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Relationships among Safety Manager Behavior, Job Insecurity Atmosphere, Counterproductive Work Behavior and Quality Performance

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Abstract: This study constructs theoretical model of relationships among safety manager behavior, job insecurity atmosphere, counterproductive work behavior and quality performance based on counterproductive work behavior perspective, safety manager behavior includes management behavior and design behavior, focuses on the moderating function of safety manager behavior. In view of research object and industrial characteristics, this study sets manufacturing enterprises as research objects, uses questionnaires to obtain paired sample data of senior and middle managers-employees, adopts hierarchical regression analysis methods and constructs hierarchical regression models to empirically expound relationships among safety manager behavior, job insecurity atmosphere, counterproductive work behavior and quality performance, results show that job insecurity atmosphere has U-shaped effect on counterproductive work behavior, counterproductive work behavior has a significantly negative effect on quality performance, safety manager behavior (management behavior and design behavior) regulates relationships between job insecurity atmosphere and counterproductive work behavior.

Key words: Counterproductive work behavior, quality performance, job insecurity atmosphere, safety manager behavior

INTRODUCTION

Counterproductive Work Behavior (CWB) refers to that individual exhibits the intentional behavior that possess or has potential hazards to organization or organizational stakeholders (He, 2010, 2011). Quality performance plays a vital role in the continuous development of enterprise. Counterproductive work behavior seriously affects economic interests of enterprises, seriously damages to the efficiencies of employees, has significantly negative impacts on quality performance which is an important factor of inhibiting the enhancement of quality performance. Therefore, studying on the influence factors of quality performance and key approaches of enhancing quality performance based on counterproductive work behavior perspective in depth have theoretical and practical significance. Facts and practice have proved that cognition and behavior of employees in the workplace, safety manager behavior are the key incentive factors of affecting and triggering counterproductive work behavior, further reducing quality performance. The current studies primarily focus on the connotation, structure, elements, determinant factors and consequences of counterproductive work behavior which provides ideas and theoretical foundation for further studying on antecedent variables of counterproductive work behavior. The relevant literature results of integrating safety manager behavior, job insecurity atmosphere, counterproductive work behavior and quality performance into the same theoretical model are lack. This study sets counterproductive work behavior perspective as oriented logic starting points to mainly expound antecedent function of job insecurity atmosphere and moderating effect of safety manager behavior on relationships between job insecurity atmosphere and counterproductive work behavior, analyzes relationships among safety manager behavior, job insecurity atmosphere, counterproductive work behavior and quality performance. Set manufacturing enterprises as empirical analysis objects, uses questionnaire survey to acquire paired sample data of middle and senior management-employees, employs hierarchical regression analysis methods to carry out empirical analysis of relationships among safety manager behavior, job insecurity atmosphere, counterproductive work behavior and quality performance.

THEORETICAL MODEL AND THEORETICAL HYPOTHESIS

Counterproductive work behavior and quality performance: Counterproductive Work Behavior (CWB) refers to that individual exhibits the intentional behavior that possess or has potential hazards to organization or

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organizational stakeholders (He, 2010, 2011). CWB scales of employees based on chinese context include four dimensions, four dimensions refer to property deviance, interpersonal deviance, political deviance and production deviance (Rotundo and Xie, 2008). CWB mainly includes six dimensions, six dimensions refer to misconduct behavior, boycotts behavior, abuse behavior, passive obedience behavior, conserving knowledge behavior and lying behavior (He, 2011). CWB seriously affects economic efficiency and interests of enterprises (He, 2011; Spector *et al*., 2006; Zhang and Liu, 2009; Berry *et al*., 2007), seriously damages efficiencies of employees which can also prevent employees from be engaged in improving product quality and process management, reduce initiatives of employees to enhance quality level, increase process quality loss, quality loss and quality cost, decrease qualified product rates (Dow *et al*., 1999), has significantly negative effects on quality performance, inhibits the improvement of quality performance. We put forward theoretical hypothesis:

Hypothesis H1: CWB plays a significantly negative role in quality performance.

Job insecurity atmosphere and counterproductive work behavior (CWB): Job Insecurity Atmosphere (JIA) refers to that employees within the enterprises perceive the insecurity atmosphere in the workplace, job insecurity atmosphere is an important pressure atmosphere (Sora *et al*., 2009). Job insecurity atmosphere can lead to greater psychological pressure to employees in job aspects, seriously affect normal psychology and behavior of employees, weaken innovation and change motivations and intentions of employees which can also drive employees to exhibit risk aversion and withdrawal behavior facing with creativity and innovation. Job insecurity atmosphere is not only an obstacle atmosphere but also a challenging and stimulation atmosphere, there exists reverse U-shaped relationships between job insecurity atmosphere and innovation behavior of employees (Fu and Lihua, 2012). When the level of job insecurity atmosphere is lower, lies in the range of critical value, the lower level of job insecurity atmosphere can inspire and mobilize employees to strengthen motivations and intentions of enhancing their own stress abilities, activate stress system and response psychology of employees, wake up mental alertness and physical alertness of employees, trigger safety production behavior and avoid counterproductive work behavior in order to respond to dynamically changeable environment stimuli and safety production signal, at this time job insecurity atmosphere is a challenging atmosphere and stimulation atmosphere. When the level of job insecurity atmosphere is excessively high, exceeding the critical value, the excessively high job insecurity atmosphere is an obstacle atmosphere which can promote employees to form and precipitate psychological state of excessive anxiety, tension and fear and undermine work interest and unsafe control sense of employees, weaken the motivations and intentions of enhancing their own safety abilities of employee, trigger counterproductive work behavior. We put forward hypothesis:

Hypothesis H2: There exists U-shaped relationships between job insecurity atmosphere and CWB. When the level of job insecurity atmosphere is lower, lies in the range of critical value, the lower level of job insecurity atmosphere has a significantly negative effect on CWB. When the level of job insecurity atmosphere is excessively high, exceeding the critical value, the excessively high job insecurity atmosphere has a significantly negative effect on CWB.

Safety manager behavior, job insecurity atmosphere and counterproductive work behavior: The elements of manager behavior in the safety management field refer to safety control, safety training and safety caring (Wu *et al*., 2008). Safety manager behavior can affect psychological contract behavior of employees, influence approaches include material incentives, non-material incentives, management experience and knowledge of managers, the respect, identity and understanding of managers to employees, the commitment and support of managers to employees (Uen *et al*., 2009). Manager behavior includes Management Behavior (MB) and Design Behavior (DB) (Qingren *et al*., 2011). This study refers to the relevant literature results of safety manager behavior (Qingren *et al*., 2011; Wu *et al*., 2008; Uen *et al*., 2009), safety manager behavior mainly includes management behavior and design behavior, management behavior includes education training, safety supervision, safety communication and manager commitment, design behavior includes security of work system, safety rules, policies and systems. Correct and appropriate safety manager behavior can trigger management behavior and design behavior, strive to promote safe production, construct clear safety goals, actively carry out and implement safety education and training, motivates employees to actively participate in safety education and training, conduct safety monitoring and supervision with employees, emphasizes on the importance of safety communication and exchange, improve safety communication and exchange frequency, practice management safety commitment. And managers should actively protect security of work system, construct and develop reasonable safety regulations and effective

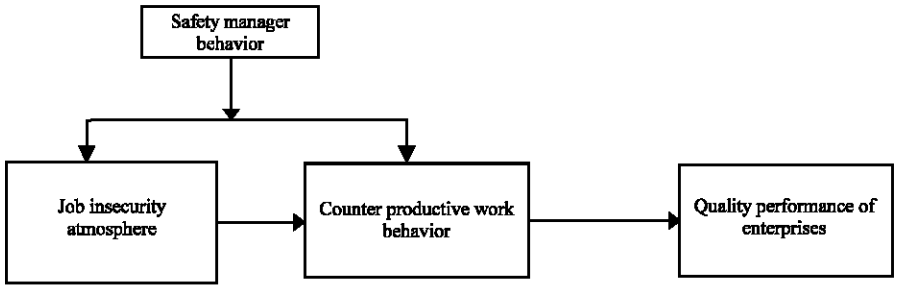

Fig. 1: Theoretical model

policies, systems. Management behavior and design behavior can trigger the lower level of job insecurity atmosphere, inhibit the excessively high job insecurity atmosphere, mobilize motivations and intentions of employees to enhance their own stress abilities, activate psychological stress and response system of employees, wake up mental alertness and physical alertness of employees, stimulate safety production behavior, avoid counterproductive work behavior. In summary, we put forward hypothesis:

Hypothesis H3: Safety manager behavior regulates relationships between job insecurity atmosphere and CWB:

H3a: Management behavior regulates relationships between job insecurity atmosphere and CWB

H3b: Design behavior regulates relationships between job insecurity atmosphere and CWB

Theoretical model: According to hypothesis H1-H3, obtain theoretical model of this study is shown in Fig. 1.

RESEARCH DESIGN AND EMPIRICAL ANALYSIS

Data sample: This study obtains empirical analysis data through scales and questionnaire survey, questionnaire survey adopts likert seven-point scales. In view of availability of data, industrial characteristics and research topics, research projects of research group, this study selects manufacturing enterprises (Manufacturing industry is a industry that connects with safety production and quality closely, manufacturing enterprises put emphasis on safety production performance and quality performance) as research objects, acquires middle and senior management-employees paired sample data. The formal survey mainly adopts onsite survey record, issuing questionnaires on site and E-mail to obtain questionnaires through the enterprises that connect with research group and research staff closely and this study also issues questionnaires to EMBA and MBA students. Five hundred questionnaires are distributed, 428 questionnaires are collected, follow the screening criteria to filter out invalid questionnaires, invalid questionnaires is 68, final number of valid questionnaires is 360, valid questionnaires rate is 72%. Survey samples mainly refer to state-owned and state holding enterprises, private-based enterprises, the proportion is 43.89 and 45%, respectively. Survey samples mainly refer to medium-sized enterprises and large enterprises, large enterprises account for 36.67% of total samples, medium-sized enterprises accounted for 46.67% of total samples.

Measurement tools: This study refers to some relevant literature results (He, 2011; Dow *et al*., 1999; Sora *et al*., 2009; Fu and Lihua, 2012; Wu *et al*., 2008; Uen *et al*., 2009; Qingren *et al*., 2011) to determine the scales of safety manager behavior, job insecurity atmosphere, counterproductive work behavior and quality performance in order to ensure that all the scales in this study have good content validity.

Scale reliability and validity test: This study adopts SPSS software, uses Cronbach's a coefficient to test scale reliability, the results are shown in Table 1. From Table 1, we can find that Cronbach's a coefficients of scales are all more than 0.7, all the scales have good reliability. This study uses SPSS software, adopts factor analysis method, employs indicators of KMO, cumulative explained rate of common factors and factor loadings to test scale validity. Table 1 reveals that KMO values are all more than 0.6, cumulative explained rate of common factors are all greater than 60%, factor loadings of the corresponding common factors are all more than 0.5, all the scales have good validity.

Empirical analysis and hypothesis test: This study uses hierarchical regression analysis methods and models, test procedures of moderating variables (Zhonglin *et al*., 2005)

Table 1: Scale reliability and validity test

Variables	Cronbach's α	KMO	Bartlett test of sphericity p	Explained cumulative rate (%)	Factor loading
Safety manager behavior	0.970	0.939	0.000	84.828	0.896-0.938
Job insecurity atmosphere	0.746	0.666	0.000	68.533	0.754-0.868
Counterproductive work behavior	0.853	0.846	0.000	63.947	0.605-0.859
Quality performance	0.893	0.705	0.000	82.425	0.857-0.941

Table 2: Test results of hypothesis

Variables	Quality performance	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB	CWB
JIA		-0.134*	-0.084		-0.094					
JIA square		0.245**					0.217**		0.246**	
CWB	-0.128*									
MB			-0.462***				-0.229**			
DB					-0.418***				-0.192*	
JIA×MB				0.337***						
JIA×DB						0.324***				
JIA square×MB								-0.268**		
JIA square×DB										-0.226**
Adj R^2	0.416	0.128	0.128	0.156	0.191	0.234	0.266	0.282	0.317	0.332

*p<0.05, **p<0.01, ***p<0.001

to verify the theoretical model and theoretical hypothesis, results are shown in Table 2. F values of regression models are greater that the critical values of significant level 0.05, P values of F values are all less than significant level 0.05, regression model are significant and valid. DW values are hovering near two, error terms of regression models do not exist autocorrelation phenomena. VIF means are less than 10, serious multicollinearity of regression models do not exist. Construct linear regression models and carry out hierarchical regression analysis, Table 2 shows hierarchical regression analysis results, CWB plays a significantly negative role in quality performance (β = -0.128, p<0.05), hypothesis H1 gets empirical demonstration. Have center treatment to job insecurity atmosphere square, set CWB as dependent variable, set job insecurity atmosphere square and job insecurity atmosphere as independent variables, construct hierarchical regression models, job insecurity atmosphere plays a significantly negative role in CWB (β = -0.134, p<0.05), job insecurity atmosphere square plays a significantly positive role in CWB (β = 0.245, p<0.01). Job insecurity atmosphere plays an U-shape role in CWB, namely when the level of job insecurity atmosphere is lower, lies in the range of critical value, job insecurity atmosphere can inhibit and prevent CWB significantly, when the level of job insecurity atmosphere is excessively high, lies in the range of critical value, job insecurity atmosphere can promote counterproductive work behavior significantly. Hypothesis H2 gets empirical demonstration.

Have center treatment to interaction terms, get the test results of moderating variables, the results are shown in Table 2. Compared with the linear regression models of no interaction effects (CWB is dependent variable, the main effects and moderating variables are independent variables), adjusted R^2 of linear regression models that add to main effects, interaction effects and moderating variables all increase significantly. Management behavior significantly positively regulates relationships between lower level job insecurity atmosphere(in the range of critical value) and CWB (β = 0.337, p<0.01), namely management behavior can significantly promote the lower level job insecurity atmosphere, inhibit and prevent CWB. Management behavior significantly negatively regulates relationships between excessively high level job insecurity atmosphere(beyond the range of critical value) and CWB (β = -0.268, p<0.01), namely mangement behavior can significantly inhibit and prevent the excessively higher level job insecurity atmosphere, inhibit and prevent CWB. Design behavior significantly positively regulates relationships between lower level job insecurity atmosphere and CWB (β = 0.324, p<0.001), namely design behavior can significantly promote the lower level job insecurity atmosphere, inhibit and prevent CWB. Design behavior significantly negatively regulates relationships between excessively high level job insecurity atmosphere and CWB (β = -0.226, p<0.01), namely design behavior can significantly inhibit and prevent the excessively higher level job insecurity atmosphere, inhibit and prevent CWB. In summary, safety manager behavior can regulate relationships between job insecurity and CWB, hypothesis H3 gets empirical demonstration.

DISCUSSION AND CONCLUSION

This study constructs theoretical model of relationships among safety manager behavior, job insecurity atmosphere, counterproductive work behavior and quality performance based on counterproductive work behavior perspective, expounds function mechanism of job insecurity atmosphere on quality performance,

focuses on moderating function of safety manager behavior. Use questionnaires to obtain paired sample data, adopt hierarchical regression analysis methods to empirically expound relationships among safety manager behavior, job insecurity atmosphere, counterproductive work behavior and quality performance, results show that job insecurity atmosphere has U-shaped effect on counterproductive work, counterproductive work behavior has a significantly negative effect on quality performance, safety manager behavior regulates relationships between job insecurity atmosphere and counterproductive work behavior. The results of this study have theoretical and practical significance and values in the fields of quality management and safety production, can provide theoretical foundation, values and practical guidelines for reducing counterproductive work behavior and enhancing quality performance through the roles of safety manager behavior and job insecurity atmosphere. Based on research results of literature (Fu and Lihua, 2012; Qingren *et al*., 2011), this study integrates and extracts the research results of literature (He, 2011; Rotundo and Xie, 2008; Spector *et al*., 2006; Berry *et al*., 2007; Sora *et al*., 2009; Fu and Lihua, 2012; Wu *et al*., 2008; Uen *et al*., 2009) to combine safety manager behavior, job insecurity atmosphere, counterproductive work behavior with quality performance into the same theoretical model based on counterproductive work behavior perspective, expounds moderating role of safety manager behavior, conduction role of job insecurity atmosphere of employees and outcome variable of quality performance of enterprises, extends and enriches the application ranges, logical ideas and theoretical frameworks of safety manager behavior and job insecurity atmosphere.

According to empirical results of this study, enterprise managers should adopt appropriate safety manager behavior, take proper management behavior and design behavior, enhance management commitment, implement and promote education and training, safety supervision and safety communication, secure work system security, formulate reasonable safety rules and policy systems, mobilize safety motivation and intention of employees, reduce the effects of excessively high job insecurity atmosphere, inspire and simulate safety production behavior, drive employees to prevent counterproductive work behavior, improve quality performance. In addition, managers of enterprises should adopt the appropriate management behavior and design behavior to create the moderate job insecurity atmosphere in order to prevent counter-productive work behavior and improve quality performance.

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