

Potential Influence of Institutional Incentives on Research Capacity and Job Performance of Teachers in Selected Universities in China

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Abstract: This study aims to determine the potential impact of institutional incentives on the job performance and research ability performance of some university teachers in China. A total of 563 teachers and managers from 50 universities in northern and southern China were surveyed, with 10 co-participants. A survey and in-depth interviews were conducted from March to May 2023. A hybrid research method based on explanatory sequence design was used to describe and analyze the reactions of these universities from aspects such as institutional incentives, job performance, and research ability performance. Researchers analyzed the research abilities and achievements of teachers under current institutional incentives and correlated their teaching performance with job performance and research ability performance. The research results indicate that institutional incentives for participating in universities have a potential impact on the job performance and research ability performance of Chinese university teachers. It can be concluded that, in addition to promotion incentives, respondents' perceptions of potential factors that affect compensation, environment, achievement, and innovation incentives, as well as their research abilities and job performance, are also significantly correlated. There is a significant relationship between the perceived level of potential factors that affect research ability performance and the job performance of respondents.

Keywords: Chinese Universities, University Teachers, Institutional Incentives, Job Performance, Research Capability Performance

1. Introduction

University teachers directly affect the quality of talent cultivation for learners. In order to attract outstanding teachers to engage in scientific research and teaching, major countries around the world have developed corresponding incentive systems to encourage university teachers. American universities mainly adopt diversified material incentives and lifelong professor incentive systems. W. Bentley MacLeod and Miguel Urquiola (2021) proposed that incentives for university teachers in the United States include salary, benefits, and honors, mainly based on salary and benefit incentives. Their salaries are determined based on social development. Working tenure is one of the means by which university teachers are motivated. Education department regulation adopts a lifelong teaching system in universities to attract top-notch talents and encourage them to work hard [1].

The incentives for teachers in domestic universities in China are generally based on salary and supplemented by spiritual incentives. According to scholars such as Jianyong Zhou (2020), in addition to salary benefits and class hour subsidies, Chinese universities have also set up some material rewards for scientific research and teaching. They provide spiritual incentives such as promotion, education and training, and achievement recognition for teachers, stimulating the potential and work enthusiasm of university teachers [2].

Similarly, the main goal of EU member states' incentive measures for teachers' material and personal development is to enhance the global competitiveness of education. They implement annual performance bonuses, fund further education, and provide vacation opportunities for senior teachers, encouraging them to work hard and pursue excellence at all stages of their career (Lijuan Jiang & Yibing Liu, 2021) [3]. Japanese universities adopt an incentive model that respects professionalism and

cultivates teachers' professional abilities. Japanese universities should create an environment for fulfilling their respective responsibilities to improve the work experience of teachers, enhance their sense of respect through various activities on Teacher's Day, and establish "free study days" within the university to provide training on their respective campuses to enhance their professional abilities (Kenji Maehara et al., 2016) [4].

The job performance level of university teachers is a manifestation of the strength of the university, and university teachers have a significant impact on the organizational performance of the university. The creation, transformation, and appreciation of knowledge within universities cannot be separated from the efforts of teachers. Currently, the industry believes that the development and performance of university teachers are directly influenced by individuals, organizations, and work. Chinese universities need to improve their sense of efficacy and build professional platforms to improve the performance of Chinese university teachers. The specific incentive policies of some universities in China have failed to guide university teachers to achieve university goals, nor have they met the needs of university teachers. University teachers are the basic unit of performance generation. This article aims to study the impact and role of institutional incentives for university teachers in China on individual research abilities and job performance, in order to develop incentive systems that are suitable for the characteristics of university teachers and effectively implement them, thereby improving the overall organizational performance of many universities in China.

2. Literature Review

2.1 Job Performance and Institutional Incentives: Its Relationship

The achievement of teacher job performance requires effective implementation by individuals, and the institutional incentives in Chinese universities directly affect teacher job performance.

Huang Li & Ersi Liu (2019): The incentive system for university teachers in China requires material incentives, spiritual incentives, and environmental incentives. Material incentives include wages, benefits, and other forms, spiritual incentives are mainly reflected in being respected, and environmental incentives are mainly harmonious interpersonal relationships. The job performance of university teachers varies with changes in incentive systems [5].

Huimin YU and Layraman Taien (2022) found through empirical research that incentive system factors such as salary incentives, welfare policy incentives, work environment incentives, and promotion conditions affect the job performance of Chinese university teachers [6].

Renmin Shi et al. (2022): The work performance of Chinese universities needs to focus on spiritual incentives. By establishing psychological empowerment incentive systems for work meaning, self-efficacy, self-determination, and influence, job performance can be positively stimulated by institutional incentives [7].

Bin Wang et al. (2022) proposed that the internal system incentive of university teachers' job performance needs to consider emotional motivation and self motivation, while the external system incentive needs to focus on performance-based compensation, professional title system, and internal position promotion. The ministry of Education should through a scientific and reasonable internal and external incentive mechanism for university teachers, establish a collaborative innovation operation mechanism, and continuously improve the enthusiasm of university teachers [8].

The above viewpoint is more suitable for most university teachers in China, as it indicates the correlation between institutional incentives and the job performance of university teachers.

2.2 Research Capacity Performance: Its Relationship to Institutional Incentives

How to incentives university teachers to improve their work enthusiasm and research ability, and the use of institutional incentives has become an important means that university management must consider.

Xinmin Liu et al. (2020) mentioned that the research ability of Chinese university teachers is influenced by individual and environmental factors. The institutional incentives in universities require the use of salary incentives and work environment incentives to ensure the scientific research output of teachers, and the use of professional incentive goals to improve the performance of scientific research capabilities [9]. Tao Sun (2020) mentioned that through empirical research, it was found that

"institutional incentives for scientific research ability of university teachers include both external and internal aspects. External salary incentives and internal achievement incentives affect the performance results of university teachers' scientific research ability, while external promotion incentives and internal innovation incentives affect the performance of university teachers' scientific research process ability [10].

According to Cuilan Xing (2021) research using the Analytic Hierarchy Process, institutional incentives in universities have a direct impact on teachers' research ability incentives and personal work performance. Establishing an evaluation model for the incentive level of performance reform for university teachers and implementing a practical and effective performance incentive mechanism plays a certain role in improving teachers' work enthusiasm and research ability performance [11].

Haitao Lu and Wenchuan Wu (2021) found through data analysis and statistics that external incentive measures for teachers in Western Chinese universities have a certain impact on individual research ability performance. Developing institutional incentives, including external incentives and autonomous motivation, can promote research ability performance [12].

Based on the above analysis, it can be found that there is a correlation between the institutional incentives of university teachers in China's education industry and their research ability performance.

2.3 Research Capability Performance: Its Relationship to Teachers Performance

Study the impact of ability performance on job performance. (Ermin Zhang and Wanbing Shi, 2022) conducted a study in which universities evaluated the performance of teachers' scientific research achievements based on quantitative scoring. According to the positioning of universities and the development requirements of disciplines, teachers should be promoted as the main body in scientific research evaluation, hoping to continuously stimulate the scientific research ability of university teachers and promote the improvement of work performance [13].

(Juanjuan Cheng, 2022) proposed that there is a strong correlation between the research activities of university teachers and teaching, and the performance of teachers' research abilities can promote the improvement of teaching performance [14]. (Zhengyu Tao, Nan Li, 2023) proposed that through empirical research and development of data from multiple universities, it was found that the research results have an impact on the teaching performance of university teachers. Teachers with scientific research achievements have higher teaching evaluation scores. For teachers of different schools and genders, the impact of research ability performance on the teaching performance of university teachers is not the same [15].

Researchers believe that the performance of Chinese university teachers' scientific research ability is a personal manifestation, mainly reflected in aspects such as scientific and technological achievements, technology transfer, various awards, and scientific research innovation ability. This article regards the performance of scientific research ability as a related variable. As a higher education institution, scientific research ability is an important aspect that reflects the level of university teachers. It is believed that research ability performance has a certain impact on the job performance of university teachers.

3. Hypotheses of the Study

- There is no significant relationship between on the level of respondent's perception on the factors affecting the institutional incentives and their research capability performance.
- There is no significant relationship between on the level of respondent's perception on the factors affecting the institutional incentives and their job performance.
- There is no significant relationship between on the level of respondent's perception on the factors affecting their research capability performance and job performance.

4. Research Design

4.1 Research Samples and Data Sources

The data comes from 50 selected universities in 31 provinces in China. The 16 provinces in North

China include Heilongjiang, Jilin, Liaoning, Hebei, Shaanxi, Shanxi, Shandong, Henan, Hubei, Gansu, Xinjiang, Ningxia, Inner Mongolia, Beijing, Tianjin and Qinghai. The 15 provinces in South China include Zhejiang, Shanghai, Jiangsu, Anhui, Hunan, Jiangxi, Fujian, Yunnan, Guizhou, Sichuan, Chongqing, Guangxi, Guangdong, Hainan and Xizang.

These universities are member units of the author's participation in the development of the China Education Information Platform, and this research environment is conducive to data collection and subsequent research.

4.2 Population and Sampling

This study adopts a mixed method explanatory study design. In terms of quantity, there are a total of 563 respondents. In order to reduce the impact of subjective factors, researchers used a random sampling method. 144 respondents are school administrators, of which 71 are from North China and 73 are from South China. In the teacher survey, there were 419 teachers, including 210 from North China and 209 from South China.

In the qualitative part, this involves identifying and selecting individuals or groups of individuals who have a special understanding or experience of the phenomenon of interest. In addition to people's knowledge and experience, it also emphasizes the importance of the availability and willingness of participants, as well as the ability to communicate experiences and opinions in a clear, expressive, and reflective manner.

Using purposive sampling techniques, at least 10 knowledgeable and willing co participants are required to participate in this study. 5 universities from North China and 5 universities from South China. The co participants are school administrators and teachers with 5 years of teaching experience in their respective universities.

4.3 Research Instrument

In the quantitative part, the research tool used in the data collection is an online survey questionnaire using the Likert Seven Scale. The survey questionnaire is divided into four parts: Part 1: Population overview of the respondents; Part 2: Institutional incentives for university teachers; Part Three: Research Capability Performance; The fourth part is the performance of teachers' work. The survey questionnaire was validated by experts and piloted for testing. Reliability and internal consistency of the questionnaire tested through reliability analysis α The larger the coefficient, the higher the reliability of the questionnaire. Validity analysis is used to test the validity of the questionnaire. The higher the KMO value, the more suitable it is for factor analysis, so that the measurement item can accurately reflect the measurement variables.

For the qualitative part, prepare to construct a semi structured problem yourself. Before conducting interviews, these questions must be approved by members of the research review team to ensure the completeness, effectiveness, and reliability of the study. When dealing with complex problems, researchers can use probes and spontaneous questions to explore, deepen understanding, and clarify the answers through semi-structured interviews.

5. Research results

5.1. Analysis of the Significant Relationship between the Perceived Level of Potential Factors Affecting Institutional Incentives and Research Ability Performance

Table 1 shows the empirical multiple regression results of institutional incentives and research capability performance.

Through multiple regression analysis, there were significant differences in the perceived levels of potential factors affecting institutional incentives and research capability performance among respondents. The P-values for compensation, environment, achievement, and innovation incentives were <0.001, 0.012, 0.001, and 0.006, respectively. Due to the significance level of the P-value being less than 0.05, this decision failed to accept the null hypothesis. However, for promotion incentives, the P-value is 0.061, which is greater than the significance level of 0.05. Therefore, the null hypothesis is accepted. This means that in terms of the perceived level of potential factors affecting among respondents, in addition to promotion incentives, there is a significant correlation between

compensation, environmental, achievement, and innovation incentives and research ability performance.

Table 1: Multiple Regression Analysis on Significant Relationship between the Level of Respondent's Perception on the Potential Factors Affecting the Institutional Incentives and Research Capability Performance

Independent Variable	B	Std	T	Sig	Decision
Compensation Incentive	0.203	0.035	5.781	<0.001	Failed to Accept
Environment Incentive	0.094	0.038	2.513	0.012	Failed to Accept
Promotion Incentive	0.075	0.040	1.877	0.061	Accept
Achievement Incentive	0.247	0.037	6.596	<0.001	Failed to Accept
Innovation Incentive	0.094	0.034	2.772	0.006	Failed to Accept
Constant	1.113	0.193	5.769	<0.001	Failed to Accept

5.2. Multiple Regression Analysis of Respondents' Perception Level of Potential Factors of Institutional Incentives and Job Performance

Table 2 shows the empirical multiple regression results of institutional incentives and job performance.

Table 2: Multiple Regression Analysis on the Significant Relationship between the Level of Respondent's Perception on the Potential Factors Affecting the Institutional Incentives and their Job Performance

Independent variable	B	Std	T	Sig	Decision
Compensation incentive	0.245	0.035	6.939	<0.001	Failed to Accept
Environment incentive	0.097	0.038	2.570	0.010	Failed to Accept
Promotion incentive	0.025	0.040	0.636	0.525	Accept
Achievement incentive	0.223	0.038	5.926	<0.001	Failed to Accept
Innovation incentive	0.167	0.034	4.894	<0.001	Failed to Accept
Constant	0.993	0.194	5.116	<0.001	Failed to Accept

There is a significant relationship between the perceived level of potential factors that affect institutional incentives and job performance among respondents. The P-values of compensation, environment, achievement, and innovation incentives are <0.001, 0.010, 0.001, and 0.001, respectively. Due to the significance level of the P-value being less than 0.05, this decision failed to accept the null hypothesis. However, for promotion incentives, the P-value is 0.525. Its significance level is greater than 0.05, therefore, the null hypothesis is accepted. This means that, in addition to promotion incentives, there is a significant relationship between compensation, environmental, achievement, and innovation incentives and job performance in the perception level of potential factors that affect among respondents. When teachers receive incentives, this will encourage and motivate them to be creative in preparing textbooks and learning activities for students, using the latest teaching techniques to encourage student participation, thereby improving job performance.

5.3. Regression analysis of the significant relationship between the perception level of potential factors that affect research ability performance and job performance by respondents

Table 3: Regression Analysis on the Significant Relationship between the Level of Respondent's Perception on the Potential Factors Affecting the Research Capability Performance and Job Performance

Independent variable	B	Std	T	Sig	Decision
Research capability performance	0.567	0.036	15.593	<0.001	Failed to Accept
Constant	1.662	0.136	12.208	<0.001	Failed to Accept

Table 3 shows the empirical regression results of the relationship between research ability performance and job performance.

For the significant relationship between the perceived level of potential factors that affect research ability performance and job performance of the respondents, with a P-value of less than 0.001 and a significance level of less than 0.05, this decision does not accept the null hypothesis. There is a significant relationship between the perceived level of potential factors that affect research performance and job performance among respondents. This means that teachers with good teaching performance have the ability to write well for universities and conduct school research.

5.4. Seven important themes

The institutional incentives and performance generated after the coding process have at least seven important themes, such as 1) compensation incentives, 2) environmental incentives; 3) Promotion incentives; 4) Achievement incentives; 5) Innovation incentives; 6) Job performance; (7) Research ability performance. Under each emerging theme, there is a cluster of topics with predetermined significance

6. Conclusion

The perception level of potential factors that affect compensation, environment, achievement, and innovation incentives among respondents is significantly correlated with research ability and job performance (excluding promotion incentives).

There is a significant relationship between the perceived level of potential factors that affect research ability performance and job performance of the respondents.

There are at least seven unexpected themes generated after the coding process, such as 1) compensation incentives for teachers. Performance pay is based on their performance, 2) environmental incentives believe that teachers need good work facilities and equipment to work with high quality; 3) Promotion incentives require relatively standardized promotion in Chinese universities; 4) Achievement incentives need to provide teachers with specific implementation indicators; 5) Specific innovation incentive measures to support teacher innovation; 6) Job performance requires specific indicators for teachers in teaching and social services; (7) Research ability is reflected in the indicators of research papers and projects.

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