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Work Curiosity, Conformity, and Employees' Innovation Performance: A Regulatory Focus Perspective

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Abstract

Curiosity is a multifaceted phenomenon which embodies the individual motivation to explore the unknown for the sake of either seeking the pleasant experience of cognitive stimulation or eliminating the unpleasant feelings of ignorance. Conformity, on the contrary, is individuals' behavioral mimicry for acting effectively and accurately. Although their importance has been extensively acknowledged in social psychology and education studies, organizational research which focuses on employees' curiosity and conformist behaviors is surprisingly rare. Professional employees' creativity and innovation performance are of great importance to organizational advantages and sustainability especially in industries where market competitions are volatile and driven by knowledge-intensive dynamics. From the motivational perspective, the integration of work curiosity and conformity provides a new lens

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to understand employee creativity and innovation performance.

Drawing upon the regulatory focus theory, this paper investigates how work curiosity and conformity jointly affect professional employees' creativity and innovation performance at work through the intervening role of creative process engagement. Our findings reveal that work curiosity improves employees' creativity and innovation performance through stimulating creative process engagement. In contrast, results show that conformity orientation undermines creativity and innovation performance by reducing employees' engagement in the creative process. We leverage insights from the social psychology research to explore the motivational mechanisms that awaken professional employees' willingness to engage in the cognitive activities for creative ideation and thus yield novel and innovative ideas. Theoretical contributions and practical implications are discussed.

Keywords:

Work curiosity; conformity; regulatory focus; innovation; work creativity

Introduction

Knowledge workers' creativity and innovative behavior are widely regarded as a vital means for organizations to thrive in dynamic environments, respond to unforeseen challenges, and proactively develop new capabilities (Zhou & Hoever, 2014). Organizational scholars share a strong interest in understanding the psychological forces that bolster creativity (i.e. the production of novel ideas) and innovative behaviors (i.e. the implementation of creative ideas

for value creation). Research suggests that individuals' creative ideation and innovative behaviors at work are deeply rooted in their work attitude and motivational dynamics (Amabile & Pratt, 2016; Grant & Berry, 2011; Zhou & Hoever, 2014). Work curiosity and conformity are the two interrelated behavioral strategies that are regulated by an individual's motivational orientation and attitude towards goal attainment. The state of curiosity arouses individuals' intention to ask the right questions, while at the heart of conformity is the attempt to find better solutions. Echoing the perspective of self-regulatory motivation, prior psychological work has emphasized the importance of curiosity and conformity to individuals' task engagement and cognitive activities (Duguid & Goncalo, 2015; Hardy III, Ness, & Mecca, 2017). Investigating curiosity and conformity at work settings, therefore, may break new ground to understand the cognitive mechanisms that determine employees' creativity and innovative performance.

Human curiosity is the psychological state that activates individuals' explorative behaviors for seeking novel stimuli and resolving uncertainties, while conformity embodies the mental tendency to obey the existing rules and convention for ensuring predictable progress as well as avoiding risks (Chatman, Polzer, Barsade, & Neale, 1998; Kirton, 1976; Litman, 2005). Research indicates that individual curiosity and conformity both exert a strong influence on idea generation through affecting the cognitive approaches they adopt in performing tasks (Adarves-Yorno, Postmes, & Haslam, 2007; Hardy III et al., 2017; Kashdan & Fincham, 2002). Although the importance of curiosity and conformity to individual cognition is extensively

acknowledged in psychology research, they are surprisingly under-researched in organizational scholarship.

From the motivational perspective, the seminal regulatory focus theory underpins this line of research and links work curiosity and conformity to the cognitive process for creative ideation and innovative behaviors (Deci, Olafsen, & Ryan, 2017; Higgins, 1998). According to Higgins (1998), the process of self-regulation unfolds through two self-regulatory motivational systems, namely promotion focus and prevention focus (Higgins, 1998). Specifically, the promotion system's hedonic concerns relate to the pleasurable presence of positive outcomes (e.g. accomplishment, growth, and advancement) and the unpleasant absence of them (Higgins et al., 2001). Curiosity implies not only the eagerness to learn and enjoy the pleasurable experience of knowing new things, but also the intent to avoid the unpleasant feeling of ignorance (Litman, 2010). Work curiosity is employees' explorative attempt at work, which is activated when the individual possesses high levels of promotion focus for meeting the standard of excellence on a task (Friedman & Förster, 2001).

On the contrary, the prevention system's hedonic concerns are associated with the pleasant absence of negative outcomes (e.g. failure or not attaining a goal) as well as the unpleasant presence of them. Individuals' conformist behaviors are under the influence of prevention focus, which underlies the pursuit of security, fulfillment of responsibilities and sense of control (Higgins et al., 2001). Employees with a high level of prevention focus tend to conform to the

social norms of behaving and play it safe under an ambiguous circumstance, due to their inclination to avoid rejection or not fulfilling their work duties (Cialdini & Goldstein, 2004). Work curiosity and behavioral conformity of the knowledge-intensive workforce, therefore, may affect employees' innovative performance through regulating how they engage in the cognitive process for creative ideation (Chang & Shih, 2018; Sacramento, Fay, & West, 2013).

Work curiosity and conformity represents the two extremes on the spectrum of individuals' regulatory foci. On the one hand, work curiosity is the reflection of individuals' promotion focus as it orients people towards advancement, growth, and accomplishment by eliciting the exploratory behaviors outside the cognitive boundaries (Chang & Shih, 2018). On the other hand, conformity is the behavioral strategy activated by the prevention focus, which stresses social acceptance and responsibility by spurring individuals to think inside the acquainted domains for identifying effective solutions and ensuring task progress and completion (Nail, MacDonald, & Levy, 2000). From the perspective of self-determination theory, curiosity and conformity both reflect employees' goal pursuit attitude at work (Deci et al., 2017). Curiosity entails the autonomous motivation for advancement and accomplishment, whereas conformist behaviors are subject to extrinsic control for avoiding the failure in task completion.

Implementation of creative ideas has become an integral part of competitive advantage of a knowledge-based company and the prerequisite of organizational innovation (Anderson, Potočnik & Zhou, 2014). Drawing upon the regulatory focus theory, this study adds to the

organizational research by unfolding the linkage between professional employees' self-regulating mechanism and innovation performance as well as examining the intervening role of creative process engagement and work creativity. More importantly, to probe into employees' self-regulation and motivational process, this paper incorporates work curiosity and conformity, which have predominant impacts on individual cognition yet have long been neglected in organizational research. The theoretical framework of this study is depicted in Figure 1.

<<Insert Figure 1 about here>>

Theory and Hypotheses

Regulatory focus, Work Curiosity, and Conformity

Over the past two decades, the regulatory focus theory (RFT) has been extensively adopted by organizational scholars to explain the self-regulation mechanisms of affect, behaviors, and cognitions towards goal attainment (Higgins, 1998; Johnson et al., 2015). On the basis of hedonistic motivation (approaching pleasure and avoiding pain), Higgins (1998) established the seminal regulatory focus theory, which differentiates goal-oriented self-regulation into two independent regulatory systems, namely promotion regulatory focus and prevention regulatory focus. Promotion and prevention foci influence the cognitive strategies that employees use to attain achievement goals and to circumvent obstacles that impede attainment of those goals (Lanaj et al., 2012). In the existing organizational research, regulatory focus has gained prominence as a behavioral theory in explaining employees' work outcomes, such as creativity and innovation performance (Friedman & Förster, 2001; Johnson et al., 2015; Lanaj et al., 2012).

At the center of promotion focus are hopes and aspirations (Johnson et al., 2015), which both lead to motivation by accomplishments and salient outcomes of gains (positive and desired) or nongains (negative and undesired). Employee behavior is regulated by promotion focus to seek the pleasant presence of positive work outcomes (e.g. increased performance, generating innovative ideas, successful project implementation, etc.) and minimizing the probability of unpleasant absence of these positive outcomes. Rather than considering potential losses, employees with a strong promotion focus strategically move towards desired outcomes through self-growth, proactive work attitude, and the pursuit of their ideal selves (Higgins et al., 2001). Employees' promotion focus heightens their willingness to discover new information, engage in exploratory activities, and experiment with a wide range of alternatives, thus arousing the state of curiosity (Ahmadi et al., 2017).

Work curiosity is the individual desire for new experience and epistemic information that engender inquisitive and exploratory behaviors in the workplace (Chang & Shih, 2018; Litman, 2005; Harrison et al., 2011). When people experience the state of curiosity, they tend to possess an open and receptive attitude to absorb whatever is the target of attention (Bishop et al., 2004). In the organizational context, work curiosity can be aroused by employees' intrinsic interest in their tasks as well as the perception of ambiguity at work as challenges and opportunities for personal growth (Kashdan et al., 2009). On the contrary, employees may feel angry, uneasy or anxious if they suspect themselves of not having enough knowledge to solve work problems,

thus elevating the feeling of deprivation. The negative feelings of deprivation and ignorance may also spur employees' work curiosity as a motive to clarify uncertainty and ensure goal attainment (Litman, 2008).

A promotion focus drives people's self-regulation by approaching matches to desired end-states and has downstream effects on their work curiosity (Lanaj et al., 2012). In the process of pursuing work goals, promotion-focused employees will experience a sense of reward as they learn something that benefits their work outcomes (Kashdan & Fincham, 2002). Furthermore, individuals with high promotion focus may perceive the positive affectivity inherent in work curiosity as intrinsically reinforcing (Silvia, 2008). As a psychological function of promotion focus, work curiosity facilitates the learning process by boosting exploratory behaviors and deployment of attentional resources.

In contrast to promotion focus' emphasis on advancement, employees' prevention focus highlights the goal-striving strategies on the fulfillment of job responsibility (Higgins, 1998). Prevention regulatory focus is concerned with protection, safety, and responsibility, resulting in a motivation to prevent mistakes for assuring mission accomplishment or avoiding the unpleasant consequences of failure (Higgins, 1998). Prevention-focused employees feel relaxed when there is an absence of negative outcomes of their work and experience pain when their work goals are not met (Higgins et al., 2001). Individuals are motivated by prevention focus to avoid mismatches to desired end-states by encouraging the vigilance and conformity strategy

centered on accuracy and meeting minimal standards of performance (Higgins, 1998; Lanaj et al., 2012).

According to social cognition theory (Bandura, 1986), it is human's instinctive tendency to observe the others' behavioral models and imitate the actions if they want to attain the same results. Conformity has been defined as behavior or belief that is consistent with the social norms or standards within an organization based on the influencee's motives to make appropriate actions and to avoid failure (Nail et al., 2000). Conformity has been regarded as the behavioral strategy adopted by prevention-focused employees to circumvent obstacles which may jeopardize work progress or lead to any aversive end states (Van-Dijk & Kluger, 2004). To transform the negative feelings involved in the uncertain situations (e.g. fear, tension, worry) into quiescent emotions (e.g. relief, feeling calm), prevention focus drives employees to follow the conventional approaches for minimizing the chances of making mistakes (Baas et al., 2011). Through obeying the conventional rule of behaviors and following the socially agreed norms, conformity is individuals' attempt to ascertain that they are on the right track (Bascle, 2016). Recent research has found that the conformist attitude involved in the prevention focus may influence individual cognition and exert negative effects on creative ideation (Duguid & Goncalo, 2015; Madjar, Greenberg & Chen, 2011; Zhou et al., 2009).

Creative process engagement

Producing creative solutions to work problems and yield innovative outcomes is the end result of a progression through intentional and systemic cognitive processes that form effective and original ideas (Mumford, 2011). Creative process engagement is the cognitive approach critical to identifying hidden linkages between discrete bits of knowledge and thereby generating creative ideas for problem-solving and innovation (Zhang & Bartol, 2010). Drawing upon the componential theory of creativity (Amabile, 1988), prior research has defined creative process engagement as employees' involvement in creativity-relevant methods, including (1) problem identification, (2) information searching, and (3) idea generation (Henker, Sonnentag & Unger, 2015; Reiter-Palmon & Illies, 2004). Employees who are capable of solving a complex problem or yielding innovative outcomes at work are those who can firstly clarify the ambiguity involved in the tasks, seek related information, and synthesize the preexisting and novel ideas in new ways (Anderson et al., 2014; Henker et al., 2015; Hennessey & Amabile, 2010).

As a psychological state rooted in promotion focus, work curiosity may stimulate creative thinking process through enhanced activation and cognitive flexibility (Baas, Dreu, & Nijstad, 2011). From the view of self-determination theory, curiosity may lead to creativity by fostering individuals' exploratory drive and intrinsic motivation for thinking outside the box to generate creative ideas (Csikszentmihalyi, 2014; Deci et al., 1989). Since work curiosity has its root in

promotion focus, the desire for advancement and growth as well as the mindset of embracing uncertainty are the catalyst for employees' intention to engage in the creative process (Harrison et al., 2011; Hennessey & Amabile, 2010; Mumford, 2011). Recent research built on the individual difference perspective indicates that individuals with higher levels of epistemic curiosity at work will be more likely to seek out, explore, and conquer situations that are appraised in terms of novelty, complexity, and ambiguity and, therefore, more often possess behaviors such as information seeking, thinking, and developing something new and unconventional (Erez & Nouri, 2010; Mussel, 2013).

Not only does curiosity activate the interest in novelty, but it also imbues individuals with the ability to regulate their attention effectively, to process knowledge more deeply, to remember information faster, and to more persist on tasks until goals are met (Silvia, 2006). Specifically, work curiosity facilitates individuals' problem identification so that they can be on the right track to collect relevant information and to produce practical and innovative solutions (Amabile, 1988; Mumford, 2011). Moreover, employees with a high level of curiosity tend to favor risky yet unique and promising schemes (Kashdan & Fincham, 2002). Indeed, the exploratory and experimentalist nature of a curious mind is pivotal to individuals' tolerance of risks as they engage in the creative process. Recent research has provided preliminary evidence to emphasize the pivotal role of creative process engagement in the relationship between

curiosity, employee creativity and innovative performance (Harrison & Dossinger, 2017).

Accordingly, we predict the following:

Hypothesis 1a: Work curiosity is positively related to employees' creative process engagement.

Prior organizational research has attempted to establish the relationship between conformity and individual creativity, but the existing findings are far from conclusive. For example, Zhou and her colleagues (2009) found that conformity does not have a direct effect on individual creativity but it plays a key role in strengthening the positive relationship between weak social ties' heterogeneous resource and creative performance when the employees are with a low level of conformist tendency. The work by Madjar et al. (2011) shows that employees' conforming behaviors exert positive influences on incremental creativity and routine performance. More recently, a study drew upon the social influence perspective shows that middle managers' conformity, which is used as a conservative strategy to maintain their status in the organization, has a detrimental effect on creative performance (Duguid & Goncalo, 2015). The existing research generally acknowledges the important role of conformity in affecting individual cognitive activities (Kirton, 1976; Nail et al., 2000), but little work has investigated the cognitive mechanisms that link individuals' behavioral conformity to creativity.

Employees' prevention focus reflects on their conforming behaviors, which are embodied in the adherence to organizational norms, unwillingness to be distinctive, and reluctance to

engage in creative activities at work. According to Madjar et al. (2011), conformity is a controlling mechanism that discourages novel approaches and radical innovations and pushes more direct applications or small modifications. Conformism adjusts individuals' sensemaking to avoid participating in the situation with changes (Baas et al., 2011; Drazin, Glynn, & Kazanjian, 1999; Madjar et al., 2011). Thus, the conformists' mindset of playing it safe and seeking stability is likely to decrease their willingness to engage in creative processes, which inevitably involve a certain level of uncertainty and risk. Accordingly,

Hypothesis 1b: Conformity is negatively related to employees' creative process engagement.

Employee creativity and innovation performance

As the complexity and volatility become an economic reality in the knowledge-intensive industries (Liu et al, 2016), there is a growing importance of professional employees' work creativity to a company's innovative capability and competitive advantages (Anderson et al., 2014; Shalley et al., 2009). Individual creativity in organization has been defined as the generation of novel and useful ideas for products, services, or processes, whereas innovation refers to the successful implementation of these original ideas for value creation (Amabile, 1988; Shalley et al., 2004). Literature suggests that creativity is a separate dimension of positive work outcomes, which can range from familiar algorithms and minor adaptations to norm-breaking heuristics and radical breakthroughs (Madjar et al., 2011). Based on the exploration-exploitation perspective, creativity scholars have conceptualized two types of creativity:

incremental and radical (Gilson & Madjar, 2011). It is important to distinguish between incremental and radical creativity because both dimensions of creative performance may benefit innovation to a different extent.

Specifically, radical creativity, which focuses on divergence, has been defined as groundbreaking ideas that differ substantially from the existing practices in the organization as well as in the industry (Gilson & Madjar, 2011). In contrast, incremental creativity is characterized by adaptation and defined as the ideas which imply few constructive changes and offer only minor modifications to existing practices and products (Madjar et al., 2011). Both incremental and radical creativity of employees can add to an organization's innovative capabilities, but the magnitude of their respective contributions may vary. For example, incremental creativity may benefit a company's operational efficiency and effectiveness, but radical creativity could become a game changer by bringing about a paradigm shift to the industry as a whole.

Following the aforementioned rationale, the emergence of creative ideas is a result of individuals' cognitive activities of work problem identification, environment exploration, data collection, and solution generation (Shalley et al., 2004; Zhang & Bartol, 2010). In pursuit of the novel and useful solutions to a complex problem, creative process engagement is the cognitive pathway through which employees can not only explore possibilities and alternatives, but also allocate attention to particular aspects of the task (Amabile & Pratt, 2016). Simple solutions that are not novel and useful may emerge when individuals minimally engage in the

creative process (Zhang & Bartol, 2010). Thus, both incremental and radical creativity at work rely heavily on employees' creative process engagement, which is conducive to their creativity in introducing adaptive changes and revolutionary breakthroughs. Based on this rationale, we propose the following:

Hypothesis 2a: Creative process engagement is positively related to employees' incremental creativity.

Hypothesis 2b: Creative process engagement is positively related to employees' radical creativity.

As mentioned previously, cognitive process is a pathway which transforms individuals' personal attributes into intellectual performance (Zhang & Bartol, 2010). Work curiosity motivates employees to identify work problems from new perspectives, spawning novel approaches for elevating performance and thereby activating not only increased motivation to engage in creative process but also to see original ways to innovate (Harrison et al., 2011; Harrison & Dossinger, 2017). Therefore, creative process engagement may serve as a cognitive conduit which facilitates work curiosity's positive effects on employee creativity. In contrast, conformism nurtures the unwillingness to take risks and try new approaches (Kirton, 1976). Conformist behaviors may hamper creative idea generation through decreasing employees' intent to engage in the creative processes.

The mediating role of creative process engagement between curiosity, conformity, and employee creativity can be derived from the sensemaking perspective (Amabile & Pratt, 2016;

Drazin et al., 1999). An individual with a high level of work curiosity is eager to experiment on new alternatives because of their inherent pro-novelty characteristic. Conformist employees are prone to avoid creative ideation because they perceive creative processes may bring unnecessary risks to their work progress and jeopardize the status quo. Conformity is a behavioral indication of employees' concern with safety and stability, thus lowering their motivation to engage in creative process for generating novel ideas. Accordingly, we predict:

Hypothesis 3a: Creative process engagement mediates the effects of work curiosity on incremental creativity and radical creativity.

Hypothesis 3b: Creative process engagement mediates the effects of conformity on incremental creativity and radical creativity.

Despite the numerous merits of creativity, an organization may fail to capitalize on its employees' creative ideas because the novel thoughts do not be implemented in real products or processes. Although people generally value unique ideas, the novelty and originality entailed in creative thinking also signify uncertainty and risks, which often cause top management's hesitation in approving the creative plans. Traditional assessment may reject an original idea since it does not easily fit into the existing work procedure (Černe, Batistič, & Kenda, 2018). Hence, in comparison to originality and usefulness entailed in creative ideas, employees' innovative behavior places emphasis on the evaluation and successful implementation of these ideas into new products, processes, or services for generating value (Černe et al., 2018; Sarooghi, Libaers, & Burkemper, 2015).

Employees' innovative behaviors include not only creating new ideas, but also the follow-up championing efforts, which enable the novel alternatives can be justified in the organization's evaluation and be implemented into practice (Sarooghi et al., 2015; Yuan & Woodman, 2010). Therefore, implementing a creative solution is the endeavor to communicate the idea to others and play an active role in championing its adoption as an approach to solving work-related problems. Employee creativity has long been seen as a foremost ingredient of innovation performance, especially when their work is knowledge-based and entails innovativeness as a requirement (Anderson et al., 2014). A meta-analytic study reported that creativity has a positive and strong relationship with innovation, especially at the individual level (Sarooghi et al., 2015).

Given that professional workers' innovative behavior has been extensively found to impact organizations' competitiveness (e.g. Duguid, & Goncalo, 2015; Grant & Berry, 2011; Yuan & Woodman, 2010), it is important to understand how individual creativity determines employees' innovative capabilities. By differentiating the two dimensions of employee creativity, we posit that both incremental creativity and radical creativity contribute to innovation performance.

Accordingly:

Hypothesis 4a: Employees' incremental creativity is positively related to innovation performance.

Hypothesis 4b: Employees' radical creativity is positively related to innovation performance.

Methods

Sample and data collection procedure

The study investigates the impact of work curiosity and conformity on knowledge workers' creativity and innovation performance in knowledge-intensive industries. To test the current hypotheses, we collected data from the 1,000 biggest technology-based manufacturing companies in Taiwan by referring to the directory published by the Common Wealth Magazine, which is the leading business media in Taiwan. We especially focused on employees whose work entails a high level of professionalism and cognitive demand, such as R&D engineers, new product development staff, middle management, etc. A postal and the Internet-based questionnaire survey was used to collect the data. We first sent out the survey packets, which included the questionnaire and a covering letter that explained the target sample and the purpose of this study and guaranteed the confidentiality of their responses. Furthermore, we also contacted few key persons who occupy high managerial positions in the targeted companies to inform them about this study and seek their consent to support our questionnaire. After three waves of data collection and elimination of incomplete reply, we received 372 valid responses, resulting in a response rate of 37.2%. The demographic profile of the respondents is shown in Table 1.

<<Insert Table 1 about here>>

Measures

Innovation performance. In work settings, individuals' innovation performance captures the

extent to which an employee proposes innovative ideas and makes effort to implement them towards better applications for value creation, such as procedures, practices, or products (Anderson et al., 2014). To assess professional employees' innovative performance, we adopted the scale of individual innovation developed by Janssen (2005), which ranges from "1 = completely disagree" to "7=completely agree". A sample item is "I acquire approval for innovative ideas from my supervisor and colleagues". The Cronbach's α was .86.

Work curiosity. To measure professional employees' curiosity in a knowledge-intensive work environment, the epistemic curiosity extensively studied in psychology provides a solid foundation. From the motivational point of view, the conceptualization of epistemic curiosity depicts human curiosity towards cognitive activities and suggests that cognitive exploration is aroused by the interest-induced and deprivation-eliminating motives (Litman, 2005). Therefore, we adopted the scale of epistemic curiosity developed by Litman (2008) and contextualized it in the work settings. The six-item scale (Cronbach's $\alpha = .81$), ranging from "1 = completely disagree" to "7=completely agree", assesses an employees' desire to learn new knowledge (arousal) and the intent to reduce the feeling of ignorance (drive). Sample items include: "I enjoy learning about task-relevant knowledge even though it is unfamiliar to me" and "If there is an unsolved work problem, I spend hours addressing it because I cannot rest without answer."

Conformity. Conformity at work is individuals' tendency to observe other people's behavior for better interpreting the reality and imitate others' conduct for acting correctly in an ambiguous

and perplexing circumstance (Cialdini & Goldstein, 2004). Conformist behavior results from the pursuit of behavioral accuracy and effective action (Nail, 2000). To measure conformity, we adopted the 7-point scale from Miron, Erez and Naveh (2004), which ranges from “1 = never” to “7=very frequently”, and the Cronbach’s α was .67. A sample item is “When I undertake a task with which I am not familiar, I learn working practices from others to prevent making mistakes.”

Creative process engagement. To measure employees’ creative process engagement, we adopted the 9-item scale with three sub-dimensions from Zhang and Bartol (2010), which are based on the conceptual work of Amabile (1983) and Reiter-Palmon and Illies (2004). Creative process engagement consists of three recursive intellectual activities which determine employees’ ability to produce creative solutions for work-related problems. The three sub-dimensions of creative process engagement are problem identification (Cronbach's $\alpha = .76$), information searching (Cronbach's $\alpha = .70$), and idea generation (Cronbach's $\alpha = .79$). Sample items for the three sub-dimensions are “I spend considerable time trying to understand the nature of the problem”, “I consult a wide variety of information” and “I generate a significant number of alternatives to the same problem before I choose the final solution”, respectively.

Since the three sub-dimensions of creative process engagement are conceptually related, we then conducted a confirmatory factor analysis to examine the distinction between the dimensions for establishing discriminant validity. Results show that the fit indexes for three

first-order factors plus one second-order factor have a better model fit, $\chi^2(24)=55.16$, CFI=.98, IFI=.98, RMR=.02, and RMSEA=.05 than the one-factor model with all 9 items loaded onto it, $\chi^2(27)=139.51$, CFI=.91, IFI=.91, RMR=.02, and RMSEA=.11. The findings suggest that it is more appropriate to consider creative process engagement as a multi-layer construct with a second-order latent factor and three first-order latent factors reflecting the three dimensions.

Creativity. As stipulated by the prior research (Anderson et al., 2014; Madjar et al., 2011), differentiating between the incremental creative and radical creativity is useful in disentangling the intricate connotation of individual creativity at work. We adopted the measures developed by Majder, Greenberg, and Chen (2011) to rate employees' incremental creativity (Cronbach's $\alpha = .85$) and radical creativity (Cronbach's $\alpha = .91$). The 6-item scale has three items on each creativity dimension, ranging from "1 = never" to "7=very frequently". Sample items for incremental creativity and radical creativity are "My work modifies previously existing work processes to suit current needs" and "I present ideas of completely new processes or products than what my company currently does", respectively.

Control variable. We controlled for five demographic variables that have been regarded as having a strong impact on employees' creativity and innovative behaviors at work, including age, gender, position (manager/ordinary employee), company tenure, and work experience (Anderson et al., 2014; Zhang & Bartol, 2010).

Analytic procedure

To test the hypothesized structural model, we followed Anderson and Gerbing's (1988) two-step analytical approach to test the hypothesized model shown in Figure 1. As per this approach, the measurement model was first established by using confirmatory factor analysis (CFA). Then, we tested a structural model based on the measurement model to examine the fit of the hypothesized model to the empirical data.

Creativity and innovation performance were self-reported by the informants since the supervisory rating was not feasible due to the anonymity assured by our survey. Prior research suggests that professional workers are best suited to self-report their creativity and innovative work behavior because they are the ones who are aware of the implicit things they do in their jobs that make them creative and innovative (Shalley, Gilson, & Blum, 2009). Additionally, it has been found that self-reported measures are highly correlated with supervisory ratings of creativity (Axtell, Holman, & Unsworth, 2000). Nevertheless, the self-reported approach may make this study vulnerable to the potential threat of common method variance (CMV).

To mitigate the impact of CMV, we adopted the procedural remedies during the survey recommended by Podsakoff, MacKenzie, and Podsakoff (2012). Specifically, we assured our respondents of strict confidentiality as well as that no right or wrong answers exist for reducing evaluation apprehension. Several statistical approaches suggested by Podsakoff et al. (2012) were used to diagnose the magnitude of CMV. First, we conducted an exploratory factor analysis for Harman's one-factor test, which showed that six distinct factors account for 64

percent of the total variance, with the first factor explaining 31 percent. The results suggested no single factor emerged, nor did one factor account for most of the variance. Second, by using confirmatory factor analysis, we examined a model loading all of the items onto a common method factor, a model loading the items onto their theoretically assigned latent variables, and a model loading the items onto their latent variables as well as onto an additional common method factor. Results of these analyses showed that the addition of the common method factor did not significantly improve model fit, and it accounted for only a small portion (i.e. 14%) of the total variance, which is less than the threshold proposed by Williams, Hartman, and Cavazotte (2010). We furthermore included the latent method variance factor mentioned above as control in the structural model (Podsakoff et al., 2012), and found that the overall pattern of relationships between the constructs also remains the same. Therefore, CMV did not pose a threat to the findings and the validity of the measures is confirmed.

Results

Validity and Reliability of Construct Measures

We used confirmatory factor analysis to examine the validity and reliability of the construct measures. According to the results, all values of factor loading for the observed items are greater than 0.5, most values of average variance extracted (AVE) are closed and above 0.5, and all values of composite reliability (CR) are greater than 0.6, indicating the requirements for convergent validity are satisfied. Given that creative process engagement, incremental

creativity, radical creativity, and innovation performance are conceptually similar constructs, we conducted the additional procedure to established discriminant validity and examine whether the items of the different scales actually measured the intended constructs. We follow the approach suggested by Hair and the colleagues (2010) to test whether the latent constructs in our model explain more of the variance in their item measures that they share with another construct. As stipulated by this method, the value of the average variance extracted should be greater than the squared correlation coefficients to achieve adequate discriminant validity. The results show that the average variance extracted for each construct range from 0.42 to 0.75, and the values are greater than the corresponding squared correlation coefficients, so the criterion is met.

Moreover, Table 2 shows the means, standard deviations, and correlations among all variables incorporated in the structural model.

<<Insert Table 2 about here>>

Measurement Model

Through CFA, the results of the measurement model test suggested a good fit to the data ($\chi^2/df = 2.24$, CFI=.92, IFI=.92, RMR=.03, and RMSEA=.05) and thereby justified further examination of the structural model. As shown in Table 3, we report multiple indexes in assessing model fit, as generally suggested by prior SEM researchers (e.g., Byrne, 2016; Hair et al., 2010).

Structural Model

Results of structural modeling test suggested that the hypothesized model fit the data well ($\chi^2/df = 2.19$, CFI=.92, IFI=.92, RMR=.05, and RMSEA=.05). All model fit indexes are summarized in Table 3.

<<Insert Table 3 about here>>

Hypothesis 1a posits that work curiosity is positively related to creative process engagement and our results supported this prediction ($\beta=.66$, $p<.001$). Hypothesis 1b, which states that conformity is negatively related to creative process engagement, was supported as well ($\beta=-.17$, $p<.01$). Hypothesis 2a and 2b postulate that creative process engagement has positive effects on employees' incremental creativity and radical creativity. Our results supported both hypotheses (incremental creativity: $\beta=.42$, $p<.001$; radical creativity: $\beta=.54$, $p<.001$). Moreover, hypothesis 4a, which posits that incremental creativity is positively associated with innovation performance, also received support ($\beta=.13$, $p<.01$). Finally, results supported hypothesis 4b, which predicts that radical creativity has a positive effect on innovation performance ($\beta=.74$, $p<.001$).

Following the suggestions of Anderson and Gerbing (1988), we furthermore tested three alternative models which are less likely to fit the observed data but are nonetheless plausible based on the theoretical inference, as shown in Table 3. First, we added direct paths from work curiosity and conformity to radical and incremental creativity. Although this model showed a

good fit, ($\chi^2/df = 2.27$, CFI=.88, IFI=.89, RMR=.09, and RMSEA=.07), the results did not yield a better model fit than our hypothesized model. Second, we added a direct path from creative process engagement to innovation performance. Again, although this model demonstrated a good fit to the data ($\chi^2/df = 2.47$, CFI=.90, IFI=.90, RMR=.11, and RMSEA=.06), it did not demonstrate better fit than the hypothesized model. More importantly, the path between creative process engagement and innovation performance was not significant ($\beta=.09$, n.s.). Third, a case can also be made that work curiosity and conformity directly affect individual creativity without influencing creative process engagement. Thus, we used work curiosity, conformity, and creative process engagement as three independent variables on incremental and radical creativity. Similarly, this model provided an adequate fit but was not significantly better than the hypothesized model ($\chi^2/df = 2.61$, CFI=.89, IFI=.89, RMR=.07, and RMSEA=.07).

Tests of Mediating Effects

We also hypothesized the mediating role of creative process engagement in the relationship between work curiosity and employee creativity (i.e. hypothesis 3a) and in the relationship between conformity and employee creativity (i.e. hypothesis 3b). Three analyses were employed to examine whether the mediating effect. First, the alternative model examination showed that our hypothesized model, which predicted the fully mediating effect of creative process engagement, had a better fit to the data than Alternative model 1 (partially

mediation) or Alternative 3 (no mediation). Second, as per the procedure suggested by Sobel (1982), we conducted Sobel tests and results showed significant indirect effects for work curiosity-incremental creativity relationship (*Sobel test*= 4.69, $p < .001$) as well as work curiosity-radical creativity relationship (*Sobel test*= 5.32, $p < .001$), thereby supporting hypothesis 3a. Likewise, we found significant indirect effects for both conformity-incremental relationship (*Sobel test*= -2.43, $p < .05$) and conformity-radical creativity relationship (*Sobel test*= -2.51, $p < .05$).

Furthermore, because Sobel test is prone to violate multivariate normality, we employed the bias-corrected bootstrapping approach to estimate the confidence interval for the indirect effect through creative process engagement. The 95% confidence intervals excluded zero: hypothesis 3a, [.24, .56] for curiosity-incremental creativity relationship and [.38, .78] for curiosity-radical creativity relationship; hypothesis 3b, [-.29, -.04] for conformity-incremental creativity relationship and [-.41, -.06] for conformity-radical creativity relationship. Therefore, our results support both H3a and H3b, confirming the mediating role of creative process engagement.

Discussion

Regulatory focus theory is emerging as the important perspective for researchers to use in mapping organizational phenomenon because personnel's self-regulation profoundly influences their behavior and performance (Green et al, 2017; Johnson et al., 2015; Madjar et

al., 2011). Curiosity and conformity are the cognitive attributes which reflect individuals' regulatory focus during goal pursuit in an uncertain and volatile circumstance (Litman, 2005; Nail et al., 2000). Although curiosity and conformity have been regarded as having many implications to individuals' cognitive ability and creative ideation (Duguid & Goncalo, 2015; Kashdan & Fincham, 2002), findings of the prior investigation are far from conclusive.

Professional-level employees' creativity and innovative behavior are integral to a company's competitiveness and growth, particularly in the dynamic and knowledge-driven industries. Prior studies have implied that curiosity is crucial to individual creativity whereas conformity is a suppressor of creative thinking. Specifically, curious individuals have been found to crave for feedback, possess the open-minded attitude, have positive framing in uncertain situations, and tend to experiment on alternatives (Hardy et al., 2017; Harrison et al., 2011; Harrison & Dossinger, 2017). On the contrary, research suggests that conformity provides an adaptive shortcut that maximizes the possibility of effective action with minimal expense to one's cognitive resources (Chartrand & Bargh, 1999). Conformity signifies the desire to maintain the status quo, unwillingness to be different, and resistance to change, thus leading to the reluctance to engage in creative behavior (Duguid & Goncalo, 2015; Madjar et al., 2011). To extend this line of research, we draw upon the componential theory of creativity (Amabile & Pratt, 2016) and the sensemaking perspective proposed by Drazin et al. (1999) to

incorporate creative process engagement as a mediating mechanism which links employees' work curiosity and conformity to creative idea generation and innovation performance.

This paper makes four contributions to the literature. First, our study provides a new lens for investigating organizational phenomenon by contextualizing the curiosity and conformity in work settings. Although their prominent role in human behavior has been evidenced by a rich body of psychology research, curiosity and conformity are surprisingly absent from consideration in organizational scholarship. The inclusion of work curiosity and conformity points to a fruitful avenue for future organizational research based on the regulatory focus theory. Second, we successfully establish a conceptual model which explains how employees' work curiosity and conformity impact creativity and innovation performance through influencing their creative process engagement. As predicted, work curiosity has a positive influence on professional employees' eagerness to engage in the creative process. The findings suggest that employees who enjoy learning new knowledge and want to eliminate the unpleasant feeling of ignorance are more active in identifying problems, searching relevant information and generating many promising ideas. In contrast, results show that employees' conforming behavior negatively affects their creative process engagement. Based on the findings, individuals with conformity orientation may have a limited ability to see a perplexing problem from different angles and less motivation to procure novel information or try out alternative solutions.

Third, we draw upon the sensemaking perspective to empirically test the mediating effect of creative process engagement. Our findings indicate that creative process engagement is the critical cognitive intermediary that links work curiosity and conformity to employee creativity and innovation performance. A number of studies have shown that creative process engagement is a series of cognitive activities activated by individuals' psychological attributes and a prerequisite for creative idea generation (Gilson & Madjar, 2011; Reiter-Palmon & Illies, 2004; Zhang & Bartol, 2010). As employees sense a strong curiosity towards their tasks, they are apt to engage in the creative processes for exploring and experimenting novel ideas and hence have a better chance to produce creative ideas. On the other hand, although a conformist work strategy may allow individuals to reduce uncertainty and gain the sense of control at work, our findings suggest that conformism may harm employees' creative thinking by impeding their engagement in the creative processes.

Fourth, this study furthermore shows that employees' creative process engagement positively affects innovation performance through strengthening creativity. We differentiate between incremental creativity and radical creativity since prior work reveals that the two dimensions of creativity benefit innovation performance to a substantially different degree (Madjar et al., 2011). Interestingly, compared to a recent meta-analysis (Sarooghi et al., 2015) showing a strong positive link between creativity and innovation ($r = .46$), our findings indicate that radical creativity has a significantly strong effect on innovation performance ($r = .74$) than

does incremental creativity ($r=.13$). The results suggest that groundbreaking ideas which involve unconventional thinking and rule challenging are more likely to promote employees' innovation performance, compared to making slight adjustment or improvement to the existing work procedure.

Our findings also have some practical implications. One major reason behind employees' reluctance to engage in creative activities is their proclivity towards behavioral accuracy, ensuring stability as well as avoiding risks involved in the creative processes. Both curiosity and conformity are individuals' behavioral strategy to reduce uncertainty and pursue goals. Curiosity implies the active exploration of ambiguity and embracing novelty, whereas conformity signifies a passive response to existing norms and work procedures. Company leaders should try to cultivate a constructive atmosphere for promoting employees' inquiry and work curiosity in the organization if they wish to introduce ground-breaking innovation to the market, maintain dominance in the industry, or strengthen technological advantage. Employees perceive curiosity in the job when they have an intrinsic interest in the task, feel supportive in exploring bold yet promising thoughts, or consider the work is meaningful and valuable. A working environment with a strong culture of curiosity is a cradle of creative ideas, whereas company imbued with standardization, bureaucracy, and the norm of meticulousness will induce the employees' conforming behavior, which leads to weak responsiveness to industrial dynamics.

Limitations and Directions for Future Research

The contributions discussed above should be interpreted with regard to this study's limitations. First, the structure of our theoretical framework follows the hypothesized causal order, with individual differences affecting the behavior of creative process engagement, which furthermore determines individual creativity and innovative behavior. The cross-sectional design of our study limited our ability to determine causality. Although the individual differences in curiosity and conformity have been generally regarded as the antecedent of behavior and relevant cognitive functioning, the relationship can also be reciprocal. For example, as theorized in our model, employees' curiosity leads to creative process engagement, yet the joy of finding creative solutions or solving difficult problems may reversely strengthen their work curiosity. Similarly, when individuals start engaging in the creative processes, they are more likely to appreciate the value of creative thinking, thus diminishing the inclination towards conformity. We strongly recommend that future studies draw on longitudinal designs and explore the structural relationship posited in this paper.

Second, the data used in this study were collected from a single source. Despite the appropriateness of measuring perceptual and attitudinal variables using self-reports (Yuan & Woodman, 2010), we carefully followed the suggestions of Podsakoff et al. (2012) to design the survey for controlling the potential method variance (although prior work points out that worries about CMV may be distorted and overstated [à la Shalley et al., 2009; Spector, 2006]).

To detect the magnitude of common method variance, we used the statistical methods recommended by Podsakoff et al. (2012) and results suggested that the threat of CMV was low.

Third, this paper underscores the importance of individual curiosity and conformity in affecting behavior and cognition, but the contextual and dispositional antecedent of individual curiosity and conformity remain unclear. Future research is encouraged to explore the organizational factors or individual differences that may regulate employees' work curiosity and conformity. Fourth, curiosity may not always benefit creative thinking whereas conformity does not necessarily undermine innovation performance, especially when we consider the stages of creative process. For instance, during the stage of information searching, an excessive level of curiosity may result in information overload and a lack of focus. In contrast, conformity may be an efficient way of reaching consensus on an innovative project during the stage of idea implementation. We encourage future research which explores how the roles of work curiosity and conformity evolve throughout all stages of the creative process.

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FIGURE 1
Hypothesized model

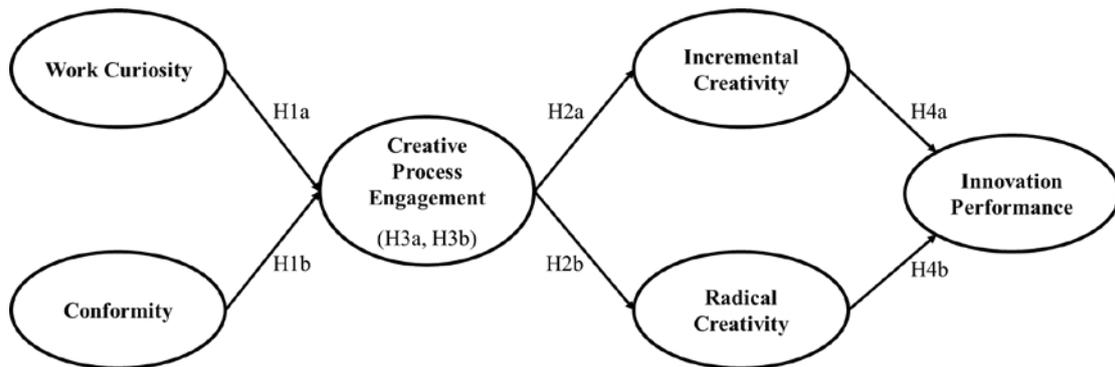


TABLE 1
Demographic Profile

| Variable | Category | <i>n</i> | Percentage (%) |
|-------------------------------|-----------------------------------|----------|----------------|
| Gender | Female | 73 | 19.6 |
| | Male | 299 | 80.4 |
| Age (years) | ≤ 30 | 45 | 12.1 |
| | 31-35 | 62 | 16.7 |
| | 36-40 | 76 | 20.4 |
| | 41-45 | 77 | 20.7 |
| | ≥ 46 | 112 | 30.1 |
| Educational attainment | Senior high school | 6 | 1.6 |
| | Vocational school | 43 | 11.6 |
| | Bachelor's degree | 119 | 32 |
| | Master's degree | 161 | 43.3 |
| | Doctoral degree | 43 | 11.6 |
| Educational background | Humanities | 6 | 1.6 |
| | Business & management | 54 | 14.5 |
| | Engineering | 212 | 57 |
| | Science | 69 | 18.5 |
| | Law | 1 | 0.3 |
| | Agriculture & bio-technology | 20 | 5.4 |
| | Medicine | 5 | 1.3 |
| Project type | Other | 5 | 1.3 |
| | Basic research | 34 | 9.1 |
| | Applied research | 101 | 27.2 |
| | New product (process) development | 184 | 49.5 |
| | Technical service | 53 | 14.2 |

TABLE 2**Means, standard deviations, and correlations**

| Variables | Mean | s.d. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|--------------------------------|-------|------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|----|
| 1. Innovation performance | 4.99 | .93 | - | | | | | | | | | | |
| 2. Age | 40.00 | 6.91 | .25** | - | | | | | | | | | |
| 3. Gender | 1.80 | .40 | .27** | .28** | - | | | | | | | | |
| 4. Managerial position | 1.35 | .48 | -.29** | -.57** | -.32** | - | | | | | | | |
| 5. Tenure in the company | .82 | .49 | .16** | .62** | .20** | -.52** | - | | | | | | |
| 6. Work experience | .76 | .53 | .17** | .47** | .11* | -.23** | .17** | - | | | | | |
| 7. Work curiosity | 5.94 | .60 | .44** | .21** | .17** | -.22** | .09 | .18** | - | | | | |
| 8. Conformity | 5.65 | .67 | .10 | -.04 | -.03 | .13* | -.04 | -.03 | .22** | - | | | |
| 9. Creative process engagement | 4.00 | .47 | .42** | .08 | .19** | -.18** | -.04 | .12* | .48** | .00 | - | | |
| 10. Incremental creativity | 5.40 | .83 | .51** | .10 | .10 | -.13* | .04 | .02 | .34** | .15** | .33** | - | |
| 11. Radical creativity | 5.02 | .95 | .75** | .12* | .23** | -.25** | .09 | .16** | .41** | .07 | .43** | .54** | - |

TABLE 3**Summary of Model Fit Indexes**

| Model Test | χ^2/DF | CFI | IFI | RMR | RMSEA |
|---|-------------|-----|-----|-----|-------|
| Independence model | 14.58 | | | | |
| Measurement model | 2.24 | .92 | .92 | .03 | .05 |
| Hypothesized model | 2.19 | .92 | .92 | .05 | .05 |
| Alternative model 1: Direct paths from work curiosity and conformity to radical creativity and incremental creativity | 2.27 | .88 | .89 | .09 | .07 |
| Alternative model 2: Direct path from creative process engagement to innovation performance | 2.47 | .90 | .90 | .11 | .06 |
| Alternative model 3: Creative process engagement as an independent variable | 2.61 | .89 | .89 | .07 | .07 |

χ^2 -values for the measurement and structural models are significant at $p < .001$.