

# Influence of the Research-oriented President's Competency on Research Performance in University of China -Based on the Results of Empirical Research

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## Introduction

With the gradual promotion and implementation of China's national innovation-oriented strategy, research universities are playing an irreplaceable role in leading scientific development and technological innovation. Scientific research is one of the basic functions of a research university, which cultivates high-quality innovations and supports research universities in serving their societies (Rhoads, 2014). While high-level research universities need presidents with outstanding quality and ability. Research-oriented presidents, as the scientific research managers and experts, play a very important role in constructing and developing their universities, and they also focus on talent cultivation to realize social missions.

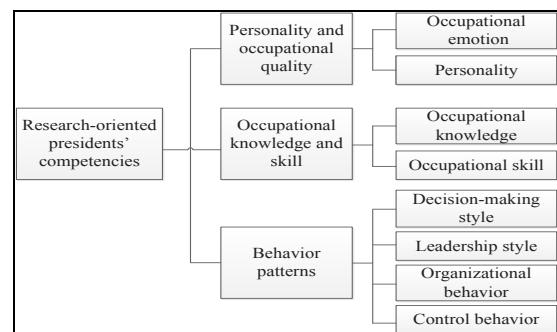
Therefore, the research on the influence of the research-oriented president's competency on research performance has profound connotations and value, which can provide references to guide and explore the systems for selecting, cultivating and assessing research-oriented university presidents.

## Method

Research-oriented presidents, as senior managers of research universities, are responsible for teaching university management and for the direct leadership of scientific research. This special position determines the universality and complexity of the factors related to empirical studies on competence characteristics (Angeles, 2014; Sydney & Frances, 2013; Liu & Xu, 2013; Snyder, 2012).

Based on the theoretical analysis of competence characteristics and in combination with the vocational characteristics and main responsibilities of research-oriented presidents, we first constructed a theoretical framework of research-oriented presidents' competence characteristics (Figure 1). Then, we designed a questionnaire system to collect data and data were analyzed using SMRT PLS2.0 software (one of the leading software tools for partial least squares structural equation modeling). The verification results show that the scale's

convergent validity was high, and it also had good discriminant validity. Finally, we used the  $R^2$  statistic to analyze the structural model and received good explanation.



**Figure 1. Theoretical Framework of Research-oriented Presidents' Competence Characteristics.**

## Data

This study selected research-oriented presidents of research universities as its subjects. Therefore, thirty-nine of 985 universities under China's Ministry of Education were selected for the study, and to ensure the comprehensiveness of our investigation, the selected samples included research-oriented presidents, middle management, scientific research management, professors, associate professors, lecturers, assistants, and other research personnel. The descriptive statistics (Table 1) on the study subjects were obtained via statistical data analysis.

## Results

Through statistically analysing the sample data, the influence of occupational emotion, personality, occupational knowledge, occupational skill, decision-making style, leadership style, organizational behaviour and control behavior on scientific research performance was respectively checked. The results indicate that the performance had good validity. However, if organizational characteristics are used as an intervening variable, the competence characteristics of research-oriented

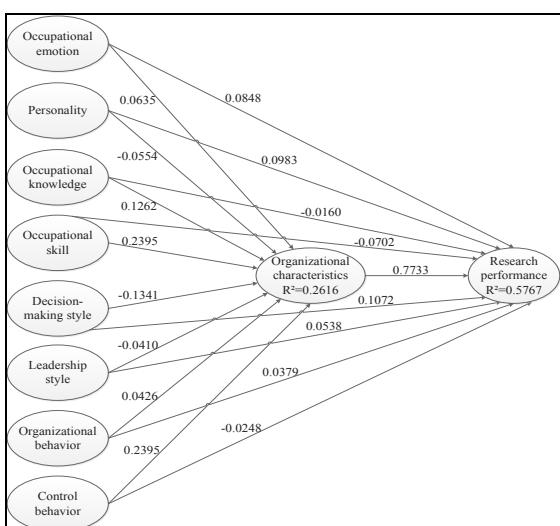
presidents have significant positive influences on scientific research performance.

**Table 1. Descriptive Statistics on Respondents.**

Measurement items	Sample size (N)	Proportion (%)
Gender	Male	292
	Female	123
Age	30 and below	37
	31–35	132
Education	36–40	93
	41–45	63
Title	46–50	41
	51–55	31
Title	56 and above	18
	College	3
Title	Bachelor's	31
	Master's	103
Title	Doctorate	276
	Others	2
Title	Assistant	98
	Lecture	92
Title	Associate Prof.	15
	Full Prof.	210
Title	Academician	0
	Others	0

## Conclusion

Based on the above research results, we constructed a model of research-oriented university presidents' competence characteristics, shown in Figure 2.



**Figure 2. Relational Model of Research-oriented Presidents' Competence Characteristics and Their Universities' Research Performance.**

The following conclusions can be drawn by analysing the model of research-oriented presidents' competence characteristics:

(1) From the direct effect perspective: 1) research-oriented presidents' professional emotion, personality traits, decision-making and leadership styles and organizational behavior have significant positive influences on scientific research performance. 2) Presidents' professional knowledge, professional skills and control behavior have significant negative influences on research performance, but further inspection of the analysis results reveals that the negative influence is not absolute.

(2) From the mediating effect perspective, professional emotion, professional skills, organizational behavior and control behavior have significant positive influences on organizational characteristics, whereas personality traits, professional knowledge, and decision-making and leadership styles have significant negative influences on organizational characteristics. However, organizational characteristics as intervening variables between research-oriented presidents' competence characteristics and their universities' scientific research performance can maximize the effects of the presidents' competence characteristics and have significant positive influence on research performance.

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## References

- Angeles, M.M. (2014). Learning for a Sustainable Economy: Teaching of Green Competencies in the University. *Sustainability*, 6, 2974-2992.
- Liu, X.J. & Xu, F. (2013). A Study on the Competency Model for Industry-based Characteristic University Presidents. *Journal of National Academy of Education Administration*, 10, 60-64.
- Rhoads, R.A., Shi, X.G. & Wang, X.Y. (2014). Reform of China's Research Universities: A New Era of Global Ambition. *Education and Society*, 32, 5-28.
- Sydney, F.J. & Frances, K.K. (2013). University Presidents' Perspectives of the Knowledge and Competencies Needed in 21st Century Higher Education Leadership. *Journal of Educational Leadership in Action*, 1, 1-2.
- Snyder. (2012). Higher Education Leadership Competencies: Quantitatively Refining a Qualitative Mode. *American psychologist*, 27, 5-8.