From Job Resources to Idea Implementation: A Moderated Sequential Mediation Model

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Abstract

Considering the motivational path of the Job Demands-Resource (JD-R) model, this study investigates a multi-step process by which contextual job resources might have an indirect effect on idea implementation. Among 187 shop floor employees of a manufacturing company, we found support for a model whereby job control has an indirect effect, over a five-month time frame, on idea implementation through employee work engagement and personal initiative. In addition, we found that the indirect effect of job control on idea implementation is stronger when employees have a higher conformity orientation. Support was not found for the hypothesized indirect effect of coworker social support on idea implementation. Our findings support the usefulness of the JD-R theory for understanding how increased idea implementation occurs at work, especially when the additional factors of personal initiative and employee conformity orientation are integrated into the model.

Keywords: idea implementation, work engagement, personal initiative, conformity orientation, Job Demands-Resource theory

Introduction

Idea implementation occurs when an idea that is considered new and useful is applied within the work setting (Holman et al., 2012). When new ideas are not implemented, there are a number of potential negative consequences at multiple organizational levels. These potential consequences motivated our study. For example, continued failure to implement new ideas might have a cumulative effect over time, whereby an organization's ability to be competitive and effective is impeded (Choi & Chang, 2009). In addition, extensive time, effort, and resources are invested as ideas make their way from the generation to the implementation stage, but such investment is wasted when ideas are not implemented. Also, when employees' ideas are not implemented, it is less likely they will experience "implementation instrumentality" (Baer (2012), anticipation of positive outcomes for implementation efforts. Lack of such anticipation, is likely to decrease motivation for further innovative work behavior (Amabile & Pratt, 2016).

The body of research on idea implementation has not advanced to the degree we would expect given its relevance (Baer, 2012). Part of the problem is the assumption that once ideas are generated, they will be automatically implemented (Magadley & Birdi, 2012). Another issue is that the distinction between idea generation and idea implementation is not adequately recognized (Potocnik & Anderson, 2016), resulting in numerous studies combining the two innovative behavior types into a single criterion (cf. Montani et al., 2020; Yuan & Woodman, 2010), or posing hypotheses asserting that factors affect both idea generation and idea implementation in the same manner (cf. Dediu et al., 2018). Such propositioning is problematic in that idea implementation and idea generation are distinct processes, and factors conducive to

one are often at odds with those conducive to the other (Axtell et al., 2006; Magadley & Birdi, 2012).

Although a small number of studies focusing specifically on idea implementation tested a variety of job, team and organizational level predictors (e.g., Agarwal & Farndale, 2017; Axtell et al., 2006; Daniels et al., 2011; Dediu et al., 2018; Donati et al., 2016; Magadley & Birdi, 2012), they lack an overarching theoretical framework that connects them in a meaningful way. Also, a general takeaway from this research is that idea implementation is shaped more by contextual factors (Axtell et al., 2000; Baer, 2012), despite recent findings (see Agarwal & Farndale, 2017; Baer, 2012) suggesting individual attributes are relevant for idea implementation as well. Finally, while motivation for idea generation has been widely studied (Liu et al., 2016), relatively little research has examined employee motivation related to idea implementation. Research linking the two concepts has tended to focus on implementation-related outcomes, as opposed to the extent to which ideas were actually implemented. For example, Cadwallader, Jarvis, Bitner, & Ostrom, (2010) studied if various forms of employee motivation were associated with front line employees' recommendations of a service innovation to customers. Chen, We, & Chen, (2010) looked at whether intrinsic and extrinsic motivation were associated with behavior such as finding necessary funds and developing schedules for the implementation of ideas.

The issues noted above are worrisome for theoretical and practical reasons. Theoretically, it means we do not have a clear understanding of how and why successful idea implementation occurs, and what its boundary conditions are. From a practical perspective, this lack of

understanding limits our ability to make recommendations to organizations and their managers about strategies to foster idea implementation at work.

In response, the goal of this study is to test a model that might account for the occurrence of idea implementation at work. Relying on the motivational process posited by the Job Demands-Resources (JD-R) theory (Bakker & Demerouti, 2017, 2018) as our conceptual framework, we test a model in which the contextual factors of job control and coworker social support relate to employee work engagement, which in turn relates to personal initiative linked with idea implementation. We also test whether the indirect effects involved are moderated by conformity orientation. The proposed relationships are depicted in Figure 1.

--- Insert Figure 1 about here---

We aim to make a number of unique contributions to the literature. First, based on the JD-R theory, we test a motivational mechanism that ties the contextual factors of job control and coworker social support to idea implementation. Because the proposed mechanism involves two sequential mediators, work engagement and personal initiative, it could provide a complex and realistic view of how motivation for idea implementation occurs. Second, by examining the role of employee conformity orientation as a moderator, we provide support for the notion (cf. Baer, 2012) that employee attributes have pivotal roles for idea implementation, and that the 'counter-intuitive' employee trait of conformity may be influential for certain types of innovative behavior (cf. Madjar et al., 2011). It also provides insight to a boundary condition affecting whether employee personal initiative will be associated with idea implementation. Building theory around idea implementation in this manner augments our capacity to understand how successful idea implementation comes about. It also provides a basis for differentiating factors

associated with idea implementation from factors associated with idea generation (Magadley & Birdi, 2012). Third, we show that the JD-R theory is a useful framework for understanding the complexities of idea implementation (Kwon & Kim, 2020). In this regard, our study contributes to expanding the set of performance outcomes that can be investigated with the JD-R theory. Finally, by conducting a time-lagged field test focused explicitly on idea implementation using supervisor-provided criterion data, we go beyond previous cross-sectional studies that relied on employee self-reports, as well as studies not differentiating idea implementation from other innovative behaviors. In combination, these steps provide a more targeted and rigorous examination of idea implementation in a work setting.

Theoretical Background

While the JD-R model was initially designed to explore the effect of job demands on employee stress and health problems, it was later revised to include the motivational component of work engagement (Schaufeli & Taris, 2014) and its effects on a myriad of important employee outcomes (Bakker & Demerouti, 2017). We chose the JD-R theory (Bakker & Demerouti, 2017, 2018) as our study's theoretical framework for the following reasons. First, idea implementation refers to the process of converting new and useful ideas "into new and improved products, services, or ways of doing things" (Baer, 2012, p. 1102) and is considered a key indicator of job performance in current organizations (Janssen, 2000). Because the JD-R theory (Bakker & Demerouti, 2017, 2018) considers job performance as the ultimate outcome, the model offers clear guidelines about relevant antecedents of job performance indicators. It has also been used in a small number of studies on innovative behavior (see Dediu et al., 2018; Montani et al., 2020), although these studies did not focus specifically on idea implementation.

Second, the JD-R theory considers a motivational process connecting job resources to motivation and improved job performance (Bakker & Demerouti, 2017). Job resources are those physical, social, and organizational aspects of the job that are functional in achieving work goals, and stimulating personal growth, learning, and development (Bakker & Demerouti, 2017). Job resources initiate a motivational process because they provide meaning and satisfy employees' basic needs. Thus, "job resources are motivating and contribute positively to work engagement," which in turn positively relates to job performance (Bakker & Demerouti, 2018, p. 2). Because we were interested in identifying factors that contribute to increasing idea implementation, the motivational process involved in the JD-R theory provided more specific theoretical guidance to inform our research model.

In our study, we decided to focus on the resources of job control and social support. Job control concerns autonomy to make work-related decisions and flexibility in deciding which task skills to utilize. Social support concerns employees feeling cared for (socioemotional support) and having assistance available when needed (instrumental support) (Karasek et al.,1998). We focused on work engagement (a heightened sense of energy, enthusiasm about the content of the job and feelings of immersion in one's job; Bakker & Demerouti, 2017) because it is a key motivational state within the JD-R theory. We included personal initiative, a "behavior syndrome" in which individuals take a self-starting approach to work and go beyond formal job requirements (Frese & Fay, 2001), because it may be an antecedent of idea implementation (Binnewies & Gromer, 2012).

Employee attributes that facilitate resilience, adaptation to the environment, and effective performance are considered personal resources within the JD-R framework, (Schaufeli & Taris,

2014). Conformity orientation is a personal attribute characterized by the tendency to act in accordance with prevailing social standards and practices (Miron et al., 2004) and to seek solutions and solve problems using tried and understood ways (Kirton, 1976). Because they are considered reliable (Kirton, 1976), sensitive to norms and expectations, and adept at facilitating team coordination and information sharing (Kaplan et al., 2009), individuals with a conforming orientation may be more successful at adapting to their work environment and performing effectively in that context. These same characteristics should also facilitate idea implementation (Miron-Spektor et al., 2011). Bakker and Demerouti (2017) note that personal resources may play key moderating roles in the JD-R theory. Based on this assumption, we included conformity orientation as a personal resource that moderates the indirect effect of job control and coworker social support on idea implementation.

Hypotheses Development

Relationships between job resources and work engagement

Job control and social support are considered two key job resources within the JD-R framework (Bakker & Demerouti, 2017; Schaufeli & Taris, 2014). We chose coworkers as a source of social support because due to their proximity, they are likely to be a more consistent source of interaction opportunities and support. Job control and coworker social support are motivational in the sense that over time they stimulate learning and personal growth, and provide rewarding interactions, which have all been linked to engagement (Bujacz et al. 2017; Hakanen et al., 2019). Greater job control provides the latitude needed to achieve work goals and should trigger the sense that one makes a difference, leading to enhanced work engagement (Schaufeli & Taris, 2014). Because job control and social support can meet basic needs for autonomy and

relatedness, they are also considered intrinsically motivating and, thus, linked to work engagement (Schaufeli & Taris, 2014). A number of studies have found support for the relationship between both job control and social support and work engagement (e.g., Adriaenssens et al., 2017; Bujacz et al., 2017; Hakanen et al., 2019). The two resources have also been linked to employee innovative behavior (Hammond et al., 2011).

Relationship between work engagement and personal initiative

Work engagement is a motivational state engendering heightened levels of focus and behavioral investment (Schaufeli & Bakker, 2004). Therefore, it should foster the self-starting, proactive behavioral pattern of personal initiative (Salanova & Schaufeli, 2008). A few studies found that engaged employees are inclined to be proactive in their daily work (e.g., Hakanen et al., 2008; Salanova & Schaufeli, 2008). Since the impact of job resources on performance may be explained by their positive effect on employees' sense of responsibility (Bakker & Demerouti, 2017), inclusion of personal initiative into a JD-R framework seems warranted.

Relationship between personal initiative and idea implementation

Because personal initiative prompts employees to proactively solve work-related problems and anticipate future opportunities to be more effective in their work (Frese & Fay, 2001), it should encourage employees to develop ideas that can be implemented in order to solve problems and materialize opportunities. Moreover**,** because individuals with high personal initiative are more goal-oriented and persistent, they should be more inclined to put ideas into practice (see Binnewies & Gromer, 2012).

The indirect effect of job resources on idea implementation

Building on the arguments presented above and using the JD-R theory as a guiding theoretical framework, we believe that a pattern of inter-relationships will be evidenced whereby both job control and coworker social support have motivating effects that should associate with enhanced work engagement (Hakanen et al., 2019). Further, since work engagement should relate to enhance behavioral investment (Schaufeli & Bakker, 2004), it should connect to personal initiative that we expect will link to ideas likely chosen for implementation. Thus, we propose the following hypotheses:

H1: Job control will have a positive, indirect effect on idea implementation via the sequential mediators of work engagement and personal initiative;

H2: Coworker social support will have a positive, indirect effect on idea implementation via the sequential mediators of work engagement and personal initiative.

The moderating role of conformity orientation

Employees with a high conformity orientation tend to be more in tune with the specific needs and requirements of their work unit and focus on practical considerations relevant to the implementation of novel ideas (Kaplan et al., 2009). Because they also are sensitive to prevailing norms and how others will respond to new ideas, they are likely to generate ideas that can be more easily accepted, supported, and implemented (Madjar et al., 2011, Miron-Spektor et al., 2011). A conformity orientation may also position employees to capitalize on diverse information and resources from their social connections (Zhou et al., 2009), which may make idea implementation easier and more successful. Frese and Fay (2001) note that because strong, personal initiative can manifest in self-serving ways (Frese & Fay, 2001), it is important to identify factors that direct personal initiative towards activities that are of "functional value" to

the work group or organization (Frese & Fay, 2001). Employees with a high conformity orientation have the characteristics that incline them to provide such "functional value" in terms of potentially implementable ideas. Thus, we posit that the positive relationship between personal initiative and idea implementation will be stronger when employee conformity orientation is high (vs. low).

Considering the sequential mediated relationship proposed in Hypothesis 1, and the proposed moderator role of conformity orientation, we posit a conditional indirect effect whereby the indirect effect of the two job resources on idea implementation is moderated by employee conformity orientation. Specifically, we formulate the following hypotheses:

H3: The positive, indirect effect of job control on idea implementation via the sequential mediators of work engagement and personal initiative will be moderated by conformity orientation, such that the indirect effect will be stronger when conformity orientation is high than when it is low.

H4: The positive, indirect effect of coworker social support on idea implementation via the sequential mediators of work engagement and personal initiative will be moderated by conformity orientation, such that the indirect effect will be stronger when conformity orientation is high than when it is low.

Method

Research Setting, Sample and Procedure

The current study was carried out in a medium-size Italian manufacturing company that produced cables, gears, rotors and transmissions for a variety of industrial uses. Although innovation was not a formal component of lower-level employees' job descriptions, management

had communicated to these employees that their ideas concerning new or improved process or production-related issues would be beneficial to the company. Survey was our primary data collection method. We also initially conducted some manager interviews and shop floor observations to understand aspects such as the nature of jobs, workflow, coworker interactions, forms of job control, and other factors that appeared relevant for idea implementation. Limited data on employee ideas that had been implemented were also collected. Some examples of implemented ideas included tool and production machine design improvements, new methods for loading raw materials into machines, more effective logistic materials flow within the plant, task redesign, as well as ways to reduce various production costs and wastes.

Based on previous studies examining job resources, work engagement and outcomes (e.g., Hakanen et al., 2008), we used a time-lagged design, collecting survey data at two points spread five months apart. The 260 employees conducting jobs along the production line such as hobbing, shaping, planing, and milling, were invited to take part in the study. Participation was limited to employees conducting work that belonged to the same job family and was similar in terms of basic job characteristics including job control, opportunities for coworker interaction, and creativity requirements. Study participation was voluntary. Surveys were administrated during normal working hours in on-site sessions held by the first author for both time periods. We collected 241 usable surveys at Time 1 (T1), and 218 at Time 2 (T2), resulting in 209 matched T1 and T2 surveys for a response rate of 80.38%. Employees provided data on job control, coworker social support, conformity orientation, and demographics at T1. Because engagement is a relatively fluctuating state (Bujacz et al., 2017) that can have more immediate effects (Bledow et al., 2011), we measured both engagement and personal initiative at T2.

Immediate supervisors provided criterion data at T2 for each of their employees. The first author talked with supervisors to clarify the criterion, conveying that we were only interested in the extent to which employees had produced new and useful ideas that had actually been implemented in the work setting. Participating supervisors had at least one year supervising the employees they were rating. The eligible 20 supervisors rated, on average, 9.35 employees (SD = 7.82) resulting in 187 usable employee surveys. The final sample was 82.9% male, had an average age of 44.28 years (SD = 8.29) and 15.36 years (SD = 10.55) of company tenure. Initial data screening analyses conducted revealed no difference in terms of demographics and other measured variables between employees responding to both T1 and T2 surveys, and those responding to the T1 survey only.

Measures

When possible, we used measures previously tested in the Italian context. Otherwise, we followed Brislin's (1986) procedure in which English versions of measures were translated into Italian and then back-translated into English by two bilingual authors. Based on feedback from managers, a few, additional modifications were made to the wording of some measure items to account for relevance and appropriateness in their context. All measures used seven-point Likert types scales (with 1 = completely disagree, never to 7 = completely agree, always).

Job control and coworker social support. Job control and coworker social support were assessed with Karasek's (1985) Job Content Questionnaire subscales. Job control was measured using three items assessing decision authority (e.g., "My job allows me to make a lot of my own decisions"), and four items assessing skill discretion (e.g., "My job allows me to develop specific skills/abilities"). Coworker social support was assessed with four items tapping both the socio-

emotional (e.g., “The people I work with have established a personal relationship with me”) and instrumental (e.g., “The people I work with help me get the job done”) components of support.

Work engagement. Following other JD-R studies (e.g., Simbula et al., 2011; Salanova & Schaufeli, 2008), we used the vigor and dedication subscales, combining them to form an overall engagement score. Vigor was assessed using six items (e.g., “At my job, I feel strong and vigorous”) and dedication with five items (e.g., “I’m enthusiastic about my job”) of the Utrecht Work Engagement Scale (Schaufeli et al., 2002). A third component (absorption) is usually included as part of work engagement. However, vigor and absorption are often highly correlated (Schaufeli et al., 2002) and because vigor and dedication are considered the core components of work engagement (Schaufeli & Bakker, 2004), we decided to not assess absorption.

Personal initiative. Personal initiative was measured with the seven items of Frese et al.’s (1997) scale (e.g., “Whenever there is a chance to get actively involved, I take it”).

Conformity orientation. To measure conformity orientation, we used the five-item conformity scale of Miron et al. (2004) based on Kirton’s (1976) cognitive style measure (e.g., “I’m a person who promptly adapts his/herself to the system”).

To evaluate the quality of the study scales and their empirical distinctiveness, and considering that the data had a nested structure (employees (Level 1) nested within immediate supervisors (Level 2)), we conducted a multilevel Confirmatory Factor Analysis with Mplus 8 (Muthén & Muthén, 2017). Considering that we were interested in employee-level relationships, we only modeled within-group (i.e., Level 1, individual-level) relationships. When assessing model fit of Multilevel Structural Equation Modeling (ML-SEM) models, different researchers have suggested using level-specific fit indices (González-Romá & Hernández, 2017; Ryu, 2014).

Among other advantages, these indices allow researchers to ascertain the fit of the relationships hypothesized at the between (Level 2) and within (Level 1) levels of analyses separately. This strategy avoids using overall fit measures that do not show where potential fit problems may reside. Mplus provides values for the Standardized Root Mean Square Residual (SRMR; an absolute index of fit) both for the within and between parts of ML-SEM models. We based fit assessment only on the SRMR computed by Mplus for the within part of our model (SRMR-within).

First, we fit a 5-factor model with the five hypothesized correlated factors (job control, coworker social support, work engagement, personal initiative, and conformity orientation). This model showed a satisfactory fit (SRMR-within = .069; "Fit values of SRMR ≤ .10… are typically considered indicators of an acceptable fit", Lang & Fries, 2006, p. 219). Second, we fit a 1-factor model with a common factor underlying all the scales' items. The fit of this model was bad (SRMR-within = .113). Finally, to ascertain whether the combination of the decision authority and skill discretion items to measure job control was supported by the data, we fit a 6-factor model in which the job control factor of the 5-factor model was split into two factors: decision authority and skill discretion. The fit of the 6-factor model (SRMR-within = .069) was the same as the fit of the 5-factor model. Therefore, we retained the 5-factor model on the basis of parsimony. All the items showed statistically significant factor loadings in their corresponding factor. The correlations (corrected for measurement error) among the factors ranged from .58 for work engagement and personal initiative to .07 for personal initiative and coworker social support. These results showed that the involved measures had adequate factorial and discriminant validity.

Idea implementation. We asked supervisors to report the frequency with which ideas generated by employees had been implemented. A three-item subscale of a measure developed by Holman et al. (2012), previously validated in the Italian context (Donati et al., 2016), was used. The three items are: "His/her ideas have been implemented by the company;" "His/her suggestions for improvements have been adopted;" "His/her proposals for doing things differently have been carried out."

Control variables. Previous studies show that males demonstrate more initiative in their work (e.g., Miron et al., 2004) and their ideas are implemented more often than females (Foss et al., 2013). Studies also suggest that age is related to idea implementation due to job experience and expertise (Binnewies et al., 2008; Rietzschel & Zacher, 2015), as well as to decreased engagement among males (Salmela-Aro & Upadyaya, 2018). Thus, we controlled for gender, age, and organizational tenure in testing our model.

Analysis

Considering that the data collected had a nested structure, in order to test the study hypotheses, we used ML-SEM methods (Preacher et al., 2016; Preacher et al., 2010) as implemented in Mplus 8.3 (Muthén & Muthén, 2017). The fact that the Intraclass Correlation Coefficient (1) (ICC(1)) computed for our model's outcome variable (idea implementation) was .14 meant that 14% of its variance resided at the work group level and supported the utilization of ML-SEM. Because all our hypotheses involved employee-level (Level 1) variables and relationships, we group-mean centered the predictors, mediators, and moderator variables in our model, removing the between-group variance in these variables for the sake of parsimony (see Preacher et al., 2010, p. 215). Therefore, we only tested employee-level relationships.

First, we tested the indirect effects involved in Hypotheses 1 and 2 by fitting a 1/1-1-1-1 model (Preacher et al., 2010) using robust maximum likelihood estimation methods. Then, we tested the hypothesized indirect effects by computing their 95% confidence intervals by means of the Monte Carlo method (Preacher & Selig, 2012). Secondly, to test for the conditional indirect effects involved in Hypotheses 3 and 4, we included conformity orientation as a Level 1 moderator of the "personal initiative → idea implementation" relationship in the aforementioned model. Next, we tested the hypothesized conditional indirect effects by estimating the involved indirect effects at different levels of the moderator (conformity orientation) and computing their 95% confidence intervals by means of the Monte Carlo method (Preacher & Selig, 2012).

Results

Table 1 reports means, standard deviations, Cronbach's alphas, and correlations between the study variables. Of the control variables considered, only age showed a statistically significant correlation with the model's variables (r with engagement = .19, $p < .05$). Thus, for the sake of parsimony and to reduce the number of parameters to be estimated, we only controlled for the relationship between age and engagement in our model.

--- Insert Table 1 around here ---

The ML-SEM model fit to test Hypotheses 1 and 2 is shown in Figure 2. The SRMR-within for this model was .083, which is acceptable, as lower than .10 (Lang & Fries, 2006). The parameter estimates obtained for the hypothesized relationships are shown in Figure 2. Job control was positively related to work engagement (.53, $p < .01$). Work engagement was positively related to personal initiative (.44, $p < .01$)[1], which in turn was positively related to idea

[1] Although we did not hypothesize reverse causality between personal initiative and work engagement, we did test for this possibility (see Hakanen et al., 2008) by comparing our initial model against an alternative model in which

implementation (.49, $p < .01$). Coworker social support was not related to work engagement (.11, $p > .05$), meaning that Hypotheses 2 and 4 were not supported. However, the indirect effect from job control to idea implementation through work engagement and personal initiative was positive (.12, SE = .04) and statistically significant [its 95% Monte Carlo confidence interval (MCCI) excluded zero (.04, .21)]. Therefore, Hypothesis 1 was supported.

--- Insert Figure 2 around here ---

In the next step, we examined whether the hypothesized indirect effect from job control to idea implementation was moderated by conformity orientation. We added conformity orientation as a Level-1 moderator of the relationship between personal initiative and idea implementation (see Figure 3). The model including the moderator showed an acceptable fit to data (SRMR-within = .094), and its Akaike Information Criterion (AIC)[2] (1651.6) was smaller than the AIC obtained for the previous model without the moderator (1654.5). This result suggested that the fit of the moderated mediation model (Figure 3) was slightly better than the fit of the mediated model (Figure 2). The parameter estimates obtained were similar to those obtained for the previous model and showed that conformity orientation moderated the relationship between personal initiative and idea implementation (.22, $p < .01$, see Figure 3).

--- Insert Figure 3 around here ---

Next, we computed the conditional indirect effects from job control to idea implementation via work engagement and personal initiative (Hypothesis 3), for different values of the moderator

personal initiative influenced work engagement. The fit of this alternative model was not acceptable (SRMR-within = .104) and worse than the fit of our initial model (SRMR-within = .083; AIC alternative model = 1665.9, AIC initial model = 1654.5). These results provided some empirical support for the hypothesized directional relationship between work engagement and personal initiative.

[2] The AIC index is generally used to compare models. The model with the smallest value is the preferred one.

(conformity orientation; -1SD, mean, +1SD). Before doing this, we defined the simple slope for the regression of idea implementation (Y) on personal initiative (PI), conformity orientation (C), and their interaction (PI*C). The aforementioned regression model is: $Y = c_0 + c_1 PI + c_2 C + c_3 PI*C$, where the c_is are regression coefficients (intercept (c_0) and slopes (c_1, c_2, c_3)). This regression equation can be re-arranged as follows: $Y = (c_0 + c_2 C) + (c_1 + c_3 C) PI$, which shows that the associated simple slope is: $(c_1 + c_3 C)$ (see Preacher et al., 2007).

The conditional indirect effects (CIEs) associated with Hypothesis 3 can be computed as follows: $a_1 * b_1 * (c_1 + c_3 C)$ for the three considered values of C, where a_1 is the "effect" of job control on work engagement, and b_1 is the "effect" of the latter on PI. The obtained CIEs are shown in Table 2. These results showed that the indirect effect "job control→work engagement→personal initiative→ idea implementation" was statistically significant for the three values of conformity orientation considered. As we expected the indirect effect was stronger as conformity orientation increased. Its value was .09 (SE = .04, 95% MCCI = [.02, .18]) when conformity orientation equaled its mean - 1SD, .12 (SE = .05, 95% MCCI = [.04, .23]) when conformity orientation equaled its mean, and .16 (SE = .06, 95% MCCI = [.05, .29]) when conformity orientation equaled its mean + 1SD. The results lend support to Hypothesis 3.

--- Insert Table 2 around here ---

Finally, we used the Mplus capabilities to represent the estimated conditional indirect effects (see Figure 4). Focusing on the indirect effect from job control to idea implementation via work engagement and personal initiative (y-axis), Figure 4 shows that when conformity orientation was low (from -2 to -1.1, group-mean centered values) this indirect effect was non-significant (the corresponding 95% confidence interval included zero). From -1.1 on (group-mean centered

values), the indirect effect was statistically significant and increased as conformity orientation increased.

--- Insert Figure 4 around here ---

Discussion

This five-month time-lagged study among manufacturing employees applied the motivational path of the JD-R framework to investigate the indirect effects of job control and coworker social support on employees' idea implementation with a moderated-mediation model. Our results suggest that increased job control affects the level of idea implementation through a sequential path of enhanced work engagement and personal initiative. The pattern was more prominent when employees possessed a higher conformity orientation. The hypothesized effect between coworker social support and idea implementation did not bear out because no association was detected between coworker social support and work engagement. The lack of a direct effect between coworker social support and work engagement was surprising because the social support-engagement association is well-established in the literature (Bakker & Demerouti, 2017; Schaufeli & Taris, 2014) and evidenced in recent studies (Dediu et al., 2018; Hakanen et al., 2019). Our lack of a significant finding may be, in part, a function of our study sample. In highly routine work settings, coworker social support may contribute more to lessening employee stress and burnout (Xanthopoulou et al., 2007), a JD-R path that was not the focus of our study, rather than increasing work engagement. Leaders are acknowledged as another source of social support within the JD-R theory (Kwon & Kim, 2020) that has been tied to work engagement (Christian et al., 2011). In study settings such as ours, the status differential and power dynamic between employees and leader is often pronounced. Baer (2012, p. 1103) notes that because idea

implementation is often socio-political in nature (Yuan & Woodman, 2010), employees need to rely on "important supporters in their organization" for the process. As such, it could be that a leader's social support would have associated more with work engagement among our study participants than support received from coworkers.

Theoretical Implications

Our findings have a number of theoretical implications that expand the body of research on idea implementation. First, they show a motivational mechanism that links job control to idea implementation. In general, due to a lack of research, we currently know little about what motivates employees toward ideas that will be implemented. While motivation for innovative work behavior has largely been examined in terms of idea generation and intrinsic motivation (Liu et al., 2016), our focus on work engagement as motivating for idea implementation might prove more useful. Because interest and enjoyment are central to intrinsic motivation, it lends itself more to novel endeavors than to those that might be particularly useful or practical (Silvia, 2008). In contrast, the dedication and vigor components of work engagement may be more conducive to the solving of problems that address practical needs and, therefore, be aligned with idea implementation. Although we did not test the impact of intrinsic motivation in our study model, the significant role of work engagement may suggest a way in which motivation may differ between idea generation and idea implementation.

The potential for work engagement to serve as an important drive for employee innovative behavior is starting to be addressed (see Kwon & Kim, 2020). As suggested (Hakanen et al., 2019; Huhtala & Parzefall, 2007), and based on our findings, the motivational construct of work engagement does appear central to understanding how job control experienced by employees

leads to idea implementation. Going beyond a single motivational construct, our study also tested a more complex motivation sequence in which engagement associated with a proactive behavioral mode of personal initiative linked to idea implementation. In doing so, our study provides a more nuanced understanding of the underlying motivational process leading to idea implementation at work.

Second, our findings suggest that the trait of conformity orientation may be influential for ideas that are more likely to be implemented. Idea implementation and its requirements are in a number of ways unique from the other innovation stages such as idea generation (Baer, 2012; Miron-Spektor et al., 2011). As such, a factor such as conformity orientation, generally considered detrimental to idea generation (Goncalo & Duguid 2012), may actually prove useful for idea implementation (Kaplan et al., 2009; Miron-Spektor et al., 2011). Idea implementation in organizations is considered to be both a political and social process (Baer, 2012). Conforming-oriented employees may be useful for idea implementation because they have practical knowledge to match good ideas with the social and political intricacies of workplaces (Levitt, 2002). Their sensitivity to prevailing norms and how organizational members will respond to new ideas (Madjar et al., 2011; Miron-Spektor et al. 2011), as well as their proclivity to foster collaboration, are likely to direct personal initiative toward ideas that are more acceptable and inclined to be implemented. Our finding that a stronger conformity orientation strengthens the relationship between personal initiative and idea implementation, and the examined indirect effect, support a small body of work (e.g., Miron et al., 2011; Madjar et al., 2011) advocating for the role of conformity in the gestalt of employee innovative work behavior. The majority of research on idea implementation has focused on the impact of contextual factors only (Baer,

2012). Our finding on conformity orientation provides needed insight to employee attributes that may be relevant for idea implementation (see Baer, 2012). The finding also signals that researchers should expand their consideration of what constitutes influential employee traits for innovative work. There may be other employee traits that we normally would not consider in our studies that end up playing important and surprising roles and help us establish a fuller profile of what an innovative employee is like. For example, while personal initiative has been associated with employee innovative behavior (see Binneweis & Gromer, 2012), our study would suggest that an employee's personal initiative is more likely to link to idea implementation when the employee has a more conforming orientation. In this regard, conformity orientation may be a factor that directs employee personal initiative toward performance that is of "functional value" (see Free & Fray, 2001) to the organization.

Third, while the JD-R framework is established in terms of its association with traditional job performance outcomes (Bakker & Demerouti, 2018), our study provides support for the idea that it may also be instrumental in explaining the complexities of employee innovative behavior (see Kwon & Kim, 2020) such as idea implementation. Our study points to the JD-R theory's potential usefulness for identifying how other job and personal resources translate into idea implementation. In this regard, our study also contributes to the literature on JD-R theory by expanding the set of feasible performance outcomes that can be explained within a JD-R framework. Further, the need for both elaboration and refinement of JD-R theory has been cited (Bakker & Demerouti, 2017). Two noted areas for useful inquiry concern (1) the underlying mechanisms by which job resources manifest in employee outcomes, and (2) the roles that personal resources play in the model (Bakker & Demerouti, 2017; Schaufeli & Taris, 2014). Our

study addresses both issues. The model we tested illustrates the motivational underpinnings linking job control with idea implementation. It also reveals that the personal resource of conformity orientation serves in a moderating capacity for strengthening the association between the motivational process and idea implementation.

Practical Implications

Our findings also have some practical implications. First, ideas generated but not implemented are a lost opportunity for organizations (Choi & Chang, 2009). As such, knowledge of factors that managers can leverage to enhance idea implementation is critical to an organization's innovation and success. The set of contextual and personal factors identified as conducive to idea implementation in the current study should prove useful to managers in their efforts to bring generated ideas to fruition. For example, our findings show job control as central to the processes associated with idea implementation. Such control is a mechanism readily available to managers and, therefore, a means by which they can increase the incidence of idea implementation. Specifically, since work engagement is contingent on task characteristics such as control (Sonnentang, 2017), managers can create motivating conditions by permitting their employees to have more autonomy and discretion in various aspects of their jobs. The fact that the motivational processes include both work engagement and personal initiative should be of particular interest to managers since both constructs associate with a variety of performance outcomes that extend beyond idea implementation.

Second, employees across a variety of job and organization types conduct routine work in which innovation is not a formally expected and rewarded job component. Our finding that such employees were producing valuable ideas for implementation in the absence of explicit

inducements is encouraging, and points to the motivational mechanisms enacted when employees are permitted increased levels of control in their work. The broad message is the importance of organizations actively considering where opportunities for employees' enhanced job control might exist. In our study setting, control was experienced by working on occasional batch job projects affording employees more discretion over individual work pace as well as their use of different skill sets. Control was also evidenced through permission to make various determinations about running the production line, maintaining equipment, and quality control actions. Job crafting is increasingly recognized as a viable means by which employees attempt to obtain greater job resources (Bakker & Demerouti, 2017) such as job control. Allowing employees opportunities to craft their jobs in ways that would increase job resources conducive to work engagement would appear vital to idea implementation (see Montani et al., 2020).

Third, our study results show that managers should closely consider advantages that conforming-oriented employees might bring when the end goal is new ideas that are implementable. As suggested, employees with a conformity orientation might advance ideas that are well-suited to problems that need to be addressed and are reasonably feasible for implementation. Beyond this benefit, prior research (Miron-Spektor et al., 2011) also suggests that the placement of conformity-oriented employees within teams is conducive to team innovation because conformists are likely to support the idea generation of others, facilitate important cooperation, and improve team confidence necessary for innovation. Because conformity orientation is a relatively stable trait that can be assessed by measures like the one used in the current study, managers should be able to identify employees with such an orientation and situate them where they can be most useful for innovative work.

Study Limitations and Future research

Our study has a number of limitations to be considered when interpreting its results. First, we did not assess whether the ideas implemented were incremental or radical in nature. It is possible that the factors we considered in our model might be more or less relevant had we taken into account the level of idea innovativeness. Second, since job-required creativity is important for idea generation (Shalley et al., 2009), future work testing the current model should consider the possible effect of job required creativity on idea implementation as well. Third, our study took place in a single setting among a manufacturing sample of lower-level line employees. Although our basic pattern of findings is similar to those detected in a study of dentists (Hakanen et al., 2008) whose job is high-level and complex, it would be worthwhile to investigate the model in additional settings with employees conducting work defined by varying levels of job control and complexity.

Fourth, because we were interested in ascertaining factors that contribute to increasing idea implementation and the mechanisms involved, we focused only on the motivational process involved in the JD-R theory and did not consider its health-impairment process. Studies focusing on only one of the two processes are not new in the literature (Schaufeli & Taris, 2014; Shin & Hur, 2020). However, 'hindrance' demands negatively relate to work engagement, and 'challenge' demands positively relate to work engagement (Crawford et al., 2010). Additionally, in accordance with the rationale underlying the JD-R model, job demands and resources could offset one another in ways that might be meaningful for idea implementation. As such, future studies should also consider job demands and their impact on idea implementation.

Fifth, our simultaneous measurement of work engagement, personal initiative, and idea implementation at Time 2 prevents causal interpretation of the relationship among these variables. We separated the data collections of job resources (T1) from engagement, personal initiative, and idea implementation (T2) to permit some time exposure to job resource experiences to shape employee engagement. Since engagement has proximal effects (Bledow et al., 2011), we measured personal initiative in the same time frame. Therefore, possibilities for reverse causality throughout the JD-R paths are plausible (Bakker & Demerouti, 2017), so future research should examine these with intention. For example, prior research (Xanthopoulou et al., 2009) suggests engaged employees may either seek out, or work to create, enhanced resource conditions. Although opportunities to craft their jobs among our study participants were limited given the nature of their work, it is possible that having one's ideas implemented may cause such employees to assume more personal initiative, which could possibly lead to a greater sense of work engagement, as well as to the purposeful seeking of enhanced job resources. Because we collected data over two time periods five months apart, and the criterion data were provided by a secondary source, our study provides a more rigorous test of the proposed relationship between idea implementation and its possible predictors compared to most existing studies. However, future studies should attempt to test the relations we detected with more than two time periods to obtain specification of the causal influences among the study variables.

Sixth, in our study, we only focused on the job resources of job control and coworker social support because both are consistent with prior theorizing around work engagement and employee innovation. A strength of the JD-R framework is that it accommodates the use of a varied list of job resources (Schaufeli & Taris, 2014). Investigation into additional types of job resources as

they play out for idea implementation is also warranted. Finally, drawing from our finding regarding the innovation role of conformists, an intriguing line of future inquiry might be exploring other 'counter-intuitive' employee traits (e.g., risk aversion, routine orientation) that may be influential for idea implementation, as well as other employee innovative behaviors.

Conclusion

Given its importance to organizations, it is imperative that we reach a greater understanding of the factors associated with idea implementation. Through our study, we uncovered that job control linked to idea implementation through the motivational mechanism of work engagement and personal initiative. In addition, we identified a personal attribute, conformity orientation, that strengthens the indirect effect of job control on idea implementation. We hope our study will help improve understanding about how and why successful idea implementation occurs in work settings.

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Table 1

Means, Standard Deviation, Correlations and Cronbach's alphas

	M	SD	1	2	3	4	5	6	7	8	
1 Gender	1.17	0.38									
2 Age	44.28	8.30	.01								
3 Organizational tenure	15.37	10.58	.11	.54**							
4 Job control	4.37	1.03	-.02	.01	-.03	(.81)					
5 Coworker Support	4.67	1.11	.05	.07	.04	.30**	(.79)				
6 Work Engagement	4.13	1.35	.07	.19*	.09	.44**	.21**	(.96)			
7 Personal initiative	4.68	1.06	.12	.08	.08	.43**	.08	.61**	(.89)		
8 Conformity orientation	4.85	.76	.04	.14	.13	.12	.24**	.34**	.15*	(.69)	
9 Idea Implementation	2.81	1.51	.00	-.11	-.01	.29**	.08	.30**	.30**	-.02	(.88)

Note. N = 187. * $p < .05$ ** $p < .01$. Reliability estimates (α) are reported on the diagonal (within parenthesis).

Table 2

Conditional Indirect Effects for Different Values of Conformity Orientation

	Indirect effect		
Moderator value (conformity)	IE	SE	95% MCCI
Mean - 1SD	.09	.04	[.02, .18]
Mean	.12	.05	[.04, .23]
Mean + 1SD	.16	.06	[.05, .29]

Notes. Indirect effect: job control→work engagement→personal initiative→idea implementation. IE: indirect effect point estimate. SE: standard error. MCCI: Monte Carlo confidence interval. SD: standard deviation.

Figure 1. The proposed research model

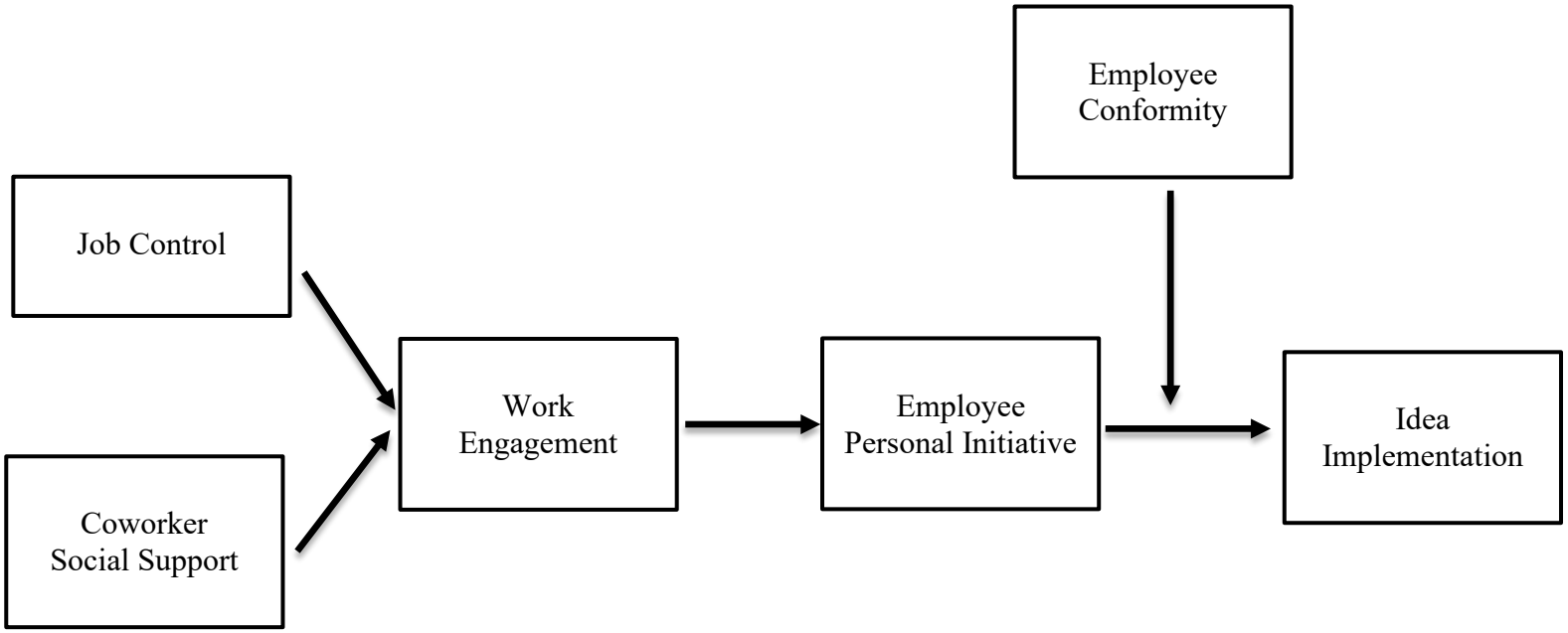
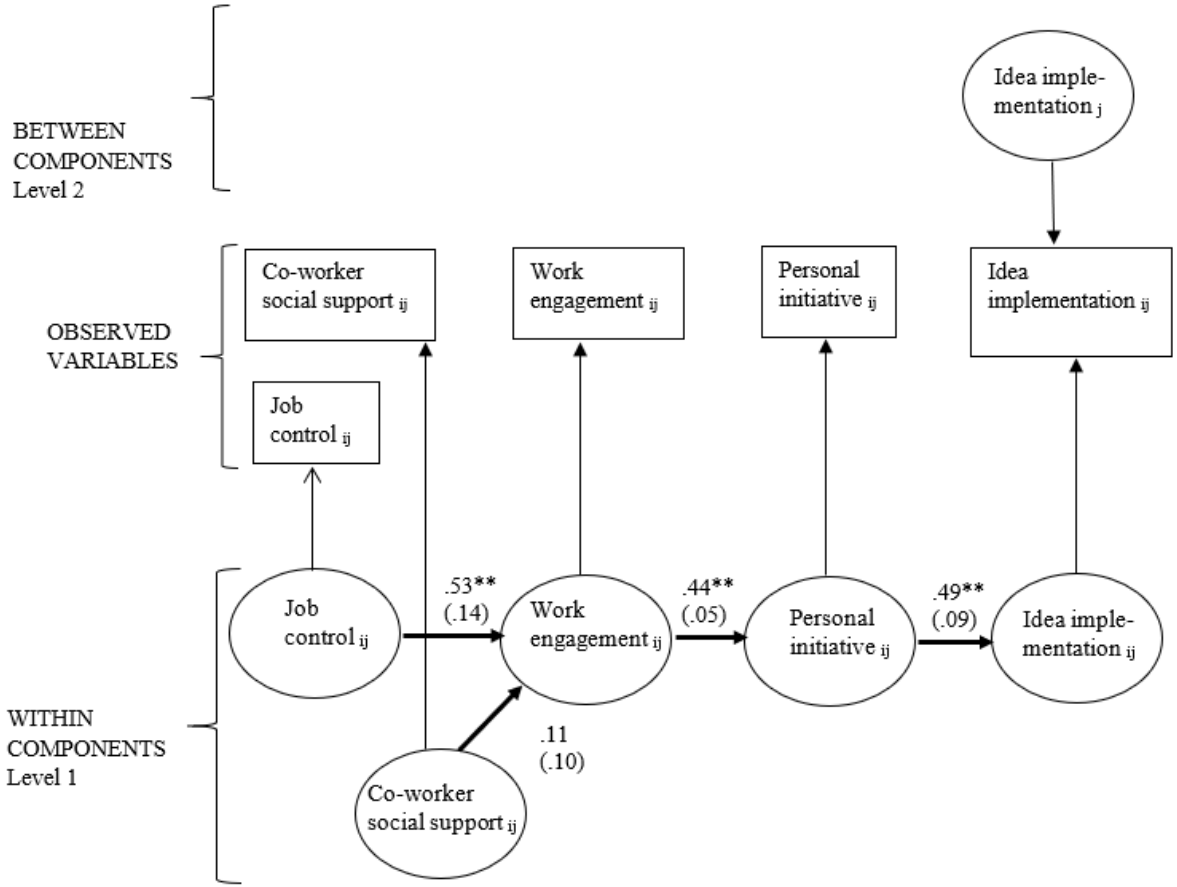
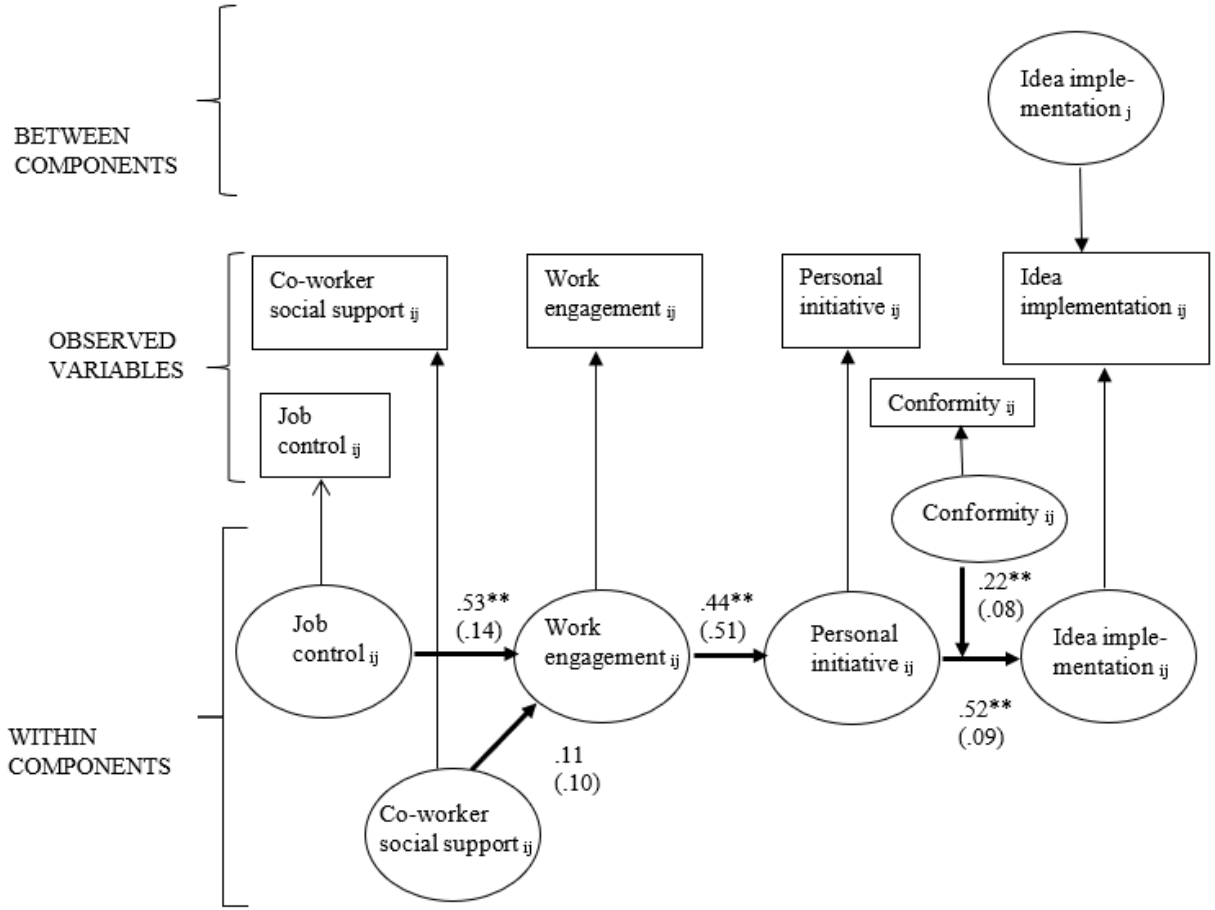


Figure 2. Multilevel model with the hypothesized indirect effects at the employee level (Level 1).



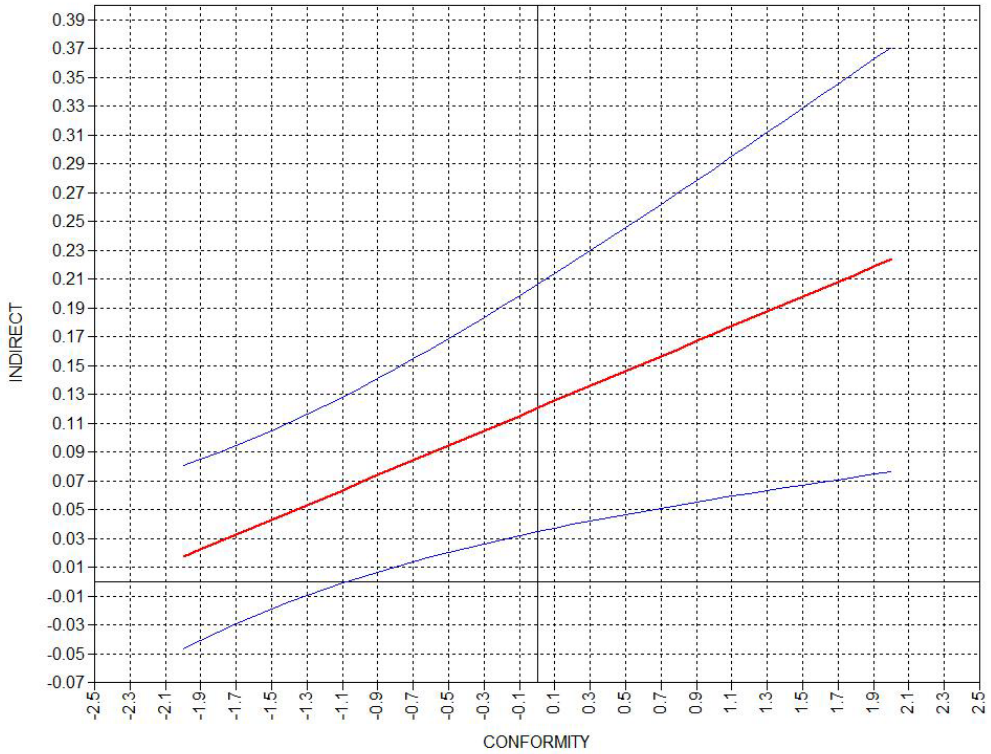
Note. ** $p < .01$, two-tailed tests. Bold arrows show the relationships involved in the investigated indirect effects. The parameter estimates shown are unstandardized. Values within parentheses are standard errors. The Level-1 relationship between age and work engagement was controlled for (.03, SE = .01, $p < .05$), although it is not represented for the sake of clarity.

Figure 3. Multilevel model with the hypothesized conditional indirect effects at the employee level (Level 1).



Note. ** $p < .01$, two-tailed tests. Bold arrows show the relationships involved in the investigated indirect effects. The parameter estimates shown are unstandardized. Values within parentheses are standard errors. The Level-1 relationship between age and work engagement was controlled for (.03, SE = .01, $p < .05$), although it is not represented for the sake of clarity.

Figure 4. Plot of the conditional indirect effect involved in Hypothesis 3: "job control→work engagement→personal initiative→idea implementation" across conformity orientation values



Note. Indirect represents the value of the following indirect effect: job control→work engagement→personal initiative→ idea implementation. Conformity is group-mean centered. The red line represents the point estimate of the indirect effect across the range of conformity values. The blue lines define the corresponding 95% confidence interval.