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Motivations for Employee Creativity: The Mixed Moderating Role of Prosocial Motivation

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Abstract

This study investigates the indirect relationship between job autonomy and creativity through creative self-efficacy and intrinsic motivation, and is based on the motivational theory of creativity. It suggests that intrinsic motivation and creative self-efficacy positively influence creativity. Additionally, prosocial motivation's mixed moderating role is tested in this study. The results demonstrate that job autonomy directly promotes intrinsic motivation and creative self-efficacy and indirectly influences employee creativity through intrinsic motivation and creative self-efficacy, based on survey data from 323 employees in the information technology industry. In decreasing order, creative self-efficacy, intrinsic motivation, and prosocial motivation-the three main motivations-all have a favorable impact on creativity. Furthermore, the impact of creative self-efficacy on creativity is reinforced by prosocial drive. Prosocial drive, however, has no moderating effect on the connection between intrinsic motivation and employee creativity.

Keywords: *Prosocial Motivation, Intrinsic Motivation, Job Autonomy, Creativity, Creative Self-Efficacy.*

INTRODUCTION

Creativity plays an important role in the process of organizational innovation, increasing organizational performance, helping organizations survive and develop, especially in a rapidly changing business environment (Anderson et al., 2014; Liu et al., 2016; Shalley et al., 2004). Studies from the past to the present show that there are many factors affecting creativity, such as: Amabile (1983), Anderson et al. (2014), Shalley et al. (2004), and are divided into three main groups: (1) Personal factors, (2) work factors, and (3) social factors (Anderson et al., 2014). There have been many studies on the topic of creativity in the world (Anderson et al., 2014), but there are very few studies on the topic of employee creativity in Vietnam (Bui Thi Thanh, 2014). In the group of personal factors, theory has affirmed the core role of motivation in promoting employee creativity, it compensates for the lack of expertise, skills, or creative thinking (Amabile, 1983, 1997). However, according to Liu et al. (2016), empirical studies testing the impact of prosocial motivation on employee creativity are still quite few, mainly studies stop at the concept, propose hypotheses but have not been tested by experiment.

Furthermore, studies on the motivational antecedents affecting employee creativity are limited and need further research (Anderson et al., 2014; Bammens, 2016). Previous studies in the world have focused on three main types of motivation: (1) Creative self-efficacy, (2) intrinsic motivation, and (3) prosocial motivation, however, "the three streams of motivational research on creativity have been largely studied separately" (Liu et al., 2016). As a result, determining the strength or weakness of the impact of motivational types on employee creativity is still limited in practical testing. In addition, the relationship between work autonomy and creativity has also received much attention. The results of previous studies confirm that job autonomy has a positive impact on creativity (Coelho & Augusto, 2010) or moderates the interaction between leadership and creativity (Wang &

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Cheng, 2010). However, research on the impact of job autonomy on employee creativity indirectly through motivation is limited although a meta-analysis has shown this relationship (Liu et al., 2016).

In order to bridge the above research gaps, this study simultaneously focuses on three main types of motivations that influence creativity: (1) Creative self-efficacy, (2) intrinsic motivation, and (3) prosocial motivation. This study surveyed engineers, technicians, and employees working in departments in the information technology industry because Schweisfurth and Raasch (2018) concluded that creative ideas can originate from any department in the company. In particular, the information technology industry is the field where previous studies on the topic of creativity surveyed data to analyze and test the research model (Farmer et al., 2003; Yuan & Woodman, 2010).

This study contributes to the expansion of the theory on the topic of creativity, especially in Vietnam. First, the author examines and compares the impact of three main types of motivation on employee creativity in Vietnam. In particular, this study explores and examines the relationship between prosocial motivation and employee creativity empirically in response to the call for research by Liu et al. (2016). Second, although prosocial motivation reinforces the influence of intrinsic motivation on creativity that has been studied by Grant and Berry (2011), this study continues to explore and examine a new relationship, which is the moderating role of prosocial motivation on the relationship between creative self-efficacy and employee creativity. Finally, this study examines the impact of job autonomy on employee creativity indirectly through intrinsic motivation and creative self-efficacy.

After the introduction in Part 1, the structure of the paper consists of four remaining parts in the following order: Part 2 overviews the theoretical basis and hypotheses; Part 3 presents the research method; Part 4 presents the research results; and Part 5 presents the discussion and managerial implications.

Theoretical Framework and Hypotheses

Theoretical Framework

Creativity is defined as the generation of ideas, products, and processes that are both novel and useful (Oldham & Cummings, 1996). In the creative process, motivation is the most important factor that determines the difference between what a person can do and what he or she will do (Amabile, 1983). Based on the theory of creative motivations studied by the method of Meta-Analysis (Liu et al., 2016), this study focuses on examining the role of work autonomy and three main types of motivation that affect creativity, which are: (1) creative self-efficacy, (2) intrinsic motivation, and (3) prosocial motivation.

Intrinsic motivation is studied and developed by the Componential Theory of Creativity (Amabile, 1983, 1997). In this theoretical model, three main groups of components affect individual creativity: (1) expertise, (2) creative skills, and (3) intrinsic motivation (Amabile, 1983, 1997). In addition, environmental factors affecting creativity include: Resources, organizational dynamics, and management issues (Amabile, 1997). This model has received many empirical tests and most authors explore and test intrinsic motivation as a mediating mechanism underlying the impact of environmental factors on creativity (Anderson et al., 2014; Shalley et al., 2004). Intrinsic motivation drives individuals to engage in the creative process because they find it enjoyable to do so (Amabile, 1983, 1997).

Unlike intrinsic motivation, creative self-efficacy is studied based on the Social Cognitive Theory (Bandura, 1997; Tierney & Farmer, 2002). This theory emphasizes that creative self-efficacy encourages individuals to engage in the creative process and maintain their level of engagement in this process because they believe they have the ability to complete the creative process (Tierney & Farmer, 2002). Finally, prosocial motivation is studied based on the combination of the theory of the components of creativity and the Prosocial Motivation Theory (Bolino & Grant, 2016; Grant, 2008; Grant & Berry, 2011). This theory emphasizes that creativity should not only focus on novelty but also on usefulness, during the creative process, prosocial motivation motivates individuals to focus on finding new ideas that benefit others (Grant & Berry, 2011).

The Most Related Studies

Work motivation is one of the main factors affecting creativity (Anderson et al., 2014). Scholars around the world have focused on studying the impact of intrinsic motivation on employee creativity. Research results show that employee intrinsic motivation as well as the interaction between employee intrinsic motivation and management intrinsic motivation affect creativity (Tierney et al., 1999). Furthermore, management support affects creativity through intrinsic motivation (Chen et al., 2016). In addition to intrinsic motivation, scholars are also interested in examining the impact of creative self-confidence on employee creativity. Studies applying social cognitive theory have confirmed that creative self-confidence has a direct impact on employee creativity (Houghton & DiLiello, 2010; Tierney & Farmer, 2002, 2004). In addition, other factors such as work experience, job self-efficacy, management behavior, views on creative expectations, and job complexity influence creativity through creative self-efficacy (Tierney & Farmer, 2002, 2004). Furthermore, young leader development moderates the relationship between creative self-efficacy and individual creativity (Houghton & DiLiello, 2010). Finally, prosocial motivation has also been studied in recent years. Prosocial motivation moderates the relationship between intrinsic motivation and creativity because prosocial motivation directs employees to generate ideas that are not only novel but also useful to others (Grant & Berry, 2011). A meta-analysis indicates that prosocial motivation positively affects employee creativity (Liu et al., 2016). However, this relationship has not yet been tested through empirical studies (Liu et al., 2016).

In Vietnam, research exploring and measuring factors affecting employee creativity seems to be still lacking (Bui Thi Thanh, 2014). The research results of Bui Thi Thanh (2014) show that intrinsic motivation has a positive impact on employee creativity in banks, in addition, other factors such as creative thinking style, creative autonomy, work autonomy and organizational support also have a positive impact on employee creativity.

Hypotheses

Job autonomy is defined as the degree of freedom, independence, and discretion that employees have in planning their work and determining the work process when assigned to a job (Hackman & Oldham, 1975; Parker, 1998) and the extent to which employees can determine the method, pace, sequence, and effort required to complete tasks (Spector, 1986; Volmer et al., 2012; Wang & Cheng, 2010). Employees with more job autonomy will have more freedom to decide what tasks to perform, how to perform the work, and what measures to take to handle the work (Llopis & Foss, 2016). Job autonomy increases employees' responsibility for their work (Parker et al., 1997) and broadens their understanding and perspective-taking (Parker & Axtell, 2001). This leads to increased employee engagement in generating and pursuing new ideas (Wu et al., 2014). Job autonomy gives employees the opportunity to experiment with new and useful combinations of methods (Wang & Cheng, 2010), leading to more opportunities for employees to develop new ideas and demonstrate the originality of their ideas (Volmer et al., 2012).

To have high intrinsic motivation to foster creativity, employees need to work in conditions of high autonomy and receive positive feedback to provide necessary information (Zhou, 1998). Self-determination theory suggests that an environment that allows high autonomy will promote and maintain intrinsic motivation (Black & Deci, 2000; Deci et al., 1981). Job autonomy is the main source of intrinsic motivation (Liu et al., 2016). When employees work in jobs that allow high autonomy, they will find intrinsic motivation and use this motivation to develop creative ideas (Shalley et al., 2004). Job autonomy is an important factor in job design, providing a desirable work environment that motivates and encourages employees to work (Joo et al., 2010). An environment that allows autonomy and freedom will promote employee motivation (Komarraju et al., 2009).

Interdependence in work is controlled by the company and this affects employee confidence (Gist & Mitchell, 1992). High job autonomy allows employees to make their own decisions, which increases self-control (Parker, 1998). Job autonomy is one of the determinants leading to employee confidence (Bandura & Wood, 1989) as well as developing a strong belief that they can succeed with their new ideas (Wu et al., 2014). In an environment

with high autonomy and much support from managers and colleagues, the level of individual confidence will increase (Overall et al., 2011). Furthermore, a meta-study by Liu et al. (2016) showed that job autonomy positively affects creative confidence. With the above explanations, the authors propose the following two research hypotheses:

H1a: Job autonomy has a positive impact on employees' intrinsic motivation.

H1b: Job autonomy has a positive impact on employees' creative confidence

Intrinsic motivation is the act of a person being motivated to work because of passion and being absorbed in the work (Amabile, 1985), is the effort of a person for internal reasons such as interest, curiosity (Birdi et al., 2016), is the level of enjoyment of work and participation in work for the benefit of the work itself (Shalley et al., 2004). The theoretical model of the components of creativity has affirmed that intrinsic motivation plays an important role in promoting employee creativity (Amabile, 1983; Tierney et al., 1999) because employees are willing to make efforts and spend a lot of time participating in creative activities even though no rewards are promised (Birdi et al., 2016). When employees are intrinsically motivated, they are more flexible in their cognitive activities and more persistent in generating innovative and novel solutions (Chen et al., 2016). Intrinsic motivation increases employees' tendency to be curious, adventurous, and persistent when faced with difficulties in developing creative ideas (Shalley et al., 2004). Therefore, the following research hypothesis is proposed:

H2: Intrinsic motivation has a positive impact on employee creativity.

Creative self-efficacy is a subjective belief or self-assessment of one's own creative ability (Tierney & Farmer, 2002), an individual's self-perception of their ability to complete tasks creatively (Tierney & Farmer, 2004, 2011), and a self-assessment of being good at creative problem solving and generating new ideas (Houghton & DiLiello, 2010). According to Liu et al. (2016), creative self-efficacy is considered a mediating motivation that connects the effects of environmental factors and personal factors on employee creativity, which is a different research direction from intrinsic motivation, which was developed from Bandura's (1997) self-efficacy theory. The higher the creative self-confidence of an individual, the more opportunities he or she will recognize to translate his or her creative potential into practical actions at work (Houghton & DiLiello, 2010). The level of self-confidence of employees will affect the level of liking for creative activities, activities that inspire creativity and maintain the level of creativity at work (Tierney & Farmer, 2004). Maintaining creative self-confidence is very necessary (Tierney & Farmer, 2004) because creativity is often time-consuming, requires a lot of effort but is prone to failure (Amabile, 1983). Therefore, the authors propose the following research hypothesis:

H3: Creative self- efficacy has a positive impact on employee creativity

Prosocial motivation is defined as the desire and effort to benefit others (Grant, 2008), the desire to benefit others, or the effort to care for others (Bolino & Grant, 2016). Individuals with a prosocial orientation tend to accept feedback and integrate it into their self-evaluations or thinking (Korsgaard et al., 1997) and act to benefit others regardless of their own future benefits (Korsgaard et al., 2010). Prosocial motivation theory emphasizes that employees can develop problem-solving abilities while helping their colleagues solve problems (Bolino & Grant, 2016). Prosocial motivation promotes idea generation by orienting employees to focus on seeking and discovering useful aspects of work (Liu et al., 2016).

Although intrinsic motivation has positive effects and enhances cognitive flexibility to help employees generate new ideas, empirical research has shown that the effects of intrinsic motivation on employee creativity are inconsistent and that intrinsic motivation tends to lead employees to focus on the novelty of ideas rather than their usefulness (Grant & Berry, 2011). Therefore, this study further examines the moderating effect of prosocial motivation on the relationship between intrinsic motivation and employee creativity. Prosocial motivation motivates employees to aim for the benefit of others, which will help employees focus on the most relevant and useful ideas (Grant & Berry, 2011). When employees consider the needs and interests of others, they are more likely to adopt new ideas to benefit them (Liu et al., 2016). In other words, prosocial motivation directs employees toward meaningful goals that benefit others (Bolino & Grant, 2016; Grant, 2007). Therefore, in the process of generating new ideas, employees with prosocial motivation will aim to develop useful ideas

that benefit others such as: colleagues, managers, customers (Grant & Berry, 2011). Furthermore, employees with high prosocial motivation will focus on generating ideas that are useful to the next generation (McAdams & de St Aubin, 1992).

As discussed above, creative self-efficacy positively affects employee creativity. However, prosocial motivation directs employees to focus on goals that benefit others (Grant & Berry, 2011). According to Grant and Wrzesniewski (2010), other-benefit orientation prevents overconfidence in highly confident employees. This helps employees avoid failures due to overestimating their abilities (Baumeister et al., 1993). Furthermore, other-benefit orientation reduces employees' anxiety about the outcome, encouraging them to exert more effort toward protecting and increasing the benefits of others (Schwartz et al., 2000). Orientation toward the benefit of others will encourage employees with high self-esteem to make more appropriate commitments and to exert more effort to benefit others (Grant & Wrzesniewski, 2010). Based on that, this study tests the following hypotheses:

H4a: Prosocial motivation positively affects employee creativity.

H4b: Prosocial motivation positively moderates the relationship between intrinsic motivation and employee creativity.

H4c: Prosocial motivation positively moderates the relationship between creative self-efficacy and employee creativity.

Based on the arguments of hypotheses H1a and H2 as well as hypotheses H1b and H3, the authors propose the following two research hypotheses:

H5a: Intrinsic motivation mediates the relationship between work autonomy and employee creativity.

H5b: Creative self-efficacy mediates the relationship between work autonomy and employee creativity.

From the arguments and research hypotheses mentioned above, the authors proposed the research model as shown in Figure 1.

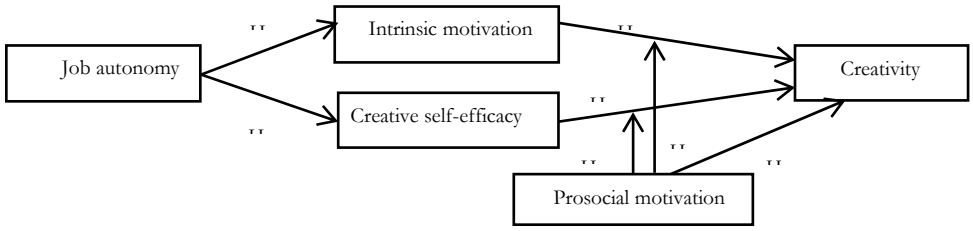

Figure 1. Proposed research model

RESEARCH METHODOLOGY

Research Process

The research consists of two main steps, the preliminary research conducted in Ho Chi Minh City and the official research conducted in Ho Chi Minh City, Binh Duong and Ben Tre. To collect research data, the authors contacted managers, human resources departments or employees at the companies (hereinafter referred to as research supporters) to ask for support by explaining the research purpose. Then, the questionnaires were sent to employees in the company through the supporters. Finally, the questionnaires (which had been answered) were collected by the supporters and the authors contacted to receive them.

The qualitative preliminary study was conducted in March 2023 using in-depth interviews with 12 employees working in the information technology industry in Ho Chi Minh City. The sampling theory in qualitative research (Coyne, 1997) was applied in this study with a saturation point of 12 employees. The quantitative

preliminary study was conducted in April 2023 by surveying 141 employees in the information technology industry through a questionnaire. The data filtering process had 12 responses excluded because of missing information or choosing one option for all questions, and finally 129 valid responses were obtained. Cronbach's Alpha analysis and exploratory factor analysis (EFA) were used to process the preliminary data. The purpose of the preliminary study was to adjust and supplement the scale for the official study.

The formal study was conducted by surveying employees in the information technology industry in Ho Chi Minh City, Binh Duong and Ben Tre through a revised questionnaire based on the results of the preliminary study. The survey was conducted during the period of May 2023-July 2023 with 500 survey forms distributed, but only 346 responses were collected. Of these, 23 were eliminated due to missing information or choosing one option for all questions, leaving 323 valid responses for analysis. The methods used were, confirmatory factor analysis (CFA) to evaluate the scale and structural equation modeling (SEM) was conducted to test the model fit and proposed hypotheses.

The sample of the official study included 323 employees. In terms of gender, there were 225 men (69.7%) and 98 women (30.3%). In terms of educational level, there were 22 employees with general education (6.8%), 212 employees with college or university degrees (65.6%) and 89 employees with postgraduate degrees (27.6%). In terms of company size, there were 124 employees working in companies with less than or equal to 100 employees (38.4%) and 199 employees working in companies with more than 100 employees (61.6%). In terms of company ownership, there were 193 employees working in companies with domestic investment (59.8%) and 130 employees working in companies with foreign investment (40.2%). The average employee experience is 5.2 years, with a minimum of 1 year and a maximum of 18 years.

Scale

This study includes the following scales: (1) Job autonomy, (2) intrinsic motivation, (3) creative self-efficacy, (4) prosocial motivation, and (5) employee creativity. The scale used is a 7-point Likert scale (from 1–7; 1 is completely disagree, 7 is completely agree). First, the English scale was adopted from previous studies (Grant & Sumanth, 2009; Houghton & DiLiello, 2010; Morgeson et al., 2005; Soda et al., 2019; Tierney et al., 1999), then translated into Vietnamese using the group discussion method. Finally, the scale was adapted from the preliminary study for use in the main study.

Job autonomy was measured using three variables derived from Morgeson et al. (2005). Intrinsic motivation was measured using five variables derived from Tierney et al. (1999). Creative self-efficacy was measured using six variables derived from Houghton and DiLiello (2010). Prosocial motivation was measured using five variables derived from Grant and Sumanth (2009). Employee creativity was measured using four variables derived from Soda et al. (2017).

Preliminary Scale Assessment

The scales all have satisfactory Cronbach's Alpha coefficients, specifically, work autonomy has $\alpha = 0.842$, intrinsic motivation has $\alpha = 0.837$, creative self-confidence has $\alpha = 0.852$, social motivation has $\alpha = 0.857$ and employee creativity has $\alpha = 0.910$. The results of EFA analysis show that one observed variable (I like to improve processes or improve existing products) out of a total of 23 variables was eliminated because the factor loading coefficient was $0.389 < 0.5$. The KMO index = 0.825 and Sig. = 0.000, and at the same time, 22 observed variables of the scales were extracted into 5 factors at Eigenvalue 1.087 with a total variance extracted of 60.824%. Furthermore, all factor loadings of the variables are greater than 0.5 (the smallest is 0.584). The intrinsic motivation scale after removing one variable still has a satisfactory Cronbach's Alpha coefficient ($\alpha = 0.851$). Therefore, the official study continues to use these scales.

Empirical Results

First, the authors tested the distribution of 22 variables. The results showed that the distribution of these 22 variables deviated slightly from the normal distribution. However, the kurtosis and skewness indices of these 22 variables ranged from -0.647 to +0.722, so the ML (Maximum Likelihood Estimation) method was used to analyze the data (Muthén & Kaplan, 1985).

Scale Test

Table 1: Scale test results

Observation variable		M	SD	λ
Prosocial motivation		*CR = 0.847; AVE = 0.525*		
PM1	I am energized when I do things that have the potential to benefit others.	5.167	1.222	0.715
PM2	I enjoy doing work that has the potential to benefit others.	5.099	1.199	0.800
PM3	I enjoy doing work that allows me to positively influence others.	5.207	1.138	0.717
PM4	It is important to me to have the opportunity to use my abilities to benefit others.	5.260	1.182	0.687
PM5	I work best when I am involved in tasks that contribute to the well-being of others.	4.994	1.236	0.700
Creative self-efficacy		*CR = 0.858; AVE = 0.502*		
CE1	I feel I am good at coming up with new ideas.	5.087	1.100	0.690
CE2	I have a knack for developing other people's ideas.	4.879	1.201	0.673
CE3	I enjoy trying out new ideas.	5.269	1.131	0.737
CE4	I am confident in my ability to solve problems.	5.211	1.114	0.745
CE5	I am good at finding new ways to solve problems.	5.062	1.252	0.769
CE6	I have the ability and skills to do my job well.	5.495	1.096	0.629
Creativity		*CR = 0.820; AVE = 0.534*		
EC1	I come up with new ideas to improve the efficiency of the department.	5.025	1.147	0.721
EC2	I offer ways to optimize daily workflows.	5.139	1.102	0.806
EC3	I come up with a new way to improve quality.	5.102	1.166	0.729
EC4	I come up with creative solutions to problems that arise.	5.201	1.169	0.661
Intrinsic motivation		*CR = 0.824; AVE = 0.539*		
IM1	I enjoy finding solutions to complex problems.	5.232	1.360	0.733
IM2	I enjoy coming up with new ideas for products.	5.344	1.245	0.774
IM3	I enjoy engaging in activities that require analytical thinking.	5.483	1.191	0.741
IM4	I enjoy creating new processes for work.	5.207	1.292	0.687
IM5	I enjoy improving processes or enhancing existing products.	Removed		
Job autonomy		*CR = 0.821; AVE = 0.605*		
JA1	I have enough autonomy to determine how I work.	5.254	1.108	0.809
JA2	I can decide for myself how my work is done.	5.232	1.068	0.765
JA3	I have enough freedom and independence in how I do my work.	5.276	1.126	0.758

Note: M: means; SD: standard deviation; λ: factor loading; AVE: average variance extracted; CR: composite reliability.

The CFA analysis indexes of the critical model (survey data from 323 employees) are as follows: $\chi 2[199] = 352.046$ ($p = 0.000$), GFI = 0.912, IFI = 0.951, CFI = 0.951, and RMSEA = 0.049. This means that the critical model fits the data from practice. All standardized weights of the scales are high, the smallest is 0.629 and reaches statistical significance ($p = 0.000$). The extracted variance of the concepts in the model is high, the smallest is 0.502 (Table 1), which means that the concepts in the model achieve unidimensionality (Steenkamp & van Trijp, 1991). Furthermore, the square root of variance extracted is always greater than the correlation of that concept with other concepts (Table 2), which means that the concepts in the model achieve discriminant validity (Fornell & Larcker, 1981). In addition, the composite reliability ranges from 0.820 to 0.858 (Table 1). Therefore, the scales in the proposed model achieve reliability, unidimensionality and discriminant validity.

Table 2: Correlated matrix

	(1)	(2)	(3)	(4)	(5)
(1) Intrinsic motivation	**0.73**				
(2) Prosocial motivation	0.57	**0.72**			
(3) Creative self-efficacy	0.55	0.63	**0.71**		
(4) Creativity	0.56	0.48	0.55	**0.73**	
(5) Job autonomy	0.37	0.47	0.54	0.51	**0.78**

Note: The bold values above the diagonal are the square roots of the variances extracted for the scales; the values below the diagonal are the correlations between the scales.

Model and Hypotheses Testing

In this study, prosocial motivation is assumed to play both an antecedent role in influencing creativity and a moderator role in the relationship between motivations (creative self-efficacy and intrinsic motivation) and employee creativity. Based on the data analysis proposal of Cortina et al. (2001), this study analyzes the moderator variable and other variables in the model simultaneously. First, to avoid multicollinearity, the observed variables of the concepts are used by taking the difference of the observed variable value and the mean value (Cronbach, 1987). Then, based on the study of (Ping, 1995), an indicator variable is used to represent the interaction between intrinsic motivation and prosocial motivation. Similarly, another indicator variable is used to represent the interaction between creative self-efficacy and prosocial motivation.

The SEM results show that the proposed model fits the market data with the following indices: $\chi 2[241] = 543.840$ ($p = 0.000$), GFI = 0.876, IFI = 0.906, CFI = 0.905 and RMSEA = 0.062. The results show that 6 out of 7 direct hypotheses are accepted (Table 3). Hypothesis H1a: Job autonomy has a positive impact on intrinsic motivation, this hypothesis is accepted by the data ($p = 0.000 < 0.05$). Hypothesis H1b: Job autonomy has a positive impact on employees' creative self-efficacy is accepted with statistical significance ($p = 0.000 < 0.05$). Hypothesis H2: Intrinsic motivation positively affects employee creativity is accepted by the data ($p = 0.000 < 0.05$). The data shows that hypothesis H3 creative self-efficacy positively affects creativity is accepted ($p = 0.000 < 0.05$). Hypothesis H4a: Prosocial motivation positively affects creativity is accepted by the data ($p = 0.014 < 0.05$). For hypothesis H4b: Prosocial motivation positively moderates the relationship between intrinsic motivation and employee creativity, the results show that this hypothesis is not accepted ($p = 0.099 > 0.05$). Finally, hypothesis H4c: Prosocial motivation positively moderates the relationship between creative self-confidence and creativity is accepted ($p = 0.046 < 0.05$).

Table 3: Results of direct hypothesis testing

Hypotheses	Relationship			Unstandardized estimation	Standardized estimation	p-value	Hypothesis testing
H1a	Job autonony	→	Intrinsic motivation	0.574	0.497	0.000	Supported
H1b	Job autonony	→	Creative self-efficacy	0.726	0.640	0.000	Supported
H2	Intrinsic motivation	→	Creativity	0.269	0.307	0.000	Supported
H3	Creative self-efficacy	→	Creativity	0.306	0.343	0.000	Supported
H4a	Prosocial motivation	→	Creativity	0.140	0.157	0.014	Supported
H4b	Intrinsic motivation X Prosocial motivation	→	Creativity	-0.003	-0.092	0.099	Not supported
H4c	Creative self-efficacy X Prosocial motivation	→	Creativity	0.003	0.112	0.046	Supported

Table 4: Results of indirect hypothesis testing

Hypotheses	Relationship	Unstandardized estimation	Standardized estimation	Confidence interval	p-value	Hypothesis testing
H5a	Job autonomy → Intrinsic motivation → Creativity	0.154	0.153	(0.061, 0.298)	0.003	Supported
H5b	Job autonomy → Creative self-efficacy → Creativity	0.222	0.220	(0.095, 0.388)	0.002	Supported

Note: Bootstrap with N = 1,000; adjusted confidence level is 95%.

Based on the indirect hypothesis testing method of previous studies (Javed et al., 2018; Javed et al., 2017), this study used bootstrap with N = 1,000 and bias-corrected confidence interval of 95% to test hypotheses H5a

and H5b. The processing results showed that the two hypotheses H5a and H5b were accepted (Table 4). Hypothesis H5a: Proposed intrinsic motivation mediates the relationship between work autonomy and creativity was accepted ($p = 0.003 < 0.05$) with confidence interval (0.061; 0.298). Similarly, hypothesis H5b: Creative self-efficacy mediates the relationship between work autonomy and creativity was accepted ($p = 0.002 < 0.05$) with confidence interval (0.095; 0.388).

Discussion and Administrative Implications

After analyzing the official survey data, employee creativity was directly affected by creative self-efficacy, intrinsic motivation, and prosocial motivation with decreasing levels, as well as indirectly affected by work autonomy through creative self-efficacy and intrinsic motivation. Moreover, prosocial motivation strengthened the impact of creative self-efficacy on employee creativity. Creative self-efficacy is the factor with the strongest impact on creativity ($\beta = 0.343$; $p = 0.000$). This result is similar to previous studies (Houghton & DiLiello, 2010; Tierney & Farmer, 2002, 2004). Theory has affirmed the important role of creative self-confidence in promoting employee creativity (Anderson et al., 2014; Liu et al., 2016; Shalley et al., 2004). Intrinsic motivation is the second strongest factor affecting employee creativity ($\beta = 0.307$; $p = 0.000$). The results of the impact of intrinsic motivation on employee creativity are similar to previous studies (Bui Thi Thanh, 2014; Tierney et al., 1999). According to Amabile's theory of components of creativity (1983, 1997), intrinsic motivation is one of the main factors affecting employee creativity. Prosocial motivation is the third strongest factor affecting employee creativity ($\beta = 0.157$; $p = 0.014$). This result is similar to the conclusion of Liu et al. (2016). However, this is one of the first attempts to empirically test the hypothesis raised and call for empirical research by Liu et al. (2016). Through data analysis in Vietnam, it shows that social motivation is an important factor promoting creativity. Moreover, social motivation moderates the effect of creative self-confidence on employee creativity ($\beta = 0.112$; $p = 0.046$). This is an important new contribution showing that prosocial motivation moderates employees' overconfidence (Grant & Wrzesniewski, 2010) and directs them to generate ideas and solutions that are both novel and useful to others, such as colleagues, managers, and customers (Grant & Berry, 2011). However, prosocial motivation does not moderate the relationship between intrinsic motivation and employee creativity. Although this result is different from the results of Grant and Berry (2011), helping others can undermine employee success when organizations use a system of control and rewards based on individual performance (Bergeron et al., 2013). Furthermore, the interaction between intrinsic motivation and prosocial motivation is not clearly established (Bolino & Grant, 2016).

Job autonomy directly affects creative self-confidence ($\beta = 0.640$; $p = 0.000$) as well as intrinsic motivation ($\beta = 0.497$; $p = 0.000$). This result is consistent with the conclusion of Liu et al. (2016). Furthermore, work autonomy indirectly affects creativity through creative self-confidence ($\beta = 0.220$; $p = 0.002$) and intrinsic motivation ($\beta = 0.153$; $p = 0.003$). This is a new contribution affirming that creative self-confidence and intrinsic motivation mediate the relationship between job autonomy and creativity. Based on analyzed above, the authors propose some of the following managerial implications:

Firstly, business managers should pay attention to creating a working environment that allows employees to plan their own work and how to carry out their work, which will increase their motivation, increase their enjoyment of work, and increase their confidence in their work. Furthermore, companies should pay attention to conducting surveys on the level of autonomy in their work, and discuss to grasp their wishes in planning their work and their work progress in order to make timely adjustments, support and advice to overcome difficulties. This will create a working environment that allows employees to have greater autonomy. As a result, it will increase employee creativity.

Secondly, managers must pay attention to arousing employees' creative confidence, creating conditions for them to explore their work and guiding them to work that benefits others. Creative confidence is an important factor because the creative process has countless difficulties and has a high risk of failure. Therefore, managers should encourage employees when they succeed as well as fail to maintain their confidence. Moreover, the company should have incentives and policies to support employees in exploring new aspects of their work. This motivates them to make more efforts, towards creating new products and better work processes for the department and the company.

Finally, businesses need to promote consulting activities to guide employees towards activities that benefit society. Because this increases employee creativity as well as helps control their overconfidence, guiding them towards creating ideas that benefit society. To this end, managers should create conditions for employees to have opportunities to access and receive opinions and feedback from customers, suppliers, or build and design jobs so that employees can exchange experiences and problems in work with each other. In addition, increasing the assignment of work to groups of employees so that they can work together and enjoy the results is also an effective solution.

Despite efforts, this study still has the following limitations as: first, according to theory, there are many factors affecting creativity (Anderson et al., 2014), however, this study only focused on studying the main motivations which are intrinsic motivation, prosocial motivation, creative self-efficacy (Liu et al., 2016) and employee autonomy. Therefore, more research is needed to explore other antecedent and moderator variables affecting employee creativity in Vietnam; second, the prosocial motivation hypothesis that reinforces the influence of intrinsic motivation on employee creativity is not accepted. This is partly contrary to the study of Grant and Berry (2011), so other studies are needed to collect data in other industries or other provinces to have more general conclusions for the Vietnamese market; and last, the sample of the official study was 323 employees using the convenience sampling method. To increase the generalizability of the model, future studies should survey a larger sample size in more provinces or collect data using probability sampling methods.

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