MASTER THESIS

Internal and External Attributions for Innovative Work Behavior

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Abstract

Purpose - Although many studies have researched on the determinants of innovative work behavior (IWB), most of them focus on one or a few variables, and examine IWB as a unidimensional construct. The purpose of this paper is therefore to develop a model of the various internal and external employee attributions for IWB, examining how they differently affect two stages of the innovative work behavior, namely idea generation and idea implementation.

Design/methodology/approach - A systematic literature review was conducted, leading to the analysis of 50 empirical papers published in peer-reviewed journals.

Findings - By following the attribution theory and by carefully studying the variables covered in the articles, the main internal attributions for IWB that were identified are employees' personality and traits, self-perceptions, intrinsic motivation, attitudinal variables, and abilities, skills and competences. The external attributions are leadership behaviors, organizational support, social support from managers and coworkers, task characteristics and HR practices. In addition, some attributions showed to affect the two phases of IWB in a different way.

Practical implications - The findings of this research provide practitioners with useful information on how to stimulate employees' IWB, and investments in which employee attributions are needed in case the organization faces shortcomings in either idea generation or idea implementation.

Originality/value – This study seems the first one to link the attribution theory to IWB and yields to a deeper understanding of the internal and external employee attributions for IWB and its stages.

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1 Introduction

In today's economy, characterized by an increasingly global competition, innovation has a fundamental role for companies to achieve and sustain a competitive advantage (Porter, 1990). Innovation does not only concern technological breakthrough, but also requires the development and implementation of new ideas (Van de Ven, 1986). This implies that innovation does not only rely on the creativity of employees involved in the research and development of new products but depends on all individuals within an organization. Ever since West and Farr (1989) highlighted the lack of attention that had hitherto been paid to innovation at the individual level, literature has shown a growing interest on employees' innovative work behavior (IWB) and its determinants.

IWB is defined as employees' intentional behavior to produce, introduce, and realize new ideas in the workplace, to benefit a work position, a group, or the organization (Janssen, 2000). This suggests that besides generating new ideas, IWB also involves the activity of implementing them. In particular, idea generation consists in exploring opportunities and creating new ideas, while idea implementation involves promoting the generated ideas and putting them into practice (De Spiegelaere et al., 2014).

Considering the important role of employees in innovation, studies that investigate the determinants of innovative behavior at work are not absent (e.g. De Jong & Den Hartog, 2010; Ramamoorthy et al., 2005). However, despite the general agreement on the multi-stage nature of IWB (Kanter, 1988; Scott & Bruce, 1994; Janssen, 2000), most studies appear to focus on the overall innovative process, while there seem to be a shortage of research examining the factors that are decisive for the two IWB's stages of idea generation and idea implementation, although studies have shown that the phases of IWB require different behaviors (Scott & Bruce, 1994). Many research have been conducted about employees' creativity (e.g. Shalley et al., 2004; Amabile, 1988; Amabile 2012), which could be argued to coincide with the first phase of IWB. However, employees' creativity and idea generation are two different concepts. Creativity refers to the production of completely novel ideas (Amabile, 1988), while the IWB's phase of idea generation refers to the production of ideas which are new for a particular context, meaning that they can be considered new even if they are not original but copied, for example, from other departments (De Spiegelaere et al., 2014). Therefore, while idea generation could involve employees' creativity, the reverse is, however, not true.

Since idea generation and idea implementation require different activities and different individual behaviors (Scott & Bruce, 1994), the aim of this study is to fill the gap present in the literature by trying to identify the attributions for IWB that play a crucial role for these two stages. Indeed, for a better understanding on how to promote IWB within an organization, this study appeals to the attribution theory (Heider, 1958), which tries to explain how people make causal inferences about someone's behavior. This perspective could help gaining deeper knowledge on IWB as it focuses on employees' perceptions and how they influence their behaviors. According to the attribution theory, individuals could attribute someone's behavior to factors that are placed within the person, or factors related the external environment (Heider, 1958), distinguishing between internal and external attributions respectively (Kelley, 1967). Linking the attribution theory to IWB therefore means finding employee internal and external attributions for IWB, since employees may attribute their innovative behavior to their own competences and motivation, or to external factors such as the presence of supportive managers and opportunities.

Focusing on individual innovation within organizations and appealing to the theory of causal attribution, the aim of this study is therefore to answer the following research question: *"Which internal and external attributions play a decisive role for the generation and implementation of new ideas?"*

A systematic literature review has been conducted to answer the mentioned research question and thus identify an overview of employee attributions for IWB.

This article provides both theoretical and practical contributions. Concerning the theoretical ones, this study seems to be the first one to link the attribution theory to IWB. Such theory could help highlight the important role employees' perceptions play in determining their future innovative behaviors. Moreover, while available studies on IWB's determinants mostly focus on specific relationships between one factor or a few ones and IWB, this research aims to provide an extensive overview of the internal and external attributions for IWB. Considering that the determinants of IWB have often been studied taking into account possible mediating and moderating variables, this article will also show how combinations between internal and external factors predict IWB. As a result, this study will provide a better understanding of the possible ways in which IWB can be enhanced. In addition, trying to link the attributions to the IWB's stages of idea generation and idea implementation, this research will respond to the calls in the literature to study IWB's different dimensions instead of IWB as a unidimensional constructs (Bos-Nehles et al., 2017).

This study also offers some practical contributions. Since employees play such an important role in innovation, gaining knowledge on the employee attributions for IWB could help companies to improve their innovative performance by suggesting managers in which attributions they should focus efforts to stimulate employees' IWB. Moreover, linking attributions to the two dimensions of IWB could provide an understanding on whether some attributions are more suitable for idea generation rather than idea implementation, or vice versa. This useful information could help managers decide which attributions to develop and make a more efficient use of resources considering that, within an organization, it is possible that the level of innovation is not the desired one either because employees are not likely to come up with new ideas, or because new ideas are generated but they are not able to successfully reach the implementation. When organizations are in one of the two mentioned situations and aim to improve IWB, investing in the "wrong" attributions could lead to a useless waste of effort, as well as not allowing the achievement of the desired outcome.

2   Literature Review

2.1   Innovative Work Behavior

Following Farr and Ford (1990), De Jong and Den Hartog (2010, p.24) define IWB as an "individual's behaviour that aims to achieve the initiation and intentional introduction (within a work role, group or organization) of new and useful ideas, processes, products or procedures". In addition, Janssen (2000) identifies IWB as an intentional behavior which goes beyond the prescribed job tasks, thus qualifying as a discretionary behavior of the employee. Considering IWB as something more than the mere creation of new ideas, Kanter (1988) highlighted how IWB is a multistage process, of which idea generation represents only the first phase. This observation led other authors to propose their operationalization of IWB as a process consisting of different phases (e.g. Scott & Bruce, 1994; Janssen, 2000; De Jong &

Den Hartog, 2010). A consistent share of the literature agrees on identifying IWB as consisting of two dimensions, namely idea generation and idea implementation (e.g. De Spiegelaere et al., 2014; Krause, 2004, Axtell et al., 2000; Yuan & Woodman, 2010). Idea generation consists in creating new ideas as a solution to the arising of a problem or the discovery of an opportunity (Veenendaal & Bondarouk, 2015). For this reason, it may involve not only creating new products, services, or processes, but also improving something that already exists within the organization (De Jong & Den Hartog, 2010). Idea implementation refers to putting the generated ideas into practice after having promoted them (De Spiegelaere et al., 2014). New ideas indeed need to be promoted because their realization could be hindered from resistance to change (Kanter 1988) or social and political pressures imposed by the organization (Howell et al., 2005). Promoting ideas means mobilizing resources, seeking for sponsorship, and building coalitions that can support them (Scott & Bruce, 1994). These activities can be successfully carried out by individuals who informally emerge to champion ideas thanks to their ability to express enthusiasm and confidence about the success of the innovation, to be persistent under adversity and to involve the right people (Howell et al., 2005). After being promoted, new ideas are realized by transforming them into new or improved products, services, or processes, and by making the innovation as a regular part of the organization (Kleysen & Street, 2001).

2.2 Attribution Theory

To classify the determinants of IWB that can be found in the literature, the attribution theory (Heider, 1958) will be used. According to Heider (1958), individuals want to know what people's behavior is due to, and in particular, if it is due to factors within the person, or to environmental conditions. Therefore, they make causal inferences about others' behavior, but also about their own behavior, in a perspective of self-perception (Kelley, 1973). Understanding to what causes individuals attribute behaviors appear to be important because "the perceived causality influences the perceiver's responses and actions" (Hewett et al., p.89). Defining an attribution as the "the linking of an event with its underlying conditions" (Heider, 1958, p.89), it is therefore possible to state that the attributions individuals make about a certain action are likely to influence their future behaviors. Attributions can be distinguished into internal ones and external ones (Kelley, 1967), depending on whether the cause of an event or a behavior is perceived to be placed inside the individual or outside the individual, respectively. According to Heider (1958), the individual forces that can contribute to an action outcome are the power of doing something, which is mainly related to the ability, personal traits and attitudes of the individual, and the motivation of doing it, which refers to the individuals' intention and effort in achieving the desired outcome. The external attributions consist instead in all the environmental conditions that could be either unfavorable for a particular action/behavior or, on the contrary, represent opportunities which enable the outcome. For example, Heider (1958) mentions factors such as task difficulty, luck, and opportunity, to which Kelley (1973) adds stimuli and external pressures.

In this study, the desired outcome is represented by IWB and in particular, by idea generation and idea implementation. Applying the attribution theory to IWB suggests that individuals within an organization, either employees or managers, try to make inferences about employees' IWB, because individuals have the natural tendency to try to explain what a behavior they observe is due to (Heider, 1958). They could therefore attribute the successful engagement in IWB to internal factors such as employees' personality, ability, attitudes and motivation, or to favorable external conditions such as opportunities, external pressures and stimuli provided by the environment, or more likely, to a combination of the two (Hewett

et al., 2018). The attributions for IWB therefore represent the perceptions of employees and managers regarding the causes of IWB. Identifying them seems crucial because these perceptions are likely to influence the future behaviors of individuals in the organization. Employees for instance, will be stimulated to engage in IWB, if they perceive that the factors to which they attribute IWB are present within them (in the case of internal attributions) or within the organization (in the case of external attributions). With regard to managers instead, the internal and external attributions for IWB will influence their decisions and strategies, suggesting on which factors they should focus efforts and resources, if they want to stimulate employees' IWB.

3 Methodology

To answer the research question properly, data were obtained by conducting a systematic literature review, due to the reasons which are explained below.

The internal and external factors that attribution theory considers to be the causes to which individuals attribute their successes or failures appear to be quite broad. When trying to answer the research question through an empirical study, this results in the difficulty of deciding what to include in the two categories, since the distinction between factors within the person and factors within the environment allows to come up with a large list of possible antecedents of IWB. An approach based on empirical evidence, would require making a selection among the determinants of IWB that can be found in the literature. This, however, will limit the research and above all, it would be difficult to explain the criteria that led to choose some factors and exclude others. Conducting a systematic literature review instead, allows to overcome these problems because it involves a comprehensive and unbiased search (Tranfield et al., 2003), which is particularly suitable for analyzing extensive literatures (Murlow, 1994). The systematic literature review is in fact a research technique which consists of finding results starting from the already existing available literature, by selecting in a systematic way the studies that are relevant to address the research question (Jesson & Lacey, 2006).

The purpose of the data collection is to obtain literature that researches on IWB, conceptualized in the same way as in the literature review section, and in particular on its determinants by examining the factors (internal and external) to which employees' attribute IWB. The process that has been followed to identify the literature that meets these requirements is explained below, illustrating the inclusion and exclusion criteria that have been used.

3.1 Data Collection

To collect the data, two search engines have been used: Web of Science and Scopus. Since the literature available on IWB is extensive, it seemed reasonable to opt for search engines that are quite selective on their data sources, such as the prior mentioned ones.

The keywords identified for the initial research are "innovative work behavior" and "employee innovation" searched in combination with "opportunity exploration", "idea generation", "idea creation", "idea realization", "idea promotion", "idea championing", "idea implementation", "antecedents" and "determinants" using the Boolean operator AND. Given the large amount of literature obtained by using only the first two mentioned keywords, the decision to search them in combination with the different names used to define the phases of IWB is due to the desire to restrict the articles to those which considers IWB as a multidimensional construct. The last two keywords were instead included to make

sure the articles focused on what determines IWB, rather than what its consequences are. All the mentioned search terms were entered also in their plural and spelling (both UK and US) variants and were searched in such a way that they should have appeared at minimum in the title, abstract or keywords of the articles.

Regarding the selection criteria, for this research, only empirical articles written in English and published in peer-reviewed journals were selected. This decision is due to the desire to ensure the quality of the selected literature and implies the exclusion of conference papers, whose rigor is argued to be lower than that of peer-reviewed journal articles (Culnan, 1978). Moreover, to prevent the selection of literature which is inconsistent with the research question, the articles were filtered for subject category, considering only of those related to the business and management area.

The time span of the selected literature ranged from 1989 to 2020, because West and Farr (1989) were the first to highlight the lack of attention that had hitherto been devoted to innovation at the individual level. The literature published before their article, therefore, did not appear to be relevant for this study. Considering that the search was run approximately from mid-April 2020 to mid-May 2020, it is possible that some articles, despite being relevant for this research, have not been included because published after that period.

All the inclusion criteria described so far, were not applied manually, but automatically through filtering options provided by the websites of the chosen search engines. This step led to a dataset of 125 articles, of which 70 identified through Web of Science and 55 through Scopus.

Since the search was run with two search engines, the following step consisted in the exclusion of duplicates by removing one of the two identical versions of an article, which resulted in a dataset of 94 articles.

Then, a selection was done by reading the titles and abstracts, and excluding all the articles that did not meet the inclusion criteria, not referring to the concepts of interest for this research or treating them only marginally. When after reading the abstracts there were doubts about the suitability of the articles for this research, they were anyway selected in order to be able to decide better after reading them entirely. Screening titles and abstracts against the criteria led to the exclusion of 30 articles. Some examples of rejected literature are articles which consider innovation at the organizational or team level rather than at the individual one, articles which focused on inhibitors of IWB rather than its antecedents, and articles which considered innovative behavior only related to research & development employees, thus being inconsistent with the conceptualization of IWB as an extra-role behavior.

Of the remaining 64 articles, 14 were removed due to the unavailability of the full text access.

The process that has been described so far has led to the list of articles that have been read entirely and assessed for eligibility. Since, on the basis of the full reading, all articles appeared to meet the inclusion criteria, no further exclusion was needed. The final dataset therefore consists of 50 articles, which were included in the research.

For the sake of synthesis and greater clarity, all the steps of the filtering process that has been described so far are graphically summarized in the PRISMA flow diagram (Liberati et al., 2009) shown in *Figure 1.*

Figure 1 - *PRISMA diagram*
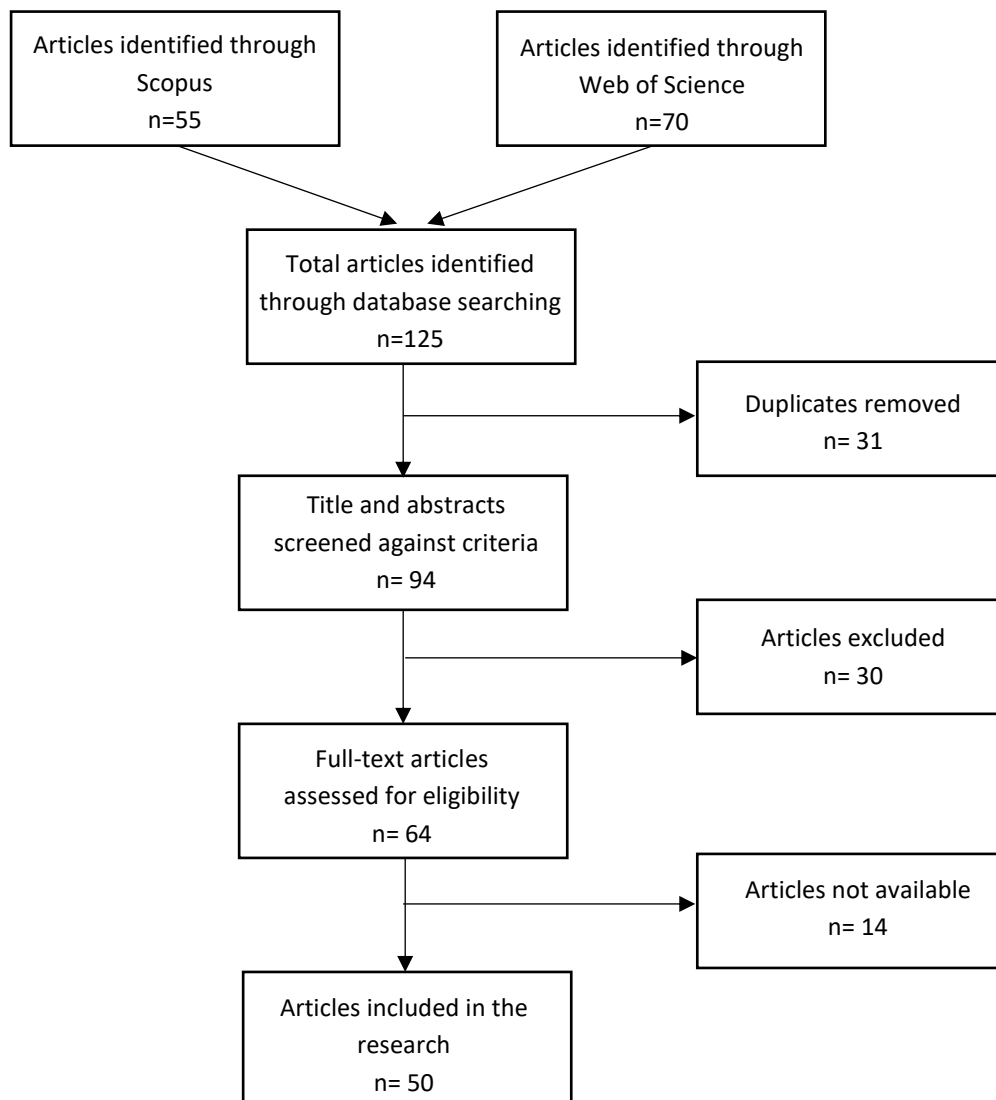
3.2 Data Extraction

After assuring that the articles selected for this study were consistent with the inclusion criteria, they were analyzed to answer the research question. To simplify the content analysis and reduce biases (Tranfield et al., 2003), the chosen literature has been summarized and classified in a table (*Table 3*, in *Appendix*), which was filled with information regarding the choices the authors made to conduct their studies and the results they found. In particular, the data extracted consist of general information (authors, title and year of publication), research purpose, methodology (including sample, respondents and context), operationalization of IWB, attributions for IWB sorted into internal and external, and main findings. For reasons of synthesis and clarity, not all the findings of the studies were reported in the mentioned table, but only those of interest for this research. Starting from the findings of each article, it was possible to spot all the determinants of IWB identified by the different authors, also including any mediating variables, since they are antecedents of IWB as well. After having obtained the list of the different variables that in the selected articles are studied as determinants of IWB, the researcher followed an inductive approach (Bos-Nehles et al., 2017) and grouped similar factors into categories of

attributions which constitute the findings of this research. The step of grouping the variables and finding a suitable name for the resulting categories, has been carried out by carefully studying the way in which the variables were defined and conceptualized in the introduction and/or theoretical framework of the papers. Very useful was also the variables' operationalization that was often present in the methodology section (more specifically, in the subparagraph usually titled "measures") where the authors provided some examples of the items included in the constructs and the questions that respondents were asked to answer in the surveys, in order to better describe the variables and how they were measured in the research. In addition to helping to group the antecedents of IWB into categories of attributions, the process of understanding how the authors conceptualized and operationalized the variables also helped sort attributions into either internal or external ones. Based on that, in fact, the categories that included variables which in the articles were described as attributable to the person, have been classified in this study as internal attributions, while the categories including variables described as attributable to the environment, have been classified as external attributions. To increase the transparency of the study, a detailed explanation of how all the variables studied in the selected articles have been grouped into attributions for IWB is provided in *Table 1*.

Table 1 - *Coding table for the internal and external attributions for IWB*

Authors	Variables studied in the articles	Categories of attributions	Aggregate dimensions
Mumtaz and Parahoo (2020)	Growth need strength	Personality and Traits	Internal Attributions for IWB
Woods et al. (2018)	Conscientiousness		
Woods et al. (2018)	Opennes		
Montani et al. (2014)	Learning goal orientation		
Chughtai and Buckley (2011)			
Stoffers et al. (2014)	Organizational citizenship behavior		
Mussner et al. (2017)	Work ethic		
Santoso and Furinto (2019)	Self-efficacy	Self-perceptions	
Mumtaz and Parahoo (2020)	Self-efficacy effort		
Mumtaz and Parahoo (2020)	Self-efficacy persistence		
Afsar and Masood (2018)	Creative self-efficacy		
Clarke and Higgs (2019)	Role-breadth self-efficacy		
Rehman et al. (2019)	Psychological empowerment		
Afsar et al. (2018)			
Messmann and Mulder (2014)	Perceived impact		
Bawuro et al. (2019)	Prosocial motivation	Intrinsic Motivation	
Birdi et al. (2016)	Intrinsic motivation to innovate		
Messmann and Mulder (2014)	Intrinsic task motivation		
Agarwal (2014)	Work engagement	Attitudinal Variables	
Agarwal et al. (2012)			
Chughtai (2013)			
Chughtai and Buckley (2011)			
De Spiegelaere (2014)			
Orth and Volmer (2017)	Daily work engagement		

Karkoulian et al. (2019)	Engagement		
Riaz et al. (2018)	Thriving at work		
Maqbool et al. (2019)	Flow		
Miller and Miller (2020)	Employees' engagement/ job commitment		
Amankwaa et al. (2019)	Affective commitment		
Battistelli et al. (2019)			
Susomrith et al. (2019)			
Chughtai (2013)	Affective commitment to the supervisor		
Grosser et al. (2018)	Political skills	Ability, Skills and Competences	
Clarke and Higgs (2019)			
Caniëls and Veld (2019)	Employees' ambidexterity		
Caniëls and Veld (2019)	Employees' specialization		
Birdi et al. (2016)	Cretivity-relevant skills		
Birdi et al. (2016)	Domain-relevant skills		
Radaelli et al. (2014)	Knowledge sharing behavior		
Mura et al. (2012)			
Radaelli et al. (2014)	Ability to share knowledge		
Mura et al. (2016)	Sharing best practices		
Mura et al. (2016)	Sharing mistakes		
Mura et al. (2016)	Seeking feedback		
Yasir and Majid (2019)	Boundary integration		
Zhang et al. (2015)	Emotional intelligence		
Korzilius et al. (2017)	Cultural intelligence		
Stoffers et al. (2014)	Employability		
Zhang et al. (2015)	Integrating style of conflict management		
Holman et al. (2012)	Work-based learning strategies		
Montani et al. (2014)	Proactive goal generation		
Yasir and Majid (2019)	Work-to-family enrichment		
Afsar et al. (2018)	P-O fit	Other	
Afsar and Badir (2017)			
Korzilius et al. (2017)	Multiculturalism		
Dediu et al. (2018)	Education		
Amankwaa et al. (2019)	Transformational leadership	Leadership Behaviors	External Attributions for IWB
Afsar and Masood (2018)			
Khalili (2016)			
Hafeez et al. (2019)	Ambidextrous leadership		
Kung et al. (2020)			
Hafeez et al. (2019)	Leaders' emotional intelligence		
Agarwal (2014)	Perceived organizational support (POS)	Organizational Support	
Afsar and Badir (2017)			
Sulistiawan et al. (2017)			
Clarke and Higgs (2019)			
Kung et al. (2020)	Organizational climate for innovation		
Riaz et al. (2018)	Organizational support for innovation		

Santoso and Furinto (2019)	Perceived employee friendly workplace		
Afsar and Badir (2017)	Workplace spirituality		
Radaelli et al. (2014)	Opportunity to share knowledge		
Montani et al. (2014)	Psychological climate		
Ramamoorthy et al. (2005)	Psychological contract variables		
Ramamoorthy et al. (2005)	Procedural justice		
Bysted and Jespersen (2014)	Innovation trust		
Veenendaal and Bondarouk (2015)	Supportive supervision	Social Support from Managers and Colleagues	
Amankwaa et al. (2019)	Supportive management		
Dediu et al. (2018)	Manager support		
Ma Prieto and Pilar Perez-Santana (2014)			
Dediu et al. (2018)	Manager encouragement		
Sulistiawan et al. (2017)	Superior relationship quality		
Agarwal et al. (2012)	Leader-member exchange (LMX)		
Agarwal (2014)			
Stoffers et al. (2014)			
Miller and Miller (2020)			
Dediu et al. (2018)	Collegue support		
Ma Prieto and Pilar Perez-Santana (2014)	Co-worker support		
Sulistiawan et al. (2017)	Group relationship quality		
Birdi et al. (2016)	Departmental support		
Messmann and Mulder (2014)	Perceived social support		
Mura et al. (2016)	Psychological safety		
Janssen (2000)	Job demands	Task Characteristics	
Clarke and Higgs (2019)	Role overload		
Dediu et al. (2018)	Working under tight deadlines		
Dediu et al. (2018)	Working long hours, autonomy		
Dediu et al. (2018)	Task complexity		
Hernaus et al. (2019)	Job complexity		
Montani et al. (2014)	Task variety		
Battistelli et al. (2019)	Challenging tasks		
Dediu et al. (2018)	Dealing with unforeseen problems		
Holman et al. (2012)	Problem demands		
Hernaus et al. (2019)	Job innovation requirements		
Amankwaa et al. (2019)	Job autonomy		
Bysted and Jespersen (2014)			
De Spiegelaere (2014)			
Ramamoorthy et al. (2005)			
Dediu et al. (2018)	Autonomy		
Holman et al. (2012)	Job control		
Orth and Volmer (2017)	Daily job autonomy		
Rehman et al. (2019)	High-involvement HR practices (ability-, opportunity-, motivation-enhancing)	HR Practices	

Ma Prieto and Pilar Perez-Santana (2014)	High involvement ability-enhancing HR practices		
Ma Prieto and Pilar Perez-Santana (2014)	High involvement opportunity-enhancing HR practices		
Noopur and Dhar (2019)	Knowledge-based HRM practices		
Veenendaal and Bondarouk (2015)	Information sharing		
Battistelli et al. (2019)			
Birdi (2005)	Creativity trainings		
Susomrith et al. (2019)	Participation in T&D events		
Bysted and Jespersen (2014)	Competence development		
Bysted and Jespersen (2014)	Financial mechanisms		
Ramamoorthy et al. (2005)	Pay		
Ramamoorthy et al. (2005)	Justice perceptions of equity		
Ramamoorthy et al. (2005)	Meritocracy		
Bysted and Jespersen (2014)	Recognition		
Mura et al. (2012)	Intellectual capital	Other	
Mura et al. (2016)	Knowledge assets		
Noopur and Dhar (2019)	Human capital		
Castellacci et al. (2018)	Functional department's centrality		

4   Results

This section is structured as follow. First, it is provided an overview of the internal and external categories of attributions for IWB, explaining in detail how the different variables studied in the articles influence employees' innovative behaviors. Second, since in the articles the variables are studied as antecedents of IWB, rather than attributions for IWB, a better explanation for why these variables and categories can be considered either internal attributions or external attributions is given. Third, a framework that presents the results is provided.

4.1   Internal Attributions

The antecedents of IWB studied in the selected articles as related to the person rather than the environment, have been grouped into six macro-categories of internal attributions for IWB: personality and traits, self-perceptions, intrinsic motivation, attitudinal variables, and abilities, skills and competences, plus a residual category of other internal attributions that was not possible to classify within the previous ones. All these categories represent internal attributions because when employees or managers perceive them to predict IWB, it means that they are attributing the successful engagement in such behavior to factors that are placed within employees, rather than ascribing it to environmental forces.

4.1.1   Personality and Traits

Woods et al. (2018) focused their study on two of the Big Five model of personality (Goldberg, 1999) traits, namely conscientiousness and openness, finding that they are not significantly related to either IWB or its dimensions, unless considering their interaction with the contextual variable of organizational tenure, which refers to how long an individual has been employed in the organization. Following the trait activation theory (Tett and Burnett, 2003), they argue that the different job demands that short- and long-tenured employees face, activate the traits of conscientiousness and openness in a different

way (Woods et al., 2013) so that the effect on IWB will be different according to the tenure. Conscientiousness represents individuals' tendency to be diligent and well-organized (Costa & McCrae, 1992). Woods et al. (2018) found conscientiousness to be positively associated with idea generation and implementation for newer employees, but negatively associated with idea generation and implementation for longer tenured employees. Employees who score high in conscientiousness but are new in an organization in fact, tend to be persistent and industrious in order to perform better (Costa & McCrae, 1992) and are more likely to propose and implement innovations. However, after being many years within the organization and having adjusted to its procedures, their conscientiousness stimulates them to comply with the rules and follow the routines, aspects that are not conducive to IWB (Woods et al., 2018). Openness instead represents the individual's tendency to be imaginative, curious and open to new experiences or changes (Costa & McCrae, 1992). Woods et al. (2018) found openness to be positively associated with idea generation for longer tenured employees but negatively associated with idea generation for newer employees. This means that even if they score high on openness, new employees are not likely to exhibit IWB, because they first need to understand the new job context. When their tenure increases instead, thanks to the experience and knowledge acquired, their tendency to be curious and experiment new things will result in the generation of new ideas. The fact that openness and its interaction with organizational tenure does not influence idea implementation suggests that this phase of the innovation process might require other traits or competences (Wood et al., 2018).

Another individual trait which has been studied in relation to IWB is growth need strength. It refers to the individual's ambition, desire of accomplishment and need to grow and it is considered to be a personality trait since not everyone is necessarily interested in growing in the career (Hackman & Oldham, 1980). Mumtaz and Parahoo (2020) found growth need strength to be positively and directly related to innovative behavior because individuals who score high on this trait are internally motivated to learn, perform well and accomplish, thus being more likely to find new solutions and behave innovatively.

Somehow related to the individual growth is the orientation to acquire or improve skills and knowledge in order to achieve goals, also called learning goal orientation (Dweck, 1986). In their study, Montani et al. (2014) and Chughtai and Buckley (2011) found that employees with a strong learning goal orientation have a preference for goals oriented to change which involve challenging and uncertain situations. Moreover, they believe in their ability to develop new competences by working hard and being resilient, which in turn stimulates them to deal with new and complex activities without the fear of failing, considering mistakes as part of the learning process.

Stoffers et al. (2014) analyzed instead employees' organizational citizenship behavior considering it as a construct comprised by altruism, conscientiousness, sportsmanship, courtesy, and civic virtue (Podsakoff et al., 1990). They found it to be positively related to IWB through increased employability, meaning that it improves employees' knowledge, skills and in more in general their career potential, subsequently enhancing their innovative behavior.

Another variable studied in relation to IWB that can be considered related to employees' personality is work ethic, which refer to the personal values an individual has towards his/her work. Studying the different dimensions of work ethic, Mussner et al. (2017) found that employees who are self-reliant and time efficient in carrying out and accomplish their tasks are more likely to engage in IWB. On the contrary

being hard worker and giving a lot a value to spare time appear to be detrimental for it. However, the negative effect that the orientation toward leisure has on IWB, might be inverted into a positive effect when employees perceive their salary to be fair (Mussner et al., 2017).

4.1.2 Self-perceptions

The way employees perceive themselves and their abilities, also revealed to play a role in predicting their innovative outcomes. Psychological empowerment for instance, representing individuals' self-confidence of performing the job tasks well and their willingness to shape the work environment, enhances employees' intrinsic motivation, self-determination and confidence to achieve innovative outcomes (Afsar et al., 2018), with this relationship being stronger when employees perceive support from managers and colleagues (Rehman et al., 2019). Messmann and Mulder (2014) focused their attention on a subdimension of psychological empowerment, named impact, which refers to employees' perception of being able to influence processes and outcomes. They found this variable to influence in particular the exploration of opportunities because, being characterized by less risk compared to creating or implementing new ideas, this activity makes employees perceive to have more power. Another self-perception variable largely studied in the literature in relation to IWB is self-efficacy and its variants. Self-efficacy refers to the belief individuals have regarding their ability to perform particular tasks, influencing people's initiative to engage in activities, the effort they put in, and the perseverance they show in the face of difficulties (Bandura, 1977). Since they strongly believe in their ability to perform well, employees with greater self-efficacy are more likely to engage in IWB (Santoso & Furinto, 2019). Analyzing in detail the components of self-efficacy, Mumtaz and Parahoo (2020) found self-efficacy-effort and -persistence to be positively related to innovative behavior, while they could not state the same for self-efficacy initiative, arguing that however, it could be due to the fact that the employees who made up their sample were not provided with enough autonomy. Afsar and Masood (2018) and Clarke and Higgs (2019) have instead focused their studies on particular forms of self-efficacy, which are creative self-efficacy and role-breadth self-efficacy, respectively. Referring to employees' self-belief of being able to behave innovatively, creative self-efficacy was found to increase their tendency to generate creative outcomes (Afsar & Masood, 2018). Role-breadth self-efficacy instead, refers to the individual's belief of being able to carry out a variety of tasks that go beyond the prescribed job requirements (Parker, 1998). Employees who have such a greater self-confidence, are therefore more likely to engage in discretionary behavior, such as IWB (Clarke & Higgs, 2019).

4.1.3 Intrinsic Motivation

Intrinsic motivation represents the individual willingness to engage in an activity because of internal reasons, such as enjoyment, personal interest and curiosity (Amabile, 1988). When intrinsically motivated, employees tend to put extra effort in what they are doing, resulting in increased idea generation and implementation (Messmann & Mulder, 2014). Birdi et al. (2016) however, found the relationship to be stronger for idea implementation than idea generation, suggesting that, regardless of employees' expertise and operational skills, their intrinsic motivation is essential for seeing the new ideas realized, because it makes them more likely to be persistent in the face of difficulties and overcome any resistance and obstacles. Bawuro et al. (2019) focused instead on a particular aspect of intrinsic motivation named prosocial motivation, which represents individuals' willingness to engage in certain behaviors or activities so that other people can benefit from them. In the emerging context of Nigerian public universities, they found that lecturers' prosocial motivation positively influences their tendency

to generate and implement new ideas because they perceive that their innovative behavior can improve the environment, education and ultimately be beneficial for the society.

4.1.4 Attitudinal Variables

Multiple studies found affective commitment to predict IWB. Affective commitment is a component of organizational commitment and refers to the employee's emotional attachment to the organization (Meyer, 2017). Identifying with and feeling involved in the organization, affectively committed employees are more likely to put extra effort in their work and engage in discretionary behaviors that could be beneficial for the organization, such as IWB, because they are concerned about their organization's performance (Battistelli et al., 2019; Amankwaa et al., 2019; Susomrith et al., 2019). Instead of commitment towards the organization, Chughtai (2013) studied employees' affective commitment to supervisors and found it to be associated with increased IWB, but only through the mediation of work engagement. The researcher argues that employee's emotional attachment to the supervisor is synonymous of a high-quality relationship between them, which positively influences the employee's attitudes, making he/she more engaged at work. Work engagement in turn influences IWB as it will be explained below.

A number of studies examined work engagement as an antecedent of IWB, and all of them found the relationship to be direct (Agarwal et al., 2012; Agarwal, 2014; Chughtai, 2013; Chughtai & Buckley, 2011; De Spiegelaere, 2014; Orth & Volmer, 2017). Work engagement can be defined as a "positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli et al., 2002, p. 74). In the working context, vigor refers to high levels of energy, mental resilience and persistence in the face of difficulties, dedication refers to high levels of involvement in one's work accompanied by feelings of enthusiasm, pride and inspiration, while absorption refers to being fully immersed in one's work so that detaching from it appears difficult (De Spiegelaere, 2014). Based on this definition, even if they have been named differently, the variables of thriving at work (Riaz et al., 2018) and flow (Maqbool et al., 2019) will be considered as part of the work engagement construct, since they respectively refer to a state characterized by vitality, energy and learning, and to a state characterized by absorption, concentration, involvement and enjoyment. The vigor, dedication and absorption exhibited by engaged employees are likely to intrinsically motivate employees to go beyond the prescribed job-related activities and exhibit discretionary behaviors such as IWB (Agarwal et al., 2012; Agarwal, 2014; Chughtai, 2013). Being an extra-role behavior, in fact, IWB requires substantial effort: since it involves new things, it requires concentration and dedication and since it often encounter difficulties or resistance from other members of the organization, it requires employees to be resilient and persistent (Agarwal et al., 2012). Another possible explanation for the direct relationship between work engagement and IWB is given by the broaden-and-build theory of positive emotions (Frederickson, 2000). Following this theory, Chughtai (2013) argue that the positive emotions that engaged employees experience might broaden their momentary thought-action repertories and induce them to experiment new things and propose new solutions to problems.

Besides the fact that highly engaged employees are more likely to exhibit IWB, regardless of their individual differences in creative self-efficacy, Orth and Volmer (2017) found that employees are more likely to effectively implement innovations in those days in which they are more engaged, considering that the within-person level of engagement might vary across days. In addition to the direct effect through which work engagement affects IWB, Chughtai and Buckley (2011) found this relationship to be

partially mediated by employees' learning goal orientation because, following the already cited broaden-and-build theory of positive emotions (Frederickson, 2000), they argue that highly engaged employees are stimulated to learn new skills and acquire new knowledge, which in turn offer opportunities for innovative behavior.

Given the substantial influence work engagement has on employee attitudes and on IWB, many researchers studied it as a mediating variable to examine the effect of other variables on IWB. In particular, the quality of the relationship with supervisors (Agarwal et al., 2012; Agarwal, 2014; Miller & Miller, 2020), the perceived organizational support (Agarwal, 2014), the affective commitment to supervisors (Chughtai, 2013) and job autonomy (De Spiegelaere, 2014) were found to be associated with higher levels of IWB through increased engagement, representing therefore different ways in which employees' engagement can be built.

Different from the work engagement (engagement towards work) mentioned so far, is instead employees' engagement towards the organization, which has been studied by Karkoulian et al. (2019). They found engagement to be positively associated to both idea generation and idea implementation, with these relationships being moderated by an appraisal scheme called 360-degree evaluation, which allows employees to receive feedback from multiple sources including managers, peers, subordinates, suppliers, customers and so on. When this type of evaluation is present within an organization and is perceived to be fair by employees, their engagement toward the organization is strengthened, as well as the relationship with innovative behavior, because employees will be likely to give the organization something valuable in return, in line with a social exchange perspective (Karkoulian et al., 2019).

4.1.5 Abilities, Skills and Competences

Employees' knowledge, skills and in more in general their career potential, also referred to as employability, are positively related to IWB (Stoffers et al., 2014). Various are the abilities, competences and skills which have been studied in the literature in relation to employees' innovative behavior.

Defining creativity-relevant skills as the individual's ability to generate original solutions when a problem arises (divergent thinking) and to analyze and evaluate the generated ideas (convergent thinking), Birdi et al. (2016) found employees with strong creativity-relevant skills to be more likely to generate new ideas, but not to implement them.

On the contrary, the skills that are related to the job domain, such as operational skills and job expertise, were found to be strongly related to idea implementation, but only to a little extent to idea generation, because they make an employee understand where creative outcomes could be useful and in which way implement them in a specific context (Birdi et al., 2016).

Caniëls and Veld (2019) examine how employees' ability to engage in both explorative and exploitative activities, also called ambidexterity, influence their IWB. Explorative activities concern searching new solutions and learn new skills or knowledge, while exploitative activities concern using the current knowledge and skills to achieve short-term goals (Kang & Snell, 2009). Caniëls and Veld (2019) found that employees' who engage in high levels of both activities, are more innovative than those who engage in low levels of the two. The reason is that, since innovation requires both exploration and exploitation, separating the two activities is inconvenient, because it prevents from taking advantage of their synergy (Rosing et al., 2011). However, Caniëls and Veld (2019) found that also specializing in either explorative

or exploitative activities positively predicts IWB. This suggest that since the two activities require different capabilities, it is possible that employees, also driven by their personality traits, show a greater predisposition for one of the two. For instance, open and curious employees are best suited for explorative activities and will engage more effectively in idea generation, while employees who tend to follow routines and focus on specific goals are motivated to engage in exploitation activities, thus being better at idea implementation.

Employees with high political skills were found to engage more effectively in innovative behaviors, than employees with less political skills (Grosser et al., 2018; Clarke & Higgs, 2019). Political skills can be defined as the individuals' ability to "effectively understand others at work and to use such knowledge to influence others to act in ways that enhance one's personal and/or organizational objectives" (Ferris et al. 2005, p. 127). On one hand, Grosser et al. (2018) show how the ability to observe and understand the social environment that employees with high levels of political skills have, makes them more likely to access information and knowledge, which can be a stimulus for generating new ideas. On the other hand, their ability to influence others and build and maintain strategic relationship which provide support and resources, is crucial to effectively implement the new ideas. Clarke and Higgs (2019) show instead that in the public sector the relationship between political skills and IWB is not direct, but fully mediated by role-breadth self-efficacy. They in fact argue that the ability to understand the social environment, influence others and better acquire knowledge, that politically skilled employees have, make them perceive greater self-confidence and sense of control, resulting in higher role-breadth self-efficacy, which in turn predicts IWB.

Employees' ability to share knowledge does not only positively influence the IWB of the recipients of the information, but also their own IWB (Radaelli et al., 2014). Two explanation for this have been found. First, when sharing knowledge, employees are not just giving information to others, but they are also implicitly interpreting it, elaborating it, integrating it and recombining it, which can lead them to find new ways to use existing knowledge (Radaelli et al., 2014). Second, following a social exchange perspective, Mura et al. (2016) argue that employees who engage in knowledge sharing behavior are likely to benefit from the useful information that others may exchange in the future to return the favor. Combining such new knowledge with the existing one, will provide them with opportunities to behave innovatively. Looking at the different behaviors in which knowledge sharing can be decomposed, Mura et al. (2016) found that sharing best practices is beneficial for both idea generation and idea implementation, while sharing mistakes and exchanging feedback appear to mainly predict the last phase of the innovation process, suggesting that the knowledge they provide is particularly useful to develop new solutions and put them into practice.

Zhang et al. (2015) studied instead the relationship between employees' emotional intelligence and IWB. Emotional intelligence is the ability of individuals to recognize their own emotions, understand others' emotions and control and manage emotions according to the situation (Mayer et al.,2004). A high level of emotional intelligence makes employees less likely to let themselves be overwhelmed by negative emotions and makes them have better relationships with their colleagues, giving rise to a cooperative climate which is favorable for innovative behaviors (Zhang et al., 2015).

Employees ability to balance work and life domains increases employees' satisfaction and motivation and consequently, their creative outcomes, especially when support from manager and coworker is present since it helps to better handle the conflicts between the two domains (Yasir & Majid, 2019).

Holman et al. (2012) studied instead employees learning strategies and found them to positively predict idea generation. They in fact argue that these learning processes, which include the elaboration and organization of new information (cognitive learning strategies) and the acquisition of information from other people, written material or through practical application (behavioral learning strategies), encourage employees to come up with new ideas by widening their knowledge about the job task and context.

Montani et al. (2014) studied employees' ability to proactively generate goals, finding that it makes them more change-oriented, thus increasing their tendency to engage in IWB. In fact, their ability to envision goals makes them better at recognizing opportunities, while their ability to plan goals makes them better at reducing the risks that innovative behaviors may entail.

4.1.6   Other Internal Attributions

Some demographic variables were also found to positively influence IWB. Dediu et al. (2018) for instance, found employees' level of education to predict both idea generation and idea implementation, probably because highly educated employees are usually in higher position within the organization, which are characterized by higher autonomy and task complexity. Even if employees' age was not studied as an antecedent of IWB in the selected articles, the fact that Hernaus et al. (2019) found task complexity to have different effects on employees' IWB depending on their age, suggests that this demographic variable could also play an important role. Lastly, employees' cultural background was found to predict IWB. Korzilius et al. (2017) argue that employees who can be defined multicultural because they have been exposed to more than one culture, are more likely to engage in IWB compared to monocultural employees. However, this relationship is true only if multicultural employees are equipped with cultural intelligence which represents the ability to comprehend other cultural environment and adapt to them (Ang et al., 2006). This ability in fact, makes sure that individuals internalize the cultures to which they have been exposed, rather than just having a knowledge of them (Korzilius et al., 2017).

A somewhat difficult variable to categorize was person-organization (P-O) fit, which represents the extent to which an individual's values match the values of the organization in which he/she is employed (Afsar et al., 2018). It could be therefore seen as a hybrid variable because it depends on both factors within the person (employees' values) and factors related to the environment (organization's values). The decision to put it among the internal variables is due to the fact that the match between values depends more on employees, since the values of the organization are somewhat stable, while individual values could be different across employees. Afsar and Badir (2017) found P-O fit to positively predict IWB because a high compatibility with the organization's values leads to higher employees' satisfaction and intrinsic motivation (Silverthorne, 2004), prompting them to pay back the organization with extra-role behaviors.

4.2   External Attributions

The antecedents of IWB studied in the articles as related to the environment rather than to the person, have been grouped into six macro-categories of external attributions for IWB: leadership behaviors, organizational support, social support from managers and coworkers, task characteristics, plus the residual category of other external attributions. All these categories represent external attributions because when employees or managers perceive them to predict IWB, it means that they are attributing

the successful engagement in such behavior to factors that are placed within the external environment, rather than within employees.

4.2.1 Leadership Behaviors

A number of studies examined the relationship between transformational leadership and IWB (e.g. Afsar & Masood, 2018; Amankwaa et al., 2019; Khalili, 2016). According to Bass (1985) a leader can be defined transformational when, exhibiting behaviors of inspirational motivation, intellectual stimulation, idealized influence and individualized consideration, he/she motivates and stimulates its subordinates to go beyond their own self-interest and do more than what is expected of them. All the studies found transformational leadership to positively affect IWB and most of them found the relationship to be direct (Amankwaa et al., 2019; Khalili, 2016). The support, encouragement and consideration employees receive from transformational leaders stimulate workers to engage in both idea generation and implementation (Khalili, 2016). Two possible explanations for this relationship have been found. First, the behaviors exhibited by transformational leaders lead employees to believe more in their abilities, develop self-confidence and see growth opportunities, thus increasing the probability that employees perform better than expected and engage in discretionary behavior such as IWB (Amankwaa et al., 2019). Second, Khalili (2016) state that the behaviors exhibited by transformational leaders make employees feel safe in taking risks at the workplace, stimulating them to go beyond the routine ways of doing things and experiment new solutions. That is also why the author found the effect on IWB to be stronger when employees also perceive that the organization supports innovation.

Besides the described direct effect, Amankwaa et al. (2019) also found the impact of transformational leadership on IWB to be mediated by job autonomy. They argue that since transformational leaders want to empower employees, intellectually stimulate them and because of the fact they have a high understanding of their subordinates' job needs (individualized consideration), it is likely that they provide employees with more freedom in the execution of their tasks. Job autonomy in turn, provides employees with both the authority to engage in innovative behaviors and the intrinsic motivation to do it.

Afsar and Masood (2018) however highlight how the impact that transformational leadership has on IWB, will not be the same for everyone, and will be the strongest for employees who show high levels of both trust in leader and uncertainty avoidance. On employees who tend to avoid uncertainty, follow rules and seek for the guidance of supervisors, the behaviors exhibited by transformational leaders will be more beneficial compared to employees who are already inclined towards innovation, but only if besides high levels of uncertainty avoidance, they also have high levels of trust in their leaders. Having trust in supervisors implies a feeling of psychological safety that makes employees not to worry about potential failures that a risky activity such as IWB may entail. The combination of transformational leadership, trust in leader and uncertainty avoidance studied by Afsar and Masood (2018) indirectly affects IWB through increased creative self-efficacy because it makes employees develop a self-belief of being able to successfully engage in IWB.

Another leaders' characteristic that was found to predict IWB is leaders' ambidexterity (e.g. Hafeez et al., 2019; Kung et al., 2020). Ambidextrous leadership can be defined as the leader's ability to foster both explorative and exploitative behaviors in their subordinates and to flexible switch from one to the other according to the situation (Rosing et al., 2011). Explorative activities are fostered by leaders' opening

behaviors, which stimulate employees to rethink the way of doing things, find new solutions, take risks and behave creatively, while exploitative activities are fostered by leaders' closing behaviors, which lead employees to follow the rules, minimize errors and failures, and follow their guidance, in order to achieve specific goals (Hafeez et al., 2019). Hafeez et al. (2019) found leaders' ambidexterity to affect IWB both directly and with the mediation of their emotional intelligence. Leaders who show both opening and closing behaviors and are able to switch between the two, encourage employees to engage in both idea generation and idea implementation since IWB's phases require creativity and independence, but also managers' backing and checking activities. Moreover, ambidextrous leaders were found to have greater ability to classify and understand their own and others' emotion, resulting in higher emotional intelligence. Since managerial emotional intelligence is positively associated to leadership effectiveness (Kerr et al., 2006), it is likely to increase subordinates' satisfaction and thus their tendency to engage in extra-role behaviors such as IWB (Hafeez et al., 2019).

However, in public organizations, where managers are usually not able to have interpersonal interactions with every employee, the relationship between ambidextrous leadership and employees IWB is not direct, but mediated through organizational climate for innovation, which is highly influenced by leaders' behaviors (Kung et al., 2020). Leaders' opening behavior signals employees the importance of exploring uncertain opportunities, think creatively and experimenting new things even if they involve risks, thus making them feel there is a safe environment to innovate. On the other hand, closing behaviors make employees feel that the organization is focusing on task orientation and that following rules and procedure is needed to achieve specific goals with standards of excellence (West, 1990). Therefore, engaging in both opening and closing behaviors makes employees perceive there is an organizational climate for innovation, which in turn stimulates employees to generate and implement new ideas (Kung et al., 2020).

4.2.2 Organizational Support

Since employees' perception on organizational climate play an important role in predicting their IWB, fostering a climate which supports and promotes innovation by providing employees with trust and safety to produce innovative outcomes, appears to be crucial (Montani et al., 2014; Kung et al., 2020; Bysted & Jespersen, 2014). Beneficial for IWB is also an environment which promotes employees' well-being (Santoso & Furinto, 2019; Afsar & Badir, 2017), in which employees are provided with opportunities to share knowledge (Radaelli et al., 2014), and in which processes are perceived to be fair so that employees feel that the organization has fulfilled its psychological contract's obligations (Ramamoorthy et al.; 2005). In the literature related to IWB, a lot of attention has been given in particular to the contextual variable of perceived organizational support (POS), which refers to the extent to which employees perceive their organization to support them by valuing their contributions and being concerned about their needs and well-being (Eisenberger et al., 2001). Afsar and Badir (2017) and Riaz et al. (2018) found POS to have a positive direct influence on IWB. Appealing to the social exchange theory in fact, they argue that when employees perceive the organization to support them, they will feel the obligation to reciprocate with proactive and extra-role behaviors such as IWB. Afsar and Badir (2017) also found the relationship between POS and IWB to be mediated by person-organization (P-O) fit, which represents the extent to which an individual's values match the values of the organization in which he/she is employed. Employees who feel supported from the organization in fact, will also feel more attached to it, thus strengthening their perceptions of fit with the organization.

A high compatibility with the organization's values, leads to higher employees' satisfaction and intrinsic motivation (Silverthorne, 2004), prompting them to pay back the organization with extra-role behaviors (Afsar & Badir, 2017). Agarwal (2014) instead, found POS not to have a direct impact on IWB, but to indirectly influence it through increased work engagement. This relationship can be explained using the JD-R model or the social exchange theory. Following the JD-R theory, which states that work characteristics can be classified as job demands, if they require a physical, cognitive or emotional effort, or job resources, if they are job aspects that reduce job demands, or allow to accomplish goals and personal development (Bakker & Demerouti, 2007), POS represents a job resource. Therefore, when employees perceive they are receiving adequate levels of organizational support, POS acts to reduce job demands and stimulates goal achievement and positive attitudes, such as work engagement (Hobfoll, 2001). Following the social exchange theory, employees reciprocate the organization for supporting them and caring about their well-being, by being more engaged at work since this type of attitude is beneficial for the organization. Lastly, following the expectancy theory of motivation (Vroom, 1964), which states that individuals behave in a certain way because they are motivated to gain in the future the consequences they expect to be the result of those particular behaviors, Sulistiawan et al. (2017) found POS to be related to IWB through to expected image gains. In presence of high POS in fact, employees are likely to behave innovatively because, knowing that the organization is favorable to change rather than stay static, they perceive that engaging in IWB will enhance their image within the organization.

4.2.3   Social Support from Managers and Colleagues

After having understood the beneficial effect organizational support has on employees' IWB, it is important to note that the perception of a supportive work climate are strongly influenced by social actors such as managers and coworkers (Ma Prieto & Pilar Perez-Santana, 2014).

Veenendaal & Bondarouk (2015) argue that managers are perceived to be supportive when they encourage employees, show concern for them, provide them with useful feedback and openly communicate with them. Employees in turn feel that they have their supervisors' guidance, that they can easily approach them and that they are provided with room to behave creatively (Ma Prieto & Pilar Perez-Santana, 2014; Amankwaa et al., 2019). When trust, respect and support are present, the quality of the relationship between an employee and his/her supervisor, also defined leader-member exchange (LMX), can be considered high as opposed to low (Morrow et al., 2005; Sparrowe & Liden, 1997; Spreitzer et al., 2010). Coworker support is instead present within an organization when employees trust and respect each other, have collective aspirations, share information and ideas, fostering a climate characterized by collaboration (Sulistiawan et al., 2017; Ma Prieto & Pilar Perez-Santana, 2014).

High-quality relationships with managers and coworker contribute to create an environment where employees perceive less risk because they feel they can count on their supervisors' support and on colleagues' collaboration (Miller & Miller, 2020; Stoffers et al., 2014). Such a feeling of psychological safety (Mura et al., 2016), together with the knowledge exchange associated with strong relationship with coworkers, are likely to trigger IWB because they make employees perceive the presence of a supportive climate for innovation (Ma Prieto & Pilar Perez-Santana, 2014; Dediu et al., 2018). The way manager support and coworker support influence IWB can be explained by different theories. Following the social exchange theory (Blau, 1964), Veenendaal and Bondarouk (2015) argue that employees who perceive their supervisor as supportive will be more committed towards the organization because they

perceive it as the organization is investing in them (McClean & Collins, 2011). This motivates them to mutually reciprocate with discretionary behaviors that are valuable and beneficial for the organization. Both the study of Agarwal et al. (2012) and Agarwal (2014) instead, found an indirect relationship suggesting that when managers support employees, treat them with respect and take care of them from both a professional and an emotional point of view, employees perceive that their supervisors are fulfilling the obligations of the psychological contract. Employees feel therefore motivated to reciprocate with work engagement, which in turn in associated to higher levels of IWB. Following the JD-R theory, high-quality relationships with supervisors and colleagues represent organizational resources which reduce job demands and facilitate the achievement of work goals, giving rise to a motivational process that increases employee engagement and IWB (Dediu et al., 2018; Agarwal et al., 2012; Agarwal, 2014). Lastly, following the expectancy theory of motivation (Vroom, 1964), Sulistiawan et al. (2017) argue that strong relationships with supervisors based on trust, respect and support make employees feel safe that any error and failure that a risky activity like IWB may entails, will not affect negatively their image within the organization. Rather, they feel confident that creating and implementing new ideas will enhance their image in the social context (Sulistiawan et al., 2017).

Consider now the effect of social support on the two phases of IWB. Concerning idea generation, researchers appear to agree on the fact that manager support and coworker support stimulates employees to come up with new ideas (e.g. Veenendaal & Bondarouk, 2015; Birdi et al., 2016; Messmann & Mulder, 2014; Dediu et al., 2018). In addition, going into details, Birdi et al. (2016) found such a social support for innovation to be positively associated with the quantity of the ideas generated as well as with their quality in terms of originality, usefulness and persuasiveness. Concerning the last stage of IWB instead, results are less clear. Some studies found a positive relationship, suggesting that managers and coworker support help employees in implementing the generated ideas (e.g. Veenendaal & Bondarouk, 2015; Dediu et al., 2018). However, Birdi et al. (2016) did not find social support to influence idea implementation, while Messmann and Mulder (2014) found it to be positively associated with the promotion of the new ideas, but not with putting them into practice. An intermediate solution to these conflicting ideas is given by Dediu et al. (2018) who, despite having found a positive association to both idea generation and idea implementation, found empirical evidence that both in the case of manager and colleagues support, the relationship with idea generation is stronger than with idea implementation, suggesting that having feedback, advice and encouragement from social actors is more important for employees to come up with new ideas and solutions.

4.2.4 Task Characteristics

Many studies have been found examining how job demands (Janssen, 2000) and the way a job is designed influence employee's innovative work behavior. First, when innovation is among the job requirements, IWB is likely to be enhanced, especially for older employees, who usually tend more to prioritize goals (Hernaus et al., 2019). Task complexity also appeared to be beneficial for IWB, being positively associated with both idea generation and idea implementation, while monotonous tasks revealed to be detrimental for coming up with new ideas and realize them (Dediu et al., 2018). In addition, Hernaus et al. (2019) found employees' age to moderate the impact of task complexity on IWB, in such a way that it is stronger for younger employees because they are usually faster at processing compared to their older colleagues. Different aspects can make a job complex. When tasks are challenging for instance, they usually involve new situations, changes, unforeseen circumstances and

frequent problems that stimulates employees to use non-routine skills and find new solutions to deal with such a complexity (Holman et al., 2012; Battistelli et al., 2019). Dediu et al. (2018) examined the role of time pressure finding that working at high speed is a stressful working condition that hampers the whole innovative process, while having tight deadlines slightly predicts idea generation, but not idea implementation. They also found that long working hours are conducive to idea generation and implementation, but they argue that this is mainly because when innovating, employees are likely to work outside working hours since they get involved and committed in the innovation process. Forcing them to work long hours on the contrary, would probably lead to increased stress which will hinder IWB (Dediu et al., 2018). In addition, Montani et al. (2014) found that employees who are required to carry out a broad variety of different tasks are better provided with the opportunity to identify areas of improvements in their job, which stimulate them to engage in behaviors oriented to change. This makes them motivated to set goals and develop plans to achieve them, which respectively allow them to make a more efficient use of resources and reduce the risk of failures, thus encouraging IWB. However, cautions must be taken when task variety turns into role overload, because the latter has mixed results on IWB. On one hand, in fact, Clarke and Higgs (2019), found that role overload, which is as a stressor more often found in public organizations, can be beneficial for innovative behavior because it motivates employees to find new ways to perform their job and deal with the stress that such a job challenge usually entails. On the other one, the authors highlight how it can also be interpreted by the employees as a failure of the organization in taking care of their well-being, with detrimental effect for the tendency to engage in extra-role behaviors.

Another task characteristic which received a lot of attention in the literature is the level of discretion an employee has over how to carry out his/her tasks, also called job autonomy (Ramamoorthy et al., 2005; Hackman & Oldham, 1980). Most of the studies revealed the existence of a positive direct relationship between job autonomy and IWB (Amankwaa et al., 2019; De Spiegelaere, 2014; Bysted & Jespersen, 2014; Dediu et al., 2018; Ramamoorthy et al., 2005). Having certain degree of freedom at work stimulates, empowers and motivates employees to go beyond rules and procedures to experiment new ways of doing things with the opportunity to engage in trial and error processes which are inevitably part of the innovation process, without the fear of failing (De Spiegelaere, 2014; Ramamoorthy et al., 2005). It is interesting to notice that job autonomy was found to predict IWB both in studies done on a sample of blue-collar workers (Ramamoorthy et al., 2005) and on a sample of white-collar workers (De Spiegelaere, 2014), suggesting the generalizability of this result over different types of jobs. Concerning the sector instead, Bysted & Jespersen (2014) highlight how job autonomy increases IWB more effectively for private employees compared to public ones, mainly for two reasons. First, because it is very likely that public employees experience lower levels of autonomy than private ones and second, because more than public ones, private employees consider IWB as a discretional behavior with which the organization measure their performance and in which they are therefore more intrinsically motivated to engage aiming to a career advancement (Bysted & Jespersen, 2014). Besides the direct effect on IWB, job autonomy was also found to influence it through some intervening variables. De Spiegelaere (2014) found an indirect effect through increased levels of employees' work engagement because providing them with more opportunity to achieve their goals, job autonomy is likely to increase the absorption, dedication and vigor they feel while working (De Spiegelaere, 2014). Moreover, following the social exchange theory, Ramamoorthy et al. (2005) argue that experiencing job autonomy makes employees perceive that their supervisors fulfilled their obligations which are part of the

psychological contract. Employees in turn, feel the need to mutually reciprocate with the discretionary behavior of IWB which is beneficial for the organization, thus identifying perceived obligation to innovate as a partially mediating variable.

When it comes to decompose IWB in the phases of idea generation and idea implementation, results are less clear on the last phase. Researchers seem to agree on the fact that job autonomy positively influences idea generation and, while some of them propose a direct relationship (e.g. Bysted & Jespersen, 2014; Dediu et al., 2018), Holman et al. (2012) found the relationship to be fully mediated by learning strategies arguing that the level of control an employee has over his/her job tasks stimulates and provides employees with the opportunity to use work-based learning strategies. Including the elaboration and organization of new information (cognitive learning strategies) and the acquisition of information from other people, written material or through practical application (behavioral learning strategies), learning strategies positively affect idea generation by widening the knowledge employees have of the job task and context which in turn, stimulates the creation of innovative ideas Holman et al. (2012). Concerning idea implementation instead, Bysted and Jespersen (2014) and Dediu et al. (2018) found job autonomy to directly influence idea implementation. Orth and Volmer (2017) further explored this aspect analyzing the variable of daily within-person job autonomy and finding that employees are more likely to implement new solutions on days in which they experience more job autonomy, with this relationship being stronger for employees with a higher creative self-efficacy. On the contrary, Holman et al. (2012) did not find job autonomy to be associated to idea implementation. This result also clashes with what stated by Dediu et al. (2018) who instead found job autonomy to be fundamental to successfully put the new ideas into practice since the association with idea implementation has proven to be stronger compared to idea generation.

4.2.5 HR Practices

In the articles of Ma Prieto and Pilar Perez-Santana (2014) and Rehman et al. (2019), HR practices aimed at increasing employees' involvement in the organization were studied in relation to IWB, following the AMO framework, which allows to distinguish them into ability-enhancing, motivation-enhancing, and opportunity-enhancing practices. Practices aimed at improving employees' ability and those aimed at providing employees with opportunities were found to be positively related to IWB both directly and indirectly through the mediation of psychological empowerment, according to Rehman et al. (2019), and the mediation of manager and coworker support, according to Ma Prieto and Pilar Perez-Santana (2014). In the two mentioned studies in fact, it is respectively highlighted how such practices positively influence employees' self-confidence to perform job tasks well and employees' perceptions of social support.

An example of opportunity-enhancing practice is information sharing (Ma Prieto & Pilar Perez-Santana, 2014). Representing the degree to which employees are informed by the organization about its values, policies and goals, information sharing is positively and directly related to both idea generation and idea implementation because it makes employees more aware of what behaviors are expected of them (Veenendaal & Bondarouk, 2015). Battistelli et al. (2019) found the HR practice of information sharing to indirectly affect IWB because it helps creating a learning environment which makes tasks more challenging and increases employees' affective commitment. These two variables in turn, positively influence IWB in the way is has already been described.

An example of ability-enhancing practice is instead, training and development which has been found to have a positive effect on employees' IWB (Birdi, 2005; Susomrith et al., 2019). By including activities aimed at equipping employees with the knowledge, skills and attitudes required for a specific task or job (training) or for the purposes of personal and professional growth (development) (Salas et al., 2012; Aguinis & Kraiger, 2009), training & development was found to provide employees with the cognitive resources that trigger their IWB (Susomrith et al., 2019), considering also that when employees feel they are more competent, they are more motivated (Bysted & Jespersen, 2014). In particular, Birdi (2005) studied training specifically aimed at enhancing employees' innovativeness, finding them to be effective on both idea generation and idea implementation, because they improve the creativity knowledge/skills of individuals and their attitudes towards innovation. Focusing on small firms, Susomrith et al. (2019) also explain the positive relationship between training & development and IWB through the mediation of affective commitment arguing that since these opportunities can improve employees' job performance and professional career, they are very appreciated leading workers to reciprocate by being more emotionally attached to the organization and exhibiting discretionary behaviors. Birdi et al. (2005) however argue that unfavorable environmental factors in terms of management support and climate for innovation can lower the effectiveness trainings have on idea implementation, since this phase strongly relies on the involvement of other people. Not in line with the studies cited so far, is instead the research of Veenendaal and Bondarouk (2015), who found training & development to negatively affect idea generation. They therefore suggests that, while a minimum level of training and development opportunities is beneficial for IWB, providing too many of them appears to suppress employees' creativity, preventing them to come up with new ideas probably because they will feel guided and tend to wallow.

Regarding motivation-enhancing HR practices instead, opinions proved conflicting. While Rehman et al. (2019) found them to be directly related to IWB, Ma Prieto and Pilar Perez-Santana (2014) did not found any significant relation among the two variables. In line with this, findings related to the specific motivation-enhancing HR practice of compensation, are conflicting as well. On one hand, rewards were found to negatively affect idea generation and idea implementation, suggesting that they act as extrinsic motivators resulting to be harmful for discretionary behaviors (Veenendaal & Bondarouk, 2015). In addition, Bysted and Jespersen (2014) did not find non-financial rewards such as recognition and appreciation to be related to IWB. On the other hand, some articles show instead how compensation positively influences innovative behaviors. Ramamoorthy et al. (2005) for instance, found pay to have both a direct effect on IWB and an indirect effect through psychological contract since it makes employees reciprocate for the fact that the organization has fulfilled its obligations towards them. For the same reason, the authors found also meritocracy and the perceived procedural justice to predict IWB. Janssen (2000) adds that the perceived fairness of rewards is likely to moderate the relationship between job demands and IWB. Following the social exchange theory, the author argue that when employees perceive rewards to be fair in relation to their effort, they feel the organization has fulfilled the psychological contract and are therefore likely to engage in discretionary behavior such as IWB, to cope with the increased stress that higher job demands entail. Lastly, studying public organizations, Bysted and Jespersen (2014) found recognition to positively influence idea generation and financial mechanisms to predict idea implementation. This can be explained by the fact that in public organizations, where goals are usually ambiguous and vague as opposed to private ones, rewards and recognition create goal clarity. Since public employees are usually not likely to engage in risky activities

for which they are not paid, financial rewards and appreciation makes them understand that the organization values behaviors such as IWB, by creating a climate which tolerate failures and makes employees feel safe (Bysted & Jespersen, 2014).

4.2.6 Other External Attributions

Some studies highlighted how the organization's stock of knowledge positively but indirectly affects IWB (Mura et al., 2012; Mura et al., 2016). Mura et al. (2012) describes intellectual capital as the knowledge that organizations use to achieve a competitive advantage and comprises human capital, which refers to the knowledge owned by employees, organizational capital, which refers to the codified knowledge available through databases and manual, and social capital, which refers to the knowledge obtained through social interactions and that can be further divided in the two subdimension of affective social capital, referring to trust and reciprocity, and the structural social capital, referring to the linkages among employees. Following the theory of planned behavior, which explains how individuals engage in certain behaviors because of their intentions, the authors found intellectual capital to influence IWB indirectly because it positively influences employees' intentions to share knowledge. Psychological safety was also found to mediate this relationship (Mura et al., 2016). The relationship between the structural component of social capital and IWB was instead found to be direct, highlighting the fundamental role of strong relationship (Mura et al., 2012). Additionally, studying innovative behavior in service organizations, Noopur and Dhar (2019) found human capital to mediate the relationship between knowledge-based HR practices and IWB, and to predict IWB especially when the P-O fit is high rather than low, because people are critical resources in these type of organizations.

The position in which employees are within an organization was also found to predict IWB. In particular, Castellacci et al. (2018) found that employees who work in departments that are more central in the intra-organizational network are more likely to engage in innovative behaviors because such position provides them with more opportunities to interact with other members of the organization and share knowledge.

4.3 IWB's antecedents as Internal and External Attributions

As it has already been mentioned, there seem to be no studies which link the attribution theory to IWB. This means that all the internal and external factors which have been described so far, are mostly studied in the selected articles as antecedents of IWB, rather than employee attributions. The aim of this study is however to investigate how the perceptions of these factors influence employee attributions for IWB. Focusing on perceptions appears fundamental because they are likely to determine and influence employees' behavior. Therefore, while in the selected papers the different variables studied are considered antecedents of IWB because they positively influence it, in this study, the focus is on how they influence employee attributions. Following an attribution theory perspective, in fact, does not mean stating that these internal and external factors influence IWB. Rather it is how employees perceive these factors and how they attribute them to IWB that is going to influence their behavior. To make an example, it has been shown how certain HR practice can stimulate employees' IWB. However, according to an attribution theory perspective, the implementation of such HR practices within the organization does not ensure that employees will come up with innovative outcomes. Rather, it is the way employees perceive these practices that can influence employee attributions on IWB. In the case in which for instance the HR practices are perceived by employees as a way through which the organization controls and manipulates them, exerting pressure on their behaviors, it is possible that their implementation

within the organization will not bring the desired positive effects on IWB. Based on what has been said, *Table 2* provides some necessary clarifications on why the described internal and external categories of IWB's antecedents can be considered employees attributions and how these perceptions influence their behaviors and actions.

Table 2 *- Description of IWB's antecedents as internal and external attributions for IWB*

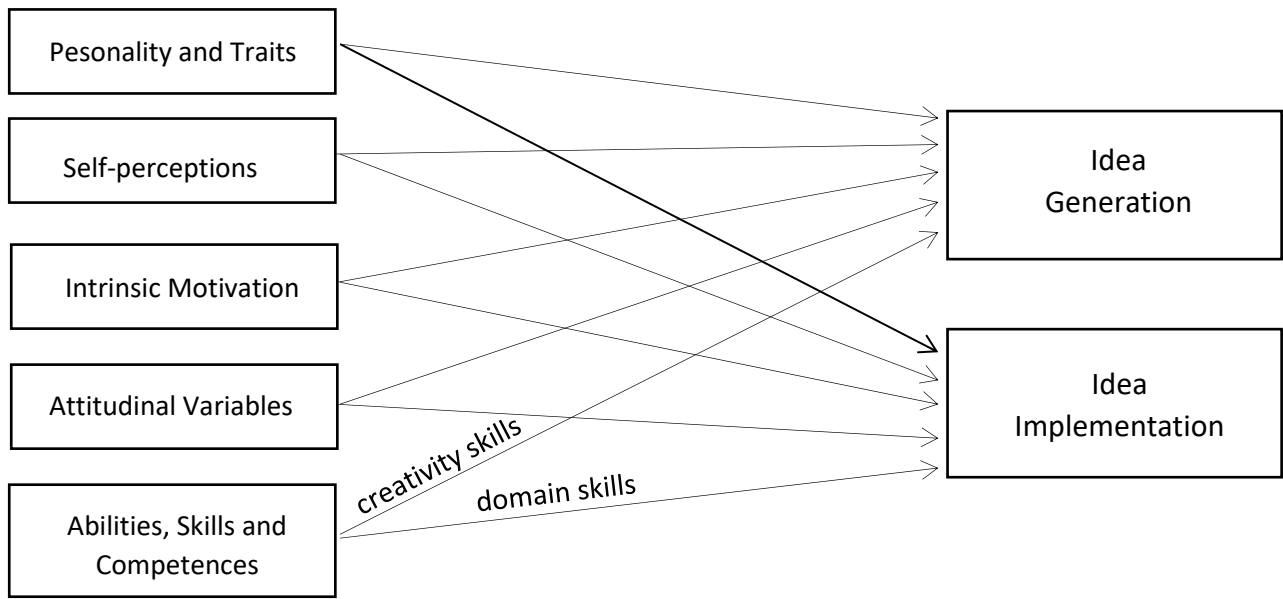| Internal Attributions	
Category of attribution	**Description**
Personality and Traits	The described personality traits and individual orientations can be considered internal attributions for IWB because, under an attribution theory perspective, employees perceive that such personal characteristics can influence their abilities, motivation and, consequently, whether they engage in innovative behaviors or not.
Self-perceptions	Following the attribution theory (Heider, 1958), the power of engaging in IWB does not depend only on individual skills, but also on the attitude employees have toward themselves. Regardless of the level of their competences, high self-perceptions such as self-confidence and self-efficacy influence employees' attributions for IWB making them perceive that they have the power to engage in that behavior.
Intrinsic Motivation	Intrinsic motivation is an internal attribution because it makes employees perceive that their engagement in IWB depends on their individual intention of doing it and on the effort they will put in that activity (Heider, 1958).
Attitudinal Variables	Employees can ascribe IWB to attitudinal variables such as commitment and engagement because such attributions are likely to be perceived as personal states which provide motivation and stimulus to engage in innovative behaviors.
Abilities, Skills and Competences	Abilities such as creativity and operational skills, political skills, ability to share knowledge etc., can also influence employee attributions on IWB. The main reason employees attribute IWB to internal factors such as their competences is that the latter make employees perceive that they are provided with the power of accomplishing that behavior (Heider, 1958).
External Attributions	
Category of attribution	**Description**
Leadership Behaviors	Following the attribution theory, leaders' behavior influences employee attributions on IWB because employees perceive it as an environmental opportunity (Heider, 1958) and stimulus (Kelley, 1973) for IWB. Such perception will make them react with increased IWB, ascribing the causes of this behavior to the perceived beneficial behaviors exhibited by leaders.
Organizational Support	The way the organization is perceived to care about employees' well-being and to support innovation positively influences employee attributions for IWB when the organizational support is perceived to provide opportunities and stimulus for IWB, rather than force innovation.
Social Support from Managers and Colleagues	When employees perceive their relationship with managers and colleagues to be high-quality, they are likely to ascribe the causes of IWB to the environmental factor of social support because they perceive it as an opportunity and stimulus to engage in IWB.

Task Characteristics	While Heider (1958) considers task difficulty as an environmental factor to which individuals usually attribute the failure of accomplishing an activity, the selected studies about IWB showed that job complexity (Dediu, 2018), challenging tasks (Battistelli et al., 2019) and task variety (Montani et al., 2014) are perceived by employees as external pressures (Kelley, 1973) which influence their behavior by stimulating them to find solutions to deal with the higher demands, thus boosting IWB. Job autonomy is instead perceived more as an environmental opportunity which makes easier for employees to engage in innovative behaviors.
HR Practices	The implementation of certain HR practices within the organization does not automatically translates in increased IWB. Rather, it is the way employees perceive these practices that can influence employee attributions on IWB. For instance, the HR practice of information sharing is perceived by employees to provide opportunities for IWB, while the HR practice of training and development is perceived to provide the abilities needed for IWB. Such perceptions make employees react with increased IWB.

Even if in *Table 2* it has been provided an explanation on why and how each category of attributions influences employees' behaviors, what emerged from the results, looking in particular at the variables that mediate and moderate the relationships between the different factors and IWB, is that the identified internal and external attributions sometimes work in combination with each other, rather than individually. For instance, the external attribution of social support has been found to work in combination with internal attributions such as employees' psychological empowerment (Rehman et al., 2019), intrinsic motivation (Messmann & Mulder, 2014) and the ability to integrate work and family domains (Yasir & Majid, 2019). This means that when both such internal and external attributions are present, they support each other and the resulting IWB will be even greater, compared to the situation in which only the internal attribution or the external one is present. The same can be stated for the external attribution of organizational support, which works in combination with the internal attitudinal variables (Agarwal et al., 2014; Riaz et al., 2018) and P-O fit (Afsar & Badir, 2017), and for the internal attribution of creative self-efficacy, which was found to work in combination with the external leadership behaviors (Afsar & Masood, 2018) and the task characteristic of job autonomy (Orth & Volmer, 2017).
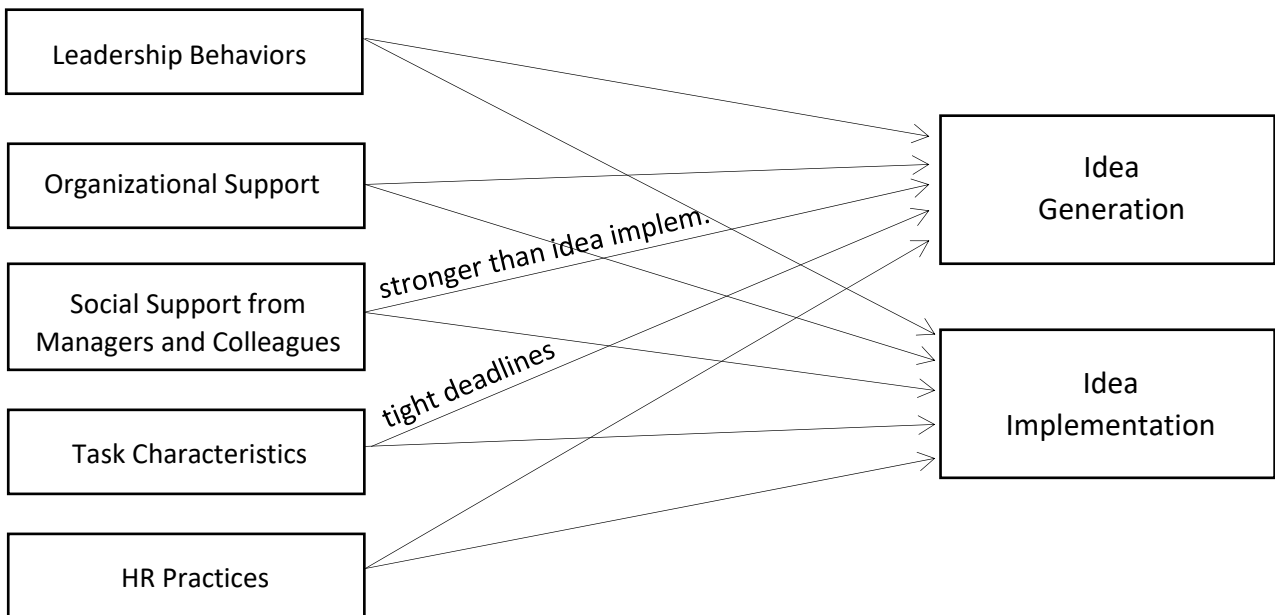
4.4   Framework of Internal and External Attributions for IWB

After having described the categories of internal and external attributions for IWB, *Figure 2* and *Figure 3* provide a framework that presents the results. As it is possible to notice, the different effect that attributions have on the phases of IWB cannot really be seen at the level of macro-categories of attributions, since they all relate to both phases. Rather than being at the level of categories of attributions, the different effects for idea generation and idea implementation are more at the micro-level of variables within the categories of attributions. For instance, considering the external attribution of task characteristics, in the results it has been described how it consists of different aspects such as job complexity, challenging tasks, working under tight deadlines, working long hours etc. The way employees attribute these variables to idea generation and idea implementation is different because some are perceived to be beneficial for both IWB's phases, while some others are beneficial for either the first one or the second one. Therefore, by comprising different variables, the macro-category of task

Figure 2 - *Internal attributions for idea generation and idea implementation*


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Pesonality and Traits
Self-perceptions
Intrinsic Motivation
Attitudinal Variables
Abilities, Skills and Competences

creativity skills
domain skills

Idea Generation
Idea Implementation
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Figure 3 - *External attributions for idea generation and idea implementation*


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Leadership Behaviors
Organizational Support
Social Support from Managers and Colleagues
Task Characteristics
HR Practices

stronger than idea implem.
tight deadlines

Idea Generation
Idea Implementation
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characteristics relates to both idea generation and implementation, but at the micro-level some differences are present. Such issues have been included in the framework, by writing the micro-variables on the arrows that link the attributions to IWB's phases. Therefore, when such "label" on the arrows is present, it shows the micro-level attributions which affect idea generation and idea implementation in a different way. To make an example, consider the internal attribution of abilities, skills and competences in *Figure 2.* The fact that on the arrows that link this categories to idea generation and idea implementation there is written "creativity skills" and "domain skills" does not mean that these two variables are the only ones to make up the category. Rather, it means that all the abilities, skills and competences that were studied in the articles are attributed to both idea generation and idea

implementation, with the exception of creativity skills, which relate only to idea generation and not to idea implementation, and domain skills, which relate only to idea implementation and not to idea generation.

5   Discussion

The purpose of this study was to determine to which internal and external factors employees attribute IWB and try to understand in what way idea generation and idea implementation are predicted by different attributions, considering that the two phases of IWB involve different activities and require different behaviors (Scott & Bruce, 1994). This paper therefore contributes to the existing literature by providing an extensive overview of the internal and external attributions for IWB, an explanation of how these perceptions are related to IWB, and the attempt to link them to IWB's phases.

What emerged from the 50 studies selected for this research is that the internal factors to which employees attribute IWB are personality and traits, self-perceptions about their abilities, intrinsic motivation, attitudinal variables, and abilities, skills and competences. This is in line with the attribution theory, according to which individuals can attribute the successful engagement in a certain activity or behavior to factors which are placed within the person such as personality, ability, attitudes and motivation (Heider, 1958). Employees attribute their engagement in IWB to their orientation towards goals, their ambition, and their need to grow (Hackman & Oldham, 1980; Mumtaz & Parahoo, 2020; Montani et al., 2014; Chughtai & Buckley, 2011). Personality traits such as conscientiousness and openness are not perceived to influence IWB in the same way for every employee, but differently, depending on how long employees have been working within the organization (Woods et al., 2018). Regarding employees' abilities, creativity-relevant skills revealed to be employee attributions for idea generation, while skills related to the job domain, such as job expertise and operational skills, are attributions for idea implementation (Birdi et al., 2016). Also employees' political skills (Grosser et al., 2018; Clarke & Higgs, 2019), ability to share knowledge (Radaelli et al., 2014; Mura et al., 2016) and emotional intelligence (Zhang et al., 2015) are perceived by employees as factors that determine their engagement in IWB. Concerning the ability to engage in explorative and exploitative activities, both employees' ambidexterity and employees' specialization are perceived to be beneficial for IWB, suggesting that when employees show a preference for one of the two, it is not recommended to force them to engage in both (Caniëls & Veld, 2019). Besides to their abilities, employees also attribute IWB to the way they perceive themselves, recognizing that employees who have greater self-confidence tend to react to such perception with more IWB than employees who have less (Santoso & Furinto, 2019; Afsar & Masood, 2018; Clarke & Higgs, 2019). In line with the attribution theory, employees' intrinsic motivation also appeared to be fundamental in predicting IWB, from the generation of the ideas to their implementation (Bawuro et al., 2019), because it determines the level of effort employees will put in such activities. This suggests that employees perceive that possessing the right skills and competences is not enough to produce innovative outcomes, if motivation is not present (Birdi et al., 2016). Lastly, employees attribute IWB to attitudinal states such as their work engagement (Agarwal et al., 2012; Agarwal, 2014; Chughtai, 2013; Chughtai & Buckley, 2011; De Spiegelaere, 2014; Orth & Volmer, 2017) and affective commitment (Battistelli et al., 2019; Amankwaa et al., 2019; Susomrith et al., 2019; Chughtai, 2013) because such factors are likely to determine the motivation and stimulus to engage in discretionary behaviors.

The external attributions that have been identified as determinants of IWB are leadership behaviors, organizational support, social support from managers and colleagues, task characteristics and HR practices. What emerged is that employees perceive that they react with increased IWB when their leaders exhibit transformational behaviors (Afsar & Masood, 2018; Amankwaa et al., 2019; Khalili, 2016) or engage simultaneously in the opening and closing behaviors typical of an ambidextrous leadership (Hafeez et al., 2019; Kung et al., 2020). Also, organizational and social support are perceived to be beneficial for IWB because they create a climate of psychological safety thanks to which employees do not worry about any negative outcomes that a risky activity such as IWB is likely to entail. For these reasons, following the attribution theory, leaders' behavior and external support from the organization and its members are perceived by employees as environmental opportunities (Heider, 1958) and stimuli (Kelley, 1973), to which employees attribute the successful engagement in IWB. While organizational support for innovation appeared to be equally important for the whole innovative process, social support emerged to be more strongly related to idea generation, suggesting that employees attribute the activity of coming up with new ideas especially to the feedback, advices and guidance they receive from managers and colleagues (Dediu et al., 2018), while they may attribute the successful implementation more to other factors, such as their abilities and skills (Birdi et al., 2016). Employees also attribute their IWB to certain task characteristics such as job complexity, while working under time pressures not always seemed to be beneficial for innovative outcomes (Dediu et al., 2018). While the attribution theory considers task difficulty as an environmental factor to which individuals usually attribute the failure of accomplishing an activity (Heider, 1958), when talking about IWB instead, job complexity, challenging tasks (Battistelli et al., 2019) and task variety (Montani et al., 2014) are perceived by employees as a stimulus to find solutions to deal with the higher demands, demonstrating that external pressures are not always detrimental for IWB. Both blue-collar and white-collar workers perceive that experiencing job autonomy provide them with the opportunity to behave innovatively. However, while there is agreement on the fact that autonomy is an attribution for idea generation, results are less clear on idea implementation (Veenendaal & Bondarouk, 2015). Lastly, HR practices are perceived by employees as opportunities and stimuli to which they attribute the successful engagement in IWB, in line with the attribution theory (Heider, 1958; Kelley, 1973). High-involvement HR practices have been studied in relation to IWB following the AMO framework. Opportunity-enhancing practices, such as information sharing, are perceived to positively influence IWB (Rehman et al., 2019; Ma Prieto & Pilar Perez-Santana, 2014; Battistelli et al., 2019; Veenendaal & Bondarouk, 2015). The same can be said for ability-enhancing practices such as training and development (Rehman et al., 2019; Ma Prieto & Pilar Perez-Santana, 2014; Birdi, 2005; Susomrith et al., 2019), at least as long as the these opportunities are not too many (Veenendaal & Bondarouk, 2015). Concerning motivation-enhancing practices such as compensation instead, results are conflicting. Some studies suggest that employees do not perceive their IWB to be attributable to compensation (Bysted & Jespersen, 2014; Veenendaal & Bondarouk, 2015), while other research suggest they do (Rehman et al., 2019; Ramamoorthy et al., 2005), especially in public organizations, where financial mechanism are perceived to create goal clarity (Bysted & Jespersen, 2014).

5.1 Theoretical Implications

By linking the attribution theory to IWB, this study contributed to highlight how the casual inferences employees make about IWB, influence their reactions and future behaviors. Studying the various antecedents of IWB, it was possible to identify employees' internal and external attributions for IWB.

Taking into account also the variables that play a mediating or moderating role in the relationship between the different factors and IWB, what emerged is that internal and external attributions for IWB often work in combination with each other. Stating that employees attribute IWB to internal factors, means that they engage in this kind of behavior because they are innovative by nature and that for this reason, they will exhibit IWB in every context, regardless of the environment. On the contrary, stating that employees attribute IWB to external factors, means that since employees' IWB depends on the environment, everyone can engage in this type of behavior, regardless of their personal characteristics and predispositions. However, the results of this study do not show that internal attributions are better than external ones or vice versa, but rather that they often act in combination, meaning that they are both needed, for both phases of IWB. What emerged is in fact that when both certain internal attributions and external ones are present, they support each other and the resulting IWB will be even greater, compared to the situation in which only the internal attribution or the external one is present.

5.2   Implications for Practice

By examining the way internal and external attributions influence IWB and identifying the variables that mediate and moderate these relationships, what emerged is that IWB is often perceived as determined by a combination of internal and external factors. Apart from personality traits in fact, internal factors such as skill, work engagement, commitment and motivation can be enhanced through external factors such as trainings, job autonomy and support. External factors can in fact contribute to make employees perceive the psychological safety they need in order to engage in a risky activity such as IWB. To promote idea generation, organizations should focus on providing a supportive environment. To this end leaders can be trained to better understand subordinated needs, encourage them, and provide them with the necessary room to come up with new ideas. Moreover, to increase colleagues support, organization could think about planning periodic events in which employees can socialize and build relationships, thus fostering collaboration among them. To promote idea implementation instead, organizations should focus on providing trainings that can improve employees' operational skills and political skills. In any case, ensuring that employees are engaged at work should be a focus of the organization, otherwise the resources provided might not have the desired effects. Lastly, it is recommended to organizations to identify action plans specifically designed for different employee targets. It is possible in fact that, because of internal reasons, employees show a preference for either activities aimed at the exploration of new opportunities or activities focused at reaching goals and developing solutions. Stimulate them to engage in activities for which they are not suited could represent a waste of resources.

5.3   Limitations

This study is not without limitations. First, since some of the articles that were found to meet the selection criteria were not publicly available, their content could not be analyzed for this research. Then, despite having described in the methodology all the steps that have been followed to increase transparency, the possibility that there is some subjectivity in the study selection is still present, because even if the systematic literature review involves using electronic search engines, the selection process is still conducted by humans (Daniels, 2019). In this regard it must be noted that the whole articles' selection process has been designed and conducted by only one researcher. On the contrary, thanks to the presence of different points of view and the possibility to discuss in case of doubts or disagreement, including other researchers would probably have contributed to reduce biases during the selection of the keywords, the judgment of the abstracts against the criteria, and the content analysis, adding value

to the research. In addition, this research examined the attributions for IWB, without focusing on a particular sector. Since different sectors may involve different activities, further research could focus on specific sectors in order to understand whether some factors better predict IWB than others. In the same way, this study did not focus on a particular type of worker. Even if job autonomy was found to be perceived as an external attribution for IWB by both blue- and white-collar workers, this might not be the same for other factors. Further research is therefore needed to examine to what factors different types of workers attribute IWB since they usually deal with different activities, which may require different capabilities or on which external factors may have different effects. Moreover, the studies analyzed in this research have been selected regardless of which subject evaluated IWB and the other factors. Making a distinction was not possible because many of the studies applied a mixed approach in the sense that, for instance, employees were asked to report on the determinants of IWB, while managers were asked to report on employees' IWB, or vice versa. However, considering the important role played by perceptions, further studies could try to investigate whether employees and managers have different perceptions on how employees' IWB is determined, attributing IWB to different factors. Further research is also needed to better examine the perceptions employees have on the way compensation influences their IWB. The available studies in fact present very conflicting results. Since this could be due to ambiguous or different operationalization of the construct, it could be interesting, for example, to analyze separately earnings and rewards. Lastly, when considering the distinction of IWB in its two phases, for more than one attribution what has emerged is that, while researchers seem to agree on the effect on idea generation, results are conflicting and less clear for idea implementation, suggesting that the last phase of IWB needs to be further investigated.

6 Conclusion

This research examined and integrated existing empirical literature on IWB, in order to build a framework of the internal and external attributions for IWB. The main internal attributions for IWB that were identified are employees' personality and traits, self-perceptions, intrinsic motivation, attitudinal variables, and abilities, skills and competences, while the external ones are leadership behaviors, organizational support, social support from managers and coworkers, task characteristics and HR practices. The findings suggest some of the possible ways in which IWB can be stimulated and highlight how IWB is usually perceived by employees as being determined by a combination of internal and external attributions. What emerged is also that while attributions such as motivation and organizational support have been found to be crucial for the whole innovative process, some other attributions have different effects on idea generation and idea implementation, or they affect the two stages of IWB with a different intensity. Therefore, in case organizations have shortcomings specifically in one of the two phases, in order not to waste resources, it would be better to focus investments on specific attributions for which a general agreement in the literature was found. That would mean to focus on enhancing employees' creativity skills, job autonomy and social support from managers and coworkers to encourage idea generation, and on skills related to the job domain for idea implementation.

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Appendix

Table 3 - *Description and main findings of the articles included in the systematic literature review*

Authors and Title	Research Purpose(s)	Methodology and Sample	Operationali-zation of IWB	Internal Attributions for IWB	External Attributions for IWB	Main findings
Afsar and Badir (2017) - Workplace spirituality, perceived organizational support and innovative work behavior: The mediating effects of person-organization fit	Examine the relationships between workplace spirituality and perceived organizational support (POS) with IWB, and whether person-organization (P-O) fit mediates these relationships	Quantitative study - 434 subordinates and 59 supervisors from different departments of 5 Chinese leading hotels	IWB	P-O fit	POS and workplace spirituality	Workplace spirituality and POS positively influence IWB through the partial mediation of P-O fit
Afsar et al. (2018) - Do nurses display innovative work behavior when their values match with hospitals' values?	Examine the relationship between P-O fit and IWB, and whether this relationship is mediated by psychological empowerment and moderating by knowledge sharing behavior	Quantitative study - 441 nurses and 73 doctors from four public sector hospital in Thailand	IWB	P-O fit and psychological empowerment	-	P-O fit positively influence IWB through the partial mediation of psychological empowerment. Knowledge sharing behavior (both sharing best practices and sharing mistakes with co-workers) moderates this relationship.
Afsar and Masood (2018) - Transformational leadership, creative self-efficacy, trust in supervisor, uncertainty avoidance, and innovative work behavior of nurses	Examine the moderating role of trust in leader and uncertainty avoidance in the relationship between transformational leadership and innovative work behavior of nurses. Examine also the mediating role of creative self-efficacy in this three-way interaction on nurses' IWB.	Two quantitative studies - Study 1: 322 nurses and their supervisors from public sector hospitals in Pakistan. Study 2: 371 nurses and their supervisors from private sector hospitals in Pakistan	IWB	Creative self-efficacy	Transformational leadership	Trust in leader and uncertainty avoidance moderate the relationship between transformational leadership and IWB. Creative self-efficacy mediates the relationship between this three-way interaction (transformational leadership, trust in leader and uncertainty avoidance) and IWB.
Agarwal et al. (2012) - Linking LMX, innovative work behaviour and turnover intentions: The mediating role of work engagement	Examine the relationship between leader-member exchange (LMX) with employees' innovative work behavior (IWB) and intentions to quit and the mediating role of work engagement in these relationships	Quantitative study - 979 managers from six Indian private-service companies	IWB	Work engagement	Leader-member exchange (LMX)	Leader-member exchange (LMX) is positively associated with IWB through the full mediation of work engagement
Agarwal (2014) - Examining the impact of social exchange relationships on innovative work behaviour: Role of work engagement	Examine antecedents, moderator and mediator of IWB. In particular, examine the impact of perceived organizational support (POS), LMX and work engagement on IWB; examine the moderating role of LMX in the relationship between POS and IWB; examine the mediating role of work engagement in the	Quantitative study - 510 managers of two Indian private-service companies	IWB	Work engagement	POS and LMX	POS, LMX and work engagement are positively associated to IWB. LMX and POS influence IWB, through the full mediation of work engagement. LMX moderate the relationship between POS and IWB.

						relationship between LMX and POS with IWB.
Amankwaa et al. (2019) - Transformational leadership with innovative behaviour: Examining multiple mediating paths with PLS-SEM	Examine the mediating role of job autonomy, affective commitment and supportive management in the relationship between transformational leadership and IWB	Quantitative study - 358 employees of two banks in Ghana	IWB	Affective commitment	Transformational leadership, job autonomy and supportive management	Transformational leadership is positively associated to IWB through the partial mediation of job autonomy and supportive management. Affective commitment did not mediate the relationship between transformational leadership and IWB
Battistelli et al. (2019) - Information sharing and innovative work behavior: The role of work-based learning, challenging tasks, and organizational commitment	Examine how employees' perception of the HRM practice of information sharing relates to their IWB through the sequential mechanism of work-based learning, challenging tasks and organizational commitment.	Quantitative study - 756 employees (various ranks) of an Italian military organization	IWB	Affective commitment	Information sharing and challenging tasks	Information sharing had an indirect relationship to challenging tasks and affective commitment through work-based learning (task-related learning and interactional learning). Both challenging tasks and affective commitment are positively related to IWB.
Bawuro et al. (2019) - Prosocial motivation and innovative behaviour: An empirical analysis of selected public university lecturers in Nigeria	Examine how prosocial motivation affects innovative work behavior of public employees in an emerging economic context	Quantitative study - 320 employees from six public universities in Nigeria	Idea generation, idea promotion and idea realization	Prosocial motivation	-	Prosocial motivation positively influences IWB beacuse it positively affects idea generation, idea promotion and idea realization.
Birdi et al. (2016) - The relationship of individual capabilities and environmental support with different facets of designers' innovative behavior	Examine how individual knowledge, skill, motivational attributes and environmental support influence the different phases of design engineers' IWB	Quantitative study - 169 design engineers of 1 multinational engineering company in 4 countries	Idea generation and idea implementation	Cretivity-relevant skills, domain-relevant skills (job expertise and operational skills) and intrinsic motivation to innovate	Departmental support	Cretivity-relevant skills and departmental support were positively associated with idea generation and not to idea implementation. Employees' operational skills, job expertise and motivation to innovate were more strongly related to idea implementation respect to generation. Contextual knowledge is not related to idea implementation and job control is not associated to IWB
Birdi (2005) - No idea? Evaluating the effectiveness of creativity training	Examine the effectiveness of creativity training for IWB and whether environmental factors contrast this influence	Quantitative and qualitative study - 71 employees of a UK civil service organization	Idea generation and idea implementation	-	Creativity trainings	Creativity trainings are associated with idea generation and idea implementation. The environmental factors of management support and divisional climate for innovation influence the impact that creativity training has on idea implementation, limiting it when they are unfavourable.
Bysted and Jespersen (2014) - Exploring managerial mechanisms that influence innovative work behaviour: Comparing private and public employees	Examine whether financial, decentralization, and participative mechanisms influence IWB of private and public employees differently	Quantitative study - 8310 employees (3743 public and 4567 private) from different industries and subsectors in Denmark, Norway and Sweden	Idea generation and idea implementation	-	Financial mechanisms (for public employees); decentralization mechanisms: job autonomy and competence development; participative mechanisms: innovation trust and recognition (recognition, for public employees)	Financial mechanisms do not affect idea generation, but negatively influence idea implementation of private employees, while they seem to motivate idea implementation of public employees. Job autonomy positively influeces both idea generation and idea implementation. Competence development positively influences both idea generation and idea implementation, but these effects are lower for public employees respect to private employees. Innovation trust is

						positively related to both idea generation and idea implementation, and it is not moderated by the context (the relationship is not stronger for public employees compared to private ones). Recognition is not related to IWB for private employees, but for public employees it is positively associated to idea creation.
Caniëls and Veld (2019) - Employee ambidexterity, high performance work systems and innovative work behaviour: How much balance do we need?	Examine the relationship between employees' ambidexterity by examining both the balanced situation in which employees engage in explorative and exploitative activities in equal amounts and the unbalance situation in which they specialize in either explorative or exploitative activities. Examines also whether high-performance work systems moderate these relationships	Quantitative study - 160 employees of an organizational support unit of the Dutch Defence organization	IWB	Employees' ambidexterity and employees' specialization	-	Employees' ambidexterity and employees' specialization in either explorative or exploitative activities positively influences IWB. High-performance work systems do not moderate these relationships
Castellacci et al. (2018) - Functional centrality and innovation intensity: Employee-level analysis of the Telenor group	Examine the relationship between functional department (FD)'s centrality and employees' innovation intensity, and whther task characteristics (quality and analytical detail, entrepreneurial and risk taking attitude, and result orientation) moderate this relationship	Quantitative study - Almost 16000 employees from all functional departments and business units of a multinational telecommunications company	IWB (in the article: "employees' innovation intensity")	-	Functional department's centrality	FD's centrality is related to employees' innovation intensity, with this relationship being moderated by task characteristics (quality and analytical details, and entrepreneurial and risk-taking attitude positively moderate this relationship, while result orientation negatively moderate this relationship). The relationship between centrality and innovation is inversely U-shaped, but only with respect to cross-functional collaboration among distinct BUs.
Chughtai and Buckley (2011) - Work engagement: Antecedents, the mediating role of learning goal orientation and job performance	Examine the effect of trust on work engagement and whether learning goal orientation mediates the relationship between work engagement and two forms of job performance: in-role performance and innovative work behavior	Quantitative study - 168 research scientists from six Irish science research centres	IWB	Work engagement and learning goal orientation	-	Work engagement is positively associated to IWB with the partial mediation of learning goal orientation
Chughtai (2013) - Linking affective commitment to supervisor to work outcomes	Examine the relationship between affective commitment to supervisor and three work outcomes: innovative work behavior and two types of learning behaviours which are feedback seeking for self-improvement and error-reporting. Examine also	Quantitative study - 192 research scientists from six Irish science research centres	IWB	Affective commitment to supervisor and work engagement	-	Affective commitment to the supervisor positively affects IWB through the full mediation of work engagement

	the mediating role of work engagement of in these relationships					
Clarke and Higgs (2019) - Political skill and role overload as antecedents of innovative work behavior in the public sector	Examine the relationship between political skills and role overload with IWB among public sector employees, and the mediators of these relationships	Quantitative study - 249 employees (junior doctors) in the public health sector in the United Kingdom	IWB	Political skill and role-breadth self-efficacy	Role overload and POS	Political skill has a positive effect on IWB, through the full mediation of role-breadth self-efficacy. Role overload has a positive direct effect on IWB, but also a negative indirect effect on IWB, thorugh the mediating role of POS.
De Spiegelaere (2014) - On the relation of job insecurity, job autonomy, innovative work behaviour and the mediating effect of work engagement	Examine the relationship between job insecurity and job autonomy with IWB and whether work engagement mediates these relationships	Quantitative study - 927 Flemish employees (including managers) from five different industries	IWB	Work engagement	Job autonomy	Job autonomy is positively associated with innovative work behavior through the partial mediation of work engagement
Dediu et al. (2018) - Job demands, job resources and innovative work behaviour: a European Union study	Examine the relationship between job demands (time constraints), job resources (autonomy and social support), and other work factors (task monotony, complexity, and dealing with unforeseen problems) with IWB	Quantitative study with secondary data - 12942 employees of organizations in 27 EU member states	Idea generation and idea implementation	Education	Working under tight deadlines, working long hours, autonomy, collegue support, manager support, manager encouragement, task complexity and dealing with unforeseen problems	Working with high speed is negatively associated with idea implementation and non-significant for idea generation. Working on tight deadlines has a small positive association with idea generation, but not with idea implementation. Long working hours are positively associated with both idea generation and idea implementation. The level of autonomy and the level of social support (colleague support, manager support and manager encouragement) are positively related with both idea generation and idea implementation. Task complexity and having to deal with unforeseen circumstances are positively related with both idea generation and idea implementation, while monotonous tasks were negatively related to both stages. Employees' level of education is positively related to both idea generation and idea implementation
Grosser et al. (2018) - A Sociopolitical perspective on employee innovativeness and job performance: The role of political skill and network structure	Examine how political skills and network structure influence employees' innovativeness and job perfomance	Quantitative study - Primary study: 113 employees of a division of a semiconductor manufacturer in the US. Replication study: 33 cardiac physician and surgeon of an hospital in the US	IWB (in the article: "employee innovation involvement")	Political skills	-	Employees' political skills positively influence their IWB and structural holes in the ideation network moderate this relationship
Hafeez et al. (2019) - Ambidextrous leadership and innovative work behavior: Mediating role of emotional intelligence	Examine the relationship between ambidextrous leadership and IWB, and whether emotional intelligence mediates this relationship	Quantitative study - 130 employees from IT companies in Pakistan	IWB	-	Ambidextrous leadership and leaders' emotional intelligence	Ambidextrous leadership has a positive influence on IWB and leaders' emotional intelligence mediates this relationship
Hernaus et al. (2019) - Age-sensitive job design antecedents of innovative work behavior: The role of cognitive job demands	Examine the moderating role of chronological age in the relationship between cognitive job demands (job complexity and job	Quantitative study - 336 employee-supervisor dyads from 61 departments across	IWB	-	Job complexity and job innovation requirements	Employees' chronological age moderates the positive relationship between job complexity and IWB so that it is stronger for younger employees compared to older

	innovation requirements) and IWB	three Croatian organizations				employees. Employees' chronological age moderates the positive relationship between job innovation requirements and IWB so that it is stronger for older employees compared to younger employees.
Holman et al. (2012) - Job design and the employee innovation process: The mediating role of learning strategies	Examine whether employee learning strategies mediate the relationship between job design (job control and problem demands) and the phases of IWB	Quantitative study - 327 employees of a UK manufacturing organization	Idea generation, idea promotion and idea implementation	Work-based learning strategies	Job control and problem demands	Job control is positively and indirectly associated with idea generation through the full mediation of learning strategies. Problem demand is associated with idea generation through the partial mediation of learning strategies.
Janssen (2000) - Job demands, perceptions of effort-reward fairness and innovative work behaviour	Examine the moderating role of perceived effort-reward fairness in the relationship between job demands and IWB	Quantitative study - 170 non-management employees from all departments of a Dutch industrial organization in the food sector	IWB	-	Job demands	Job demands were found to be positively related to IWB when employees perceived effort–reward fairness rather than under-reward unfairness
Karkoulian et al. (2019) - The moderating role of 360-degree appraisal between engagement and innovative behaviors	Examine the moderating role of 360-degree evaluations in the relationship between engagement and three different types of innovative behavior (idea generation, idea implementation and innovative use of company resources)	Quantitative study - 166 employees selected randomly in Lebanon	Idea generation and idea implementation	Engagement	-	Engagement is positively associate to idea generation and idea implementation. The presence of 360-degree evaluations moderate these relationships.
Khalili (2016) - Linking transformational leadership, creativity, innovation, and innovation-supportive climate	Examine how transformational leadership affects employees' creativity and innovation in developing countries. Examine also the mediating role of employees' perceptions of a supportive climate for innovation, in these relationships	Quantitative study - 1172 employees of different industries in Iran	Idea generation (in the article: "employee's creativity") and idea implementation (in the article:"idea innovation")	-	Transformational leadership	Transformational leadership was found to be positively related to employees' creativity and innovation. These relationships are moderated by employees' perceptions of a supportive climate for innovation.
Korzilius et al. (2017) - Multiculturalism and innovative work behavior: The mediating role of cultural intelligence	Examine the mediating role of cultural intelligence in the relationship between multiculturalism and IWB	Quantitative study - 157 employees from different departments of an international Dutch staffing agency	IWB	Multiculturalism and cultural intelligence	-	Multiculturalism has an indirect positive relationship with IWB through the full mediation of cultural intelligence
Kung et al. (2020) - Ambidextrous leadership and employee innovation in public museums	Examine how ambidextrous leadership influences employees' IWB in public museums, and the mediating role of organizational climate in this relationship	Quantitative study - 30 HR managers, 74 operational department managers and 237 employees from 30 museums in Taiwan	IWB	-	Ambidextrous leadership and organizational climate for innovation	Ambidextrous leadership positively influences employees' IWB through the mediating role of organizational climate for innovation.
Ma Prieto and Pilar Perez-Santana (2014) - Managing innovative work behavior: the role of human resource practices	Examine the mediating role of contextual factors (management support and coworker support) in the relationship between high-involvment HR practices and IWB	Quantitative study - 198 HR managers or CEOs of Spanish firms from different industries activities	IWB	-	High involvement ability-enhancing and opportunity-enhancing HR practices, manager support and coworker support	Ability-enhancing and opportunity-enhancing HR practices are positively related to IWB with the partial mediation of manager support and coworker support. Motivation-enhancing HR practices have no significant relation to IWB.

Maqbool et al. (2019) - Micro-foundations of innovation: Employee silence, perceived time pressure, flow and innovative work behaviour	Examine how flow and employee silence affect IWB and how time pressure mediates these relationships. Examine also how flow, employee silence and time pressure simultaneously relate to IWB.	Quantitative study - 608 white-collar employees of five medium-to-large organizations in Italy	IWB	Flow	-	Employee silence is negatively related to IWB, with this relationship being moderated by time pressure so that when the perceived time pressure is high, the relationship is less negative than when the time pressure is low. Flow is positively related to IWB and this relationship is not moderated by time pressure. Perceived time pressure is not related to IWB through a direct effect. The three-way interaction among employee silence, flow and time pressure significantly predict IWB so that a low level of employee silence, a low level of time pressure and a high level of flow produce the highest level of IWB.
Messmann and Mulder (2014) - Exploring the role of target specificity in the facilitation of vocational teachers' innovative work behaviour	Examine whether employees have different needs according to the target specificity of the innovation task in which they engage, by investigating the role of perceived impact, perceived social support and intrinsic task motivation in relation to the different tasks of IWB.	Quantitative study - 239 vocational teachers of different colleges in Germany	Opportunity exploration, idea generation, idea promotion, idea realization and idea reflection	Perceived impact and intrinsic task motivation	Perceived social support	Perceived impact is positively associated with opportunity exploration (low target specificity task). Perceived social support is positively associated with idea generation, idea promotion and idea reflection (high target specificity tasks), while the relationship with idea realization was not significant. Intrinsic task motivation is positively assciated with all innovation tasks (all levels of target specificity) and mediates the relationship between perceived impact and perceived social support with all innovation tasks.
Miller and Miller (2020) - Innovative work behavior through high-quality leadership	Examine how high-quality leader-member relationships can influence employees' engagement/job commitment and IWB in the grocery retail industry	Qualitative study - 15 knowledge workers consisting of managers and analysts	IWB	Employees' engagement/job commitment	High-quality leader-member relationships	High-quality relationships between knowledge workers and their leaders positively affect their engagement/job commitment which in turn is associated to increased IWB
Montani et al. (2014) - Individual and contextual determinants of innovative work behaviour: Proactive goal generation matters	Examine the extend to which proactive goal generation explains how the individual factor of LGO and the contextual factors of psychological climate for innovation and task variety influence employees' IWB	Quantitative study - 107 employees of 14 small Italian firm from different industry sectors	IWB	LGO and proactive goal generation	Psychological climate and task variety	LGO positively affects IWB though the partial mediation of proactive goal generation. Psychological climate and task variety positively affect IWB through the full mediation of proactive goal generation. LGO moderates the relationship between proactive planning and IWB.
Mumtaz and Parahoo (2020) - Promoting employee innovation performance: Examining the role of self-efficacy and growth need strength	Examine the relationship between self-efficacy (SE) (SE-initiative, SE-effort, SE-persistence) and growth need strength (GNS) with employees innovation performance (IP) and examine the mediating role of SE in the relationship between GNS and IP	Quantitative study - 354 managerial-level employees from various service sector companies (including different industries) in United Arab Emirates	IWB (in the article: "innovation performance")	SE effort, SE persistence and GNS	-	SE-initiative does not influence IP. SE-effort, SE-persistence and GNS are positively associated with IP. SE does not mediate the relationship between GNS and IP

Mura et al. (2016) - Behavioural operations in healthcare: A knowledge sharing perspective	Examine whether different knowledge sharing behaviour (i.e. sharing best practices, sharing mistakes and seeking feedback) are promoted by different types of knowledge assets (organizational capital, structural social capital and relational social capital) and differently affect the dimensions of employees' IWB	Quantitative study - 195 health care professional employees of three non-profit hospice and palliative care organizations in Italy	Idea generation, idea promotion and idea implementation	Knowledge sharing (sharing best practices, sharing mistakes and seeking feedback)	Knowledge assets and psychological safety	Knowledge sharing positively affects IWB: sharing best practices influences idea generation, idea promotion and idea implementation, sharing mistakes influences idea implementation and seeking feedback influences idea promotion. Knowledge sharing together with psychological safety mediate the positive relationship between knolewdge assets (organizational capital, structural social capital and relational social capital) and IWB.
Mura et al. (2012) - Intellectual capital and innovative work behaviour: Opening the black box	Examine the relationship between intellectual capital dimensions and IWB and whether knowledge sharing behaviour mediates this relationship	Quantitative study - 135 health care professional employees of three not-for-profit hospice and palliative care organizations in Italy	IWB	Knowledge sharing behavior	Intellectual capital	The organization's intellectual capital has a positive indirect influence on IWB through the full mediation of knowledge sharing and its antecedents (intentions, attitudes and perceptions of behavioral control). The relationship with IWB is instead direct for the structural component of social capital.
Mussner et al. (2017) - The effect of work ethic on employees' individual innovation behavior	Examine the relationship between the different dimensions of work-ethic (leisure, hard-work, centrality of work, wasted time, morality/ethics, delay of gratification, self-reliance) and individual innovation behavior, and whether perceptions of a fair pay moderate these relationships	Quantitative study - 256 employees working in different companies and industries in Austria	IWB (in the article: "individual innovation behavior (IIB)")	Work ethic (Wasted time, self-reliance, leisure (only with the moderation of fair salary) and centrality of work (only with moderation of fair salary))	-	Leisure is negatively associated to IIB with this relationship being moderated by perceptions of fair salary. Hard-work is negatively associated to IIB and fair salary does not moderate this relationship. Centrality of work is not related to IIB, but fair salary moderate this relationship. Wasted time is positively associated to IIB and fair salary does not moderate this relationship. Self-reliance is positively associated to IIB with this relationship being moderated by fair salary. Morality/ethics and delay of gratification are not associated with IIB.
Noopur and Dhar (2019) - Knowledge-based HRM practices as an antecedent to service innovative behavior: A multilevel study	Examine the relationship between knowledge-based human resource management practices and employees' service innovative behavior through the mediating role of human capital and examine whether P-O fit moderates this relationship	Quantitative study - 278 employees and 86 managers from 47 Indian tourists hotels	IWB	-	Knowledge-based human resource management practices and human capital	Knowledge-based human resource management practices positively influence employees' service innovative behavior through the mediation of human capital. The relationship between human capital and employees' service innovative behavior is moderated by P-O fit
Orth and Volmer (2017) - Daily within-person effects of job autonomy and work engagement on innovative behaviour: The cross-level moderating role of creative self-efficacy	Examine how situational (daily) job autonomy and momentary (daily) work engagement affect daily idea implementation, and how creative self-efficacy moderates these relationships	Quantitative study - 123 employees from different German companies	Idea implementation (in the article: "innovative behavior")	Daily work-engagement	Daily job autonomy	Daily job autonomy and daily work engagement are positively associated to daily idea implementation. Creative self-efficacy moderates the relationship between daily job autonomy and daily idea implementation, but not the relationship between daily work engagement and daily idea implementation

Radaelli et al. (2014) - Knowledge sharing and innovative work behaviour in healthcare: A micro-level investigation of direct and indirect effects	Examine the way employees' knowledge sharing influences their own IWB	Quantitative study - 150 professional employees from four non-profit palliative care organizations in Italy	IWB	Knowledge sharing behavior and ability to share knowledge	Opportunity to share knowledge	Employees' knowledge sharing has a direct positive effects on their own IWB. Ability to share knowledge and opportunity to share knowledge directly and positively influence IWB
Ramamoorthy et al. (2005) - Determinants of innovative work behaviour: Development and test of an integrated model	Examine the linkages among psychological contract variables (i.e. met expectations and obligation to innovate), organizational processes (i.e. meritocracy and justice perceptions of equity and procedural justice) and job design variables (i.e. job autonomy and pay) in predicting IWB.	Quantitative study - 204 blue-collar employees from multiple manufacturing organizations in Ireland	IWB	-	Job autonomy, pay, justice perceptions of equity, procedural justice, meritocracy and psychological contract variables	Job autonomy has a positive effect on IWB through the partial mediation of obligations to innovate. - Pay has a positive effect on IWB through the partial mediation of met expectation. The two justice perception variables (equity and procedural justice) and meritocracy affect IWB through the full mediation of psychological contract variables (obligations to innovate and met expectations).
Rehman et al. (2019) - High involvement HR systems and innovative work behaviour: The mediating role of psychological empowerment, and the moderating roles of manager and co-worker support	Examine the mediating role of psychological empowerment in the relationship between high-involvement HR practices and IWB, and whether this relationship is moderated by management support and co-worker support	Quantitative study - 538 operational employees, 81 supervisors and the HR managers of 51 software companies in Pakistan	IWB	Psychological empowerment	High-involvement HR practices (ability-, opportunity-, motivation-enhanching)	High involvement motivation-enhancing HR practices have a positive direct effect on IWB. High involvement ability-enhancing and opportunity-enhancing are positively related to IWB through the mediation of psychological empowerment. The relationship between psychological empowerment and IWB is moderated by management support and co-worker support.
Riaz et al. (2018) - Understanding employee innovative behavior and thriving at work: A Chinese perspective	Examine the relationship between thriving at work and IWB and whether this relationship is mediated by organizational support for innovation (contextual factor) and moderated by external work contacts (social factor)	Quantitative study - 402 employees working in R&D of five different organizations in China	IWB	Thriving at work	Organizational support for innovation	Thriving is positively associated with IWB through the partial mediation of organizational support for innovation. The indirect relationship (with the mediation of organaitional support) is moderated by external work contacts in the path between organizational support for innovation and IWB.
Santoso and Furinto (2019) - Combining self-efficacy and employee friendly workplace to generate innovative work behavior: Evidence from telecommunication industry	Examine how employees' self-efficacy and perceived friendly workplace affect employees' IWB and their job satisfaction	Quantitative study - 245 employees from three telecommunication companies in Indonesia	IWB	Self-efficacy	Perceived employee friendly workplace	Employees' self-efficacy and perceived employee friendly workplace are positively related to IWB
Stoffers et al. (2014) - Towards a moderated mediation model of innovative work behaviour enhancement	Examine whether firm (organizational and market) performance moderates the relationship between LMX and organizational citizenship behavior (OCB) with employability, within a previously validated model in which employability mediates the relationship between LMX and OCB with IWB	Quantitative study - 487 pairs of employees and immediate supervisors of 151 small- and medium-sized enterprises (SMEs) in the Netherlands	IWB	OCB and employability	LMX	Firm performance was found to partially moderate the relationship between LMX and employability, in a model in which employability mediates the relationship between LMX and IWB. Firm performance (organizational and market) was found to moderate the relationship between OCB and employability in a model in which employability mediates the relationship between OCB and IWB.
Sulistiawan et al. (2017) - The antecedents of	Examine the antecedents of IWB and	Quantitative study - 214 employees	IWB	-	POS, superior relationship	POS, superior relationship quality and group relationship

innovative work behavior: The roles of self-monitoring	examine the role of the individual factor of self-monitoring	from companies in different industries in Indonesia			quality and group relationship quality	quality are positively related to IWB through expected image gains. POS and superior relationship quality are negatively related to expected image risks which is in turn negatively related to IWB (no evidence for the negative relationship between group relationship quality and expected image risk was found). - Self-monitoring was found to moderate the relationship between expected image risks and IWB, but not the relationship between expected image gains and IWB.
Susomrith et al. (2019) - Training and development in small professional services firms	Examine the relationship between participation in training and development (T&D) events and IWB in small professional services organizations, and whether affective commitment mediates this relationship. Examine also the relationship between attitudes towards T&D and policy and practices supportive of T&D with participation in T&D events.	Quantitative study - 203 employees from small professional services firms in Australia	IWB	Affective commitment	Participation in T&D events	Policy and practice supportive of T&D was associated with participation in T&D events (no evidence was instead found for the association between attitudes towards T&D and participation in T&D events). Participation in T&D events was positively associated with IWB throught the mediation of affective commitment and IWB. Neither participation in just training events nor participation in just development events was associated with higher level of affective commitment or IWB.
Veenendaal and Bondarouk (2015) - Perceptions of HRM and their effect on dimensions of innovative work behaviour: Evidence from a manufacturing firm	Examine how perceptions of four high-commitment HR practices (supportive supervision, training and development, information sharing and compensation) affect the three dimensions of IWB (idea generation, idea championing and idea application)	Quantitative study - 328 employees (work floor workers) from a Dutch manufacturing company	Idea generation, idea championing and idea application	-	Supportive supervision and information sharing	Supportive supervision is positively related to idea generation, idea championing and idea application. Training and development is negatively related to idea generation. Information sharing is positively related to idea generation and idea application. - Compensation is negatively related to idea generation, idea championing and idea application.
Woods et al. (2018) - Innovative work behavior and personality traits: Examining the moderating effects of organizational tenure	Examine the moderating effect of organizational tenure on the relationship between coscientiousness and openness with IWB	Quantitative study - 146 employees and their line-supervisors of a UK-based financial institution	Both IWB as a single constructs and a three-dimensional construct comprising idea generation, idea promotion and idea realization	Conscientiousness and openness	-	Tenure moderates the positive relationship between conscientiousness and openness with IWB. Higher conscientiousness is associated with higher idea generation, promotion and realization for newer employees but lower idea generation, promotion and realization for longer tenured employees. Higher openness is associated with higher idea generation for longer tenured employees but lower idea generation for newer employees. Without considering organizational tenure, neither conscientiousness nor openness are related to either IWB or any of its three dimensions.
Yasir and Majid (2019) - Boundary integration and innovative work	Examine the relationship between boundary integration	Quantitative study - 652 nurses and 144 doctors	IWB	Boundary integration and	-	Boundary integration is positively related to IWB through the full mediation of

behavior among nursing staff	and nurses' IWB in public sector hospitals. Examine also whether work-to-family enrichment mediates this relationship and whether manager support and co-worker support moderate this relationship	(matching with each other) from public sector hospitals in Pakistan		work-to-family enrichment		work-to-family enrichment. Supervisor support and co-worker support moderate this relationship.
Zhang et al. (2015) - Emotional intelligence, conflict management styles, and innovation performance: An empirical study of Chinese employees	Examine the relationship between emotional intelligence and individual innovation performance, and whether different conflict management styles (CMSs) mediate this relationship	Quantitative study - 159 employees from the construction industry in China	IWB (in the article: "innovation performance")	Emotional intelligence and integrating style of conflict management	-	Employees' emotional intelligence is positively associated to their innovation performance and this relationship is partially mediated by the integrating style of conflict management