Agile Team Practices: Construct Development and Multilevel Study

Master Thesis

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September 2019

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Content

Abstract

Organizations increasingly show interest in so-called "agile team practices", which can be defined as a bundle of instructions with the goal of enabling employees to work in a self-managing (agile) way. In this article, we investigated this trend by developing a generic "Agile Team Practices Scale" (ATPS) and by conducting a multilevel study among 114 teams undergoing an "agile transformation" in their organization (N = 476). We established the psychometric properties of the ATPS and found that its six subscales cluster around two higher-order dimensions: agile taskwork practices and agile teamwork practices. Thereafter, we tested a new "cross-level influence model of proactivity" to investigate the potential effects of agile team practices on employees. Results of multilevel path analyses largely supported our model, showing that agile taskwork practices related positively to the team's norms for proactivity, which subsequently related positively to team member's proactive behavior (i.e. job crafting and employee intrapreneurship). We conclude that agile team practices, particularly agile taskwork practices, may create a favorable context for proactive behavior, by promoting shared norms that motivate team members to take initiative.

Keywords: Agile Practices, Team Effectiveness, Proactive Behavior, Job Crafting, Employee Intrapreneurship, Multilevel Modelling, Cross-Level Influence

Organizations operating in contexts of volatility, uncertainty, complexity, and ambiguity – commonly known by the acronym "VUCA" (Bennett & Lemoine, 2014) – are increasingly noticing the limitations of traditional prediction-and-control management approaches such as "management by objectives" (Drucker, 1954). In VUCA contexts, plans change frequently (Du & Chen, 2018), work behaviors cannot be formalized (Griffin, Neal, & Parker, 2007), and performance can hardly be monitored by a single manager (Adler et al., 2016). What is needed in these contexts are employees who take initiative (Frese & Fay, 2001), realize change (Phelps & Morrison, 1999), and actively ensure that they work on tasks that fit their capabilities (Tims & Bakker, 2010; Wrzesniewski & Dutton, 2001). Hence, employees' proactive behavior, defined as self-starting and future-oriented action (Grant & Ashford, 2008), is seen as a key resource for organizational survival in VUCA contexts (Baer & Frese, 2003; Bindl & Parker, 2010; Crant, 2000).

Research has devoted much attention to study different forms of proactive behavior (Parker & Collins, 2010), and to examine their effects on employee well-being and performance (for meta-analyses, see: Fuller & Marler, 2009; Ng & Feldman, 2012; Rudolph, Katz, Lavigne, & Zacher, 2017; Tornau & Frese, 2013). Less attention has been paid to the question of how organizations can stimulate employees to be more proactive and how teams encourage or inhibit individual proactive behavior (for a review, see: Cai, Parker, Chen, & Lam, 2019). At the same time, many organizations show interest in so-called "agile team practices" as an alternative to traditional prediction-and-control management in the hope that these practices will stimulate their employees to be more proactive at work (Agnihotri & Bhattacharya, 2019; Barton, Carey, & Charan, 2018; Rigby, Sutherland, & Takeuchi, 2016).

Agile team practices can be defined as a bundle of instructions with the goal of enabling employees to work in a self-managing (agile) way (Rigby et al., 2016; So, 2010; Tripp, Riemenschneider, & Thatcher, 2016). These practices emerged in the IT-sector but are now increasingly applied in other work areas such as HR, marketing, and even in health care

(Cappelli & Tavis, 2018; Gothelf, 2017; Scrum Alliance, 2018; VersionOne, 2018). Agile team practices are typically applied by self-managing teams (Moe, Dingsøyr, & Dybå, 2010). Such teams have control over their work methods and take responsibility for a broader variety of tasks than traditionally supervised teams (Hackman, 1992; Manz, 1992; Stewart, Courtright, & Manz, 2011; Taggar, Hackew, & Saha, 1999).

Despite their rising popularity in companies, empirical research on the effects of agile team practices on employees is scarce (Dybå & Dingsøyr, 2008). This is problematic, because only when these practices offer benefits to employees *and* organizations, they can be regarded as a sustainable management approach for VUCA contexts. Moreover, organizations are in need of more evidence-based advice on whether agile team practices are indeed effective in stimulating proactive behavior at work. The present research attempts to fill this science-practice gap by developing a new model that seeks to explain the cross-level influence effects of agile team practices on individual proactive behavior, well-being, and performance. In order to test this model, we first developed a new measurement instrument of agile team practices and then conducted a multilevel study among teams undergoing an "agile transformation" (cf. Barton et al., 2018) in their organization.

The present research makes four contributions to the literature on team effectiveness and proactive behavior. Firstly, we open a new avenue for research on (agile) teams, by clarifying what the agile team practices concept entails and by developing a generic "Agile Team Practices Scale" (ATPS). Secondly, by proposing a cross-level influence model, we shed light on an understudied area in proactivity research (Cai et al., 2019), namely how collective team practices shape individual proactive behavior. Thirdly, we examine the relationships of agile team practices with employees' proactive behavior, well-being, and in-role performance, based on the proposed cross-level influence model of proactivity. Fourthly, we demonstrate how employees may use different proactive strategies to increase their well-being and performance when working in (agile) teams.

The remainder of this thesis is structured as follows. We start by introducing commonly used agile team practices and their conceptual basis. Thereafter, we develop a "cross-level influence model of proactivity" by drawing from the proactive motivation model (Parker, Bindl, & Strauss, 2010), job demands-resources (JD-R) theory (Bakker & Demerouti, 2018), and theories of social influence (Cialdini, Kallgren, & Reno, 1991; Feldman, 1984; Salancik & Pfeffer, 1978). Then follows the empirical part of the thesis, which includes scale development and model testing. Findings will be integrated in a general discussion at the end of the thesis.

Theoretical Background

Agile team practices

The adjective "agile" originates from the Latin term "agilis", which means "quick" or "fast" (Merriam-Webster Online Dictionary, 2019). Why this term is used in a work context is to some extent owed to a group of software developers who proposed the so-called "agile manifesto" (Beck et al., 2001). This document lists a set of values and principles, which also can be found in popular writings on agile methods such as *Scrum* (Schwaber & Sutherland, 2017), *Kanban* (Anderson, 2010), or *Design Thinking* (Plattner, Meinel, & Leifer, 2011). Each of these methods proposes a set of practices that may enable teams to enact the values and principles of the agile manifesto (AgileAlliance, 2019; PMI, 2017). These values and principles emphasize flexibility, customer-centricity, and change-oriented action over rigidly following pre-specified strategic plans (Gupta, George, & Xia, 2019).

Agile teams commonly use a broad set of practices derived from different agile methods (VersionOne, 2018). Moreover, some agile methods describe similar practices but label them differently, resulting in a conceptual overlap of methods and practices (So, 2010). In the present study, we try to avoid this confusion by examining five of the most frequently used agile practices as reported in surveys among agile practitioners (Komus & Kuberg, 2017; Scrum

Alliance, 2018; Tripp & Armstrong, 2014; VersionOne, 2018), namely: iterative development, short iterations, iteration planning, stand-up meetings, and retrospective meetings (see Figure 1). What these practices have in common is that they focus on typical activities of self-managing teams such as planning, monitoring, or reviewing work outputs (Kirkman & Rosen, 1999; Manz, 1992; Stewart et al., 2011). Therefore, we refer to them as "agile team practices". In the following, we propose that these practices may help teams to work more effectively in a VUCA context, by stimulating team members to be proactive.

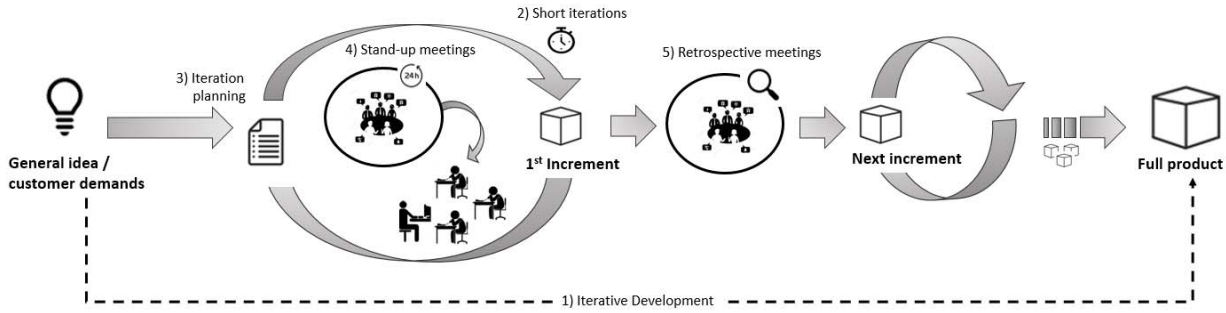


Figure 1. Five of the most commonly used agile team practices.

Iterative development. Agile teams usually work in environments, in which customers' preferences change frequently and the scope of assignments or projects is not clearly defined (Rigby et al., 2016). This forces the team to deliver work outputs in smaller portions or so-called "increments" (see Figure 1), which later add up to a final product (AgileAlliance, 2019; PMI, 2017; Tripp et al., 2016). When the team starts working on an assignment, it may only have a rough idea of how the final product will look like. In response to this, agile teams commonly experiment with different ideas before settling on an approach, often starting with developing prototypes (Plattner et al., 2011). Later, these prototypes are adapted based on feedback from clients or customers. Practitioners commonly refer to this way of delivering work outputs as "iterative development" (AgileAlliance, 2019). This practice may imply that agile teams work on complex and sometimes ambiguous tasks, which has been shown to be positively associated with proactive work behavior (Frese, Garst, & Fay, 2007; Grant & Rothbard, 2013).

Short iterations. Iterative development goes hand in hand with short work cycles or iterations (often called "sprints"; PMI, 2017). At the end of each work cycle, the team tries to deliver a potentially working increment of a product (Schwaber & Sutherland, 2017). For example, when the product is a software package, a working increment could be a new feature of an app – when the product is a book, a working increment could be a new chapter and so on. According to agile practitioners, the length of an iteration should ideally be limited to one month (Schwaber & Sutherland, 2017). This is because agile teams usually work in environments in which it is difficult to layer-out plans long in advance (Rigby et al., 2016). By keeping iterations short, the team reduces the risk of unnecessary resource allocation and remains flexible in case requirements change (PMI, 2017). Short iterations may work on the principles of goal-setting theory (Locke & Latham, 2002, 2006), as this practice implies that agile teams are supposed to work on short-term and attainable goals. Perhaps this practice also introduces a certain degree of time pressure for employees, which may stimulate proactive behavior, when the pressure is appraised as challenging (Ohly & Fritz, 2010; Sonnentag & Spychala, 2012).

Iteration planning. During the iteration planning meeting, team members specify the tasks that will be completed during the iteration (Agile Alliance, 2019; PMI, 2017). Two activities are commonly performed during an iteration planning meeting (Schwaber & Sutherland, 2017). Firstly, the team estimates the time and effort needed to complete different components of the increment, in order to prioritize the tasks. Secondly, team members can sign-up for the different tasks based on their own availability and capacity. Thus, rather than being assigned to tasks by a supervisor, members of agile teams decide for themselves how they will contribute to the goal of the iteration (AgileAlliance, 2019). This practice may indicate considerable team- and individual-autonomy (Morgeson & Humphrey, 2008), as it implies that team members can participate in decision-making and have control over their work activities. Theory (e.g., Grant & Parker, 2009) and evidence (e.g., Petrou, Demerouti, Peeters, Schaufeli, & Hetland, 2012) suggest that autonomy is an important antecedent of proactive behavior.

Stand-up meeting. Agile teams are supposed to have a short daily meeting, which is usually held with all members standing in a circle (AgileAlliance, 2019; PMI, 2017; Schwaber & Sutherland, 2017). Hence, this practice is often referred to as "stand-up meeting" (Tripp et al., 2016). The duration of this meeting is typically limited to fifteen minutes and requires team members to answer questions such as 1) "What have I accomplished yesterday?" 2) "What will I do today?" and 3) "What obstacles are impeding my progress?" (Tripp et al., p. 273). Stand-up meetings may instigate team monitoring processes (Marks, Mathieu, & Zaccaro, 2001) because in these meetings, team members keep track of each other's progress by reporting on their work activities. This practice implies that team members are held accountable for their work (Lerner & Tetlock, 1999; Tetlock, 1985), which is positively associated with proactive behavior (Fuller, Marler, & Hester, 2006).

Retrospective meetings. At the end of an iteration, agile teams commonly hold a more elaborate meeting, which is often referred to as "retrospective meeting" (Agile Alliance, 2019; PMI, 2017). As the name suggests, this meeting is used to look back on the iteration and to find ways for improving team performance. Retrospective meetings may be regarded as a form of team reflexivity (Schippers, Den Hartog, & Koopman, 2007), which refers to "a team's joint and overt exploration of work-related issues" (p. 191). Apart from improving work processes, this meeting is often used to address the social dynamics in the team (e.g., conflicts, role ambiguity, etc.). This is commonly facilitated by an agile coach, who "ensures that the meeting is positive and productive" (Schwaber & Sutherland, 2017, p. 12). Thereby, retrospective meetings may function as a source of social support and may encourage team members to take the risk of showing initiative (Lebel, 2017; Tornau & Frese, 2013).

Existing research on agile team practices. In the previous paragraphs, we introduced some of the most commonly used agile team practices and argued that each of these practices can be linked to certain job design features, which are positively associated with proactive behavior. In one of the few existing studies on agile team practices, Tripp et al. (2016) analyzed

some of these practices from the perspective of job characteristics theory (Hackman & Oldham, 1980). In a sample of 252 software engineers from different organizations, Tripp and colleagues demonstrated positive relationships between the reported use of agile team practices and perceptions of job autonomy, task feedback, as well as job satisfaction. Thus, there is some evidence that agile team practices are associated with enriched perceptions of job design, which may subsequently relate to proactive behavior (Grant & Parker, 2009). However, Tripp and colleagues investigated the relationships between agile team practices and job characteristics at the individual level instead of the team level. Such an approach may overlook the importance of social psychological processes inherent in team phenomena.

The present research focuses on these social psychological processes, as they may shape (1) perceptions of job design (Salancik & Pfeffer, 1978), and (2) individuals' willingness to engage in proactive behavior (Cai et al., 2019). Given its importance in VUCA context (Baer & Frese, 2003), the emphasis of the present study is on proactive behavior rather than on job design as an explanation of how agile team practices relate to employee well-being and performance outcomes. Before elaborating on these relationships, the next section will introduce existing theoretical frameworks for investigating proactive behavior as a mechanism explaining how agile team practices relate to employee well-being and performance.

Existing frameworks for investigating proactive behavior

In the present study, we investigate two proactive behaviors that may be relevant for agile teams, namely job crafting and employee intrapreneurship. Job crafting refers to activities through which employees change the task, relational, or cognitive boundaries of their job (Wrzesniewski & Dutton, 2001). As a type of proactive person-environment fit (*PE-fit*) behavior (Parker & Collins, 2010), job crafting attempts to increase the fit between one's own attributes (e.g., strengths, interests, values) and the attributes of one's job (e.g., tasks, responsibilities, relationships). Employee intrapreneurship (Gawke, Gorgievski, & Bakker, 2017, 2019) refers to proactive activities through which employees (a) strategically renew their

organization (e.g., optimizing workflows), and (b) create new business for their organization (e.g., developing new services). Defined as such, employee intrapreneurship belongs to the category of proactive *strategic* behaviors (Parker & Collins, 2010), because it attempts to increase the fit between the organization and external developments. We argue that job crafting and employee intrapreneurship are relevant for agile teams (Rigby et al., 2016), because such teams often lack clearly defined roles (i.e. requiring job crafting; Petrou, Demerouti, & Schaufeli, 2018) and are pressured to innovate (i.e. requiring employee intrapreneurship; Blanka, 2018). This observation leads us to the main research questions of the thesis:

RQ1: Are agile team practices antecedents of job crafting and employee intrapreneurship?

RQ2: What are the consequences of job crafting and employee intrapreneurship for team members' well-being and performance?

Proactive motivation model. A useful framework for studying the antecedents of job crafting and employee intrapreneurship is the proactive motivation model (Parker et al., 2010; Parker & Wang, 2015). This model distinguishes between three motivational states that typically precede proactive behavior, namely, *can-do motivation* (e.g., feeling confident to be proactive), *reason-to motivation* (e.g., being asked to be proactive), and *energized-to motivation* (e.g., being physically ready to be proactive). These three states can be regarded as the most proximal antecedents of proactive behavior and are shaped by individual differences (e.g., proactive personality) and contextual variables (e.g., job design). Within this model, agile team practices could be studied as contextual variables that give rise to different proactive motivational states and in turn behavior (Cai et al., 2019).

Job demands-resources theory. The consequences of job crafting and employee intrapreneurship for employees can be explained by JD-R theory (Bakker & Demerouti, 2018). This theory states that the characteristics of any work environment can be divided into two basic categories: job demands and job resources (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001).

The former refer to aspects of the work that demand considerable energy from employees (e.g., workload or conflicts), while the latter refer to aspects that provide employees with motivation to engage in the work (e.g., autonomy or social support; Demerouti et al., 2001). The most recent extensions of JD-R theory highlight that employees can optimize their own job demands and job resources by engaging in proactive behavior (Bakker & Demerouti, 2017, 2018). Thereby, employees can influence their own well-being and performance in a positive way (Lichtenthaler & Fischbach, 2019).

In this thesis, we expand the established proactive motivation and JD-R frameworks with a social psychological perspective. Thereby we try to account for the social influence processes that happen in (agile) teams.

Social influence processes as the missing link

With their social information processing theory, Salancik and Pfeffer (1978) brought attention to the role of social influence processes when investigating attitudes and behaviors at work. This theory states that the effects of workplace events or job characteristics on attitudes and behaviors are not constant, but emerge through a social reality construction process. In this process, employees make sense of their environment and focus on cues that serve as a guide for appropriate behavior. Such a social reality construction process likely mediates the effects of agile team practices on employees' proactive behavior, well-being, and performance.

We argue that this process is largely governed by the norms a team adopts when implementing agile team practices. Norms refer to *implicit* rules or standards that guide behavior within a group (Cialdini et al., 1991; Cialdini & Trost, 1998; Ehrhart & Naumann, 2004). Norms inform individuals about the typical behavior in a team (i.e. descriptive norms; Cialdini et al., 1991), and the behaviors that are socially approved or disapproved by the team (i.e. prescriptive norms; Cialdini et al., 1991). Agile team practices may result in different norms, depending on how these practices are enacted in the team (cf. Feldman, 1984). Furthermore, normative pressure in self-managing teams is often higher than in traditionally

supervised teams, a phenomenon known as "concertive control" (Barker, 1993). Thus, the norms that follow from implementing agile team practices may give a powerful explanation of how these practices affect employees.

In this thesis, we argue that agile team practices promote norms that are conducive to employee's proactive behavior (hereafter, "norms for proactivity"). One reason why agile team practices may promote norms for proactivity are the values on which these practices are supposed to be based (Gupta et al., 2019) – as described, for example, in the agile manifesto (Beck et al., 2001). These values suggest that agile teams emphasize personal interactions and initiative over formal processes and rigidly following a plan (Gupta et al.). By endorsing norms for proactivity, teams may be able to express the central values of the agile manifesto (cf. Feldman, 1984). Norms for proactivity may entail that team members *encourage each other* to take initiative (Frese & Fay, 2001), realize change (Phelps & Morrison, 1999), or voice their opinion (Van Dyne & LePine, 1998), which is presumably needed to work in an agile way as a team (cf. Rigby et al., 2016). Therefore, we hypothesize the following:

H1: Agile team practices are positively related to collective norms for proactivity.

Agile team practices and individual proactive behavior

Now that we have outlined how agile team practices relate to collective norms for proactivity, we can specify their cross-level influence effects on individuals' job crafting and employee intrapreneurship activities.

Agile team practices and job crafting. Agile team practices may allow employees to engage in job crafting, because these practices let employees define their roles more broadly and grant them freedom regarding the choice of their tasks (AgileAlliance, 2019; PMI, 2017; Tripp et al., 2016). Moreover, members of agile teams must ensure by themselves that they work on meaningful tasks (i.e. through job crafting), because there is no supervisor who directly assigns them to their work (Moe et al., 2010). Here we examine a novel type of job crafting,

namely job crafting towards strengths and interests (Kooij, van Woerkom, Dorenbosch, Denissen, & Wilkenloh, 2017), because we regard it as especially relevant in the work context of agile teams. By engaging in this type of job crafting, team members ensure that they contribute to the team with their personal strengths and they can create a feeling of flow in their own work (Bakker & van Woerkom, 2017). Norms for proactivity may inform team members that job crafting is encouraged and necessary for effective self-management in the team (Ehrhart & Naumann, 2004; Leana, Appelbaum, & Shevchuk, 2009; Mäkikangas, Aunola, Seppälä, & Hakanen, 2016). Due to the presence of these norms, team members likely model each other's job crafting activities (Bakker, Rodríguez-Muñoz, & Sanz Vergel, 2016; Demerouti & Peeters, 2018; Tims, Bakker, Derks, & Van Rhenen, 2013), resulting in a convergence of job crafting behavior within the agile team. Hence, we argue that the effects of agile team practices on job crafting towards strengths and interests can be explained by the social norms that these practices introduce:

H2: Agile team practices are positively related to job crafting towards strengths and interests through collective norms for proactivity.

Agile team practices and employee intrapreneurship. Through employee intrapreneurship, team members can ensure that they contribute to corporate development and organizational adaptiveness (Antoncic & Bostjan, 2007; Blanka, 2018; Neessen, Caniëls, Vos, & de Jong, 2019). This is needed in agile teams, because these teams are expected to be innovative (Rigby et al., 2016). In order to realize innovations, employees must engage in activities such as anticipating trends, adapting procedures, or networking with experts (Potočnik & Anderson, 2016), all of which are behaviors that fall under the realm of employee intrapreneurship (Gawke et al., 2019). Yet, such behaviors are inherently risky for employees, as there is a possibility that intrapreneurship activities fail, with negative personal consequences such as damaged reputation or even job-threat (Shepherd & Cardon, 2009). By endorsing norms

for proactivity, agile teams signal their members that they can take the risk of engaging in employee intrapreneurship and that they can derive personal benefits from this activity (Grant, Parker, & Collins, 2009; Lebel, 2016). Given its similarity with job crafting, team members perhaps also model each other's intrapreneurship activities and thereby start to spread this behavior in the team (cf. Tims et al., 2013). Hence, we argue that the relationship between agile team practices and employee intrapreneurship can also be explained by collective norms for proactivity:

H3: Agile team practices are positively related to employee intrapreneurship through collective norms for proactivity.

Consequences of proactive behavior for the individual

In the following, we consider the consequences of job crafting and employee intrapreneurship for team members' work engagement and in-role performance. Work engagement is an important indicator of employee well-being (Bakker & Oerlemans, 2011), and defined as an affective-motivational state characterized by vigor (i.e. energy), dedication (i.e. involvement), and absorption (i.e. concentration; Schaufeli, Salanova, González-Romá, & Bakker, 2002). Engaged employees are enthusiastic about their work and can easily bounce back from difficulties (Costa, Passos, Bakker, Romana, & Ferrão, 2017). As they are more capable of broadening their behavioral repertoire (e.g., learning new skills) and building personal resources (e.g., self-efficacy), engaged employees achieve higher levels of in-role performance compared to their less engaged colleagues (Demerouti & Cropanzano, 2010; Fredrickson, 2001; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007, 2009). In-role performance refers to the extent to which an employee contributes to the technical core of the organization by adequately completing tasks and fulfilling responsibilities (Griffin et al., 2007; Motowidlo, Borman, & Schmit, 1997).

Consequences of job crafting. There is ample evidence that job crafting relates positively to in-role performance, both directly and indirectly through higher-levels of work engagement (for a meta-analysis, see: Lichtenthaler & Fischbach, 2018). In-line with JD-R theory, longitudinal and intervention studies have shown that job crafting helps employees to acquire job resources, which in turn increases their work engagement (Tims, Bakker, & Derks, 2013; van Wingerden, Bakker, & Derks, 2017a; Vogt, Hakanen, Brauchli, Jenny, & Bauer, 2016). By increasing work engagement, job crafting also contributes positively to in-role performance over time (Gordon et al., 2018; Tims, Bakker, & Derks, 2015a; van Wingerden, Bakker, & Derks, 2017b). To the best of our knowledge, the specific job crafting type in the current investigation (i.e. job crafting towards strengths and interests) has not yet been related to work engagement or in-role performance. The only existing study on job crafting towards strengths and interests used an intervention to examine whether this type of job crafting leads to improved person-job fit (Kooij et al., 2017). This intervention was effective, but only for older workers, as younger workers did not increase their job crafting behavior. Given that person-job fit is associated with work engagement (Chen, Yen, & Tsai, 2014) and in-role performance (Kristof-Brown, Zimmerman, & Johnson, 2005), we can expect that job crafting towards strengths and interests will also have positive effects on these outcomes. Moreover, several studies have demonstrated that being able to use one's strengths at work is associated with higher work engagement and in-role performance (e.g., Bakker, Hetland, Olsen, & Espevik, 2019; van Woerkom et al., 2016; van Woerkom, Oerlemans, & Bakker, 2016). Therefore, we hypothesize:

H4: Job crafting towards strengths and interests is positively related to in-role performance through work engagement.

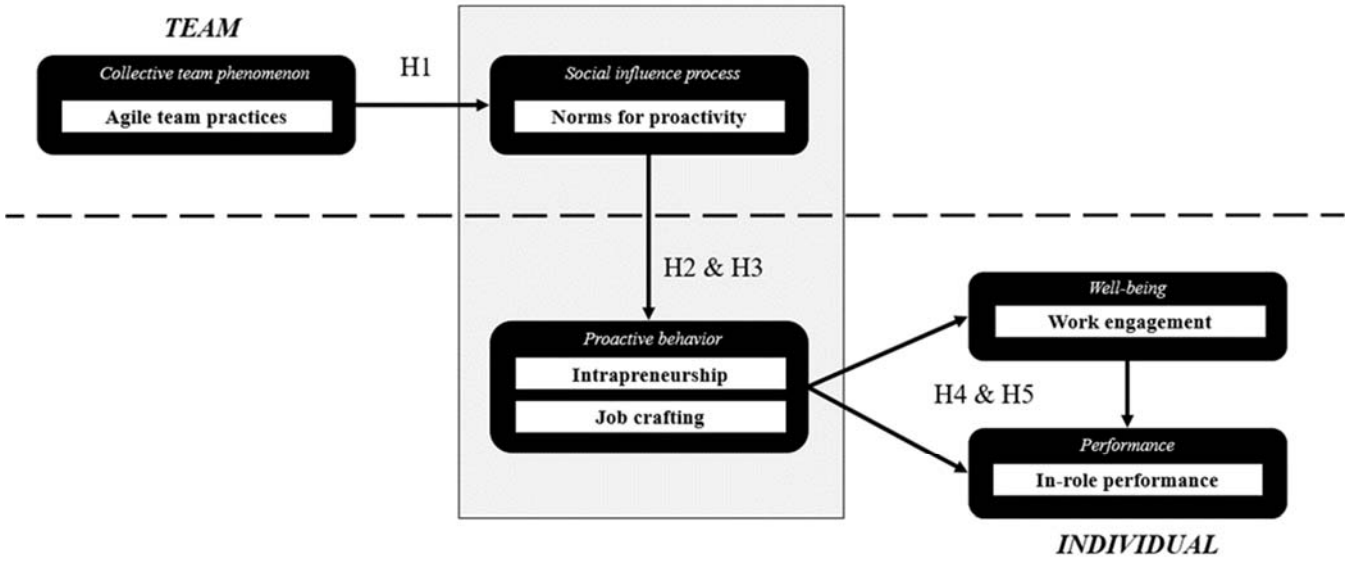
Consequences of employee intrapreneurship. Given its focus on changing the organization, the benefits of employee intrapreneurship for individuals are less pronounced than

those of job crafting. Gawke, Gorgievski, and Bakker (2018) hypothesized that employee intrapreneurship goes along with both costs and benefits for employees. On the one hand, intrapreneurship may offer opportunities for experiencing moments of success and involvement, for example, when an employee designs a new service or starts a new project. This may increase the intrapreneur's work engagement and helps in acquiring new knowledge and skills, which contributes positively to in-role performance (Motowidlo et al., 1997). On the other hand, employee intrapreneurship demands to "go the extra mile" (e.g., due to excessive work hours and additional responsibilities), which may drain energy and may distract from core tasks. Although only cross-sectional, the study of Gawke et al. (2018) provided support for these hypotheses, as employee intrapreneurship had both positive and negative consequences for in-role performance, depending on whether the relationship was mediated by work engagement or exhaustion. In another study, Gawke et al. (2017), only considered the motivational benefits of employee intrapreneurship in a cross-lagged panel study. This study showed that employee intrapreneurship can help to stabilize work engagement by increasing personal resources such as self-efficacy, resilience, or optimism over time. Thus, while there is some evidence that employee intrapreneurship contributes positively to work engagement, it is not clear whether it relates positively to in-role performance. Given that the present study only examines work engagement as an indicator of well-being, we follow Gawke et al. (2017, 2018) in their reasoning:

H5: Employee intrapreneurship is positively related to in-role performance through work engagement.

Putting it together: A cross-level influence model of proactivity

Figure 2 illustrates the hypothesized relationships developed throughout the introduction. Based on social information processing theory (Salancik & Pfeffer, 1978), we propose that the effects of collective team phenomena (i.e. agile team practices) on individual behavior are mediated by social influence processes. These social influence processes likely affect proactive motivational states such as "can-do" or "reason-to" motivation, which give rise to individual proactive behavior (Parker et al., 2010; Parker & Wang, 2015). In line with JD-R theory (Bakker & Demerouti, 2018), proactive behavior is thought to have an impact on individual performance through its effect on well-being and motivation (i.e. work engagement). Integrating these theoretical perspectives in one coherent model can provide a more holistic account of the dynamics of proactive behaviors in teams.



Note. The grey box represents the cross-level influence mechanism from norms for proactivity to individual proactive behavior. The black dashed line represents the distinction between team- and individual-level constructs.

Figure 2. Cross-level influence model of proactivity.

Method

Organizational context

We tested the proposed model in a unique organizational setting, as the participating teams were undergoing an "agile transformation" at the time of the study (cf. Barton et al., 2018). The organization in which the study was conducted is the IT-division of one of the largest European transport and logistics companies, with about 3600 employees mainly located in Germany. Prior to the start of the agile transformation, employees worked in departments that were managed top-down in a matrix structure (Hatch, 2018). Since 2017, the organization introduces a new organizational design that successively replaces the old departmental structure with self-managing (agile) teams that work together in a network structure (Hatch, 2018). Teams undergo the agile transformation in four phases, with the main events listed in Table 2 below.

Table 1
Main team accomplishments per phase of the agile transformation of the teams.

Phase 1	▪ The team is committed to the agile transformation. ▪ The team receives support from an agile coach.
Phase 2	▪ The team has a clearly defined mission. ▪ The team has clarified its role and main work activities.
Phase 3	▪ The team has built a network with other teams in the company. ▪ The team has clarified its competencies and professional development needs.
Phase 4	▪ The team's customers (internal or external) have confirmed its effectiveness. ▪ The team has demonstrated its social competency (e.g., conflict management).

At the end of each phase, the team has to pass a so-called "quality gate" before progressing to the next phase. The quality gate is an internal auditing process that includes senior managers and members of the company's work council. In the quality gate conversation, the team has to convince the auditors that it successfully completed the respective phase of the agile transformation by answering questions on the team's performance, collaboration with other teams, and the team's finances.

Procedure and participants

Before we contacted the teams, the company's work council reviewed our research proposal and the measurement instruments to ensure that we complied with data protection and privacy regulations. The work council agreed to distribute the survey among teams with at least eight members. In total, we sent an invitation to participate in the study to 159 teams. Each e-mail invitation contained an individualized link to the survey, which allowed us to trace back individual respondents to their team. In total, 499 participants completed the survey in the time between May and July 2019. At least two members per team had to answer the survey to be included in the final sample, as has been done in similar previous studies (e.g., Tims et al., 2013). We excluded participants who were the only respondent of their team, resulting in a sample size of 476 participants spread over 114 teams (response rate of 72% at the team-level).

The final sample included 19 teams which were currently in Phase 1 of the agile transformation, 47 teams in Phase 2 of the agile transformation, 34 teams in Phase 3 of the agile transformation, and 14 teams in Phase 4 of the agile transformation. The majority of the teams (76%) were classified by the company as "delivery teams" and the remaining as "support teams" (24%). Delivery teams produce direct value for the organization's customers in the form of IT-services, -maintenance, and -consulting. Support teams include functions such as HR, finance, or customer relations. The average team size of the contacted teams was 9.51 (*SD* = 2.41) and on average 4.18 members per team answered the survey.

Most of the participants (92%) had been a member of their team for more than 6 months and had worked for the organization for more than one year (96%). Moreover, 80% reported spending 30h or more per week working in their current team. This suggests that participants were quite familiar with their team and the organizational context. Most of the participants were men (78%) and between 35 and 55 years old (55%). Participants were highly educated, as 64% reported having obtained a bachelor degree or higher.

Measures

The online survey was split into two parts, with the first part containing all measures relating to the team-level constructs and the second part containing all measures relating to individual-level constructs. All measures were administered in German and translated from English using the forward-back translation method (Behling & Law, 2000). Except for agile team practices, the measures of all variables were based on previously validated and published self-report scales.

Agile team practices. In order to measure agile team practices, we developed a generic "Agile Team Practices Scale" (ATPS). We followed the recommendations of Hinkin (1995, 1998) and attempted to validate the ATPS in three stages.

Stage 1. We started by reviewing existing measures of agile team practices, which are specifically tailored to the software-development context (e.g., So, 2010; Tripp et al., 2016). Then we conducted interviews with five agile practitioners, in order to construct additional items and to make the items more generic, so that they can be answered by participants without an IT background (e.g., members of support teams). Thereafter, we conducted an *independent pilot study* including 163 participants recruited through the author's network and through social media (LinkedIn, Xing, and Facebook). Participants filled out the preliminary 41-item pool of the ATPS in an online questionnaire in the time between February and April 2019.

Results of exploratory factor analyses suggested that participants of the pilot study discriminated between five agile team practices in their responses (see Appendix 1, for items and factor loadings). It emerged a seven-item "iterative development" subscale ($\alpha = .83$), a five-item "short iterations" subscale ($\alpha = .89$), a seven-item "iteration planning" subscale ($\alpha = .82$), a seven-item "standup meeting" subscale ($\alpha = .96$), and a seven-item "retrospective meeting" subscale ($\alpha = .91$). Hence, the preliminary item pool was reduced to a set of 33 items that can be measured reliably. Supporting the convergent validity of the ATPS, its total score correlated strongly ($r = .61$, $p < .001$) with a single item asking participants whether they consider their

team to be rather traditional or rather agile on a scale from 1 (*traditional*) to 5 (*agile*). Additional information on the participants and the results of the pilot study can be taken from Appendix 1.

Stage 2. In this stage, we examined how the (pre-validated) items can be combined to scales using the data of the present sample. We conducted principal axis factoring with oblique rotation (Direct Oblimin) on the individual-level data (N=476) and the team averages (N=114). Both factor analyses revealed a more fine-grained pattern matrix than the one that emerged in Stage 1, as the "iterative development" items loaded on two separate factors, which we labeled "experimentation" and "adaptation". Moreover, of the "iteration planning" items, only those relating to "task choice" clearly loaded on the same factor (e.g., "We can choose to work on those tasks that best fit our strengths"). For factor loadings of the items and Cronbach's alpha of the subscales, see Appendix 2.

Next, we explored whether there exists a higher-order structure among the six subscales or whether they ground in the same underlying latent variable. Principle axis factoring on the subscale scores suggested that experimentation, adaptation, and task choice map on the same underlying factor. The commonality of these subscales is that they relate to how agile teams approach their work activities and they imply that agile teams work on complex tasks coupled with autonomy. In contrast, short iterations, retrospective meetings, and stand-up meetings are more indicative of how the team structures itself internally with respect to timing and socioemotional activities. A similar distinction is often made in the literature on work teams, namely between taskwork and teamwork (Fisher, 2014; Kozlowski & Bell, 2003). Perhaps, experimentation, adaptation, and task choice are more reflective of *agile taskwork*, whereas short iterations, retrospective meetings, and stand-up meetings are more reflective of *agile teamwork*.

Stage 3. Finally, we evaluated the psychometric properties and the construct validity of the newly created scales. In order to confirm whether it is empirically justified to make a distinction between agile taskwork practices and agile teamwork practices, we conducted

confirmatory factor analyses in MPlus (Muthén & Muthén, 1998-2015) – using the data of the present sample ($N = 476$). To assess model fit we examined the chi-square, the root mean square error of approximation (RMSEA), the comparative fit index (CFI), and the Tucker-Lewis index (TLI) with their conventional cut-off values (i.e. CFI and TLI > .90, and RMSEA and SRMR < .08 represent acceptable model fit; Marsh, Hau, & Wen, 2004). We compared the agile taskwork-teamwork model (see Figure 3), with a model whereby all first-order factors loaded on the same second-order agile team practices factor. The fit indices of the agile taskwork-teamwork model ($\chi^2 = 551.35$, $df = 245$, $p < .001$, AIC = 33639.98, RMSEA = .05, CFI = .94, TLI = .93, SRMR = .06) were comparable to the alternative model ($\chi^2 = 580.47$, $df = 246$, $p < .001$, AIC = 33669.53 RMSEA = .93, CFI = .93, TLI = .92, SRMR = .07). Yet, a chi-square difference test indicated a slightly superior fit of the agile taskwork-teamwork model ($\Delta\chi^2 = 29.12$, $p < .001$). This model also had a lower AIC, indicating a better tradeoff between model fit and complexity (Wagenmakers & Farrell, 2004). Moreover, the agile taskwork-teamwork model has a theoretical basis in the literature on team effectiveness (e.g., Fisher, 2014). For these reasons, we decided to proceed with our measurement of agile team practices based on this model.

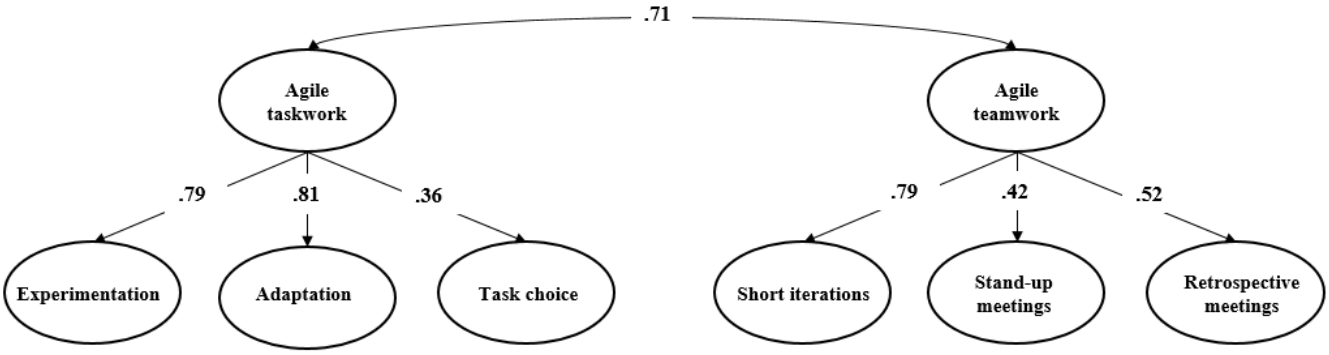


Figure 3. Agile taskwork-teamwork model, all loadings are significant at $p < .05$.

Providing support for the construct validity of these measures, agile taskwork practices and agile teamwork practices correlated positively with the phase of the agile transformation ($r = .30$, $p < .001$, and $r = .33$, $p < .001$). Post-hoc comparisons with Bonferroni corrections

revealed significant differences on the ATPS total scores ($F(3,110) = 6.39$, $p < .001$), with teams in Phase 3 ($M = 4.85$, $SD = .50$) and Phase 4 ($M = 5.13$, $SD = .22$) scoring significantly higher than teams in Phase 1 ($M = 4.35$, $SD = .74$). Hence, teams in a more advanced stage of the agile transformation tended to score higher on our measures of agile team practices. This finding provides evidence for the construct validity of the ATPS, based on known-groups comparison (Cronbach & Meehl, 1955).

Given the results of Stage 3, we decided[1] to measure agile team practices with the nine-item *agile taskwork practices scale* ($\alpha = .84$ for team-average data, and $\alpha = .78$ for individual data) and the fifteen-item *agile teamwork practices scale* ($\alpha = .93$ for team-average data, and $\alpha = .89$ for individual data).

Norms for proactivity. We created a six-item measure of norms for proactivity on the basis of the personal initiative scale (Fay & Frese, 2001). The personal initiative scale captures the essence proactivity and has been frequently used in the validation of new proactivity measures (e.g., Gawke et al., 2019). Each item started with the stem "Team members encourage each other…" and continued with a proactive activity such as "to take initiative" or "to actively attack problems". Hence, the measure captures *prescriptive norms*, as the items suggest that proactive behavior is socially approved and valued within the team (cf. Ehrhart & Naumann, 2004). Participants were asked to indicate to what extent the statements applied to their team, on a scale ranging from 1 (*fully disagree*) to 7 (*fully agree*). We submitted the items to a principal components analysis, which returned only one factor with an eigenvalue larger than one, explaining 76% of the variance in the items. The reliability of the measure was good ($\alpha = .96$ for team-average data, and $\alpha = .94$ for individual data).

[1] At this point readers may wonder why we decided to measure agile team practices along the two higher-order dimensions rather than using the six subscales. This decision is similar to the "bandwidth-fidelity dilemma" in personality research (Ones & Viswesvaran, 1996). We refer readers to (Sitser, van der Linden, & Born, 2013) and (van der Linden et al., 2016) for arguments why it is sometimes advantageous to sacrifice the precision of narrow subscales for broader measures based on higher-order factors for prediction and theory testing purposes.

Job crafting strengths and interests. We measured job crafting towards strengths and interests based on the scale of Kooij et al. (2017). We used their four highest loading items of *job crafting towards strengths* (e.g., "I organize my work in such a way that it matches my strengths") and their four highest loading items of *job crafting towards interests* (e.g., "I actively look for tasks that match my own interests"). Responses were given on a frequency scale ranging from 1 (*almost never*) to 7 (*almost always*). Principal components analysis suggested that the items could be reduced to one underlying factor, as it returned only one factor with an eigenvalue larger than one, which explained 56% of the variance in the items. The reliability of the total job crafting score was good (α = .92 for team-average, and α = .88 for individual data).

Employee intrapreneurship. We used the eight-item version of the Employee Intrapreneurship Scale (EIS; Gawke et al., 2019), which contains four items measuring *venture behavior* (e.g., "I undertake activities to reach a new market or community with my organization") and four items measuring *strategic renewal behavior* (e.g., "I undertake activities to change current products/services of my organizations"). Responses were given on a frequency scale ranging from 1 (*almost never*) to 7 (*almost always*). Principal components analysis indicated that the items could be reduced to one underlying factor, as only one factor had an eigenvalue larger than one, which explained 61% of the variance in the items. The reliability of the total score of the EIS was good (α = .93 for team-average, and α = .91 for individual data).

Work engagement. We used the nine-item version of the Utrecht Work Engagement Scale (Schaufeli, Bakker, & Salanova, 2006), which contains three items for each dimension: *vigor* (e.g., "At my work, I feel bursting with energy"), *dedication* (e.g., "I am enthusiastic about my work"), and *absorption* (e.g., "I am immersed in my work."). Participants indicated how frequently they experienced the different indicators of work engagement on a frequency scale ranging from 1 (*almost never*) to 7 (*almost always*). Principal components analysis

indicated that the nine items could be reduced to one underlying factor, as it returned only one factor with an eigenvalue larger than one, which explained 71% of the variance in the items. The reliability of the total score of the UWES was good (α = .96 for team-average, and α = .95 for individual data).

In-role performance. We measured in-role performance with four items based on Williams and Anderson (1991). An example item of this measure is "I meet the performance requirements of the job". Responses were given on a Likert scale ranging from 1 (*fully disagree*) to 7 (*fully agree*). As, expected all items loaded on the same factor, which explained 64% of the variance in the items in principal components analysis. The reliability of the total score was good (α = .81 for team-average, and α = .80 for individual data).

Control variable. In order to obtain a purer estimate of the cross-level influence effects of agile team practices on job crafting and employee intrapreneurship, we decided to control for within-team differences in proactive personality (cf. LoPilato & Vandenberg, 2015). Individuals who score high on proactive personality may engage more frequently in job crafting or employee intrapreneurship (Gawke et al., 2019; Tims, Bakker, & Derks, 2012), no matter whether they are working in an agile team or a traditionally supervised team. We used a four-item version of Bateman and Crant's (1993) proactive personality scale, as has been done by Parker, Williams, and Turner (2006). An example item of this scale is "No matter what the odds, if I believe in something, I will make it happen". Participants indicated, whether the statements applied to them as a person, on a Likert scale ranging from 1 (*fully disagree*) to 7 (*fully agree*). The reliability of this scale was good (α = .83 for team-average and individual data).

Justification for aggregation

In order to test our proposed cross-level influence model (see Figure 2), we had to aggregate the measures of agile team practices, norms for proactivity, job crafting, and

employee intrapreneurship to the team-level. Whether aggregation is justified, depends on the intra-class correlations (ICC1), the reliability of group mean scores (ICC2) and the within-team agreement (r_{wg}) of the measures (Van Mierlo, Vermunt, & Rutte, 2009). In the present study, the ICC1 ranged between .18 for job crafting and .84 for agile teamwork practices, which suggests that considerable variance in these measures exists at the team-level and warrants multilevel modelling (Hox, Moerbeek, & van de Schoot, 2017). The reliability of group means (ICC2) were acceptable ranging from .48 for job crafting to .56 for agile teamwork practices (James, Demaree, & Wolf, 1984). Furthermore, within-team agreement (r_{wg}) calculated under the uniform distribution exceeded the general cutoff value of .70 (James et al., 1984). According to the critical values provided by Dunlap, Burke, and Smith-Crow, (2003), significant agreement exists for r_{wg} of .80 for a cluster-size of five, and for r_{wg} of .91 for a cluster-size of four. The average cluster size in our analysis was 4.18, which means that the r_{wg} of .91 may be seen as the more conservative cut-off. The r_{wg} of agile taskwork practices (.91) and agile teamwork practices (.95) were significant, which provides further evidence for the validity of these newly developed team measures (Van Mierlo et al., 2009). Only our measure of employee intrapreneurship was below the cut-off with an r_{wg} of .84. Therefore, we should be cautious about our interpretation of the cross-level influence paths with employee intrapreneurship as the outcome. Rather than being interpreted as the effects of the team variables on *individual* employee intrapreneurship, these paths may be interpreted as the effects of the team variables on the *average* levels of employee intrapreneurship in the team (cf. LoPilato & Vandenberg, 2015). This is because without high within-team agreement, the average or the team intercept of employee intrapreneurship is "a poor proxy for an individual's actual standing on the DV" (LoPilato & Vandenberg, 2015, p. 303). The ICCs and r_{wg} of all variables can be taken from Appendix 2.

Analysis strategy

We tested our hypotheses using multilevel path analyses in MPlus (Muthén & Muthén, 1998-2015) with manifest variables (i.e. mean scores), in order to limit the number of estimated parameters. Variables that were only modelled at the within-team level (i.e. work engagement, in-role performance, and proactive personality) were group-mean centered to remove their between-team variance. All other variables were modelled on both levels and grand-mean centered. Hence, their variances were decomposed into a latent within-team and between-team component, by modelling them on both levels (Hox et al., 2017). We followed the steps described by Hox et al. (2017) and LoPilato and Vandenberg (2015) for building our cross-level mediation model.

Results

Table 2
Means, standard deviations, and bivariate correlations among the study variables.

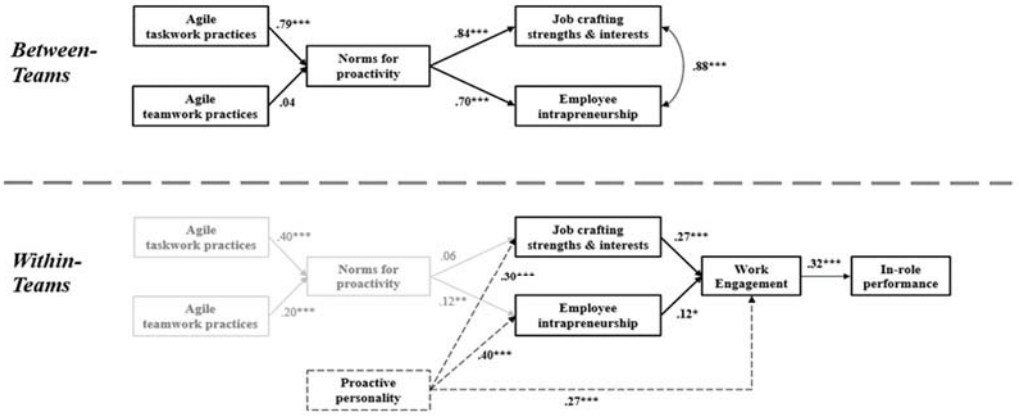
	M	SD	1	2	3	4	5	6	7	8
1. Agile taskwork	4.80	.85		.44**	.63**	.54**	.48**	.49**	-.03	.39**
2. Agile teamwork	4.76	.86	.37**		.38**	.25**	.18	.26**	.02	.30**
3. Norms for proactivity	4.97	1.10	.55**	.34**		.41**	.43**	.57**	.13	.29**
4. Job crafting	5.16	.84	.34**	.14**	.26**		.58**	.35**	.20*	.42**
5. Intrapreneurship	3.29	1.26	.33**	.17**	.30**	.34**		.31**	.13	.55**
6. Work engagement	4.95	1.01	.36**	.22**	.38**	.41**	.32**		.09	.27**
7. In-role performance	5.89	.69	.11*	.05	.16**	.27**	.12**	.28**		.07
8. Proactive personality	4.71	.98	.25**	.14**	.20**	.36**	.48**	.37**	.15**	

Note. Correlations with team-average data (N = 114) above the diagonal, correlations with individual-data (N = 476) below the diagonal.
** $p < .01$ and * $p < .05$

Hypotheses testing

For investigating differences between teams, we hypothesized that agile team practices have a positive relationship with collective norms for proactivity (H1), which in turn relate

positively to the average job crafting (H2) and employee intrapreneurship (H3) in the team. For investigating differences within teams, we hypothesized that job crafting and employee intrapreneurship are related to work engagement and in turn to in-role performance (H4 & H5). We modelled these relationships in MPlus, as shown in Figure 3. Overall, the fit of this model was acceptable (χ^2 = 70.97, *df* = 19, $p < .001$, AIC = 7650.63, RMSEA = .08, CFI = .91, TLI = .83, $SRMR_{within}$ = .07, $SRMR_{between}$ = .06). The TLI did not reach the conventional cut-off value of .90, which could be due to the null model being too good (Hu & Bentler, 1999), or due to the fact that the TLI tends to decrease with the number of paths added to the model, as noted by Kenny & McCoach (2003). As all other indices were acceptable, we are confident that we came up with a correctly specified structural equation model (Marsh et al., 2004). Next, we continued with examining the structural relationships, in order to test our hypotheses.



Note. The solid black lines represent the hypothesized paths, the dashed black lines represent the significant paths of the control variable, and the grey lines represent the paths of the team-level constructs irrespective of team-membership (i.e., pooled across all teams).
*** $p < .001$
** $p < .01$
* $p < .05$

Figure 3. Multilevel model of agile team practices and proactivity constructs.

Hypotheses 1 stated that agile team practices are positively related to collective norms for proactivity. In line with H1, we found that agile taskwork practices had a significant relationship with norms for proactivity when considering differences between teams (γ = .79, $p < .001$). Thus, the more the teams practiced agile taskwork, the higher they rated their norms for proactivity. However, the relationship between agile teamwork practices and norms for proactivity was not significant between teams (γ = .04, p = .748). As can be seen in the grey

paths of Figure 3, agile teamwork practices (β = .20, p < .001) and agile taskwork practices (β = .40, p < .001) were both significantly related to norms for proactivity, when the team membership of the participants was ignored and the relationships were examined using the pooled sample variance. However, taking these paths as evidence for H1 would run the risk of committing an "atomistic fallacy" (Hox et al., 2017). This fallacy happens when individual-level data is used to make inferences about hypotheses located the team-level. Thus, H1 was only partially supported, given that only the relationship between agile taskwork practices and norms for proactivity was significant between teams.

We then continued with testing the mediation effects specified in H2-H5. The mediation model, which additionally included the direct paths of agile taskwork practices on proactive behavior, and from proactive behavior on in-role performance fitted the data adequately (χ^2 = 52.78, df = 14, p < .001, AIC = 7642.19, RMSEA = .08, CFI = .93, TLI = .83, $SRMR_{within}$ = .06, $SRMR_{between}$ = .06).

Hypotheses 2 stated a positive indirect relationship between agile team practices and job crafting through collective norms for proactivity. Supporting H2, the indirect effect of agile taskwork practices on job crafting through norms for proactivity was significant (estimate = .08, SE = .04, p = .032). Yet, the direct effect was also significant (estimate = .49, SE = .20, p = .013), which suggests that norms for proactivity only partially mediated the effects of agile taskwork practices on job crafting. Thus, the more the teams practiced agile taskwork, the more frequently their members engaged in job crafting and this relationship was partially explained by the norms for proactivity of the teams.

Hypothesis 3 proposed a positive indirect relationship between agile team practices and employee intrapreneurship through collective norms for proactivity. In line with H3, the indirect effect of agile taskwork practices on employee intrapreneurship through norms for proactivity was significant (estimate = .17, SE = .09, p = .045). Yet, the direct effect was also significant (estimate = .66, SE = .25, p = .009). This indicates that norms for proactivity only partially

mediated the relationship between agile taskwork practices and employee intrapreneurship. Thus, the more the teams practiced agile taskwork, the higher the average employee intrapreneurship in the teams, which was partially due to the norms for proactivity of the teams.

Hypothesis 4 argued that work engagement is a mediator in the relationship between job crafting and in-role performance. In line with H4, job crafting had a direct effect on in-role performance (estimate = .12, SE = .04, p = .005), and an indirect effect on this outcome through work engagement (estimate = .01, SE = .003, p = .030). This finding suggests that work engagement is a mechanism through which job crafting towards strengths and interests may relate to better in-role performance. Given that work engagement and in-role performance were group-mean centered, these findings may imply that engaging in this type of job crafting provided team members an advantage in terms of work engagement and in-role performance, compared to the other members of their team.

Hypothesis 5 stated that work engagement is a mediator in the relationship between employee intrapreneurship and in-role performance. Contrary to H5, employee intrapreneurship neither had a direct (estimate = -.002, SE = .03, p = .947), nor an indirect effect on in-role performance (estimate = .00, SE = .00, p = .948). Moreover, it only had a weak effect on work engagement (estimate = .09, SE = .04, p = .014), when controlling for job crafting and proactive personality. Therefore, H5 did not receive much support. While engaging in employee intrapreneurship may have provided team members a small advantage in terms of work engagement, it did not explain differences in terms of team member's self-rated in-role performance.

Additional analyses

Although we cannot directly test whether norms change due to agile team practices, we can examine how agile team practices and norms might have changed over the course of the agile transformation. Given that the agile transformation focused on implementing agile team practices rather than on changing norms for proactivity, it is conceivable that changes in agile

team practices preceded changes in the team's norm for proactivity. As can be seen in Figure 4, both agile team practices and norms for proactivity seem to increase with each phase of the agile transformation. One way ANOVAs further indicated that there were significant differences between teams belonging to the four phases, in the extent to which they reported using agile team practices ($F(3,110) = 6.39$, $p < .001$) and in how they reported on their norms for proactivity ($F(3,110) = 6.75$, $p < .001$).

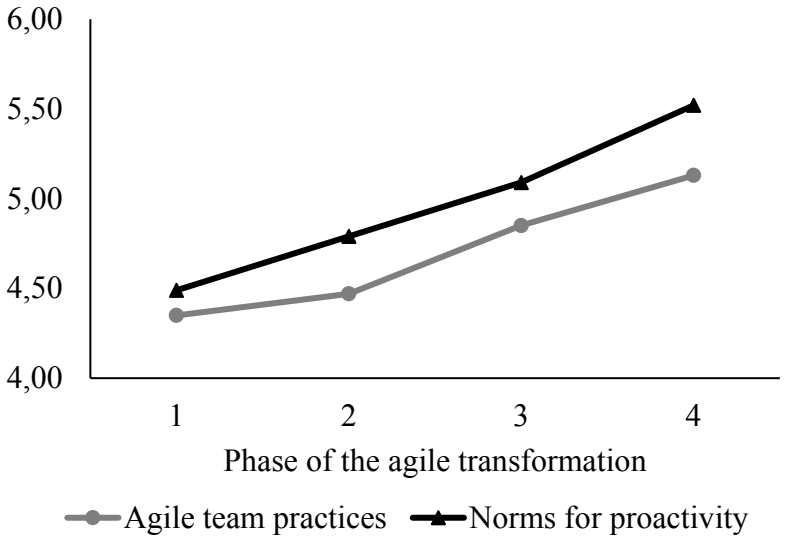


Figure 4. Differences between teams of different phases of the agile transformation.

Furthermore, mediation analyses using PROCESS (Hayes, 2014) revealed that agile team practices partially mediated the effects of the agile transformation on norms for proactivity. The indirect effect of the agile transformation on norms for proactivity through agile team practices was significant (estimate = .16, SE = .05, 95% Bootstrapping CI [.06; .27]), as was the direct effect (estimate = .17, SE = .07, 95% Bootstrapping CI [.04; .31]). These findings may suggest that the use of agile team practices increases with the phases of the agile transformation, which in turn spreads norms for proactivity in the teams. Hence, it is conceivable that the implementation of agile team practices preceded changes in the norms for proactivity of the teams.

Discussion

The present study aimed to develop a new cross-level influence model of proactivity and to validate measures of agile team practice. Before testing our model, we developed a generic "Agile Team Practices Scale" (ATPS) and provided evidence for its factor structure, reliability, and convergent validity in two independent samples. Results of multilevel path analyses largely supported the proposed cross-level influence model and provided evidence for the criterion validity of the ATPS. These findings suggested that agile team practices may help to create a favorable context for job crafting and employee intrapreneurship by promoting shared norms for proactivity in the teams. Although only cross-sectional, our results are in line with the idea that agile team practices function as antecedents of proactive behavior (RQ1).

Yet, not all agile team practices may have this effect, as only agile taskwork practices were significantly related to norms for proactivity, job crafting, and employee intrapreneurship. The more the teams practiced agile taskwork, the higher they rated their norms proactivity, and the more frequently their members engaged in job crafting and employee intrapreneurship. In contrast, agile teamwork practices did not explain significant differences between teams in these variables. Hence, the criterion validities of agile teamwork practices and agile taskwork practices seem to differ with regard to proactivity criteria.

Next, we investigated whether team members can influence their own well-being and performance by engaging in job crafting or employee intrapreneurship (RQ2). We found that the more the team members engaged in job crafting and employee intrapreneurship, the higher they rated their own work engagement relative to the other members of their team. This relationship remained even when controlling for proactive personality, which shows that it is the proactive *activity* that relates to work engagement and that this motivational state is not fully explained by being a more proactive team member in general (cf. Young et al., 2018). Moreover, job crafting additionally had a positive indirect effect on in-role performance through work engagement, whereas employee intrapreneurship did not show such an effect.

Thus, while job crafting comes with benefits for team member's work engagement and in-role performance, employee intrapreneurship only relates to their work engagement.

In what follows, we discuss the main theoretical contributions of our study to the literature on team effectiveness, proactive behavior, and JD-R theory.

Theoretical contributions

Research on team effectiveness. Our research contributes to the literature on team effectiveness by introducing agile team practices as another characteristic that may distinguish closely supervised "traditional teams" from self-managing (Manz, 1992) or autonomous (Taggar et al., 1999) – "agile teams" (Moe et al., 2010). We introduced the ATPS as a measurement instrument for quantitative research on agile teams and evaluated its psychometric properties. The subscales of the ATPS clustered around two higher-order dimensions, which fitted the frequently mentioned taskwork-teamwork distinction from the literature on work teams (Fisher, 2014). Agile taskwork relates to how the team approaches work activities by experimenting with different ideas, adapting to changing circumstances, and granting team members freedom over their work activities. Agile teamwork refers to how the team structures itself internally with respect to timing and socioemotional team activities, by delivering in short iterations, monitoring progress in daily stand-up meetings, and reflecting on previous work in retrospective meetings.

We showed that the more the teams implemented agile practices, the more the teams were endorsing norms that allow for proactive behavior – a crucial determinant of the effectiveness of self-managing teams (Williams, Parker, & Turner, 2010). Previous research suggests that self-managing teams are more effective when such teams are empowered or have a shared sense of potency, meaningfulness, autonomy, and impact (Kirkman & Rosen, 1999). Our research complements these findings, by showing how self-managing teams can enable proactivity, by implementing agile team practices. Interestingly, only agile taskwork practices seem to have this effect, as agile teamwork practices were neither related to norms for

proactivity nor to individual proactive behavior. Agile taskwork practices perhaps signal norms for proactivity more strongly, as these practices seem to imply a learning-oriented and promotion-focused approach to tasks (cf. Meyer, Becker, & Vandenberghe, 2004). When a team approaches tasks in an agile way, it quickly tries to develop a prototype or pilot version of the final work output and successively refines it together with clients or customers (Rigby et al., 2016; So, 2010; Tripp et al., 2016). Such an approach is in itself proactive, as it involves future-focused and change-oriented action (cf. Bindl & Parker, 2010). Team members may infer from agile taskwork practices, that proactive behavior is crucial for the effectiveness of their team, which reinforces the norms for proactivity (cf. Feldman, 1984).

In contrast, agile teamwork practices are less indicative of proactivity because they focus more on the team itself and require less personal initiative than, for example, seeking feedback from customers or refining a prototype. Instead, agile teamwork practices may relate more strongly to other social influence processes such as team monitoring (Marks et al., 2001) or team reflexivity (Schippers et al., 2007). Such processes are also important for team effectiveness, especially for self-managing teams (Manz, 1992; Stewart et al., 2011). For example, Langfred (2004) showed that the performance of such team suffers when high levels of individual autonomy are coupled with low levels of team monitoring. Without monitoring team members' progress, agile teams may be more prone to coordination loss and errors than closely supervised teams. Thus, even though they were not predictive of the outcomes of our study, agile teamwork practices may still fulfill an important function for the effectiveness of agile teams. Future research may further investigate what role agile teamwork practices play for team effectiveness.

The ideas that have been forwarded by the agile manifesto (Beck et al., 2001) and that were applied by the teams in the form of agile team practices are not inherently new (Merisalo-Rantanen, Tuunanen, & Rossi, 2005). Similar ideas have been formulated already more than 50 years ago in writings on sociotechnical systems theory (STS; Trist, 1981; Trist & Bamforth,

1951) or the job characteristics model (JCM; Oldham & Hackman, 1976). Nevertheless, agile team practices are more than "old wine in new bottles" (cf. Merisalo-Rantanen et al., 2005), because they offer a common language and specific instructions for team members to use these ideas in practice. Moreover, agile team practices are tailored to the specific needs of teams working in VUCA environments (Rigby et al., 2016), which are drastically different from the industrial economy that prevailed at the time STS or JCM were formulated (Bennett & Lemoine, 2014). At the same time, this strength may be a limitation of agile team practices, as not all of these practices (e.g., experimentation or task choice) seem suitable for teams working in highly formalized environments or in contexts where mistakes have detrimental consequences (e.g., surgical teams or flight-cabin crews).

Research on proactive behavior. Our findings also contribute to the relatively scarce research on how collective team-phenomena affect individual proactive behavior (cf. Cai et al., 2019). With our cross-level influence model of proactivity, we proposed a framework for more empirical research on this topic. The results of multilevel path analyses provided support for this model and showed how collective phenomena such as agile team practices may translate to individual proactive behavior by promoting shared norms for proactivity in the team. By bringing attention to the role of social influence processes, we complement the established proactive motivation model (Parker et al., 2010) and JD-R theory (Bakker & Demerouti, 2018) with a social psychological perspective (Salancik & Pfeffer, 1978). Social influence processes such as norms (Ehrhart & Naumann, 2004), behavior modelling (Bandura, 2012), and emotional contagion (Bakker, Emmerik, & Euwema, 2006) likely have a powerful impact on "reason-to", "can-do", or "energized-to" proactive motivation. In the present study we focused on the role of norms, as they might be affected by the values (Gupta et al., 2019) and typical behaviors (So, 2010) that come with implementing agile team practices.

Additional analyses suggested that with the phases of the agile transformation, norms for proactivity and the use of agile team practices seem to increase. Although we cannot

demonstrate what came first, from a theoretical perspective it seems more likely that norms would follow from agile team practices, rather than vice versa (Ehrhart & Naumann, 2004; Feldman, 1984). While, norms refer to *implicit* rules or standards (Cialdini & Trost, 1998), agile team practices refer to *explicit* instructions for working together as a team (So, 2010; Tripp et al., 2016). According to Feldman (1984), norms develop through explicit statements from supervisors or coworkers or critical events in the team's history. The agile transformation certainly represented a critical event in the team's history and also introduced explicit guidelines on how the teams are expected to work. Given that the agile transformation focused on implementing agile team practices and not directly on norms for proactivity, it is conceivable that the use of agile team practices preceded the development of norms for proactivity.

Norms for proactivity only partially mediated the relationships between agile taskwork practices and job crafting or employee intrapreneurship. This suggests that there may be other mediators present (e.g., job characteristics related to agile taskwork) or that more specific norms could have stronger mediating effects. We measured prescriptive norms for proactivity based on the personal initiative construct (Fay & Frese, 2001). If we had measured prescriptive norms for job crafting or employee intrapreneurship, we may have found stronger mediating effects, as there is unique variance in the two proactive behaviors that is not explained by generic norms for proactivity. To the best of our knowledge, this is the first study to show that *prescriptive* norms for proactivity relate to individual proactive behavior. A previous study by Tims et al. (2013) found that team norms for job crafting relate to individual job crafting, yet norms for job crafting in their study were captured *descriptively* (cf. Ehrhart & Naumann, 2004). Tims and colleagues measured norms by shifting the referent from individual job crafting (e.g., "I ask others for advice") to the team (e.g., "My team asks others for advice"). This approach might capture behavior modelling (Bandura, 2012) more strongly than the social proof (Deutsch & Gerard, 1955) or compliance mechanisms (Cialdini & Trost, 1998) that are central to *prescriptive* norms.

Research on JD-R theory. Finally, our research replicated and extended findings in line with the propositions of JD-R theory (Bakker & Demerouti, 2017, 2018). We replicated research showing that employees can influence their own work engagement by engaging in job crafting (Tims et al., 2013, 2015; Vogt et al., 2016) or employee intrapreneurship (Gawke et al., 2017, 2018). We extended these findings by demonstrating that these effects also hold within teams, as team members who more frequently crafted their jobs or undertook intrapreneurial activities had higher levels of work engagement compared to the other members of their team. Moreover, previous studies mainly examined only one proactive behavior at the time, while theory and evidence suggest that proactivity constructs are strongly correlated (Parker & Collins, 2010; Tornau & Frese, 2013). Our findings show that job crafting and employee intrapreneurship have unique relationships with work engagement, which go beyond what can be explained by the other construct and proactive personality. Thus, job crafters or intrapreneurs are not only more engaged because they are more proactive (engaged) individuals in general, but also because they create optimal working conditions for themselves, as proposed by JD-R theory (Bakker & Demerouti, 2017, 2018).

It should be noted that employee intrapreneurship had a considerably weaker relationship with work engagement and that it was unrelated to in-role performance in our study. Hence, this proactive strategy comes with less personal benefits for employees and may, in reality, be associated with certain personal costs (e.g., exhaustion, work avoidance), as suggested by Gawke et al. (2018). Yet, their study still found a positive indirect effect of employee intrapreneurship on in-role performance through work engagement, which was not significant in our study. It may be that in our sample the performance costs of employee intrapreneurship have equaled-out the performance benefits, especially since we additionally controlled for job crafting. Another potential explanation could be differences in the measurement of in-role performance, as we used self-ratings, while Gawke et al. (2018) used colleague-ratings. Perhaps intrapreneurs themselves do not have the impression that they

complete their core tasks better than others, while their colleagues perceive them as more capable of completing their core tasks because intrapreneurs are more positively engaged in their work (cf. Grant et al., 2009).

Lastly, our study is the first to demonstrate the potential benefits of job crafting *towards strengths and interests* for team members' work engagement and in-role performance. The majority of the job crafting research has examined job crafting along the generic dimensions seeking job resources, seeking challenging job demands, and reducing hindering job demands (Petrou et al., 2012; Tims et al., 2012; Zhang & Parker, 2018). Kooij et al. (2017) introduced job crafting towards strengths and interests, in order to incorporate positive psychological principles into the job crafting concept. Interventions based on these principles have shown that people can increase their own well-being when being asked to use their personal strengths in a novel way – at work (Forest et al., 2012) or in daily life (Seligman, Steen, Park, & Peterson, 2005). The results of the current study show that employees frequently apply this strategy on their own initiative, especially when working in teams practicing agile taskwork, because these teams share norms that allow for this behavior. Moreover, team members who applied this job crafting strategy more frequently had an advantage in terms of work engagement and in-role performance compared to the other members of their team.

Limitations and future research

Despite the promising results, our research does not come without limitations. Firstly, our cross-sectional survey design does not allow for conclusions regarding causality. For example, it is conceivable that teams with higher norms for proactivity are more prone to use agile team practices, and that engaging in job crafting or employee intrapreneurship changes the team's norms for proactivity over time (cf. Ehrhart & Naumann, 2004). Nevertheless, we based the directions of the relationship on general multilevel theorizing, which states that team behavior generally has a larger effect on individual behavior than vice versa (Kozlowski & Klein, 2000), and that the effect of individuals on the team only becomes apparent only slowly

over time (Chen & Kanfer, 2006). Future research may attempt to examine these more complex relationships in longitudinal studies and may additionally consider potential negative consequences of agile team practices, such as heightened workload, peer pressure, or exhaustion (cf. Barker, 1993).

Secondly, given that our data comes from the same source (i.e. team members), the strength of the relationships could be inflated due to common-method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). To some extent, our use of multilevel path analyses may have reduced this bias, as part of the common method variance might be explained by the team membership of the respondents, which we controlled for in our analyses. Common method bias could be further reduced in the future by including other reports of certain variables (e.g., observer ratings) or by separating the measures in time (e.g., longitudinal or diary design).

Thirdly, it is not clear whether the findings of our multilevel path analyses generalize to other populations of employees and teams. The organizational context of the study was quite unique, most of the participants were IT-professionals, male, and highly educated. We cannot ascertain that our findings apply equally to other occupational groups or teams with lower task interdependencies. Future research may seek to cross-validate our model and the factor structure of the ATPS in organizational contexts outside the IT-sector, or by including teams from multiple organizations.

Practical implications

The results of the present study suggest that organizations operating in VUCA contexts may benefit from complementing or replacing traditional management approaches with agile team practices, in order to increase employee proactivity. Despite our promising results, we would like to point out that agile team practices are certainly not a panacea and that they should not be taken as an end in themselves. Instead, we suggest that agile team practices are a tool for stimulating proactivity and that they are only sustainable if they come with benefits for employees *and* the organization. Organizations could support employees in taking advantage

of the benefits of agile team practices by offering job crafting interventions, such as the one described by Kooij et al. (2017). At the same time, we advise teams to establish "rules for job crafting", as this behavior may bring benefits for individuals but can go at the costs of their colleagues, especially when tasks are left undone or conflicts emerge due to this behavior (Tims, Bakker, & Derks, 2015b).

Conclusion

Agile team practices, particularly agile taskwork practices, are positively associated with employee's proactive behavior. This can be explained by the social norms that agile taskwork practices promote, which in turn motivate team members to take initiative and actively attack work problems. Therefore, these practices may be regarded as tools for stimulating employees to engage in proactive behavior, which is thought to be a key resource for organizational survival in VUCA contexts (Crant, 2000). Moreover, proactive behavior also holds benefits for employees, as job crafting and employee intrapreneurship are positively associated with work engagement – a key driver of job performance (Demerouti & Cropanzano, 2010).

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Appendix 1: Pilot Study

Participants of the pilot study

The majority of participants (51.6%) had been a member of their current team for more than 12 months. Most of them (53.4%) worked more than 20h (i.e. fulltime) in their current team. Team types were varied with an approximately equal number of participants working in production/service teams, consulting/advice teams, or project teams. Only 20 participants (12.6%) indicated that they work in a management team. Most of the participants were regular team members (57.7%), followed by functional team leaders (26.9%), and team coaches (15.4%). On average participants indicated that they experienced moderate to high-levels of task interdependence in their job (mean of 3.8 on the 5-point scale by Campion & Medsker, 1993). Taken together, these findings suggest that the sample adequately fitted the target population (i.e. employees working in teams).

Moreover, the sample was balanced in terms of gender (44% female) and the age distribution was similar to the general working population (55% were between 25 and 45 years old). The majority of the participants were highly educated (78% had Bachelor's degree or higher) and worked in the following sectors: logistics/transportation (13.8%), IT (13.2%), construction (10.1%), education (5.2%), professional/scientific services (5.2%) finance/insurance (5%), public administration (4.4%), health care (2.5%), food/accommodation services (1.9%), management of companies (1.3%), other sectors or no answer (37.4%). Furthermore, 34 participants filled out the survey in English (21.4%). All of them indicated that it was "easy" or "very easy" to fill out the English survey. Among the respondents to the English survey were 10 native speakers, 4 Dutch, 3 Chinese, 2 Indonesian, 1 Greek, 1 French, 1 Italian, and 1 Lithuanian respondent (the remaining 11 did not indicate their native language). Taken together, the sample was sufficiently heterogeneous to develop a generic scale measuring agile team practices irrespective of demographic variables or work content.

Sampling adequacy test

Although the sample size was relatively small for the number of new measures, it reaches the minimum requirements mentioned in Hinkin (1995). Moreover, it has been pointed out that with sufficient communalities among the items, even with small sample sizes good estimates of population parameters for factor loadings can be obtained (Hong, MacCallum, Widaman, & Zhang, 1999). Moreover, the Kaiser-Meyer-Olkin measure (.96) and Bartlett's test of sphericity ($\chi^2 = 3732.85$, df = 528, $p < .01$) indicated that our data is adequate for factor analyses.

Factor extraction

The 41 items of the initial item pool were submitted to principle factor analysis (PAF) in IBM SPPS Statistics 25. PAF was used instead of maximum likelihood or principle component analysis, because it is free of distributional assumptions and less prone to improper solutions. Based on the Scree plot and eigenvalues, five factors were extracted, which together explained 58% of the variance.

Table 1
Factor extraction pilot study.

	Initial Eigenvalues		
Factor	Total	% of variance	Cumulative %
1	12.80	31.22	31.22
2	3.77	9.19	40.42
3	2.76	6.73	47.15
4	2.58	6.29	53.45
5	2.04	4.98	58.43
6	1.26	3.08	61.51
7	1.20	2.92	64.43
8	1.12	2.73	67.16
9	1.01	2.47	69.63

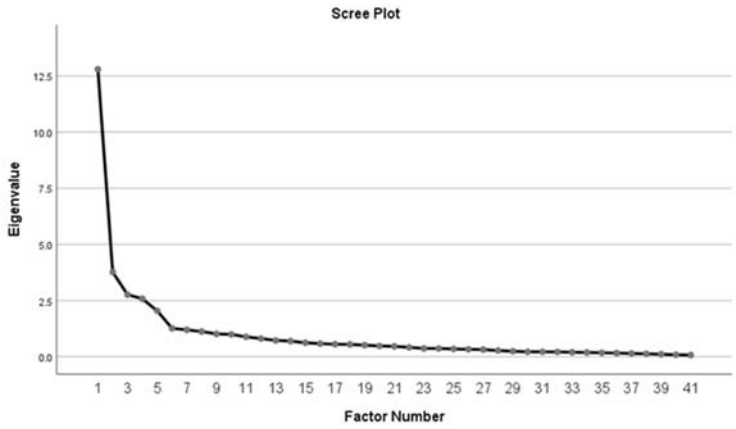

Figure 1. Scree plot pilot study.

Factor rotation and loadings

We performed oblique rotation on the items and examined the pattern matrix to eliminate items with small loadings (< .35) or high cross-loadings on a non-hypothesized factor. Based on this criterion, six items were eliminated. Another two items were eliminated because they were not adding meaningful information to the scales. See table 2 for the items of the ATPS after Stage 1, together with factor loadings and alpha reliability values.

Table 2
ATPS pattern matrix, based on principle axis factoring for the pilot survey data.

	Factor				
Scale	1	2	3	4	5
Iterative development (α = .83)					
We develop a prototype/pilot before layering out plans.				.53	
We quickly adapt our approach to changing requirements.				.52	
We regularly ask customers/clients for feedback on the progress of our work.				.60	
We refine our initial ideas successively.				.61	
We frequently check whether the demands of our customers/clients have changed.				.71	
When we start working on an assignment, we often do not know how the final product will look like.				.66	
We experiment with different ideas before settling on an approach.				.63	
Short iterations (α = .89)					
We plan our tasks in short cycles.			.67		
We limit the duration of our work cycles to less than 1 month.			.76		
We try to reduce uncertainties by keeping work cycles short.			.81		
We try to increase flexibility by keeping work cycles short.			.72		
We plan our work activities in short sequences.			.64		
Iteration planning (α = .82)					
We agree together with our customers/clients on what will be delivered.					.50
We estimate the amount of time/effort each feature of an assignment will require.					.62
We give input regarding how much work can be completed.					.62
We agree together on our goals in the team.					.50
We distribute tasks according to the preferences of all team members.					.64
We can choose those tasks that best fit our strengths and interests.					.48
We agree together on how to get the work done.					.39

Note: Responses were given on a 5-point Likert scale from 1 (*disagree*) to 5 (*agree*).

Table 2 continued

Stand-up meeting (α = .96)		
We have a short meeting, to inform each other about what we are working on.	.78	
We have a short meeting, to inform each other about relevant issues.	.80	
We have a short meeting, to discuss new developments in our tasks.	.85	
We have a short meeting, to discuss impediments that hinder us from completing our tasks.	.80	
We have a short meeting, to discuss the progress of our work.	.84	
We have a short meeting, to discuss changes in our tasks.	.86	
We have a short meeting, to discuss difficulties in our tasks.	.86	
Retrospectives (α = .91)		
We take time, to discuss ways to improve team performance.		.62
We take time, to appreciate each other for our efforts.		.67
We take time, to talk about what went well in the team.		.87
We take time, to discuss about our work processes.		.77
We take time, to improve the social dynamics inside the team.		.76
We take time, to critically reflect on our work activities.		.80
We take time, to discuss feedback from our customers/clients.		.55

Note:
Response format stand-up meeting: 1 (*once a month or less*) 2 (*few times a month*) 3 (*once a week*) 4 (*few times a week*) 5 (*daily*)
Response format retrospectives: 1 (*once a year or less*) 2 (*few times a year*) 3 (*once a month*) 4 (*few times a month*) 4 (*weekly*)

Appendix 2: Main Study

Table 1
ATPS pattern matrix, based on principle axis factoring with team-average / individual data.

	Factor					
Scale	1	2	3	4	5	6
Experimentation (α = .87 / .77)						
We develop a prototype/pilot before layering out plans.					.81 / .71	
We experiment with different ideas before settling on an approach.					.74 / .67	
We test our initial ideas before specifying details.					.89 / .74	
Adaptation (α = .81 / .77)						
We regularly ask customers/clients for feedback on the progress of our work.						.65 / .69
We refine our initial ideas successively.						.54 / .58
We frequently check whether the demands of our customers/clients have changed.						.77 / .68
Task choice (α = .83 / .74)						
We clarify the responsibilities together as a team.				.78 / .66		
We distribute tasks according to the preferences of all team members.				.96 / .78		
We can choose those tasks that fit our strengths best.				.60 / .67		
Short iterations (α = .96 / .92)						
We plan our tasks in short cycles.	.74 / .74					
We limit the duration of our work cycles to less than 1 month.	.84 / .80					
We try to reduce uncertainties by keeping work cycles short.	.94 / .86					
We try to increase flexibility by keeping work cycles short.	.95 / .87					
We plan our work activities in short sequences.	.92 / .89					

Note: Responses for experimentation, adaptation, task choice, and short iterations were given on a 7-point Likert scale from 1 (*fully disagree*) to 7 (*fully agree*).

Table 1 continued

Stand-up meetings (α = .95 / .90)			
We have a short meeting, to inform each other about what we are working on.	.86 / .72		.86 / .72
We have a short meeting, to discuss new developments in our tasks.	.89 / .75		.89 / .75
We have a short meeting, to discuss impediments that hinder us from completing our tasks.	.95 / .90		.95 / .90
We have a short meeting, to discuss changes in our tasks.	.80 / .77		.80 / .77
We have a short meeting, to discuss difficulties in our tasks.	.87 / .88		.87 / .88
Retrospective meetings (α = .92 / .88)			
We take time, to appreciate each other for our efforts.		.70 / .68	
We take time, to talk about what went well inside the team.		.82 / .78	
We take time, to discuss about our work processes.		.80 / .80	
We take time, to improve the social dynamics inside the team.		.86 / .79	
We take time, to critically reflect on our work activities.		.90 / .81	

Note: Responses for stand-up meetings and retrospective meetings were given on a 7-point frequency scale:
1 (*almost never*) 2 (*few times a year*) 3 (*once a month*) 4 (*few times a month*) 5 (*once a week*) 6 (*few times a week*) 7 (*daily*)

Table 2
Pattern matrix of the subscale scores for team-average / individual data.

	Factor	
Indicators	1	2
Experimentation	.60 / .57	
Adaptation	.73 / .62	
Task choice	.45 / .42	
Short iterations	.41 / .29	.49 / .51
Stand-up meetings		.77 / .64
Retrospective meetings		.53 / .49

Table 3
PCA on the items of the norms for proactivity scale for team-average / individual data.

Item	Factor loading
Team members encourage each other…	
…to take initiative	0.93 / .90
…to actively attack problems	0.94 / .90
…to engage in proactive behavior	0.93 / .91
…to realize new ideas	0.91 / .87
…to act entrepreneurially	0.83 / .78
…to realize change	0.91 / .87

Table 4
Intra-class correlations, between-level variances, and r_{wg}.

Variable	ICC1	ICC2	$S^2_{between}$	r_{wg}
1. Agile taskwork	0.28	0.62	0,19**	0.91
2. Agile teamwork	0.56	0.84	0,43**	0.95
3. Norms for proactivity	0.26	0.60	0,31**	0.92
4. Job crafting	0.18	0.48	0,09**	0.94
5. Employee intrapreneurship	0.22	0.54	0,31**	0.84
6. Work engagement	0.13	0.39	0,10*	0.93
7. In-role performance	0.12	0.36	0,04**	0.92
8. Proactive personality	0.11	0.34	0.05	0.88

Note: ** $p < .01$, * $p < .05$