



# Supporting innovating employees: how managerial coaching affects four dimensions of innovative work behavior

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## Abstract

SMEs rely on innovation, and individual employees come up with and implement ideas to act as the microfoundations of organizational innovation. Managers play a critical role in encouraging employees' innovative work behavior. However, thus far, this relationship has been studied utilizing a one-dimensional construct, and little is known about whether a determinant affects all phases of the innovation process equally. We investigate the effect of managerial coaching—managers coaching their employees to improve performance—on four dimensions of innovative work behavior. We show that managerial coaching positively influences innovative behavior in organizations, but is least important when employees explore ideas and most important when they implement ideas. We also find that employees tend to be more comfortable exploring and generating ideas than championing and implementing them, indicating innovation potential at the employee level which can be unlocked if managers know how to coach employees at the right time.

**Keywords** Innovative work behavior (IWB) · Employee innovation · Innovation process · Managerial coaching · Innovation management

**JEL Classification** O31

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## 1 Introduction

When it comes to innovation in SMEs, researchers agree on three things: that innovation is essential for SME performance (Barber et al. 2024; Love and Roper 2015), that managers play a vital role (Harel et al. 2021), and that SMEs face different types of challenges from large businesses when they innovate (McMurray et al. 2022; Rogers 2004). The last issue stems from factors such as SMEs having more limited human and financial resources (Pisoni et al. 2018; Torres de Oliveira et al. 2022) and lower R&D activity (Audretsch et al. 2020; Ortega-Argilés et al. 2009). However, they are often more flexible (Rubio-Andrés et al. 2022), and extending innovation as an activity required of every SME employee, regardless of their level, is a necessity—innovation cannot only come from the managers. The role of individuals as the microfoundations of organizational innovation has gained traction (Klofsten et al. 2021; Ryan et al. 2018). Specifically, innovative employees demonstrate four types of behaviors: exploring opportunities to improve, generating new ideas, championing these ideas inside and outside the organization, and implementing solutions (de Jong and den Hartog 2010).

However, research shows that especially as the company grows, keeping employees motivated to generate growth is difficult (Parker 2024). One of the significant factors that can enhance employees' innovative work behavior (IWB) is managerial support (Hughes et al. 2018a). Studies have shown for example, that the trust that managers bestow on their team (Hughes et al. 2018b), their personalities (Runst and Thomä 2022), and their own innovative behaviors (Kör et al. 2021) are meaningful for IWB in organizations.

We propose that previous academic attempts to advise managers on supporting their innovating employees have suffered particular shortcomings. First, research on the topic has so far leaned repeatedly on a few traditional leadership theories (see Hughes et al. 2018a), and attempts to meet the contextual factors better by seeking alternative leadership frameworks have rarely been made. One common practice has been to study whether a particular, relatively narrow leadership style such as servant leadership (e.g., Newman et al. 2018) or either/or based management styles such as transformational vs. transactional leadership (e.g. Pieterse et al. 2010) can encourage employees to innovate more. Moreover, these theories might be too “grandiose” to investigate supervisors' daily activities with their subordinates in SME workplaces (see Alvesson and Einola 2019; Alvesson and Kärreman 2016). Ahmadi et al. (2021) recently suggested that more research is needed to understand managers' behaviors in effective SMEs, and that it should consider actions focusing on tasks and people.

The second shortcoming relates to the research practice where the effect of managerial support is measured on all stages of the innovation process together (Anderson et al. 2014). That is to say, it is common to measure the influence of a determinant on individuals as they recognize opportunities to innovate, generate new ideas, champion the idea to get the right people involved and gain the resources necessary to develop it further, and finally implement the idea (de Jong and den Hartog 2010; Kanter 1988). However, because the behaviors in each of these four dimensions are quite different, it is entirely conceivable that employees who are thinking about a problem to solve might benefit from the support of their manager differently to

when they are implementing solutions to said problem. The few studies that have observed the influence of managerial support on idea generation and implementation give weight to our argument that managerial support does not have a uniform impact during the different stages of the innovation process. According to such studies, managerial support— whether it be leaders' respect and fair treatment of employees (Fang et al. 2019), openness in the decision-making process (Krause 2004), or giving feedback (Noefer et al. 2009)— plays a more significant role in idea implementation than in idea generation. To our knowledge, more granular divisions than two stage studies have not been attempted. We address these shortcomings by studying how managerial coaching encourages employees to innovate, and whether the effect is equal in size in *all stages* of the innovation process. Beattie et al. (2014) have defined managerial coaching as leadership behavior where “the focus tends to be mainly on improving the skills, competence, and performance” of employees. It consists of concrete day-to-day activities such as discussing performance with employees, facilitating cooperation in the team, and dealing with problems constructively (Tanskanen et al. 2019). An empirical study by Kindström et al. (2024) highlighted that the most critical people-oriented challenges in SMEs revolved around developing competencies and getting everyone onboard in change processes. Zia et al. (2024) observed that psychological empowerment enhances IWB in SMEs, and these are all central goals in managerial coaching (Beattie et al. 2014).

In this study, we divide employees' innovative behaviors into four dimensions: recognizing problems and generating, championing, and implementing ideas (de Jong and den Hartog 2010). Each dimension is, again, measured as a concrete behavior such as thinking about how things can be improved, generating original solutions, convincing people to support an idea, and putting effort into developing new solutions. Consequently, measuring the influence of managerial coaching on four dimensions of innovative behavior allows for detailed insights about when employees feel that they need their manager's support the most.

We make several theoretical and practical contributions. First, we show that managerial coaching positively affects employees' innovative work behavior. However, the effect grows continuously as the process advances, with employees benefiting from managerial support least when they explore ideas and most when they implement ideas. We find that employees are most comfortable exploring problems and generating new ideas, and least comfortable when championing and implementing them. This indicates that there is an untapped innovation potential at the employee level that could be leveraged if managers support their innovating employees at the right time and in the right way. Furthermore, by studying concrete managerial and employee behaviors, we help busy managers to understand how and when they can best support their innovating employees. Finally, we add to the growing body of literature recognizing individuals' contributions to organizational innovation.

## 2 Literature review and hypotheses

### 2.1 Innovative work behavior

Although the exact definition of innovation still excites debate, most scholars agree that it is a complex multi-staged process with elements related to generating and implementing new ideas for the organization's benefit. A large body of literature is focused on studying how individual employees come up with new ideas and implement them in such diverse fields as AI (Zirar 2023), social networks (Mannucci and Perry-Smith 2022), and agile innovation (Annosi et al. 2024). Another exciting direction centers around the impact of generational factors on how innovation is approached, especially in an SME context (Janssen 2000; Kanter 1988; Kör et al. 2021; Scott and Bruce 1994). Innovative work behavior is, therefore, a highly topical research area that is seen to be at the heart of organizational innovation (Kör et al. 2021). As microfoundations of organizational innovation, learning about individuals' behaviors and activities is critical to understanding macro-level innovative outcomes (Felin et al. 2015; Ryan et al. 2018).

Innovative work behavior (IWB) has traditionally been defined as the generation of creative ideas and their implementation (Janssen 2000). Creativity and innovation are closely related concepts, and have sometimes been used interchangeably or with innovation as the broader concept of which creativity is a part of (e.g., West and Farr 1990). Nowadays, it is generally agreed that it is necessary to conceive creativity and innovation as two different concepts and have definitional clarity around them (Anderson et al. 2014). An excellent discussion around this topic is offered by Hughes et al. (2018a), who after a thorough analysis of the definitions of creativity and innovation being used by scholars, go on to define creativity as the behavioral processes that are involved in generating new ideas. Following on, innovation is defined as the processes involved in implementing these ideas.

The innovation process usually starts with recognizing that there is a problem or an opportunity to do something better, given that innovation is always initiated with the purpose of improvement or benefit for the organization (Hughes et al. 2018a). Here, individuals recognize or look for ways to improve the current situation, or try to think about it differently (Farr and Ford 1990; Kanter 1988). Next, ideas or solutions are generated for addressing the problem. These ideas can be entirely new (i.e., creative) or new to the context where a solution already in place elsewhere is applied to the problem at hand (de Jong and den Hartog 2010). Seeing that innovation is at heart a change process, and as such can cause resistance (Janssen 2004), ideas often have to be promoted or championed. This work involves getting the idea approved to move forward with it, and obtaining the manpower, money and time to work on it (Perry-Smith and Mannucci 2017), as well as getting other people involved, building coalitions, and being persistent (Howell et al. 2005). Finally, idea implementation entails preparing plans, securing funds and resources, and ensuring that the innovation becomes part of business as usual (Kleysen and Street 2001; Lukes and Stephan 2017; Scott and Bruce 1994). While often presented as separate, clear-cut steps in the innovation process, in actuality, these behaviors may overlap and follow a non-fixed order in what may be a messy and reiterative process (Anderson et al. 2014).

## 2.2 Managerial coaching

Managerial coaching (MC) is a rapidly developing theory designed to meet the growing pressure for organizational performance improvement and continuous learning and renewal (Berg and Karlsen 2007; Bond and Seneque 2013). It is presented as a suitable leadership style in organizational contexts which benefit from managers encouraging their employees to utilize their potential in solving new problems, learning new skills and knowledge, and developing and improving performance (Anderson et al. 2014; Ellinger and Kim 2014; Matsuo 2018). Specifically, it looks at managers' supportive behavior with subordinates both at individual and team levels (Geroy et al. 2005; Hagen 2012).

Managerial coaching draws from several earlier leadership theories, which take into account leadership actions that support individual and group autonomy, internal motivation, and learning at work (Ruiz-Palomino et al. 2021). In the spectrum of management theories, it represents an integrative construct of broad leadership style, which combines ideas of both transformational and transactional leadership dimensions (Bass 1985), as well as leader–member exchange (LMX) theory (Graen and Uhl-Bien 1995). However, it also challenges traditional leader-centric and heroic leadership theories by seeing coaching leadership as a two-way process between the leader and subordinates, where supervisors (or team leaders or line managers) behave in a way that supports their subordinates to meet their targets, develop their capabilities, and strengthen their autonomy (Anderson 2013).

At the core of managerial coaching are conversational actions which focus on clarifying common goals, evaluating performance in a reflective way, evaluating competence and performance development needs, finding and implementing development methods, and strengthening the group's mutual relations and cooperation (Beattie et al. 2014; Berg and Karlsen 2007). Leaders employing a managerial coaching style have as their goal to help employees grow and fully utilize their capacity. Managerial coaching consists of actions which can be beneficial in all stages of the innovation process. Managers employing this leadership style tend to encourage their employees to question how things are done in the organization (Ellinger et al. 2008; McCarthy and Milner 2020), which can lead employees to engage in more idea exploration. They also consciously urge their team members to use creative capabilities and skills to develop new ideas (Heslin et al. 2006), which can result in better and more frequent idea generation. These managers are skilled at increasing psychological well-being while improving performance (Kim 2014), as well as creating a sense of security, both of which are necessary for idea promotion. Indeed, it has been shown that managerial coaching even mitigates the negative influence of an obsessive–compulsive personality on IWB (Abukhait et al. 2023). Finally, the managers empower the employees to make their own decisions and work toward solutions (McCarthy and Milner 2020; Wageman 2001). Therefore, we suggest that managerial coaching is especially suitable for stimulating innovative behavior among employees.

### 2.3 The connection between innovative behavior and managerial coaching

Despite the apparent suitability of adopting a managerial coaching style to enhance innovative work behavior, to our knowledge, only three previous studies address this connection (Ali et al. 2020; Hahn 2016; Wang 2013). All of these studies have shown that MC positively impacted innovative work behavior. However, they all measure IWB one-dimensionally, and as such, cannot shed light on whether managerial coaching is more or less impactful in the various stages. We hypothesize:

**Hypothesis 1a** *MC is positively associated with the idea exploration dimension of IWB, representing the innovation process's first phase.*

**Hypothesis 1b** *MC is positively associated with the idea generation dimension of IWB, representing the innovation process's second phase.*

**Hypothesis 1c** *MC is positively associated with the idea championing dimension of IWB, representing the innovation process's third phase.*

**Hypothesis 1d** *MC is positively associated with the idea implementation dimensions of IWB, representing the innovation process's fourth phase.*

A handful of studies have looked at how different kinds of managerial support affect two dimensions of innovative work behavior. Noefler et al. (2009) found that supervisor feedback plays little role in idea generation, but is, however, important in idea implementation. The results of Fang et al. (2019) showed that a leader's encouragement and their recognition of employees has a positive effect on both innovative thinking and innovation outcomes. Leader's rational understanding and tolerance of failures did not significantly account for either innovative thinking or innovation outcomes. However, while the leader's respect and fair treatment of their employees positively affects innovation outcomes, it has no effect on innovative thinking. Cumulatively, these two studies indicate that leaders can play a more active role toward the end of the innovation process.

Somewhat more inconclusive is the study by Krause (2004), who showed that support for innovation is needed more when employees are generating and testing ideas than when implementing them. In our four-stage division of the innovation process, *testing* is included in the implementation stage. Therefore, it is not possible to directly compare the two studies and what they show about employee needs for managerial support. Additionally, Krause does not specify whether support stems from managers, or for example, from peers. Indeed, Mannucci and Perry-Smith (2022) have lately suggested that weak ties (as opposed to strong ties which employees typically have with their managers) are more useful in the idea generation stage, and this indicates that types of support other than managerial support may be beneficial in the early stages of the innovation process. We hypothesize:

**Hypothesis 2** *The positive impact of managerial coaching on IWB increases as the innovation process progresses from the first to the fourth phase.*

## 3 Method

### 3.1 Study context and sample

The study reported in this paper is part of a comprehensive research program where 12 researchers investigated the influence of HRM on company performance in 110 companies in Finland in 2015–2016. First, we conducted case studies in 10 companies. Then, we used the case studies to design a questionnaire that contained measurement scales for 17 different variables such as work engagement and individual and team performance, in addition to scales for managerial coaching and innovative work behaviors. Method and content experts were asked to give feedback on the questionnaire, and representatives from one SME piloted the survey before it was distributed more widely.

We chose small and medium-sized enterprises (SMEs) as the context for our study because they have become vital innovation players in economic development (Love and Roper 2015; Muller et al. 2019). Some of the advantages that large firms have had with economies of scale have disappeared, for example, because consumer tastes have become more varied, creating niche markets, and new technologies have made it possible to produce small batches as efficiently as large ones (Muller et al. 2019). Despite this leveling in the playing field, SMEs continue to be less innovative than large firms (OECD 2019), making studying how innovation can be encouraged in SMEs worthwhile. Finland is a particularly fruitful country for such research, given that the European Innovation Scoreboard 2020 ranks it among the top countries where SMEs innovate products and business processes. Moreover, in Finland, the economic significance of SMEs is large. In 2022, SMEs' value added was 58.7%. 99.7% of enterprises were SMEs, and 65.5% of persons employed work in SMEs (European Commission 2022). We used the EU definition of an SME as selection criteria: 1) the company employs between 20 and 250 employees, and 2) the annual turnover does not exceed EUR 50 million, and/or the annual balance sheet total does not exceed EUR 43 million (European Commission 2022). We made sure that different industries were present in the sample, including manufacturing, the service sector, retail, and other industries such as IT and construction. We also ensured that we had SMEs in the sample from all over Finland: Northern Finland, Southern Finland, Western Finland and Eastern Finland.

100 companies were recruited nationwide. Open databases published by the economic region were used as a basis for recruitment. The contacted companies were chosen in such a way that they would roughly represent the industry structure of Finnish SMEs, however, an exact statistical representativeness was not sought. Companies were approached by telephone. The overall goal was to gather comprehensive data from all of the companies—i.e. responses from the entire staff from top management to entry-level employees. In those companies where it was not possible to collect data from personnel using an electronic form, the researchers either hand-delivered paper forms to the site or sent them by post to the contact person. In the analysis stage, companies were eliminated from the study when the data obtained was incomplete (e.g., a personnel group was missing, or the response rate was low). In total, 88 companies returned complete datasets, yielding a response rate of 43%.

This dataset is used in this paper. Of the 4418 respondents, 31.2% were women, 68.8% were men, and 15.4% held a managerial position.

## 3.2 Measures

### 3.2.1 Innovative work behavior

To measure innovative work behavior, we employed a 12-item scale taken from de Jong and den Hartog (2010). The respondents rated the items on a 7-point Likert scale which ranged from *never* (1) to *very often* (7). We consulted experts on the functionality of the measure, and based on this, added two items: the first to measure how often the respondents apply ideas (adding, verbatim, an item that de Jong and den Hartog had dropped from the final version of their scale), and the second to measure how collaborative innovation is (Tjosvold et al. 2004). We used self-rated items, which can be seen as problematic (Ng and Feldman 2012). However, seeing that we wanted to understand how individuals themselves perceive their engagement in innovative work behavior rather than to get an objective understanding of employee performance, we considered self-ratings to be an appropriate approach. In addition, the items in the questionnaire asked the respondents to consider behaviors that others would find challenging to notice, such as how often they wonder how things can be improved. We divided innovative work behavior into four dimensions (as per de Jong and den Hartog's (2010) original study): idea exploration ( $\alpha=0.73$ ), generation ( $\alpha=0.91$ ), championing ( $\alpha=0.92$ ), and implementation ( $\alpha=0.93$ ). All items of the measurement scale are contained in the appendices.

### 3.2.2 Managerial coaching

The validated seven-item scale of Tanskanen et al. (2019) was used to measure managerial coaching. Two more items were added to the scale to ensure that it works well with innovative work behavior. The first examines whether the manager promotes innovative efforts, and was included because managers should purposefully promote innovative behavior (Amabile 1988; Prieto and Pérez-Santana 2014). To do that, the manager should honestly discuss performance at work with the subordinate (Agarwal et al. 2012), so we added a statement on whether the respondent knows what their manager thinks about their performance. This measurement scale is also available in the appendices.

The respondents evaluated their perception of the leader's activity on nine types of coaching behavior on a 7-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (7) ( $\alpha=0.95$ ). Some items focused on the coaching behaviors of the manager on a group level, and some on an individual level. We conducted an exploratory factor analysis to ensure that the nine items measured the same one-dimensional construct as the original measuring scale. The items explained 73.14% of the total variance and loaded on a single factor with an eigenvalue exceeding 1 (6.583). The eigenvalue of the next factor was 0.654. The factor loadings ranged from 0.74 and 0.89, and were all acceptable.

### 3.2.3 Control variables

We used gender (male or female) and managerial position (yes or no) as control variables. Gender has been found to correlate with innovative work behavior so that men engage slightly more in innovative behavior than women (de Jong and den Hartog 2010). Similarly, managers tend to suggest more ideas and implement ideas more frequently than non-managers (Lukes and Stephan 2017). Additionally, we included the industry sector as a multi-group variable in the structural equation model to control for it.

## 4 Results

### 4.1 Descriptive statistics

The descriptive statistics and correlations of the variables are shown in Table 1. All variables had good internal consistency, as confirmed by Cronbach's alphas (between 0.73 and 0.95).

The four dimensions of innovative work behavior likewise positively correlated with managerial coaching, with the first and last dimensions having the lowest and largest correlation magnitudes, respectively. Significant and strong correlations were found between the four IWB dimensions (between 0.49 and 0.76), and given the findings of earlier studies (de Jong and den Hartog 2010), this was anticipated. We will take up this topic in greater detail in the Discussion.

Moving on to the control variables, gender showed a weak correlation ( $-0.12$ ) with the IWB dimensions, with men being somewhat more likely to generate and champion ideas. The four dependent variables and holding a managerial position showed statistically significant and positive correlations, with the correlations for championing and implementation slightly higher (0.29 and 0.27) than those for the first two dimensions (0.18 and 0.18).

When looking at how often the respondents felt they engaged in each of the four stages of the innovation process, we can see that respondents felt most comfortable exploring ideas, with a mean of 5.25 out of 7. Generating ideas was next with 4.96. The lowest scores (indicating the stages that the respondents felt they engaged in the least) were idea implementation at 4.59, and idea championing had an even lower score of 4.32 out of 7. Of interest is also the fact that being in a managerial position (one of the control variables) had the highest effect on idea championing (0.29 compared to 0.2 on idea exploration, 0.17 on idea generation, and 0.24 on idea implementation).

### 4.2 Confirmatory factor analyses

We performed confirmatory factor analysis on the nine items that measured managerial coaching. The model showed a good fit to the data:  $\chi^2=320.06$ ,  $df=21$ ,  $p<0.000$ , root mean square error of approximation (RMSEA)=0.06, comparative fit index (CFI)=0.99, and standardized root mean square residual (SRMR)=0.02. The items

**Table 1** Descriptive statistics and correlations

Variables	N	M	SD	Min	Max	1	2	3	4a	4b	4c	4d
Control variables												
1. Gender (0= male)	4330	0.31	0.46	0	1							
2. Managerial position	4285	0.15	0.36	0	1	-0.08***						
Predictor variable												
3. Managerial coaching	4328	4.96	1.41	1	7	0.05**	0.08***	(0.95)				
Dependent variables												
4a. Idea exploration	4374	5.25	1.13	1	7	-0.00	0.18***	0.06***	(0.73)			
4b. Idea generation	4370	4.96	1.21	1	7	-0.12***	0.18***	0.16***	0.62***	(0.91)		
4c. Idea championing	4376	4.32	1.46	1	7	-0.10***	0.29***	0.20***	0.51***	0.67***	(0.92)	
4d. Idea implementation	4346	4.59	1.31	1	7	-0.03	0.27***	0.28***	0.49***	0.70***	0.76***	(0.93)

\*\*\* $p < 0.001$ , \*\* $p < 0.01$ . Cronbach's alphas are given in parentheses

loaded significantly on the predicted construct with standardized factor loadings that ranged from 0.69 to 0.89, which fall in between Bagozzi and Yi's (1988) reliability thresholds of 0.50 and 0.95. We computed average value extracted (AVE) and composite reliability (CR) scores to examine the convergent reliability of the construct. The AVE was 0.69, which exceeds the suggested cut-off of 0.50. The CR score was 0.95, which is higher than the threshold of 0.70. The Cronbach's alpha was 0.95.

Next, a confirmatory factor analysis was performed on the 12 items used to measure innovative work behavior. The first model consisted of idea exploration, generation, championing, and implementation as the four dimensions of IWB. To determine the model with the best fit, we constructed three alternatives. Following Janssen (2000), the three-factor model integrated idea exploration and generation into one factor, while keeping championing and implementation as two separate factors. The two-factor model, based on Krause (2004), combined championing and implementation into one factor, thus retaining one factor on idea generation and another factor on implementation. Finally, in the last model we loaded all of the items into one factor.

Cutoff values for the fit indices recommended by Hair et al. (2014):  $\chi^2/df < 5.0$ ; RMSEA  $< 0.08$ ; CFI  $> 0.90$ ; SRMR  $< 0.05$ .

The fit indices for the four models are displayed in Table 2. Using the thresholds suggested by Hair et al. (2014), it is clear that the four-factor model achieves the best fit. All items strongly loaded on the four anticipated constructs in this model, with standardized factor loadings ranging from 0.65 to 0.94. The AVE was between 0.63 and 0.85, higher than the suggested cut-off of 0.50. The CR scores were likewise over the threshold of 0.70, ranging from 0.76 to 0.92. We have provided all factor loadings, AVE and CR scores, and Cronbach's alphas for both constructs (MC and IWB) in Table 3.

### 4.3 Structural equation model

We used Stata to run the measurement model that was based on our hypotheses. A good-to-acceptable fit to the data was achieved by the model:  $\chi^2 = 3353.37$ ,  $df = 169$ , RMSEA 0.07, CFI 0.96, and SRMR 0.04. Next, we ran the structural equation model using latent variables for managerial coaching and the four dimensions of innovative work behavior. Figure 1 presents the model's standardized path coefficients.

We hypothesized that managerial coaching influences each dimension of IWB positively. We see in Fig. 1 that the standardized path coefficient from MC to idea exploration is 0.08 ( $p < 0.001$ ). The standardized path coefficient from MC to idea generation is 0.16 ( $p < 0.001$ ) and to idea championing 0.21 ( $p < 0.001$ ). Lastly, the standardized path coefficient from MC to idea implementation is 0.27 ( $p < 0.001$ ). In sum, managerial coaching, affects all four dimensions of IWB positively. Thus, hypotheses 1a through 1d are confirmed. Furthermore, for idea exploration, the effect is the smallest, growing gradually until reaching its highest magnitude for idea implementation. This confirms Hypothesis 2.

We knew that the respondent's industry could influence the results (de Jong and den Hartog 2010), and we were interested in observing this effect. To do this, we separated the data into four groups according to industry using a multi-group analysis: 34 enterprises were classified as belonging to the manufacturing group, 23 as service

**Table 2** Fit indices for the CFA models

Model	$\chi^2$	df	$\chi^2/df$	RMSEA	CFI	SRMR
1. Four-factor model	651.23*	38	17.14	0.06	0.99	0.02
2. Three-factor model	2892.44*	51	56.71	0.11	0.94	0.05
3. Two-factor model	5055.80*	53	95.39	0.15	0.89	0.05
4. One-factor model	9771.66*	54	180.96	0.21	0.79	0.08

\* $p < 0.001$ **Table 3** Confirmatory factor analyses and model fit indices

Measurement model		Factor loading	CR	AVE	Cronbach's $\alpha$				
<i>Managerial coaching</i>		MC1	0.88	0.95	0.69	0.95			
		MC2	0.89						
		MC3	0.84						
		MC4	0.85						
		MC5	0.83						
		MC6	0.83						
		MC7	0.84						
		MC8	0.84						
		MC9	0.69						
<i>Innovative work behavior</i>	Idea exploration	IWB1	0.65	0.76	0.63	0.73			
		IWB2	0.90						
	Idea generation	IWB3	0.87				0.90	0.76	0.91
		IWB4	0.89						
		IWB5	0.86						
	Idea championing	IWB6	0.90				0.92	0.85	0.92
		IWB7	0.94						
	Idea implementation	IWB8	0.87				0.92	0.69	0.93
		IWB9	0.84						
		IWB10	0.79						
		IWB11	0.81						
		IWB12	0.87						

providers, 10 as retailers, and 21 as belonging to an *other* category. Companies of comparable sizes were included in all categories; for instance, there were businesses in each group that employed 20 people, as well as businesses that employed 200 people. We conclude that firm size does not affect how the results of the multi-group analysis should be interpreted, because neither small nor large enterprises dominated in any of the groups.

Table 4 presents the results of the standardized path coefficients between MC and the four dimensions of IWB for each industry. As we can see, the coefficients for the path between managerial coaching and idea exploration were not significant for service, retail, or other. However, they were significant for manufacturing (0.12,  $p < 0.001$ ). The coefficients for the path between MC and idea generation were significant in all industries and ranged from 0.08 ( $p < 0.05$ ) for the *other* category to 0.17 ( $p < 0.001$ ) for manufacturing. For the path between MC and idea championing, all coefficients were again significant, and the range was 0.13 ( $p < 0.001$ ) for *other* to 0.20 ( $p < 0.001$ ) for service. Finally, for the path between MC and idea implemen-

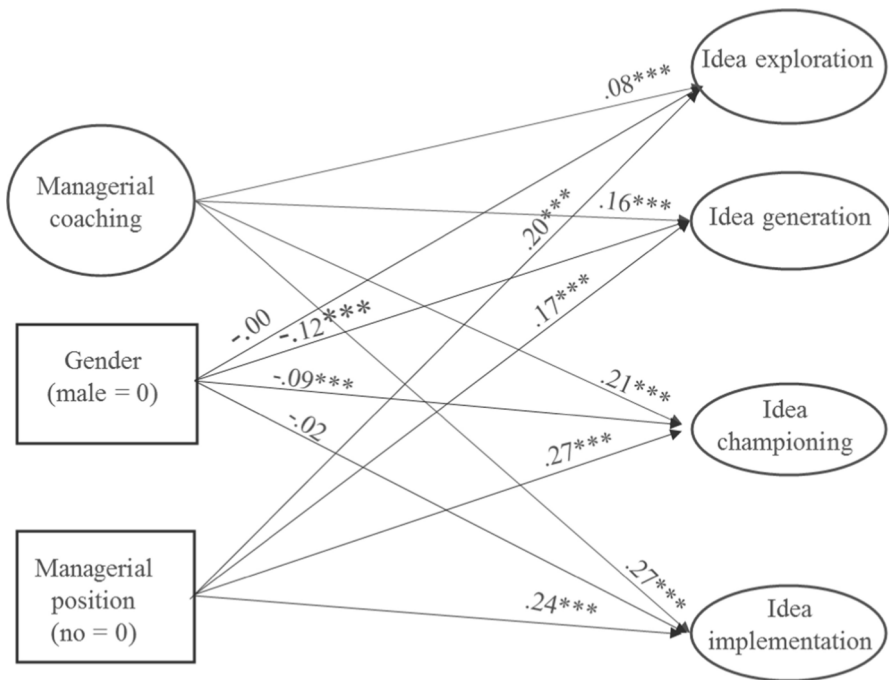


Fig. 1 Standardized path coefficients of the final model. \*\*\* $p < .001$

Table 4 Standardized path coefficients by industry

Industry	N	MC>Idea exploration	MC>Idea generation	MC>Idea championing	MC>Idea implementation
Manufacturing	1725	0.12***	0.17***	0.19***	0.26***
Service	927	-0.03	0.15***	0.20***	0.28***
Retail	493	-0.01	0.13**	0.17***	0.28***
Other	873	-0.01	0.08*	0.13***	0.22***

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

tation, all coefficients were significant. The lowest coefficient was for *other* (0.22,  $p < 0.001$ ), and the highest for service and retail (0.28,  $p < 0.001$ ). These findings support the pattern previously noted: that the importance of managerial coaching increases from idea exploration to idea implementation. Consequently, we can draw the conclusion that the industry sector has no impact on the study's findings. As a further observation, employees are more likely to gain from managerial coaching when they promote or implement their ideas than when they explore or generate them, regardless of whether they work in a labor-intensive or knowledge-intensive industry.

#### 4.4 Common method variance

Common method variance is always a substantial risk when using cross-sectional survey data, and can compromise the discriminant validity of constructs (Podsakoff et al. 2003). Therefore, we applied principal component analysis and Harman's one-factor test to check for undesirable results. The test is designed to indicate common method bias if the one-factor confirmatory factor analysis model fits the data well. The largest factor did not account for the majority of variance (39%), indicating a low threat of common method bias. Common method variance may also emerge if the model is very simple. In our study, we had several variables in the questionnaire, and the respondent could not have been aware of which relationships we were testing. Thus, the relationships tested in this paper were not likely to be part of the respondent's cognitive maps.

We further used the approach suggested by Lindell and Whitney (2001), and included a marker variable in the survey and the analyses. The marker should be theoretically unrelated to the variable tested, but still elicit a cognitive process that is similar to when responding to the variable (Simmering et al. 2015). Four extrinsic motivation factors (Hennessey et al. 2015) were selected as the marker for this analysis: job location (Peters et al. 2010), benefits offered by the workplace (Peters et al. 2010; Bristow et al. 2011), job security (Bristow et al. 2011) and friendships at work (Dickie 2009). The respondents graded the items on a 7-point Likert scale. Although a positive association has been found between intrinsic motivation and innovative work behavior (Venkatesamy and Lew 2022), to our knowledge, none of these motivational factors have been proven to predict innovative work behavior. To indicate that no significant common method bias exists in the data, the calculated variance should be below 50%. In this data, the calculated variance is 52%. However, the tests together suggest that common method bias is not a significant threat in this study and should not affect the interpretation of the results.

## 5 Discussion

In this paper, we continue exploring how SMEs can realize their innovation potential (Audretsch et al. 2020; Runst and Thomä 2022). As a particularly fruitful avenue, we investigate how individuals contribute to organizational innovation (Kör et al. 2021) in an SME context, and address the previous line of study's shortcomings in how employees' innovative behaviors can be influenced.

Our study suggests several theoretical implications for the academic literature on innovative work behavior and managerial coaching—i.e., concrete activities that managers can engage in in their daily work. Previous research has called for more empirical research on managerial coaching to facilitate evidence-based coaching practice (Hagen 2012; Kim 2014). Firstly, our study responds to these calls by providing empirical evidence regarding how managerial coaching can benefit organizations. More specifically, we examine how managerial coaching affects employees' innovative work behavior. Coaching managers support employees in exploring and developing new ideas and taking on new challenges (Heslin et al. 2006). Our findings

on the effect of managerial coaching on innovative work behavior are in line with the findings on managers' feedback (Noefer et al. 2009), managers' individualized support (Pieterse et al. 2010), and how a good relationship between a leader and follower (de Jong and den Hartog 2007) supports employees' innovation.

Secondly, innovation concerns a series of phases including detecting a problem, generating a novel idea, building support, and finally implementing the idea (Scott and Bruce 1994). In this study, we examine the effect of managerial coaching on all these four dimensions of innovative work behavior. Previous studies on innovative work behavior have typically measured innovative work behavior as one construct. There are two exceptions to this, where Krause (2004) and Fang et al. (2019) measured innovative work behavior as two stages (idea generation and implementation), however, the discussion in these studies centered around determinants that influence one stage but not the other. In our study we show that the effect of managerial coaching forms a continuum where the positive impact of managerial coaching gradually grows in importance from idea exploration (where employees feel it the least), through idea generation and championing, to idea implementation (where it is felt the most). This is a novel finding and contrasts with previous findings which have tended to see determinants mainly as affecting or not affecting innovative work behavior.

It is unavoidable for employees to experience a series of failures during the innovation process. Therefore, it is also important for managers to understand in more detail the phases of the innovation process where they particularly need to promote and maintain innovative employees' behavior. At the beginning of the process, the activities are more cognitive in the form of wondering how things can be improved and finding new approaches to execute tasks. While not necessarily done alone, they have at least an intra-individual element to them (Rank et al. 2009) in that it is possible to engage in these activities solely inside one's head. Managerial coaching consists of empowering and enabling the employee to act, while giving helpful feedback and guidance. It therefore makes sense that these behaviors are needed less when employees engage in more cognitive pursuits.

Later in the process, it is necessary to involve other people. Championing an idea requires presenting it to key organization members to get their support and permission, and perhaps it will even be necessary to put together a task team to take the idea further. In the implementation stage, a budget or people's time may have to be managed. Therefore, these activities are inter-individual social processes (Rank et al. 2009), and when changes in organizational processes and procedures are required, managerial coaching behaviors are valued and sought after by employees. These activities are more visible to the rest of the organization and might require handling organizational resources. Consequently, and in terms of support, they benefit from setting goals with the manager, getting feedback on performance, and being supported in dealing with problems— all activities that a coaching manager becomes engaged in.

Thirdly, we also contribute to the cross-industry generalizability of the managerial coaching and innovative work behavior literature by exploring the effect across industries. Typically, previous research has focused on one organization or industry per study; for example, Wu et al. (2020) on a knowledge-intensive organization, Grošelj et al. (2021) on technology firms, and Cangialosi et al. (2020) on a service

organization. Even when the study has incorporated various industries (e.g., Montani et al. 2020), there is no discussion on the differences or similarities between the industries. Our findings propose that coaching practices can be successful across a range of industries, regardless of whether the tasks are labor- or knowledge-intensive.

## 5.1 Managerial implications

For top organization management, we highlight that managerial actions can impact innovative work behavior. This study demonstrates that managerial coaching is a suitable leadership strategy for promoting innovative work behavior. We encourage top management and HR professionals to recruit, develop, and reward managers to enhance their capacity to coach employees across the firm.

Based on this research, we also recommend that managers are trained to understand how the innovative process unfolds, and what type of support employees are most likely to need during each stage. Managers might be keen to encourage their employees to innovate. However, suppose they do not know that there are different stages in the process and that employees actually do different things at each stage, and therefore need different things? In that case, managers might offer support that is not as timely or helpful as it might be elsewhere in the process, and hence, they might not appropriately utilize their opportunities to support their employees as they participate in developing the organization's competitive advantage.

We also noticed that employees report engaging in problem exploration and idea generation more readily than in championing and implementing ideas. Since manager-level employees are comfortable championing ideas, this may indicate that employees might refrain from championing ideas not because of reasons to do with the organization, but because they do not feel competent enough to do it. Championing and promoting ideas, therefore, acts as a bottleneck in the process where the ideas that employees have may never have even be brought to the attention of the rest of the organization. Managerial coaching can stimulate feelings of autonomy and competence (Moen and Federici 2012), which can encourage employees to champion and promote their ideas, thereby unlocking unused innovation potential in the organization.

Our findings have some specific implications for SMEs. The role of innovation in SMEs continues to grow, and it is vital for their survival and success. However, SMEs are still less innovative than larger companies, indicating that the silver bullet for getting innovation to flourish in SMEs has not yet been found. In this study, we suggest that harnessing the innovation potential of all levels of employees is beneficial, and that managerial coaching is an appropriate way of achieving this.

## 5.2 Limitations and future research

We acknowledge that the relationship between MC and IWB may be bi-directional. Employees who are coached by their managers seem to be more innovative. However, it is also feasible that innovative employees receive more coaching than less innovative ones. The endogeneity biases that limit the accurate estimation of causal effects

are difficult to deal with using the measuring scales in use (Hughes et al. 2018a). This problem might be addressed in future studies with a different study design.

Another limitation relates to the four-factor measurement scale. As in the original study by de Jong and den Hartog (2010), all of the correlations between the four dimensions of IWB were high and significant. However, the four-factor model performed better than competing models when looking at the fit indices. Theoretically, dividing IWB into four dimensions is justified. We encourage more work to be done on how IWB can be measured multi-dimensionally.

In the next steps in research on the topic, we suggest adding mediators or moderators to our model. Some potential set-ups include whether managerial coaching mediates the relationship between organizational culture and IWB, and whether work engagement moderates the relationship between managerial coaching and IWB. Moreover, qualitative research may be needed to uncover situational dependencies that need managerial support in the innovation process.

## 6 Conclusion

We conclude that a connection between managerial coaching and innovative work behavior exists, but it is not uniform. Uncovering more in-depth knowledge of the connection offers valuable information for researchers in academia and practitioners. We believe that the more we consider the variation in needs for managerial coaching in innovation processes, the more effectively innovations can be promoted in organizations, and the more precise observations we can make on the role of managerial support. Our study also contributes to the discussion on the microfoundations of innovation by shedding more light on how the knowledge and ideas of individual employees can be harnessed to turn them into economic value for the organization.

## Appendix 1 Measurement scales

Items in the innovative work behaviour measurement scale

\*denotes items added to the original scale by de Jong and den Hartog (2010)

How often do you...

1. Pay attention to issues that are not part of your daily work?
2. Wonder how things can be improved?
3. Search out new working methods, techniques, or instruments?
4. Generate original solutions to problems?
5. Find new approaches to execute tasks?
6. Make important organisational members enthusiastic for innovative ideas?
7. Attempt to convince people to support an innovative idea?
8. Systematically introduce innovative ideas into work practices?
9. Contribute to the implementation of new ideas?
10. Contribute to the implementation of new ideas together with other people?\*
11. Put effort into the development of new things?

## 12. Apply new ideas to practice?\*

Items in the managerial coaching measurement scale

\*denotes items added to the original scale by Tanskanen et al. (2019)

1. My manager discusses our performance with us sufficiently.
2. My manager facilitates mutual cooperation in a group.
3. My manager ensures that everyone is capable of doing their tasks.
4. My manager supports the work community in dealing with problems and mistakes constructively.
5. My manager seeks to develop the operation of our unit.
6. My manager understands the problems and needs of my work.
7. My manager gives me supportive feedback on my work.
8. My manager promotes and supports innovative ideas, experiments and creative processes.\*
9. I know what my manager thinks about my performance.\*

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**Data availability** The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.

## Declarations

**Conflict of interest** The authors declare they have no relevant financial or non-financial interests.

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