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Study on Relationships among High-performance Work Practices System, Quality Management Practices and Organizational Learning

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Abstract: Establish theoretical analysis framework of relationships among environment dynamic, high-performance work practical system, quality management practices and organizational learning, use SEM method to carry out empirical analysis of the established theoretical framework. Empirical results show that environment dynamic is conducive to high-performance work practices system, job rotation has not significantly positive effect on product design, process management, statistical control and feedback, job rotation contribute to soft elements of quality management practices. Staff training and inter-departmental communication are conducive to promote soft elements and hard elements of quality management practices. Leadership attention, employee involvement and customer focus have significantly positive effect on organizational learning, supplier relationships, product design, statistical control and feedback, process management have not significantly positive effects on organizational learning.

Key words: Environmental dynamic, high-performance work practice system, quality management practice, organizational learning

INTRODUCTION

The quality is the life of the enterprise, the survival and development guarantee. Good organizational learning culture and learning strategies is the core to enhance enterprise and sustain competitive advantage. The research has shown that: QMP is potential means and important way to promote organizational learning. Low environmental dynamics is beneficial to the organization build the high performance work practices system, through staff rotation, inter-departmental communication, staff training and other ways to encourage QMP, leaders attention, employee participation, attention customer, product design, process management, supplier relationship, statistical control and feedback, in order to better respond to the complex fluctuations and innovative environmental change, to accelerate the process adaptability of the enterprise, lower environmental dynamics negative impact. Attention to the QMP can mutual trust, interactive and cooperative learning, to promote knowledge sharing, to create organizational culture knowledge and learning strategies is beneficial to the organizational learning. However, external contingency perspective as the entry point to, put environmental dynamic, high-performance work practice system, QMP and organizational learning into having a relatively less theoretical analysis framework literature, more the lack of the relevant literature to use

structural equation model for the empirical analysis. The study build environment dynamic, high performance work practice system, QMP and organizational learning relationship theoretical analysis framework, using SEM to the empirical analysis, mining the relationship and the mechanism of action of the variable.

LITERATURE REVIEW AND THEORY HYPOTHESIS

Environment dynamic and high-performance work practice system: Cappelli and Neumark (2001) and other people thought that high-performance work practice is the sum of a series of activities and policies in the enterprise to ensure that human resources management services to corporate strategic goals. On the basis of reference, combined (Jian, 2012) high-performance work practices system's division dimension, in the part of representatively large and medium-sized enterprises senior management, responsible quality relevant departments and key employees deeply interviews, thought high-performance work practices system mainly consists by employee training, job rotation and cross-sectoral communication.

When environmental dynamism is more higher, employees have more opportunities, the quit rate increased and the organization thought from the market buy human capital cost is lower than high-performance work practice system cost, the organization tends to

behavior and measures that it can make weaken the employees identity and loyalty of the organization. When environment dynamic is lower, the staff has more fewer opportunities, the quit rate reduced and now the organization thought from the market buy human capital cost is higher than high-performance work practice system cost, the organizations choose to build high-performance work practices system to enhance the employee positive attitude for the organization, promote employee's self-efficacy (Dejun and Shuming, 2006). Lawler (1992), Tsui *et al.* (1997) and Delery and Doty (1996) thought when environmental dynamic is lower, the organization through formal training, job rotation, performance evaluation, planning staff, career paths and other measures to enhance employee loyalty for the organization, nurture and create well atmosphere that the staff promise to the organization. Actively practice organizational citizenship behavior, produce high-job matching attribute, driven the employees to actively participate training, inter-departmental communication and participated in job rotation, job rotation make the employees get wide heterogeneity knowledge and skills, enhance the staff diversity capabilities. High environmental dynamic is not conducive to employee job rotation, inter-departmental communication and staff training. To sum up, put forward the following hypothesis:

- H1:** Low environmental dynamism is conducive to establish of high-performance work practices system
- H1.1:** Low environmental dynamism promotes job rotation
- H1.2:** Low environmental dynamism promotes staff training
- H1.3:** Low environmental dynamism promotes inter-departmental communication

High-performance work practices system and QMP: The Quality Management Practices (QMP) is the enterprises in order to improve quality, enhance production efficiency and reduce the cost adopted and implemented a series of quality management measures and plans (Donghua, 2011). Domestic and overseas scholars have a useful exploration for QMP elements (Zhao *et al.*, 2008), QMP is divided into two parts: QMP software elements and QMP hard elements. The former is mainly included non-institutional and social behavior support measures, the latter is mainly included the mechanism process and technology measures (Wei and Xiaobin, 2012). Reference and learn from at home and abroad typical literature (Saraph *et al.*, 1989). QMP hard elements include product design,

process management, statistical control and feedback; QMP soft elements include leadership attention, employee involvement, supplier relationships and valued customers (Powell, 1995).

High-performance human resource management system emphasizes on internal staff training, through job design, job rotation, profit-sharing, employee participation and decision etc., a series of management measures developed and excavated the potential of the internal staff and stimulated the staff's innovative behavior and work efficiency, enhanced the staff's organizational commitment, acquired and developed unique and valuable resources. Support and attend QMP activities, pay attention to customer demand changes and share information about customer needs, extend the contact-type network, build an external network structure and enhance cooperation depth and breadth relationship commitment with suppliers. Fynes *et al.* (2005) thought that the relationship commitment is beneficial to the common participation in product design and process management and relationship commitments reduce process variation and standardization process by the impact of product design quality. To sum up, put forward the following hypothesis:

- H2:** High-performance work practices system for QMP having significant and positive promotion
- H2.1:** Job rotation is respectively and dramatically promoted to leader attention, employees participation, supplier relationships, attention customer, product design, statistical control and feedback, process management
- H2.2:** Staff training is respectively and dramatically promoted to leader attention, employees participation, supplier relationships, attention customer, product design, statistical control and feedback, process management
- H2.3:** The inter-departmental communication is respectively and dramatically promoted to leader attention, employees participation, supplier relationships, attention customer, product design, statistical control and feedback, process management

QMP and organizational learning: Prajogo and Sohal (2003) thought the leaders attend QMP, encourage all of employees participated QMP, sustain to pay attention to customer needs for promoting the organizations to develop new products, implement the continuous improvement activities, encourage organization members creatively evaluate their activities for promoting organizational learning. Actively involved

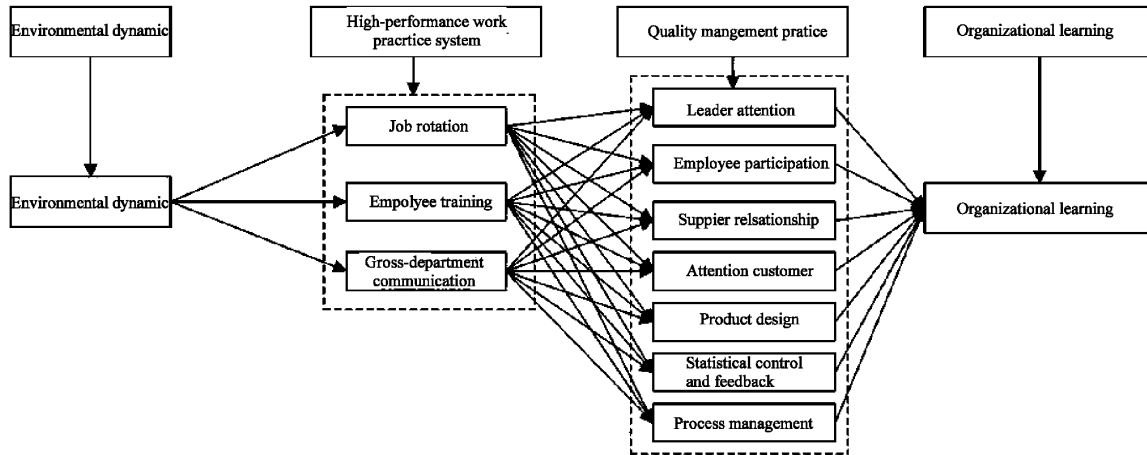


Fig. 1: Theoretical analysis framework

in quality improvement and innovation and hardly accomplished the organization's quality target, implemented organizational processes and quality continuous improvement is conducive to quality knowledge creation, knowledge transfer and knowledge integration (Samson and Terziovski, 1999). QMP advocate the quality embedded product design, good product design attract actively suppliers, customers demand and the insertion of suppliers participation and customer demand reduce product production the number of required parts, made the parts standardization to avoid complex redundancy processes and process changes on the final quality established prevention, discovery and correction mechanism, quickly correct the unreasonable the stage of the process and product design process, enhance process management, reduce production costs, improve product quality and accelerate their learning curve effect. Self-efficacy and job competency, ability to adapt to drive continuous improvement of quality control and quality assurance tools innovation, shared knowledge and exchange quality knowledge, access and create expertise assist and guide the scientific decision-making, resist and avoid staff's counterproductive behavior and actively carry out organizational learning activities. To sum up, put forward the following hypothesis:

- H3:** QMP plays a significant promoting role in organizational learning
- H3.1:** The leaders attention organizational learning having a significant promoting role
- H3.2:** The employees participation for organizational learning having a significant promoting role
- H3.3:** Supplier relationship for organizational learning having a significant promoting role

- H3.4:** Attend the customer for organizational learning having a significant promoting role
- H3.5:** Product design for organizational learning having a significant promoting role
- H3.6:** Statistical control and feedback organizational learning having a significant promoting role
- H3.7:** Process management for organizational learning having a significant promoting role

Based on the above theoretical hypothesis, proposed theoretical analysis framework of the study, e.g., Fig. 1.

STUDY DESIGN

Scale design and variable selection: The study learns from the relevant literature and uses the maturity scale as generated references to ensure that the scale has higher content validity. The scale variables is shown in Table 1.

Questionnaires and data acquisition: Adopted small sample predictability ways conducted pre-survey for inservice MBA and EMBA, relevant experts, senior management staff in part of enterprises, it is in all 80 person. According to the results proceed correcting and removing for the scale get the final questionnaire. Questionnaire adopted Likert 1-7 point scale. Researchers adopted in-depth interviews, e-mail, postal service and other forms, in total 426 questionnaires, 389 were returned and 73 invalid questionnaires, the questionnaire effective rate was 74.18%. The questionnaires require senior management in manufacturing enterprises relevant circumstances to make sure answer. The questionnaire involves effective sample enterprises, state-owned holding enterprises held 45.89%. Foreign funded

Table 1: Scale variable

Variables	Reference
Environmental dynamic	Pan Fei etc., Jauch etc., Achrol etc., Song Hua etc.
High-performance work practices system	Job rotation Staff training Cross-function communication QinJian, Cheng Dejun etc.
Organizational learning QMP	Richard etc., Jiang Peng etc., Xiong Wei etc., Song Yongtao etc., Saraph etc., Powell, Samson and Terziovski, Fredendall etc., Prajogo and Sohal

Table 2: Scale reliability testing and validity

Variable	Table reliability	KMO value	Common factor cumulative explain total variance ratio (%)	Factor loading range
Environmental dynamic	0.88	0.873	62.455	0.534-0.86
High-performance work practices system	0.873	0.876	54.324	0.549-0.813
Organizational learning	0.926	0.919	62.921	0.717-0.844
Leader attention employee	0.897	0.856	70.917	0.821-0.86
Participation	0.885	0.855	68.565	0.75-0.866
Supplier relationship	0.866	0.783	71.601	0.824-0.865
Attention customer	0.871	0.806	71.092	0.838-0.856
Product design	0.825	0.799	66.176	0.733-0.848
Statistical control and feedback	0.886	0.833	74.494	0.847-0.882
Process management	0.888	0.842	74.971	0.846-0.882

Table 3: Standardized SEM path coefficients 1

Path	Standardized path coefficient	p-value
Environmental dynamic→job rotation	-0.594	***
Environmental dynamic→employee training	-0.613	***
Environmental dynamic→cross-department communication	-0.567	***
Job rotation→leader attention	0.21	**
Job rotation→employee participation	0.237	**
Job rotation→supplier relationship	0.15	*
Job rotation→attention customer	0.145	*
Job rotation→product design	0.129	Non-distinctive 0.156
Job rotation→statistical control and feedback	0.097	Non-distinctive 0.394
Employee participation→leader attention	0.358	***
Employee training→employee participation	0.361	***
Employee training→supplier relationship	0.418	***
Employee training→attention customer	0.365	***
Employee training→product design	0.29	**
Employee training→statistical control and feedback	0.295	**

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

enterprise and sino-foreign equity joint venture held 18.67% of stock. Private sector 112 held 35.44%. Staff size: Employees number 51-150 people of enterprises held 20.57%, employees number 301-500 people of enterprises held 28.48%, more than employees number 500 enterprises held 36.71%.

Table 4: Standardized SEM path coefficients 2

Path	Standardized path coefficient	p-value
Cross-department communication→leader attention	0.445	***
Cross-department communication→employee participation	0.407	***
Cross-department communication→supplier relationship	0.378	***
Cross-department communication→attention customer	0.411	***
Cross-department communication→product design	0.414	***
Cross-department communication→statistical control and feedback	0.388	***
Job rotation→process management	0.124	Non-distinctive 0.186
Leader attention→organizational learning	0.281	**
Employee participation→organizational learning	0.289	***
Supplier relationship→organizational learning	0.116	Non-distinctive 0.249
Attention customer→organizational learning	0.208	*
Product design→organizational learning	0.087	Non-distinctive 0.427
Process management→organizational learning	0.092	Non-distinctive 0.408
Statistical control and feedback→organizational learning	0.007	Non-distinctive 0.643
Employee training→process management	0.342	***
Cross-department communication→process management	0.405	***

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

Scale reliability and validity testing: The total scale Cronbach's a value greater than 0.7. Using SPSS 17.0 software explored factor analysis, adopted varimax rotation method, followed eigenvalues greater than 1 and the rule of the common factor accumulation explain total variance amount of variation is greater than 50% determine the common factor; It will factor loading is greater than 0.5 as the selection criteria of the table metric items, explored factor analysis results showed that: The KMO values are greater than 0.6, common factor cumulative explained variance variation ratio reached a basic standard of 50%, the scale of the variable factor loadings are greater than 0.5 (Table 2).

Empirical analysis process: Based on the theoretical analysis framework and conceptual model, follow the steps of the modeling of the structural equation (SEM) to build the initial structural equation model, on the basis, by increasing the relationships among the variables, the delete variable and variable between not significant the path of the relationship, to create a residual variable enhance overall goodness of fit of the SEM and the covariation relationships between the other residual variable after adjusting the SEM standardized path coefficients as shown in Table 3 and 4 shows a SEM adjusted preferably fitting index (Table 5).

Table 5: Adjusted SEM fit index

Index	χ^2/df	GFI	NFI	TLI	RESEA
SEM	2.356	0.938	0.956	0.913	0.042
Ideal Nemerical interval	1<a<3	>0.9	>0.9	>0.9	>0.05

CONCLUSION

Except assuming 2.1, 3.3, 3.5-3.7 path coefficients did not pass significantly testing, the other theoretical assumptions is verified and supported. According to Table 3-4 SEM path coefficients get empirical conclusion and revelation are as follows: First, low environmental dynamic is conducive to high-performance work practices system establishment. The organizations according to environmental dynamics change and the external environment impact should build with the environment well-match. Through enhanced staff training, job rotation and cross-sectoral communication make the organizations survive and develop in a dynamic environment, reducing environment dynamic. Second, job rotation is having significantly positive role for product design, statistical control and feedback, process management; job rotation is having positively promoting effect for employees participation, leader attention, supplier relationships, attention customers. High-performance work practices system emphasis on staff training, job rotation system, inter-departmental communication, inter-departmental communication and staff training system for interactive communication between employees and develop special abilities. Third, staff training is significantly promoting effect for leader attention, employees participation, product design, supplier relationships, attention customer, product design, process management, statistical control and feedback.

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