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The role of innovative work behavior and organizational support for business model innovation

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While innovative work behavior sets the stage for organizational innovativeness, little is known about how innovative work behavior is related to business model innovation. This study analyzes how employees' innovative work behavior leads to business model innovation. Following the organizational support theory, we further examine that business model innovation is a function of individual innovative work behavior of the employee and the firm's ability to create an organizational environment in which these work behaviors can unfold and be translated into innovative output, such as business model innovation. Based on survey data from 154 firms, this study empirically finds that employee innovative work behavior is positively related to business model innovation. Further, we find that the effect of innovative work behavior on business model innovation is moderated through organizational support for innovation. However, the moderation reveals different results for low levels of innovative work behavior than for high values. For high values, we find that additional organizational support does not lead to more business model innovation.

1. Introduction

The ability to innovate a firm's business model has become a source of competitive advantage in today's global and digitalized marketplace (Amit and Zott, 2012; Bashir and Verma, 2017). Through business model innovation (BMI), firms can capture new market shares in markets that were said to be fully saturated (Sosna et al., 2010) or can even create new markets (Santos et al., 2015). Whereas a firm's business model is an integrated system of the firm's key elements, value creation, value proposition, and value capture (Teece, 2010; Clauss, 2017), BMI is defined as "designed, novel, nontrivial changes to the key elements of a firm's business model and/or the architecture linking these elements (Foss and Saebi, 2017b)." While start-ups regularly develop new and innovative business models, incumbent firms seem to struggle (Chesbrough and Rosenbloom, 2002; Amit and Zott, 2012). However, despite recent advancements in conceptualizing critical capabilities for the change and transformation process of BMI (Mezger, 2014; Clauss et al., 2021; Hock-Doepgen et al., 2021; Soluk et al., 2021), the identification of relevant internal enablers, moderators, and outcomes regarding the innovation process of BMI is still lacking (Foss and Saebi, 2017b), while Zhang et al. (2021) conclude that the antecedents of BMI remain ambiguous and under-examined.

Prior literature found several internal enablers of BMI concerning managerial cognition (Chesbrough, 2010; Martins et al., 2015) and organizational capabilities (Bhatti et al., 2021). However, most of these studies concentrate on identifying capabilities that help manage the BMI process, while there is a research gap in understanding the ideation phase for BMI. Researchers agree that BMI requires knowledge and ideas from diverse sources, entrepreneurial behavior (Zhang et al., 2021), and opportunity recognition (Guo et al., 2017). Despite much research advocating these capabilities to managers, new ideas and opportunity recognition hinge on the creativity of individual employees (Van Dijk and Van Den Ende, 2002), drawing this study's focus on the so far under-researched role of the individual employee in the ideation phase of BMI. Innovative work behavior (IWB) is a key characteristic employees need to have for firms to continuously innovate their business (Zhou and Shalley, 2003). It has been described as an "extra role" – an innovative behavior that employees seek in addition to their ordinary work (Janssen, 2000) that is characterized by intentional generation, promotion, and realization of innovative ideas (West

and Farr, 1989). Although research argued that BMI depends on collective behavioral aspects such as corporate culture (Hock et al., 2016) and cognitive representations (Egffjord and Sund, 2020; Martins et al., 2015), we lack a comprehensive understanding of the role of individuals and their IWB in respect with BMI. Given our aims to close this research gap, our first research question is: *How does innovative work behavior influence business model innovation?*

However, while firms are often prone to inertia, especially regarding BMI (Foss and Saebi, 2017b), employees' ideas need to be actively supported to be leveraged to produce organizational outcomes, pointing to the organizational environment as a moderating factor. According to the organizational support theory, firm-specific output variables can be influenced by the support employees perceive from the organization (Eisenberger et al., 1986; Rhoades and Eisenberger, 2002). The creation of an organizational environment supportive of innovation can help employees generate and realize innovative ideas on an organizational level (Scott and Bruce, 1994). A good example is Google, where some successful products, such as Gmail and AdSense have been the output of innovative side projects that employees worked on during their 20% slack time (Ross, 2015). Thus, a firm's innovative success can be further influenced by the organizational support provided by the firm (Wayne et al., 1997; Rhoades and Eisenberger, 2002). As BMI is a firm-level construct, we propose that utilizing the potential of individual IWB for BMI requires consistent and comprehensive organizational support. Therefore, our second research question asks: *How does organizational support for innovation moderate the relationship between innovative work behavior and business model innovation?*

Our study offers several contributions to the literature on BMI. First, we find that the IWB of employees impacts BMI. Thereby, we add valuable insights to the emerging literature stream on the internal enablers for BMI. Second, we examine how firm-level support for innovation strengthens the extent to which individual-level behaviors, such as IWBs, can be translated to BMI. So far, research on BMI and innovation research in general have mainly taken place either at the individual or the organizational level (Anderson et al., 2014; Foss and Saebi, 2017b). Thus, we advance our understanding of identifying the right match between internal enablers and firm-specific variables.

The article proceeds as follows: First, we provide an overview of the literature on BMI, IWB, and organizational support for innovation. Next, we derive

our hypothesis. We test the hypothesis using a data set of 154 firms using the partial least squares (PLS) structural equation modeling. After presenting the methods and results, we discuss our findings and provide an outlook for future research.

2. Theoretical background

2.1. Business model innovation

Research agreed that the innovative designs of the firm's value delivery, value capture, and value offering mechanisms have become a source of competitive advantage in today's business environment (Casadesu-Masanell and Zhu, 2013), while the business model itself as a unit of innovation has extended the business model literature with an innovative dimension (Zott and Amit, 2010). Following Khanagha et al. (2014), we refer to BMI as the development of novel activities that range from changes in individual components of the business model – value offering, value creation, value capture, and value delivery to the customer – to replacing the former business model with a fundamentally different one. We conducted a systematic literature review on BMI to gain a comprehensive overview of the vast literature on BMI (methodological approach, please see Table 1, Kraus et al., 2022). The search resulted in 255 articles. As this study focuses on the antecedents of BMI, we coded each article according to their primary research focus into conceptualization articles, antecedents (drivers, enablers), consequences, and moderators of BMI (Foss and Saebi, 2017b; Zhang et al., 2021). From our literature review, we conclude that the consequences of BMI, especially in terms of performance implications, are well-researched, finding positive performance implications in the long term (Zhang et al., 2021). We identified several research gaps focusing on the internal enablers of BMI (69 articles, Table 1).

Given that BMI represents a change process (Foss and Saebi, 2017b), much research has devoted attention to understanding the management of the process of BMI and critical enablers that empower BMI. Zhang et al. (2021) present two opposing views: BMI driven passively by external factors and BMI driven by actively managed processes and internal factors and capabilities (Clauss et al., 2021; Hock-Doepgen et al., 2021). We take the latter perspective in this study, while external changes, such as technological advancements (Baden-Fuller and Haefliger, 2013) or changes in the business environment brought by new consumer preferences (Plé et al., 2010) and new competitors (Heij et al., 2014) have been frequently researched.

Concerning the internal enablers of BMI, we identified five main research themes: managerial cognition, capabilities (management and organizational), employee capabilities, internal resources, and organizational characteristics. Within the identified themes, the investigation of internal capabilities dominates (Chesbrough, 2010; Loon et al., 2020). For instance, researchers found dynamic capabilities to sense and seize novel opportunities and to reconfigure resources appropriately to impact a firm's ability to innovate the business model (Teece, 2018). Critical dynamic capabilities are leadership skills for identifying and experimenting with new opportunities (Achtenhagen et al., 2013), resource capabilities for flexible use and re-use of resources (Teece, 2007), cultural determinants that underpin the willingness and commitment to change (Bock et al., 2012; Hock et al., 2016) and knowledge management capabilities (Hock-Doepgen et al., 2021). For instance, Bhatti et al. (2021) found that absorptive capacity on an organizational level – the ability to identify and use knowledge for commercial ends – drives BMI.

Moreover, as most of these studies analyze BMI as a change process, understanding the beginning of an innovation process comprising creativity and organizational innovativeness remains a blind spot in research. Although much research agrees that the absorptive capacity of external knowledge drives BMI, research concerning the creative ideation process and use of internal knowledge for BMI is rare. However, researchers recently started to address this gap by studying cognitive and decision-making processes that lead to BMI (Osievskyy and Dewald, 2015; Snihur and Zott, 2020), for instance, by applying analogical reasoning and conceptual combination (Martins et al., 2015), while Narayan et al. (2020) found that cognitive diversity among top management teams increases BMI activities. Yet, these studies only focus on the managerial side and have not explored the effects of employee innovativeness on BMI.

Despite vast explorations of management capabilities, the BMI literature offers two research gaps, which we address in this study: first, understanding the role of individual employees in driving BMI, and second, the lack of focus on the ideation phase for BMI. Furthermore, although organizational characteristics like culture are enablers of BMI (Hock et al., 2016), the understanding of the interplay of employee behavior and organizational characteristics for driving BMI also remains vague. Therefore, we focus this research on how the IWB of employees translates to BMI by considering the interplay with organizational support.

Table 1. Literature review on the internal enablers of business model innovation

Research theme	Conceptual focus	Subthemes and key findings of enablers	Exemplary references
Managerial cognition	Ideation	Analogical reasoning; conceptual combination; sensemaking; top management team heterogeneity; entrepreneurial thinking; effectuation	Martins et al. (2015), Egffjord and Sund (2020), Loon et al. (2020), Narayan et al. (2020), Snihur and Zott (2020)
Organizational /management capabilities	Transformation management	Dynamic capability; knowledge management; agile methods; agility of TMT	Chesbrough (2010), Doz and Kosonen (2010), Sosna et al. (2010), Guo et al. (2017), Velu (2017), To et al. (2019), von Delft et al. (2019), Ghezzi and Cavallo (2020), Loon et al. (2020), Bhatti et al. (2021), Denoo et al. (2021), Hock-Doepgen et al. (2021), Klein et al. (2021), Sjödin et al. (2021)
	Organizational learning	Experimentation; trial and error; knowledge absorptive capacity; big data analytics	
	Strategy	Opportunity recognition; strategic orientation; strategic learning; strategic agility; ambidexterity; knowledge acquisition capability; strategic sensitivity	
Employee capabilities	Behavior	Entrepreneurial mindset (e.g., risk-taking behavior, proactive behavior); absorptive capacity	Karimi and Walter (2016), Denoo et al. (2021)
Internal resources	Transformation management	Leveraging (big) data; use of digital technologies and Industry 4.0 (e.g., 3D printing)	Rayna and Striukova (2016), Sorescu (2017), Alshawaaf and Lee (2021), Cheng and Wang (2022)
Organizational characteristic	Organizational structures	Social mission and objectives; organizational culture; rules and governance structure; IT infrastructure	Herrera (2016), Velu and Jacob (2016), Müller et al. (2018), Giudici et al. (2020), Vittori et al. (2022)

Data collection: We searched Web of Science database for published articles from 2005 to 2023. We chose this timeframe as research on business model innovation was first published after 2005 (Foss and Saebi, 2017b). We used the following keywords: business model innovation, business model innovations, business model reinvention, business model renewal, business model evolution, business model dynamics, business model transformation, business model change, and business model adaptation. For ensuring methodological rigor, we implemented a set of criteria to select relevant publications, following suggestions by Kraus et al. (2022). As such, we selected only journals in the “Business or Management” classification in Web of Science. Furthermore, we excluded articles published in journals that did not fulfill the criteria of one of the following rankings: VHB \geq C; AJG \geq 3; FT Top 50. Based on these criteria, we found 255 articles. We coded these articles for their antecedents, consequences, moderators, and conceptual articles (Foss and Saebi, 2017a). We identified 69 articles concerning the antecedents of business model innovation.

2.2. Innovative work behavior

Using knowledge represents a decisive capability for BMI, whereas the knowledge held by employees has been mostly neglected in prior studies. Here, innovative work behavior refers to an “extra role” – an employee behavior that goes beyond their regular role expectations – in order to benefit his or her performance, the work group, or the organization (West and Farr, 1989; Janssen, 2000). These behaviors arise from the employees’ intrinsic motivations and include introducing novel ideas regarding products

and services and improving internal processes and business activities (Yuan and Woodman, 2010).

Innovative work behavior encompasses three complex behaviors: Idea generation, idea promotion, and idea realization (Scott and Bruce, 1994; Janssen, 2000; Wang et al., 2015). Every innovation begins with a novel and potentially useful idea developed by the employee through identifying new work-related opportunities (idea generation) (Woodman et al., 1993). These opportunities range from simple improvements regarding internal routines to novel ideas concerning new product and process innovations (De Jong

and Den Hartog, 2010; Marshall et al., 2019). For the idea to be implemented, idea promotion has to take place – the process of an employee searching for supporters and allies to promote the idea internally (Galbraith, 1982). It is vital for pushing complex innovations (Janssen, 2000). Finally, the idea has to be implemented (idea realization). Internal processes must provide the right course for realizing innovative ideas (Scott and Bruce, 1994; Janssen, 2000). As each of the behaviors is interrelated and pivotal for innovation to take place, these behaviors have been taken together under the term innovative work behavior (IWB) (Janssen, 2000; Wang et al., 2015).

IWB represents one of the most critical characteristics organizations need today (Anderson et al., 2014). “Innovative behaviors by employees, which might formerly have been seen as inappropriate, disrespectful or even subversive, have become increasingly sought by organizations attempting to compete in a fast-moving and changeable, globalized business environment” (Anderson et al., 2004, p. 149). Moreover, IWB is claimed to promote the organization’s functioning and survival (Amabile et al., 1996; Yuan and Woodman, 2010). Empirical studies that test this assumption are, however, sparse. Most studies so far focus on the predictors of IWB (Anderson et al., 2014), such as relationships at work (Janssen and Van Yperen, 2004; Yuan and Woodman, 2010), leadership (Wang et al., 2015) or individual differences (Wu et al., 2014; Ng and Lucianetti, 2016). Research on the outcomes of IWB is less common.

One of the first studies on this topic (Sanz-Valle and Jiménez-Jiménez, 2018) examines the effect of IWB on product innovations. The results underline that IWB can foster product innovation and seem to be related to outcomes on the organizational level. However, this study is far from conclusive and leaves open questions such as how organizational work behavior relates to other innovative outcomes. Similarly, Anderson et al. (2014) highlight the need to address interfaces between different levels of innovation research and call for a better understanding if and under which organizational circumstances IWB translates to desired outcomes such as organizational innovation.

2.3. Organizational support for innovation

Organizational support theory proposes that social exchange processes between employees and the organization determine their relationship with the organization (Kurtessis et al., 2017). The theory states that employees are socioemotional beings whom the organization can influence (Eisenberger et al., 1986; Rhoades and Eisenberger, 2002) and assumes that employees behave in “accord with the norm of reciprocity, trading

their effort and dedication to their organization for perceived organizational support and its promise of future benefits” (Chen et al., 2009, p. 120). A positive perceived organizational support leads to organizational commitment or organizational citizenship behavior (Wayne et al., 1997) and specific actions (Rhoades and Eisenberger, 2002). It has been shown that through perceived organizational support, employees are overall more satisfied and care about the organization’s welfare, feeling obligated to help the organization reach its objectives (Eisenberger et al., 2001).

Studies in innovation research have therefore focused on understanding what kinds of support enhance organizational innovativeness. Scott and Bruce (1994) enumerate two dimensions: (1) climate for innovation and (2) resource support. The climate for innovation follows the psychosocial climate theory, which states that individuals mainly respond to cognitive interactions in certain environments (James and Sells, 1981). Organizational climate represents feelings, behaviors, attributes, and signals that individuals perceive in an organization. Thus, for innovative behaviors to occur, employees must perceive that creativity and innovation are supported by the firm. An innovative climate can be developed by encouraging creativity and experimentation (Siegel and Kaemmerer, 1978; Kanter, 1983), by tolerating diversity among employees (Siegel and Kaemmerer, 1978), and by taking experimenting with new ideas (Nahapiet and Ghoshal, 1998). The second dimension of organizational support for innovation is an appropriate resource supply (Scott and Bruce, 1994). Organizations can provide these resources through tangible assets, for example, facilities and machines and/or intangible assets, such as time (Ahmed, 1998). When the organizational orientation toward innovation in combination with an appropriate resource supply is high, employees will most likely perceive the organizational environment as supportive of innovation (Gumusluoglu and Ilsev, 2009).

3. Hypothesis development

3.1. Innovative work behavior and business model innovation

Independent of the radicalness of BMI, the underlying processes for innovating a firm’s business model are said to require dynamic capabilities that enable firms to sense and seize new business model opportunities and transform the business model (Teece et al., 1997; Teece, 2018). BMI begins with an innovative idea. To generate potential BMI ideas,

organizations must be able to sense innovative cues that shape new business model opportunities (Doz and Kosonen, 2010; Hock and Clauss, 2017). Employees who are innovative at work have adapted behaviors that are oriented toward thinking into the future and beyond the tasks of their everyday work (Kurtessis et al., 2017). Such behaviors include sensing new technological developments, proposing new products or service applications, finding new production methods for improving internal routines and production, improving customer relationships, etc. (Yuan and Woodman, 2010). These behaviors increase their overall creativity and the ability to identify innovative business model opportunities. Furthermore, these behaviors may spread throughout the organization when finding supporters to promote their new ideas, which is important for seizing business model opportunities (Janssen, 2000). It requires unifying a commitment toward change to align underlying activities and reconfigure internal and external resources (Casadesus-Masanell and Zhu, 2013). The ability of employees to promote and test innovative ideas can thereby enhance an organizational environment of trial and error. A discovery-driven process of constant experimentation has been highlighted to foster BMI (Dunford et al., 2010; McGrath, 2010; Yunus et al., 2010). However, to finally realize BMI opportunities, employees must further be able to transform their innovative ideas into useful applications. The transformation process comprehends deploying human, physical, and capital resources to new means of value creation (Zott and Amit, 2010). New activities require employees to be flexible, cooperative, and comfortable with change (Ahmed, 1998).

New ideas and the experimentation of these ideas, as well as the overall willingness to change, have been described as important dynamic capabilities for innovating a firm's business model (McGrath, 2010; Achtenhagen et al., 2013; Teece, 2018). Through the intentional behaviors of idea generation, idea promotion, and wanting to realize new ideas that benefit the organization (West and Farr, 1989; Janssen, 2000), employees with strong IWBs have a developed mindset for innovation and, thus, possess dynamic capabilities at the individual level.

Organizations benefit from IWBs in several ways. Studies have found that employees with strong IWBs can improve their job performance, enhance the efficiency of organizational processes, and increase the firm's overall innovativeness (Janssen, 2000; Dorenbosch et al., 2005). Moreover, Baer and Frese (2003) showed that IWBs positively influence the firm's performance. Thus, referring to the arguments above, we hypothesize that:

H1 The innovative work behavior of employees fosters business model innovation.

3.2. *The moderating role of organizational support for innovation*

"Individuals in organizations do not work in a vacuum" (Vough et al., 2017, p. 1192). They are in constant exchange with the organizational context through social exchange processes (Wayne et al., 1997). The organizational context influences the extent to which an employee lets the organization profit from their innovative behavior. To promote BMI behaviors, firms must constitute a working environment in which employees are able to transfer new ideas from an individual to an organizational level. As BMI is assessed at the firm level, we suggest that a matching firm-level moderator is needed to raise the individual dynamic capabilities to the firm level. We propose that organizational support for innovation could help the individual employee understand the value of his/her innovative attempts for the organization, leading to more BMI.

Even though employees may have good ideas or see potential for improvements, a lot of times, they stay silent instead of sharing concerns with others (Milliken et al., 2003). When employees perceive managers to be open to change, they are more likely to speak up with new ideas (Detert and Burris, 2007). This willingness to come up with suggestions and new ideas is paramount for successful learning in organizations (Edmondson, 2003). Employees may be more willing to think about the broader picture and share an idea with management and colleagues when she/he feels supported and acknowledged. Research shows that strategic issues are only raised to top management when the management is perceived as supportive and there is little fear of negative consequences (Dutton et al., 1997; Ashford et al., 1998). Hence, when employees perceive favorable support for innovation, ideas may spread throughout the organization. Additionally, when employees feel supported and have resources, they may further exchange more experiences with one another. When employees exchange ideas, they can profit from each other's expertise, while knowledge sharing between employees leads to more innovation at the firm level (Lin, 2007). Innovations can become refined and are, therefore likely to be deemed worth trying by management and, thus, potentially gain more support. This management support may lead to ideas being implemented on a broader scale or management being open to testing and experimenting with new ideas, enhancing the BMI output. In line with Foss and Saebi (2017b), we propose that the relationship

between internal dynamic capabilities and BMI can be enhanced through a moderator. Following organizational support theory, we suggest that:

H2 The effect of innovative work behavior on business model innovation will be stronger when the organizational support for innovation is high.

Figure 1 visualizes the Model structure.

4. Methodology and empirical setting

4.1. Sample and data collection

The sample data used for this study consists of survey data that was randomly collected at an international trade fair for optical and laser technology hosted in Germany. International trade fairs have become an important platform in which firms connect and conduct business with other firms in the industry. Thereby, they exchange innovative knowledge and discuss the latest developments and trends. Referring to the importance of trade fairs in this sector, our sample depicts the typical structure of the organizations

in the optical and laser industry (Rolf Seringhaus and Rosson, 1998). Trade fairs were previously utilized for data collection purposes as they enable researchers to get in direct contact with respondents and thus assess respondent adequateness and enhance semantic validity (e.g., Chai et al., 2020; Clauss et al., 2021; Hock-Doeppen et al., 2021).

The data collection was done by a team of trained research assistants. Exhibitors were personally addressed, the topic and the purpose were described, and they were asked about their knowledge of the topic. Only if potential respondents were willing and knowledgeable, did we pursue the survey process. Depending on the language of the respondent, the questionnaire was handed out in its original version in English or German. For the German version, the back-translation method was used to secure a consistent translation (Brislin, 1970; Campbell and Prichard, 1976). Overall, we collected 154 usable questionnaires, which were completed by firms that have their headquarters mainly located in Asia, Europe, and North America. Table 2 provides an overview of the descriptives of the sample.

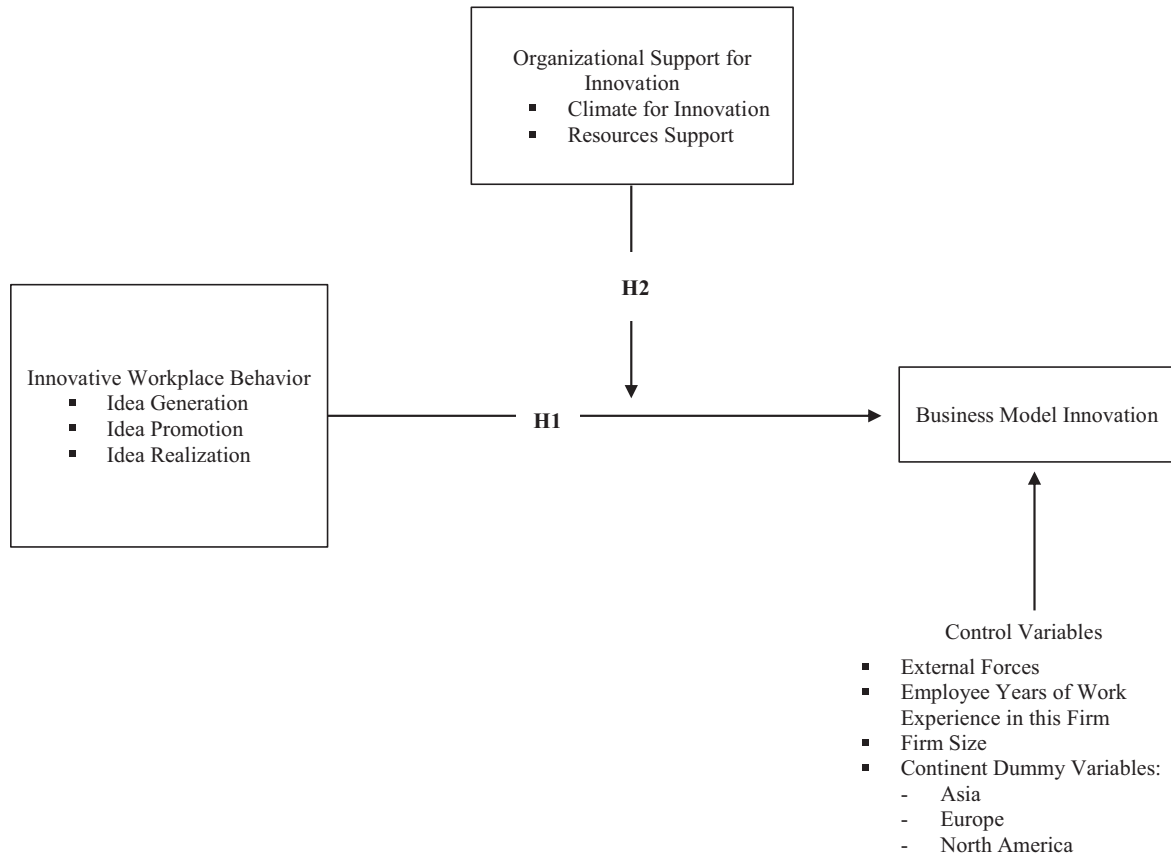


Figure 1. Overview of the hypothesis.

Table 2. Sample descriptives

Sample descriptives	%
Country	
Asia	20.1
Europe	53.2
North America	9.1
Others	17.6
Firm size	
≤10	10.5
11–50	37.5
51–200	31.6
201–500	7.2
501–1000	6
>1000	7.2
Work experience in this company	
>2 years	25.9
3–5 years	21.0
6–9 years	16.7
10–15 years	18.9
>15 years	17.5

4.2. Measurement

The items used for this study are mainly based on established multi-item scales from published studies. The measurement of the items employed a five-point Likert-type scale.

Business Model Innovation was assessed by the three interrelated components – value proposition, value creation, and value capture – for which we developed the following sub-items: Value proposition innovation: new offerings, new customer relationships, new markets, and new channels, for value creation innovation: new competences and human resources, new technical resources, new external resources, and new processes and for value capture innovation: overall cost advantages, completely new sources of revenue. The scales are based on the theoretical framework of Osterwalder and Pigneur (2010) and follow the scales developed by Clauss (2017). In total, these sub-items create nine reflective items measuring BMI. *Innovative Work Behavior* was assessed as a second-order reflective-formative construct using idea generation, idea promotion, and idea realization as first-order dimensions. The first-order dimensions are based on items developed by Janssen (2000). *Organizational Support for Innovation* was also measured with a second-order reflective-formative construct, with the first-order dimensions being resource support and organizational climate for innovation. All first-order dimensions are

measured with four items developed by Scott and Bruce (1994).

4.3. Control variables

This study further controls for variables at the individual and organizational levels. On an individual level, we controlled for the *employee's years of work experience in this firm*, measured as the logarithm of the years the employees have been working in the current firm, as experience in the firm may influence the employee's ability to sense and seize innovative business model ideas.

We controlled for the *firm size* and *location of the firm headquarters*. We measured firm size by taking the logarithm of the number of firm employees (Reinartz et al., 2004). For the location, we grouped the firm's headquarters into *Europe*, *North America*, and *Asia*. Further, we controlled for *external forces*, as prior studies found that market turbulence and strong competition stimulate BMI (Amit and Zott, 2015). External forces were assessed through a second-order reflective-formative construct, leaning on items developed by Jaworski and Kohli (1993). Table 3 summarizes all measurement items and sources.

4.4. Assessment of common method bias

The survey data was collected by assessing the self-reports of single informants for both the dependent and independent variables. Therefore, precautionary actions were taken ex-ante to the distribution of the survey and ex-post by conducting tests for common method bias (CMB). To decrease the existence of CMB ex-ante, we emphasized that the questionnaire is entirely anonymous. Further, we mainly used well-established items and structured them in a counterbalancing way (Podsakoff et al., 2003).

Ex-post, we conducted the Harman's one-factor test (Podsakoff et al., 2003) and the marker variable test (Lindell and Whitney, 2001). The Harman's one factor test was conducted through a principal exploratory factor analysis with all variables (Podsakoff et al., 2003). The extraction of the single factor only explains 13.1% of the total variance. For the marker variable test, we use *strategic uncertainty* as a marker variable, as it is unrelated to the other variables in our model. *Strategic uncertainty* was measured through a reflective construct with the following two items: How uncertain is (1) the direction in which the organization is heading? and (2) the overall objective/mission of the organization? A high correlation would indicate a systematic bias.

Table 3. Quality criteria of the reflective first-order-constructs

Construct	Measurement item	Item loadings	AVE	α_{CR}	CR
Business model innovation (Clauss, 2017; Osterwalder & Pigneur, 2010)	What were you able to accomplish in the last 1–5 years?		0.512	0.842	0.880
	Has created various new lines of products and services	0.737			
	Has taken new opportunities in new markets	0.676			
	Tried to gain new customers relationships through new service offerings	0.737			
	Has utilized innovative procedures and processes during the manufacturing of our products	0.654 ¹			
	Has innovated the supply chain	0.656			
	Has constantly trained the employees to develop new competences	0.757			
	Has developed new revenue opportunities	0.748			
	Has developed dramatic cost advantages	0.737			
Idea generation (Janssen, 2000)	Our employees create new ideas for difficult issues	0.837	0.720	0.806	0.885
	Our employees search out new working methods, techniques, or instruments	0.867			
Idea promotion (Janssen, 2000)	Our employees generate original solutions for problems	0.841			
	Our employees mobilize support for innovative ideas	0.860	0.677	0.762	0.862
	Our employees acquire approval for innovative ideas	0.758			
Idea realization (Janssen, 2000)	Our employees make important organizational members enthusiastic for innovative ideas	0.846			
	Our employees transform innovative ideas into useful applications	0.853	0.757	0.839	0.903
	Our employees introduce innovative ideas into the work environment in a systematic way	0.876			
Climate for innovation (Scott & Bruce, 1994)	Our employees evaluate the utility of innovative ideas	0.880			
	Creativity is encouraged in our company	0.819	0.577	0.755	0.845
	Our ability to function creatively is respected by the leadership	0.702			
	The reward system here encourages innovation	0.745			
Resource support (Scott & Bruce, 1994)	Our company publicly recognizes those who are innovative	0.767			
	Assistance in developing new ideas is readily available	0.737	0.697	0.780	0.873
	There are adequate resources devoted to innovation in this organization	0.896			
	There is adequate time available to pursue creative ideas here	0.863			
Market changes (Jaworski & Kohli, 1993)	This organization gives free time to pursue creative ideas during the workday	0.618 ¹			
	The actions of local and foreign competitors in our major markets were changing quite rapidly	0.758	0.620	0.847	0.891
	Technological changes in our industry were rapid and unpredictable	0.781			
	The market competitive conditions were highly unpredictable	0.799			
	Customers' product preferences changed quite rapidly	0.795			
Competitive intensity (Jaworski & Kohli, 1993)	Changes in customers' needs were quite unpredictable	0.804			
	Competition in our industry is cutthroat	0.857	0.736	0.820	0.893
	There are many competitive rivalries in our industry	0.903			
Firm size (Reinartz et al., 2004)	Intensive competitor-related activities are a hallmark in our industry	0.812			
	Ln (number of employees)	–	–	–	–

¹These items were excluded due to low factor loadings.

After including the marker variable in the partial correlation analysis, we observe that the correlations between the marker variable and the variable are below 0.3. The highest squared partial correlation shows that the most common variance shared is 7.4%. Both tests suggest that common method bias should most probably not be of concern in this research. Further, our model includes an interaction effect that is not likely to be biased through the common method used (Brockner et al., 1997).

4.5. Data analysis

The PLS method was applied for both the measurement model and the structural equation model (SEM). PLS is a technique based on a correlation principal component approach (Chin, 1998; Ringle et al., 2005). It is often used to estimate causal-predictive analysis in the early stages of theory development (Fornell and Bookstein, 1982). Research analyzing internal enablers for BMI through the lens of employee innovativeness still lacks theoretical underpinning (Foss and Saebi, 2017b). Therefore, PLS is an appropriate method for advancing the cumulative empirical research studies on internal enablers for BMI. Moreover, PLS is a variance-based technique for SEM that analyzes second-order reflective-formative measurement models (Becker et al., 2012), which is applied in this study. The SmartPLS 3.0 software was used following parameter settings by Hair et al. (2012), applying non-parametric bootstrapping with 5000 samples, and the mean replacement of missing values. The higher-order constructs were computed with the repeated indicator approach (Hair Jr et al., 2014).

5. Results

5.1. Measurement model results

All recommended procedures for the systematic evaluation of our specific measurement model were assessed by analyzing the internal consistency, convergent validity, and discriminant validity of the reflective measurement constructs (Hair et al., 2011). All scores of internal consistency were above the recommended threshold of 0.7 for composite reliability (CR) and Cronbach's alpha. Further, we excluded all factor loadings below 0.65, which is slightly below the threshold of 0.7 but still acceptable (Hair et al., 2011). All average variance extracted (AVE) values are above 0.5, indicating convergent validity. Therefore, we decided to keep items that are theoretically relevant but statistically slightly below the loading indicator reliability (IR) threshold. According to the Fornell-Larcker criterion, discriminant validity was met, as all squared AVE exceeded the inter-construct correlations (Fornell and Larcker, 1981). More conservatively, we further tested discriminant validity using the heterotrait-monotrait (HTMT) ratio criterion and the HTMT inference criterion for all reflective constructs (Henseler et al., 2014). All HTMT values were significantly below the conservative threshold of 0.85, and the HTMT inference criterion indicates that all HTMT values are significantly different. Table 4 provides the results of the assessment of discriminant validity.

For the hierarchical second-order constructs, measured with a type II reflective-formative approach, we assessed the path weights and tested the multicollinearity for all first-order constructs. All first-order

Table 4. Assessment of discriminant validity

Construct	Mean	SD	1	2	3	4	5	6	7	8	9
Innovative workplace behavior											
Idea generation	3.87	0.74	0.85								
Idea promotion	3.52	0.79	0.70	0.82							
Idea realization	3.71	0.73	0.62	0.75	0.87						
Organizational support for innovation											
Resource support	3.32	0.80	0.28	0.42	0.42	0.83					
Climate for innovation	3.41	0.78	0.28	0.39	0.38	0.41	0.76				
External forces											
Market changes	3.02	0.73	0.02	0.14	0.10	0.08	0.113	0.78			
Competitive intensity	3.22	0.87	0.05	0.09	0.15	0.13	0.09	0.39	0.85		
Firm size ln (employees)	4.62	1.74	0.00	0.02	0.01	0.02	0.01	0.11	0.03	1.0	
BMI	3.55	0.73	0.37	0.38	0.30	0.38	0.39	0.27	0.25	0.05	0.72

The bold values on the diagonal show the square root of the AVE, Numbers below the diagonal represent the correlation between the constructs.

Table 5. Evaluation of the inner formative measurement model

Construct	Path weight	t-value	VIF
Innovative work behavior			
Idea generation	0.367***	17.042	2.102
Idea promotion	0.369***	19.360	3.192
Idea realization	0.383***	18.537	2.457
Organizational support for innovation			
Resource support	0.545***	11.807	1.279
Climate for innovation	0.636***	13.266	1.279
External forces			
Market changes	0.755***	15.425	1.181
Competitive intensity	0.424***	9.803	1.181

n.s. not significant.

*** $p < 0.001$.

constructs highly load on the second-order construct of *IWB* and *organizational support for innovation*. Moreover, the variance inflation factors (VIF) show that none of the VIF values exceed the threshold of 5 (Hair et al., 2011), indicating that multi-collinearity is not an issue for the formative constructs (Table 5).

5.2. Structural model results

Three structural models (I–III) were tested by employing the bootstrapping procedure to estimate the path coefficients and determine the significance (Table 6, illustration in Figure A1). Model I only includes the control variables regarding external forces ($\beta = 0.276$, $p < 0.01$), firm size ($\beta = -0.015$, $p > 0.1$), employee years of work experience in this firm ($\beta = 0.022$, $p > 0.1$) and the continent dummy variables for Asia ($\beta = 0.103$, $p > 0.1$), Europe ($\beta = -0.047$, $p > 0.1$) and North America ($\beta = -0.054$, $p > 0.1$), in which the headquarter of the firms are located in. In line with previous research analyzing external enablers for BMI (Ferreira et al., 2013; Heij et al., 2014), our findings confirm a positive and highly significant relationship between external forces and BMI ($\beta = 0.276$, $p < 0.01$). Model II tests hypothesis 1 by adding the direct effect IWB has on BMI. Our findings are statistically significant and support hypothesis 1, in which we hypothesized a positive relationship ($\beta = 0.392$, $p < 0.001$). Finally, Model III confirms the positive relationship found in Model II (between IWB and BMI) and adds the interaction term between IWB and organizational support for innovation. Unlike expected, we find a highly significant but negative effect between the interaction term and BMI ($\beta = -0.194$, $p < 0.01$). This result is not in line with hypothesis 2, in which we predicted that organizational support for innovation

Table 6. Hypothesis test and model fit

Model	I (only controls)	II (direct effect)	III (full model)
Dependent variable: Business model innovation			
<i>Independent variables</i>			
Innovative workplace behavior		0.392*** (0.085)	0.170 [†] (0.095)
Organizational support for innovation			0.358*** (0.097)
Interaction term			
Innovative workplace behavior \times organizational support for innovation			-0.194** (0.067)
<i>Control variables</i>			
External forces	0.276** (0.100)	0.206** (0.089)	0.196* (0.076)
<i>Dummy variables for the firm's headquarters</i>			
Asia	0.103 (0.096)	0.104 (0.083)	0.063 (0.087)
Europe	-0.047 (0.132)	0.053 (0.109)	0.090 (0.102)
North America	-0.054 (0.108)	-0.039 (0.093)	-0.026 (0.086)
Employee work experience in this firm	0.022 (0.083)	0.118 (0.072)	0.024 (0.067)
Firm size	-0.015 (0.087)	-0.018 (0.074)	0.008 (0.070)
Observations	154	154	154
R^2	0.111	0.235	0.359
Adjusted R^2		0.199	0.319

Standardized B-coefficients significant at [†] $p < 0.100$, * $p < 0.050$, ** $p < 0.010$, *** $p < 0.001$; values in parentheses show the standardized errors.

would positively moderate the effect IWB has on BMI. Model III has an R^2 of 0.359 and an adjusted R^2 of 0.319, representing an increase in explained variance from Model II to Model III.

To get a detailed picture of the interaction, we conducted a simple slope analysis for different standard deviations (SD) of IWB (Dawson, 2014). Illustrated in Figure 2 are regression lines for organizations with low (-1 SD) and high ($+1$ SD) IWB under conditions of low (-1 SD) and high ($+1$ SD) organizational support for innovation on BMI. The plot demonstrates that under conditions of high support for innovation, there is no significant

difference between organizations with low or high IWB on BMI. However, when organizational support for innovation is low, we found a significant difference between low and high IWB on BMI. When there is low support for innovation, high IWB seems to be crucial for more BMI to take place. Additionally, when comparing organizations with low and high IWB, organizations with low IWB seem to prosper from high support for innovation to generate more BMI. Under conditions of high IWB, the difference between low and high support for innovation on BMI is less apparent. Thus, organizations with high support for innovation seem to generate more BMI independent of their employees' existing innovative work attempts. When comparing organizations with low IWB, high support for innovation seems to be especially important. Thus, especially under conditions of low IWB,

support for innovation seems to be crucial for generating the desirable outcome for BMI.

The marginal effects (Busenbark et al., 2002) are drawn in Figure 3 and show the significant positive effect of IWB on BMI over all values of IWB. The 95% confidence intervals around the regression line have a significant effect on BMI when the upper and lower bound of the 95% confidence intervals are both either below or above the zero line (Brambor et al., 2006).

6. Discussion and conclusion

This study analyzed how innovative work behavior (individual-level variable) influences business model innovation and identified whether the extent to which IWB is translated to BMI is moderated by the organizational support for innovation provided

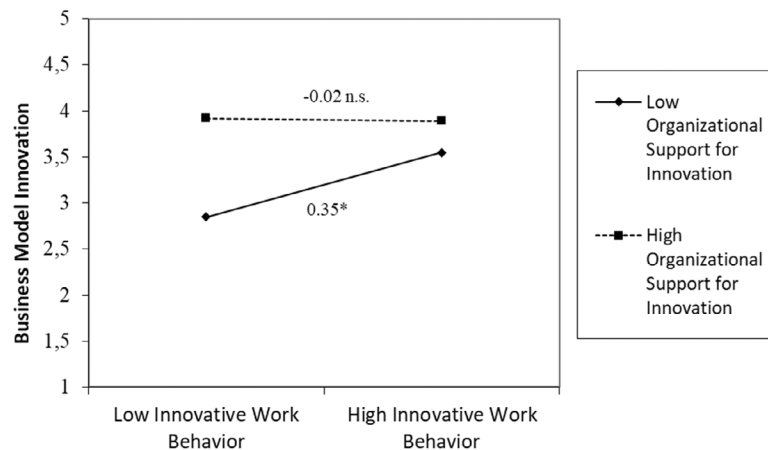


Figure 2. Interaction between organizational support for innovation and innovative work behavior (simple slopes). n.s. not significant, * $p < 0.100$.

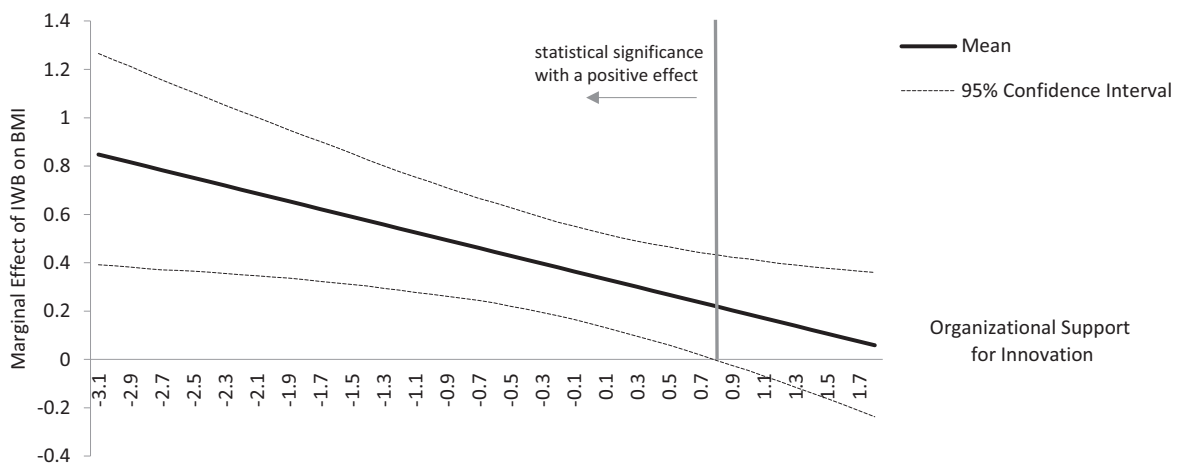


Figure 3. Marginal effect of innovative work behavior on business model innovation.

by the organization (firm-level variable). Our findings show that IWB has a positive relationship with BMI, supporting the first hypothesis. This indicates that effects descend from the individual level to the organizational level, such that individual ideas influence a firm's ability to innovate the business model.

Regarding the moderation, we found surprising results. Foss and Saebi (2017b) suggested that the effect of internal capabilities such as IWB on BMI can be strengthened through firm-level moderators. We cannot find general support for the second hypothesis that organizational support for innovation enhances the effect of IWB on BMI. However, the analysis offers a more nuanced perspective. Our assumption holds when firms have employees with low IWB. Thus, organizational support for innovation, e.g., through additional funds, reward systems, or additional time for creativity, can strengthen BMI in firms where overall innovation at the employee level is low. Consequently, organizations where employees engage only little in innovative attempts profit most from a supporting organization. Under these circumstances, it seems to be especially critical how the organization behaves to magnify the small extent of innovation in company output. When supporting their employees, companies can still profit from the little IWB for BMI to develop.

When, however, employees already have high IWBs, the effect of additional support for innovation diminishes, as the simple slope analysis shows. The IWB alone seems to be sufficient to transmit to BMI so that additional organizational support does not result in a significant increase in BMI. As innovation relates to the number of ideas generated (Frese et al., 1999), it might be that with sufficiently high IWB, strong ideas prevail. Then, the importance of organizational support is irrelevant, as there seems to be sufficient innovation. Although these findings are surprising, Alpan et al. (2010) and Stan et al. (2012) found similar results. Alpan et al. (2010) found that when both human capital and organizational support are high, innovative performance does not increase further. Thus, a saturation point seems to exist at which additional support by the organization does not lead to additional output of IWB. A possible explanation of this effect might be found in the theory of the crowding motivation effect. The theory proposes that the intrinsic motivation of an employee can be crowded out through extrinsic motivation that formulates particular goals (Osterloh and Frey, 2000). Thus, when the intrinsic motivation for innovative activities regarding the business model is high, additional support might be too goal-oriented. This

means that employees are set on achieving extrinsic goals rather than pursuing their own intrinsic ideas.

In sum, our finding suggests that other moderators may be more important for organizations with high IWB among their employees, such as leadership characteristics or systems that help handle the number of ideas and guide them into successful BMI.

7. Implications

7.1. Contribution to research

With our study, we extend the understanding of BMI in two ways: First, we contribute to the emerging literature on internal enablers of BMI by highlighting the so-far-overlooked IWB of employees for BMI. Although BMI comprehends organizational innovativeness and organizational transformation, studies identifying critical internal enablers for BMI mainly focused on studying the transformation side (Velu and Jacob, 2016). Further, the few studies that analyze the innovative process of idea generation, idea promotion, and idea realization have mainly addressed it from a managerial perspective through the lens of managerial cognition (Martins et al., 2015; Osiyevskyy and Dewald, 2015) and managerial decision making (Velu and Stiles, 2013; Schneckenberg et al., 2016). By empirically showing that employee innovativeness leads to BMI, we stress the importance of leveraging employee innovativeness and highlight that the innovative process for BMI is not only a managerial process. Consequently, we extend extant research with an employee perspective. Our study shows that the role of the individual IWB is important to utilize strategic organization-wide transformation such as BMI. These findings are in line with the dynamic capabilities framework (Teece et al., 1997). Teece (2007) emphasizes that organizational dynamic capabilities are carried out by the employees who build the basis of organizational capabilities through their underlying routines and behaviors. We also extend and complement research that found entrepreneurial characteristics like risk-taking and proactiveness on an individual level to facilitate BMI (Karimi and Walter, 2016), as IWB represents a behavior that is not entrepreneurial per se but emphasizes IWB within incumbents. As such, IWBs depend on the work environment (Anser et al., 2021) and can, therefore, be influenced by the management. Thus, we make an important contribution to understanding further mechanisms through which ideas from employees translate to BMIs (Foss and Saebi, 2017b). As human resource management

can stimulate IWB (Anser et al., 2021), our study highlights the importance of considering the human resource (HR) function besides firm-level capabilities in BMI research. Accordingly, we complement the recent findings by Loon et al. (2020), who stressed the relevance of HR in developing the capabilities for BMI, as our findings suggest that HR also needs to stimulate a work environment that allows for IWB.

Second, by adding organizational support for innovation as a firm-level context factor moderating the effect IWB has on BMI, we consider that capabilities owned at the individual employee level can be influenced by firm-level factors such as support for innovation. So far, research on BMI and innovation research, in general, has mainly taken place at either the individual or the organizational level (Anderson et al., 2014; Foss and Saebi, 2017b). By analyzing the individual-organizational interface, we follow the call by Foss and Saebi (2017b) and Anderson et al. (2014) to identify the right match between internal enablers and firm-specific variables. Our interaction results offer a nuanced perspective on the role of organizational support. In detail, we show that organizational support for innovation is especially important for organizations with low IWB. This nuanced perspective based on the marginal effects analysis extends prior knowledge on the role of the organizational culture in driving BMI (Hock et al., 2016), suggesting that organizational support might be especially important for BMI to overcome organizational inertia (Foss and Saebi, 2017a). Furthermore, the results can encourage researchers to consider the moderating role of organizational support and the effect of other individual capabilities like an entrepreneurial mindset or absorptive capacity on BMI (Karimi and Walter, 2016; Denoo et al., 2021).

7.2. Managerial implications

This study provides useful insights for managers interested in better understanding underlying behaviors that foster BMI at the individual and organizational levels. First, the findings suggest that managers should actively enhance the IWB to drive BMI, which can be facilitated with HR and knowledge management (Anser et al., 2021). To create an environment where employees feel invited and welcome to share their ideas, managers could also use tools like innovation contests. In consequence, we suggest that managers should not only focus on managing the BMI process. As ideas for BMIs are a prerequisite, managers can also enhance BMI activities by actively supporting a culture and work environment that supports IWB.

Second, while support provided by the firm usually increases employee innovativeness (e.g., Khalili, 2016), our findings suggest that this is not always the solution for more BMI. In an organizational environment where employees are already highly engaged in innovative behavior, employees might perceive additional support for innovation as a burden to “produce” more ideas. This could decrease creativity. Hence, managers should be aware that enhancing organizational support for innovation is only beneficial for BMI outcomes to a certain degree. In detail, we recommend that managers carefully consider the management tools they use to enhance BMI to allocate their attention and resources effectively. Thus, we suggest that managers should promote IWB and should adjust their organizational support for innovation depending on the level of employee IWB: when levels are low, managers should provide support but also should seek to enhance the IWB. When IWB reaches high levels, managers can reallocate resources, for instance, to further develop dynamic capabilities or knowledge acquisition to enhance BMI. However, this presupposes constant monitoring of the IWB with surveys. Furthermore, managers can use more focused approaches to support employees beyond giving access to resources when IWB is high. For instance, managers can support employees in developing ideas that match the companies’ strategic needs by offering feedback workshops regarding the ideas to facilitate organizational learning.

7.3. Limitations and future research

This study has some limitations that provide avenues for future research. First, it is important to consider that for each firm, we only questioned one key informant. However, they fulfilled several criteria to assure generalizability for the whole company and ensure that they were knowledgeable and capable of providing information. Future studies can survey employees from different departments and levels of the organization and then aggregate them to the organizational level. Thus, we see our study as a first approach that could be extended with future studies.

Second, the data collection took place at one point in time. However, BMI is a process with various development stages (Demil and Lecocq, 2010). To accurately capture this without losing information, we propose future studies to collect survey data at several points in time or conduct in-depth case study analysis. Hence, the effect of IWB on BMI can be different at different stages of the BMI process, which offers avenues for future research.

Third, from the simple slope analysis, we found that the interaction between organizational support for innovation and IWB is positive on BMI when the individual level of innovative behavior is low. When IWB is already high, its effect on BMI is insignificant. The findings suggested that the relationship between IWB and BMI is strengthened for firms with high IWB when the organizational support for innovation is low. This calls for future studies to analyze how firm-level variables (e.g., culture, knowledge management) in organizations with high levels of IWB can further stimulate BMI. Finally, we propose future studies to analyze the individual-team interface or the team-organization interface and their effects on realizing BMI, as we found research on BMI enablers on the individual level scarce. For instance, future research can investigate other individual-level enablers associated with creativity, like decision autonomy or incentive systems.

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References

- Achtenhagen, L., Melin, L., and Naldi, L. (2013) Dynamics of business models-strategizing, critical capabilities and activities for sustained value creation. *Long Range Planning*, **46**, 6, 1–25.
- Ahmed, P.K. (1998) Culture and climate for innovation. *European Journal of Innovation Management*, **1**, 1, 30–43.
- Alpkan, L., Bulut, C., Gunday, G., Ulusoy, G., and Kilic, K. (2010) Organizational support for intrapreneurship and its interaction with human capital to enhance innovative performance. *Management Decision*, **48**, 5, 732–755.
- Alshawaaf, N. and Lee, S.H. (2021) Business model innovation through digitisation in social purpose organisations: a comparative analysis of Tate Modern and Pompidou Centre. *Journal of Business Research*, **125**, 597–608. <https://doi.org/10.1016/j.jbusres.2020.02.045>.
- Amabile, T.M., Conti, R., Coon, H., Lazenby, J., and Herron, M. (1996) Assessing the work environment for creativity. *Academy of Management Journal*, **39**, 5, 1154–1184.
- Amit, R. and Zott, C. (2012) Creating value through business model innovation. *MIT Sloan Management Review*, **53**, 3, 41–49.
- Amit, R. and Zott, C. (2015) Crafting business architecture: the antecedents of business model design. *Strategic Entrepreneurship Journal*, **9**, 4, 331–350.
- Anderson, N., De Dreu, C.K.W., and Nijstad, B.A. (2004) The routinization of innovation research: a constructively critical review of the state-of-the-science. *Journal of Organizational Behavior*, **25**, 147–173.
- Anderson, N., Potočník, K., and Zhou, J. (2014) Innovation and creativity in organizations: a state-of-the-science review, prospective commentary, and guiding framework. *Journal of Management*, **40**, 5, 1297–1333.
- Anser, M.K., Yousaf, Z., Khan, A., and Usman, M. (2021) Towards innovative work behavior through knowledge management infrastructure capabilities. *European Journal of Innovation Management*, **24**, 2, 461–480. <https://doi.org/10.1108/EJIM-09-2019-0250>.
- Ashford, S.J., Rothbard, N.P., Piderit, S.K., and Dutton, J.E. (1998) Out on a limb: the role of context and impression management in selling gender-equity issues. *Administrative Science Quarterly*, **43**, 1, 23–57.
- Baden-Fuller, C. and Haefliger, S. (2013) Business models and technological innovation. *Long Range Planning*, **46**, 6, 419–426.
- Baer, M. and Frese, M. (2003) Innovation is not enough: climates for initiative and psychological safety, process innovations, and firm performance. *Journal of Organizational Behavior*, **24**, 1, 45–68.
- Bashir, M. and Verma, R. (2017) Why business model innovation is the new competitive advantage. *IUP Journal of Business Strategy*, **14**, 1, 7.
- Becker, J.-M., Klein, K., and Wetzels, M. (2012) Hierarchical latent variable models in PLS-SEM: guidelines for using reflective-formative type models. *Long Range Planning*, **45**, 5–6, 359–394.
- Bhatti, S.H., Santoro, G., Khan, J., and Rizzato, F. (2021) Antecedents and consequences of business model innovation in the IT industry. *Journal of Business Research*, **123**, 389–400. <https://doi.org/10.1016/j.jbusres.2020.10.003>.
- Bock, A.J., Opsahl, T., George, G., and Gann, D.M. (2012) The effects of culture and structure on strategic flexibility during business model innovation [article]. *Journal of Management Studies*, **49**, 2, 279–305.
- Brambor, T., Clark, W.R., and Golder, M. (2006) Understanding interaction models: improving empirical analyses. *Political Analysis*, **14**, 1, 63–82.

- Brislin, R.W. (1970) Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology*, **1**, 3, 185–216.
- Brockner, J., Siegel, P.A., Daly, J.P., Tyler, T., and Martin, C. (1997) When trust matters: the moderating effect of outcome favorability. *Administrative Science Quarterly*, **42**, 3, 558–583.
- Busenbark, J.R., Graffin, S.D., Campbell, R.J., and Lee, E.Y. (2022) A marginal effects approach to interpreting main effects and moderation. *Organizational Research Methods*, **25**, 1, 147–169.
- Campbell, J.P. and Prichard, R.D. (1976) Motivation Theory in industrial and organizational psychology. In: Editor, Dunnette, M.D., *Handbook of Industrial and Organizational Psychology*. Chicago: Rand McNally, pp. 63–130.
- Casadesus-Masanell, R. and Zhu, F. (2013) Business model innovation and competitive imitation: the case of sponsor-based business models. *Strategic Management Journal*, **34**, 4, 464–482.
- Chai, L., Li, J., Tangpong, C., and Clauss, T. (2020) The interplays of coopetition, conflicts, trust, and efficiency process innovation in vertical B2B relationships. *Industrial Marketing Management*, **85**, 269–280.
- Chen, Z., Eisenberger, R., Johnson, K.M., Sucharski, I.L., and Aselage, J. (2009) Perceived organizational support and extra-role performance: which leads to which? *The Journal of Social Psychology*, **149**, 1, 119–124.
- Cheng, C. and Wang, L. (2022) How companies configure digital innovation attributes for business model innovation? A configurational view. *Technovation*, **112**, 102398. <https://doi.org/10.1016/j.technovation.2021.102398>.
- Chesbrough, H. (2010) Business Model Innovation. Opportunities and Barriers. *Long Range Planning*, **43**, 2–3, 354–363. <https://doi.org/10.1016/j.lrp.2009.07.010>.
- Chesbrough, H. and Rosenbloom, R.S. (2002) The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spin-off companies. *Industrial and Corporate Change*, **11**, 3, 529–555.
- Chin, W.W. (1998) The partial least squares approach to structural equation modeling. In: Marcoulides, G.A. (ed.), *Modern Methods for Business Research*. New York: Lawrence Erlbaum Associates, pp. 295–336.
- Clauss, T. (2017) Measuring business model innovation: conceptualization, scale development and proof of performance. *R&D Management*, **47**, 3, 385–403.
- Clauss, T., Abebe, M., Tangpong, C., and Hock, M. (2021) Strategic agility, business model innovation, and firm performance: an empirical investigation. *IEEE Transactions on Engineering Management*, **68**, 3, 767–784.
- Dawson, J.F. (2014) Moderation in management research: what, why, when, and how. *Journal of Business and Psychology*, **29**, 1, 1–19.
- De Jong, J. and Den Hartog, D. (2010) Measuring innovative work behaviour. *Creativity and Innovation Management*, **19**, 1, 23–36.
- von Delft, S., Kortmann, S., Gelhard, C., and Pisani, N. (2019) Leveraging global sources of knowledge for business model innovation. *Business Models*, **52**, 5, 101848. <https://doi.org/10.1016/j.lrp.2018.08.003>.
- Demil, B. and Lecocq, X. (2010) Business model evolution: in search of dynamic consistency [article]. *Long Range Planning*, **43**, 2–3, 227–246.
- Denoo, L., Yli-Renko, H., and Clarysse, B. (2021) The impact of customer ties and industry segment maturity on business model adaptation in an emerging industry. *Strategic Entrepreneurship Journal*, **16**, 602–632. <https://doi.org/10.1002/sej.1400>.
- Detert, J.R. and Burris, E.R. (2007) Leadership behavior and employee voice: is the door really open? *Academy of Management Journal*, **50**, 4, 869–884.
- Dorenbosch, L., Engen, M.L., and Verhagen, M. (2005) On-the-job innovation: the impact of job design and human resource management through production ownership. *Creativity and Innovation Management*, **14**, 2, 129–141.
- Doz, Y.L. and Kosonen, M. (2010) Embedding strategic agility: a leadership agenda for accelerating business model renewal. *Long Range Planning*, **43**, 2–3, 370–382.
- Dunford, R., Palmer, I., and Benveniste, J. (2010) Business model replication for early and rapid internationalisation the ING direct experience. *Long Range Planning*, **43**, 5–6, 655–674. <https://doi.org/10.1016/j.lrp.2010.06.004>.
- Dutton, J.E., Ashford, S.J., O'Neill, R.M., Hayes, E., and Wierba, E.E. (1997) Reading the wind: how middle managers assess the context for selling issues to top managers. *Strategic Management Journal*, **18**, 5, 407–423.
- Edmondson, A.C. (2003) Speaking up in the operating room: how team leaders promote learning in interdisciplinary action teams. *Journal of Management Studies*, **40**, 6, 1419–1452.
- Egffjord, K.F.-H. and Sund, K.J. (2020) Do you see what I see? How differing perceptions of the environment can hinder radical business model innovation. *Technological Forecasting and Social Change*, **150**, 119787.
- Eisenberger, R., Armeli, S., Rexwinkel, B., Lynch, P.D., and Rhoades, L. (2001) Reciprocation of perceived organizational support. *Journal of Applied Psychology*, **86**, 1, 42–51.
- Eisenberger, R., Huntington, R., Hutchison, S., and Sowa, D. (1986) Perceived organizational support. *Journal of Applied Psychology*, **71**, 3, 500–507.
- Ferreira, F.N.H., Proença, J.F., Spencer, R., and Cova, B. (2013) The transition from products to solutions: external business model fit and dynamics. *Industrial Marketing Management*, **42**, 7, 1093–1101.
- Fornell, C. and Bookstein, F.L. (1982) Two structural equation models: LISREL and PLS applied to consumer exit-voice theory. *Journal of Marketing Research*, **19**, 4, 440–452.
- Fornell, C. and Larcker, D.F. (1981) Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, **18**, 1, 39–50.
- Foss, N.J. and Saebi, T. (2017a) Business models and business model innovation: between wicked and paradigmatic problems. *Long Range Planning*, **51**, 1, 9–21.
- Foss, N.J. and Saebi, T. (2017b) Fifteen years of research on business model innovation: how far have we come,

- and where should we go? *Journal of Management*, **43**, 1, 200–227. <https://doi.org/10.1177/0149206316675927>.
- Frese, M., Teng, E., and Wijnen, C.J. (1999) Helping to improve suggestion systems: predictors of making suggestions in companies. *Journal of Organizational Behavior*, **20**, 7, 1139–1155.
- Galbraith, J.R. (1982) Designing the innovating organization. *Organizational Dynamics*, **10**, 3, 5–25.
- Ghezzi, A. and Cavallo, A. (2020) Agile business model innovation in digital entrepreneurship: lean start-up approaches. *Journal of Business Research*, **110**, 519–537. <https://doi.org/10.1016/j.jbusres.2018.06.013>.
- Giudici, A., Combs, J.G., Cannatelli, B.L., and Smith, B.R. (2020) Successful scaling in social franchising: the case of impact hub. *Entrepreneurship Theory and Practice*, **44**, 2, 288–314. <https://doi.org/10.1177/1042258718801593>.
- Gumusluoglu, L. and Ilsev, A. (2009) Transformational leadership and organizational innovation: the roles of internal and external support for innovation. *Journal of Product Innovation Management*, **26**, 3, 264–277.
- Guo, H., Tang, J., Su, Z., and Katz, J.A. (2017) Opportunity recognition and SME performance: the mediating effect of business model innovation. *R&D Management*, **47**, 3, 431–442. <https://doi.org/10.1111/radm.12219>.
- Hair, J.F., Ringle, C.M., and Sarstedt, M. (2011) PLS-SEM: indeed a silver bullet. *The Journal of Marketing Theory and Practice*, **19**, 2, 139–152.
- Hair, J.F., Sarstedt, M., Pieper, T.M., and Ringle, C.M. (2012) The use of partial least squares structural equation modeling in strategic management research: a review of past practices and recommendations for future applications. *Long Range Planning*, **45**, 5–6, 320–340.
- Hair Jr, J.F., Sarstedt, M., Hopkins, L., and Kuppelwieser, V.G. (2014) Partial least squares structural equation modeling (PLS-SEM) an emerging tool in business research. *European Business Review*, **26**, 2, 106–121.
- Heij, C., Volberda, H., and Van den Bosch, F. (2014) *How does Business Model Innovation Influence firm Performance: The Effect of Environmental Dynamism*. Academy of Management Proceedings.
- Henseler, J., Ringle, C.M., and Sarstedt, M. (2014) A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, **43**, 1, 1–21.
- Herrera, M.E.B. (2016) Innovation for impact: business innovation for inclusive growth. *Journal of Business Research*, **69**, 5, 1725–1730. <https://doi.org/10.1016/j.jbusres.2015.10.045>.
- Hock, M. and Clauss, T. (2017) *Knowledge Management Capabilities and the Role of Risk Taking for Business Model Innovation*. Academy of Management Proceedings.
- Hock, M., Clauss, T., and Schulz, E. (2016) The impact of organizational culture on a firm's capability to innovate the business model. *R&D Management*, **46**, 3, 433–450.
- Hock-Doepgen, M., Clauss, T., Kraus, S., and Cheng, C.-F. (2021) Knowledge management capabilities and organizational risk-taking for business model innovation in SMEs. *Journal of Business Research*, **130**, 683–697.
- James, L.R. and Sells, S.B. (1981) Psychological climate: theoretical perspectives and empirical research. In: Magnusson, D. (ed.), *Toward a Psychology of Situations: An Interactional Perspective*. New York: Erlbaum, pp. 275–295.
- Janssen, O. (2000) Job demands, perceptions of effort-reward fairness and innovative work behaviour. *Journal of Occupational and Organizational Psychology*, **73**, 3, 287–302.
- Janssen, O. and Van Yperen, N.W. (2004) Employees' goal orientations, the quality of leader-member exchange, and the outcomes of job performance and job satisfaction. *Academy of Management Journal*, **47**, 3, 368–384.
- Jaworski, B.J. and Kohli, A.K. (1993) Market orientation: antecedents and consequences. *The Journal of Marketing*, **57**, 3, 53–70.
- Kanter, R.M. (1983) *Change Masters: Innovation and Entrepreneurship in the American Corporation*. Los Angeles: Free Press.
- Karimi, J. and Walter, Z. (2016) Corporate entrepreneurship, disruptive business model innovation adoption, and its performance. The case of the newspaper industry. *Long Range Planning*, **49**, 3, 342–360. <https://doi.org/10.1016/j.lrp.2015.09.004>.
- Khalili, A. (2016) Linking transformational leadership, creativity, innovation, and innovation-supportive climate. *Management Decision*, **54**, 9, 2277–2293.
- Khanagha, S., Volberda, H., and Oshri, I. (2014) Business model renewal and ambidexterity: structural alteration and strategy formation process during transition to a cloud business model. *R&D Management*, **44**, 3, 322–340.
- Klein, S.P., Spieth, P., and Heidenreich, S. (2021) Facilitating business model innovation. The influence of sustainability and the mediating role of strategic orientations. *Journal of Product Innovation Management*, **38**, 271–288. <https://doi.org/10.1111/jpim.12563>.
- Kraus, S., Breier, M., Lim, W.M., Dabić, M., Kumar, S., Kanbach, D., Mukherjee, D., Corvello, V., Piñeiro-Chousa, J., Liguori, E., Palacios-Marqués, D., Schiavone, F., Ferraris, A., Fernandes, C., and Ferreira, J.J. (2022) Literature reviews as independent studies: guidelines for academic practice. *Review of Managerial Science*, **16**, 8, 2577–2595. <https://doi.org/10.1007/s11846-022-00588-8>.
- Kurtessis, J.N., Eisenberger, R., Ford, M.T., Buffardi, L.C., Stewart, K.A., and Adis, C.S. (2017) Perceived organizational support: a meta-analytic evaluation of organizational support theory. *Journal of Management*, **43**, 6, 1854–1884.
- Lin, H.-F. (2007) Knowledge sharing and firm innovation capability: an empirical study. *International Journal of Manpower*, **28**, 3/4, 315–332.
- Lindell, M.K. and Whitney, D.J. (2001) Accounting for common method variance in cross-sectional research designs. *Journal of Applied Psychology*, **86**, 1, 114–121.
- Loon, M., Otaye-Ebede, L., and Stewart, J. (2020) Thriving in the new normal: the HR microfoundations of capabilities for business model innovation. An integrated

- literature review. *Journal of Management Studies*, **57**, 3, 698–726.
- Marshall, D.R., Davis, W.D., Dibrell, C., and Ammeter, A.P. (2019) Learning off the job: examining part-time entrepreneurs as innovative employees. *Journal of Management*, **45**, 8, 3091–3113. <https://doi.org/10.1177/0149206318779127>.
- Martins, L.L., Rindova, V.P., and Greenbaum, B.E. (2015) Unlocking the hidden value of concepts: a cognitive approach to business model innovation. *Strategic Entrepreneurship Journal*, **9**, 1, 99–117. <https://doi.org/10.1002/sej.1191>.
- McGrath, R.G. (2010) Business model: a discovery driven approach. *Long Range Planning*, **43**, 2–3, 247–261.
- Mezger, F. (2014) Toward a capability-based conceptualization of business model innovation: insights from an explorative study. *R&D Management*, **44**, 5, 429–449.
- Milliken, F.J., Morrison, E.W., and Hewlin, P.F. (2003) An exploratory study of employee silence: issues that employees don't communicate upward and why. *Journal of Management Studies*, **40**, 6, 1453–1476.
- Müller, J.M., Buliga, O., and Voigt, K.-I. (2018) Fortune favors the prepared: how SMEs approach business model innovations in industry 4.0. *Technological Forecasting and Social Change*, **132**, 2–17. <https://doi.org/10.1016/j.techfore.2017.12.019>.
- Nahapiet, J. and Ghoshal, S. (1998) Social capital, intellectual capital, and the organizational advantage. *The Academy of Management Review*, **23**, 2, 242–266.
- Narayan, S., Sidhu, J.S., and Volberda, H.W. (2020) From attention to action: the influence of cognitive and ideological diversity in top management teams on business model innovation. *Journal of Management Studies*, **58**, 2082–2110. <https://doi.org/10.1111/joms.12668>.
- Ng, T.W. and Lucianetti, L. (2016) Within-individual increases in innovative behavior and creative, persuasion, and change self-efficacy over time: a social-cognitive theory perspective. *Journal of Applied Psychology*, **101**, 1, 14–34.
- Osiyevskyy, O. and Dewald, J. (2015) Explorative versus exploitative business model change: the cognitive antecedents of firm-level responses to disruptive innovation. *Strategic Entrepreneurship Journal*, **9**, 1, 58–78.
- Osterloh, M. and Frey, B.S. (2000) Motivation, knowledge transfer, and organizational forms. *Organization Science*, **11**, 5, 538–550.
- Osterwalder, A. and Pigneur, Y. (2010) *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*. Hoboken: Wiley & Sons.
- Plé, L., Lecocq, X., and Angot, J. (2010) Customer-integrated business models: a theoretical framework. *Management*, **13**, 4, 226–265.
- Podsakoff, P.M., MacKenzie, S.B., Lee, J.-Y., and Podsakoff, N.P. (2003) Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology*, **88**, 5, 879–903.
- Rayna, T. and Striukova, L. (2016) From rapid prototyping to home fabrication: how 3D printing is changing business model innovation. *Technological Forecasting and Social Change*, **102**, 214–224. <https://doi.org/10.1016/j.techfore.2015.07.023>.
- Reinartz, W., Krafft, M., and Hoyer, W.D. (2004) The customer relationship management process: its measurement and impact on performance. *Journal of Marketing Research*, **41**, 3, 293–305.
- Rhoades, L. and Eisenberger, R. (2002) Perceived organizational support: a review of the literature. *Journal of Applied Psychology*, **87**, 4, 698–714.
- Ringle, C.M., Wende, S., and Will, A. (2005) *SmartPLS 2.0 (Beta)*. www.smartpls.de
- Rolf Seringhaus, F. and Rosson, P.J. (1998) Management and performance of international trade fair exhibitors: government stands vs independent stands. *International Marketing Review*, **15**, 5, 398–412.
- Ross, A. (2015) *Why Did Google Abandon 20% Time for Innovation?* First accessed September 2018.
- Santos, J., Spector, B., and Van der Heyden, L. (2015) Toward a theory of business model change. In: Foss, N.J. and Saebi, T. (eds), *Business Model Innovation: The Organizational Dimension*. Oxford: Oxford University Press, pp. 43–63.
- Sanz-Valle, R. and Jiménez-Jiménez, D. (2018) HRM and product innovation: does innovative work behaviour mediate that relationship? *Management Decision*, **56**, 6, 1417–1429.
- Schneckenberg, D., Velamuri, V.K., Comberg, C., and Spieth, P. (2016) Business model innovation and decision making: uncovering mechanisms for coping with uncertainty. *R&D Management*, **47**, 3, 404–419.
- Scott, S.G. and Bruce, R.A. (1994) Determinants of innovative behavior – a path model of individual innovation in the workplace. *Academy of Management Journal*, **37**, 3, 580–607.
- Siegel, S.M. and Kaemmerer, W.F. (1978) Measuring the perceived support for innovation in organizations. *Journal of Applied Psychology*, **63**, 5, 553–562.
- Sjödin, D., Parida, V., Palmié, M., and Wincent, J. (2021) How AI capabilities enable business model innovation: scaling AI through co-evolutionary processes and feedback loops. *Journal of Business Research*, **134**, 574–587. <https://doi.org/10.1016/j.jbusres.2021.05.009>.
- Snihur, Y. and Zott, C. (2020) The genesis and metamorphosis of novelty imprints. How business model innovation emerges in young ventures. *Academy of Management Journal*, **63**, 2, 554–583. <https://doi.org/10.5465/amj.2017.0706>.
- Soluk, J., Miroshnychenko, I., Kammerlander, N., and De Massis, A. (2021) Family influence and digital business model innovation: the enabling role of dynamic capabilities. *Entrepreneurship Theory and Practice*, **45**, 4, 867–905.
- Sorescu, A. (2017) Data-driven business model innovation. *Journal of Product Innovation Management*, **34**, 5, 691–696. <https://doi.org/10.1111/jpim.12398>.
- Sosna, M., Treviño-Rodríguez, R.N., and Velamuri, S.R. (2010) Business model innovation through trial-and-error learning the Naturhouse case. *Long Range Planning*, **43**, 2–3, 383–407.

- Stan, S., Evans, K.R., Arnold, T.J., and McAmis, G.T. (2012) The moderating influence of organizational support on the development of salesperson job performance: can an organization provide too much support? *Journal of Personal Selling & Sales Management*, **32**, 4, 405–419.
 - Teece, D.J. (2007) Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, **28**, 13, 1319–1350.
 - Teece, D.J. (2010) Business models, business strategy and innovation. *Long Range Planning*, **43**, 2, 172–194.
 - Teece, D.J. (2018) Business models and dynamic capabilities. *Long Range Planning*, **51**, 1, 40–49.
 - Teece, D.J., Pisano, G., and Shuen, A. (1997) Dynamic capabilities and strategic management. *Strategic Management Journal*, **18**, 7, 509–533.
 - To, C.K., Au, J.S., and Kan, C.W. (2019) Uncovering business model innovation contexts: a comparative analysis by fsQCA methods. *Journal of Business Research*, **101**, 783–796. <https://doi.org/10.1016/j.jbusres.2018.12.042>.
 - Van Dijk, C. and Van Den Ende, J. (2002) Suggestion systems: transferring employee creativity into practicable ideas. *R&D Management*, **32**, 5, 387–395.
 - Velu, C. (2017) A systems perspective on business model evolution: the case of an agricultural information service provider in India. *Long Range Planning*, **50**, 5, 603–620. <https://doi.org/10.1016/j.lrp.2016.10.003>.
 - Velu, C. and Jacob, A. (2016) Business model innovation and owner-managers: the moderating role of competition. *R&D Management*, **46**, 3, 451–463.
 - Velu, C. and Stiles, P. (2013) Managing decision-making and cannibalization for parallel business models. *Long Range Planning*, **46**, 6, 443–458.
 - Vittori, D., Natalicchio, A., Panniello, U., Messeni Petruzzelli, A., and Cupertino, F. (2022) Business model innovation between the embryonic and growth stages of industry lifecycle. *Technovation*, **117**, 102592. <https://doi.org/10.1016/j.technovation.2022.102592>.
 - Vough, H.C., Bindl, U.K., and Parker, S.K. (2017) Proactivity routines: the role of social processes in how employees self-initiate change. *Human Relations*, **70**, 10, 1191–1216.
 - Wang, X.H.F., Fang, Y., Qureshi, I., and Janssen, O. (2015) Understanding employee innovative behavior: integrating the social network and leader-member exchange perspectives. *Journal of Organizational Behavior*, **36**, 3, 403–420.
 - Wayne, S.J., Shore, L.M., and Liden, R.C. (1997) Perceived organizational support and leader-member exchange: a social exchange perspective. *Academy of Management Journal*, **40**, 1, 82–111.
 - West, M.A. and Farr, J.L. (1989) Innovation at work: psychological perspectives. *Social Behaviour*, **4**, 1, 15–30.
 - Woodman, R.W., Sawyer, J.E., and Griffin, R.W. (1993) Toward a theory of organizational creativity. *Academy of Management Review*, **18**, 2, 293–321.
 - Wu, C.-H., Parker, S.K., and De Jong, J.P. (2014) Need for cognition as an antecedent of individual innovation behavior. *Journal of Management*, **40**, 6, 1511–1534.
 - Yuan, F.R. and Woodman, R.W. (2010) Innovative behavior in the workplace: the role of performance and image outcome expectations. *Academy of Management Journal*, **53**, 2, 323–342.
 - Yunus, M., Moingeon, B., and Lehmann-Ortega, L. (2010) Building social business models: lessons from the Grameen experience. *Long Range Planning*, **43**, 2–3, 308–325. <https://doi.org/10.1016/j.lrp.2009.12.005>.
 - Zhang, H., Xiao, H., Wang, Y., Shareef, M.A., Akram, M.S., and Goraya, M.A.S. (2021) An integration of antecedents and outcomes of business model innovation: a meta-analytic review. *Journal of Business Research*, **131**, 803–814. <https://doi.org/10.1016/j.jbusres.2020.10.045>.
 - Zhou, J. and Shalley, C.E. (2003) Research on employee creativity: a critical review and directions for future research. In: Buckley, M.R.H., Jonathon, R.B., and Wheeler, A.R. (eds), *Research in Personnel and Human Resources Management*. New York: Emerald Group Publishing Limited, pp. 165–217.
 - Zott, C. and Amit, R. (2010) Business model design: an activity system perspective. *Long Range Planning*, **43**, 2, 216–226.
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APPENDIX

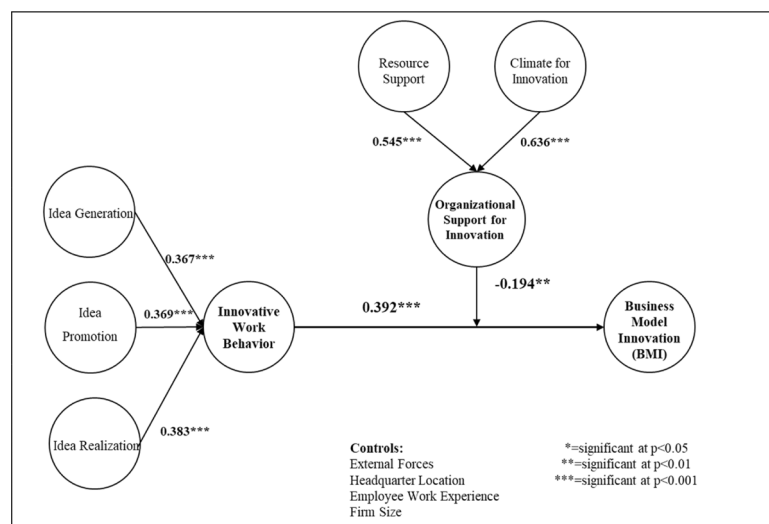


Figure A1. Structural model results.