model developed is specified and explained, ultimately deriving the hypotheses from the existing literature. Chapter four will analyze the sample data, completing the thesis with the results, implications, and limitations in chapters five, six, and seven, respectively.

Literature Review

As previously mentioned, innovative solutions never come from familiar places (Nagpal 2015). In the fast-developing business world, change within organizations and the need for constant advancement arises to remain competitive (Farrukh et al. 2021). In the past,

several HRMP have been established within firms to originate the emergence of innovation. Within this context, IPB is desirable, providing a more sustainable and long-term approach to implementing innovation within the organization (Farrukh et al. 2021). However, it needs to be made clear which HRMP have a direct, positive impact on IPB and foster such. Literature contributing to this question will be reviewed in the following. Literature was analyzed holistically to the author's best knowledge and referred to as such in the following.

Definition Intrapreneurship

When looking at existing literature, many definitions of intrapreneurship exist. Some define intrapreneurship in a broader sense by saying, “intrapreneurship refers to the entrepreneurship characteristics available in the present organization.” (Razavi and Ab Aziz 2017, 771). Furthermore, the simplest way to define intrapreneurship sufficient to understand the means of this study, is according to Farrukh et al. (2021), “Intrapreneurship is defined as entrepreneurship in the existing organization.” (661) Intrapreneurship describes the process within an established organization, whereby employees suggest new and innovative ideas and thoughts. The employees are hereby provided the freedom to introduce new concepts and ideas that will eventually be developed within the organization. It has been previously determined that there is no doubt that intrapreneurship will be indispensable in the future. Especially mature, older firms need to keep up with the rapid pace of change, thus enabling innovation through intrapreneurship within their organization (Skovvang Christensen 2005). Furthermore, literature identified that the interest in intrapreneurial practices has been growing, once more showing the future importance (Phan et al. 2009).

In conceptualizing IPB, the literature suggests that risk-taking, innovativeness, and proactiveness are, amongst other characteristics such as personal initiative, reinforcement sensitivity, and strategic renewal, the most common ones in order to describe how IPB will be reflected within the employees (Amarakoon et al. 2019; Farrukh et al. 2021; Gawke,

Gorgievski, and Bakker 2019; Glinyanova et al. 2021). Risk-taking or risk assessment describes the employees' willingness to test practices with unknown, however promising, outcomes (Amarakoon et al. 2019; de Jong et al. 2015). With this, the probability of receiving an award for a task is balanced against the risk of failure to perform the task. Regarding intrapreneurship, risk-taking is often associated with bold actions (Gawke, Gorgievski, and Bakker 2019). Adding to this, innovativeness describes the readiness of the employees to innovate, thus capturing opportunities that will add value to the organization. Further, new ideas are adopted within a team to enhance job performance (Amarakoon et al. 2019; Gawke, Gorgievski, and Bakker 2019). Furthermore, in later stages, championing and implementing new ideas describes the innovativeness of individuals (Farrukh et al. 2021). Hereby, capturing new ideas is essential (Gawke, Gorgievski, and Bakker 2019). Correspondingly, proactiveness describes the will of employees to maintain or achieve a forward-looking perspective, keeping one's eye open for opportunities that add value to the organization (Amarakoon et al. 2019).

In the past decades, much research has been conducted, making intrapreneurship a matter of discussion. For instance, enablers of IPB within knowledge-intensive firms were investigated or the impact of IPB on product innovation (Beugelsdijk 2008; Skovvang Christensen 2005). This paper will only focus on internal factors; thus, behavioral influences of IPB directly related to HRMP, as mentioned above. However, much research has been done examining external factors potentially influencing intrapreneurship and IPB, such as environmental conditions, industry conditions, or industry growth (Antoncic and Hisrich 2004). For further understanding, the terms intrapreneurship and corporate entrepreneurship might be used substitutable, as stated by previous literature. Thus, literature considering corporate entrepreneurship was considered during this study (Antoncic and Hisrich 2001; Fitzsimmons et al. 2005; Skovvang Christensen 2005).

Definition of High-Performance Work Systems

The influence of HPWS has previously been evaluated in the context of IPB. However, the definition of HPWS greatly varies amongst the existing literature (Boxall and Macky 2009). According to a general definition, HPWS can be seen as “a term used to denote a system of HR practices designed to enhance employees’ skills, commitment, and productivity in such a way that employees become a source of sustainable competitive advantage” (Datta, Guthrie, and Wright 2005, 136). According to Takeuchi et al. (2007), HPWS “involve flexible job assignments, rigorous and selective staffing, extensive training and development, developmental and merit-based performance appraisal, competitive compensation, and extensive benefits.” (1069) In other terms, HPWS describes a set of practices organizations should establish to generate high commitment and involvement amongst the employees (Bos-Nehles and Veenendaal 2019). More precisely, HPWS can include a multitude of HRMP that create knowledge, improve skills and enhance motivation by incentivizing employees’ behavior with rewards and compensation. Moreover, HPWS consolidates the relationship between the single employee and the organization in such a way that employees can respond to arising problems and changes more effectively (Farrukh et al. 2021).

It has been previously determined that HPWS will be indispensable in the future as the usage of such will increase organizational performance (Zhu, Liu, and Chen 2018). In contrast to habitual HRMP, namely management by objective, HPWS are making use of a multitude of practices to create a reinforcing system of employee motivation and continued education to achieve IPB, thus, organizational success (Farrukh et al. 2021).

In this study, HPWS comprised four parameters such as the involvement of the individual in decision-making processes within the organization, training received, job security, and compensation received by the individual. The four criteria to define HPWS have

been chosen following previous literature (Escribá-Carda et al. 2020; Farrukh et al. 2021; Hayton, Hornsby and Bloodgood 2013). The criteria for HPWS were combined in such a way as to generate a unique hypothesis, closing gaps in the existing literature. Additionally, other researchers determined that HPWS consists of a multitude of factors. Seven could be identified as the most important ones, namely training and development, supervisor support, staffing, diversity management, communication and information sharing, performance appraisal, and compensation and reward (Matookchund and Steyn 2019). For the purpose of this study, a mixture of the available factors of HPWS was used, using the most relevant variables, considering the target group of mature, big-sized German organizations.

Resource Based View

Moreover, the resource-based view (RBV) needs to be explained, adding to the explanation of the underlying principle of HPWS (Farrukh et al. 2021). The RBV states that organizations are better off than the competition if the resources and capabilities available to that firm exceed the level of the competition (Kraaijenbrink, Spender, and Groen 2010; Özçelik, Aybas, and Uyargil 2016). Additionally, qualified and trained employees are considered valuable and hard-to-imitate resources available to a firm, thus, having trained, committed, and productive employees creates a competitive advantage. Moreover, by following an RBV, the employees have higher perceived empowerment, thus, are more likely to take risks for the organization (Özçelik, Aybas, and Uyargil 2016). Understanding the underlying principles of the RBV further strengthens the relationship between HPWS and IPB (Farrukh et al. 2021).

Development of the Hypotheses

The model used for this study will be developed in the following, deriving it from previous literature and closing gaps in the mentioned.

HPWS and IPB

For an organization to keep pace with the ongoing industrial development, it is inevitable to foster IPB, as it is considered a critical element. However, little research has been done to determine which specific HRMP would foster such IPB, and only a few have investigated the direct impact of HPWS on IPB (Escribá-Carda 2020; Mustafa, Lundmark, and Ramos 2016; Schmelter et al. 2010).

In some literature, HPWS were often targeted as the primary influence on IPB. However, the literature contradicts, pertaining to the results (Escribá-Carda 2020; Farrukh et al. 2021). Moreover, literature previously focused on HPWS as a whole system, not considering the single elements of HPWS and their individual influence on IPB (Escribá-Carda 2020). As this should be considered under future research, HPWS was chosen as a factor with diverse sub-variables to test the synergy between different HRMP and their influence on IPB (Escribá-Carda et al. 2020). As some previous research demonstrated no direct relationship exists between HPWS and IPB, the question arises of which other factors might mediate the relationship between HPWS and IPB.

According to a thorough investigation of literature from past decades, five critical enablers of intrapreneurship could be identified. The most crucial enabler were thus rewards, management support, resources, organizational structure, and risk-taking (Hayton 2003; Hornsby, Kuratko, and Zahra 2002; Kuratko, Montagno, and Hornsby 1990). In the following, the enablers of IPB that belong to HPWS will be critically reviewed.

Firstly, within the banking sector, three main factors of HPWS have been identified, directly influencing IPB: empowerment, compensation, and training (Shehata, Montash, and Areda 2021). Training was found to be a profoundly effective tool in order to provide employees with the necessary knowledge to develop the ability of IPB, hence thinking more innovatively (Shehata, Montash, and Areda 2021). Moreover, training was found to enhance

the identification of entrepreneurs within the organization (Shehata, Montash, and Areda, 2021). Furthermore, research confirmed that training related to capability training, such as better communication skills or creativity, enhances IPB because those factors were found to play a significant role while developing entrepreneurial skills in the very beginning. However, results were generated in an environment with small to medium-sized firms (González-Tejero and Molina 2022). Lastly, a study revealed that training and compensation combined seemed to complement each other, fostering IPB (Castrogiovanni, Urbano, and Loras 2011). They further revealed in their study, to have found that sole compensation is not sufficient in order to foster IPB. However, a combination of further factors and compensation, apart from training, was vital in enabling IPB (Castrogiovanni, Urbano, and Loras 2011). Further studies supported those findings (Hayton 2003; Rutherford and Holt 2007). Corresponding with the findings, it can be said that training and job autonomy significantly influence IPB (Beugelsdijk 2008).

Secondly, compensation can be identified as a diverse factor when speaking about HPWS and influences on IPB, where no common ground could be identified yet amongst research (Lerner, Azulay, and Tishler 2009; Shehata, Montash, and Areda 2021). While some researchers argue compensation has no impact on IPB (Brazeal 1993), others argue compensation has a significant impact on IPB (Shehata, Montash, and Areda 2021), while a third group only considers compensation to have an impact on IPB when combined with other HRMP (Rule and Irwin 1988). Some argue that compensation alone is not the alone-standing factor enabling IPB. Instead, several factors in combination with compensation will influence IPB (Matookchund and Steyn 2019; Rule and Irwin 1988). However, many researchers named compensation as a great tool to enhance IPB. It is essential to mention that intrapreneurs and entrepreneurs might have different convictions when discussing how to value their work, as mentioned in the introduction. While entrepreneurs frequently feel valued

by non-monetary rewards, intrapreneurs interact differently concerning this aspect (Sathe 2007). Intrapreneurs instead feel rewarded and esteemed by a different reward such as “regular pay, bonuses, profit share, equity or shares in the organization, expense accounts, job security, promotions, expanded projects, money for research or trips to conferences.” (Morris and Kuratko 2007, 245). Adding to the previous finding, the importance of rewards was confirmed in previous research (Ireland, Covin, and Kuratko 2009). Ireland, Covin, and Kuratko showed that adequate use of rewards is necessary to yield IPB (2009). They further elaborated that rewards are necessary to get employees to establish new practices outside of usual procedures, thus starting new and innovative work behaviors that will ultimately lead to innovative ideas, thus IPB (Ireland, Covin, and Kuratko 2009).

Moreover, rewards were connected with individual performance, thus performance-based rewards (Ireland, Covin, and Kuratko 2009). Corresponding with everything mentioned earlier, performance-based pay significantly influences IIPB (Beugelsdijk 2008).

Thirdly, according to previous literature, IPB is enhanced through strategic factors such as decision-making, organizational structure, or culture (Heavey et al. 2009).

Fourthly, Nikolov and Urban tested the influence of several factors on IPB, where financial rewards and job risk were discussed (2013). Findings showed that if job risk, meaning the risk of losing the job if the attempted project had failed, was high, their employees were less likely to show IPB. Moreover, reward significantly impacted the employee’s decision whether to participate in IPB (Nikolov and Urban 2013). Furthermore, it was found that the risk of losing a job after a failed project affected respondents less if they had previous intrapreneurial experience (Nikolov and Urban 2013).

Social Exchange Theory

Additionally, an underlying theory necessary for this research is explained in the following. Based on the social exchange theory (SET), compensation might foster IPB. If the

condition is fulfilled, compensation acts as performance-based pay whereby employees receive feedback for their doing, enhancing positive attitudes and behavior (Aktharsha and Sengottuvel 2016; Canet-Giner et al. 2020). Thus, employees that receive positive feedback in combination with compensation for their work feel enhanced to show positive attitudes towards their organization, ultimately enhancing IPB and creating a positive, reinforcing loop (Radaelli et al. 2014). Based on the mentioned arguments, the first hypothesis is derived:

H1: High-performance work systems positively influence intrapreneurial behavior.

The Role of RCS in the Relation between HPWS and IPB

Taking the findings described in the previous paragraph into consideration, further factors influencing IPB have to be identified. Adequate hypotheses are derived.

According to literature (Farrukh et al. 2021), RCS can be considered as “an employee’s perception and evaluation of the organizations’ considerations toward their well-being and career development.” (614) Hence, RCS is the personal feeling of support employees experience within their organization. It has previously been determined that HPWS do not directly impact IPB. However, a mediating effect of knowledge sharing was found to impact IPB (Escribá-Carda 2020). Furthermore, it has been found that HPWS could positively affect knowledge sharing. However, the question arises if additional factors could mediate between HPWS and IPB, irrespective of knowledge sharing (Escribá-Carda 2020).

Research showed that employees receiving support from their organization, hence receiving empowerment, are more prone to risk-taking behavior and going the extra mile for the organization, which in turn will lead to innovative behavior, fostering IPB (Shehata, Montash, and Areda 2021). The research also found that empowering employees will lead to a higher affinity toward IPB (Shehata, Montash, and Areda 2021; Zhang and Bartol 2010). Beyond that, ES further includes a failure-tolerant organization, thus not punishing employees

for failures (Hornsby, Kuratko, and Zahra 2002). Moreover, a case study revealed that personal recognition was essential to employees to develop IPB, thus being valued by their peers and receiving ES and positive reinforcement (Castrogiovanni, Urbano, and Loras 2011).

Besides offering the employees ES, as mentioned previously, MS might be provided in the form of dedicated time to work on new ideas or by providing materials needed, enhancing IPB. Offering the employees, the time to experiment and test new ideas will lead to higher interest in conducting IPB (Sayles 1986).

Furthermore, literature found a significant impact of so-called intracapital (Duncan et al. 1988). Literature stated that entrepreneurs need the freedom to develop new ideas, facilitating IPB through more freedom within the work environment. Moreover, freedom could be given in the form of capital. Hereby, capital is further specified as money used within the organization to further work on intrapreneurial thoughts and projects (Duncan et al. 1988). Hereby, the study (Duncan et al. 1988) evinces that “intracapital could be used to buy corporate resources the intrapreneur needs.” (19) By providing the employees free capital, to be used within the firm in order to follow new ideas, IPB is enhanced. Only a little research can be found about intracapital. Hence some form of intracapital, further MS from the organization, is included within this study.

Concluding, previous research emphasized the importance of empowerment and recognition. The twofold variable support was included in this research, with ES and MS provided by the organization. Based on the arguments presented, the second hypothesis was derived. Furthermore, aligning with the previous two hypotheses, the third one was derived.

***H2:** High-performance work systems positively influence recognized company support.*

***H3:** Recognized company support has a mediating effect between high-performance works systems and intrapreneurial behavior.*

Methods and Measures

In the following, the data gathered was analyzed to test the hypotheses. An independent, dependent, and mediating variable was defined within the model to explain the proposed relationships (Figure 1). Further, the independent variable was HPWS, while the dependent variable was IPB. The mediating variable was RCS. All variables are measured by sub-variables, consisting of statements provided to the respondents, asking them to evaluate the statements on a scale from one to five, following the Likert scale (Chyung et al. 2017).

Measures of the Variables

Based on the literature and in accordance with the mentioned hypotheses, HPWS, IPB, and RCS were chosen as variables. Further, HPWS and RCS are defined more thoroughly for the purpose of the research. HPWS is explained by the sub-variables decision-making, training, job security, and compensation. Furthermore, RCS was classified into the sub-variables of ES and MS. To measure the perception of the variables, questionnaire items from existing literature were utilized, adapting some of the suggested item measures (Do 2016; Farrukh, Yin, and Mansori 2016; Farrukh et al. 2021; Matookchund and Steyn 2019; Sun, Aryee, and Law 2007) (Illustration 1). Barring the mentioned variables, several controlling variables have been considered during the analysis. Control variables comprise gender, age, education, seniority, and previous intrapreneurial experience. Despite the non-utilization of the control variables during hypotheses testing, it has to be precluded that the control variables bias the effect between the main variables.

IPB. The questions for IPB comprised the topics of risk-taking, innovative and proactive behavior, defining IPB by evaluating the respondent's self-assessment. Statements provided included sentences like "I contribute with ideas for the strategic renewal of my organization" (Farrukh et al. 2021, 617) and were taken from previous literature.

HPWS. Furthermore, HPWS measurements comprised the factors of compensation, job security, training, and decision-making. Statements included sentences like “I am often asked by my supervisors to participate in decision-making processes” (Farrukh et al. 2021, 617) and were taken from previous literature.

RCS. Moreover, RCS was added; however not directly adapted from previous literature but instead derived from literature tailored to the purpose of this study. RCS comprised ES and MS received by the organization. Statements included sentences like “My organization cares about my opinion” (Farrukh et al. 2021, 617).

Survey Setup Data Acquisition

The data for the study was gathered with an online survey using the software Qualtrics (Qualtrics [2005] 2022). The survey comprised seventeen questions, closing with eight demographic questions. The English survey was published in October 2022 (Illustration 2).

The questions for the questionnaire were carefully selected from previous, truthful research papers to test the influence of HPWS and RCS on IPB and to test for a mediating effect (Farrukh et al. 2021). The unit of the measure was chosen according to previous research done in this field to guarantee the validity of the questions asked (Elis et al. 2017; Farrukh et al. 2021; Kehoe and Wright 2013). The questions were subdivided into three sections, broaching the issue of IPB, HPWS, and RCS. The questions for IPB comprised three topics, as mentioned above. Furthermore, the HPWS measurements followed previous literature. Moreover, RCS was added. However, the criteria were derived from literature tailored to the purpose of this study. All variables were evaluated by the respondent’s self-assessment of the mentioned criteria (Farrukh et al. 2021).

The survey was distributed amongst employees of traditional, big German organizations that fulfilled the predetermined prerequisites. The fundamental requirements stated that the organization of interest should be a large-sized organization with a European

headquarters. Additionally, the organization should follow a competitive strategy with a high orientation towards quality and innovation, creating the need for IPB. The requirements were set on knowledge-intensive industries where expertise is a strategic resource. The questionnaire distribution followed the same scheme invariably in order to ensure reliable and equal data; the respondents were informed that the survey was conducted for academic purposes only. Respondents were contacted through LinkedIn or other means. Respondents were only contacted when the required criteria were met. In total, 202 respondents completed the questionnaire successfully. Respondents could only complete the survey once, ensuring no repeated data collection to maintain the findings.

Data Analysis

The range of age was between 20 and 65 years old. The mean age was 34.5 years, while the median (Md) was 28, indicating that most of the respondents were older than 28, aligning with the purpose of this research (Table 1). 45.8% of all respondents were female, while 54.2% were male. (Table 1.1). The respondents had a mean seniority of 8.5 years with an Md of 5 years, indicating that most respondents have worked for the same organization for several years (Table 1.2). Background education was diverse amongst the respondents (Table 1.3). A scale from one (strongly disagree) to five (strongly agree) is applied to evaluate the items. A five-point Likert scale was utilized to exclude forced choices, potentially occurring with even-scaled questionnaires (Chyung et al. 2017). Further, it was indicated that 43.0% of the respondents had previous intrapreneurial experience (Table 1.4).

Overall, most respondents rated the variable IPB the highest, with a mean of 3.6. Second on the rating was RCS, with a mean of 3.5; lastly followed by HPWS, with a mean of 3.2 (Table 2). Interestingly, the mode for training is .0, which indicates that most respondents have not received training within their organization in the past months (Table 2). For the sub-

variables of support, respondents seemed to identify with ES and MS, as the mean values were 3.7 and 3.0, respectively (Table 2).

Sample Measurements and Computations

Furthermore, the effect size is calculated. The more participants there are in an experiment, the more likely the results will be statistically significant (Ryan 2013). The quicker a result becomes statistically significant, the higher the so-called power of the experiment. (Ledolter and Kardon 2020). The required sample size was determined to generate a statistically significant sample size (Fritz and MacKinnon 2007). According to representative literature, a sample size between 158 and 224 respondents is required to have a statistical power of .80 (Fritz and MacKinnon 2007). One hundred fifty-eight respondents are required to have a medium effect size ($c' = .39$), whereas 224 respondents are required to have a small effect size ($c' = .14$) (Fritz and MacKinnon 2007) (Table 3).

For the reliability analysis, to determine whether the statements for each variable and sub-variables conform with each other, a test for internal consistency, Cronbach's α , was conducted (Table 4 and 4.1). The test results will provide the strength of reliability and the power of how different statements can explain a single work (Dimitrov 2011). The results yield that Cronbach's α is higher than .80 for all three main variables. It is possible to say that Cronbach's α is strong. The internal consistency is given (Blanz 2015) (Table 5 to 6.1).

All the hypotheses above exclude the influence of age, gender, seniority, education, and previous intrapreneurial experience. Hence the need arises to test if the results are independent of these factors. Spearman's correlation was conducted, which points out the strength of the monotone connection between two ordinal variables (Cohen 1988). Zero would indicate no correlation between the variables. According to literature often used to interpret the results, a weak correlation is given if the correlation coefficient is around .10, and a moderate correlation has a value of .30. In contrast, a strong correlation has a value of

.50 or higher (Cohen 1988). Spearman's correlation was computed. IPB shows no significant correlation with the control variables as all values of Spearman's ρ are below .1, close to zero (Table 7).

Furthermore, RCS shows no significant correlation with age, gender, education, and previous intrapreneurial experienced. However, a significant weak correlation can be found between RCS and seniority with a value of -.18 and a *p-value* of .01 (Table 7). The negative relation indicates that respondents with higher seniority have lower RCS. This finding corresponds with the assumption that traditional German companies tend to neglect innovation and RCS, especially people with high seniority, therefore, have low RCS. The scatterplot did not reveal a significant correlation between the two mentioned variables, despite the significant *p-value* (Table 7). Moreover, HPWS does not correlate with any control variables as the values for Spearman's ρ are below .10 or insignificant, as determined by the *p-value*.

Inferential Statistics with Mediation Analysis

One questionnaire was excluded as no information was given. H1 stated that HPWS have a positive influence on IPB, while H2 claims that HPWS have a positive influence on RCS. Further, H3 predicts that RCS has a mediating effect between HPWS and IPB. This hypotheses will be tested in the following. The model of proposed relations will be analyzed to test the hypotheses by conducting a mediation analysis which is part of a PROCESS analysis. In order to test for a mediating effect between the variables, a test for ordinary least square regression is needed, as well as bootstrapping with 5000 samples to estimate the mediation effect size (Baron and Kenny 1986). The PROCESS macro within SPSS was used to compute the confidence interval (CI) and inferential statistics. (Hayes 2022).

In order to conduct the mediation analysis using PROCESS, several prerequisites have to be fulfilled, such as linearity, normal distribution, independence as well as timely

precedence of the data (Hayes 2022; Maxwell and Cole 2007; Maxwell, Cole and Mitchell 2011; Preacher and Hayes 2008). In order to test the dataset for linearity, a linearity test was performed, generating a scatter plot (Hayes 2022) (Figure 2). The variables involved in the mediation analysis follow a linear distribution. All lines in the scatter plot show a linear form after LOESS smoothing (Preacher and Hayes 2008). Subsequently, the normal distribution was assessed (Bortz and Schuster 2010). Many argue that a sample size bigger than 30 ($N > 30$) is sufficient to assume a normal distribution amongst the dataset. Hence, no test for normal distribution was conducted (Bortz and Schuster 2010). The prerequisite of independence and timely precedence were given due to the survey design.

The mediation analysis for the model of proposed relations (Figure 1) is performed (Table 8). Firstly, the direct relationship between the dependent variable Y and the independent variable X is analyzed and interpreted, looking at path c' (Figure 3). After performing a mediation analysis, a total effect of $HPWS$ on IPB is observed, $B = .228$, p -value $< .001$ (Table 8). The total effect is composed of path a , path b , and path c' of the mediation model, hence $.621 * .112 + .158 = .228$ (Table 8). Furthermore, the role of the mediator was considered. The results demonstrate that $HPWS$ predicts the mediator of RCS , $B = .621$, $p < .001$ (Table 8.1), the path a in the mediation model. However, the mediator, RCS , is not directly influencing the dependent variable, IPB , as the effect $B = .112$ is insignificant with $p > .001$ at a 95% CI, path b within the mediation model (Table 8.2). The direct effect of the model is $B = .158$ at a p -value = $.008$, hence the influence of $HPWS$ on IPB in the presence of the mediator RCS . As the mediator is not influencing the dependent variable on a statistically significant level, there is no mediating effect between $HPWS$ on IPB . The indirect effect is insignificant with $ab = .070$, 95%-CI $[-.003, .143]$. As zero is included within the CI, the mediation effect can be denied (Table 8).

Continuing the mediation analysis for the initial model was performed again, considering a 90% CI to determine if a mediating effect is given at a lower significance level (Table 9 and Table 9.1). At a 90% CI, a statistically significant assumption can still be made (Altman et al. 2013). The results are equal to the ones described above. However, the mediator *RCS* directly influences the dependent variable, *IPB*, as the effect $B = .112$ is significant with $p = .011$ at a 90% CI (Table 9.2). Besides that, as the R-squared value is .108, 10.84% of the variance within the model can be explained by path b and path c. The total effect of the model is $B = .228$ at a p -value $< .001$ (Table 9), which is composed of path a, path b, and path c' of the mediation model, hence $.621 * .112 + .158 = .228$, or by simply adding up the direct and indirect effect ($.070 + .158$). Additionally, the indirect effect (ab) is interpreted, analyzing if the direct effect between *HPWS* and *IPB* is eliminated through the mediating effect. As the p -value for the effect of *HPWS* on *IPB* remains significant, the effect between the independent and dependent variables is not eliminated. Only partial mediation is given. The indirect effect is computed by multiplying path a and path b, hence $ab = .621 * .112 = .070$. Concluding, *RCS* partially mediates the relationship between *HPWS* and *IPB* with an indirect effect $ab = .070$, 90% -CI [.006; .131] (Table 9). The partial mediation is complimentary as the signs of the direct and indirect effects are both positive.

As the independent and mediating variables have several sub-variables, a more thorough mediation analysis is required to determine if any factors of *HPWS* or *RCS* influence *IPB* directly (Table 10 to 15). The first in-depth model analysis was conducted with the factor of *compensation* of *HPWS*, with all other factors remaining equal. A total effect was given with $B = .164$ and a p -value $< .001$ at a CI of 95% (Table 10). Path a and path b show significance. Hence a mediating effect is present. *Compensation* predicts the mediator, $B = .505$, p -value $< .001$ (Table 10.1), which further predicted *IPB*, $B = .142$, p -value = .027 (Table 10.2). Full mediation is given as the direct effect c' turns insignificant with a p -value

of .094. Therefore, it is assumed that *RCS* fully mediates the relationship between *compensation* and *IPB*. The indirect effect is $ab = .071$, 95%-CI [.008, .133] (Table 10).

Hence there is no direct relation between *compensation* and *IPB* when mediated by *support*.

The second in-depth model analysis was conducted with the factor of *job security* of *HPWS*, with all other factors remaining equal. A total effect was given with $B = .213$ and a p -value $< .001$ at a CI of 95% (Table 11). Path a as well as path show significance. Hence a mediating effect is given. *Job security* predicts the mediator, $B = .303$, p -value = .003 (Table 11.1), which further predicted *IPB*, $B = .154$, p -value = .005 (Table 11.2). As the direct effect c' precedes to remain significant, only a partial mediation is given (Table 11.2).

The third in-depth model analysis was conducted with the factor of *emotional support*, with all other factors remaining equal. A total effect was given with $B = .228$ and a p -value $< .001$ at a CI of 90% (Table 12). Path a as well as path show significance. Hence, a mediating effect is given (Table 12.2). *HPWS* predicts the mediator *emotional support*, $B = .594$, p -value $< .001$ (Table 12.1), which further predicts *IPB*, $B = .095$, p -value = .089 (Table 12.2). As the direct effect c' precedes to remain significant, only a partial mediation is given (Table 12).

The fourth and fifth in-depth models were conducted with the factor of *job security* of *HPWS*, as well as the factors of *emotional support* and *material support*. A total effect was given with $B = .213$ and a p -value $< .001$ at a CI of 95% for *emotional* (Table 13) and *material support* (Table 14). Path a as well as path b show significance. Hence a mediating effect is given for both models mentioned (Table 13; Table 14). *Job security* predicts the mediator *emotional support*, $B = .305$, p -value = .006 (Table 13.1), which further predicts *IPB*, $B = .137$, p -value = .007 (Table 13.2). *Job security* predicts the mediator *material support*, $B = .294$, p -value = .006 (Table 14.1), which further predicts *IPB*, $B = .109$, p -value

= .016 (Table 14.2). As the direct effect c' precedes to remain significant, only a partial mediation is given for both models mentioned (Table 13; Table 14).

The remaining model was conducted with the factor *compensation* of HPWS, as well as the factors *of emotional support*. A total effect was given with $B = .164$ and a p -value $< .001$ at a CI of 95% (Table 15). Path a as well as path b show significance. Hence a mediating effect is given. *Compensation* predicts the mediator *emotional support*, $B = .474$, p -value $< .001$ (Table 15.1), which further predicts IPB, $B = .122$, p -value = .033 (Table 15.2). As the direct effect c' precedes to remain significant, only a partial mediation is given (Table 15). The findings are summarized, indicating the outcome of the hypotheses testing (Table 16). An overview of the conducted tests can be found in the Appendix (Table 17).

Results and Discussion

The survey was conducted to test the hypotheses of whether HPWS positively influences IPB and RCS. The third hypothesis discussed whether RCS functions as a mediator in the named relationship. Hereby, the study contributes to existing literature.

It became evident that there is a significant relationship between HPWS and IPB. Hence H1 can be favored. Employees involved in the decision-making processes, high job security, appropriate compensation, and training have a higher drift toward IPB. The combination of those factors conveys a positive picture and shows the commitment of the organization to invest and thus trust in their employees. In return, employees are willing to take higher risks and bring up new ideas, which ultimately fosters IPB. The positive reinforcement by the organization is further supported by the RBV and the SET. By investing in skill development, employees feel supported by the organization, enhanced to take higher risks, enhancing IPB. However, studies also argue otherwise. The research argued that the effect of HPWS on IPB is mediated by different factors (Escribá-Carda et al. 2020). This study contradicts those findings by proving that there is indeed a significant positive impact of

HPWS on IPB when HPWS comprise the four factors mentioned. Which factors constitute HPWS plays a significant role in fostering IPB. Contrary, HPWS might be destructive to the employees, as argued by research (Kroon, Van De Voorde, and Veldhoven 2009). Facilitating the exploitation of employees by overcharging employees with too many liabilities while also setting too many regulations. Those assumption were not proven during this study.

Furthermore, there is a statistically significant relationship between HPWS and RCS. Hence H2 is supported. HPWS also directly influence RCS, comprising how the employees feel emotionally supported by the organization and how well they feel supported concerning the provision of materials such as time and physical products. The study is in accordance with previous findings stating that HPWS influence RCS, hereby adding to previous literature by examining different factors of HPWS, such as compensation (Farrukh et al. 2021).

Moreover, there is a statistically significant mediation of RCS between HPWS and IPB. Hence H3 is favored. Considering those results, bearing in mind the lower statistical significance of a 90% CI, a partial mediation is given. IPB is not solely predicted by HPWS but is too influenced by RCS, making it indispensable.

While previous research emphasized the importance of MS, this study could not verify those findings (Duncan et al. 1988). However, this study verified the significance of ES. In accordance with the SET, ES emphasizes IPB by providing a safe work environment for the employees, aligning with the findings that job security played an outstanding role in fostering IPB. The findings of this study are logically linked to each other. Job security fosters RCS, which then influences IPB, while at the same time job security directly affects IPB.

Furthermore, the several sub-variables elicited the necessity for further examination. Compensation, a factor of HPWS, caused a full mediation. Hence not affecting IPB directly. Instead, compensation influences RCS, mediating the relationship with IPB. Thus, sole compensation should not be used as an HRMP. Also, Job security was tested, indicating a

partial mediation of RCS and IPB aligning with the findings of the SET. Job security was also mediated when the variable support was divided into the mentioned sub-variables, ES and MS. Additionally, ES as a standalone factor showed a mediating effect. As solely MS did not show a mediating effect between HPWS and IPB, the importance of ES is emphasized.

Interestingly, some argued that compensation has no impact on IPB, while others found compensation to have a significant impact (Brazeal 1993; Shehata, Montash, and Areeda 2021). This study found interesting results, adding to the literature. While compensation directly impacted IPB when considering all factors for HPWS, the opposite appeared when considering compensation as a standalone factor. Compensation alone has no direct influence on IPB. RCS fully mediates the effect. Those results are explained by, yet again, the SET, implying that employees feel valued by performance-based pay, receive the support of their organization and thus feel enhanced to take more risk in their work, fostering IPB.

Additionally, the findings correspond with the sample group considered, namely mature big-sized German companies. Previous studies primarily focused on small to medium-sized companies (SMEs) (Castrogiovanni, Urbano, and Loras 2011). Interestingly, this study proved that factors of HPWS leading to IPB in SMEs also have a significant impact on big-sized firms. An outstanding factor hereby is RCS, once again emphasizing the findings of this study. No matter the company, a crucial impact is identified by the individual recognition employees feel within the organization and the rewards provided to them based on their performance. Job security, compensation, and ES were also found to be important within this study.

Summarizing, this study highlights that the constantly changing business world creates the need for organizations to focus on innovation and IPB. Organizations need to support and encourage their employees to engage in more risk-taking and proactive behavior, fostering IPB. This can be achieved by emotionally supporting them and by adapting HPWS. This

study specifically showed that compensation, job security, and ES has an important impact on employees of big-sized, mature German companies.

Implications

This study examined the relationship between HPWS and IPB and whether RCS mediated this effect. Moreover, this study focused on the context of big-sized, mature German organizations, previously not considered in the literature. The study revealed that HPWS have a significant positive impact on IPB, especially the influences of compensation and job security were identified. Furthermore, ES was found to have a higher impact than MS on the IPB of the employees. The findings strongly indicate that organizations should implement HPWS, thus considering the implementation of training and the involvement of the employees in decision-making processes. However, special attention should be paid to compensation and job security, making the employees feel safe within their organization, empowering them to work on new ideas without fearing the loss of their job. Moreover, compensation should be used to motivate employees to walk the extra mile, establish new ways of thinking, and generate new ideas for the organizations and therefore modify established patterns. Additionally, ES systems should be established within organizations, hence further empowering the employees and making them feel valued. By adapting all of the abovementioned measures, organizations will drive towards innovation, higher performance, and constant change, thus keeping pace with the fast-developing business environment. Significantly, in research, mature German companies tend to remain within existing structures. Hence the implementation will have a significant impact in this field.

Limitations

There is no doubt that there are limitations to this study. The factors chosen as sub-variables for HPWS and RCS might be adapted, eventually generating different results. For HPWS, only four factors were chosen. Future research might follow up on the combination of

different factors. The same applies to the sub-variables chosen for RCS. Furthermore, the statements provided to the respondents regarding RCS might be adjusted to fit the corporate culture of a designated organization in a better way rather than providing general questions. Secondly, cultural factors such as the organization's culture or the cultural background of the employees should be considered. Moreover, the study was limited to companies within Germany, limiting the data gathered to one cultural background. Therefore, the results might only be applicable in some countries due to different work ethics and values. Besides that, the questionnaire should be provided in the language of the country of research to avoid language barriers. Lastly, the study could only be conducted with employees from one organization, generating more conform results.

Conclusion

This research examined the influence of HPWS on IPB, considering RCS as a mediating factor. Results showed that HPWS significantly positively impacted IPB, while RCS partially mediated this effect. Especially compensation and job security influenced IPB, making them outstanding factors of HPWS. Moreover, ES has a more significant influence on IPB than MS, aligning with the SET.

Nevertheless, the study has limitations. Cultural factors could be included in further research as they influence HPWS. Other sub-variables could be chosen for HPWS and RCS to investigate further which combination of factors has a significant influence on IPB.

Implications for organizations state that HPWS should be implemented, hence considering compensation and job security measurements. Additionally, the organizations should provide ES, empowering their employees, ultimately leading to IPB.

Further research could focus on considering further sub-variables for HPWS and RCS concerning the limitations. Moreover, cultural factors could be investigated. Ultimately, the survey could be conducted within different countries and industries.

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Appendix A Illustrations

Illustration 1

Measures used for the study

Variable		Item
IPB	<i>Risk-taking</i>	In the course of my work, I will take calculated risks despite the possibility of failure.
		If large interests are at stake, I regularly go for the big win even when things could go seriously wrong.
		I boldly move ahead with a promising new approach when others might be more cautious.
	<i>Innovation</i>	I would be willing to give up some salary in exchange to try out my business idea if the rewards for success were adequate.
		I undertake activities to change the current products/services of my organization.
		I contribute with ideas for the strategic renewal for my organization.
		I undertake activities to reach new markets or communities for my organization.
		I undertake activities that result in new departments outside of my organization.
		I am particularly good at realizing ideas at work.
		I often try to institute new work methods that are more effective for my organization.
	<i>Proactiveness</i>	I attempt to convince people to support an innovative idea.
		Usually, I do more than I am asked to do.
		I take the initiative immediately even when others do not.
		I undertake activities to realize change in my organization.
HPWS	<i>Decision-making</i>	I actively establish new collaborations with experts outside of my own profession.
		If I believe in an idea, no obstacle will prevent me from making it happen.
		I am often asked by my supervisors to participate in decision-making processes.
	<i>Training</i>	I am allowed to make decisions regarding my projects by myself (without permission from my supervisors).
		I am provided with the opportunity to suggest improvements in the way things are done.
		My supervisors have open communication with me concerning my job.
		Within the last months, I have attended a company training program that provided me with new skills.
		The training programs I went through within my organization effectively prepared me to provide high-quality work.
		The organization provides me with sufficient training to handle the introduction of new products and services.
		My company is committed to the training and development needs of its employees.
<i>Job Security</i>	I have a say in how much training I receive.	
	Employees within my organization can be expected to stay with the organization for as long as they wish.	
		Job security is almost guaranteed to employees within my company.

		Declining performance is negatively influencing my salary within my organization.
	<i>Compensation</i>	<p>I have the opportunity to earn individual bonuses (or commissions) for productivity, performance, or other individual performance outcomes. My salary and benefits have been an adequate return for the time and energy demanded of me.</p> <p>My organization's compensation and reward system encourage individual contributions.</p> <p>Risk-taking is rewarded with appropriate pay within my organization. Risk-taking is rewarded by offering more flexible work hours within my organization.</p> <p>I am satisfied with my company's reward system to compensate good performance.</p>
Support	<i>Emotional Support</i>	<p>My organization cares about my opinion.</p> <p>My organization cares about my well-being.</p> <p>My organization would forgive an honest mistake on my part.</p> <p>My organization strongly considers my goals and values.</p> <p>Employees in my organization receive encouragement and support from their supervisors.</p>
	<i>Material Support</i>	<p>My organization provides employees with especially dedicated work-time in order to work on new ideas / solutions for the company.</p> <p>My organization provides budget for employees in order to realize new ideas, suggested by individuals.</p> <p>Employees are allowed to use company resources such as machinery in order to develop personal ideas that could benefit the organization.</p>

Illustration 2

Questionnaire provided to the respondents on Qualtrics

Hi there.

We're Vanessa and Katja, two master students who are just one step ahead to finish their master's degree at Nova SBE in Lisbon. We created this survey in the course of our master thesis to investigate how intrapreneurial behavior (which basically means entrepreneurial behavior within established companies) of employees can be fostered in large traditional companies. Something your company can benefit from too. So therefore, we would kindly ask for your support!

We will not share your sensitive data with anyone else. Hence, the survey is anonymous and confidential. There are 5 blocks (pages) of 15 closed questions in total and it shouldn't take you more than 5 minutes to complete it.

We greatly appreciate the time you take to help us!

Many thanks in advance and sunny greetings from Lisbon,
Vanessa and Katja

1. *Intrapreneurial behavior*

Risk-taking. Please think about risk-taking (personal risk, risk of losing profit/customers/job etc.) within your job and indicate your level of agreement with each of the following statements:

	Strongly disagree (= 1)				Strongly agree (= 5)
In the course of my work, I will take calculated risk despite the possibility of failure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If large interests are at stake, I regularly go for the big win even when things could go seriously wrong.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I boldly move ahead with a promising new approach when others might be more cautious.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would be willing to give up some salary in exchange to try out my business idea if the rewards for success were adequate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Innovativeness. Please think about innovativeness within your job and indicate your level of agreement with each of the following statements:

	Strongly disagree				Strongly agree
I undertake activities to change the current products/services of my organization.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I contribute with ideas for the strategic renewal for my organization.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I undertake activities to reach new markets or communities for my organization.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I undertake activities that result in new departments outside of my organization.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am particularly good at realizing ideas at work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often try to institute new work methods that are more effective for my organization.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I attempt to convince people to support an innovative idea.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Proactiveness. Please think about proactiveness within your job and indicate your level of agreement with each of the following statements:

	Strongly disagree				Strongly agree
Usually, I do more than I am asked to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I take the initiative immediately even when others do not.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I undertake activities to realize change in my organization.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I actively establish new collaborations with experts outside of my own profession.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I believe in an idea, no obstacle will prevent me from making it happen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. High-performance work systems

Decision-making. Please think about your participation in decision-making processes within your organization and indicate your level of agreement with each of the following statements:

	Strongly disagree				Strongly agree
I am often asked by my supervisors to participate in decision-making processes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am allowed to make decisions regarding my projects by myself (without permission from my supervisors).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am provided with the opportunity to suggest improvements in the way things are done.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My supervisors have open communication with me concerning my job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Training. Have you ever attended a organizational training? (Fortbildung/Weiterbildung etc.)

Yes

No

Training. Please think about training and development within your organization and indicate your level of agreement with each of the following statements:

	Strongly disagree				Strongly agree
Within the last months, I have attended a company training program that provided me with new skills.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The training programs I went through within my organization effectively prepared me to provide high-quality work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The organization provides me with sufficient training to handle the introduction of new products and services.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My company is committed to the training and development needs of its employees.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a say in how much training I receive.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Job security. Please think about your job security and indicate your level of agreement with each of the following statements:

	Strongly disagree				Strongly agree
Employees within my organization can be expected to stay with the organization for as long as they wish.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Job security is almost guaranteed to employees within my company.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Declining performance is negatively influencing my salary within my organization.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Compensation. Please think about any kind of compensation / reward within your organization and indicate your level of agreement with each of the following statements:

	Strongly disagree				Strongly agree
I have the opportunity to earn individual bonuses (or commissions) for productivity, performance, or other individual performance outcomes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My salary and benefits have been an adequate return for the time and energy demanded of me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My organization's compensation and reward system encourages individual contributions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Risk-taking is rewarded with appropriate pay within my organization.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Risk-taking is rewarded by offering more flexible work hours within my organization.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am satisfied with my company's reward system to compensate good performance.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. Recognized company support

Emotional support. Please think about support that you receive from your organization and indicate your level of agreement with each of the following statements:

	Strongly disagree				Strongly agree
My organization cares about my opinion.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My organization cares about my well-being.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My organization would forgive an honest mistake on my part.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My organization strongly considers my goals and values.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employees in my organization receive encouragement and support from their supervisors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Material support. Please think about material support that you receive from your organization and indicate your level of agreement with each of the following statements:

	Strongly disagree				Strongly agree
My organization provides employees with especially dedicated work-time in order to work on new ideas / solutions for the company.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My organization provides budget for employees in order to realize new ideas, suggested by individuals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employees are allowed to use company resources such as machinery in order to develop personal ideas that could benefit the organization.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. Demographic data

Gender. Please indicate your gender:

Male

Female

Other

Prefer not to say

Age. Please indicate your age:

Education. Please indicate your highest level of education:

High School

Apprenticeship (Ausbildung)

Bachelor degree or similar

Masters degree or similar

Ph.D. degree

Seniority. Please indicate how many years you have been working for your current employer:

Work sector. Please name the sector you are working in (e.g. retail, IT):

Experience. Please indicate if you had previous entrepreneurial work experience in any way:

Yes

No

Appendix B Figures

Figure 1

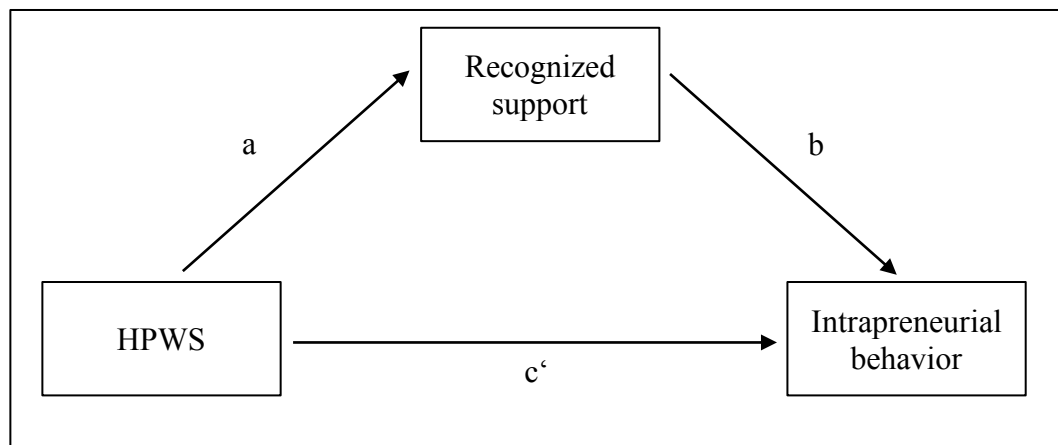
Model of Proposed Relationships

Figure 2

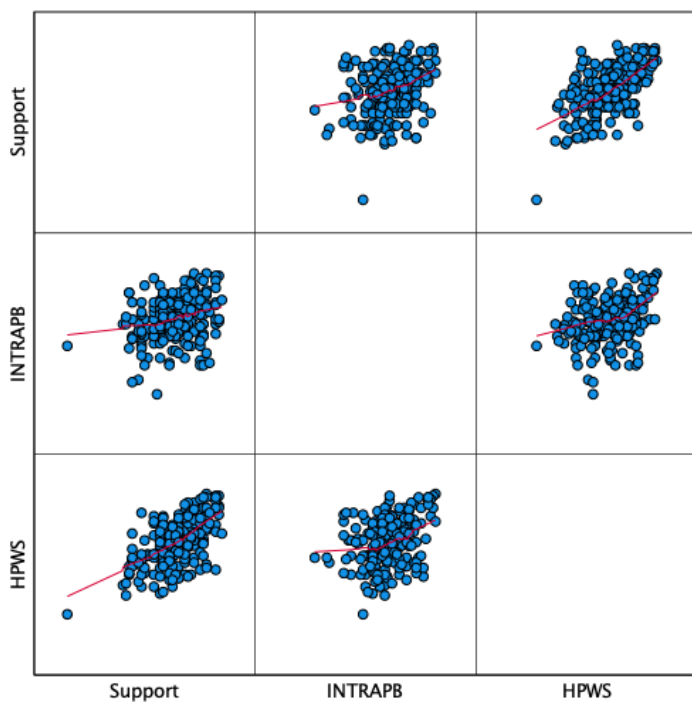
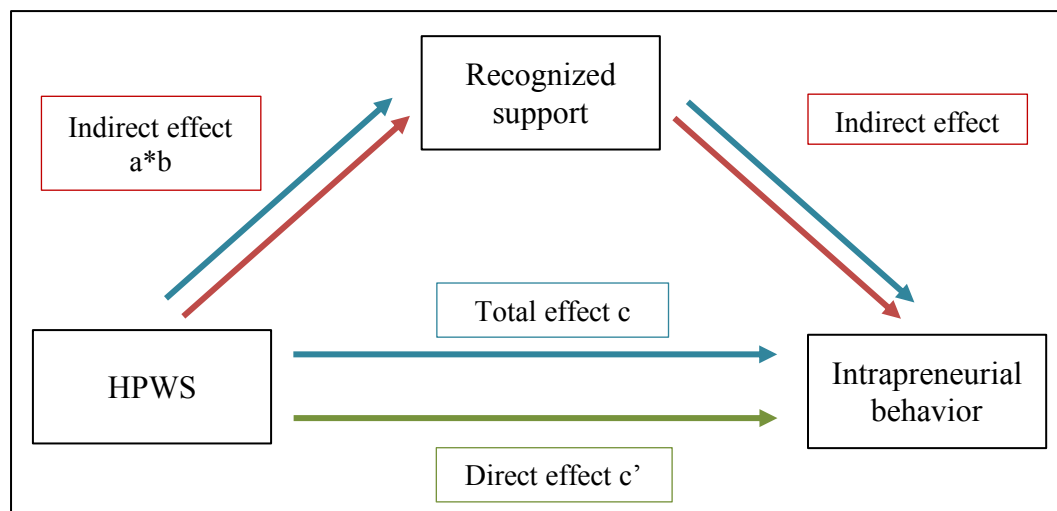
Test for Linearity

Figure 3

Model of Proposed Relationships with Indicated Paths used for Mediation Analysis



Appendix C Tables

Table 1

Descriptive Statistics of the Variable Age

Age	
N	201
Mean	34.52
Median	28.00
Mode	24 ^a
Std. Deviation	12.69
Minimum	20
Maximum	65

a. Multiple modes exist. The smallest value is shown

Table 1.1

Descriptive Statistics of the Variable Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male	109	54.2	54.2	54.2
	Female	92	45.8	45.8	100.0
	Total	201	100.0	100.0	

Table 1.2*Descriptive Statistics of the Variable Seniority*

Seniority	
N	201
Mean	8.49
Median	5.00
Mode	2.0
Std. Deviation	9.11
Minimum	.0
Maximum	35.0

Table 1.3*Descriptive Statistics of the Variable Education*

		Frequency	Percent	Valid Percent	Cumulative Percent
Education	High School	8	4.0	4.0	4.0
	Apprenticeship	8	4.0	4.0	8.0
	Bachelor	95	47.3	47.3	55.2
	Master	88	43.8	43.8	99.0
	PhD	2	1.0	1.0	100.0
	Total	201	100.0	100.0	

Table 1.4*Descriptive Statistics of the Variable Previous Intrapreneurial Experience*

Experience	Valid		
	Yes	No	Total
Frequency	86	114	200
Percent	43.0	57.0	100.0
Cumulative Percent	43.0	100.0	

Table 2*Descriptive Statistics of the main variables and the subvariables*

	Statistics								
	Intrapb	HPWS	Comp	Job	Train	Decision	Support	Esup	Msup
N	201	201	201	201	201	201	201	201	201
Mean	3.63	3.22	2.96	3.53	2.77	3.96	3.51	3.76	3.06
Median	3.63	3.22	2.83	3.67	3.40	4.00	3.600	3.80	3.00
Mode	4.00	3.22	2.83	3.33	.00	4.00	3.3 ^a	4.0	3.0
Std. Deviation	.58	.78	.93	.81	1.69	.77	.80	.82	1.01
Minimum	1.69	.89	.00	.00	.00	1.75	.00	.00	.00
Maximum	4.81	4.78	4.83	5.00	5.00	5.00	5.0	5.0	5.0
Sum	728.75	648.21	595.36	708.02	557.60	796.00	706.0	755.4	615.4

a. Multiple modes exist. The smallest value is shown

Table 3*Empirical Estimates of Sample Sizes Need for .8 Power*

Test	Condition															
	SS	SH	SM	SL	HS	HH	HM	HL	MS	MH	MM	ML	LS	LH	LM	LL
BK ($t' = 0$)	20.89	6.32	3.04	1.56	6.07	1.83	883	445	2.68	820	397	204	1.18	364	175	92
BK ($t' = .14$)	562	445	427	414	444	224	179	153	425	178	118	88	411	147	84	53
BK ($t' = .39$)	531	403	402	403	405	158	124	119	405	125	75	59	405	122	60	38
BK ($t' = .59$)	530	404	402	403	406	158	124	120	405	125	74	58	404	122	59	36
Joint significance	530	402	403	403	407	159	124	120	405	125	74	58	405	122	59	36
Sobel	667	450	422	412	450	196	144	127	421	145	90	66	410	129	67	42
PRODCLIN	539	402	401	402	402	161	125	120	404	124	74	57	404	121	58	35
Percentile bootstrap	558	412	406	398	414	162	126	122	404	124	78	59	401	123	59	36
Bias-corrected bootstrap	462	377	400	385	368	148	115	118	391	116	71	53	396	115	54	34

Table 4*Cronbach's Alpha, All Questions Intrapreneurial Behavior*

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Risk_01	54.31	78.50	.50	.35	.86
Risk_02	55.15	76.66	.49	.32	.86
Risk_03	54.57	77.41	.51	.40	.86
Risk_04	54.56	77.47	.33	.19	.87
Inno_01	54.21	75.40	.53	.36	.86
Inno_02	54.10	75.13	.58	.53	.85
Inno_03	54.49	75.41	.49	.45	.86
Inno_04	55.02	75.49	.47	.38	.86
Inno_05	54.13	76.76	.60	.43	.85
Inno_06	54.18	79.09	.41	.30	.86
Inno_07	53.89	77.21	.58	.43	.85
Pro_01	53.86	80.04	.41	.42	.86
Pro_02	54.09	78.31	.49	.46	.86
Pro_03	54.19	75.75	.62	.51	.85
Pro_04	54.52	75.76	.50	.34	.86
Pro_05	54.55	75.71	.57	.40	.85

Table 4.1*Reliability Statistics*

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of items
.864	.870	16

Table 5*Cronbach's Alpha, All Questions HPWS*

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Deci_01	59.45	113.62	.40	.45	.85
Deci_02	59.10	114.94	.37	.44	.85
Deci_03	58.97	113.43	.48	.59	.85
Deci_04	58.86	112.80	.51	.50	.85
Train_01	59.64	111.10	.39	.32	.86
Train_02	59.43	110.22	.58	.47	.85
Train_03	59.57	110.00	.57	.56	.85
Train_04	59.33	113.19	.47	.51	.85
Train_05	59.39	109.46	.55	.44	.85
Job_01	59.03	117.07	.29	.58	.86
Job_02	59.05	116.62	.30	.61	.86
Job_03	60.41	112.72	.33	.38	.86
Comp_01	59.99	108.79	.43	.42	.85
Comp_02	59.42	112.33	.45	.46	.85
Comp_03	60.05	107.63	.58	.58	.85
Comp_04	60.53	109.43	.55	.67	.85
Comp_05	60.54	109.22	.52	.58	.85
Comp_06	59.84	106.79	.66	.59	.84

Table 5.1*Reliability Statistics*

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of items
.858	.861	18

Table 6*Cronbach's Alpha, All Questions Recognized Company Support*

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Esu_01	24.47	29.11	.66	.50	.85
Esu_02	24.35	28.35	.73	.57	.85
Esu_03	24.14	31.79	.47	.30	.87
Esu_04	24.61	28.20	.72	.59	.85
Esu_05	24.36	29.02	.70	.57	.85
Msu_01	25.07	28.06	.60	.46	.86
Msu_02	25.16	27.75	.61	.47	.86
Msu_03	25.05	28.02	.59	.39	.86

Table 6.1*Reliability Statistics*

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of items
.871	.875	8

Table 7*Correlations (Spearman's Rho)*

	Age	Gender	Educ	Seni	Pre Exp	Intra	Support	HPWS	Comp	Job	Train	Deci
Age	--											
Gender	-.06	--										
Educ	.13	-.07	--									
Seni	.75** ($<.001$)	.06	-.05	--								
PreEx	-.09	.05	-.05	.05	--							
Intra	.07	.05	.08	.06	-.06	--						
Support	-.13	-.04	-.05	-.18* (.012)	.04	.27** ($<.001$)	--					
HPWS	.08	.13	.07	.10	.06	.29** ($<.001$)	.57** ($<.001$)	--				
Comp	-.08	.03	.02	-.16	.07	.25** ($<.001$)	.55** ($<.001$)	.69** ($<.001$)	--			
Job	.05	.05	.10	.08	.04	.29** ($<.001$)	.24** ($<.001$)	.52** ($<.001$)	.34** ($<.001$)	--		
Train	.11	.14	.08	.13	.02	.17* ($<.001$)	.41** ($<.001$)	.87** ($<.001$)	.38** ($<.001$)	.34** ($<.001$)	--	
Deci	.08	.14	.03	.07	.06	.40** ($<.001$)	.51** ($<.001$)	.56** ($<.001$)	.33** ($<.001$)	.03** ($<.001$)	.33** ($<.001$)	--

** . Correlation is significant at the .01 level (2-tailed). * . Correlation is significant at the .05 level (2-tailed).

Table 8*Mediation Analysis, 95%-CI, HPWS -> Support -> Intrapreneurial Behavior*

Effects	Total, Direct, and Indirect Effects of X on Y					
	Effect	Se(HC3)	t-value	p-value	LLCI	ULCI
Total Effect	.228	.049	4.611	.000	.130	.325
Direct Effect	.158	.059	2.667	.008	.041	.275
Indirect Effect	.070	.037			-.003	.143

 $\alpha = .95$ **Table 8.1***Outcome Variable Support*

	Outcome Variable							
	coeff	Se(HC3)	t-value	p-value	LLCI	ULCI	R-sq	p-value
Constant	1.510	.243	6.203	.000	1.030	1.990	.361	.000
HPWS	.621	.069	8.950	.000	.484	.758		

Table 8.2*Outcome Variable Intrapreneurial behavior*

	Outcome Variable							
	coeff	Se(HC3)	t-value	p-value	LLCI	ULCI	R-sq	p-value
Constant	2.722	.196	13.890	.000	2.335	3.110	.108	.000
HPWS	.158	.059	2.667	.008	.041	.275		
Support	.112	.061	1.828	.069	-.009	.233		

Table 9*Mediation Analysis, Full Model, 90%-CI, HPWS -> Support -> Intrapreneurial behavior*

Effects	Total, Direct, and Indirect Effects of X on Y					
	Effect	Se(HC3)	t-value	p-value	LLCI	ULCI
Total Effect	.228	.049	4.611	.000	.146	.309
Direct Effect	.158	.059	2.667	.008	.060	.256
Indirect Effect	.070	.038			.006	.131

 $\alpha = .90$ **Table 9.1***Outcome Variable Support*

	Outcome Variable							
	coeff	Se(HC3)	t-value	p-value	LLCI	ULCI	R-sq	p-value
Constant	1.510	.243	6.203	.000	1.108	1.912	.361	.000
HPWS	.621	.069	8.956	.000	.506	.735		

Table 9.2*Outcome Variable Intrapreneurial behavior*

	Outcome Variable							
	coeff	Se(HC3)	t-value	p-value	LLCI	ULCI	R-sq	p-value
Constant	2.722	.196	13.890	.000	2.398	3.045	.108	.000
HPWS	.158	.059	2.667	.008	.060	.256		
Support	.112	.061	1.828	.069	.011	.214		

Table 10*Mediation Analysis, Factors of HPWS, Compensation -> Support -> Intrapreneurial behavior*

Effects	Total, Direct, and Indirect Effects of X on Y					
	Effect	Se(HC3)	t-value	p-value	LLCI	ULCI
Total Effect	.164	.045	3.681	.000	.076	.252
Direct Effect	.093	.055	1.684	.094	-.016	.201
Indirect Effect	.071	.032			.008	.133

 $\alpha = .95$ **Table 10.1***Outcome Variable Support*

	Outcome Variable							
	coeff	Se(HC3)	t-value	p-value	LLCI	ULCI	R-sq	p-value
Constant	2.017	.190	10.644	.000	1.644	2.391	.341	.000
Compensation	.505	.057	8.846	.000	.392	.617		

Table 10.2*Outcome Variable Intrapreneurial behavior*

	Outcome Variable							
	coeff	Se(HC3)	t-value	p-value	LLCI	ULCI	R-sq	p-value
Constant	2.854	.189	15.108	.000	2.482	3.227	.094	.000
Compensation	.093	.055	1.684	.094	-.016	.201		
Support	.142	.063	2.232	.027	.017	.267		

Table 11*Mediation Analysis, Factors of HPWS, Job Security -> Support -> Intrapreneurial behavior*

Effects	Total, Direct, and Indirect Effects of X on Y					
	Effect	Se(HC3)	t-value	p-value	LLCI	ULCI
Total Effect	.213	.042	5.078	.000	.130	.296
Direct Effect	.166	.045	3.733	.000	.079	.254
Indirect Effect	.047	.021			.011	.093

 $\alpha = .95$ **Table 11.1***Outcome Variable Support*

	Outcome Variable							
	coeff	Se(HC3)	t-value	p-value	LLCI	ULCI	R-sq	p-value
Constant	2.446	.372	6.568	.000	1.712	3.181	.092	.003
Job Security	.303	.101	3.012	.003	.105	.501		

Table 11.2*Outcome Variable Intrapreneurial behavior*

	Outcome Variable							
	coeff	Se(HC3)	t-value	p-value	LLCI	ULCI	R-sq	p-value
Constant	2.500	.207	12.061	.000	2.091	2.909	.128	.000
Job Security	.166	.045	3.733	.000	.079	.254		
Support	.154	.054	2.822	.005	.046	.261		

Table 12

Mediation Analysis, Factors of Support, 90%-CI, HPWS -> Emotional Support ->

Intrapreneurial behavior

Effects	Total, Direct, and Indirect Effects of X on Y					
	Effect	Se(HC3)	t-value	p-value	LLCI	ULCI
Total Effect	.228	.049	4.611	.000	.146	.309
Direct Effect	.171	.058	2.932	.004	.075	.268
Indirect Effect	.057	.033			.003	.112

$\alpha = .90$

Table 12.1

Outcome Variable Emotional Support

	Outcome Variable							
	coeff	Se(HC3)	t-value	p-value	LLCI	ULCI	R-sq	p-value
Constant	1.844	.265	6.966	.000	1.406	2.281	.319	.000
HPWS	.594	.075	7.965	.000	.4701	.717		

Table 12.2

Outcome Variable Intrapreneurial behavior

	Outcome Variable								
	coeff	Se(HC3)	t-value	p-value	LLCI	ULCI	R-sq	p-value	
Constant	2.716	.196	13.825	.000	2.391	3.040	.105	.000	
HPWS	.171	.058	2.932	.004	.075	.268			
Emotional Support	.095	.056	1.710	.089	.003	.187			

Table 13*Mediation Analysis, Combined Factors, Job Security -> Emotional Support ->**Intrapreneurial behavior*

Effects	Total, Direct, and Indirect Effects of X on Y					
	Effect	Se(HC3)	t-value	p-value	LLCI	ULCI
Total Effect	.213	.042	5.078	.000	.130	.296
Direct Effect	.171	.044	3.930	.000	.085	.257
Indirect Effect	.042	.019			.009	.084

 $\alpha = .95$ **Table 13.1***Outcome Variable Emotional Support*

	Outcome Variable							
	coeff	Se(HC3)	t-value	p-value	LLCI	ULCI	R-sq	p-value
Constant	2.685	.408	6.576	.000	1.879	3.490	.090	.006
Job Security	.305	.110	2.780	.006	.089	.521		

Table 13.2*Outcome Variable Intrapreneurial behavior*

	Outcome Variable							
	coeff	Se(HC3)	t-value	p-value	LLCI	ULCI	R-sq	p-value
Constant	2.509	.215	11.673	.000	2.085	2.933	.121	.000
Job Security	.171	.044	3.930	.000	.085	.257		
Emotional Support	.137	.050	2.725	.007	.038	.235		

Table 14

Mediation Analysis, Combined Factors, Job Security -> Material Support -> Intrapreneurial behavior

Effects	Total, Direct, and Indirect Effects of X on Y					
	Effect	Se(HC3)	t-value	p-value	LLCI	ULCI
Total Effect	.213	.042	5.078	.000	.130	.296
Direct Effect	.181	.044	4.100	.000	.094	.268
Indirect Effect	.032	.017			.004	.071

$\alpha = .95$

Table 14.1

Outcome Variable Material Support

	Outcome Variable							
	coeff	Se(HC3)	t-value	p-value	LLCI	ULCI	R-sq	p-value
Constant	2.026	.388	5.221	.000	1.261	2.792	.055	.006
Job Security	.294	.106	2.766	.006	.084	.503		

Table 14.2

Outcome Variable Intrapreneurial behavior

	Outcome Variable							
	coeff	Se(HC3)	t-value	p-value	LLCI	ULCI	R-sq	p-value
Constant	2.654	.171	15.558	.000	2.318	2.991	.121	.000
Job Security	.181	.044	4.100	.000	.094	.268		
Material Support	.109	.045	2.435	.016	.021	.198		

Table 15*Mediation Analysis, Combined Factors, Compensation -> Emotional Support ->**Intrapreneurial behavior*

Effects	Total, Direct, and Indirect Effects of X on Y					
	Effect	Se(HC3)	t-value	p-value	LLCI	ULCI
Total Effect	.164	.045	3.681	.000	.076	.252
Direct Effect	.106	.053	1.988	.048	.001	.212
Indirect Effect	.058	.027			.005	.111

 $\alpha = .95$ **Table 15.1***Outcome Variable Emotional Support*

	Outcome Variable							
	coeff	Se(HC3)	t-value	p-value	LLCI	ULCI	R-sq	p-value
Constant	2.355	.209	11.294	.000	1.944	2.766	.291	.000
Compensation	.474	.062	7.685	.000	.352	.595		

Table 15.2*Outcome Variable Intrapreneurial behavior*

	Outcome Variable							
	coeff	Se(HC3)	t-value	p-value	LLCI	ULCI	R-sq	p-value
Constant	2.852	.188	15.179	.000	2.482	3.223	.090	.000
Compensation	.106	.053	1.988	.048	.001	.212		
Emotional Support	.122	.057	2.144	.033	.010	.234		

Table 16*Summary of the tested hypotheses*

Hypotheses	Outcome
H1: High-performance work systems positively influence intrapreneurial behavior.	Accepted
H2: High-performance work systems positively influence recognized company support.	Accepted
H3: Recognized company support has a mediating effect between high-performance works systems and intrapreneurial behavior.	Accepted

Table 17*Overview of the conducted mediation testing*

Factors tested	Outcome
HPWS - Support - Intrapreneurial Behavior	Partial mediation
HPWS - Support - Intrapreneurial behavior (90% CI)	Partial mediation
Compensation - Support - Intrapreneurial behavior	Full mediation
Job Security - Support - Intrapreneurial behavior	Partial mediation
HPWS - Emotional Support - Intrapreneurial behavior (90% CI)	Partial mediation
Job Security - Emotional Support - Intrapreneurial behavior	Partial mediation
Job Security - Material Support - Intrapreneurial behavior	Partial mediation
Compensation - Emotional Support - Intrapreneurial behavior	Partial mediation