

HRM Practices and Innovative Work Behavior: Employee Involvement and Job Autonomy as influencing factors of Innovative Work Behavior

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Supervised by

Prof. (FH) Mag. Dr. Willy Kriz

Handed in by

Desiree Egger

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Abstract

HRM Practices and Innovative Work Behavior: Employee Involvement and Job Autonomy as influencing factors of Innovative Work Behavior

An organization's capacity to innovate often resides within its employee's innovative work behavior. Previous research suggested positive effects of employee involvement and job autonomy on innovative behavior. This research aims to analyze the impact of involvement- and autonomy-focused HRM practices (participation, information-sharing, work-scheduling autonomy, decision-making autonomy, and work-methods autonomy) on innovative work behavior. It is hypothesized that all five HRM practices mentioned above positively influence employees' innovative work behavior. Therefore, a cross-sectional quantitative research design was chosen. Online questionnaire data from 376 employees in Austria was analyzed. Although all five HRM practices correlated with innovative work behavior, only work-methods autonomy had a statistically significant influence on the innovative work behavior of all employees. Thus, practitioners should include work-methods autonomy as critical HRM practice in a "high-innovation" HRM system to facilitate employees' innovative work behavior.

Kurzreferat

HRM-Praktiken und innovatives Arbeitsverhalten: Einbindung und Arbeitsautonomie als Einflussfaktoren für innovatives Arbeitsverhalten

Die Innovationsfähigkeit einer Organisation liegt oft im innovativen Arbeitsverhalten der Mitarbeiter. Frühere Forschungen deuten auf positive Effekte von Mitarbeiterereinbindung und Arbeitsautonomie auf innovatives Verhalten hin. Diese Forschung zielt darauf ab, die Auswirkungen von einbindungs- und autonomiefokussierten HRM-Praktiken (Partizipation, Informationsaustausch, Autonomie bei der Arbeitsplanung, Entscheidungsautonomie und Autonomie bei den Arbeitsmethoden) auf innovatives Arbeitsverhalten zu analysieren. Die Hypothese ist, dass alle fünf oben genannten HRM-Praktiken das innovative Arbeitsverhalten der Mitarbeitenden positiv beeinflussen. Daher wurde ein quantitatives Querschnittsforschungsdesign gewählt. Es wurden Online-Fragebogendaten von 376 Arbeitnehmer/innen in Österreich ausgewertet. Obwohl alle fünf HRM-Praktiken mit innovativem Arbeitsverhalten korrelierten, hatte nur die Autonomie der Arbeitsmethoden einen statistisch signifikanten Einfluss auf das innovative Arbeitsverhalten aller Arbeitnehmenden. Daher sollten Praktiker die Autonomie im Hinblick auf Arbeitsmethoden als kritische HRM-Praxis für ein "innovationsfokussiertes" HRM-System mit einbeziehen, um das innovative Arbeitsverhalten der Mitarbeitenden zu fördern.

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List of Abbreviations

AMO	Abilities–Motivation–Opportunities for Participation
HRM	Human Resource Management
IWB	Innovative Work Behavior
SDT	Self-determination theory

1. Introduction

The opening chapter of this work gives initial clarity about the why, what, and how of this scientific work. Firstly, the relevance of the research topic is outlined to understand why research concerning HRM practice – innovative work behavior relationships is essential. Secondly, the research gap and the resulting research question are pointed out (what). Afterward, this master's thesis structure is laid out in further detail (how).

1.1 Importance of Research Topic

Looking forward, more and more organizations can only sustain themselves in the long term through continuous innovation (Battistelli et al., 2019, p. 361). It may even be viewed as the “life blood of corporate survival and growth” (Zahra & Covin, 1994, p. 183). Innovation enables organizations to leverage new opportunities and technologies to constantly change the needs and requirements of their employees, customers, and environments (Baregheh et al., 2009, p. 1323). An organization's capacity to innovate lives and dies with its employees' willingness and innovation possibilities (Seeck & Diehl, 2017, p. 914). Employees' innovative behavior predicts an organization's innovativeness (Prieto & Pilar Pérez-Santana, 2014, p. 184). Knowing this, many organizations prioritize the active participation of employees in the organizational innovation process (Cangialosi et al., 2020, p. 264). More and more managers and leaders expect employees to go beyond their formal job description to achieve organizational innovation goals (Maden, 2015, p. 720). Because of this, many organizations are interested in additional insights about how they can optimally leverage the innovative potential of their employees (Bos-Nehles et al., 2017, p. 1229).

When it comes to organizational innovation, an organization's efforts to rear and steer employees' behaviors through Human Resource Management (HRM) play an essential role (Jiménez-Jiménez & Sanz-Valle, 2005, p. 364; Laursen & Foss, 2003, p. 245; Messersmith & Guthrie, 2010, p. 255; Rajiani et al., 2016, p. 52; Wang & Zatzick, 2019, p. 114). Nevertheless, little focus has been laid on the effects of specific HRM practices on innovation at the individual level (Bos-Nehles & Veenendaal, 2019, p. 2663). Individual-level innovativeness is vital as employees are directly in touch with processes and products in the organization, enabling them to develop enhancements and suggestions for organizational innovations (Bos-Nehles et al., 2017, p. 1229). This increasing focus on the importance of innovative behavior of individuals led to the formation of a new research field dedicated to understanding antecedents of innovative work behavior (IWB) (Hammond et al., 2011, p. 90). Increased IWB is a solution to be more creative as an organization and strengthens a firm's competitive advantage (Prieto & Pilar Pérez-Santana, 2014, p. 202).

Quite a few empirical studies document beneficial effects of increased employee involvement and job autonomy on employee's innovative work behavior (Battistelli et al., 2019, p. 372; Singh et al., 2020, p. 12; Stankevičiūtė et al., 2020, p. 4; Veenendaal & Bondarouk, 2015, p. 151).

Notwithstanding, there is still little clarity about implementing the proper practices to foster IWB (Battistelli et al., 2019, p. 362). The optimal use of the innovative potential of employees may be described as one of the significant issues that need to be solved within human resource management efforts (Spiegelaere et al., 2012, p. 7).

1.2 Research Gap and Research Question

Comprehensive insights about the relationship between HRM practices and IWB are still scarce and partially contrary to each other (Bos-Nehles et al., 2017, p. 1233). Recently researchers recommended the inclusion of different theoretical concepts such as the Abilities–Motivation–Opportunities for Participation (AMO) framework or self-determination theory (SDT) to understand better why and when HRM variables relate to IWB (Seeck & Diehl, 2017, p. 931).

Multiple researchers in the field expressed the urgent demand for additional empirical evidence for the influence of specific HRM practices on IWB across various industries, age, and occupational groups (Battistelli et al., 2019, p. 375; Boon et al., 2019, p. 2529; Bos-Nehles & Veenendaal, 2019, p. 2678; Prieto & Pilar Pérez-Santana, 2014, p. 185; Salas-Vallina et al., 2020, p. 575; Stankevičiūtė et al., 2020, p. 21). Wood (2020, p. 409) intensified this need for empirical studies by stating that previous quantitative HRM studies have not focused enough on the effects of involvement-focused HRM practices. Aspects like employee participation and other variables did not receive the necessary attention in quantitative research (Wood, 2020, p. 409). Bos-Nehles and Veenendaal (2019, p. 2678) specifically suggested to further investigate the role of job characteristics, such as job autonomy, in HRM practice research for an improved understanding of HRM practice – IWB relationships.

Thus, the above-outlined research gap leads to the following research question:

What impact could HRM practices for employee involvement (employee participation & information-sharing) and job autonomy (work-scheduling autonomy, decision-making autonomy & work-methods autonomy) have on employees' innovative work behavior?

The undertaken research project contributes to the existing body of knowledge in multiple ways. Firstly, this study is one of the first empirical studies investigating potentially different effects of employee involvement and job autonomy on IWB. It creates understanding about the conditions under which HRM practices for employee involvement (employee participation and information-sharing) and job autonomy (work-scheduling autonomy, decision-making autonomy, and work-methods autonomy) relate to IWB. Furthermore, it answers the recent call from the authors mentioned above for more research in that area. Through investigating the effects of HRM practices on employee outcomes, this empirical study also answers the recent call in the literature from Boon et al. (2019, p. 2527) to better understand the interdependencies and interaction of multiple HRM practices. This empirical work focuses on identifying the impact of involvement- and autonomy-focused HRM practices (participation, information-sharing, work-scheduling autonomy, decision-making autonomy, and work-methods autonomy) on IWB. This work intends to close the above-outlined research gap by disentangling different dimensions

of employee involvement and job autonomy as separate constructs to understand how and why these constructs relate to IWB. It is expected that this study gives additional insights into the significance of employee involvement and job autonomy for IWB. Furthermore, this study is likely to be of practical relevance as well. It intends to give practical implications for HR practitioners and line managers on aspects worth considering when they want to increase the innovative work behavior of their employees.

1.3 Thesis Structure

The primary intention of this work is to answer the research question concerning the impact of employee involvement and job autonomy on employees' IWB. For maximum traceability of all efforts undertaken to answer this research question, this thesis is structured around six chapters: Introduction, Theoretical Foundation, Methodology, Results, Discussion, and Conclusion.

The Introduction (this chapter) intends, as stated previously, to give initial clarity about the why, what, and how of this master's thesis.

The theoretical foundation (2nd chapter) aims to establish a comprehensive understanding of what is meant by employee involvement, job autonomy, and innovative work behavior. Here the outcomes of the literature review are presented, and the hypotheses for this research study are developed.

In the methodology section (3rd chapter), all the methodological procedures are emphasized. There the research model is summarized, and the selection of a quantitative research approach is justified. Additionally, the measures for each construct are explained and evaluated before the undertaken procedures for data analysis are described.

The results (4th chapter) present the collected questionnaire data and the outcomes of the computed empirical analyses.

In the discussion section (5th chapter), the results of chapter four are evaluated and brought into connection with previous research.

The conclusion (6th chapter) wraps up this empirical work by summarizing the content of this study, outlining limitations, giving implications for research and practice, and presenting possible avenues for future research.

2. Theoretical Foundation

The primary aim of this chapter is to conceptualize relevant terms from the research question, discuss measures for each construct, and give an overview of previous research in that area. For more information about the literature review process, please see Annex A. Firstly, a general perspective of HRM Practices and innovation is applied before focusing on employee involvement, job autonomy, and innovative work behavior. After that, the HRM practices for employee involvement and job autonomy are connected to innovative work behavior to derive hypotheses.

2.1 HRM Practices and Innovation

This section gives a short overview of research concerning the link between HRM and innovation. Firstly, HRM practices and innovation are defined. Then, three commonly used categories of HRM practices are introduced. After this, the author summarizes the relevant results of previous research.

2.1.1 Defining HRM Practices and Innovation

To adequately capture the meaning of HRM practices, further clarification about what the term Human Resource Management (HRM) means is necessary. It is defined as “activities of management in organizing work and managing people to achieve organizational ends” and researchers view it as a core element of an organization (Boxall & Purcell, 2010, p. 29). Within HRM research, three areas of expertise evolved (Boxall et al., 2007, p. 4): Firstly, Micro HRM focuses on understanding the management of individuals, groups, and work organization processes through various HR policies and HRM practices (Boxall et al., 2007, p. 3). Secondly, Strategic HRM aims to uncover relationships of different HRM variables with organizational outcomes and embeds HRM in the broader strategic and systemic context of its environment (Boxall et al., 2007, p. 3). And finally, there is International HRM, which evolves around several HRM matters of internationally operating companies and focuses on how HRM might need to be adapted in international contexts (Boxall et al., 2007, p. 4). Even though these three areas of expertise came to be somewhat independently from each other, research practice has shown that all three fields benefit from one another through borrowing knowledge of each other (Boxall et al., 2007, p. 4). Recently, a fourth area, employee perceptions of HRM practices, emerged (Wang et al., 2020, p. 129). This research area combines knowledge of the previous three and mainly focuses on understanding the role of employee perceptions of HRM practices (Wang et al., 2020, p. 129).

Since this empirical work aims to understand the role of employee involvement and job autonomy in shaping IWB, this work adopts a more general approach to HRM. This more general approach to HRM allows for combining the areas mentioned above (Boxall et al., 2007, p. 7). Furthermore, a deeper understanding of various underlying aspects of HRM research can be achieved (Boxall et al., 2007, p. 4).

Based on this understanding of HRM, the term HRM practices can be defined. Boon et al. (2019, p. 2510) noted in their conceptual review about the measurement of HR systems that there is still a lack of clarity about what counts and what does not count as an HRM practice. This study views HRM practices as *any effort of an organization or an individual manager to form “employees’ skills, abilities, values, beliefs, attitudes, and behaviors through hiring, socializing and developing” them* (Fong et al., 2011, p. 706).

After having clarity about the term HRM practices, light is shed on conceptualizing innovation. As innovation is an area of interest in multiple fields of study, the construct is usually conceptualized in alignment with the particular viewpoint of that discipline (Damanpour & Schneider, 2006, p. 216). Due to this, various partially contradictory definitions of innovation emerged (Baregheh et al., 2009, p. 1324). For example, many disciplines differentiate between radical and incremental innovation. Radical innovation is seen as innovation new to the whole industry, whereas incremental innovation is interpreted as innovation unique to the firm (Beugelsdijk, 2008, p. 827).

In the HRM discipline, researchers often rely on the conceptualization of West and Farr (1990, p. 9) (Seeck & Diehl, 2017, p. 916). West and Farr (1990, p. 9) see innovation as the intentional introduction and application of new, beneficial ideas, processes, products, or procedures.

However, a definition of innovation out of the perspective of just one discipline does not comprehensively capture innovation to benefit researchers and practitioners alike (Baregheh et al., 2009, p. 1325). Based on over sixty definitions of innovation, Baregheh et al. (2009, p. 1333) attempted to identify six common elements of innovation: Stages, Social Context, Means, Nature, Type, and Aim. Figure 1 further clarifies what is meant with each component of innovation.

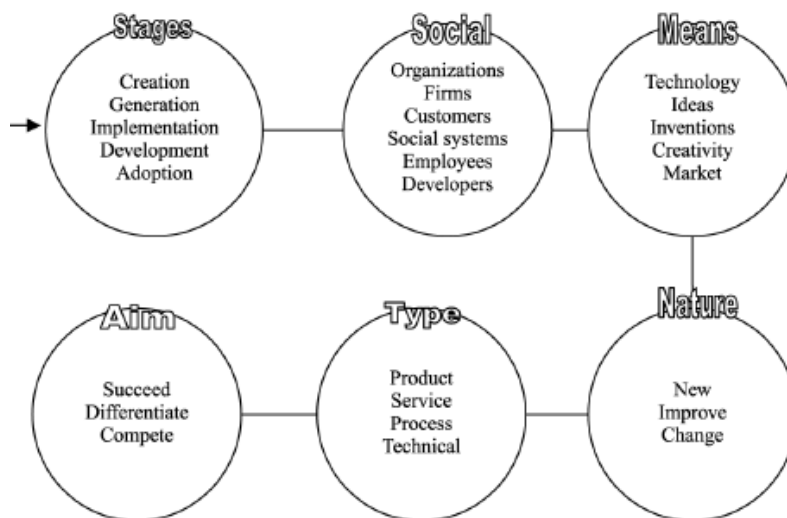


Figure 1: Six components of innovation

Source: from Baregheh et al. (2009, p. 1333)

Derived from these six components Baregheh et al. (2009, p. 1333) propose an integrative multi-disciplinary definition of innovation as a *“multi-stage process whereby organizations transform ideas into new/improved products, services or processes, to advance,*

compete and differentiate themselves successfully” in their occupation. For a more holistic view of innovation, this empirical paper adopts the perspective of Baregheh et al. (2009, p. 1333) and sees innovation as a “multi-stage process” that results in radical and incremental efforts to introduce and apply new and beneficial products, services or processes.

2.1.2 Three Categories of HRM Practices

To better understand previous research on HRM and innovation, three commonly mentioned HRM Practice categories are conceptualized. This is done to outline significant limitations of prior studies concerning HRM and innovation. In the literature, HRM practices are often grouped based on the Abilities–Motivation–Opportunities for Participation (AMO) Framework (Boon et al., 2019, p. 2501; Wood, 2020, p. 409; Yasir & Majid, 2020, p. 885). According to Boselie et al. (2005, p. 72), the AMO framework dominates the field of HRM and was used more than any other theory since its emergence. AMO theory states that the performance of employees is a function of an employee’s ability, motivation, and opportunity to perform (Jiang, K. et al., 2012, p. 1266). Therefore, it is often used to explain relationships between HRM practices and performance variables (Yasir & Majid, 2020, p. 885). Further details on the AMO theory are presented in section 2.4.

Based on this view, HRM Practices are commonly categorized into ability-enhancing, motivation-enhancing, and opportunity-enhancing HRM Practices. That categorization helps researchers and practitioners build an HRM system of HRM practices that reinforce each other and create synergies that are likely to lead to more robust effects on outcomes (Boon et al., 2019, p. 2502; Subramony, 2009, p. 745). These three HRM practice categories are now described in further detail.

Ability-enhancing HRM Practices. Skill-enhancing bundles intend to increase the knowledge and abilities of employees and include HRM practices like recruitment, selection, training and development (Subramony, 2009, p. 746). Thus ability-enhancing HRM practices refer to the regulation of employees’ competencies through the application of recruitment, selection, training and development (Jiang, K. et al., 2012, p. 1267). For that reason, these practices may be seen as means to alter an employee’s abilities or competencies to achieve better the goals of an organization (Tay et al., 2017, p. 549). They are all about employees’ knowledge, skills, and abilities and focus on acquiring skilled employees or the skill-development of current employees (Gardner et al., 2011, p. 319). They are designed to ensure appropriately trained and knowledgeable employees in the organization at all times (Jiang, K. et al., 2012, p. 1267). Recruitment and selection can be defined as searching for suitable applicants and selecting employees with the best skills and competencies to fulfill specific job requirements (Tay et al., 2017, p. 549). For this, employee selection practices, such as interviews, assessment centers, or other tests, are used (Lepak et al., 2006, p. 238). Training and development are conceptualized as practices to equip employees within an organization with the proper knowledge and skills at the right time to carry out their professional roles (Tay et al., 2017, p. 549).

Motivation-enhancing HRM Practices. HRM practices to increase the motivation of employees use the compensation system and performance management to modify an employee’s motivation to perform in line with organizational goals (Jiang, K. et al., 2012,

p. 1268). Motivation-enhancing bundles give employees incentives and direction and comprise HRM practices like performance appraisal or other employee benefits (Subramony, 2009, p. 746). Therefore, they can be seen as HRM practices to motivate specific employee effort and behavior (Gardner et al., 2011, p. 319). In addition, they comprise contingent rewards such as performance-based pay, piece-rate systems, and profit-sharing systems (Tay et al., 2017, p. 550). Other examples of motivation-enhancing HRM practices include career development or job security (Jiang, K. et al., 2012, p. 1267).

Opportunity-enhancing HRM Practices. Empowerment-enhancing bundles focus on increasing the responsibility levels of employees and consist of HRM practices like autonomy, employee participation, or feedback (Subramony, 2009, p. 746). Their purpose is to use selected involvement practices to boost the employees' opportunities to participate within the organization actively (Guerci et al., 2015, p. 331). This subbundle gives employees the possibility to demonstrate desired behaviors (Yasir & Majid, 2020, p. 886). Through the availability of specific job design characteristics, employees can apply their abilities and motivation (Jiang, K. et al., 2012, p. 1267). These practices intend to increase employees' possibilities to actively contribute to various processes within an organization (Tay et al., 2017, p. 550). Examples of such practices are information-sharing, grievance procedures (Gardner et al., 2011, p. 319), flexible job design, and the use of work teams (Jiang, K. et al., 2012, p. 1267). Practices like information-sharing, participation processes, and job autonomy can improve an employee's sense of involvement and commitment and, in turn, lead to purposeful improvements (Tian et al., 2016, p. 954).

Although the categorization of HRM practices into ability-enhancing, motivation-enhancing, and opportunity-enhancing HRM Practices is accepted in the literature, it has considerable limitations. One of them is that a clear differentiation of the three types of HRM practices proves rather tricky. Thus, it is possible for one researcher to group a specific HRM practice as motivation-enhancing HRM practice, whereas another sees this specific HRM practice as opportunity-enhancing (Elorza et al., 2011, p. 1410; Subramony, 2009, p. 746). One example of this is the HRM practice of information-sharing. Elorza et al. (2011, p. 1410) classify information-sharing as motivation-enhancing HRM practice, whereas Tian et al. (2016, p. 954) treat information-sharing as opportunity-enhancing HRM practice.

Another limitation lies in the bundle approach of the AMO classification. Researchers applying an AMO perspective often create only one scale for each of the three HRM practice subgroups. Through this combination of multiple variables to one scale, important information about which specific HRM practice leads to certain outcomes is lost. Due to this, it is possible that the effect of HRM practice bundles could be attributed only to one or two variables in the system. In contrast, other variables remain without any impact on the specific outcome variable. This limitation is also supported by the statements of Bos-Nehles and Veenendaal (2019, p. 2665) and Gardner et al. (2011, p. 319), who claim that various HRM practices may influence performance variables differently. Thus, the disentanglement of different HRM practices is essential to understand the relationship between HRM practices and outcome variables.

Due to these limitations, this study investigates the effects of each HRM practice on IWB. Firstly, this is done to transcend the notion that a single HRM practice can either be ability-enhancing, motivation-enhancing, or opportunity-enhancing. And secondly, to see which of the HRM practices influences IWB.

2.1.3 The Research Stream HRM and Innovation

The majority of literature published before 2005 considered HRM relevant to innovation (Leede & Looise, 2005, p. 109). However, Leede and Looise (2005, p. 109) were the first to present an integrated framework connecting HRM and Innovation. Their integrated model to connecting HRM and Innovation is illustrated in Figure 2.

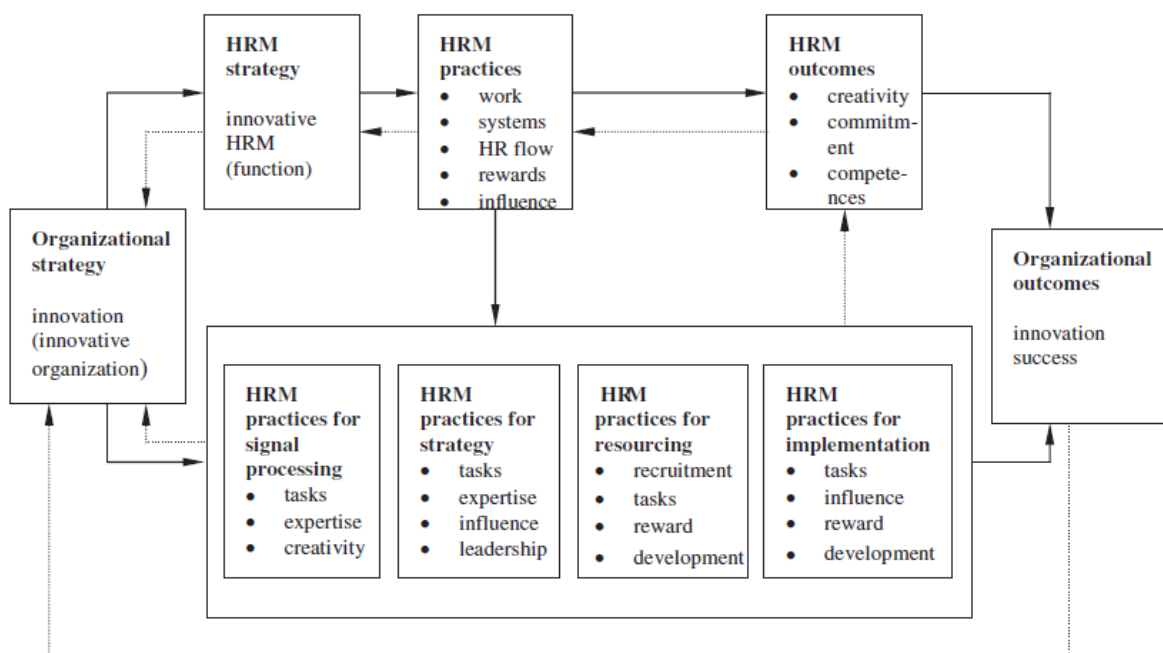


Figure 2: Framework of HRM and Innovation

Source: From Leede and Looise (2005, p. 114)

HRM is seen as a strategically integrated field that assists all organization parts (Leede & Looise, 2005, p. 114). HRM should see innovation related to an organization's internal and external dynamics (Leede & Looise, 2005, p. 114). Their presented model focuses on two levels: The organizational level and the level of corporate activities (Leede & Looise, 2005, p. 114). The goal of the organizational level is the creation of an innovative organization through HRM strategy, and the corporate activities level comprises the means to achieve the strategy (Leede & Looise, 2005, p. 114). Based on this HRM strategy, HRM practices are used to achieve specific HRM outcomes that foster an innovative organization (Leede & Looise, 2005, p. 114). Organizational activities are all about choosing appropriate HRM practices to facilitate specific stages of a typical innovation process to achieve innovation success (Leede & Looise, 2005, p. 115).

The identified studies are grouped into two categories: influence of HRM bundles (systems) on innovation and impact of specific HRM practices on innovation. This is done to give a comprehensive overview of the current research on HRM and innovation.

Influence of HRM bundles on innovation. The majority of research studies investigated the effects of multiple HRM practices on outcomes. However, employees are rarely exposed to only a single HR practice in an organization, as synergies among the single HRM practices exist (Boon et al., 2019, p. 2499). Laursen and Foss (2003, p. 245) were among the first researchers to empirically test the link between HRM practices and innovation. They looked at data from 1900 Danish business firms and found that HRM practices matter in shaping an organization's innovativeness (Laursen & Foss, 2003, p. 258). In a study with 180 CEOs of Spanish firms, based on the firm's innovation strategy different HRM practices were put into practice (Jiménez-Jiménez & Sanz-Valle, 2005, p. 376). These findings support the theoretical model of Leede and Looise (2005, p. 114). In HRM and innovation research, the effects of involvement-focused, high commitment, and high-performance HRM systems have been investigated (Boon et al., 2019, p. 2499). However, until now, no common ground has been achieved in research about how single HRM practices are grouped into bundles or systems (Boon et al., 2019, p. 2499). Apart from that, an empirical study of firms in China showed that commitment-oriented HRM systems and collaboration-oriented HRM systems supported innovation, which was conceptualized as technological and administrative innovation (Zhou et al., 2013, p. 278). Commitment-oriented HRM systems supported innovation by fostering an employee's creativity and cohesiveness for knowledge exploitation.

In contrast, collaboration-oriented HRM systems reinforced innovation by building social networks with external partners to aid in the exploration of new knowledge and insights (Zhou et al., 2013, p. 278). An expert rating study found support for the claim that organizations with HRM bundles that focus on promoting commitment rather than promoting compliance have higher levels of firm innovativeness and employees, who are more engaged (Verburg et al., 2007, p. 200). Based on the results of three case studies Bondarouk and Looise (2005, p. 167) found that HR professionals could be a valuable support in IT innovation projects.

Influence of HRM practices on innovation. It was found that strategic HRM practices, such as well-developed staffing, participation, performance appraisal, and compensation systems, lead to higher innovation performance (Chen & Huang, 2009, p. 110). In a study of multiple HRM practices, employee involvement was the one practice to positively predict product and process innovation (Walsworth & Verma, 2007, p. 237). A moderating effect of internationalization on the relationship between HRM practices and innovation was also identified (Walsworth & Verma, 2007, p. 238). Whereas training was found to foster innovation in internationalized organizations, variable pay and employee involvement seemed less critical for these organizations (Walsworth & Verma, 2007, p. 238). A further study conducted by Beugelsdijk (2008, p. 833) found that incremental innovation can be increased through training, job autonomy, and performance-based pay. Radical innovation was only influenced by job autonomy and the percentage of flexible working hours (Beugelsdijk, 2008, p. 833). A study about total quality management-based HRM practices discovers that practices like training, teamwork, and extrinsic motivation were

positively associated with innovation, conceptualized as technological and non-technological innovation (Perdomo-Ortiz et al., 2009, p. 1207). In a sample of 106 firms in China, Jiang, J. et al. (2012, p. 4040) found support for the relationship between the HRM practices hiring and selection, job design, reward and teamwork, and employee creativity. Employee creativity, in turn, predicted a firm's administrative and technological innovation (Jiang, J. et al., 2012, p. 4040). In their study, non-state-owned firms and manufacturing firms had higher levels of innovation than the other firms (Jiang, J. et al., 2012, p. 4038). Ling and Nasurdin (2010, p. 108) investigated the effect of performance appraisal, career management, training, reward system, and recruitment on organizational innovation, which comprises product, process, and administrative innovation. The researchers found a positive effect of training on product, process, and administrative innovation (Ling & Nasurdin, 2010, p. 112). Interestingly, the reward system negatively influenced product innovation and performance appraisal and positively affected administrative innovation (Ling & Nasurdin, 2010, p. 112).

The above-summarized research in the field of HRM and innovation shows that results and implications vary from study to study, as researchers used different and partially contradictory definitions of HRM practices and innovation. For this reason, the comparison of the previously outlined studies is rather challenging. This observation was also made by Seeck and Diehl (2017, p. 932) as they outlined inconsistencies and potential challenges of research connecting HRM and Innovation.

2.2 Differentiating Employee Involvement and Job Autonomy

This section focuses on understanding employee involvement and job autonomy as domains consisting of various HRM practices. Within HRM literature, partially contradictory research results arose concerning the influence of employee involvement and job autonomy on outcome variables since both concepts are often incorporated as the same construct (e.g., opportunity-enhancing HRM practices, high-involvement HRM practices, etc.). That aspect leads to blurred boundaries between these two domains and the respective HRM practices representing each construct (Lopes et al., 2017, p. 449). To allow for a clear differentiation of these two concepts and their unique properties, employee involvement and job autonomy are differentiated from each other as multidimensional constructs represented by specific HRM practices.

2.2.1 Conceptualizing Employee Involvement

In HRM, employee participation, engagement, and empowerment describe employee involvement (Wilkinson et al., 2010, p. 4). All terms center around employee involvement at the individual or group level (Marchington & Wilkinson, 2005, p. 398). Their focus lies on information-sharing among individuals (Marchington & Wilkinson, 2005, p. 398).

Following the view of Marchington and Wilkinson (2005, p. 400), employee involvement on the organizational level may be categorized based on degree, form, level, and range. Degree refers to the magnitude to which employees may influence decisions reaching from being only informed over being consulted to making decisions (Marchington & Wilkinson, 2005, p. 400). Form evaluates on a continuum how the employee may participate, reaching from through a representative to direct participation of the individual employee. The level is about where participation is desired, going from the task over team and department to corporate-wide decisions (Marchington & Wilkinson, 2005, p. 400). Range refers to bandwidth to which an employee can participate, from trivial decisions, such as which coffee to order, to strategic choices for the company, such as significant investments. Figure 3 gives a better illustration of the above-described categorization of employee involvement.

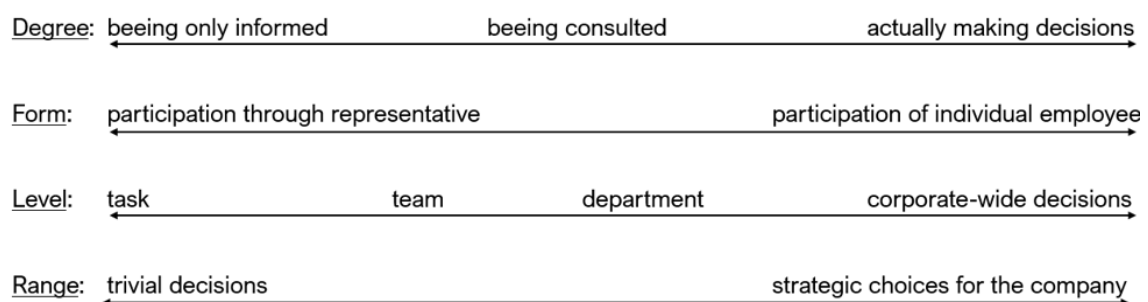


Figure 3: The categorization of employee involvement

Source: Own Illustration based on content from Marchington and Wilkinson (2005, p. 400)

In the literature, many different definitions of employee involvement can be found. Due to this variety of conceptualizations, it may also be associated with high-performance

work design, employee voice, high-involvement work systems, and teamwork (Wilkinson et al., 2010, pp. 9–10). These blurred boundaries among multiple terms used to describe employee involvement make it very challenging to conceptualize (Glew et al., 1995, p. 396). A reason for this may also be that term is used across multiple disciplines in the social sciences with different meanings (Wilkinson et al., 2010, p. 4). Marchington and Wilkinson (2005, p. 417) identify forms of employee involvement as a “complex and multi-faceted phenomenon.” Further examples of definitions for employee involvement are: “conscious and intended effort by individuals at a higher level in an organization to provide visible extra-role or role-expanding opportunities for individuals at a lower level in the organization to have a greater voice” (Glew et al., 1995, p. 402) or “a process which allows employees to exert some influence over their work and the conditions under which they work” (Heller et al., 2004, p. 15). However, in essence, employee involvement could be described as “the extent to which workers participate in work-related decisions” (Lopes et al., 2017, p. 449).

This leads to the question of what is to be understood under participation. Depending on the context, conceptualizations of participation differ across studies (Glew et al., 1995, p. 400). These conceptualization differences arise due to the perspective out of which the term employee participation is viewed. One perspective is to view participation as equivalent to employee involvement (Glew et al., 1995, p. 400). Another perspective is to view participation as one dimension of employee involvement (Marchington & Wilkinson, 2005, p. 403). Thus, definitions of participation reach from “any form of delegation or consultation with employees” (a rather broad perspective of participation) to “on-going structure of direct communications” from the employee to the organization (a precise understanding of participation) (Marchington & Wilkinson, 2005, p. 403).

For further clarification, Marchington and Wilkinson (2005, p. 402) introduced four dimensions of employee involvement which are as follows: downward communications, upward problem-solving participation, task participation, and teamwork/self-management (Marchington & Wilkinson, 2005, p. 403). Downward communications are conceptualized as a “mechanism to convey information about a particular issue” from the organization/manager to the employee (Marchington & Wilkinson, 2005, p. 404). It can be seen as information-sharing reaching from formal written documents to one-on-one live interactions between an employee and their manager (Marchington & Wilkinson, 2005, p. 404). Upward problem-solving is defined as a “range of techniques designed to tap into employee knowledge and ideas, typically through individual or ad hoc or semi-permanent groups for the specific purpose of resolving problems or generating ideas” (Marchington & Wilkinson, 2005, p. 404). These upward problem-solving practices aim to make ideas available to decision-makers and facilitate better collaboration (Marchington & Wilkinson, 2005, p. 405). In other words, upward problem-solving participation may be interpreted as passing information from the employee to the organization/manager. Task participation refers to allowing employees to either complete multiple different tasks on the same experience level (horizontal task participation) or engage in tasks above their current experience level (vertical task participation) (Marchington & Wilkinson, 2005, pp. 405–406). Teamwork/self-management comprises any form of involvement in primarily self-managed teams (Marchington & Wilkinson, 2005, p. 406).

Information and consultation are considered the two critical elements of organizational employee involvement (Wilkinson et al., 2010, p. 12). Information refers to “the provision of data about the business”, and consultation refers to “the exchange of views between employers and their employees” (Wilkinson et al., 2010, p. 12).

This study intends explicitly to investigate these two vital elements of employee involvement. This step is undertaken by viewing the HRM practice of employee participation as representative for consultation and the HRM practice of information-sharing as representative for information. These two HRM practices were selected, as previous research identified positive effects of employee participation and information-sharing on innovative work behavior (Battistelli et al., 2019, p. 372; Odoardi et al., 2015, p. 559; Prieto & Pilar Pérez-Santana, 2014, p. 199; Veenendaal & Bondarouk, 2015, p. 151).

The studies mentioned above conceptualized employee participation and information-sharing differently, leading to partially overlapping definitions of these HRM practices. To avoid potential conceptualization overlaps between these two HRM practices, straightforward explanations for employee participation and information-sharing need to be developed.

Glew et al. (1995, pp. 401–402) consider employee participation a concept consisting of four components. These are referral to “extra-role or role-expanding behaviors”, “conscious interaction between at least two individuals”, “visible interaction to both individuals”, and occupation of “different level positions” of “participating actors”. According to Gallie et al. (2002, p. 3), previous research did not distinguish when it comes to the perspective from which employee participation is viewed. Thus, some studies investigating participation were rather looking at the effects of employee involvement instead of adopting a differentiated view of participation (Wilkinson et al., 2010, p. 4). Thus, this empirical study uses a rather specific definition of employee participation to adequately distinguish between employee participation and information-sharing, understanding participation as one dimension of employee involvement.

Based on the dimensions of Marchington and Wilkinson (2005, p. 403), this empirical work understands employee participation as *HRM practice focused on bottom-up upward problem-solving participation*. It is, as previously stated, a “range of techniques designed to tap into employee knowledge and ideas” (Marchington & Wilkinson, 2005, p. 404). This specific dimension of employee participation is about allowing employees to voice suggestions for improvement in the company (Akhtar et al., 2008, p. 16). Thus, employee participation is viewed as the extent to which employees are invited to articulate their opinion, suggestions, knowledge, and ideas in the company.

After this comprehensive definition of employee participation, a clarification of the term information-sharing is given.

Often, information-sharing is critical for organizational success (Yang & Maxwell, 2011, p. 173). Nevertheless, information-sharing is one of the least studied HRM practices (Battistelli et al., 2019, p. 366). Through information-sharing, employees are given the knowledge to better understand the organization's overall goals and actively contribute to achieving these goals (Bontis et al., 2011, p. 241). Some researchers refer to information-sharing as communication practices or organizational communication. However,

corporate communication and information-sharing describe the same construct (Guerrero & Barraud-Didier, 2004, p. 1412; Veld et al., 2010, p. 344). In practice, information-sharing behaviors of companies are not as widespread, as many companies are afraid of sharing information with their staff. Through information, employees would receive more power and become more difficult to control (Vlachos, 2008, p. 78).

Information-sharing is about delivering the correct information about how the organization is currently doing in terms of quality and business results (Wood & Wall, 2007, p. 1337). It is about sharing news about technologies, the competitors' performance, and the business units' performance (Gibson et al., 2007, p. 1469). Information-sharing helps employees identify with company goals and values and feel of value to the company (Paré & Tremblay, 2007, p. 336). Through information-sharing, a company can involve employees and invite them to better understand critical success factors for the company (Gibson et al., 2007, p. 1469). It is seen as the easiest way to provide participation opportunities for employees (Paré & Tremblay, 2007, p. 336).

Information-sharing should also be differentiated from knowledge-sharing. Knowledge-sharing is more focused on different employees within an organization helping each other by sharing their unique knowledge with others (Munir & Beh, 2019, p. 275). Information-sharing is about communications from the organization to the employees (Veld et al., 2010, p. 344).

As outlined previously, out of a theoretical perspective, definitions for employee participation and information-sharing may overlap to a certain extent, depending on the viewpoint from which participation is conceptualized. This empirical study views information-sharing as *HRM practice focusing on downward communications* to distinguish employee participation from information-sharing. Downward communications are "mechanisms to convey information about a particular issue" (Marchington & Wilkinson, 2005, p. 404). Thus, this study understands information-sharing as the extent to which an organization provides information and feedback to its employees.

2.2.2 Conceptualizing Job Autonomy

As stated before, employee involvement and job autonomy are often interpreted as the same construct in HRM research (Park & Jang, 2017, p. 704). However, a clear differentiation between these two constructs is essential to understand relationships between HRM practices and IWB better. The crucial distinguishing characteristic between employee involvement and job autonomy is that employee involvement encompasses an employee's involvement in consultation and information processes (Lopes et al., 2017, p. 451). Job autonomy is incorporated into the employee's position (Lopes et al., 2017, p. 451).

Job autonomy gives employees additional flexibility (Ramamoorthy et al., 2005, p. 144). It enriches an employee's work by empowering an employee's role (Wood & Wall, 2007, p. 1337). A commonly accepted definition of job autonomy was provided by Hackman and Oldham (1980, p. 162), who stated that job autonomy is "the degree to which the job provides substantial freedom, independence, and discretion to the individual in scheduling the work and in determining the procedures to be used in carrying it out". According

to the opinion of Park and Jang (2017, p. 704), job autonomy may be characterized as “the degree to which individual employees are granted the freedom and discretion to carry out their work functions”. It somewhat frees an employee from being obliged to work within strict rules and regulations (Ramamoorthy et al., 2005, p. 144). However, autonomy is prevalent in multiple research areas such as leadership, job design characteristics, and HRM practices (Breugh, 1985, p. 551). Thus, numerous conceptualizations of autonomy can be found in the literature. However, in essence, job autonomy can be conceptualized as “the extent to which workers can exercise control and influence over their immediate work activities” (Lopes et al., 2017, p. 451).

Some researchers view job autonomy as a one-dimensional construct, whereas others declare it a multi-faceted concept that influences various outcomes differently (Theurer et al., 2018, 3). Humphrey et al. (2007, p. 1336) proposed that job autonomy consists of three dimensions: work-scheduling, work-methods, and decision-making autonomy. Work-scheduling autonomy refers to the freedom to choose when the work is done and in which order it is done (Humphrey et al., 2007, p. 1336). Work-methods autonomy is about having the freedom to choose which means and procedures are put into practice at work (Humphrey et al., 2007, p. 1336). Decision-making autonomy refers to the chance to make choices at work independently (Humphrey et al., 2007, p. 1336). However, it was noted that these three dimensions of autonomy strongly correlate with each other and could potentially simply be summarized under one broad autonomy construct (Humphrey et al., 2007, p. 1344).

Then again, it was suggested to empirically differentiate between the dimensions of job autonomy (Spiegelaere et al., 2016, p. 517; Theurer et al., 2018, p. 3). This differentiation between various job autonomy dimensions proves reasonable as each dimension may have different effects on variables, such as IWB. Apart from that, disentanglement of the dimensions of job autonomy allows HRM representatives to better plan actions to enlarge the scope of an employee’s autonomy to achieve specific outcomes. Since the current state of the art is to understand autonomy as a form of empowering employees to schedule their work, choose their work methods, and make their own decisions, autonomy should be seen as three-dimensional (Morgeson & Humphrey, 2006, p. 1323). Morgeson and Humphrey (2006, p. 1323) state that work-methods, work-scheduling, and decision-making autonomy should be measured to comprehensively understand job autonomy.

Somewhat overlapping views are shared by Spiegelaere et al. (2016, p. 516), who proposed four dimensions of job autonomy. These are work-methods, work-scheduling, work-time, and locational autonomy. The work-methods autonomy described by Spiegelaere et al. (2016, p. 517) in essence overlaps to a great extent with the work-methods autonomy described by Humphrey et al. (2007, p. 1336). Humphrey et al. (2007, p. 1336) see work-scheduling autonomy as autonomy regarding ordering tasks and autonomy about when the work is done. Spiegelaere et al. (2016, p. 518) differentiate work-scheduling autonomy further into work-scheduling and work-time autonomy. The first refers to the freedom to choose the order of tasks, and the other to the freedom to choose beginning and end of the work day (Spiegelaere et al., 2016, p. 518). Their fourth dimension, locational autonomy, refers to the possibility of the employee to choose from where work is done (Spiegelaere et al., 2016, p. 518). Locational autonomy may also be seen as part of decision-making autonomy (Humphrey et al., 2007, p. 1336). Also, Theurer et al.

(2018, p. 5) see autonomy as a multidimensional construct consisting of three dimensions. They differentiate between work-scheduling, work-methods, and decision-making autonomy (Theurer et al., 2018, p. 5). Their understanding of the three autonomy dimensions greatly overlaps with the view of Humphrey et al. (2007, pp. 1336–1337) and Morgeson and Humphrey (2006, p. 1323).

In line with the work of Morgeson and Humphrey (2006, p. 1323), Humphrey et al. (2007, p. 1336), and Theurer et al. (2018, p. 5), this empirical study views work-scheduling autonomy, decision-making autonomy, and work-methods autonomy as theoretically and empirically separate HRM practices. Work-scheduling autonomy is considered as the extent to which employees can control the timing and order in which the work is done. Decision-making autonomy is conceptualized as the extent to which employees can make independent choices at work. Work-methods autonomy is understood as the extent to which employees can choose the means and procedures applied to carry out their work. (Humphrey et al., 2007, p. 1336; Morgeson & Humphrey, 2006, p. 1323; Theurer et al., 2018, p. 5)

2.2.3 Measuring HRM Practices

In general, HRM practices' measurement received very little attention in the HRM literature (Boon et al., 2019, p. 2499). The same underlying construct was often measured with different items, making a comparison of research results rather challenging (Boon et al., 2019, p. 2499). An example of two studies measuring opportunity-enhancing HRM practices is given to illustrate these measurement differences. One study focused on understanding how far this specific set of HRM practices influenced motivation to share knowledge. The authors of this study chose a scale for social interaction methods to share more knowledge to measure opportunity-enhancing HRM practices (Andreeva & Sergeeva, 2016, p. 157). The goal of the other study was to understand the influence of opportunity-enhancing HRM practices on IWB. These opportunity-enhancing HRM practices were operationalized by relying on participation and job design characteristics (Prieto & Pilar Pérez-Santana, 2014, p. 199)

In most studies, HR professionals or managers are asked to rate available HR practices (Boon et al., 2019, p. 2511). Only very few studies let employees rate their perceptions of HR practices (Boon et al., 2019, p. 2511). Thus, only a selected amount of research is available about measuring perceived HRM practices (Wang et al., 2020, p. 128). In the last decades, more and more HRM studies apply Likert-type scales to measure the presence of HRM practices (Boon et al., 2019, p. 2512). Frequently, HRM practices include multiple items representing various theoretical constructs (Boon et al., 2019, p. 2513).

This study focuses on measuring employee participation, information-sharing, work-scheduling-autonomy, decision-making autonomy, and work-methods autonomy to deal with the measurement challenges mentioned above. For more clarity about the measurement of these HRM practices, standard measurement methods for employee involvement and job autonomy are discussed.

2.2.3.1 Measurement of Employee Involvement

Since this study intends to measure employee participation and information-sharing, the focus is on understating how employee participation and information-sharing were measured in previous studies.

Often authors that applied a systems approach to HRM research opted for a single item to represent participation by asking for the degree of involvement in decision-making (Jiménez-Jiménez & Sanz-Valle, 2005, p. 371; Monks et al., 2016, p. 311). Other researchers used three (Chen & Huang, 2009, p. 109; Singh et al., 2020, p. 8), four (Boselie et al., 2001, p. 8), or even six items (Prieto & Pilar Pérez-Santana, 2014, p. 195; Stankevičiūtė et al., 2020, p. 12) to capture participation. For example, Chen and Huang (2009, p. 109) asked how far employees were allowed to make decisions in the company, in how far employees are allowed to suggest ideas for improvement, and in how far the voice of the employees is valued (Chen & Huang, 2009, p. 109). Nevertheless, these commonly used measures view employee participation as equivalent to employee involvement (Glew et al., 1995, p. 400). They do not distinguish between the different dimensions of employee involvement. For this reason, selected items used to measure participation may create a conceptual overlap to the HRM practice of information-sharing.

The HRM practice of information-sharing is often measured as part of high-involvement HRM practices (Guthrie, 2001, p. 183; Maden, 2015, p. 726; Yang, 2012, pp. 1216–1217). Earlier studies assessed information-sharing simply by asking for the relative use of information-sharing in the company (Datta et al., 2005, p. 136; Guthrie, 2001, p. 183). In later studies, information-sharing is measured from two items (Maden, 2015, p. 726; Vlachos, 2008, p. 84; Yang, 2012, p. 1217) to up to nine items (Paré & Tremblay, 2007, p. 339). Similarly, as with employee participation, the measurement items used for information-sharing differ according to how the respective author defined information-sharing. An example of this is a study by Veenendaal and Bondarouk (2015, p. 145). They understood information-sharing as the extent to which an employee is informed or knows about the organization's norms, goals, and achievements. Thus, the researchers used a six-item scale by Boselie et al. (2001, p. 8), capturing this understanding of information-sharing.

This study views employee participation and information-sharing as distinct components of employee involvement (Marchington & Wilkinson, 2005, p. 403). As stated previously, measurement items for employee participation and information-sharing vary significantly from study to study. Previous researchers did not adequately distinguish employee participation and information-sharing as separate dimensions of employee involvement. Lawler et al. (1995, p. 150), Kilroy et al. (2016, p. 416), and Kilroy et al. (2017, p. 827) were among the few researchers to empirically differentiate between dimensions of employee involvement.

2.2.3.2 Measurement of Job autonomy

Depending on the area of research, the measure for job autonomy is based on different items. The operationalization of autonomy as either a one-dimensional concept or as a multi-faceted construct also influences its measurement.

Studies that looked at autonomy as a one-dimensional concept usually used between three (Bysted & Hansen, 2015, p. 717; Bysted & Jespersen, 2014, p. 226; Kilroy et al., 2016, p. 416, 2017, p. 827) and nine items (Ramamoorthy et al., 2005, p. 146) to capture autonomy. Researchers heavily drew on items developed to measure other closely related constructs to identify suitable measurement items. Thus, autonomy was measured with items based on decision authority (Park & Jang, 2017, p. 711). Another example is a three-item scale initially developed by Spreitzer (1995, p. 1450) to measure the self-determination dimension of psychological empowerment. This scale was often used in the HRM literature to assess the construct of autonomy with just one dimension (Bysted & Hansen, 2015, p. 717; Bysted & Jespersen, 2014, p. 226; Kilroy et al., 2016, p. 416, 2017, p. 827).

Researchers that measured multiple dimensions of autonomy usually used three items to measure each type of autonomy (Breugh, 1985, p. 570; Morgeson & Humphrey, 2006, p. 1337; Spiegelare et al., 2016, p. 521). However, the included types of autonomy varied from study to study (Breugh, 1985, p. 570; Morgeson & Humphrey, 2006, p. 1337; Spiegelare et al., 2016, p. 521). Nevertheless, it can be pointed out that the measures for work-method and work-scheduling autonomy were very similar across the multiple studies (Breugh, 1985, p. 570; Morgeson & Humphrey, 2006, p. 1337; Spiegelare et al., 2016, p. 521).

Another aspect that should be mentioned when addressing the measurement of job autonomy is the excellent overlap between items used as one-dimensional measures of autonomy and items used as the measurement of specific types of autonomy. One example for this is an item used by Ramamoorthy et al. (2005, p. 146) which asks the extent to which the respondent can choose the methods to carry out their work. Similarly, one item to measure work-methods autonomy in the scale of Morgeson and Humphrey (2006, p. 1337) asks participants how far the job allows them to decide what methods they use to complete work.

2.2.4 Research on Employee Involvement

This subchapter aims to give a rough overview of available research on employee involvement. Since research results concerning the relationship between employee involvement and IWB are discussed in greater depth in section 2.5, they are excluded here. As this subchapter is designed to provide a rough understanding of the current state of the art, only selected noteworthy theoretical and empirical findings are presented within this subchapter.

Building on the knowledge from previous theoretical and empirical research about employee involvement, Glew et al. (1995, p. 397) suggest a comprehensive framework of the participation process in organizations. Their framework is depicted in figure 4.

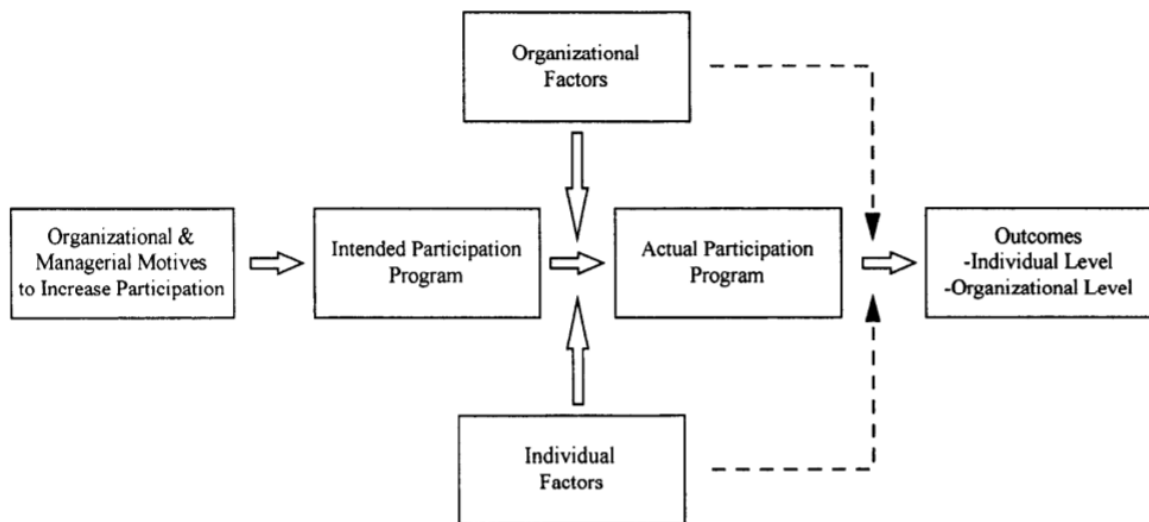


Figure 4: Framework of participation/involvement in organizations

Source: From Glew et al. (1995, p. 398)

The framework begins with the potential or expected benefits the organization or a manager identifies through establishing participation in the organization (Glew et al., 1995, p. 397). Then an intention is set to implement participation (Glew et al., 1995, p. 397). Out of that intention, management plans a participation program (e.g., workforce empowerment or giving employees a voice in decision-making) (Glew et al., 1995, p. 397). The implementation of such a planned participation program may be hindered or facilitated through various individual (preferences, personality, etc.) and organizational (available technology, organizational culture, etc.) factors (Glew et al., 1995, p. 397). Thus, it is possible that the intended participation program may not be the same as the actual participation program and may or may not lead to the outcomes management initially desired to generate (Glew et al., 1995, p. 397).

The recent rise of interest in employee involvement research came due to the increasing competitiveness in the public and private sector (Wilkinson et al., 2010, p. 8). One empirical study found that organizations that have an innovation strategy more often encourage their employees to actively participate (Jiménez-Jiménez & Sanz-Valle, 2005, p. 376). Apart from that, employee participation was positively related to innovation performance (Chen & Huang, 2009, p. 110). This relationship between employee participation and innovation performance was mediated by knowledge management capacity, conceptualized as knowledge acquisition, sharing, and application (Chen & Huang, 2009, p. 110). Besides leading to increased performance and increased stress levels, redundancies and intensification of work are seen as potential outcomes of employee participation (Marchington & Wilkinson, 2005, p. 399). In theory, it was suggested that employee participation could improve productivity (Gong et al., 2009, p. 266). However, earlier studies found no relationship between participation and productivity (Faems et al., 2005, p. 686). But participation practices lead to decreased employee turnover rates as participation is a practice that helps employees feel more committed to an organization (Faems et al., 2005, p. 686).

The researchers Dundon and Gollan (2007, p. 1182) conducted a conceptual analysis about employee voice to identify factors that affect employee voice. They stated that

employee voice is, on the one hand, influenced by external factors, such as the market or the regulatory environment, and on the other hand by internal factors such as autonomy, trust, and occupational identity (Dundon & Gollan, 2007, p. 1186). Additionally, increased availability of employee participation programs negatively influenced disciplinary actions and hours lost to injury (Bartram et al., 2007, p. 29).

Another study focused on the impact of perceptions of a commitment-oriented HR system on trust in decision-making and job security. There perceived employee participation and information-sharing had a positive effect on the employee's trust in management decisions and positively affected perceived job security (Boselie et al., 2001, pp. 10–11). In a sample of Chinese firms, employee participation influenced financial and product/service performance (Akhtar et al., 2008, p. 26).

Within HRM research, information-sharing positively predicted affective commitment (Yang, 2012, p. 1221), procedural justice (Paré & Tremblay, 2007, p. 346), and work engagement (Maden, 2015, p. 730). However, perceived information-sharing did not correlate with individual innovation and feedback inquiry (Maden, 2015, p. 730). Additionally, information-sharing was negatively related to turnover intentions (Paré & Tremblay, 2007, p. 347). A study among hospital employees found that information-sharing correlated with autonomy and performance variables (Veld et al., 2010, p. 347). Information-sharing also had a positive relationship with safety climate (Veld et al., 2010, p. 350). Research investigating the effects of high-involvement work practices on innovation found that these work practices, including information-sharing, lead to a higher possibility for product and process innovation (Li et al., 2018, p. 2012).

As information-sharing gives employees a greater understanding of an organization's goals and intentions, it is likely to reduce uncertainty in work contexts (Kilroy et al., 2016, p. 414). Additionally, it was proposed that information-sharing can lead to a competitive advantage for companies (Fey & Björkman, 2001, p. 65). A study investigating the effects of high-performance work practices information-sharing correlated with individual-level performance evaluation frequency (Den Hartog & Verburg, 2004, p. 65). Apart from that also a negative correlation between information-sharing and employee turnover was found (Den Hartog & Verburg, 2004, p. 69). In another study focusing on the well-being of employees, high-involvement work practices, which include information-sharing, were linked to lower job demands and lower experienced burnout levels (Kilroy et al., 2016, p. 420).

Information-sharing was also brought into relation to performance variables in a study looking at the effects of information-sharing on firm financial performance, customer service, and quality (Gibson et al., 2007, p. 1467). As predicted, the study found a positive effect of information-sharing on financial performance. However, no impact of information-sharing on customer service and quality was verifiable (Gibson et al., 2007, p. 1476). In a similar context, information-sharing was brought into relation with social, organizational, and financial performance (Guerrero & Barraud-Didier, 2004, p. 1418). Another study that tried to identify the effects of HRM practices in the food manufacturing industry found support for a positive relationship between information-sharing and firm performance (Vlachos, 2008, p. 92). Apart from that, information-sharing was found to improve a company's market share and sales, but information-sharing had no relationship with product quality (Vlachos, 2008, p. 93). This HRM practice also seems to play

an essential role in occupational safety. Information about various aspects of the company is necessary to work safely and lead to greater trust in management (Zacharatos et al., 2005, p. 80).

2.2.5 Research on Job Autonomy

The purpose of this subchapter is to give a rough overview of available research on job autonomy and its effects on outcome variables. Since research results concerning the relationship between job autonomy and IWB are discussed in greater depth in section 2.5, they are excluded here.

Job autonomy positively impacts radical and incremental innovation (Beugelsdijk, 2008, p. 833). Interestingly the percentage of flexible working hours only predicted radical innovation (Beugelsdijk, 2008, p. 833). Job autonomy also mediated the relationship between inbound innovation practices and innovative performance (Burcharth et al., 2017, p. 1259). Another study among 2254 US citizens examined the role of job autonomy concerning mental health (Park & Jang, 2017, p. 711). Job autonomy was positively related to mental health, and the relationship was mediated by perceived supervisor support (Park & Jang, 2017, p. 718). It was also suggested that job autonomy would play a more significant role in companies that heavily focus on innovation than in less innovative companies (Park & Jang, 2017, p. 721).

The previously presented study by Den Hartog and Verburg (2004, p. 65) discovered that job autonomy correlated negatively with job evaluation and task analyses and positively correlated with going beyond contract (Den Hartog & Verburg, 2004, p. 69).

Apart from that, the construct of autonomy received considerable attention in work design research (Humphrey et al., 2007, p. 1332). There, the relationship between autonomy and job satisfaction is one of the most investigated relationships (Humphrey et al., 2007, p. 1346). Job autonomy was also found to influence employee's skill development (Gallie, 2011, p. 3; Zhou et al., 2019, p. 3) and their quality of work (Gallie, 2013, p. 458). As part of high-involvement work practices, autonomy leads to lower levels of experienced burnout, as job autonomy can alleviate job demands (Kilroy et al., 2016, p. 420). Another study found autonomy to positively predict self-development (Zhou et al., 2019, p. 8). The relationship between job autonomy and self-development was entirely mediated by intrinsic motivation (Zhou et al., 2019, p. 8). Additionally, job autonomy was connected with work engagement and drive to work (Malinowska et al., 2018, p. 451).

2.3 Innovative Work Behavior

This section aims to present the construct of innovative work behavior (IWB). This is done by firstly defining IWB and its dimensions. Afterward, available measures for IWB are explained before the current state of the art concerning IWB research is considered.

2.3.1 Defining Innovative Work Behavior

In a previous chapter of this work, innovation was conceptualized to understand the term innovative in innovative work behavior. This was done by building on the definition of West and Farr (1990, p. 9), who view innovation as the intentional introduction and application of new, beneficial ideas, processes, products, or procedures. Besides that, an integrative definition of innovation by Baregheh et al. (2009, p. 1333) as a “*multi-stage process whereby organizations transform ideas into new/improved products, services or processes, to advance, compete and differentiate themselves successfully in their marketplace*” was applied.

Based on a clear understanding of the term innovation, innovative work behavior can be characterized as “intentional creation, introduction and application of new ideas within a work role, group or organization” (Janssen, 2000, p. 288). Thus, innovative work behavior is an individual’s intentional behavior to create and realize new and beneficial ideas for an individual, a group, or an organization (Bos-Nehles et al., 2017, p. 1232). It is about all employee behavior types related to innovation at the workplace (Spiegelaere et al., 2012, p. 7). Ramamoorthy et al. (2005, p. 143) refer to it as discretionary or extra-role behavior. However, IWB is viewed as central to the innovation process as a whole (Cangialosi et al., 2020, p. 264). It includes active support for innovation and self-initiated innovation (Spiegelaere et al., 2012, p. 7). The core element of IWB is the experimentation with alternate ways and solutions to introduce new and better approaches (Spiegelaere et al., 2015, p. 127). IWB may be characterized as “employees’ engagement in innovation tasks” (Messmann & Mulder, 2014, p. 82). It comprises an employee’s physical and cognitive activity to generate innovation (Messmann & Mulder, 2014, p. 82).

The construct needs to be differentiated from creativity and intrapreneurship for a better characterization of IWB. Creativity is seen as “doing something for the first time anywhere or creating new knowledge” (Woodman et al., 1993, p. 293). Thus, it focuses on generating and exploring ideas (De Jong & Den Hartog, 2010, p. 23). IWB covers several behaviors concerning various phases of the innovation process (Spiegelaere et al., 2016, p. 519). However, creativity should be viewed as an element of IWB. Since IWB additionally encompasses the idea promotion and implementation phase, IWB is broader than creativity (Bos-Nehles et al., 2017, p. 1232). Further, creativity often refers to creating something completely new, whereas IWB is also about identifying new units for adaptation (Spiegelaere et al., 2016, p. 519). Intrapreneurship is a concept somewhat related to innovative work behavior as both of them focus on the individual (Escribá-Carda et al., 2020, p. 355). However, intrapreneurship can be differentiated from innovative work behavior. It comprises innovation, proactivity, and risk-taking (Jong et al., 2015, p. 985). Intrapreneurship refers to the entrepreneurial process and is about opportunity and threat identification, championing and generating new ideas, and accepting

risks (Jong et al., 2015, p. 985). Derived from this, IWB can be viewed somewhat as an element of intrapreneurship. Figure 5 illustrates the described differentiation of IWB from creativity and intrapreneurship.

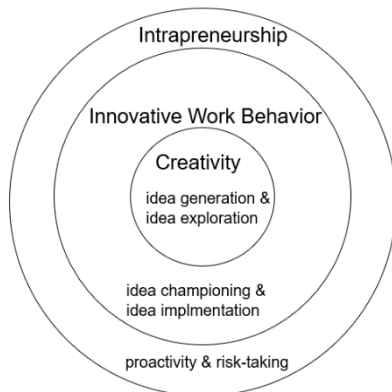


Figure 5: Differentiation Creativity, Innovative Work Behavior, and Intrapreneurship

Source: Own Illustration

When it comes to defining innovation, Scott and Bruce (1994, p. 582) see it as a “multi-stage process, with different activities and individual behaviors necessary at each stage.” Therefore innovative work behavior may be viewed as a complicated process in which frustration, hurdles, and other difficulties may occur (Fithriany Rahmah et al., 2020, p. 765). In previous theoretical work, multiple dimensions of IWB have been identified (De Jong & Den Hartog, 2010, p. 24).

Scott and Bruce (1994, pp. 581–582) identified three dimensions of IWB. They view problem recognition and idea generation as the first dimension, followed by seeking sponsorship and support for the idea and completing the idea. This three-dimensional perspective of IWB is also adopted by Janssen (2000, p. 288), who see IWB as consisting of three behaviors, namely “idea generation, idea promotion, and idea realization.” This three-dimensional view has been adopted by empirical researchers like Veenendaal and Bondarouk (2015, p. 141). Other than Janssen (2000, p. 288) and Scott and Bruce (1994, p. 581), Dorenbosch et al. (2005, p. 130) understand IWB as “four interrelated sets of behavioral activities, namely (1) problem recognition, (2) idea generation, (3) idea promotion and (4) idea realization”. In contrast, the first two dimensions refer more to creativity-oriented work behavior, and the last two dimensions more to implementation-oriented work behavior (Dorenbosch et al., 2005, p. 130). Feirong and Woodman (2010, p. 324) also applied this set of behavioral activities perspective. They see IWB as “activities pertaining to both the generation/introduction of new ideas and the realization or implementation of new ideas.” A similar view of IWB is also shared by De Jong and Den Hartog (2010, p. 24). However, they see the idea generation dimension proposed by Janssen (2000, p. 288) and Scott and Bruce (1994, p. 581) as rather broad. Thus, they differentiated the idea generation dimension further and proposed viewing IWB consisting of four dimensions.

The four dimensions of IWB are as follows: “idea exploration, idea generation, idea championing and idea implementation” (De Jong & Den Hartog, 2010, p. 24). These four dimensions are now described further.

Idea exploration refers to identifying opportunities to alter existing conditions or respond to current challenges (Fithriany Rahmah et al., 2020, p. 766). In this phase, an employee encounters upcoming issues or possibilities in need of solving (De Jong & Den Hartog, 2010, p. 24). *Idea generation* focuses on combing and reorganizing information to develop possible solutions to previously identified problems (De Jong & Den Hartog, 2010, p. 24). *Idea championing* mainly comprises promoting the idea (De Jong & Den Hartog, 2010, p. 24). This dimension can be seen as equivalent to seeking sponsorship and support dimension of Scott and Bruce (1994, p. 582) and the idea promotion dimension of Janssen (2000, p. 288). *Idea implementation* as the fourth dimension is about putting ideas into realization with a result-oriented attitude (De Jong & Den Hartog, 2010, p. 24). Equivalent to the idea implementation dimension are “completion of the idea” and the idea realization (Janssen, 2000, p. 288; Scott & Bruce, 1994, p. 581).

De Jong and Den Hartog (2010, p. 33) found that their four-dimensional model of IWB seemed to fit better than any other competing model. However, due to high correlations among the four dimensions, there was no empirical evidence for the distinctiveness of the previously named four dimensions (De Jong & Den Hartog, 2010, p. 31). It is also important to note that the above-described dimensions are not understood as sequential stages and should be interpreted as interdependent elements of the innovation process (Spiegelaere et al., 2014, p. 319). Thus, this empirical work views IWB as *intentional behaviors that comprise idea exploration, idea generation, idea championing, and idea implementation to benefit individuals, groups, or organizations*. This adapted perspective is also in line with the current state of the art concerning IWB (Bos-Nehles et al., 2017, p. 1232).

2.3.2 Measuring Innovative Work Behavior

Since IWB is a complex construct to measure, multiple studies focused on developing measures for IWB (Bos-Nehles et al., 2017, p. 1232). Three of the most famous studies introducing a measurement scale for IWB were conducted by De Jong and Den Hartog (2010), Janssen (2000), and Kleysen and Street (2001). In the following, each of the proposed measurement scales is presented.

De Jong and Den Hartog (2010, p. 24) see IWB as a construct with the four dimensions idea generation, idea exploration, idea championing, and idea implementation. Thus, the authors initially proposed multiple items to measure these four dimensions (De Jong & Den Hartog, 2010, p. 27). After a pilot study, some of the initially proposed items were dropped, and a measurement scale consisting of ten items was introduced (De Jong & Den Hartog, 2010, p. 33). Out of the ten items, two focus on measuring idea exploration, and another two intend to measure idea championing. The dimensions of idea generation and idea implementation are represented, each with three items (De Jong & Den Hartog, 2010, p. 29).

Other than De Jong and Den Hartog (2010), Janssen (2000, p. 292) introduced a nine-item scale for IWB based on a combination of measurement scales used by previous researchers. Since the author believes IWB consists of three dimensions (idea generation, idea promotion, and idea realization), each dimension is measured with three items (Janssen, 2000, p. 292).

Kleysen and Street (2001, p. 289) coded multiple articles to discover typical behaviors for each of their dimensions of IWB in their effort to develop a multi-dimensional measure of IWB. However, out of the originally proposed 34 items, 20 had to be omitted, resulting in a measurement scale consisting of 14 items (Kleysen & Street, 2001, p. 289). Initially, Kleysen and Street (2001, p. 293) intended to develop a five-factor model measuring IWB. Still, due to a poor model fit, they created a one-dimensional measure of IWB with good construct validity that intends to measure behaviors associated with “opportunity exploration, generativity, formative investigation, championing and application” of ideas.

The research focusing on examining the relationship between HRM practices and IWB primarily uses at least one of three proposed measurement scales for IWB developed by De Jong and Den Hartog (2010), Janssen (2000), or Kleysen and Street (2001) in some form or another. Thus, either the scale one of the before-mentioned authors is applied as it is, combinations of the three scales are used, or the measurement scales are adapted to the requirements of the respective study in which they are used (Battistelli et al., 2013, p. 32; Battistelli et al., 2019, p. 367; Bysted & Hansen, 2015, p. 717; Chughtai & Buckley, 2011, p. 693; Ramamoorthy et al., 2005, p. 146; Spiegelare et al., 2012, p. 11; Turanli & Yolsal, 2020, p. 90).

In the research field of employee innovation, the construct of IWB is often rated by the supervisor or by the employee themselves (De Jong & Den Hartog, 2010, p. 31). De Jong and Den Hartog (2010, p. 34) state that supervisor ratings are more likely to lead to biased results as intercorrelations between the dimensions of IWB could be inflated through the overall view of a supervisor of the abilities and extra-role behaviors of an employee. Nevertheless, it also needs to be noted that self-ratings of IWB might lead to common method bias (De Jong & Den Hartog, 2010, p. 34). Despite that, self-ratings for IWB are recommended as employees themselves are the most capable of estimating their innovative work behaviors because they know their thoughts and activities best (Veenendaal & Bondarouk, 2015, p. 148). Apart from that, more and more empirical studies are moving away from supervisor rated measures to self-rated measurement methods of IWB (Battistelli et al., 2019, p. 367; Bos-Nehles & Veenendaal, 2019, p. 2671; Janssen, 2000, p. 292; Kleysen & Street, 2001, p. 293; Turanli & Yolsal, 2020, p. 90).

Usually, IWB is measured as a one-dimensional construct (Bos-Nehles & Veenendaal, 2019, p. 2671; Chughtai & Buckley, 2011, p. 693; De Jong & Den Hartog, 2010, p. 25; Ramamoorthy et al., 2005, p. 146; Zhang & Begley, 2011, p. 40). Nevertheless, some researchers operationalized a two-dimensional (Bysted & Jespersen, 2014, p. 226; Dorenbosch et al., 2005, p. 133) or three-dimensional measure of IWB (Veenendaal & Bondarouk, 2015, p. 148). The number of items used to measure IWB ranges from four (Spreitzer, 1995, p. 1451) to fourteen (Kleysen & Street, 2001, p. 293).

2.3.3 Research Field of Innovative Work Behavior

IWB was investigated concerning multiple different variables. As this empirical study focuses on IWB as an outcome variable, this section primarily presents research studies that aim to understand the antecedents of IWB. However, detailed results concerning the relationship between employee involvement, job autonomy, and IWB are excluded in this section as they are presented in greater depth in the following sections.

Research focusing on the determinants of IWB can be grouped into three major categories. Firstly, research on the effects of individual factors, such as work engagement, personality traits, and intrinsic motivation. Secondly, research aiming to understand the impact of HRM practices on IWB, and thirdly research trying to find explanations for the effects of leadership and organizational characteristics on IWB. Nevertheless, it should be noted that all three groups of research on IWB are somehow intertwined, and multiple studies combine various variable groups to understand IWB comprehensively. However, studies are categorized into the three groups mentioned above to give a clear overview of noteworthy studies in IWB research.

Studies that focused on individual factors such as learning goal orientation, work engagement, personality traits, self-efficacy, intrinsic motivation, or affective commitment on IWB form one stream of research within the research field. Chughtai and Buckley (2011, p. 696) found support for the claim that learning goal orientation positively relates to IWB. The same study also tried a mediation model with learning goal orientation as a mediator in the relationship between work engagement and IWB. It was found that work engagement positively predicted IWB and that the initially suspected mediation model with learning goal orientation was partially supported (Chughtai & Buckley, 2011, p. 696). In a study by Spiegelaere et al. (2014, p. 325), work engagement not only had a direct positive effect on IWB but also mediated the relationship between job insecurity and IWB. Job insecurity itself was found to decrease an employee's IWB (Spiegelaere et al., 2014, p. 326). Later the same authors found a positive correlation between work engagement and IWB while investigating Karasek's learning hypothesis (Spiegelaere et al., 2015, p. 130). The relationship between work engagement and IWB was also investigated in a study measuring the daily levels of work engagement and their effects on IWB (Orth & Volmer, 2017, p. 607). The authors brought to light that the experienced daily levels of vigor, dedication, and absorption positively predicted the daily levels of employees' engagement in IWB (Orth & Volmer, 2017, p. 607). In theory, the personality traits conscientiousness and openness were often discussed to be related to IWB (Woods et al., 2018, p. 32). However, much to the surprise of experienced researchers, neither openness nor conscientiousness was identified to be related to IWB (Woods et al., 2018, p. 35). IWB was also brought into relation with self-efficacy and growth needs strength. It was revealed that growth needs strength, self-efficacy effort, and self-efficacy persistence positively influenced innovation performance on the individual level (Mumtaz & Parahoo, 2020, p. 713). Mura et al. (2016, p. 1222) examined the relationship between knowledge-sharing behavior and IWB. It was found that sharing best practices positively related to idea generation, idea promotion, and idea implementation (Mura et al., 2016, p. 1230). Sharing mistakes associated with idea implementation and sharing feedback was only related to idea promotion (Mura et al., 2016, pp. 1230–1231). However, the same study could not support the hypothesis that psychosocial safety shapes IWB (Mura

et al., 2016, p. 1231). Another variable that is often discussed in research in connection with IWB is intrinsic motivation. Hammond et al. (2011, p. 98) identified that intrinsic motivation influenced individual-level innovation. Intrinsic task motivation is expected to be a key determinant of IWB and was also found to partially mediate the relationship between perceived impact and IWB (Messmann & Mulder, 2014, p. 93).

It should be noted that although intrinsic motivation is an essential contributor to IWB, also extrinsic motivational factors play a role in influencing an employee's willingness to engage in innovative work behavior (Bos-Nehles et al., 2017, p. 1234). Thus, another great stream of research on IWB focuses on understanding the *effects of HRM practices on IWB*, which can nourish not only an employee's intrinsic motivation but also foster their extrinsic motivation to engage in IWB (Bos-Nehles et al., 2017, p. 1238). A later study of Bos-Nehles and Veenendaal (2019, p. 2673) showed that perceived supervision had a significant positive effect on IWB, whereas the perceived compensation system negatively affected IWB. Although perceived training and development was found to correlate with IWB, no direct impact of the variable on IWB could be identified (Bos-Nehles & Veenendaal, 2019, p. 2673). An early study looking at the relationship between commitment-oriented HRM practices and IWB revealed a significant positive relationship between perceived high-commitment-oriented HRM practices and IWB (Dorenbosch et al., 2005, p. 139). This relationship between these two variables appeared to be partially mediated by feelings of production ownership (Dorenbosch et al., 2005, p. 139). Also notable are the results of Sanders et al. (2010, p. 63) on the relationship between satisfaction with HRM practices and IWB. They found satisfaction with influence and work content to be positively related to IWB, and increased satisfaction with salary lead to decreased engagement in IWB (Sanders et al., 2010, p. 63). In addition to that, satisfaction with HRM practices mediated the positive relationship between Leader-Member-Exchange and IWB (Sanders et al., 2010, p. 63). A different study showed that employee engagement mediated the relationship between perceived HRM practices and IWB (Alfes et al., 2013, p. 851). Concerning job demands, if employees see their efforts as fairly rewarded, the relationship between job demands and IWB was positive (Janssen, 2000, p. 296). Rehman et al. (2019, p. 532) showed that ability-enhancing (operationalized as selection and training practices), motivation-enhancing (operationalized as monetary rewards and performance appraisals) and opportunity-enhancing HRM practices (operationalized as flexible work design and participation opportunities) positively relate to IWB. Especially valuable are the results of a study carried out among production-line workers. This study aimed to understand the relationship between high-involvement HRM practices and IWB (Yasir & Majid, 2020, p. 883). In this study high-involvement HRM practices were categorized into ability-enhancing, motivation-enhancing and opportunity-enhancing HRM practices (Yasir & Majid, 2020, p. 885). It was revealed that ability-enhancing, motivation-enhancing and opportunity-enhancing HRM practices positively predicted IWB, supporting the overall claim that the use of high-involvement HRM practices lead to IWB (Yasir & Majid, 2020, p. 894). Not surprisingly, the relationship between high-involvement HRM practices and IWB was mediated by functional flexibility (Yasir & Majid, 2020, p. 895).

The third significant stream of research on IWB concentrates on leadership behaviors and organizational characteristics, such as organizational climate and their effect on IWB. Just recently, a qualitative study identified transformational leadership, knowledge sharing, and organizational learning as positive contributors to IWB, whereas organizational politics, job insecurity, and transactional leadership diminished its occurrence (Fithriany Rahmah et al., 2020, pp. 765–768). The positive effect of knowledge sharing on IWB was also shown by Munir and Beh (2019, p. 277). Furthermore, this study looked at the effects of a creative organizational climate on IWB and identified creative organizational climate as a valuable contributor to an employee's IWB (Munir & Beh, 2019, p. 279). Also, well-being-oriented management was connected with IWB (Salas-Vallina et al., 2020, p. 572). Furthermore, well-being-oriented administration increased the IWB of employees, and the relationship was positively mediated by harmonious work passion (Salas-Vallina et al., 2020, p. 572). Similarly, the effects of a learning climate on IWB and the role of learning potential at the workplace were researched empirically (Cangialosi et al., 2020, p. 263). A facilitation learning climate positively increased an employee's engagement in IWB, whereas no relationship between an error avoidance learning climate and IWB could be identified (Cangialosi et al., 2020, p. 270). The link between the facilitation learning climate and IWB was mediated by task-related learning potential at the workplace (Cangialosi et al., 2020, p. 273). Apart from that, Leader-Member Exchange was found to lead to higher levels of IWB (Atitumpong & Badir, 2018, p. 41; Sanders et al., 2010, p. 63). In addition, the relationship was positively mediated by creative self-efficacy (Atitumpong & Badir, 2018, p. 39).

2.4 HRM Practices and Innovative Work Behavior

This section begins by outlining a general argumentation for the connection between selected HRM practices (employee participation, information-sharing, work-scheduling autonomy, decision-making autonomy, and work-methods autonomy) and IWB. Afterward, hypotheses to test the relationship between the above-mentioned HRM practices and IWB are developed.

The claim that HRM practices influence IWB is based on the AMO Framework introduced by Appelbaum et al. (2000). It is also called the “motivation, empowerment, and skill” framework (Gardner et al., 2011, p. 319). The idea of the AMO theory is that the performance of employees comprises three essential components: an employee’s ability, motivation, and opportunity to accomplish (Jiang, K. et al., 2012, p. 1266). According to the AMO theory, the performance of employees is determined by their abilities and skills to accomplish goals (A), their motivation to perform (M), and their opportunities to take part in and immerse themselves in desired behaviors (O) (Guerci et al., 2015, p. 329; Poole et al., 2000, p. 497). Subsequently, Lepak et al. (2006, p. 233) developed that further and introduced a comprehensive framework connecting the HR System to organizational performance. HR system in this context may be conceptualized as a set of multiple HRM practices that are all geared towards reaching a strategic goal such as service improvement or innovation (Lepak et al., 2006, p. 226). Primarily, the model builds on the notion that an HR system determines the prevailing organizational climate and directly influences the individual performance of employees (Lepak et al., 2006, p. 230). The model suggests three important vital mechanisms through which HRM practices control employee performance. Firstly, they directly impact the employee’s ability to perform, to enhance employees’ abilities, knowledge and skills. Secondly, they may also have an indirect and direct effect on the motivation of employees, as they establish certain organizational and psychological climate perceptions and give incentives to show specific work behaviors. Thirdly, the model also suggests that the performance of employees also depends upon the available opportunities of the employees to utilize their skills and motivation (Lepak et al., 2006, p. 232). Lepak et al. (2006, p. 233) conclude: Organizations which equip their employees with the necessary skill levels to show better performance, motivate employees to work toward organizational goals, and enlarge employees’ opportunities to put into practice their skills and motivation will have a better performance than organizations that fail to do so. Figure 6 depicts the AMO model, explaining the relationship between an HR system (multiple HRM practices) and organizational performance.

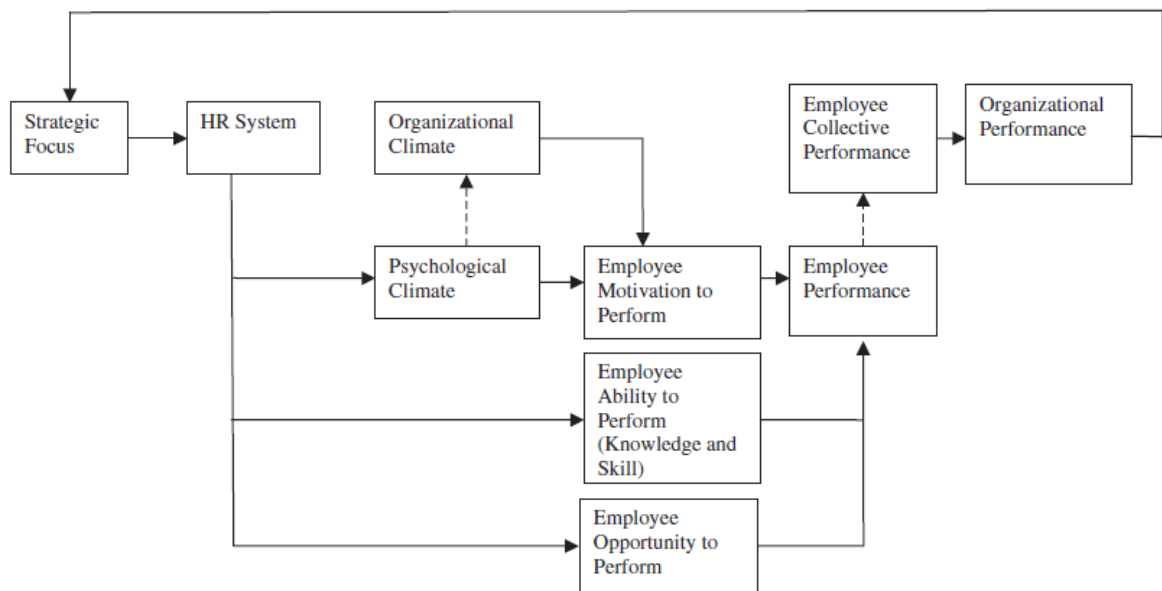


Figure 6: The AMO Framework

Source: from Lepak et al. (2006, p. 231)

Many researchers see the AMO framework as essential and “universally appropriate” for comprehensive HRM research (Andreeva & Sergeeva, 2016, p. 157; Elorza et al., 2011, p. 1410; Kehoe & Wright, 2013, p. 368; Khoreva & Wechtler, 2018, p. 230; Kundu & Gahlawat, 2018, p. 731; Prieto & Pilar Pérez-Santana, 2014, p. 188; Wood, 2020, p. 412; Yasir & Majid, 2020, p. 885).

Since innovation can be viewed as a performance variable, the enhancement of an employee’s ability (A), motivation (M), and opportunities (O) through HRM practices would lead to innovation (Seeck & Diehl, 2017, p. 930). Based on that, Bos-Nehles et al. (2017, p. 1229) proposed to apply the AMO theory to explain the relationship between HRM practices and IWB. In line with the AMO theory to the following theoretical conclusions are derived for this empirical work:

- Organizations inviting employees to voice suggestions for improvement in the company (employee participation) may allow employees to engage in IWB and motivate their engagement in IWB
- Organizations that share information with their employees (information-sharing) may give employees additional abilities to engage in IWB and provide them with increased opportunities to engage in IWB
- Positions that allow employees to control the timing and order in which the work is done (work-scheduling autonomy) may increase employee’s motivation and opportunities to engage in IWB
- Positions that allow employees to make independent choices at work (decision-making autonomy) may give employees increased abilities, motivation, and opportunities to engage in and show IWB
- Positions that allow employees to freely choose the means and procedures applied to carry out their work (work-methods autonomy) may enhance not only an

employee's opportunities to engage in IWB but also may influence an employee's motivation and ability to show IWB

These theoretical conclusions are now substantiated with facts from other academic and empirical studies in the following paragraphs before the specific hypotheses for this empirical study are developed.

Initial support for these theoretical conclusions can be found in the claim of Walton (1985, p. 77): It becomes more and more consensus that employees work best and most creatively when they receive a broader set of responsibilities, have opportunities to contribute, and receive feedback. Tight control, narrowly defined job descriptions, and treating employees as a simple requirement for organizational success lead to opposite results (Walton, 1985, p. 77).

Besides that, work motivation literature provides further theoretically valuable insights for connecting the selected HRM practices and IWB. According to motivation research scholars, organizational success must give employees the right opportunities to contribute. These opportunities may also lead to increased motivation, which is the key driver for an employee's in-role and extra-role performance (Deci & Ryan, 1985, p. 294). Previous research also identified intrinsic motivation to be innovative as a critical driver of IWB (Hammond et al., 2011, p. 100; Kurz et al., 2018, p. 415).

For motivational processes, self-determination and competence play a fundamental role (Deci & Ryan, 1985, p. 85). Self-determination theory (SDT) states that intrinsic and autonomous motivation is determined by the degree to which three "fundamental nutrients" are satisfied (Deci & Ryan, 2000, p. 229). These three basic needs are: the need for autonomy, the need for relatedness, and the need for competence (Deci & Ryan, 2000, p. 229). The need for autonomy is about the obligation of people to experience freedom concerning their behaviors and choices (Deci & Ryan, 2000, p. 254). The need for relatedness is characterized as the desire of individuals to "seek attachments and experience feelings of security, belongingness, and intimacy with others" (Deci & Ryan, 2000, p. 252). Need for competence refers to feeling a sense of effectiveness when engaging in interactions with the environment (Deci & Ryan, 2000, p. 253). For further explanations about SDT, please see Annex B.

Based on SDT theory, Gagné and Deci (2005, p. 337) claim that work climates that increase the satisfaction of the above-explained three "fundamental nutrients" will lead to increased intrinsic and autonomous motivation. This increased motivation leads to better performance at tasks "requiring creativity, cognitive flexibility, and conceptual understanding" (Gagné & Deci, 2005, p. 337). For IWB, capabilities such as creativity and understanding play an essential role (Messmann & Mulder, 2014, p. 82). Thus, the claim can be made that work climates that increase the satisfaction of the above-explained three "fundamental nutrients" lead to increased intrinsic and autonomous motivation of employees to be innovative and result in higher IWB.

The previously mentioned claim is based on the assumption that employee participation, information-sharing, and autonomy regarding work-scheduling, decision-making, and work-methods create a work climate that satisfies the three basic psychological needs for relatedness, competence, and autonomy. This assumption proves to be reasonable due to the following considerations: Employee participation helps employees to feel a

sense of belonging and security (Boselie et al., 2001, p. 10). Because of this, a satisfaction of the need for relatedness could be assumed. Information-sharing helps employees better understand their organization and their contribution to the organization, giving them a feeling of effectiveness when exchanging ideas (Gibson et al., 2007, p. 1469; Li et al., 2018, p. 2007). Thus, a satisfaction of the need for competence could be assumed. Autonomy in terms of work-scheduling, decision-making, and work-methods frees an employee from being obliged to work within strict rules and regulations and allows employees to try out the new (Ramamoorthy et al., 2005, p. 144). Thus, a satisfaction of the need for autonomy could be assumed.

The propositions mentioned above are additionally theoretically backed up by the job demands control model of Karasek (1979, p. 388) and the Job Demands-Resources model from Bakker and Demerouti (2007, p. 313). They identify various job resources as crucial drivers for employee engagement.

Further support for the theoretical connection of the selected HRM practices and IWB gives a qualitative study exploring the effects of HRM meta-features on IWB (Abstein & Spieth, 2014, p. 211). The researchers conducted 21 interviews with HR professionals from large- and medium-sized companies in Germany (Abstein & Spieth, 2014, p. 213). Results of their extensive qualitative study show the critical role employee involvement and job autonomy play in shaping IWB (Abstein & Spieth, 2014, p. 217). Multiple interviewees in the survey reported that their innovation success and their employees' engagement in IWB depended greatly upon their efforts to involve employees and the opportunities employees have to be autonomous at work (Abstein & Spieth, 2014, p. 217).

Besides that, multiple studies empirically examined the effects of either employee involvement or job autonomy on IWB (Bos-Nehles & Veenendaal, 2019; Bysted & Hansen, 2015; Bysted & Jespersen, 2014; Veenendaal & Bondarouk, 2015). To get a comprehensive picture of the current status quo concerning research on the relationship between the selected HRM practices and IWB, a list of empirical studies examining these relationships can be found in Annex C.

After this general argumentation, specific hypotheses for the relationship between each selected HRM practice and IWB are developed in the following sections.

2.4.1 Employee Involvement and Innovative Work Behavior

Common ground has been reached concerning the notion that employee involvement leads to benefits for not only the employer but also for the employee (Gagné & Deci, 2005, p. 333; Stankevičiūtė et al., 2020, p. 7; Yasir & Majid, 2020, p. 886). Employee Involvement may be seen on the one hand as an instrument for the enhancement of an employee's loyalty and attachment to their organization, and on the other as a catalyst for human growth and social need satisfaction (Joensson, 2008, p. 594).

Multiple experiments around employee involvement and its outcomes indicate a positive effect of inviting employees to actively participate (Deci & Ryan, 1985, p. 296). Research has demonstrated that if employees were able to participate in changes and new developments in the organization, the implementation, and effect of these new developments

were positively influenced (Deci & Ryan, 1985, p. 296). This may be viewed as an instrument to promote performance variables through continuous communication and consultation between the organization and its employees (Wilkinson et al., 2010, p. 10).

Practices to involve employees also create additional opportunities for employees to exchange their ideas (Shin et al., 2018, p. 269). When it comes to creativity-oriented work behaviors, employee involvement practices also equip employees with more abilities and skills to develop new ideas and motivate them to bring in their ideas (Shin et al., 2018, p. 270).

Wood (2020, p. 409) noted the concept of employee involvement, which is “the core of opportunities for participation,” was treated inconsistently in quantitative HRM studies. Also, Bos-Nehles et al. (2017, p. 1235) concluded that only a few studies include HRM practices focusing on employee involvement.

On top of that, as noted previously, employee involvement was conceptualized and measured differently depending on the researcher’s approach (Wood, 2020, p. 409). Due to this, generalizations about the relationship between involvement-focused HRM practices and IWB are tricky. Thus, it is suggested to use an HRM practice approach, where the effect of each involvement-focused HRM practice is tested (Wood, 2020, p. 418). Following this argumentation, hypotheses for the possible relationship between, on the one hand, employee participation and IWB and, on the other hand, information-sharing and IWB are developed.

2.4.1.1 Employee Participation and Innovative Work Behavior

Many employees even prefer to be asked to participate as then they feel a sense of control over what decisions are made (Deci & Ryan, 1985, p. 297). Practitioners argue that when it comes to idea championing and idea implementation, the organization’s appreciation of employees’ opinions is essential (Messmann & Mulder, 2014, p. 80).

De Jong and Den Hartog (2010, p. 34) found a strong correlation between participative leadership and IWB. Participative leadership encourages employees to be intrinsically motivated and helps them feel responsible and in control (De Jong & Den Hartog, 2010, p. 34). These feelings of responsibility and control reassure an employee’s willingness to engage in IWB (De Jong & Den Hartog, 2010, p. 34). The availability of participation opportunities for employees boosts their generation and implementation of ideas (De Jong & Den Hartog, 2010, p. 34).

If employers give employees opportunities to participate, it can lead to better knowledge transfer within the organization, as more detailed knowledge of the employees can be discovered (De Winne & Sels, 2010, p. 1868). Increased participation opportunities may motivate employees to bring in new ideas and exchange their knowledge with the organization, enhancing their involvement in IWB (Chen & Huang, 2009, p. 106).

Apart from that, previous empirical studies, such as Singh et al. (2020, p. 12) or Prieto and Pilar Pérez-Santana (2014, p. 199), support participation mechanisms as an antecedent of IWB. For example, Prieto and Pilar Pérez-Santana (2014, p. 199) looked at the effect of opportunity-enhancing HRM practices (job design and participation) on IWB.

In their study opportunity -enhancing HRM practices, of which participation is a part of, are positively related to IWB (Prieto & Pilar Pérez-Santana, 2014, p. 199). In a different context focusing on sustainable HRM among employees working in Lithuania, participation directly and significantly positively affected idea championing and idea application (Stankevičiūtė et al., 2020, p. 12).

With that in mind, it is proposed that:

Hypothesis 1 (H1): Employees who experience high levels of employee participation in their organization will show high levels of innovative work behavior.

2.4.1.2 Information-sharing and Innovative Work Behavior

Companies that share information with their employees empower them to make more effective decisions (Gibson et al., 2007, p. 1469). One empirical study found that empowerment, which includes information-sharing, was significantly related to innovativeness, conceptualized as a combination of innovation encouragement and innovative behaviors of employees (Fernandez & Moldogaziev, 2013, p. 496).

Information-sharing gives employees the ability to become proactive. With adequate information, they develop novel suggestions and initiatives for improvement (Gibson et al., 2007, p. 1469). If a company regularly induces information-sharing practices, employees can receive additional insights for effective communication and are empowered to better exchange knowledge with their work colleagues (Li et al., 2018, p. 2007).

A research paper focused on community-based innovation systems revealed four possible explanations for why information-sharing is constructive for any innovation process (Franke & Shah, 2003, p. 172). Relevant information is more likely to activate improvement suggestions from others and may motivate the development of a more favorable standard. Besides that, information-sharing leads to lower feelings of rivalry and promotes mutual exchange processes (Franke & Shah, 2003, p. 172). Information-sharing helps to join personal and organizational values and thus creates a desire of the employee to actively contribute to improvements of organizations (Kilroy et al., 2017, p. 824). Additionally, information-sharing helps employees gain a better perspective of their work role and their contribution to an organization (Gibson et al., 2007, p. 1469).

The practice of sharing information is also decisive for involvement in innovation processes. Up-to-date information is needed to feel comfortable with the accompanying risks of creative improvisation and innovation processes (Vera & Crossan, 2005, p. 208).

Besides that, information-sharing may lead to more committed employees and higher identification with a corporation's goals (Marchington & Wilkinson, 2005, p. 404). The reason for this effect is that employees perceive their organization as being trustworthy, supportive, and fair if they receive valuable and relevant information from their organization (McElroy, 2001, p. 333). A similar opinion is shared by Veenendaal and Bondarouk (2015, p. 145), who state that information-sharing gives employees feelings of self-worth and importance to the organization. Because of these perceptions mentioned above, they, in turn, are more likely to show increased levels of in-role and extra-role behaviors,

such as IWB (McElroy, 2001, p. 333; Ramamoorthy et al., 2005, p. 143; Veenendaal & Bondarouk, 2015, p. 145). Thus, information-sharing enables a supportive organizational environment for generating and implementing ideas (Odoardi et al., 2015, p. 549). It was also argued that employees that receive additional information from their organization about the influence of their ideas are more likely to actively promote and implement their innovative ideas (Messmann & Mulder, 2014, p. 80).

Although research on information-sharing practices is rare, some empirical evidence for the relationship between perceived information-sharing and IWB is available. Veenendaal and Bondarouk (2015) identified a positive effect of information-sharing on idea generation and idea application, which both are considered dimensions of IWB. Another study of two researchers in the Netherlands found empirical support for the relationship between information-sharing and IWB (Bos-Nehles & Veenendaal, 2019, p. 2673). Other researches revealed indirect effects of information-sharing practices on IWB through group support for innovation (Odoardi et al., 2015, p. 559) and task-related learning (Battistelli et al., 2019, p. 372).

Given this, it is suggested that:

Hypothesis 2 (H2): Employees who experience high levels of information-sharing in their organization will show high levels of innovative work behavior.

2.4.2 Job Autonomy and Innovative Work Behavior

If employees are given autonomy, it is a sign that the organization trusts them (Deci & Ryan, 1985, p. 298). If an employee feels trusted, he or she is more willing to engage in beneficial behaviors for the organization (Deci & Ryan, 1985, p. 298). Employees that receive a high amount of job autonomy are more motivated and more willing to take on additional responsibilities (Zhou et al., 2019, p. 2).

Job autonomy provides employees with more responsibility and gives them additional flexibility, leading to proactive behaviors (Salanova & Schaufeli, 2008, p. 119). Thus, autonomy furthers an employee's willingness to generate and implement ideas (De Jong & Den Hartog, 2010, p. 34). It also encourages employees to think freely and exchange information (Kurz et al., 2018, p. 415). But, contrary, low autonomy levels prevent employees from innovation (Orth & Volmer, 2017, p. 602).

The positive relationship between job autonomy and employee innovativeness has been empirically tested in multiple studies (Bysted & Hansen, 2015, p. 712; Bysted & Jespersen, 2014, p. 233; Kurz et al., 2018, p. 412; Ramamoorthy et al., 2005, p. 147; Spiegelaere et al., 2012, p. 14; Spiegelaere et al., 2014, p. 325; Turanli & Yolsal, 2020, p. 92).

However, as previously discussed, job autonomy may be understood differently by each researcher. For example, some include only work-scheduling autonomy, whereas others see autonomy as a construct consisting of multiple dimensions (Spiegelaere et al., 2016, p. 515). This, in turn, makes the comparison of results concerning the relationship between autonomy-focused HRM practices and IWB difficult. For this reason, previous researches suggested looking at the individual effects of each autonomy dimension on

IWB separately to better understand the interplay between autonomy and IWB (Kurz et al., 2018, p. 415; Spiegelaere et al., 2016, p. 515; Theurer et al., 2018, p. 2). Following this argumentation, hypotheses for the possible relationship of each autonomy dimension (work-scheduling, decision-making, and work-methods) and IWB are developed.

2.4.2.1 Work-Scheduling Autonomy and Innovative Work Behavior

If employees are to engage in innovative behaviors, they need to have autonomy concerning their time management and the order in which they fulfill their respective tasks (Abstein & Spieth, 2014, p. 220). MacEachen et al. (2008, p. 1024) came to similar results. They found that managers believe that flexibility in working hours may lead to higher creativity and that employees are more willing to suggest their ideas.

Work-scheduling autonomy may inspire employees to organize and optimize their schedules, which lets them demonstrate a form of IWB (Spiegelaere et al., 2016, p. 520). In addition, the possibility of being autonomous in terms of scheduling work gives employees the necessary space to experiment and develop innovative ideas (Spiegelaere et al., 2015, p. 127).

Because of this, it is hypothesized:

Hypothesis 3 (H3): Employees experiencing high levels of work-scheduling autonomy will show high levels of innovative work behavior.

2.4.2.2 Decision-Making Autonomy and Innovative Work Behavior

Throughout the innovation process, an employee must make multiple smaller and bigger decisions concerning the generation, exploration, championing, and implementation of ideas (Theurer et al., 2018, p. 6). For this reason, an employee must have the necessary decision-making autonomy within their sphere to make upcoming decisions concerning idea generation, idea exploration, idea championing, and idea implementation (Theurer et al., 2018, p. 6). If employees are constantly obliged to seek approval for certain decisions by a superior, they may feel less motivated (Brock, 2003, p. 59). And since especially intrinsic motivation plays a vital role in engagement in IWB (Deci & Ryan, 1985, p. 297; Devloo et al., 2015, p. 499), decreased motivation may lead to lower engagement in IWB.

Additionally, decision-making autonomy seems to be particularly important when making decisions about where work is done. Working from another location leads to higher engagement in creative tasks (Dutcher, 2012, p. 362). Changes in the environment of the employee may lead to different thoughts and let the employee come up with other solutions to an issue at work (Martínez-Sánchez et al., 2007, p. 219; Spiegelaere et al., 2016, p. 521).

For this reason, the following claim is made:

Hypothesis 4 (H4): Employees experiencing high levels of decision-making autonomy will show high levels of innovative work behavior.

2.4.2.3 Work-methods Autonomy and Innovative Work Behavior

For innovation to occur, employees need multiple opportunities to try out new ways to learn from previous failures (Ramamoorthy et al., 2005, p. 144). This possibility to try out the new and learn by “trial and error” is primarily present if employees have the necessary autonomy to decide how they want to approach an issue (Ramamoorthy et al., 2005, p. 144).

Through work-method autonomy, employees receive the necessary room for exploration and experimentation with alternative work methods, leading to innovation (Spiegelaere et al., 2016, p. 519).

Theurer et al. (2018, 26) studied the effects of multiple dimensions of autonomy on IWB. They found that all the investigated dimensions positively predicted IWB. However, the influence of work-methods autonomy was the strongest compared to the other dimensions of autonomy (Theurer et al., 2018, 26). The reason for this is that employees with high levels of work-methods autonomy may choose freely out of multiple techniques to generate, explore, campaign, and implement their ideas (Theurer et al., 2018, p. 6). Through this work-methods autonomy, employees can try out the new (Ramamoorthy et al., 2005, p. 144).

Thus, similar to work-scheduling autonomy, work-methods autonomy gives employees space to experiment and develop innovative ideas. They are more flexible in choosing how they go about doing their work (Spiegelaere et al., 2015, p. 127).

Derived from that, the following is hypothesized:

Hypothesis 5 (H5): Employees experiencing high levels of work-methods autonomy will show high levels of innovative work behavior.

3. Methodology

This chapter intends to pinpoint the underlying methodological aspects of this empirical work. Firstly, the derived hypotheses from chapter two are summarized in a research model. Then a justification for the selected research approach and design is given before the sample, and the data collection procedure is specified. The questionnaire structure is explained in the following steps, and the used measurement items are outlined. Additionally, their reliability and validity are reported. The chapter concludes with a thorough description of the procedures for data analysis.

3.1 Research Model

This study examines the potential influence of involvement- and autonomy-focused HRM practices (participation, information-sharing, work-scheduling autonomy, decision-making autonomy, and work-methods autonomy) on IWB.

In the previous section of this empirical work, five hypotheses were formulated. Hypothesis one and two test a possible relationship of HRM practices for employee involvement (employee participation and information-sharing) on IWB. Hypothesis three, four, and five test the possible association of HRM practices for job autonomy (work-scheduling autonomy, decision-making autonomy, and work-methods autonomy) with IWB.

A summary of the proposed effects is depicted in figure 7. Innovative work behavior is treated as the dependent variable. Employee participation, information-sharing, work-scheduling autonomy, decision-making autonomy, and work-methods autonomy are independent variables.

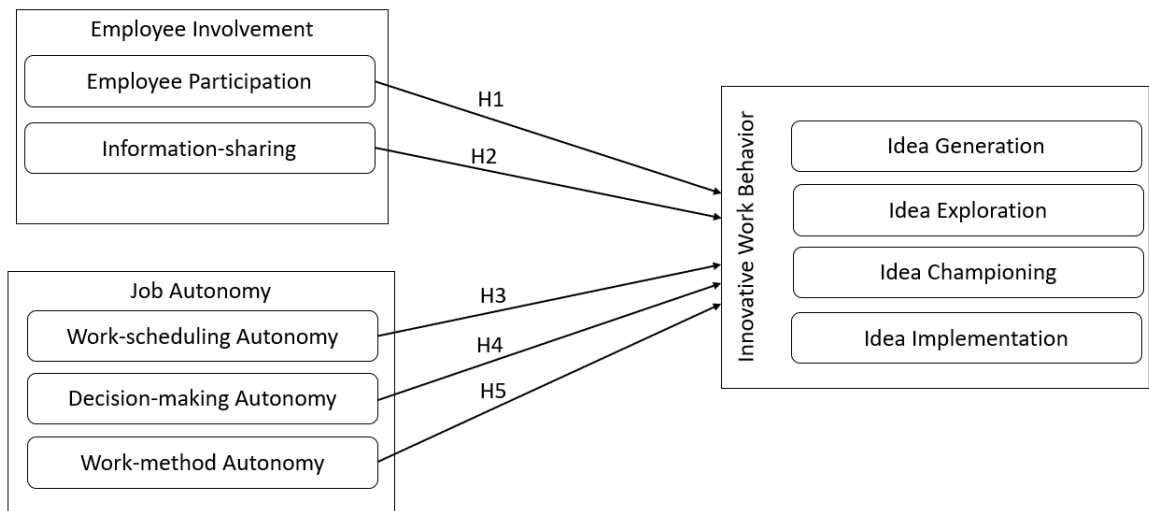


Figure 7: Summary of the proposed hypotheses

Source: Own Illustration

3.2 Research Approach and Design

According to Bryman and Bell (2011, p. 85), the type of research question determines a suitable research approach selection. The previously outlined research question asks for the impact of selected HRM practices on IWB and tires to understand its drivers better. For this reason, a deductive research approach is preferred, as it is used to explain relationships between variables (Saunders et al., 2009, p. 125).

The deductive approach requires developing a theory before data collection (Saunders et al., 2009, p. 41). This approach develops hypotheses based on existing ideas and later collects the data to test the suspected hypotheses (Bryman & Bell, 2011, p. 11). A quantitative research approach should be chosen when a deductive research strategy is applied (Bryman & Bell, 2011, p. 13).

Quantitative research focuses on testing theories and identifying factors influencing an outcome (Creswell & Creswell, 2018, p. 44). Since this research project aims to better understand employee involvement and job autonomy as influencing factors of IWB, the choice for a quantitative research strategy seems most relevant. This research approach is best suited to comprehend antecedents of outcomes (Creswell & Creswell, 2018, p. 63). Also, the possibility of suggesting generalizations of empirical findings makes its application very appealing (Bryman & Bell, 2011, p. 163).

Due to the limited time available for the research project, a cross-sectional research design is selected. Cross-sectional studies focus on relations of factors at a particular time (Saunders et al., 2009, p. 155). Additionally, most studies within business research fall into this category (Zikmund et al., 2010, p. 197).

A cross-sectional design is also called survey design (Bryman & Bell, 2011, p. 53). It is best suited to provide insights on relationships between variables (Creswell & Creswell, 2018, p. 236). This type of research design collects primary data from a sample of individuals (Zikmund et al., 2010, p. 184). It is also a means to collect accurate, fast, reasonable data about a population (Zikmund et al., 2010, p. 185).

For data collection, a self-administered web-based questionnaire is chosen. This choice was made due to the possibility of quickly reaching a large audience, accurately capturing real-time data, and because of the option for respondents to stay anonymous (Zikmund et al., 2010, pp. 227–230). Additionally, decreased interviewer effects and convenience for respondents support the choice of a web-based questionnaire (Bryman & Bell, 2011, p. 232).

The choice for an online survey was made. However, there is a risk of a low response rate. This risk can be overcome on the one hand by choosing an attractive questionnaire format and design and, on the other hand, by asking individuals with a general interest in the research topic to participate (Zikmund et al., 2010, p. 222). Moreover, higher response rates may be achieved through notifying respondents three days in advance of the questionnaire over phone or mail, by drafting an appropriate cover letter for each recipient, and by sending out reminders to complete the questionnaire (Fowler, 2014, p. 67; Zikmund et al., 2010, pp. 223–224).

3.3 Sample and Data Collection

The sample for this study was drawn primarily from employed individuals in Austria. A sample is usually used to generalize findings for the whole population, as surveying the entire population is impossible due to organizational and financial restrictions (Fowler, 2014, p. 10). For adequate generalizability, crucial aspects such as the choice of sampling method, the desired sample size, and the procedure used for sampling the individuals should be taken into account (Fowler, 2014, p. 6).

For this empirical study, a random voluntary response sampling method was chosen. This sampling method selects individuals from the whole population by chance and invites them to participate voluntarily (Stockemer, 2019, p. 58). This sampling method was chosen because it is considered realistic and aligns with the desired ethical standards for research projects (Saunders et al., 2009, p. 185).

Fowler (2014, p. 38) suggested that the sufficiency of sample size can be evaluated based on desired goals of the specific study. Furthermore, multiple studies prove that sample sizes between 150 and 200 have adequate precision (Fowler, 2014, p. 39). Nevertheless, it is desirable to achieve larger sample sizes, as with a more significant sample, the reliability, stability, and replicability of the research results can be increased (Fowler, 2014, p. 39; Hair et al., 2014, p. 574). Additionally, Green (1991, p. 508) suggested that for the calculation of regression analysis, the following rule of thumb for the sample size should be applied: The sample size should be at least 104 plus the number of independent variables.

A total number of 409 employees participated in this study. However, the answers of 33 participants were omitted as they did not finish the entire questionnaire or answered inconsistently. Thus, the final sample size consisted out of 376 participants. This sample size of 376 can be considered excellent, as the sample size is congruent with the goal of this study.

The following procedure for sampling was applied to achieve the sample size mentioned above: The link to the questionnaire and a short explanation were posted on the author's and the supervisor's LinkedIn account. Additionally, previously contacted individuals re-shared the author's post with the questionnaire link on LinkedIn to reach a broader audience of potential participants. The author also distributed the invitation to the questionnaire via e-Mail to multiple previously contacted companies based in Austria. Within these companies, the questionnaire link was then redistributed among the organization's employees, inviting them to participate in the study voluntarily. Companies who received the e-Mail were also invited to share the questionnaire with other employees/friends they know. Apart from that, the questionnaire was also distributed via e-Mail among employed students at the FH Vorarlberg.

Data collection took place between Friday 24th of March 2021 and Monday 18th of April 2021.

3.4 Questionnaire Structure and Pretest

The online questionnaire was designed with the tool "Iamapoll.de". Participants could either complete the questionnaire in English or German. The availability of a German questionnaire ensured that participants could complete the questionnaire in their native tongue.

The questionnaire consisted out of 20 questions and was grouped into eight sections. These sections were as follows: participation, information-sharing in the company, autonomy at the workplace, motivation, innovation focus, innovative work behavior at the workplace: creativity, innovative work behavior at the workplace: implementation, company information, and sociodemographic data. The first section measured perceived employee participation with three indicators. The second section measured perceived information-sharing with also three indicators. Work-scheduling autonomy, decision-making autonomy, and work-methods autonomy were measured in the job autonomy section with three items each. The questionnaire's motivation and innovation focus section is intended to understand the participant's type of work motivation and the company's focus on innovation with one item each. The innovative work behavior creativity section measured the idea generation and idea exploration dimension of innovative work behavior with five items. The remaining IWB dimensions idea championing and idea implementation were measured with five items in the section innovative work behavior: implementation. The sections company information and sociodemographic data focused on measuring additional control variables such as industry, company size, tenure, gender, and age.

As suggested by Saunders et al. (2009, p. 394) and Bryman and Bell (2011, p. 262), the designed questionnaire was pretested with five individuals. A Pre-test is conducted to refine the questionnaire in terms of structure, consistency, instruction clarity, question wording, and design (Bryman & Bell, 2011, p. 262; Saunders et al., 2009, p. 394). After the pretest, minor changes were made to the English and German versions of the questionnaire. Both questionnaires had spelling mistakes and layout irregularities which were corrected. In the questionnaire's German version, the wording of some items was adjusted to fit the original English version of the question. The respective finalized English and German versions of the questionnaire can be found in Annex D and E.

3.5 Measures

This section outlines and explains the measurement items for each construct in the study. Additionally, the measurement of included control variables is described.

HRM Practices for Employee Involvement encompassed two dimensions, namely employee participation and information-sharing. Employee participation and information-sharing are each assessed with three items from Kilroy et al. (2017, p. 835), who modified items from Lawler et al. (1995, p. 150). A sample item for *employee participation* is: "My organization usually asks for employees' opinion when it considers adopting new rules, procedures, or methods related to the organization of work." A sample item for *information-sharing* is: "Employees are regularly informed about major projects in our organization (e.g., structural changes, major investments, new technologies)". Each of the six statements for employee participation and information-sharing was tested on a five-point Likert scale, ranging from 1= "never" to 5= "very often".

HRM Practices for Job autonomy included three dimensions, namely work-scheduling autonomy, decision-making autonomy, and work-methods autonomy. Each of the three dimensions was assessed with three items from the Work Design Questionnaire developed by Morgeson and Humphrey (2006, p. 1337). A sample item for *work-scheduling*

autonomy is “The job allows me to decide on the order in which things are done on the job”. A sample item for decision-making autonomy is: “The job gives me the chance for significant autonomy in making decisions”. A sample item for work-methods autonomy is: “The job allows me to decide what methods I use to complete my work”. For each item referring to job autonomy, respondents could answer on a 5-point Likert scale, ranging from 1= “never” to 5= “very often”.

Innovative Work Behavior: A 10-item scale developed by De Jong and Den Hartog (2010, p. 29) with four dimensions (idea generation, idea exploration, idea championing, and idea implementation) was employed. Idea generation and idea championing are measured with two items each. Idea exploration and idea implementation are assessed with three items each. A sample item for idea generation is: “How often do you wonder how things can be improved?” A sample item for idea exploration is: “How often do you find new approaches to execute tasks?” A sample item for idea championing is: “How often do you make important organizational members enthusiastic for innovative ideas?” A sample item for idea implementation is: “How often do you systematically introduce innovative ideas into work practices?” All the items for innovative work behavior were scored on a 5-point Likert scale with possible answers ranging from 1 = “never” to 5 = “very often”.

Control variables: The type of work motivation plays an essential role in the level of IWB an employee demonstrates (Bammens, 2016, p. 248; Devloo et al., 2015, p. 491). Thus this study controls the type of work motivation with one item derived and adapted from Tremblay et al. (2009, p. 226). Respondents were able to indicate their level of motivation by selecting a statement representing their motivation level, reaching from amotivation to intrinsic motivation. The type of work and work circumstances, in general, may also influence perceived HRM practices and IWB (Glew et al., 1995, p. 398; Hammond et al., 2011, p. 96). For this reason, management responsibility, the intensity of a company’s innovation focus, general satisfaction with working conditions, the number of employees in the company, and the company’s respective industry are controlled for. Besides that, age, tenure, and gender are used as control variables. The older an employee is and the longer they are part of an organization, the more knowledge and experience they have, which might influence the level of IWB of an employee (Zhang & Begley, 2011, p. 41). Gender might influence the engagement in IWB because men are stereotypically more associated with being innovative (Luksyte et al., 2018, p. 293). Measures for age, tenure, number of employees in the company (company size), general satisfaction with working conditions, the intensity of innovation focus, and industry were categorized to increase confidence in the anonymity of the questionnaire. For the measurement of the control variables, simple selection and different formats such as drop-down selection or sliders were chosen. The use of a variety of designs is a standard method to keep participants engaged and attentive throughout the questionnaire (Bryman & Bell, 2011, p. 662; Fowler, 2014, p. 131)

3.6 Scale Reliability and Validity

This section describes the steps undertaken to ensure internal reliability and measurement validity.

Each construct was measured with previously validated items derived from the literature to make results comparable and reliable. Items formulated in English were translated into German. Translation evaluation methods and tips described by Saunders et al. (2009, p. 385) were applied to assure correct translation into German.

To establish reliability and validity of a measure, the calculation of Cronbach's alpha and the execution of factor analysis are standard methods (Bryman & Bell, 2011, p. 159; Saunders et al., 2009, p. 374). Thus, the respective Cronbach's alphas for each construct and its dimensions were calculated, and a factor analysis was carried out. The threshold for adequate Cronbach's alphas should be set at ≥ 0.70 (Cortina, 1993, p. 101). However, slightly lower values may also be considered acceptable (Cortina, 1993, p. 101).

Cronbach's alphas were as follows: $\alpha = 0.86$ for employee participation, $\alpha = 0.78$ for information-sharing, $\alpha = 0.84$ for work-scheduling autonomy, $\alpha = 0.82$ for decision-making autonomy, $\alpha = 0.81$ for work-methods autonomy, $\alpha = 0.80$ for creativity-oriented IWB (idea generation and idea exploration), $\alpha = 0.87$ for implementation-oriented IWB (idea championing and idea implementation), and $\alpha = 0.89$ for IWB. These values are all above the threshold of ≥ 0.70 and thus indicate good scale reliability.

Concerning the evaluation of factor analysis, two rules of thumb should be applied. Firstly, items loading onto one factor should have factor loadings of at least ≥ 0.70 (Watkins, 2018, p. 235). And secondly, only solutions that account for more than 60% of the variance are acceptable (Hair et al., 2014, p. 107). With that in mind, multiple factor analyses with varimax rotation were executed.

The principal component analysis for employee participation (Chi-Square (3) = 532,266, $p < .001$; KMO=.726) indicates that all items loaded onto a single factor, which accounted for 78.35% of the variance. Factor loadings ranged from 0.864 to 0.907. Similarly, also the principal component analysis for information-sharing (Chi-Square (3) = 336,2, $p < .001$; KMO=.684) shows that all items loaded onto a single factor, which accounted for 70,1% of the variance. Factor loadings ranged from 0.795 to 0.875.

The results of the principal component analyses for the other HRM practices were as follows: Work-scheduling autonomy (Chi-Square (3) = 475,4, $p < .001$; KMO=.726): 76,6 % of variance explained and factor loadings ranging from 0.865 to 0.892. Decision-making autonomy (Chi-Square (3) = 243,91, $p < .001$; KMO=.500): 84,62 % of variance explained and factor loadings of 0.92 for each item. Work-methods autonomy (Chi-Square (3) = 410,83, $p < .001$; KMO=.704): 73,6% of variance explained and factor loadings ranging from 0.819 to 0.881.

The respective factor loadings of each item on employee participation (PAT), information-sharing (Inf), work-scheduling autonomy (WSA), decision-making autonomy (DMA), work-methods autonomy (WMA) are shown in figure 8.

<i>Component Matrix^a</i>		<i>Component Matrix^a</i>	
	<u>Component</u>		<u>Component</u>
	1		1
PAT1	,884	Inf1	,875
PAT2	,907	Inf2	,839
PAT3	,864	Inf3	,795

<i>Component Matrix^a</i>		<i>Component Matrix^a</i>		<i>Component Matrix^a</i>	
	<u>Component</u>		<u>Component</u>		<u>Component</u>
	1		1		1
WSA1	,892	DMA1	,920	WMA1	,873
WSA2	,868	DMA2	,920	WMA2	,881
WSA3	,865			WMA3	,819

Figure 8: Factor loadings of HRM practices

To calculate the scale for decision-making autonomy, the author decided to drop item DMA 3 (“The job gives me a chance for significant autonomy in making decisions.”). The item was excluded from the analysis due to low factor loadings and a decreased Cronbach’s alpha for decision-making autonomy.

The principal component analysis for IWB (Chi-square (45) = 1630,47, $p < .001$; KMO = .91; 60,57% of variance explained) showed that items loaded onto two factors. Based on this, a two-factor solution for IWB was operationalized.

A two-factor solution for IWB is in line with previous research. Because this solution allows for additional insights into the effects of each HRM practice on the different dimensions of IWB, additional insights would be precious as previous research identified that other HRM practices might affect dimensions of IWB differently (Bos-Nehles et al., 2017, p. 1241). Bos-Nehles et al. (2017, p. 1241) and Stankevičiūtė et al. (2020, p. 7) stated that, if possible, a separate investigation of IWB dimensions creates deeper insights on how selected HRM practices influence IWB. The choice was made to group behaviors associated with idea generation and idea exploration as creativity-oriented IWB and behaviors associated with idea championing and idea implementation as implementation-oriented IWB. This categorization of IWB is in line with previous two-dimensional operationalizations of IWB (Dorenbosch et al., 2005, p. 133; Noefer et al., 2009, p. 388).

The respective principal component analyses led to the following results: Creativity-oriented IWB (Chi-Square (6) = 480,47, $p < .001$; KMO=.772): 63,1 % of variance explained and factor loadings ranging from 0.724 to 0.847. Implementation-oriented IWB (Chi-Square (10) = 856,46, $p < .001$; KMO=.850): 65,62% of variance explained and factor loadings ranging from 0.779 to 0.847.

The respective factor loadings of each item on creativity-oriented IWB (Creat_wb) and implementation-oriented IWB (Implment_wb) are shown in figure 9.

<i>Component Matrix^a</i>		<i>Component Matrix^a</i>	
	Component		Component
	1		1
IG2	,724	IC1	,791
IE1	,813	IC2	,847
IE2	,788	II1	,779
IE3	,847	II2	,818
		II3	,814

Figure 9: Factor loadings of IWB.

To calculate the scale creativity-oriented IWB, the author decided to drop the item IG 1 (“How often do you pay attention to issues that are not part of your daily work?”). The item was excluded due to low factor loadings and a decreased Cronbach’s alpha for creativity-oriented IWB.

3.7 Data Analysis

The gathered empirical questionnaire data from the 409 participants was analyzed with the help of the software tool IBM Statistics SPSS 26. Therefore, the raw data output from the tool “Iamapoll.de” was imported to SPSS and prepared accordingly. The data preparation phase included the following tasks as recommended by Saunders et al. (2009, p. 416): deletion of invalid responses, the definition of data types, and checking for errors. Data of participants who did not finish the entire questionnaire was, as suggested by Fowler (2014, p. 132), excluded from the data analysis.

Before new variables for participation, information-sharing, work-scheduling autonomy, decision-making autonomy, work-methods autonomy, and IWB could be calculated, the reliability and validity of the intended scales for each construct were assessed., Cronbach’s alphas were calculated, and a factor analysis was conducted to ensure reliability and validity following the example of Bryman and Bell (2011, p. 159) and Saunders et al. (2009, p. 374). Since items intended to measure IWB loaded onto two factors, a two-factor solution for IWB consisting of creativity-oriented IWB and implementation-oriented IWB was chosen in line with previous research (Dorenbosch et al., 2005, p. 133; Noefer et al., 2009, p. 388).

Multiple diagrams showing the sample’s characteristics based on frequencies of the control variables were computed to describe the sample. Afterward, the collected data was examined descriptively with measures for central tendency (mean), variability (standard deviation and variance), and shape (skewness and kurtosis) as proposed by Cooper and Schindler (2013, pp. 400–402).

Afterward, Pearson`s correlations were calculated to show first indicators for positive or negative relationships between variables (Saunders et al., 2009, p. 459). Before the execution of multiple linear regression analyses, the prerequisites for a multiple linear regression were assessed based on the recommendations of Hair et al. (2014, pp. 178–184) and Saunders et al. (2009, pp. 461–464).

Multiple linear regression analyses were computed to test the proposed hypotheses as all the prerequisites for multiple linear regression were met. This analysis method aims to test the impact of employee involvement (employee participation & information-sharing) and job autonomy (work-scheduling autonomy, decision-making autonomy & work-methods autonomy) on employees` innovative work behavior. Multiple linear regression analysis is suitable to help with answering the research question due to the following reasons: It can predict changes in a dependent variable if independent variables change (Hair et al., 2014, p. 16). It is used to understand the strength of predictors for a dependent variable (Saunders et al., 2009, p. 462). Apart from that, it is a statistical analysis method with broad applicability, flexibility, and good adaptability and can be used to show the relative importance of each independent variable to predict the independent variable (Hair et al., 2014, pp. 165–166).

4. Results

The main objective of this chapter is to summarize the results of this empirical study. Therefore, the sample is described with the help of measured control variables in the first step (section 4.1). Afterward, the descriptive statistics for the main study variables are presented (section 4.2). Then, the respective correlations between the variables are displayed, and the prerequisites for multiple linear regression are evaluated (section 4.3). Finally, the results of the multiple linear regression models are reported, and selected results of additional analyses concerning differences between groups are described (section 4.4)

4.1 Sample Description

This subchapter presents detailed insights about noteworthy characteristics of the sample (N=376) derived from measured control variables. Therefore, the descriptive statistics for gender, age, tenure, management responsibility, company size, industry, satisfaction with working conditions, the intensity of innovation focus, and work motivation type are presented.

Gender:

212 (=56,38%) of the participants identified themselves as male, whereas the remaining 164 (=43,62%) as female (see Figure 10).

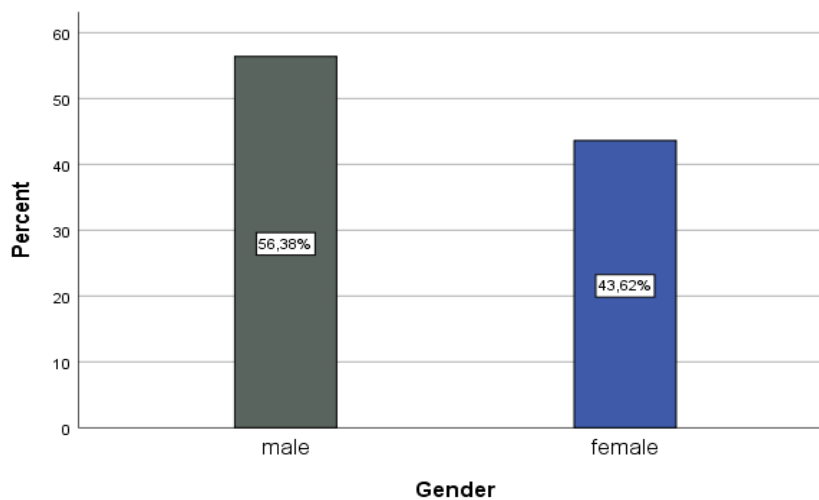


Figure 10: Percentage of male and female participants

Age:

Half of the participants (188; 50%) were 25 to 39 years old. More than a third of the respondents (129; 34,3%) were between 40 and 59 years old, and roughly 12% (45) were 18 to 24. Only about 3,5% (13) were older than 60, and one participant (0.3%) was under 18 years (see Figure 11).

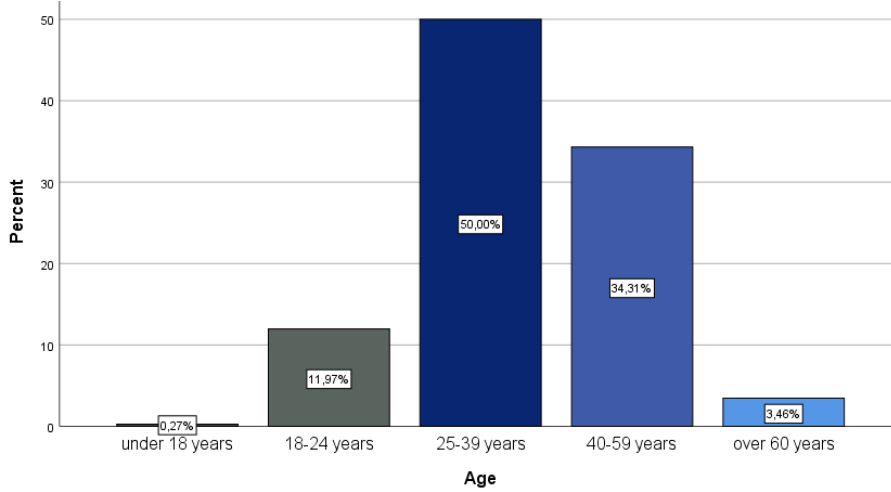


Figure 11: Age Distribution of participants in years

Tenure:

29,3% (110) of employees said they have been working in their company for more than ten years. Another 25,8% (97) stated to have been in the company between one and three years. 17,6% (66) indicated a tenure of four to six years, and 11,7% (44) a seven- to nine-year tenure. The remaining 15,7% (59) were employed in the company for less than a year (see Figure 12).

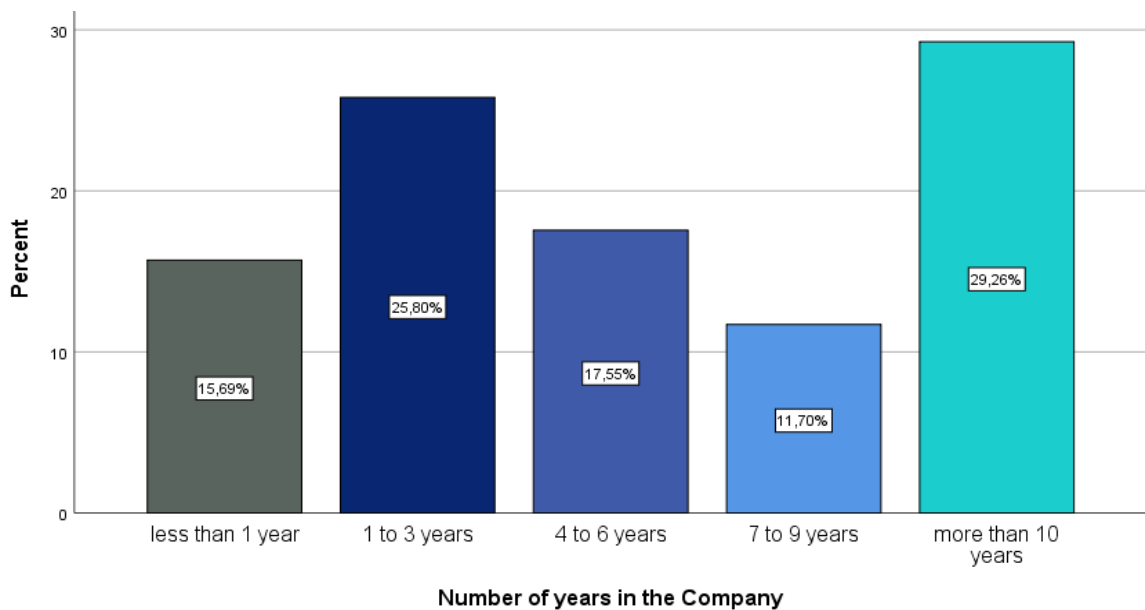


Figure 12: Tenure of participants in years

Management Responsibility:

Most respondents (234; 62,2%) did not have management responsibility, whereas 142 (37,8%) were employees with management responsibility. Out of the 142 with management responsibility, 100 were male and 42 females. Of the respondents without management responsibility, 112 were male and 122 females (see Figure 13).

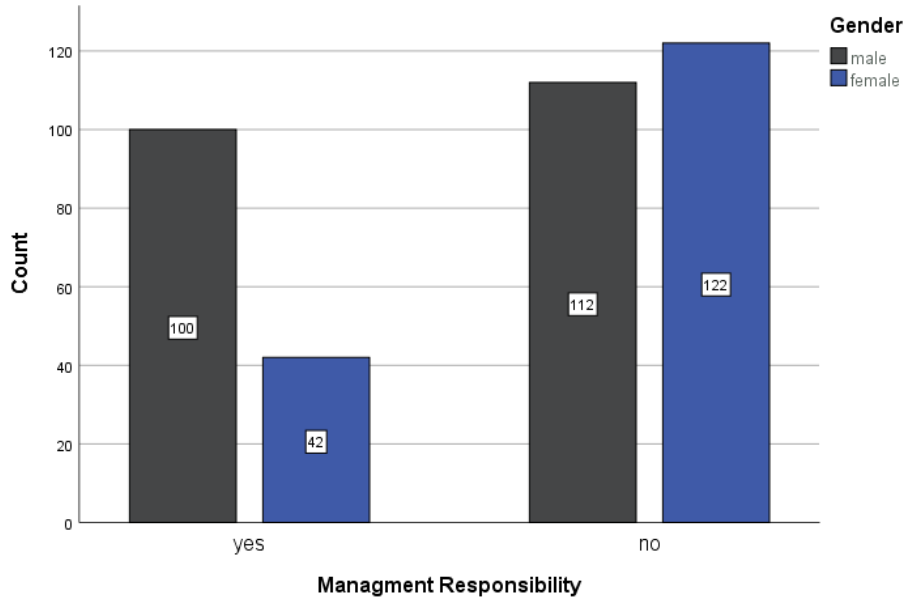


Figure 13: Gender of employees and management responsibility

Company Size:

One hundred fifty-four participants (41%) worked in large organizations with more than 250 employees. 98 (26,1%) were employed in medium-sized organizations with 50 to 249 employees. Almost the same number of participants (97; 25,8%) worked in small organizations with 10 to 49 employees. Only 27 (7,2%) worked in micro-organizations with up to nine employees. This distribution is illustrated in figure 14.

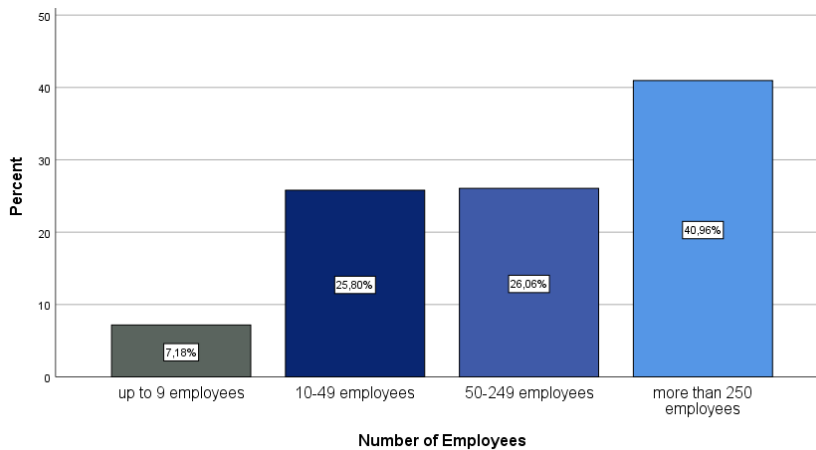


Figure 14: Organization's number of employees in percent

Industry:

As Figure 15 shows, most employees (90,23,9%) in the sample worked in the industrial goods and industrial services industry. 10,60% (40) worked in consumer goods, while only 2,9% (11) were employed in consumer services. Employees in the basic industry are represented with 5,9% (22), and another 4,5% (17) claimed to be working in the utilities. Furthermore, 13,3% (50) of respondents worked in the technology and telecommunication industry, and 5,6% (21) worked in Finance, and less than 4,3% (16) of the participants were employed in health care. Roughly 17% (64) of the respondents stated to be working in other lines of business. Since the question about the employment industry was not mandatory to finish the questionnaire, 12% (45) employees did not answer or were undecided to which sector they belong.

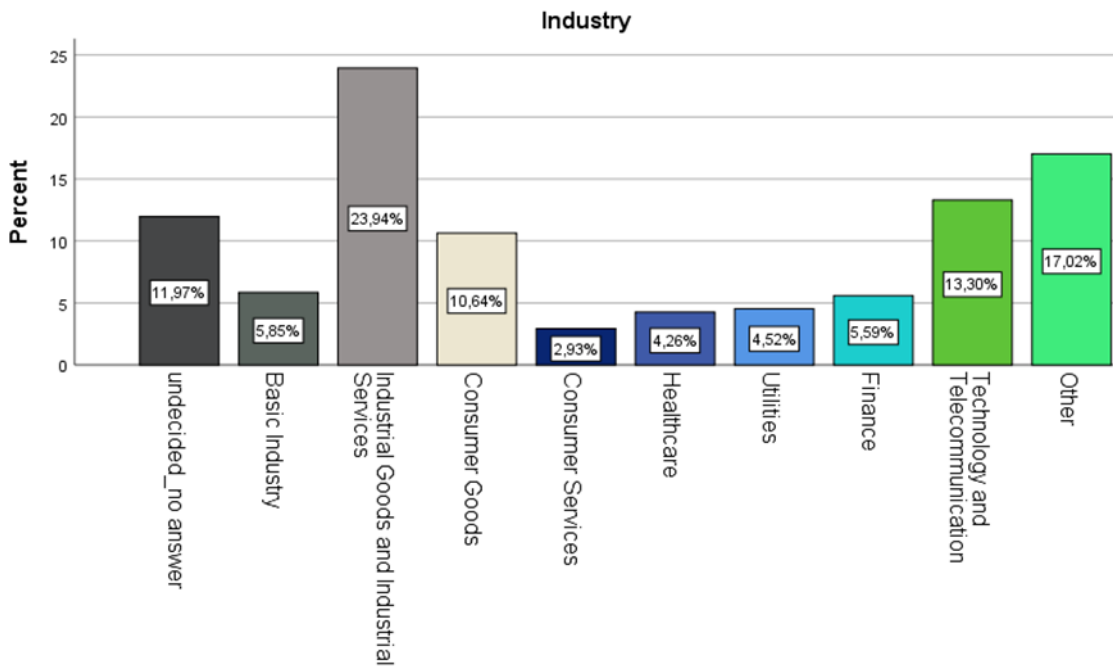


Figure 15: Distribution of employees across industries in percent

Satisfaction with Working Conditions:

Most respondents were somewhat satisfied (181;48,1%) or even very satisfied (98; 26,1%) with the working conditions in their company. 12% (45) were neither satisfied nor dissatisfied, and 10,6% (40) were rather not happy with the general working conditions in their company. A minority of 3,2% (12) employees indicated to be not satisfied with the working conditions in the company in general (see figure 16).

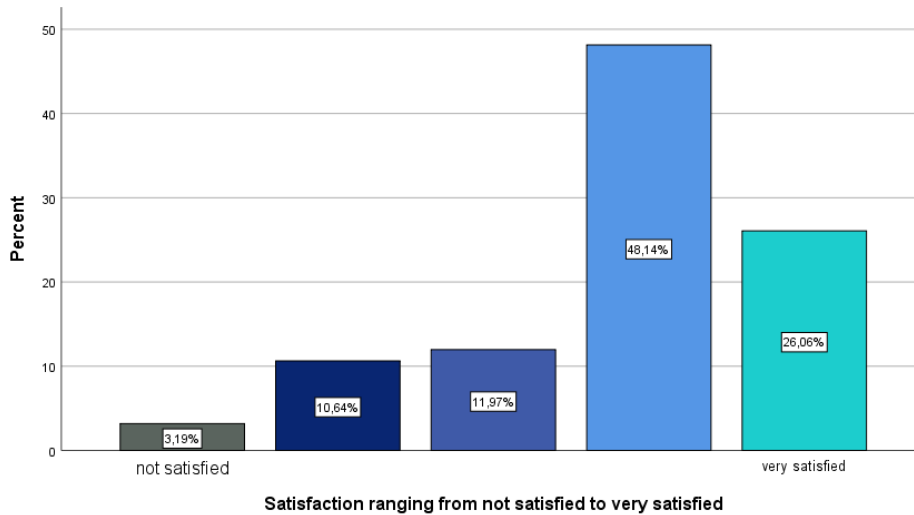


Figure 16: Average satisfaction with working conditions in the company

Company Focus on Innovation:

Regarding the intensity of innovation focus in the organization, most employees perceived their organization as having a substantial (67;17,8%) or relatively strong (141; 37,5%) focus on innovations. 24,5% (92) indicated neither strong nor weak focus on innovation, and 11,2% (42) a relatively soft focus on innovation. 8,5% (32) categorized their company as having a soft focus on innovation. The remaining 0,5% (2) left the question unanswered. Figure 17 depicts this distribution of the organizational intensity of focus on innovation.

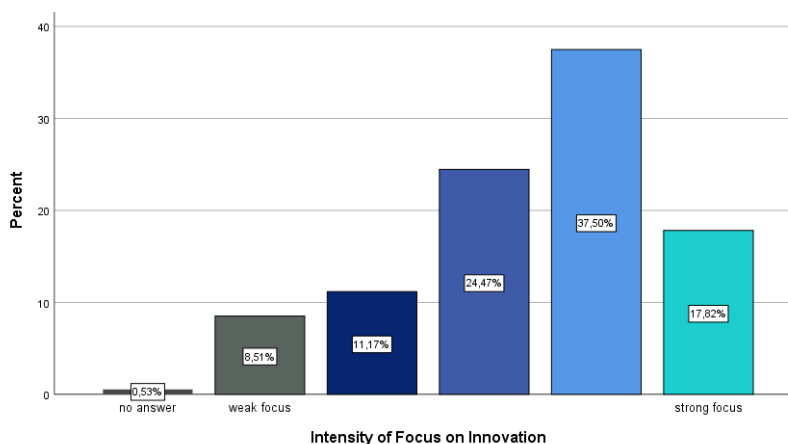


Figure 17: Distribution of organizational intensity of focus on innovation

Work Motivation:

Respondents were asked to select one statement representing their type of work motivation based on the taxonomy of work motivation from Gagné and Deci (2005, p. 336). For more information about the taxonomy of work motivation, please see Annex B. 28,2% (106) choose the statement indicating intrinsic motivation at work. However, most of employees opted for a statement representing a type of extrinsic work motivation: 20,2% (76) autonomous motivation, 17,6% (66) moderately autonomous motivation, 13,6% (51) moderately controlled motivation and 15,2% (57) controlled motivation. A minority of 5,3% (20) indicated to be demotivated at work. Figure 18 shows this distribution.

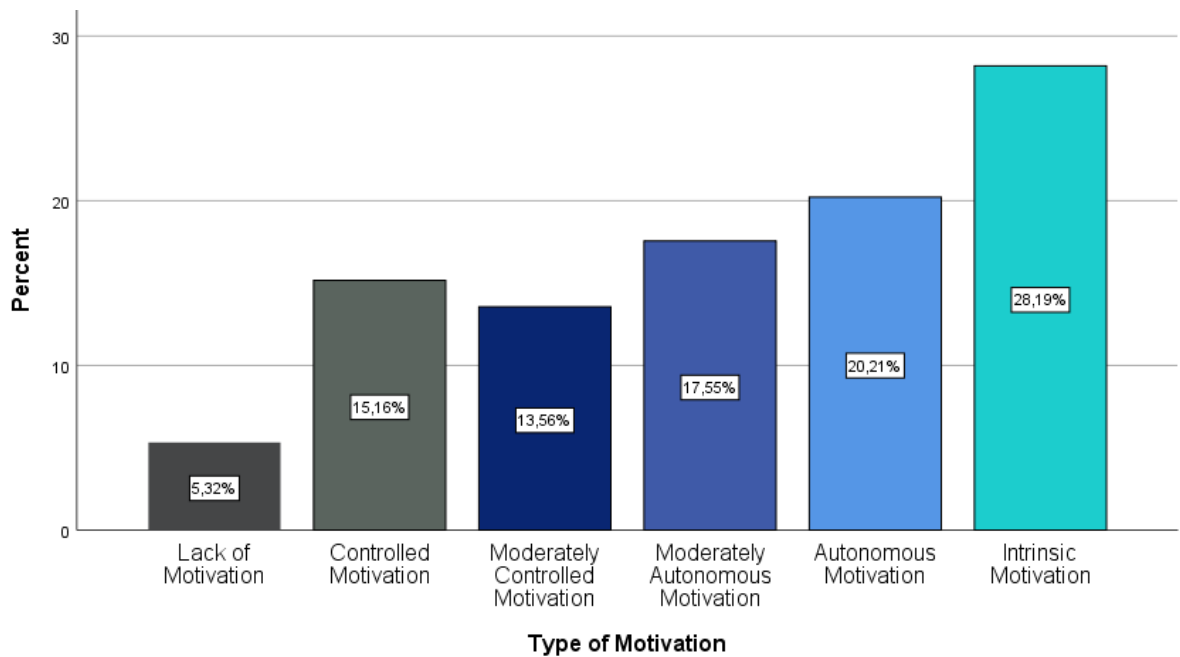


Figure 18: Distribution of work motivation type

4.2 Description of Study Variables

This subchapter aims to present the descriptive statistics of the main variables this study focuses on. However, before delivering the descriptive statistics of IWB, the descriptive statistics of HRM practices referring to employee involvement and job autonomy are presented.

4.2.1 Descriptive Statistics of HRM Practices for Employee Involvement

Employee participation and information-sharing were each measured with three items ranging from “never” to “very often”. Figure 19 depicts the histogram of participation ($M=3.49$, $SD= .975$) and figure 20, respectively, the histogram of information-sharing ($M=3.64$, $SD=.862$). Participation was conceptualized as actively allowing employees to voice suggestions for improvement in the company (Akhtar et al., 2008, p. 16). Information-sharing was conceptualized as the extent to which an organization provides information and feedback to its employees.

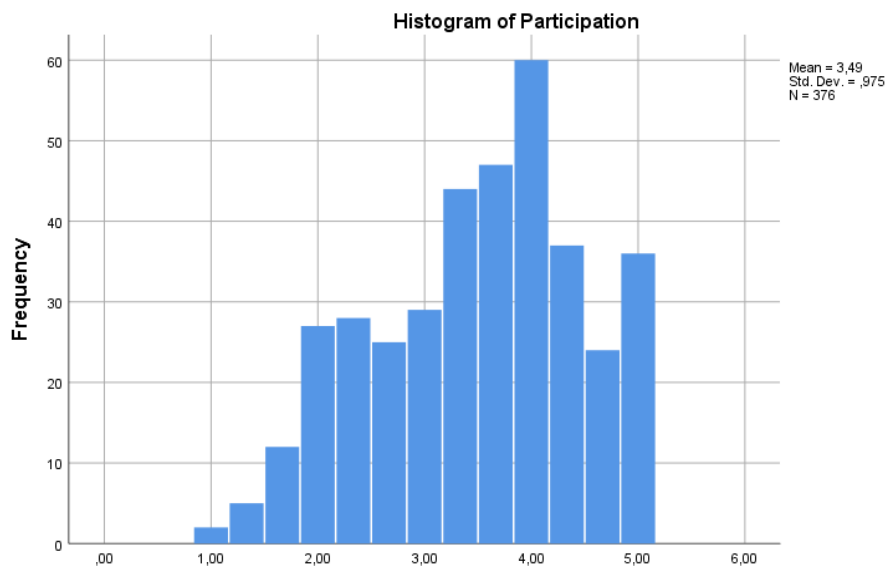


Figure 19: Histogram of Participation

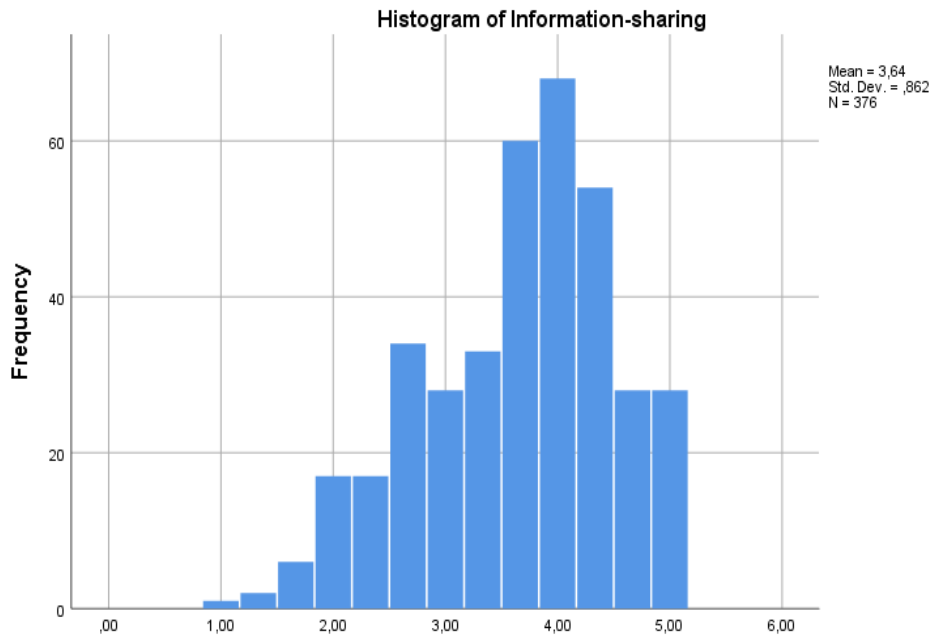


Figure 20: Histogram of Information-sharing

Means of all items used to measure participation and information-sharing ranged from 3.12 (SD=.06; item PAT 1) to 3.73 (SD=.054, item PAT2). Further descriptive statistics of measurement items for the level of perceived employee involvement organizations offered are displayed in table 1.

Descriptive Statistics of Employee Involvement

	N	Mean		Std.	Variance	Skewness		Kurtosis	
		Statistic	Std. Error	Deviation		Statistic	Std. Error	Statistic	Std. Error
Employee_Involvement	376	3,5660	,04435	,86006	,740	-,435	,126	-,452	,251
Participation	376	3,4920	,05029	,97522	,951	-,326	,126	-,715	,251
PAT1	376	3,12	,060	1,161	1,348	-,122	,126	-,756	,251
PAT2	376	3,73	,054	1,042	1,086	-,516	,126	-,619	,251
PAT3	376	3,62	,057	1,103	1,217	-,481	,126	-,543	,251
Information_sharing	376	3,6401	,04445	,86197	,743	-,501	,126	-,350	,251
Inf1	376	3,57	,051	,988	,977	-,327	,126	-,747	,251
Inf2	376	3,67	,054	1,055	1,113	-,481	,126	-,520	,251
Inf3	376	3,69	,054	1,049	1,101	-,528	,126	-,342	,251
Valid N (listwise)	376								

Table 1: Descriptive Statistics of Employee Involvement

4.2.2 Descriptive Statistics of HRM Practices for Job Autonomy

Like employee participation and information-sharing, all three types of job autonomy were measured with three items, each ranging from “never” to “very often”. Means for the three types of autonomy were as follows: 4.3 (SD= .81) for work-scheduling autonomy, 4.2 (SD=.84) for decision-making autonomy, and 4.03 (SD= .87) for work-methods autonomy. The corresponding distributions are portrayed in the Histograms for work-scheduling autonomy (see Figure 21), decision-making autonomy (see Figure 22), and work-methods autonomy (see Figure 23).

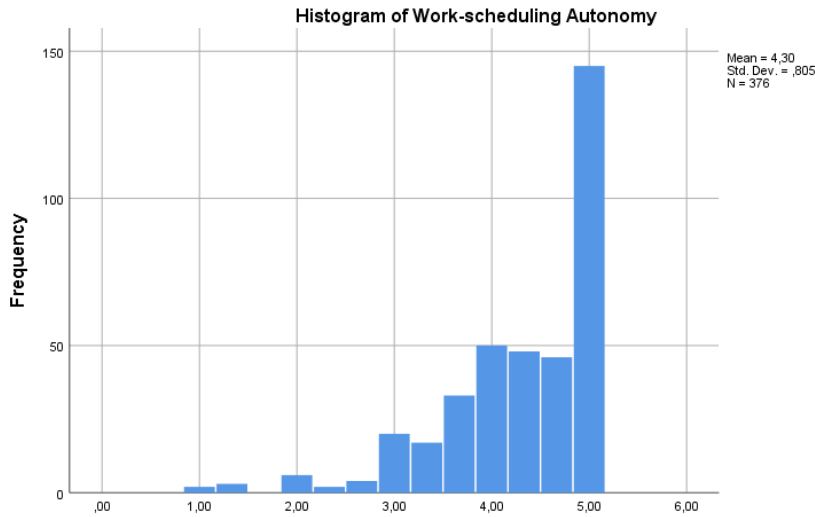


Figure 21: Histogram of Work-scheduling Autonomy

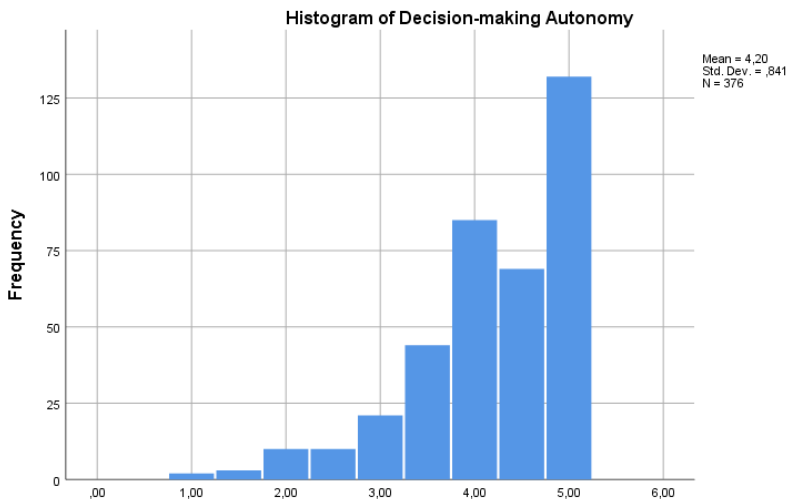


Figure 22: Histogram of Decision-making Autonomy

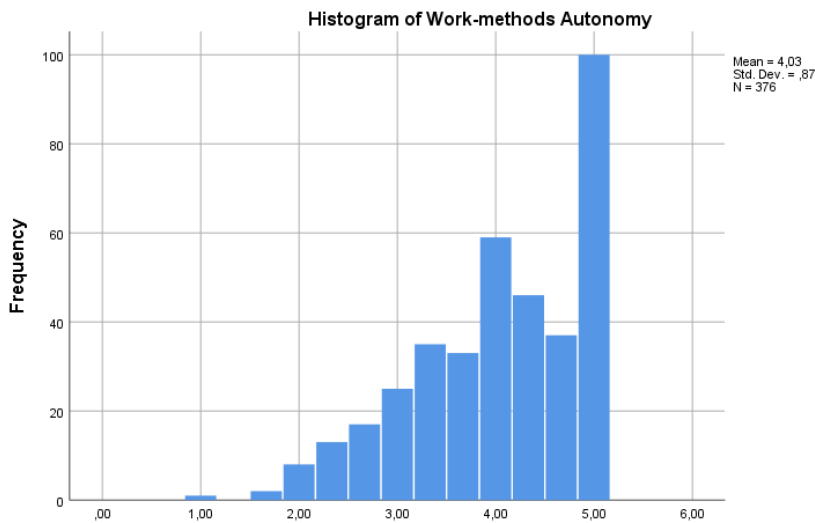


Figure 23: Histogram of Work-methods Autonomy

Since most employees enjoyed relatively high job autonomy levels, means of the single items indicating the different types of job autonomy ranged from 3.84 (SD=.059, item WMA 3) to 4.39 (SD=.045, item WSA 2). Table 2 displays further descriptive statistics of measurement items of the level of perceived job autonomy organizations offered their employees.

Descriptive Statistics of Autonomy

	N	Mean		Std. Deviation		Variance		Skewness		Kurtosis	
		Statistic	Std. Error	Statistic	Std. Error	Statistic	Std. Error	Statistic	Std. Error	Statistic	Std. Error
Autonomy	376	4,1769	,03790	,73488	,540	-1,036	,126	,916	,251		
Work_scheduling_Autonomy	376	4,3050	,04152	,80504	,648	-1,421	,126	2,231	,251		
WSA1	376	4,34	,046	,886	,784	-1,550	,126	2,479	,251		
WSA2	376	4,39	,045	,870	,757	-1,686	,126	3,001	,251		
WSA3	376	4,18	,052	1,004	1,009	-1,279	,126	1,217	,251		
Decision_making_Autonomy	376	4,1995	,04340	,84149	,708	-1,181	,126	1,273	,251		
DMA1	376	4,34	,045	,865	,748	-1,390	,126	1,707	,251		
DMA2	376	4,06	,050	,964	,930	-,978	,126	,546	,251		
Work_methods_Autonomy	376	4,0337	,04485	,86959	,756	-,691	,126	-,260	,251		
WMA1	376	4,10	,049	,951	,905	-,908	,126	,252	,251		
WMA2	376	4,16	,049	,954	,910	-,960	,126	,102	,251		
WMA3	376	3,84	,059	1,141	1,302	-,788	,126	-,225	,251		
Valid N (listwise)	376										

Table 2: Descriptive Statistics of Job Autonomy

4.2.3 Descriptive Statistics of Innovative Work Behavior

As explained previously, the author decided to differentiate between two types of IWB, as IWB is a multi-dimensional construct (De Jong & Den Hartog, 2010, p. 24; Scott & Bruce, 1994, p. 582). Behaviors associated with idea generation and idea exploration were summarized as creativity-oriented IWB, behaviors related to idea championing, and idea implementation translated as implementation-oriented IWB. The operationalization of IWB as a two-dimensional construct is also in line with previous research (Dorenbosch et al., 2005, p. 133; Noefer et al., 2009, p. 388). Figures 23 and 24 give additional insights about the employees' level of creativity-oriented ($M= 3.56$, $SD=.698$) and implementation-oriented IWB ($M=3.29$, $SD=.75$).

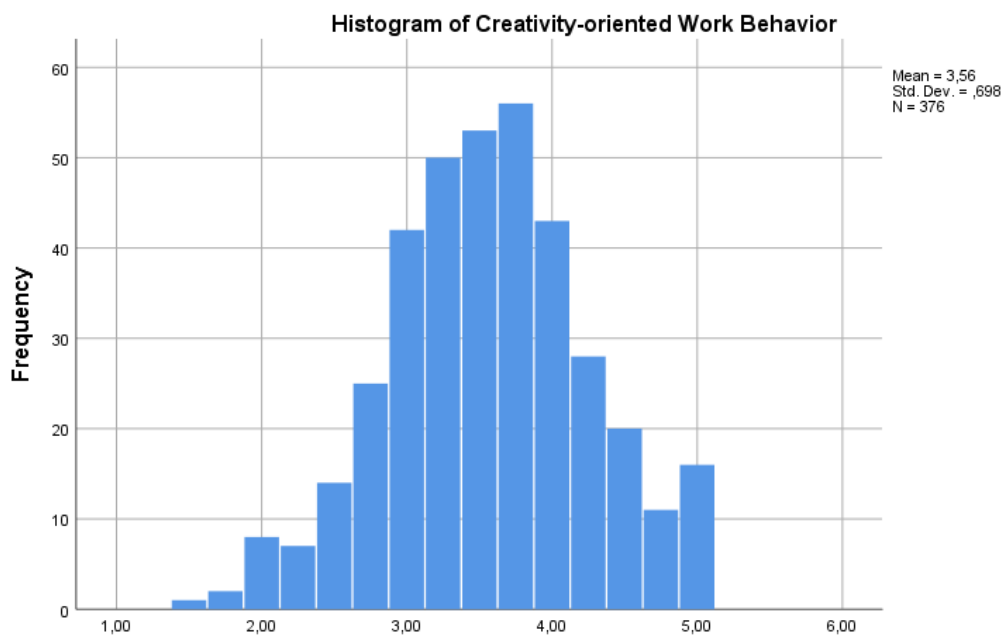


Figure 24: Histogram of Creativity-oriented IWB

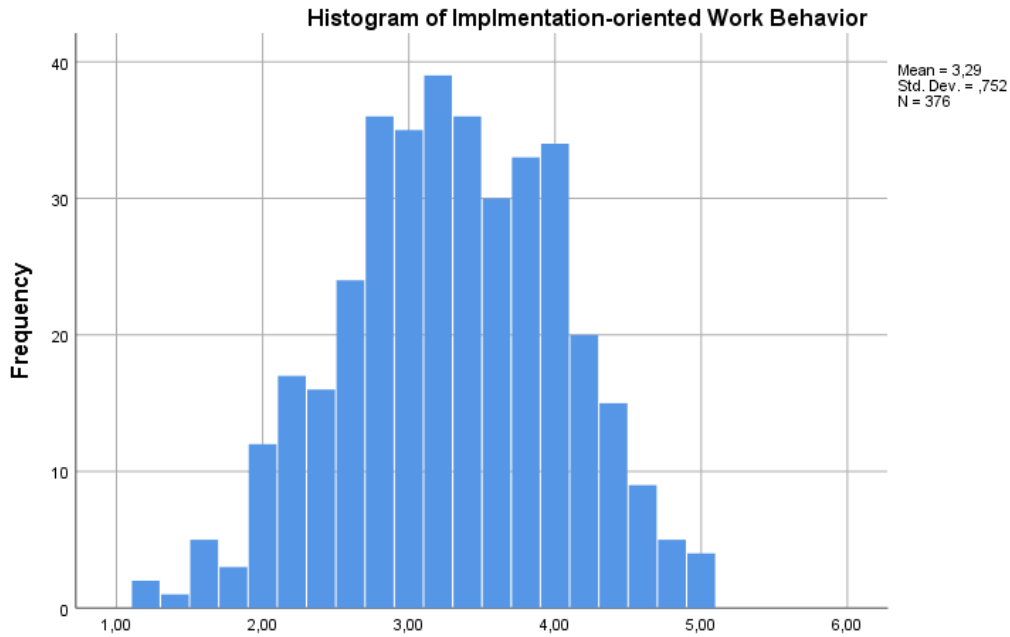


Figure 25: Histogram of Implementation-oriented IWB

Means of measurement items of IWB ranged from 2.97 (SD=.048) to 3.93 (SD=.045). Item II1 (“...systematically introduce innovative ideas into work practices”) had the lowest mean (M=2.97). Whereas the item IG2 (“...wonder how things can be improved”) had the highest mean (M= 3.93). Table 3 portrays additional descriptive statistics of measurement items for the level of IWB employees demonstrated in their organizations.

Descriptive Statistics of Innovative Work Behavior

	N	Mean		Std.	Variance	Skewness		Kurtosis	
		Statistic	Std. Error	Deviation		Statistic	Std. Error	Statistic	Std. Error
IWB	376	3,4093	,03445	,66803	,446	-,059	,126	-,274	,251
creat_wb	376	3,5578	,03599	,69796	,487	-,065	,126	-,113	,251
IG2	376	3,93	,045	,875	,765	-,556	,126	-,082	,251
IE1	376	3,35	,049	,944	,891	,025	,126	-,547	,251
IE2	376	3,47	,045	,882	,778	-,219	,126	-,096	,251
IE3	376	3,48	,042	,820	,672	-,188	,126	-,098	,251
implem_wb	376	3,2904	,03878	,75197	,565	-,132	,126	-,347	,251
IC1	376	3,04	,048	,931	,868	-,145	,126	-,324	,251
IC2	376	3,29	,049	,954	,909	-,231	,126	-,276	,251
II1	376	2,97	,048	,925	,855	-,003	,126	-,374	,251
II2	376	3,56	,047	,916	,839	-,368	,126	-,166	,251
II3	376	3,59	,047	,917	,840	-,261	,126	-,279	,251
Valid N (listwise)	376								

Table 3: Descriptive Statistics of IWB

4.3 Correlations and Regression Prerequisites

For initial insights about associations between the metric variables, person's correlations were calculated (see Table 4).

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Participation												
2. Information-sharing	,752**											
3. Employee Involvement	,944**	,928**										
4. Work-scheduling Autonomy	,286**	,303**	,314**									
5. Decision-making Autonomy	,274**	,296**	,304**	,679**								
6. Work-methods Autonomy	,249**	,243**	,263**	,621**	,654**							
7. Job Autonomy	,306**	,317**	,333**	,881**	,855**	,886**						
8. Creativity-oriented IWB	,054	,021	,041	,199**	,232**	,269**	,267**					
9. Implementation-oriented IWB	,234**	,202**	,234**	,320**	,348**	,373**	,397**	,677**				
10. IWB	,172**	,136**	,165**	,293**	,325**	,358**	,372**	,888**	,940**			
11. Work Motivation Type	,301**	,305**	,324**	,318**	,362**	,303**	,369**	,168**	,254**	,236**		
12. Innovation Fokus	,495**	,477**	,519**	,332**	,258**	,197**	,298**	,060	,217**	,163**	,333**	
13. Satisfaction Working Conditions	,536**	,564**	,587**	,343**	,371**	,359**	,407**	,034	,188**	,133**	,476**	,489**

** p < .01 N = 376

Table 4: Pearson's Correlations for metric Variables

The results show a significant positive correlation of work-scheduling autonomy ($r=.199$, $p<.01$), decision-making autonomy ($r=.232$, $p<.01$), and work-methods autonomy ($r=.269$, $p<.01$) with creativity-oriented IWB. Neither participation nor information-sharing correlated with creativity-oriented IWB.

However, when it comes to correlations with implementation-oriented IWB, significant positive correlations with participation ($r=.234$, $p<.01$), information-sharing ($r=.202$, $p<.01$), work-scheduling autonomy ($r=.320$, $p<.01$), decision-making autonomy ($r=.348$, $p<.01$) and work-methods autonomy ($r=.373$, $p<.01$) were found.

In this context, it should also be pointed out that all five HRM practices work-methods autonomy had the strongest correlation with not only creativity-oriented IWB ($r=.269$, $p<.01$), but also with implementation-oriented IWB ($r=.373$, $p<.01$).

Noteworthy are the correlations with the type of work motivation, focus on innovation, and satisfaction with working conditions. Work Motivation Type correlated positively with not only participation ($r=.301$, $p<.01$) and information-sharing ($r=.305$, $p<.01$), but also with work-scheduling autonomy ($r=.318$, $p<.01$), decision-making autonomy ($r=.363$, $p<.01$), work-methods autonomy ($r=.303$, $p<.01$), creativity-oriented IWB ($r=.168$, $p<.01$) and implementation-oriented IWB ($r=.254$, $p<.01$). Likewise, also positive correlations of focus on innovation with participation ($r=.495$, $p<.01$), information-sharing ($r=.477$, $p<.01$), work-scheduling autonomy ($r=.332$, $p<.01$), decision-making autonomy ($r=.258$, $p<.01$) and work-methods autonomy ($r=.197$, $p<.01$) were found. Furthermore, also satisfaction with working conditions positively correlated with participation ($r=.536$, $p<.01$), information-sharing ($r=.564$, $p<.01$), work-scheduling autonomy ($r=.343$, $p<.01$), decision-making autonomy ($r=.371$, $p<.01$) and work-methods autonomy ($r=.359$, $p<.01$). Whereas implementation-oriented IWB positively correlated with focus on innovation

($r=.217$, $p<.01$) and satisfaction with working conditions ($r=.188$, $p<.01$), creativity-oriented IWB did not correlate with either variable.

For insights about interrelationships of company size, tenure, and age with measured metric variables, spearman's rank correlations were calculated (see Table 5). This was done because company size, age, and tenure were measured on an ordinal scale.

	Company Size	Tenure	Age
Creativity-oriented IWB	-.112*	.105*	.132*
Implementation-oriented IWB	-.115*	.119*	.182**
Participation	-.281**	.020	.106*
Information-Sharing	-.255**	.003	.103*
Work-scheduling Autonomy	-.069	.201**	.219**
Decision-making Autonomy	-.084	.250**	.240**
Work-methods Autonomy	-.136**	.225**	.186**
Work Motivation Type	-.048	.183**	.236**
Satisfaction Working Conditions	-.233**	.051	.125*

** $p<.01$ * $p<.05$ N = 376

Table 5: Spearman's rank Correlations for ordinal Variables

Company Size showed significant negative correlations with creativity-oriented IWB ($\rho = -.112$, $p=.031$), implementation-oriented IWB ($\rho = -.115$, $p=.026$), participation ($\rho = -.281$, $p<.001$), information-sharing ($\rho = -.255$, $p<.001$), work-methods autonomy ($\rho = -.136$, $p=.008$), and satisfaction with working conditions ($\rho = -.233$, $p<.001$).

Contrary to that tenure had significant positive correlations with creativity-oriented IWB ($\rho = .105$, $p=.042$), implementation-oriented IWB ($\rho = .119$, $p=.021$), work-scheduling autonomy ($\rho = .201$, $p<.001$), decision-making autonomy ($\rho = .250$, $p<.001$), work-methods autonomy ($\rho = .225$, $p<.001$), and work motivation type ($\rho = .183$, $p<.001$).

Age correlated positively with creativity-oriented IWB ($\rho = .132$, $p=.001$), implementation-oriented IWB ($\rho = .182$, $p<.001$), participation ($\rho = .106$, $p=.004$), information-sharing ($\rho = .103$, $p=.045$), work-scheduling autonomy ($\rho = .219$, $p<.001$), decision-making autonomy ($\rho = .240$, $p<.001$), work-methods autonomy ($\rho = .186$, $p<.001$), work motivation type ($\rho = .236$, $p<.001$) and satisfaction with working conditions ($\rho = .125$, $p=.015$).

To test the previously developed hypotheses, the author intends to conduct a multiple linear regression analysis. The following prerequisites should be fulfilled to perform this statistical analysis: normal distribution of error terms, linearity, homoscedasticity, and independence of error terms (Hair et al., 2014, p. 164). Apart from that, no multicollinearity is also an important prerequisite for executing multiple linear regression analysis (Saunders et al., 2009, p. 463).

Normal distribution and independence of error terms can be checked with a scatterplot of residuals and normal probability plots (Hair et al., 2014, p. 181). Since the scatterplots of residuals and normal probability plots did not show any significant deviations or patterns, normality of error term distribution and independence of error terms is assumed.

Linearity and Homoscedasticity are best examined with scatter plots (Hair et al., 2014, p. 179). Since the computed residual scatterplot matrix did not show any abnormalities or patterns, the prerequisites of no non-linearity and no heteroscedasticity can be considered as met.

No Multicollinearity. Correlation coefficients are a good indicator for multicollinearity (Saunders et al., 2009, p. 463). Thus correlations coefficients higher than 0.90 show a data collinearity (Saunders et al., 2009, p. 463). Since the correlation coefficients between the relevant study variables for the multiple linear regression analyses are all below 0.90, the prerequisite of no multicollinearity is assumed to be fulfilled.

4.4 Testing of Hypotheses and Additional Analyses

For testing the developed hypotheses, multiple hierarchical regression analyses were conducted on the one hand for creativity-oriented IWB (dependent variable model 1) and on the other hand for implementation-oriented IWB (dependent variable model 2). This was done because different HRM practices might affect dimensions of IWB differently (Bos-Nehles et al., 2017, p. 1241) and because IWB is a multi-dimensional construct (De Jong & Den Hartog, 2010, p. 24; Scott & Bruce, 1994, p. 582).

For this, the HRM practices were entered first in the model without control variables. Afterward, control variables were added stepwise to assess their relative importance. That procedure resulted in two independent models. One was predicting creativity-oriented IWB and the other implementation-oriented IWB. As shown in Table 6, both models are highly significant and have an excellent overall fit (R^2 model 1=.116 and R^2 model 2=.236). The results of these two models are reported based on the previously developed hypotheses.

No evidence was found for the anticipated effects of involvement-focused HRM practices (participation and information-sharing). As shown in models 1 and 2, neither participation nor information-sharing significantly influenced creativity-oriented IWB or implementation-oriented IWB. Thus, no support for hypotheses one and two was found.

Results were different for predicted effects of autonomy-focused HRM practices (work-scheduling autonomy, decision-making autonomy, and work-methods autonomy). Models 1 and 2 depict that neither work-scheduling autonomy nor decision-making autonomy significantly influenced creativity-oriented IWB or implementation-oriented IWB. Hence, no support for hypotheses three and four was found. However, work-methods autonomy significantly influenced creativity-oriented IWB ($\beta = .164$, $p = .004$) and implementation-oriented IWB ($\beta = .186$, $p \leq .001$). Consequently, hypothesis five is supported.

<i>Variables</i>		Creativity-oriented IWB Model 1	Implementation-oriented IWB Model 2
<u>Control Variables</u>			
Work Motivation Type	β (SE)	.058 (.025)*	.055 (.025)*
Innovation Focus	β (SE)	.016 (.036)	.59 (.036)
Satisfaction Working Conditions	β (SE)	-.093 (.046)	-.073 (.046)
Gender Female (Dummy)	β (SE)	-.045 (.072)	-.013 (.072)
With Management Responsibility (Dummy)	β (SE)	.173 (.078)*	.342 (.078)***
<u>HRM Practices</u>			
Participation	β (SE)	.029 (.056)	.076 (.056)
Information-sharing	β (SE)	-.064 (.064)	-.020 (.064)
Work-scheduling Autonomy	β (SE)	-.004 (.063)	.008 (.063)
Decision-making Autonomy	β (SE)	.054 (.063)	.069 (.063)
Work-methods Autonomy	β (SE)	.164 (.056)**	.186 (.056)***
R^2		.116	.236
Adjusted R^2		.091	.215
F		4,767***	11.291***

* $p \leq .05$; ** $p \leq .01$, *** $p \leq .001$

Table 6: Results of Multiple Regression Analysis

Besides that, a significant positive effect of work motivation type on creativity-oriented IWB ($\beta = .058$, $p = .023$) and implementation-oriented IWB ($\beta = .055$, $p = .032$) was revealed. Due to these results, the author decided to calculate two one-way between-subjects ANOVAs to compare work motivation type effects on creativity-oriented and implementation-oriented IWB. Even though the type of work motivation affected creativity-oriented IWB ($F(5,370) = 2.791$, $p = .017$), the Post Hoc comparisons using Bonferroni indicated no significant differences in the mean of creativity-oriented IWB across all six types of work motivation.

Concerning the effect of work motivation type on implementation-oriented IWB ($F(3,370) = 7.585$, $p < .001$) results were different. Employees lacking motivation ($M = 2.96$, $SD = .6916$) showed significantly ($p = .035$) lower levels of implementation-oriented IWB than moderately autonomously motivated employees ($M = 3.52$, $SD = .7440$). Also, controlled motivated employees ($M = 2.89$, $SD = .7062$) showed significantly lower levels of implementation-oriented IWB compared to not only moderately autonomous but also autonomously ($M = 3.40$, $SD = .6585$) and intrinsically motivated ($M = 3.44$, $SD = .7609$) employees. Besides that, moderately controlled motivated ($M = 3.10$, $SD = .7215$) employees demonstrated significant ($p = .025$) lower implementation-oriented IWB than moderately autonomous motivated employees.

Based on the previously presented multiple regression analysis, employees with management responsibility had higher creativity-oriented IWB ($\beta = .173$, $p = .028$) and implementation-oriented IWB ($\beta = .342$, $p \leq .001$) compared to employees without management responsibility.

Because of these results, the author decided to run four additional multiple regression models to better understand the relationship between HRM practices and IWB. Therefore, the author separated the sample into two groups (with management responsibility/without management responsibility). Two models predict creativity-oriented IWB (model 3 and 4) and the other two implementation-oriented IWB (model 5 and 6). Models 3 and 5 only sampled employees with management responsibility. Models 4 and 6 included only employees without management responsibility (see Table 7).

Variables	Creativity-oriented IWB		Implementation-oriented IWB		
	Model 3	Model 4	Model 5	Model 6	
<u>HRM Practices</u>					
Participation	β (SE)	.119 (.085)	-.028 (.070)	.188 (.088)*	.033 (.069)
Information-sharing	β (SE)	-.050 (.100)	-.114 (.078)	-.020 (.104)	-.033 (.077)
Work-scheduling Autonomy	β (SE)	-.021 (.144)	-.002 (.072)	.189 (.149)	-.009 (.071)
Decision-making Autonomy	β (SE)	-.058 (.111)	.135 (.076)	-.058 (.115)	.153 (.075)*
Work-methods Autonomy	β (SE)	.246 (.093)**	.120 (.071)	.194 (.096)*	.167 (.070)*
R ²		.087	.078	.159	.119
Adjusted R ²		.053	.058	.128	.10
F		2.589*	3,857*	5,128***	6,172***

* $p \leq .05$; ** $p \leq .01$, *** $p \leq .001$

Table 7: Multiple Regression Analysis with the two subgroups

Concerning the explanation of creativity-oriented IWB, no unusual effects were found. However, results differed for implementation-oriented IWB. In the group of employees with management responsibility (model 5), not only work-methods autonomy ($\beta = .194$, $p = .045$) but also participation ($\beta = .188$, $p = .035$) played a role in predicting implementation-oriented IWB. On the contrary, in the group of employees without management responsibility (model 6), work-methods autonomy ($\beta = .167$, $p = .018$) and decision-making autonomy ($\beta = .153$, $p = .043$) influenced implementation-oriented IWB.

Company size, age, and tenure significantly correlated with creativity-oriented IWB and implementation-oriented IWB. Thus, the author decided to calculate various one-way between-subjects ANOVAs to understand if the levels of creativity-oriented and implementation-oriented IWB differed because of company size, tenure, and age. Results of the six conducted factorial variance analyses are reported in the following.

Company size and IWB

The number of employees in the company had a significant effect on creativity-oriented IWB ($F(3,372) = 2.840$, $p = .038$) and on implementation-oriented IWB ($F(3,372) = 3.255$, $p = .022$). Post Hoc comparisons using Bonferroni showed that creativity-oriented IWB of respondents working in companies with up to 9 employees ($M = 3.91$, $SD = .7277$) differed significantly ($p = .023$) from respondents working in companies with more than 250 employees ($M = 3.49$, $SD = .6714$). The same was true for implementation-oriented IWB. There respondents working in companies with up to 9 employees ($M = 3.70$, $SD = .6358$) differed significantly ($p = .012$) from respondents working in companies with more than 250 employees ($M = 3.21$, $SD = .7343$).

Tenure and IWB

The number of years in the company had no significant effect on creativity-oriented IWB ($F(4,372) = 1.36$, $p = .248$). However, results were different for implementation-oriented IWB. There tenure had a significant effect ($F(4,371) = 3.477$, $p = .008$). Post Hoc comparisons using Bonferroni confirmed that employees who have been working in the company for more than ten years ($M = 3.49$, $SD = .7343$) showed significantly higher implementation-oriented IWB compared to employees with a tenure of 1 to 3 years ($M = 3.20$, $SD = .6877$) and employees with a tenure of 4 to 6 years ($M = 3.11$, $SD = .7566$).

Age and IWB

Age had a significant effect on creativity-oriented IWB ($F(3,371) = 3.996$, $p = .008$) and on implementation-oriented IWB ($F(3,371) = 4.818$, $p = .002$). Post Hoc comparisons using Bonferroni confirmed that respondents aged 40 to 59 years ($M = 3.70$, $SD = .6565$) showed significantly higher creativity-oriented IWB compared to respondents aged 18 to 24 years ($M = 3.34$, $SD = .7465$). Additionally, employees aged 40 to 59 years ($M = 3.47$, $SD = .7489$) showed significantly higher implementation-oriented IWB compared to employees aged 18 to 24 years ($M = 3.02$, $SD = .8088$) and to employees aged 25 to 39 years ($M = 3.24$, $SD = .7263$).

5. Discussion

The goal of this research study was to close the existing research gap voiced by Battistelli et al. (2019, p. 375), Boon et al. (2019, p. 2529), Bos-Nehles et al. (2017, p. 1239), Salas-Vallina et al. (2020, p. 575) and Wood (2020, p. 409). Employee involvement and job autonomy have both been linked theoretically and empirically to innovation in other research contexts (Abstein & Spieth, 2014; Bakker & Demerouti, 2007; Bos-Nehles & Veenendaal, 2019; Gagné & Deci, 2005; Karasek, 1979; Lepak et al., 2006; Prieto & Pilar Pérez-Santana, 2014; Veenendaal & Bondarouk, 2015). Thus, it was proposed that employee participation, information-sharing, work-scheduling autonomy, decision-making autonomy, and work-methods autonomy positively affect employees' IWB. Results were only partially consistent with the developed hypotheses as only the proposed positive effect of work-methods autonomy on IWB was fully supported. In this section the results are linked to the existing literature by interpreting and discussing the research results. Furthermore, explanations for the outcomes of this study are provided.

5.1 Summarized Results of tested Hypotheses

The proposed hypotheses for this study were tested with the help of two multiple linear regression analyses. Five hypotheses were developed to test if HRM practices for employee involvement (employee participation & information-sharing) and job autonomy (work-scheduling autonomy, decision-making autonomy & work-methods autonomy) predict employees' innovative work behavior. Out of the five hypotheses, only hypothesis five was fully supported, and no statistically significant support was found for the remaining four hypotheses. Out of all investigated HRM practices, only work-methods autonomy acted as a significant predictor of creativity-oriented and implementation-oriented IWB. Table 8 summarizes the hypotheses and respective findings.

Hypothesis	Finding
H1: Employees who experience high levels of employee participation in their organization will show high levels of innovative work behavior.	not supported
H2: Employees who experience high levels of information-sharing in their organization will show high levels of innovative work behavior.	not supported
H3: Employees experiencing high levels of work-scheduling autonomy will show high levels of innovative work behavior.	not supported
H4: Employees experiencing high levels of decision-making autonomy will show high levels of innovative work behavior.	not supported
H5: Employees experiencing high levels of work-methods autonomy will show high levels of innovative work behavior.	supported

Table 8: Summary of Hypotheses and Findings

5.2 Effect of Employee Involvement on Innovative Work Behavior

The claim that employee participation and information-sharing positively influence IWB was theoretically based on the AMO Framework (Lepak et al., 2006, p. 233), self-determination theory (Deci & Ryan, 2000, p. 229), and the Job Demands-Resources model (Bakker & Demerouti, 2007, p. 313). In addition to that, employee involvement either in terms of participation or information-sharing has been empirically linked to increased IWB (Battistelli et al., 2019, p. 372; Bos-Nehles & Veenendaal, 2019, p. 2673; Fernandez & Moldogaziev, 2013, p. 496; Odoardi et al., 2015, p. 559).

This study's analysis points out that neither employee participation nor information-sharing played a significant role in explaining the creativity-oriented and implementation-oriented IWB of all employees. However, results indicate that for employees with management responsibility, participation did predict their implementation-oriented IWB.

The theoretical assumptions for the hypothesis development are revisited for a better understanding of the results. Based on the argumentation with the AMO Framework, the following was assumed: 1.) Participation may allow employees to engage in IWB and motivates their engagement in IWB. 2.) Information-sharing may give employees increased opportunities and abilities to engage in IWB. Based on work motivation literature (Deci & Ryan, 2000), it was also assumed that participation satisfies the need for relatedness and that information-sharing satisfies the need for competence. It was believed that employee participation, information-sharing, and the three dimensions of autonomy create together a work climate that leads to the satisfaction of the three "fundamental nutriments" (need for relatedness, need for competence, and need for autonomy). The satisfaction of all three "fundamental nutriments" then leads to increased intrinsic and autonomous motivation, which in turn leads to better performance at tasks "requiring creativity, cognitive flexibility, and conceptual understanding" (Gagné & Deci, 2005, p. 337).

Despite this logic, this empirical work failed to find a positive effect of employee participation and information-sharing on IWB for all employee groups. Hence, on the one hand, results are in line with and, on the other hand, in contradiction to previous research. In the following various explanations for these partially contradictory results are provided.

One possible explanation for partially contradictory results to previous empirical research concerning the relationship between employee involvement and IWB can be found in the definition and measurement. As noted by Heller et al. (2004, p. 15) and Wood (2020, p. 410), various researchers investigating employee involvement in one form or another conceptualize and measure the construct in different ways. Hence, one reason for the not supported relationships of employee participation and IWB and information-sharing and IWB might lie in their conceptualization and measurement. For example, Prieto and Pilar Pérez-Santana (2014, p. 195) defined and operationalized participation from a very general perspective as the extent to which employees were generally involved in decision-making. Thus, their measure included an extensive set of multiple items.

Contrary to their understanding of participation, this work understood and operationalized participation as the extent to which employees are invited to articulate their opinion, suggestions, knowledge, and ideas in the company. Another example can further illustrate the definition and measurement aspect of information-sharing. Battistelli et al. (2019, p. 367) conceptualized and measured information-sharing more as the degree to which employees were informed or knew about company-wide matters, such as future plans or business results. Contrary to that, this empirical study conceptualized and measured information-sharing as the extent to which an organization provides information and feedback to its employees.

Besides that, the understanding of employee involvement may also differ from organization to organization, as employee involvement can take on different degrees, forms, ranges, and levels in organizations (Marchington & Wilkinson, 2005, p. 403). Also, the source rating the HRM practices may influence results (Kilroy et al., 2016, p. 413). Thus, heterogeneity concerning the conceptualization and measurement and the methodology and the sampled population is likely to lead to contradictory results (Jiménez-Jiménez & Sanz-Valle, 2005, p. 376). Thus, it is challenging to compare research results in HRM-Innovation literature with each other and to come to generalizable theories or conclusions about employee involvement and its influence on multiple variables (Wilkinson et al., 2010, p. 10).

Also, the specific variation of HRM practices included in this study could be a reason for inconsistent empirical study outcomes. Within the research field of HRM, there is still a lack of clarity about variations of HRM practices that should be combined in a study (Jiménez-Jiménez & Sanz-Valle, 2005, p. 376). This study is one of the first studies in HRM – innovation research to investigate the effects of organizational-level HRM practices (employee participation and information-sharing) and job-level HRM practices (work-scheduling autonomy, decision-making autonomy, and work-methods autonomy) in one study. Previous studies investigating the HRM practice – innovation relationship focused either on organizational-level HRM practices or job-level HRM practices (Seeck & Diehl, 2017, p. 923). Since HRM systems of organizations can be very complex, it is very likely that in practice, the assumed positive effects of a single HRM practice might be restrained by other HRM practices or contextual factors present in an organization (Seeck & Diehl, 2017, p. 925). Thus, a variation of HRM practices included or excluded in a research study can lead to contradictory results concerning the effects of individual HRM practices on specific employee outcomes (Kilroy et al., 2016, p. 412).

Work motivation literature gives an additional explanation for the empirical results. Likely, other contextual factors and job autonomy might already satisfy employees' needs for relatedness and competence enough so that the motivating effect of employee participation and information-sharing becomes insignificant. A study by Devloo et al. (2015, p. 499) found that engaging in IWB itself satisfies the need for autonomy and the need for relatedness, which in turn leads to even higher engagement in IWB (Devloo et al., 2015, p. 499). It was also revealed that work climates that support the autonomy of their employees lead to the satisfaction of the need for relatedness, competence, and autonomy (Ryan & Deci, 2017, p. 247). Thus organizational support of autonomy alone enables employees to make appropriate choices to satisfy their basic needs for relatedness, competence, and autonomy (Ryan & Deci, 2017, p. 247).

Apart from that, it is likely that employees in the sample did not experience employee participation and information-sharing as primary enablers of their abilities, motivation, and opportunities to engage in IWB. This effect can be explained with the help of SDT, as the theory describes the impact of external and intrapersonal events on motivation (Deci & Ryan, 1985, p. 62). The theory posits that events where individuals perceive their actions as causal for an outcome enhance intrinsic motivation (Deci & Ryan, 1985, p. 62). In other words, it can be said that if employees think that external resources such as employee participation or information-sharing provide them with increased opportunities to be innovative, they are more likely to be intrinsically motivated to engage in IWB. That would also be an explanation for the reason why in the subgroup of managers, participation did predict implementation-oriented IWB. The managers might have considered their participation opportunities as enablers for their abilities, motivation, and opportunities to engage in implementation-oriented IWB. However, for the other employees, it might be that they did not perceive employee participation and information-sharing as crucial factors that increase their opportunities and their motivation to engage in IWB.

An additional valid explanation for the nonsignificant effect of employee participation and information-sharing on IWB can be found in the theoretical assumption that increasing employees' opportunities to be innovative through participation and information-sharing leads automatically to better IWB. High levels of work-methods autonomy and other contextual factors may already provide employees with more than enough opportunities to show IWB. Employee participation and information-sharing on the organizational level may not substantially increase employee's possibilities to engage in IWB. Based on the Job Demands-Resources model, employee involvement and job autonomy can be classified as job resources (Kwon & Kim, 2020, p. 4). However, employees that experience an abundance of job resources can be too satisfied, which results in a lower need and likelihood to demonstrate IWB (Csikszentmihalyi, 1997, p. 321).

Likewise, IWB depends upon many contextual variables, such as climate for innovation or management support (Hammond et al., 2011, p. 102). It is possible that even though employees have increased opportunities to engage in IWB through employee participation and information-sharing, they do not show increased IWB. Reasons for this could be that employees lacked the willingness or motivation to show IWB or that the prevalent organizational contextual factors somewhat hindered their increased motivation to engage in IWB. Macduffie (1995, p. 199) summarizes this point as follows: "Skilled and knowledgeable workers who are not motivated are unlikely to contribute any discretionary effort." This claim is also in line with the observations of Glew et al. (1995, p. 397). They stated that employee participation and information-sharing might be hindered through various individual (preferences etc.) and organizational (organizational culture etc.) factors. Ren and Zhang (2015, p. 20) also provided evidence for this. They showed that stressful demands negatively impacted employees' idea generation behavior. A similar phenomenon was also mentioned by Marchington and Wilkinson (2005, p. 415), stating that even though employees were empowered to show specific behaviors, they did not, as they feared judgment, rejection, or unwanted responsibility. Besides that, Beugelsdijk (2008, p. 825) found that controlling supervision and decreased flexibility negatively affected employees' creativity and innovation.

Because of this, it can be concluded that the findings of this study concerning the connection between employee involvement and IWB are in accordance with and partially

differ from previous research. This study found no significant impact of employee involvement on the creativity-oriented and implementation-oriented IWB of all employees. The possible explanations for somewhat contradictory research results and non-significant effects of employee participation and information-sharing on IWB can be summarized as follows: heterogeneity in definition, measurement, methodology, and sampled population; selection of study variables and HRM practices included in the study; the chance that other contextual factors have a more significant influence on employees' abilities, motivation and opportunities to show IWB; possibility that employees did not perceive employee participation and information-sharing as enablers of their abilities, motivation, and opportunities to show IWB, and the possibility that other contextual factors (e.g., organizational climate for innovation or management) diminish the positive effects employee participation and information-sharing could have on employees' IWB.

5.3 Effect of Job Autonomy on Innovative Work Behavior

The suggestion that work-scheduling autonomy, decision-making autonomy, and work-methods autonomy would positively influence the IWB of employees was theoretically based on the AMO Framework (Lepak et al., 2006, p. 233), the job demands control model (Karasek, 1979, p. 388) and the Job Demands-Resources model (Bakker & Demerouti, 2007, p. 313).

Apart from that multiple studies found positive relationships between job autonomy and IWB (Bysted & Hansen, 2015, p. 712; Bysted & Jespersen, 2014, p. 233; Kurz et al., 2018, p. 412; Ramamoorthy et al., 2005, p. 147; Spiegelaeere et al., 2012, p. 14; Spiegelaeere et al., 2014, p. 325; Turanli & Yolsal, 2020, p. 92).

However, most previous studies did not consider the multi-dimensional nature of job autonomy. Thus, this study was one of the first to investigate the effects of multiple dimensions of job autonomy on IWB. This study's outcome aligns with previous empirical studies, which considered job autonomy as a one-dimensional construct. Nevertheless, this study contributes to the literature by showing that the positive effect of job autonomy on IWB is primarily attributed to work-methods autonomy. In contrast, the impact of work-scheduling autonomy and decision-making autonomy on IWB is only limited.

Work-scheduling autonomy and decision-making autonomy both positively correlated with not only creativity-oriented IWB but also implementation-oriented IWB. The data of the sample can explain this effect. In the sample, most employees experiencing a high level of work-methods autonomy were also very likely to experience high levels of work-scheduling autonomy and decision-making autonomy. That also suggests interdependencies and relatedness of the three autonomy dimensions. Similar observations were made by Spiegelaeere et al. (2016, p. 524) and Theurer et al. (2018, 26).

Because of the separate investigation of work-scheduling autonomy, decision-making autonomy, and work-methods autonomy, this study builds on and is also in line with the work of Breugh (1985), Morgeson and Humphrey (2006), and Theurer et al. (2018). Theurer et al. (2018, p.26) found in their conjoint experiment that out of work-scheduling autonomy, decision-making autonomy, and work-methods autonomy, work-methods autonomy had the most decisive impact on employee innovativeness. Besides that, a study by Spiegelaeere et al. (2016, p. 523) looked at the effects of work-method autonomy, work-scheduling autonomy, work-time autonomy, and locational autonomy on IWB. They came to similar results as this study. Their study showed that only work-methods autonomy and locational autonomy played a role in shaping employees' IWB (Spiegelaeere et al., 2016, p. 524).

Summarizing this section, it can be stated that findings of this study concerning the connection between job autonomy and IWB enlarge and underpin results of previous researchers. This study shows that the positive effect of job autonomy on creativity-oriented and implementation-oriented IWB can be primarily attributed to autonomy in terms of work-methods. Furthermore, this study indicates that the connection between work-methods autonomy and IWB remains significant if other HRM practices are added to the model.

5.4 Effects of Control Variables

Although the effect of work motivation type on creativity-oriented and implementation-oriented IWB was not the primary subject of this empirical work, this study revealed that the kind of work motivation mattered for employee's IWB. The more intrinsically motivated an employee is, the more they show creativity-oriented and implementation-oriented IWB. This finding is also in line with previous research, as increased intrinsic motivation leads to a higher willingness to get involved at work, which is connected with higher performance outcomes (Ryan & Deci, 2017, p. 538). Furthermore, this empirical study provides additional insights into the relationship between intrinsic motivation and IWB. These insights enlarge and underpin the research results of Devloo et al. (2015) and Bammens (2016), who investigated the relationship between work motivation and IWB.

Very compelling are also the results concerning differences in the mean level of creativity-oriented and implementation-oriented IWB that arose due to work motivation, management responsibility, company size, tenure, and age. These results indicate that variables like type of work motivation, management responsibility, company size, tenure, and age all play a role in the level of IWB an employee demonstrates.

Further multiple regression analyses for implementation-oriented IWB indicate that the various HRM practices play different roles in explaining implementation-oriented IWB of employees with management responsibility compared to employees without management responsibility. In the group of employees with management responsibility, participation and work-methods autonomy were the significant indicators for their level of implementation-oriented IWB. However, in the group of employees without management responsibility, decision-making autonomy and work-methods autonomy were the significant predictors of implementation-oriented IWB. These results somewhat imply that an employee's role might be a decisive factor for the influence of certain HRM practices on implementation-oriented IWB.

The findings of this study are also in line with and underpin current state-of-the-art research from Cafferkey et al. (2020, p. 10), who found that HRM practices are experienced and perceived differently across distinct occupational groups. Their study and this study highlight the critical importance of differentiated HRM practices for different employee groups. HRM is not a "one size fits all" concept.

6. Conclusion

This final chapter wraps up the scientific work by summarizing the procedure of the study, outlining its limitations, providing implications for research and practice, and giving suggestions for future research.

6.1 Study Synopsis

An organization's capacity to innovate depends significantly upon the innovativeness of its employees (Seeck & Diehl, 2017, p. 914). Thus many organizations expressed the desire to optimally leverage employees' innovative potential (Bos-Nehles et al., 2017, p. 1229). Furthermore, previous studies suggested positive effects of employee involvement and job autonomy on innovative behavior (Battistelli et al., 2019, p. 372; Singh et al., 2020, p. 12; Stankevičiūtė et al., 2020, p. 4; Veenendaal & Bondarouk, 2015, p. 151). Thus, the primary objective of this study was to investigate the impact of employee involvement (employee participation & information-sharing) and job autonomy (work-scheduling autonomy, decision-making autonomy & work-methods autonomy) on employees' innovative work behavior.

Conceptualizations for employee involvement, job autonomy, and innovative work behavior were developed to establish common theoretical ground. Based on that, available measurement methods and results of previous research about the constructs and their interrelationships were discussed and evaluated. This extensive evaluation and discussion of previous research led to developing five hypotheses to empirically test the relationship between employee involvement, job autonomy, and IWB. Two hypotheses focused on the effect of involvement-focused HRM practices (employee participation & information-sharing) on IWB. The remaining three tested the impact of three job-autonomy-focused HRM practices (work-scheduling autonomy, decision-making autonomy & work-methods autonomy) on IWB.

A quantitative cross-sectional research design was selected to test the proposed hypotheses. Therefore, an online questionnaire for employees from various organizations based in Austria was developed. The collected empirical data was then analyzed with the help of SPSS. Multiple linear regression analysis showed that out of the five selected HRM practices, only work-methods autonomy significantly influenced the creativity-oriented and implementation-oriented IWB of all employees. It was also found that employees with management responsibility showed considerably higher levels of implementation-oriented and creativity-oriented IWB compared to employees without management responsibility. An additional multiple regression analysis sampling only employees with management responsibility revealed that employee participation and work-methods autonomy played a significant role in explaining their implementation-oriented IWB. However, the regression analysis sampling only employees without management responsibility uncovered that decision-making autonomy and work-methods autonomy were the two factors to explain their implementation-oriented IWB.

These and the other study results were previously discussed. In summary, it can be stated that this study's outcomes enlarge and underpin the results of previous research, even though there were some contradictions to previous research.

6.2 Limitations

This study's limitations are declared to ensure high objectivity, reliability, and validity

This research project focused on a German-speaking context. Thus, the results of this study have limited generalizability for other cultural contexts. Besides that, the sample consisted primarily of white-collar workers. Therefore, results may not apply to production line workers. Hence, more longitudinal and cross-sectional research is needed for a more comprehensive understanding under which conditions certain HRM practices relate to IWB.

The conceptualization and operationalization of HRM practices and IWB can be considered as another limitation. There is no universally agreed-upon definition of HRM practices, and various researchers use different words to describe the same HRM practice (Bos-Nehles et al., 2017, p. 1240). The same is true for IWB, as various researchers conceptualize innovation differently (Baregheh et al., 2009, p. 1324). That fact makes comparisons among studies rather tricky. On top of that, everyone may interpret and evaluate employee involvement, job autonomy, and IWB differently. Nevertheless, this study attempted to increase comparability and objectivity through a close inspection of the measurement of each HRM practice and IWB to mitigate the effects of this limitation to a certain extent.

Another potential limitation lies in the selection of research studies included in this study and the definition of inclusion criteria for the literature review. Other researchers such as Seeck and Diehl (2017, p. 932) and Bos-Nehles and Veenendaal (2019, p. 2678) encountered a similar limitation. Nevertheless, they justified their approach by explaining the selection and inclusion criteria for the literature review. Thus, a detailed description of the literature review process to explain why certain studies were included or excluded is provided in Annex A to validate the undertaken research approach.

Also, the specific selection of HRM practices included in this study can be seen as a possible limitation. Although this study tried to have a set of involvement- and autonomy-related HRM practices, other HRM practices might also play a considerable role for employee's IWB. Furthermore, it is likely that various contextual variables (e.g., organizational culture or organizational structure) considerably influence the studied relationships (Kurz et al., 2018, p. 401). Thus, a limitation lies in the limited information collected about other contextual variables. This study sampled employees from multiple companies and industries. Therefore, it did not gather in-depth information about a broad set of other organizational or contextual factors that could potentially influence employee's IWB in their organization. Because of this, potential effects of organizational climates, other prevalent HRM or management practices were not accounted for in this study.

The selection of a cross-sectional research design can be viewed as an additional limitation. The collection of data at one point in time could lead to reverse causality and

method bias (Bos-Nehles & Veenendaal, 2019, p. 2677). A cross-sectional research design is also unable to portray all the critical dynamics in play regarding abilities, motivation, and opportunities to show IWB. Nevertheless, the limitation due to the cross-sectional research design can be assessed as acceptable since an application of a longitudinal research design would lie outside the scope of this time-restricted work.

Hence, this study's implications for research and practice should be evaluated with caution because of its limitations.

6.3 Implications for Research and Practice

This research study focused on understanding the relationship between selected HRM practices tailored towards providing employees opportunities to leverage their skills and motivation to show IWB. This approach was operationalized with two building blocks, namely employee involvement and job autonomy. Employee Involvement comprised the two HRM practices, employee participation, and information-sharing. Job autonomy was measured as autonomy in terms of work-scheduling, decision-making, and work-methods. Because of this, the undertaken research project contributes to the existing body of knowledge in multiple ways.

Firstly, this study supports the view that an organization's efforts to rear and steer employees' capabilities and behaviors through HRM practices foster innovation. Therefore this study builds, enlarges, and creates an in-depth understanding of the empirical findings of Prieto and Pilar Pérez-Santana (2014, p. 199), Kurz et al. (2018, p. 413), Rehman et al. (2019, p. 533), and Yasir and Majid (2020, p. 894). Besides that, it also uncovers the underlying complexity in relationships between HRM practices and IWB (Jiménez-Jiménez & Sanz-Valle, 2005, p. 376).

In previous research, IWB was primarily treated as a one-dimensional construct (Bos-Nehles et al., 2017, p. 1239). Thus, previous studies did not consider different effects of employee involvement and job autonomy on creativity-oriented and implementation-oriented IWB (Dorenbosch et al., 2005, p. 133; Noefer et al., 2009, p. 388). This study went beyond the one-dimensional view of IWB and operationalized IWB as a multi-dimensional construct. Thus, additional insights about the effect of HRM practices on creativity-oriented and implementation-oriented IWB were uncovered.

Different effects of employee involvement and job autonomy on creativity-oriented and implementation-oriented IWB were identified. Thus, the call of multiple researchers to further investigate the relationship between HRM practices and IWB, with IWB as a multi-dimensional construct is answered through this study (Battistelli et al., 2019, p. 375; Boon et al., 2019, p. 2529; Bos-Nehles & Veenendaal, 2019, p. 2678; Prieto & Pilar Pérez-Santana, 2014, p. 185; Salas-Vallina et al., 2020, p. 575; Stankevičiūtė et al., 2020, p. 21).

This research project also provides further understanding of the conditions under which employee involvement (employee participation and information-sharing) and job autonomy (work-scheduling autonomy, decision-making autonomy, and work-methods autonomy) relate to IWB. Therefore, employee involvement and job autonomy were disentangled to better understand how these constructs relate to IWB.

Besides that, the results of this study emphasize the importance of job design characteristics for IWB, as job design characteristics can create an increased sense of responsibility for outcomes (Prieto & Pilar Pérez-Santana, 2014, p. 200). Work-methods autonomy was identified as the HRM practice to which the positive effect of opportunity-enhancing HRM practices on IWB could primarily be attributed.

Furthermore, this study provides empirical evidence that HRM practices may play different roles for various occupational groups. Thus, the experienced and perceived effect of HRM practices on outcomes such as IWB is likely to be substantially influenced by the subgroup to which an employee belongs. For example, it was shown that in the subgroup of managers, employee participation and work-methods autonomy positively predicted implementation-oriented IWB. In the subgroup of employees without management responsibility, decision-making autonomy and work-methods autonomy significantly predicted implementation-oriented IWB. These results suggest that employees require tailored HRM practices to optimally increase their ability, motivation, and opportunities to engage in IWB.

Likewise, the results of this study also reiterate the value of comprehensive HRM systems. Previous research uncovered that HRM systems or “bundles” of HRM practices have a more substantial influence on Innovation than the combined isolated effects of each HRM practice (Jiménez-Jiménez & Sanz-Valle, 2005, p. 377). Because of this, future research should further investigate the effect of complete and comprehensive HRM systems on the IWB of employees.

Apart from these theoretically relevant contributions, this study is also of great importance for practitioners.

The study’s results provide further practical understanding for managers and HR representatives about what type of autonomy helps employees be more innovative. However, it should be considered that all three dimensions of autonomy were somewhat complementary to and interconnected with each other. The sample showed that employees enjoying a high level of work-methods autonomy were also very likely to experience a high level of work-scheduling and decision-making autonomy.

Work-methods autonomy positively influenced the creativity-oriented and implementation-oriented IWB of employees across various occupational groups. Thus, the suggestion can be made to include work-methods autonomy as critical HRM practice in an innovation-focused HRM system to facilitate employees’ IWB and, subsequently, organizational innovation.

Furthermore, results suggest that practitioners should strive for a tailored HRM system for their organization. It also might be wise for practitioners to go beyond the “one size fits all” approach of HRM and develop adapted practices for various occupational groups.

The theoretical and practical implications of this research project are best summarized with a statement by Cafferkey et al. (2020, p. 12): “good people management is critical for ensuring high levels of employee outcomes all the time.”

6.4 Avenues for Future Research

The insights and knowledge gained from this empirical work enable multiple possibilities for future research.

This study focused on identifying the best involvement- and autonomy-focused HRM practices relevant for all occupational groups that could predict IWB. Although this study tried to include HRM practices, which are seen as very suitable for the German-speaking context and culture, additional and complementary studies also including a broader set of other innovation-enabling HRM practices would be of value for research and practice. Thus, future research should combine multiple individual HRM practices to form a “high-innovation” HRM system. Therefore comprehensive studies should also look at the effects of other HRM practices, such as selection, performance evaluation, incentive compensation, and training and development, to be beneficial for a deeper understanding of how and why HRM practices affect specific outcomes (Boon et al., 2019, p. 2518).

Future research should also investigate other organizational attributes in the relationship between HRM practices and IWB. For example, variables such as corporate culture or leadership style might substantially influence the role HRM practices play in shaping the IWB of employees. Hence, future research should collect more data about other contextual and organizational factors that influence the effectiveness of an organizational HRM system.

This study failed to support that employee participation and information-sharing played a crucial role in shaping the IWB of employees across all occupational groups. Thus, future research should identify how far employee participation and information-sharing on the organizational level significantly increase employees’ abilities, motivation, and opportunities to engage in IWB across various occupational groups. Besides that, it would be interesting to understand if participation, information-sharing, work-scheduling autonomy, decision-making autonomy, and work-methods autonomy play a substantial role in satisfying the need for relatedness, competence, and autonomy at work for different subgroups of employees.

Furthermore, it would be beneficial for future research to develop a unified measurement construct for employee involvement and its dimensions. Comparisons across studies would then be more straightforward, and further in-depth understanding about the why of certain relationships would be possible.

This study’s results imply that HRM practices are experienced and perceived differently by various groups of employees. For example, for some, employee participation played a significant role in shaping implementation-oriented IWB, whereas, for others, it did not. Future research should thus mainly focus on the identification of differences between the various occupational groups and the unique contributions of specific HRM practices for employees’ IWB. Therefore, the author can only reiterate the concluding statement of Wang et al. (2020, p. 154): Future research should look at which HRM practices are more effective for specific employee groups and identify why certain HRM practices are more effective than others.

Hence, this study opened many worthwhile avenues for future research.

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Annex

Annex A: Description of Literature Review Process

This empirical study aims to understand the relationship between perceived selected HRM practices and IWB. First, a systematic literature review was conducted to give an extensive overview of the available research on this topic. Second, a literature review aims to gain further insights into the available research about a specific topic (Saunders et al., 2009, p. 534). The systematic literature review for this study was conducted following the described approaches for systematic literature reviews by Saunders et al. (2009, p. 60) and Creswell and Creswell (2018, pp. 77–78). The main steps included literature identification, evaluation, and summary (Creswell & Creswell, 2018, pp. 77–78).

For the identification of relevant literature, a list of search terms was established. Exemplary search terms were “innovative work behavior,” “human resource management,” “HRM practices,” “employee innovation,” “participation,” “autonomy,” and “opportunity-enhancing HRM practices.” Databases such as the “olav” database of the University of Applied Sciences Vorarlberg, Google Scholar, Web of Science, Ebsco Business Source Complete, JSTOR, and Scopus were searched using multiple combinations of the search terms mentioned above. For inclusion in this literature review, articles had to match the following criteria: (a) two relevant keywords in abstract or title, (b) scholarly peer-reviewed article, (c) written in English. The initial search yielded more than 300 articles. Subsequently, the articles were screened, and eligibility for inclusion in the literature review was assessed. Duplicates were deleted, and articles that did not sufficiently contribute to the research topic were omitted. The remaining articles were identified as valuable contributors to this literature review. To further enrich the insights of this literature review, the reference lists of included studies were scanned manually for potentially relevant literature. Identified articles were also included in the literature review.

Annex B: Explanation of SDT theory and taxonomy of work motivation

Self-determination-theory (SDT) was developed by Gagné and Deci (2005, p. 333). SDT states that the more intrinsically motivated an employee is, the more they are willing to get involved at work, which is brought into connection with higher performance (Ryan & Deci, 2017, p. 538). The theory differentiates between two primary forms of motivation: *autonomous and controlled motivation* (Gagné & Deci, 2005, p. 333). An individual is autonomously motivated if they engage in activities out of free will without being forced to anything (Gagné & Deci, 2005, p. 334). On the contrary, controlled motivation occurs if the individual feels pressured to fulfill specific tasks (Gagné & Deci, 2005, p. 334).

Intrinsic motivation is seen as inherent autonomous motivation and as being inherently self-determined (Gagné & Deci, 2005, p. 334). On the contrary extrinsic motivation can occur on a continuum reaching from controlled motivation to autonomous motivation with varying degrees of self-determination (Gagné & Deci, 2005, p. 334). An individual is motivated in a controlled manner if they only engage in a task “with the intention of obtaining a desired consequence or avoiding an undesired one” (*external regulation*) (Gagné & Deci, 2005, p. 334). Extrinsic autonomous motivation occurs when a person sees their behavior as “an integral part of who they are,” giving them a sense of self-determination” (*integrated regulation*) (Gagné & Deci, 2005, p. 335). Therefore, it is essential to differentiate between intrinsic motivation and integrated regulation as the highest form of extrinsic motivation. Intrinsic motivation is primarily defined as “being interested in the activity” itself, whereas for the occurrence of integrated extrinsic motivation, “the activity being instrumentally important for personal goals” creates the interest of the person to engage in that activity (Gagné & Deci, 2005, p. 335).

Apart from controlled and autonomous extrinsic motivation, Gagné and Deci (2005, p. 335) characterize two other types of extrinsic motivation in between these two forms of extrinsic motivation: moderately controlled motivation and moderately autonomous motivation. The latter occurs if a principle “has been taken in by the person but has not been accepted as his or her own” (*introjected regulation*) (Gagné & Deci, 2005, p. 335). The other form of extrinsic motivation reveals itself when a person recognizes the value of a particular behavior as beneficial for the accomplishment of “their own self-selected goals” (*identified regulation*) (Gagné & Deci, 2005, p. 334). Figure 1 depicts the above-described continuum reaching from amotivation to intrinsic motivation.

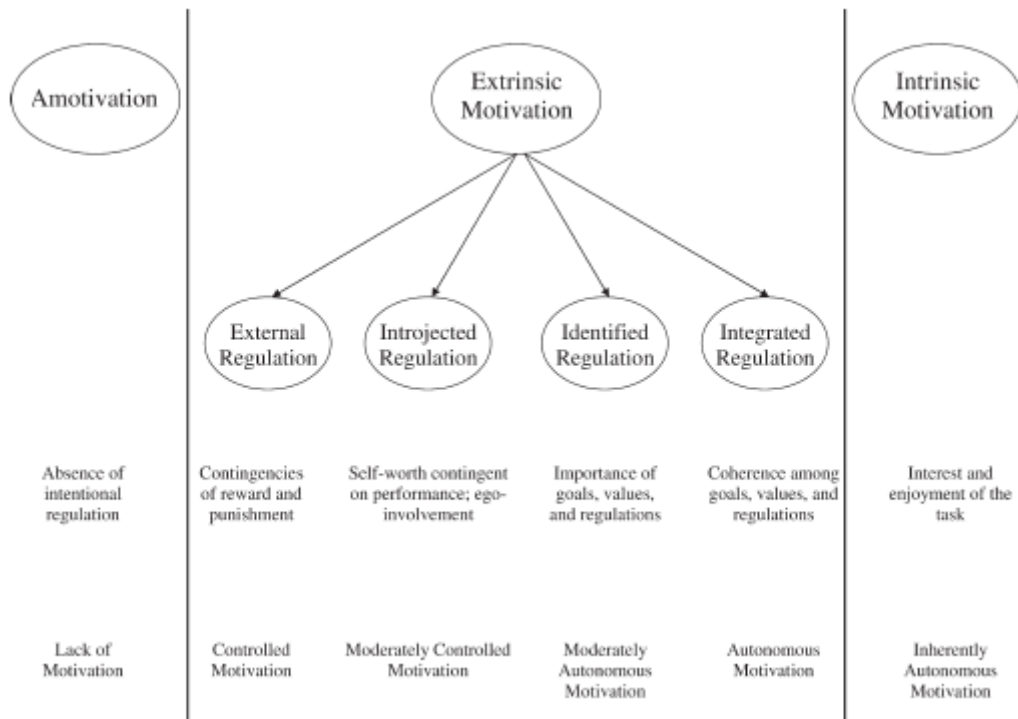


Figure: The continuum of self-determination

Source: From Gagné and Deci (2005, p. 336)

Annex C: Overview of studies, who examined selected opportunity – enabling HRM Practices and Innovative Work Behavior

Authors	Methodology & examined HRM Practice	Results concerning HRM Practices & IWB
Ramamoorthy et al. (2005)	Survey N=204 (blue-collar employees from manufacturing organizations in Ireland) Job autonomy	As hypothesized, job autonomy had an indirect effect on IWB through the mediating variable obligation to innovate. Additionally, the researchers found a direct effect of job autonomy on IWB (Ramamoorthy et al., 2005, p. 147).
Zhang and Begley (2011)	Questionnaire N=327 (employees of five US and five Chinese R&D companies) Empowerment/autonomy	Organizational climate moderated the relationship between empowerment and IWB. As in the subsample of American-owned companies, empowerment was directly positively related to IWB, whereas, in the subsample of Chinese-owned companies, no significant relationship was found (Zhang & Begley, 2011, p. 53).
Spiegelaere et al. (2012)	paper-and-pencil Questionnaire N=893 (employees in Belgium) Employee autonomy	The job resource variable autonomy had a direct positive effect on IWB. They also examined differences between blue- and white-collar workers in the relationship between autonomy and IWB. Nevertheless, no empirical evidence for these differences was found (Spiegelaere et al., 2012, p. 14).
Battistelli et al. (2013)	Questionnaire N=270 (employees of the University of Florence) Task autonomy	High Feedback from the job positively moderated the relationship between dispositional resistance to change and innovative work behavior. No effect of high task autonomy on the relationship between dispositional resistance to change and innovative work behavior was found (Battistelli et al., 2013, p. 34).
Fernandez and Moldogaziev (2013)	Electronic survey N=197.446 (federal employees in the US) Employee empowerment	The relationship between empowerment and innovativeness, conceptualized as innovative behavior and encouragement to innovate, was highly significant (Fernandez & Moldogaziev, 2013, p. 496).
Abstein and Spieth (2014)	Semi-structured interviews N=21 professionals in Germany Autonomy & Employee Involvement	Their interviewees voiced a vital role of autonomy and employee involvement for the occurrence of IWB (Abstein & Spieth, 2014, p. 218).
Bysted and Jespersen (2014)	Self-reported questionnaire N=8310 (employees from Denmark, Norway & Sweden) Autonomy	Autonomy not only had a positive effect on idea generation but also on idea realization. Moreover, no differences among the public and private sectors were found (Bysted & Jespersen, 2014, p. 233).

Prieto and Pilar Pérez-Santana (2014)	Written questionnaire N= 198 opportunity-enhancing practices (job design and employee participation)	Opportunity-enhancing HR practices are significantly related to innovative work behavior (Prieto & Pilar Pérez-Santana, 2014, p. 199).
Spiegelaere et al. (2014)	Questionnaire N=927 (employees across Belgium) Job autonomy	A positive relationship between autonomy and IWB was discovered. Additionally, a positive mediator effect of work engagement on the relationship between autonomy and IWB was found (Spiegelaere et al., 2014, p. 325).
Bysted and Hansen (2015)	Self-reported questionnaire N=8310 (employees from Denmark, Norway & Sweden) Job autonomy	IWB was positively predicted by autonomy. No differences among the public and private sectors were found (Bysted & Hansen, 2015, p. 712).
Jong et al. (2015)	Paper and pencil questionnaire N=179 (employees of one Dutch company) Job autonomy	Entrepreneurial behavior, conceptualized as innovative behavior and proactivity, was positively predicted by job autonomy (Jong et al., 2015, p. 991).
Odoardi et al. (2015)	Written questionnaire N=394 (employees from five companies in Italy) Information-sharing	Information-sharing indirectly affected innovative work behavior through group support for innovation (Odoardi et al., 2015, p. 559).
Spiegelaere et al. (2015)	Survey N=3098 (employees from Belgium) Autonomy	Job autonomy positively predicted IWB. The interaction between high time pressure and high autonomy levels did not lead to higher levels of IWB (Spiegelaere et al., 2015, p. 130).
Veenendaal and Bondarouk (2015)	Written questionnaire N=328 (production workers from Dutch manufacturing firm) Information-sharing	Information-sharing is found to have a significant effect on idea generation and idea application. No significant effect of it on idea championing was found (Veenendaal & Bondarouk, 2015, p. 151).
Spiegelaere et al. (2016)	Questionnaire N=927 (employees from Belgium) Different types of job autonomy	Work-methods autonomy positively predicted IWB, whereas no significant effect of work-scheduling autonomy and work-time autonomy on IWB was identified. However, a significant positive impact of locational autonomy (working from home) on IWB could be determined (Spiegelaere et al., 2016, p. 525).
Orth and Volmer (2017)	Daily online questionnaire N=123 (employees of German companies) Job autonomy	The researchers identified a significant positive relationship between daily job autonomy and daily innovative behavior (Orth & Volmer, 2017, p. 606). Also, creative self-efficacy was found to positively moderate the relationship between job autonomy and innovative be-

		havior so that higher creative self-efficacy strengthened the daily job autonomy and innovative behavior relationship (Orth & Volmer, 2017, p. 607).
Kurz et al. (2018)	Questionnaire N=103 (employees from companies in Germany) Autonomy	The study identified a positive effect of autonomy on IWB (Kurz et al., 2018, p. 412).
Theurer et al. (2018)	conjoint experiment N= 2,550 (employees across Germany) Autonomy	IWB of employees increased when they received higher levels of autonomy in terms of work scheduling, work methods, and decision-making. Neither supervisor support nor organizational innovation and organizational structure positively moderated the relationship between autonomy and IWB (Theurer et al., 2018, 22).
Battistelli et al. (2019)	Online questionnaire N=756 (male respondents from Italian military organization) Information-sharing	Information-sharing indirectly affected innovative work behavior through task-related learning (Battistelli et al., 2019, p. 372).
Bos-Nehles and Veenendaal (2019)	written questionnaire N= 463 Employees of four manufacturing firms in the Netherlands Information-sharing	Perceptions of information-sharing impacted innovative work behavior positively (Bos-Nehles & Veenendaal, 2019, p. 2673).
Turanli and Yolsal (2020)	questionnaire N= 251 (employees from companies in Istanbul) Job autonomy	Job autonomy positively predicted IWB. Also, perceived supervisor support mediated the relationship between job autonomy and IWB (Turanli & Yolsal, 2020, p. 92).
Stankevičiūtė et al. (2020)	N= 306 (employees working in Lithuanian Companies) Employee Participation	Participation has a direct and significant positive effect on idea generation, idea championing, and idea application. In addition, overall participation positively affected innovative work behavior. (Stankevičiūtė et al., 2020, p. 12).
Singh et al. (2020)	N=199 (executive-level employees working in Indian SMEs) Participation	Participation in decision-making positively predicted innovative work behavior. The relationship between these two variables was mediated by meaningful work (Singh et al., 2020, p. 12).

FH Vorarlberg

University of Applied Sciences



Employee Involvement/Participation

★ 1. My organization usually asks for employees' opinion when it considers adopting new rules, procedures, or methods related to the organization of work.

never rarely sometimes often very often

★ 2. In general, my organization seeks the employees' collaboration to help it find solutions to problems that directly affect their work.

never rarely sometimes often very often

★ 3. My organization incites its employees to communicate new ideas for improving how things operate within the organization.

never rarely sometimes often very often

Information-sharing in the company

★ 4. My organization provides its employees with timely feedback about the decisions that affect them or have an impact on the work they do.

never rarely sometimes often very often

★ 5. Employees are regularly informed about major projects in our organization (e.g., structural changes, major investments, new technologies).

never rarely sometimes often very often

★ 6. Employees usually receive feedback on their suggestions.

never rarely sometimes often very often

Autonomy

★ 7. The job allows me, ...

1= never; 2=rarely; 3=sometimes; 4=often; 5=very often

	never				very often
...to make my own decisions about how to schedule my work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...to decide on the order in which things are done on the job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...to plan when I do my work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

★ 8. The job gives me a chance ...

1= never; 2=rarely; 3=sometimes; 4=often; 5=very often

	never				very often
...to use my personal initiative or judgment in carrying out the work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...opportunity to make a lot of decisions on my own.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...for significant autonomy in making decisions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

★ 9. The job allows me ...

1= never; 2=rarely; 3=sometimes; 4=often; 5=very often

	never				very often
...me to make decisions about what methods I use to complete my work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...considerable opportunity for independence and freedom in how I do the work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...to decide on my own how to go about doing my work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Motivation and Focus on Innovations

★ 10. What motivates you to do your job?

Wählen Sie die Antwort, die Ihnen am meisten zusagt.

- Actually nothing anymore.
- I can earn money with it.
- I want to be very good at this work to meet certain expectations.
- It is the type of work I have chosen to achieve my goals.
- This job is a part of my life.
- The joy/satisfaction I experience when I do this job.

11. How strongly is your company focused on innovation?

weak focus strong focus

★ 12. How satisfied are you in general with the working conditions in your company?

not satisfied very satisfied

Innovative Work Behavior at the Workplace: Creativity

★ 13. How often do you...

Please answer this question referring to your current workplace.

	never	rarely	sometimes	often	very often
...pay attention to issues that are not part of your daily work?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...wonder how things can be improved?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...search out new working methods, techniques, or instruments?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...generate original solutions for problems?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...find new approaches to execute tasks?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Innovative Work Behavior at the Workplace: Implementation

★ 14. How often do you...

Please answer this question referring to your current workplace.

	never	rarely	sometimes	often	very often
...make important organizational members enthusiastic for innovative ideas?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...attempt to convince people to support an innovative idea?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...systematically introduce innovative ideas into work practices?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...contribute to the implementation of new ideas?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...put effort in the development of new things?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Information about your position / your company

15. To which industry would you assign your position?

▼

- Basic Industry (e.g. petroleum, paper, building materials,...)
- Industrial goods & industrial services (e.g. packaging, transport, ...)
- Consumer goods (e.g. furniture, food, ...)
- Consumer services (e.g. media, tourism, ...)
- Healthcare (e.g. nursing, doctor, ...)
- Utilities (e.g. electricity, gas, ...)
- Finance (e.g. bank, real estate, ...)
- Technology & Telecommunication (e.g. software, IT services, ...)
- Other (e.g. Education, Public Service,....)

★ 16. How many employees does your company have?

- up to 9 employees
- 10 - 49 employees
- 50 - 249 employees
- more than 250 employees

17. Do you have management responsibility?

- Yes
- No

Sociodemographic data

★ 18. How long have you been working in your company?

- less than 1 year
- 1 to 3 years
- 4 to 6 years
- 7 to 9 years
- more than 10 years

★ 19. Your gender?

- male female diverse
-

20. How old are you?

- under 18 years
 18-24 years
 25-39 years
 40-59 years
 over 60 years



Arbeitnehmermitbestimmung

★ 1. Meine Organisation holt normalerweise die Meinung der Mitarbeitenden ein, wenn sie erwägt, neue Regeln, Verfahren oder Methoden in Bezug auf die Arbeitsorganisation einzuführen.

nie selten manchmal häufig sehr häufig

★ 2. Im Allgemeinen sucht meine Organisation die Zusammenarbeit mit den Mitarbeitenden, um Lösungen für Probleme zu finden, die ihre Arbeit direkt betreffen.

nie selten manchmal häufig sehr häufig

★ 3. Meine Organisation regt ihre Mitarbeitenden dazu an, neue Ideen zur Verbesserung der Abläufe innerhalb der Organisation einzubringen.

nie selten manchmal häufig sehr häufig

Informationsweitergabe im Unternehmen

★ 4. Meine Organisation gibt ihren Mitarbeitenden zeitnah Rückmeldung über Entscheidungen, die sie betreffen oder die sich auf ihre Arbeit auswirken.

nie selten manchmal häufig sehr häufig

★ 5. Die Mitarbeitenden werden regelmäßig über wichtige Projekte in unserer Organisation informiert (z. B. strukturelle Veränderungen, größere Investitionen, neue Technologien).

nie selten manchmal häufig sehr häufig

★ 6. Mitarbeitende erhalten in der Regel ein Feedback auf ihre Vorschläge.

nie selten manchmal häufig sehr häufig

Autonomie am Arbeitsplatz

★ 7. Meine Position erlaubt es mir,...

1= nie; 2=selten; 3=manchmal; 4=häufig; 5=sehr häufig

	nie				sehr häufig
...meine eigenen Entscheidungen zu treffen, wie ich meine Arbeit einteile.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...über die Reihenfolge zu entscheiden, in der die Dinge am Arbeitsplatz erledigt werden.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...zu planen, wann ich meine Arbeit mache.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

★ 8. Meine Position gibt mir die Möglichkeit, ...

1= nie; 2=selten; 3=manchmal; 4=häufig; 5=sehr häufig

	nie				sehr häufig
...meine persönliche Initiative oder mein Urteilsvermögen bei der Ausführung der Arbeit einzusetzen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...viele Entscheidungen selbst zu treffen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...zu viel Freiraum, wenn ich Entscheidungen treffe.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

★ 9. Meine Position erlaubt mir ...

1= nie; 2=selten; 3=manchmal; 4=häufig; 5=sehr häufig

	nie				sehr häufig
...Entscheidungen darüber zu treffen, mit welchen Methoden ich meine Arbeit erledige.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...viel Raum für Selbstständigkeit und Freiheit bei der Ausführung der Arbeit.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...selbst zu entscheiden, wie genau ich meine Arbeit erledige.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Motivation und Innovationsfokus

★ 10. Was motiviert Sie ihren Job auszuüben?

Wählen Sie die Antwort, die Ihnen am meisten zusagt.

- Eigentlich gar nichts mehr.
- Ich kann damit Geld verdienen.
- Ich möchte sehr gut in dieser Arbeit sein, um bestimmte Erwartungen zu erfüllen.
- Es die Art der Arbeit ist, die ich gewählt habe, um meine Ziele zu erreichen.
- Dieser Job ist ein Teil meines Lebens.
- Die Freude/Befriedigung, die ich erfahre, wenn ich diesen Job ausübe.

11. Wie stark ist ihr Unternehmen auf Innovationen fokussiert?

schwacher Fokus starker Fokus

★ 12. Wie zufrieden sind sie generell mit den Arbeitsbedingungen in ihrem Unternehmen?

nicht zufrieden sehr zufrieden

Innovatives Arbeitsverhalten am Arbeitsplatz: Kreativität

★ 13. Wie oft...

Bitte beantworten Sie diese Frage bezogen auf ihr aktuelles Verhalten am Arbeitsplatz.

	nie	selten	manchmal	häufig	sehr häufig
...schenken sie Dingen, die nicht zu ihrer täglichen Arbeit gehören Beachtung?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...fragen Sie sich, wie die Dinge verbessert werden können?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...machen Sie neue Arbeitsmethoden, Techniken oder Instrumente ausfindig?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...generieren Sie originelle Lösungen für Probleme?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...finden Sie neue Ansätze zur Ausführung von Aufgaben?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Innovatives Verhalten am Arbeitsplatz: Implementierung

★ 14. Wie oft...

Bitte beantworten Sie diese Frage bezogen auf ihr aktuelles Verhalten am Arbeitsplatz.

	nie	selten	manchmal	häufig	sehr häufig
...begeistern Sie wichtige Organisationsmitglieder für innovative Ideen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...versuchen Sie, Menschen zu überzeugen, eine innovative Idee zu unterstützen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...führen Sie systematisch innovative Ideen in die Arbeitsabläufe ein?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...tragen Sie zur Umsetzung neuer Ideen bei?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...bemühen Sie sich, um die Entwicklung neuer Dinge?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Angaben zu Ihrer Tätigkeit /Ihrem Unternehmen

15. Welcher Branche würden Sie Ihre Tätigkeit zuordnen?

Hier klicken zum Auswählen

- Grundindustrie (z.B. Erdöl, Papier, Baustoffe)
- Industriegüter & industrielle Dienstleistungen (z.B. Verpackung, Transport, ...)
- Konsumgüter (z.B. Möbel, Lebensmittel, ...)
- Verbraucherdienste (z.B. Medien, Tourismus, ...)
- Gesundheitswesen (z.B. Pflege, Arzt, ...)
- Versorger (z. B. Strom, Gas, ...)
- Finanzwesen (z.B. Bank, Immobilien, ...)
- Technologie & Telekom (z.B. Software, IT-Dienste, ...)
- Sonstige (z.B. Bildungswesen, Öffentlicher Dienst,....)

★ 16. Wie viel Mitarbeitende hat ihr Unternehmen?

bis 9 Mitarbeitende

10 - 49 Mitarbeitende

50 - 249 Mitarbeitende

mehr als 250 Mitarbeitende

17. Haben Sie Führungsverantwortung?

Ja Nein

Soziodemographische Angaben

★ 18. Wie lange arbeiten Sie schon in ihrem Unternehmen?

- weniger als 1 Jahr
- 1 bis 3 Jahre
- 4 bis 6 Jahre
- 7 bis 9 Jahre
- mehr als 10 Jahre

★ 19. Ihr Geschlecht?

- männlich
- weiblich
- divers

20. Wie alt sind Sie?

- unter 18 Jahre
- 18-24 Jahre
- 25-39 Jahre
- 40-59 Jahre
- über 60 Jahre

Statutory Declaration

I hereby declare on oath that I have prepared this master's thesis independently and without the use of other than the specified aids. The positions taken directly or indirectly from external sources are identified as such. The work has not yet been submitted in the same way or a similar form to another examination authority and has not yet been published.

Dornbirn, 06.07.2021

Desiree Egger