

Messmann, Gerhard

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Fostering proactive behaviour: The role of work-related reflection, psychological empowerment, and participative safety for innovative behaviour and job crafting

Gerhard Messmann 

Institute of Educational Science, Faculty of Human Sciences, University of Regensburg, Regensburg, Germany

Correspondence

Gerhard Messmann, Institute of Educational Science, Faculty of Human Sciences, University of Regensburg, Universitaetsstrasse 31, 93053 Regensburg, Germany.
Email: Gerhard.Messmann@ur.de

Abstract

This contribution aimed at investigating how work-related reflection as cognitive efforts towards developing an understanding of work tasks, the surrounding work context, and one's professional competencies adds to the role of psychological empowerment and participative safety in predicting innovative behaviour and job crafting as two forms of proactivity. Quantitative data from 295 employees of micro, small, and medium-sized organizations in the information sector were collected with a cross-sectional questionnaire. For hypotheses testing, structural equation modelling was employed. The results of the study showed that work-related reflection and psychological empowerment were substantially related to innovative behaviour and job crafting while participative safety only played a minor role. These findings imply that jobs need to contain empowering and sufficiently complex work tasks that require reflection and provide occasions for reflective interactions to enable employees to create efficient routines and adapt to changes at work. Furthermore, experiences of empowerment need to

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be rooted in social interactions at work. Likewise, the value of reflection will only unfold if employees and supervisors regularly engage in reflection.

INTRODUCTION

Changes in the world of work, such as the digitization of work (Beer & Mulder, 2020), affect structures and tasks within organizations. To secure their performance, success, and survival, organizations, therefore, need employees who keep up with changes and who are proactive when necessary (Crant, 2000). This involves that employees cope with changes in their organization and their personal work environment by seeking innovative approaches toward work (Anderson et al., 2014). As such innovative behaviour (Janssen, 2005; Scott & Bruce, 1994) addresses needs for innovation in employees' work context or their organization, it is crucial for organizational functioning and development (Kanter, 1988; Messmann & Mulder, 2017). In addition, as innovative behaviour encompasses the generation of new ideas for dealing with changes in work tasks, procedures, or structures, employees will acquire new knowledge and skills along the way. In addition, employees may have to engage in professional learning activities to keep up with new competence requirements due to the realization of innovative ideas.

Furthermore, in a work environment that is characterized by change, being proactive involves employees responding to work-related demands and dynamics by aligning their work tasks and social relationships with personal needs and goals (Tims & Bakker, 2010; Wrzesniewski & Dutton, 2001). As a consequence of such job crafting efforts, employees may encounter tasks and interactions outside of their established routines which require them to expand their professional knowledge, skills and attitude. In turn, employees who have established a fit between their work tasks and their competences and who are equipped with resourceful social relationships are valuable for organizations to secure their internal functioning and development.

Moreover, the interactive nature of both innovative behaviour and job crafting, which for instance is visible in the social negotiation of innovative ideas or in the creation of new social relationships, catalyzes the professional development of all interacting employees, thus connecting individual professional development to the development of groups or work units within organizations. For this and the above reasons, insight into possibilities for fostering proactive behaviour is a crucial topic for human resource management and development. In accordance with previous research, motivational factors and social factors are important resources for initiating and enduring forms of proactivity such as innovative behaviour (e.g., Janssen, 2005; Vinarski-Peretz & Carmeli, 2011) and job crafting (e.g., Kerksieck et al., 2019; Niessen et al., 2016). The current contribution builds on this insight by further investigating psychological empowerment (Spreitzer, 1995) and participative safety (Anderson & West, 1998) which in previous studies were found to facilitate proactive behaviour (Matsuo, 2019a; Messmann et al., 2017; Plomp et al., 2019). In addition, these two factors were selected because they conceptually integrate different motivational and social aspects. That is, psychological empowerment highlights the importance of finding work meaningful, having favourable expectancies about linkages between effort, performance, and outcomes, and having sufficient degrees of freedom for facilitating proactivity. Likewise, participative safety emphasizes the

importance of having a safe social work environment, vitally interacting and sharing information with others, and of exerting influence on each other's work as a basis for proactivity. Beyond motivational and social factors, however, proactive behaviour may also be triggered by reflective considerations about work. In contrast to motivational and social factors, the role of work-related reflection represents a neglected aspect of research on proactive behaviour. The current contribution takes into account this cognitive perspective and explores how the reflection on work tasks, the work context and professional competences enables employees to develop a better understanding of how changes at work affect the viability of their routines and potentially create a need for proactive responses (Schwartz et al., 2012). Although research on this relationship is scarce, the available evidence supports the assumption that work-related reflection facilitates proactive behaviour (Kmieciak, 2021; Matsuo, 2019b; Messmann & Mulder, 2015).

This issue was addressed in the context of micro, small and medium-sized organizations as these organizations provide structures, such as flatter hierarchies, which allow employees to be proactive more easily than in large organizations. For micro, small and medium-sized organizations it is crucial to have proactive and reflective employees who are able to adapt to changes and new competence requirements and who can competently deal with error situations which can be particularly threatening for smaller organizations. However, despite the importance of proactivity and reflection for these kinds of organizations, there is a gap in research on organizational and professional development in this context (Stoffers et al., 2020).

Building on the above considerations and evidence about the facilitation of proactive behaviour, the current study aimed at answering the question of *which role psychological empowerment, participative safety, and work-related reflection play for innovative behaviour and job crafting*.

CONCEPTUALIZATION OF PROACTIVE BEHAVIOUR

The term proactive behaviour relates to in-role or extra-role behaviours that are self-initiated by employees with the intention of improving or changing work processes and products, the surrounding work environment, or themselves. As such, being proactive necessarily encompasses revisiting and challenging the status quo of work-related values, norms and goals (Crant, 2000). In addition, behaviours are proactive if they involve anticipatory actions that are carried out before circumstances force a certain course of action (Grant & Ashford, 2008; Parker & Collins, 2010). The current contribution focuses on innovative behaviour (Janssen, 2005; Scott & Bruce, 1994) and job crafting (Tims & Bakker, 2010; Wrzesniewski & Dutton, 2001) as two forms of proactivity that are complementary in the sense that their primary focus is on changes and improvements at the level of work versus the level of employees, respectively. That is, while innovative behaviour aims at developing innovative solutions at work, job crafting aims at aligning task-related and social job characteristics with personal needs and goals.

Innovative behaviour

Employees' proactive contributions to the development of innovative solutions (i.e., tools, devices, or procedures) that are new to their work context and that benefit the accomplishment

of work tasks or processes (Kanter, 1988; West & Farr, 1989) are referred to as innovative behaviour. This includes all physical and cognitive activities employees carry out alone or interactively to explore opportunities for innovation, generate and promote corresponding ideas, activate social support and produce a prototype of the innovative solution (Janssen, 2005; Scott & Bruce, 1994). Innovative behaviour thus integrates both creative and implementation-related aspects (Amabile & Pratt, 2016; Kanter, 1988; West & Farr, 1989). Furthermore, innovative behaviour has a dynamic and context-bound character that is created by the complex interactions of innovating employees, the interdependency of their contributions and the needs and expectations of different stakeholders in the work context (Janssen, 2005; Kanter, 1988; Messmann & Mulder, 2020; Scott & Bruce, 1994).

Job crafting

Job crafting is defined as the proactive changes employees make concerning task-related and social job characteristics to increase the balance between demands and resources on the job and, thus, improve the perceived quality of their job (Tims & Bakker, 2010; Wrzesniewski & Dutton, 2001). This involves changes employees make regarding the kind and number of work tasks, their job perception and attitude and their social relationships at work (Slemp & Vella-Brodrick, 2013; Wrzesniewski & Dutton, 2001). These physical and cognitive changes may take place without planning, remain unrecognized by supervisors and be disentangled from organizational goals (Tims & Bakker, 2010). Furthermore, although job crafting takes place within the constraints and affordances of defined jobs, it leads to subjective reconstructions of what employees conceive of as their job and why they consider it meaningful.

PSYCHOLOGICAL EMPOWERMENT AND PROACTIVE BEHAVIOUR

Psychologically empowered employees are characterized by an active orientation toward shaping their work role and their work context (Spreitzer, 1995). In accordance with Thomas and Velthouse (1990), psychological empowerment is conceptualized as a motivational disposition that manifests in four global, work-related assessments: *Meaning* refers to the valence of work-related outcomes and implies that employees see a fit between their personal goals and beliefs and their work role and corresponding expectations. *Competence*, or self-efficacy (Conger & Kanungo, 1988), represents an effort–performance expectancy and means that employees believe in their capability to accomplish work tasks in accordance with their work role and with social expectations. *Impact* in turn represents a performance–outcome expectancy and implies that employees feel that their work performance will make a difference in influencing processes and outcomes at work. Finally, *choice*, or self-determination (Gagné & Deci, 2005), refers to the perception of opportunities in relation to work-related efforts and implies that employees feel autonomous in deciding how to approach their work tasks.

For employees to feel truly empowered to actively seek and initiate actions at work, they need to experience all four components of psychological empowerment (Spreitzer, 2008; Thomas & Velthouse, 1990). That is, only if employees find meaning in work-related goals and outcomes, feel efficacious to successfully carry out the actions necessary to achieve their goals, sense that their actions exert an effect on work processes and outcomes, and perceive to have

sufficient room for making choices, they will feel truly empowered to actively initiate goal-directed actions. This motivational basis becomes particularly important when it comes to initiating proactive behaviour. Only if employees feel truly empowered, do they have the necessary motivational strength and endurance for managing the uncertainty associated with proactivity, for instance regarding the consequences of decisions, the attainment of goals, and regarding reactions to the social work environment (Bowers & Khorakian, 2014; Janssen, 2003). Accordingly, empowered employees may more likely take the risk of introducing innovative and challenging ideas despite the social conflicts this may cause at work. Likewise, they may more easily step out of their work-related comfort zone and explore new tasks or seek new social relationships, even though this may reveal competence gaps or biases in their approaches toward work. These theoretical considerations were also supported by empirical findings which showed that psychologically empowered employees performed more innovative behaviour (Liu et al., 2019; Messmann et al., 2017) and job crafting (Hulshof et al., 2020; Matsuo, 2019a). Thus, it was hypothesized:

Hypothesis 1a. *Psychological empowerment will be positively related to innovative behaviour.*

Hypothesis 1b. *Psychological empowerment will be positively related to job crafting.*

PARTICIPATIVE SAFETY AND PROACTIVE BEHAVIOUR

In accordance with Anderson and West's (1998) multi-dimensional conceptualization of team climate, participative safety refers to a social work environment that is characterized by a non-threatening atmosphere, vital social interactions and a high degree of participation in decision-making. To begin with, this involves perceptions of acceptance, support, trust, and thus *safety* in one's social work environment. A safe climate, in turn, enables employees to participate in interactive decision-making through *sharing information* with others and through *exerting influence* on each other by expressing individual opinions and views even if they are unpopular or challenging (Anderson & West, 1998; Brodbeck & Maier, 2001).

As far as the initiation of proactive behaviour is concerned, the experience of participative safety at work complements the motivational basis of feeling psychologically empowered by increasing the perception of social relatedness on the job (Gagné & Deci, 2005). This in turn helps employees to deal with the uncertainty accompanying proactivity and enables them to stay motivated and persistent when encountering failure or social conflicts. Accordingly, experiencing participative safety may encourage employees to share drafts of innovative concepts despite feeling uncertain about parts of the concept. Likewise, employees may more likely explore new work tasks if they sense that they can safely turn to others when facing obstacles with new tasks. Moreover, experiencing high degrees of mutual influence and safety at work provides employees with a system of informal rules signaling them that challenging the status quo, thinking out of the box and seeking new challenges are appreciated (De Jong & Kemp, 2003). As a consequence, employees may perceive the high degree of uncertainty associated with self-initiated, proactive behaviours as more subjectively predictable and controllable (Gebert et al., 2003). For instance, as a safe work atmosphere signals employees that minority views will be tolerated, they may more likely propose controversial ideas to colleagues. Likewise, as the experience of vital interactions signals employees that they can

trustfully approach colleagues for help, they may more likely explore new work tasks that are potentially challenging for them. As far as empirical support for these theoretical considerations is concerned, previous studies showed that employees who perceived participative safety at work performed more innovative behaviour (Messmann et al., 2017) and job crafting (Plomp et al., 2019). Thus, it was hypothesized:

Hypothesis 2a. *Participative safety will be positively related to innovative behaviour.*

Hypothesis 2b. *Participative safety will be positively related to job crafting.*

WORK-RELATED REFLECTION AND PROACTIVE BEHAVIOUR

Work-related reflection refers to cognitive activities employees carry out to gain a better understanding of partially implicit aspects of their work tasks, their work context, and their professional competences in order to facilitate the accomplishment of work tasks (Boud, 2006; Høyrup, 2004; Messmann & Mulder, 2017; Van Woerkom, 2004). Accordingly, three dimensions of work-related reflection may be distinguished by their respective object of reflection (Messmann & Mulder, 2017): *Task-related reflection* refers to the examination of different aspects related to the execution of work tasks such as performance goals, the immediate situation, associated prior tasks, potential action strategies and subsequent work outcomes. *Context-related reflection* relates to the examination of characteristics of the work environment that affect the execution of work tasks such as available material resources, supportive social relationships at work, procedural and outcome expectations, and underlying organizational values and norms. *Competence-related reflection* regards the examination of one's current level of knowledge, skills and attitudes in relation to one's work tasks and competence standards in one's professional field. In addition, it includes considerations about professional learning activities that may be necessary for closing competence gaps one may have detected.

By using reflection to gain an improved understanding of their work, employees enable themselves to plan, monitor, and adjust the actions they carry out for accomplishing work tasks and for pursuing job- and career-related goals. These connections between action and reflection can be further elaborated by employing Kolodner's (1992) cognitive model of case-based reasoning (or problem-solving). When individuals first receive a new task, reflection enables them to gain an understanding of the task at hand and the surrounding work context that defines conditions for task accomplishment. Subsequently, reflection enables them to identify prior experiences with this kind of task or with similar tasks. These episodic memories are then reused to facilitate the accomplishment of the task at hand which involves further reflection on necessary adjustments. Once concrete actions are initiated, reflection allows individuals to review whether their actions and corresponding outcomes are in accordance with expectations and prior experiences or whether further adjustments are necessary. Ultimately, reflection is used to integrate the current action episode into one's episodic case base, thereby making it accessible for facilitating future tasks. Accordingly, work-related reflection enables employees to 'see the old in the new' (Schwartz et al., 2012), that is, to establish connections between current work tasks and personal experiences with similar tasks and use these connections to accomplish work tasks more efficiently and accurately.

When applying these considerations to work tasks and situations involving or requiring proactivity, such as developing an innovative solution or adapting to new tasks and social contexts, employees not only need to recognize how current tasks and situations resemble tasks and situations experienced in the past. They also need to ‘see the new in the old’ (Schwartz et al., 2012), that is, they need to realize when work tasks, the surrounding work context, or standards in one’s professional field have changed and, thus, routines need to be adjusted or discarded. For instance, through reflection employees may realize that established procedures need fundamental revisions in order to keep up with current requirements, thus triggering innovative behaviour. Likewise, through reflection employees may develop a better understanding of their personal needs and goals, thus triggering efforts toward crafting task-related and social job characteristics.

Moreover, reflection may also facilitate proactive contributions, such as the various activities carried out during an innovation process (Messmann & Mulder, 2020) or efforts towards altering task-related and social job characteristics, more immediately. In these cases, reflection is important for gaining clarity about whether strategies are effective and outcomes are congruent with organizational or personal needs and goals. Such reflection within proactive behaviour, in turn, is facilitated if employees have already developed reflective skills during their ‘regular’ work. That is, if employees reflect on a variety of situations and in relation to a larger number of tasks, they may abstract these episodic experiences (Kolodner, 1992; Schank, 1999) and develop a generalized reflective skillset that they can flexibly use across different routine and non-routine tasks and situations. Concerning empirical support for these theoretical considerations, the few existing studies showed that employees who reflected on their work showed more engagement in innovative behaviour (Kmieciak, 2021; Messmann & Mulder, 2015) and job crafting (Matsuo, 2019b). Thus, it was hypothesized:

Hypothesis 3a. *Work-related reflection will be positively related to innovative behaviour.*

Hypothesis 3b. *Work-related reflection will be positively related to job crafting.*

METHOD

Sample and data collection

The research question was addressed in a study with $N = 295$ employees of 28 micro, 20 small and 3 medium-sized profit organizations in the information sector in Germany (response rate: 35.6%). Of the participating employees, 183 employees (62.0%) worked for a micro or small organization while 112 employees (38.0%) worked for a medium-sized organization (in further analyses controlled for as *organizational size*). The businesses of the participating organizations included IT systems, IT consulting, web development, web design and software development. The information sector is characterized by high knowledge intensity, non-routineness and high qualification requirements and was thus considered an appropriate context for investigating innovative behaviour and job crafting. All employees of the participating organizations were invited to complete a self-report online questionnaire in which data on innovative behaviour, job crafting, psychological empowerment, participative safety, work-related reflection and background variables were collected. Self-reports were chosen as an accurate source for gaining insight into employees’ work-related perceptions and the proactive activities they carry out at work.

An examination of background variables showed that the participating employees had an average *age* of 35.2 years ($SD = 11.2$ years). Concerning *gender*, the sample comprised 30.7% of female employees. The percentage of female employees however was comparably higher in micro and small organizations (34.6%) than in medium-sized organizations (24.3%). Furthermore, regarding their level of *education*, 11.1% of the employees had a basic or intermediate secondary education, 19.4% had a vocational education, 17.0% had an advanced secondary education and 52.4% had a higher education. This high percentage of employees with an academic background reflects the high qualification requirements in the information sector. Furthermore, the employees had an average *work experience* of 9.6 years ($SD = 9.8$ years) and, in terms of *organizational membership*, they had been working for their current organization for an average of 5.9 years ($SD = 6.8$ years). In terms of their contractual *working hours*, employees on average worked 37.8 h per week ($SD = 7.8$ h). Finally, 42.4% of the participating employees had a *leadership responsibility*. The percentage of employees with a leadership responsibility however was comparably higher in micro and small organizations (54.7%) than in medium-sized organizations (22.5%).

Measures

For *innovative behaviour* a German 8-item scale by Messmann and Mulder (2020) was used to measure how frequently employees carry out work activities that contribute to the exploration, generation, promotion and realization of ideas for innovative solutions at work (e.g., 'Exchanging ideas for concrete changes at work with close colleagues', response format: 1 = 'never', 6 = 'very often', $\alpha = 0.87$). In conjunction with this measure of IWB, information about employees' *innovation participation*, that is, whether they had been involved in an innovation process in the recent past, was gathered. *Job crafting* was measured with an instrument by Slemp and Vella-Brodrick (2013) which contains 15 items for assessing how frequently employees carry out work activities related to task, cognitive and relational crafting (e.g., 'Change the scope or types of tasks that you complete at work', response format: 1 = 'never', 6 = 'very often', $\alpha = 0.87$). *Psychological empowerment* was measured with Spreitzer's (1995) 12-item scale that captures work-related perceptions of meaning, competence, impact and choice (e.g., 'I can decide on my own how to go about doing my work', response format: 1 = 'does not apply at all', 7 = 'fully applies', $\alpha = .90$). For *participative safety* an 8-item scale was taken from the German version of Anderson and West's (1998) Team Climate Inventory (Brodbeck & Maier, 2001) to assesses whether employees perceived their social work environment as being characterized by safety, information sharing and mutual influence (e.g., 'People feel understood and accepted by each other', response format: 1 = 'does not apply at all', 5 = 'fully applies', $\alpha = 0.89$). Finally, *work-related reflection* was measured with an instrument that was newly developed in accordance with the theoretical considerations about work tasks, the work-context and professional competences as distinct objects of reflection (Messmann & Mulder, 2017). The instrument was developed in German and comprises three 4-item subscales for measuring how frequently employees carry out task-related reflection (e.g., 'Think about how useful different approaches towards a work task are', 'Think about the results and further steps that follow from what I do at work'), context-related reflection (e.g., 'Think about who could provide me with support or suggestions for a work task', 'Think about who I could contact if I have a confidential concern') and competence-related reflection (e.g., 'Think about to which extent I have the knowledge and skills required

for different work tasks', 'Think about which knowledge and skills I acquired in the course of my career'). The response options ranged from 1 = 'never' to 6 = 'very often'. Exploratory factor analysis (principal axis factoring, promax rotation, Kaiser criterion extraction) yielded three distinct and theoretically sound factors. As the three factors were substantially related to each other ($r = 0.49\text{--}0.55$), an overall variable for work-related reflection was formed by averaging the scores of the measurement items for work-related reflection ($\alpha = 0.86$). Moreover, the originally English measures employed for job crafting and psychological empowerment were translated into German and then back-translated by a different person to ensure the adequacy of the translation.

Analyses

To begin with, a descriptive analysis (i.e., means and standard deviations) was carried out for all study variables. Subsequently, a correlation analysis (Pearson's r) was employed to investigate the relationships among all study variables. In addition to inspecting correlations, it was further checked for multicollinearity by inspecting tolerances (>0.10) and variance inflation factors (<10) of the independent variables. To check for bivariate effects of background variables (i.e., age, gender, education, work experience, organizational membership, working hours, leadership responsibility, organizational size and innovation participation) on endogenous variables (i.e. innovative behaviour and job crafting), group comparisons (i.e., t tests and analyses of variance) and correlations (Pearson's r) were used.

For testing the hypothesized effects, structural equation modelling (SEM) in Mplus 8 (Muthén & Muthén, 1998–2017) was employed. First, a measurement model was developed by using the measurement items for innovative behaviour, job crafting, psychological empowerment, participative safety and work-related reflection as indicators of corresponding latent variables. For reasons of parsimony, domain-representative item parcels were formed (Little et al., 2002). Next, a structural model was built by specifying directed paths in accordance with the hypothesized connections among the study variables. In addition, it was controlled for the effects of background variables on endogenous variables if the bivariate analyses had shown significant effects and if the background variables significantly contributed to the structural model. For the evaluation of model fit, recommended fit indices (Schermelleh-Engel et al., 2003) including the χ^2 -test statistic, the χ^2/df -ratio, the comparative fit index (CFI), the non-normed fit index (NNFI), the root mean square error of approximation (RMSEA) and the standardized root mean square residual (SRMR) were inspected.

RESULTS

Descriptives and correlations

Descriptive statistics (Table 1) indicated that the participating employees actively contributed to the development of innovative solutions through their innovative behaviour ($M = 4.30$, $SD = 0.98$). In addition, 65.4% of the employees stated that they had recently been involved in the development of an innovative process or product in the context of their work. By comparison, they were slightly less active in crafting the task, relational and cognitive boundaries of their job ($M = 3.87$, $SD = 0.83$). Concerning their motivational disposition, employees felt empowered at work ($M = 5.32$, $SD = 1.06$).

TABLE 1 Descriptives and correlations

	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	5.
1. Psychological empowerment	5.32	1.06	(0.90)				
2. Participative safety	3.96	0.72	0.30**	(0.89)			
3. Work-related reflection	4.02	0.83	0.15*	0.17**	(0.86)		
4. Innovative behaviour	4.30	0.98	0.50**	0.20**	0.43**	(0.87)	
5. Job crafting	3.87	0.83	0.47**	0.33**	0.54**	0.62**	(0.87)

Note: $N = 295$. Scale ranges: 1–7 for psychological empowerment, 1–5 for participative safety, 1–6 for work-related reflection, innovative behaviour and job crafting. Values for Cronbach's α are presented in parentheses in the diagonal of the correlation matrix.

* $p < 0.05$; ** $p < 0.01$.

TABLE 2 Bivariate effects of background variables

	Innovative behaviour	Job crafting
Age	0.02 ^a	−0.11 ^a
Gender (female)	1.23 ^b	3.49*** ^b
Education	0.09 ^c	1.52 ^c
Work experience	0.11 ^a	−0.05 ^a
Organizational membership	0.10 ^a	0.03 ^a
Working hours	0.04 ^a	0.01 ^a
Leadership responsibility	2.07* ^b	3.11** ^b
Organizational size (medium-sized)	−2.20* ^b	−4.54*** ^b
Innovation participation	6.82*** ^b	4.29*** ^b

Note: $N = 295$.

^aPearson's r correlation.

^b t test statistic.

^c F test statistic.

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

Likewise, they felt safe in their social interactions at work ($M = 3.96$, $SD = 0.72$). And to a slightly lesser degree, they also tended to reflect on their work tasks, the work context and their professional competences ($M = 4.02$, $SD = 0.83$).

As far as correlations among the study variables are concerned, substantial relationships between independent variables and the two investigated forms of proactivity were determined. However, while the correlations of psychological empowerment and work-related reflection with innovative behaviour and job crafting were strong to medium-strong ($r = 0.43$ – 0.54), the corresponding correlations for participative safety were only moderate ($r = 0.20/0.33$). Moreover, results showed a strong correlation among the two dependent variables innovative behaviour and job crafting ($r = 0.62$), underlining their joint proactive nature. Finally, rather weak correlations among independent variables ($r = 0.15$ – 0.30) as well as tolerances (0.89–0.96) and variance inflation factors (1.04–1.12) showed that multicollinearity was not an issue.

Regarding bivariate effects of background variables (Table 2), preliminary group comparisons showed that female employees more actively crafted aspects of their job ($t = 3.49, p < 0.001$). Furthermore, results showed that employees who have a leadership responsibility more frequently contributed to the development of innovative solutions ($t = 2.07, p < 0.05$) and also more frequently crafted aspects of their job ($t = 3.11, p < 0.01$). Moreover, organizational size was negatively related to proactive behaviour as employees of medium-sized organizations had significantly lower scores for innovative behaviour ($t = -2.20, p < 0.05$) and job crafting ($t = -4.54, p < 0.001$) than employees of small and micro organizations. Conversely, employees who stated that they had recently participated in an innovation process had significantly higher scores for innovative behaviour ($t = 6.82, p < 0.001$) and job crafting ($t = 4.29, p < 0.001$).

Hypothesis testing

To begin with, a well-fitting measurement model including psychological empowerment, participative safety, work-related reflection, innovative behaviour and job crafting was specified ($\chi^2_{(55)} = 62.33, p = 0.23, \chi^2/df = 1.13; NNFI = 0.998; CFI = 0.996; RMSEA = 0.02$ with 90% confidence interval [CI]: 0.00–0.04, $pCLOSE = 0.99; SRMR = 0.03$). Likewise, a good fit was determined for the structural equation model (Figure 1) that was subsequently specified in accordance with the outlined hypotheses ($\chi^2_{(79)} = 143.75, p = 0.00, \chi^2/df = 1.82, CFI = 0.979, NNFI = 0.972, RMSEA = 0.05$ with 90% CI: 0.04–0.07, $pCLOSE = 0.36, SRMR = 0.09$). As part of the structural model, it was additionally controlled for effects of background variables, that is, effects of innovation participation on innovative behaviour and of organizational size on job crafting.

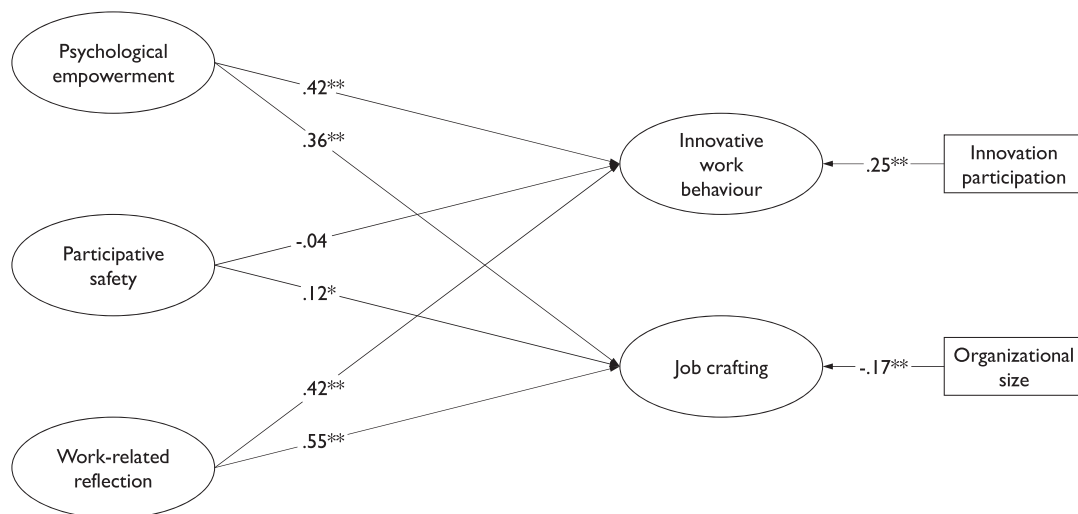


FIGURE 1 Standardized estimates for effects on innovative behaviour and job crafting. *Note.* * $p < 0.05$, ** $p < 0.001$. $N = 295$. Model fit: $\chi^2_{(79)} = 143.75, p = 0.00, \chi^2/df = 1.82, CFI = 0.979, NNFI = 0.972, RMSEA = 0.05$ with 90% CI: 0.04–0.07, $pCLOSE = 0.36, SRMR = 0.09$. CFI, comparative fit index; CI, confidence interval; NNFI, non-normed fit index; RMSEA, root mean square error of approximation.

SEM results showed that psychological empowerment positively predicted both employees' innovative behaviour ($\beta = 0.42, p < 0.001$) and their job crafting ($\beta = 0.36, p < 0.001$). Thus, Hypothesis 1 was fully supported. Conversely, the perception of participative safety had only a weak predictive effect on employees' job crafting ($\beta = 0.12, p < 0.05$) and no effect on their innovative behaviour ($\beta = -0.04, ns$). Accordingly, the current results provide only little support for Hypothesis 2. Moreover, work-related reflection positively predicted both employees' innovative behaviour ($\beta = 0.42, p < 0.001$) and their job crafting ($\beta = 0.55, p < 0.001$), herewith fully supporting Hypothesis 3. Finally, concerning the effects of background variables, the results showed that recent innovation participation significantly predicted employees' innovative behaviour ($\beta = 0.25, p < 0.001$). Conversely, working for a medium-sized organization negatively predicted employees' job crafting ($\beta = -0.17, p < 0.001$).

DISCUSSION

The aim of this contribution was to get insight into the role that employees' work-related reflection as a cognitive factor plays on top of their sense of psychological empowerment as a motivational factor and their perception of participative safety as a social factor for the facilitation of innovative behaviour and job crafting as two forms of proactivity. This insight is important as employees' proactive contributions to the development of innovative solutions and to the alignment of task-related and social job characteristics with personal needs and goals are crucial for organizational and professional development alike. Addressing a neglected aspect in research on proactive behaviour, the current contribution highlights how reflective efforts towards work may be a facilitator of proactive responses to ongoing changes at work. To address this issue, a quantitative study with employees of micro, small and medium-sized organizations in the information sector was conducted.

Theoretical implications

First, the study showed that the degree to which employees reflected on their work tasks, their work context and their professional competences was the strongest predictor of proactive behaviour. This finding is consistent with previous research (Kmieciak, 2021; Matsuo, 2019b; Messmann & Mulder, 2015) and supports the assumption that work-related reflection enables employees to establish connections between current work tasks and prior experiences and to notice when established procedures or job characteristics need to be revised or altered (Kolodner, 1992; Schwartz et al., 2012). In addition, the finding is in accordance with the assumption that frequent reflection at work leads to a generalized episodic understanding (Schank, 1999) of how to employ reflection at work which, in turn, may facilitate employees' proactive responses to changes at work.

Second, the study revealed in accordance with previous research (Hulshof et al., 2020; Liu et al., 2019; Matsuo, 2019a; Messmann et al., 2017) that employees' sense of psychological empowerment at work was a strong predictor of both their innovative behaviour and job crafting. This finding provides support for the assumption that the valence employees attribute to their work, the expectancies they hold regarding their work-related efficacy and influence, and the degrees of autonomy they perceive at work provide them with the necessary

motivational strength for initiating proactive behaviour and enduring the associated uncertainty (Bowers & Khorakian, 2014; Janssen, 2003; Spreitzer, 1995).

Third, concerning participative safety, the current study showed in contradiction to previous research (Messmann et al., 2017; Plomp et al., 2019) that the degree to which employees felt safe at work, shared information with colleagues and mutually exerted influence on each other hardly predicted their proactive behaviour. At first sight, this finding contradicts the assumptions that employees who experience participative safety are more proactive because it represents a source of social relatedness (Gagné & Deci, 2005) and because it provides informal rules in favour of proactivity which makes proactive contributions more subjectively predictable and controllable (De Jong & Kemp, 2003; Gebert et al., 2003). The finding may however be explained by the fact that the current study was conducted in micro, small and medium-sized organizations in which the social context and the larger organizational climate may have been more strongly characterized by flat hierarchies and by supportiveness and trust among employees than in larger organizations. This is in line with the rather high mean score of participative safety (i.e., when accounting for scale range, participative safety had the highest mean score of all independent variables) which implies that higher amounts of participative safety beyond a certain threshold may not have led to stronger effects on proactive behaviour (cf. Scott & Bruce, 1994). In other words, the participating employees perceived sufficient participative safety for managing the uncertainty that comes with initiating innovative behaviour and job crafting.

In summary, the findings of the study suggest that future theorizing about the facilitation of proactive behaviour should integrate various theoretical perspectives, such as a motivational and a cognitive perspective, to draw an accurate picture of what drives proactivity.

Limitations and future research

Regarding the current insight into predictors of proactive behaviour, some points need to be considered in future studies.

To begin with, the cross-sectional design of the study needs to be considered when drawing causal implications based on the current findings. Although the positive associations of psychological empowerment and work-related reflection with proactive behaviour are of practical and theoretical value, future studies should corroborate these findings in a longitudinal study. By employing a longitudinal design with at least two points of measurement for all study variables, the causal order, stability, and potential reciprocity of effects could be considered and problems with common method variance caused by measuring predictor and criterion variables at the same point in time could be accounted for. Similarly, the use of self-reports needs to be considered concerning potential biases due to using a common data source. Self-reports are a viable means for grasping employees' motivation and cognitions as well as their proactive behaviour, which in part consist of activities only employees can report on. Nevertheless, in future studies, different data sources such as peer and supervisor ratings may be employed to complement the self-report questionnaires used in the current study.

Furthermore, the specific focus of the current study needs to be considered. While innovative behaviour and job crafting were selected because they complementarily capture contributions to organizational and professional development, future studies should investigate the predictive effect of work-related reflection, psychological empowerment and participative safety in relation to other forms of proactivity such as feedback-seeking behaviour (Ashford et al., 2003). Likewise,

the current insight into the role of work-related reflection for facilitating proactive behaviour on top of motivational and social factors may be complemented by investigating other cognitive factors, such as perspective taking (Grant & Berry, 2011), that similarly relate to how employees grasp the complexity and interdependence of their work tasks, their work environment, and their professional experience. In addition, the counterintuitive finding that participative safety was a less important predictor than psychological empowerment and work-related reflection should be further investigated. As the current findings may have been due to a high amount of participative safety in the participating micro, small and medium-sized organizations, the issue should be revisited with employees of larger organizations where the average perception of participative safety may be lower.

Moreover, the study context needs to be considered concerning the generalization of the current findings. That is, the high knowledge intensity, non-routineness, and high qualification requirements that are characteristic of employees working in the field of IT (e.g., IT consulting, web design, or software development) need to be considered. The current findings thus may be generalizable to work contexts that similarly require a high level of flexible competences for accomplishing complex work tasks with a variety of solutions that need to be tailored to diverse customer needs. In addition, the findings apply to contexts with a dynamically evolving knowledge base and, thus, a high need for proactivity. Furthermore, the aforementioned size of the participating organizations needs to be considered as it may not only have affected the relative importance of participative safety but may also have created unique conditions for experiencing empowerment and for engaging in reflection.

Practical implications

The current findings contain valuable implications for fostering innovative behaviour and job crafting through job design and the creation of a stimulating social work environment in knowledge-intensive, dynamic work contexts, thereby enhancing both employees' professional development and the development of organizational processes and outcomes.

To begin with, the finding that employees' perception of psychological empowerment was substantially related to their contributions to the development of innovative solutions and to their job crafting efforts implies that employees need to be enabled to continuously make empowering experiences at work. First, concerning job design, this finding implies that work tasks need to be meaningful for employees and have an optimal level of necessary competences. In addition, concerning the actual accomplishment of work tasks, employees need to experience that their actions actually have an influence on work processes and outcomes. And closely connected to this issue, employees need to be able to autonomously make choices and decisions concerning how they approach their work tasks. Second, regarding characteristics of the social work environment, the finding furthermore implies that employees' experience of empowerment needs to be simultaneously fuelled by empowering social interactions. Beyond the formal assignment of empowering work tasks, it thus is the responsibility of supervisors to encourage and enable employees to make autonomous choices and decisions. In addition, optimally challenging work tasks need to be accompanied by the support that supervisors provide when tasks are novel or too complex. Likewise, the assignment of meaningful work tasks needs to be matched by supervisors' appreciation for the value of these tasks to enable a consistent experience of empowerment. Moreover, it is also the responsibility of colleagues, especially of those with larger amounts of experience, to provide guidance and assistance to

enforce their peers' experiences of empowerment. This may involve acknowledging and appreciating their colleagues' work and their ideas and solutions as well as providing feedback and support to help their colleagues grow professionally and overcome challenges.

Moreover, the finding that on top of this broad motivational basis employees' work-related reflection was substantially related to their innovative behaviour and job crafting implies that employees need to have a reason and room for reflection on the job. First, regarding job design, this finding implies that employees' reflection may be stimulated by work tasks that are complex enough to require reflection about possible strategies for approaching tasks, corresponding goals and expectations, the role of the surrounding contextual conditions, and one's current competences. In addition, there must be sufficient time available to actually carry out such reflective activities before, during and after working on tasks. Second, concerning the creation of a stimulating social work environment, the design of complex tasks and the provision of time for reflection may be complemented by formally designing occasions for reflective discussions about projects, tasks, or ongoing events. Such reflective discussions, in turn, may lead to further individual reflection about issues discussed with others. Likewise, reflective discussions may be enabled by creating informal occasions that provide opportunities for colleagues to exchange their experiences and ideas while taking a break from work. Furthermore, while such formal and informal occasions for reflection represent an important part of a vital reflection culture in organizations, they need to be complemented by employees' and supervisors' actual engagement in reflection and, thus, a displayed appreciation for the value that reflection has concerning the creation of efficient routines, the avoidance of errors and the adaptation to changes at work.

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CONFLICT OF INTEREST

The author declares no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ORCID

Gerhard Messmann  <http://orcid.org/0000-0003-3476-4204>

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