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## What Determines Job Satisfaction of Teachers in Universities?

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### ABSTRACT

With the expansion of university, how to improve education quality plays an important role. The satisfaction of teachers in university will be of paramount importance. This paper analyzes job satisfaction of teachers in university in Henan province. The results show that professional rank is the most important factor for teachers in university, which suggests it is titles that determine teachers' satisfaction other than creativity. Professional development scheme is secondary factors in job satisfaction. The salary is not decisive for teachers in university in China. The reputation and working circumstance are the last factors teachers consider.

**Keywords:** job satisfaction, teachers, university

### INTRODUCTION

Higher education plays an important role in economy development. With the larger enrollment in China, there will be more and more working pressure and strength on teachers in universities. So, the incentive to teachers will be the first thing we consider. However, it is difficult to apply the incentive measures if we do not know what influences satisfaction of teachers on earth. It is well know that Henan province is the most populous in China. Therefore, the paper will explore these factors take Henan province as an example.

The definition of Job Satisfaction is proposed in Job Satisfaction published in 1935, which was worked by Hoppock who is a psychologist. This book thought job satisfaction was a subjective evaluation of working circumstance. Vroom (1964) thought that job satisfaction was subjective judgment of working roles and tasks for employee, which emphasis the attitude or emotion. Locke (1976) argued that job satisfaction was a positive or passive sentiment when the employee evaluated their work or working status. Xu (1997) defined job satisfaction with 3 levels. The first level emphasized the attitude to working tasks and circumstances. The second level defined job satisfaction as the difference between expected and real salary, and the larger the difference the most satisfied. The last definition is a cognition and estimate reaction to job according to self scheme. Thompson (1997) had a result that the job satisfaction was wholly different even if within the same job conditions for different values, living conditions and education backgrounds.

The most often used measurement of job satisfaction is questionnaires. Most literatures take the form of questionnaires and get some representative indicators and scales. The most extensively used scale is Minnesota Satisfaction Questionnaire invented by Weiss et al. in 1950's, which was classified into long scale and short scale.

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#### State of the literature

- Some features of job satisfaction are focus in lots of literatures. The order of influence factors are not explored in universities, especially in Chinese universities.
- This paper uses Mann-Whitney U and Wilcoxon Sing Rank test and KrusKal-Wallis test to analyze the significant differences in sexuality, age, professional titles and academic degrees. Besides, this paper explores the factors effecting job satisfaction of teachers.

#### Contribution of this paper to the literature

- The factors effecting the job satisfaction of teachers in Chinese universities are empirically tested with entropy approach and grey related analysis. Among these factors, it is organization system, other than salary that plays an important role in job satisfaction for teachers.
- This paper analyzes whether these factors have significant differences in sexuality, age, professional titles and academic degrees. For salary, basic wage and family placement play an important role for teachers. Future training system effects career development most. The three subsidiary indicators almost play the same role in reputation. As for working circumstance and organization system, academic atmosphere and professional appraisal system have the greatest impact on job satisfaction for teachers.

The long scale measures the job satisfaction from different dimensions, which includes many secondary scales involving 120 questions regarding value, salary, co-worker relation, social responsibility, working strength, match between work and competence, psychological demand, career promotion, personnel administration and occupational planning and so on. We can see there are so many questions that interviewees have not enough patience. Many scholars often use the short scale since it involves several questions regarding autonomy, promotion, self-fulfillment, managerial style and co-worker relations. Gregson (1992) further improved the scale through increasing secondary questions. Wen (2015) designed a job satisfaction scale for teachers in Chinese university, and found scientific research, salary, personnel relations and managerial style were important.

Scotter (1996) analyzed the effect of working circumstance, working difficulty, personnel competence on employee satisfaction. Luckner and Hanks (2003) designed six dimensions scale involving leadership, compensation, workflow, communication, rewards and punishments and self-development. Seashore and Taber (1975) argued there were other factors effecting job satisfaction such as population statistic, personnel competence, value, political and economical circumstance, organization and career. Einar Skaalvik and Sidsel Skaalvik (2011) thought some indicators, i.e. working pressure, relationship, leadership, rules, would indirectly push teachers to quit through emotional identification or exhaustion in elementary and high schools, with 2,569 questionnaires. Hackman and Oldman (1976) thought there were five factors effecting job satisfaction, which were professional technology, job content, contribution, autonomy and return. Li and Fan (2014) empirically analyzed the job satisfaction of female teachers in higher universities in China, and thought some factors, i.e. salary, working circumstances and self-development, were important.

Athanasios (2001) argued that age was the important factor effecting job satisfaction in higher education organizations, and the teachers who was junior and short of experiences would be dissatisfaction to their jobs. Demirtas (2010) showed that the job satisfaction of teachers in elementary school was better. It was very different among different age groups. It was highest between the ages of 36 and 40, while lowest when the teacher is 41 years old and above. Hikmet and Fatma (2013) didn't find apparent differences among lecturers in universities in Turkey. Wang (2009) argued the job satisfaction was U-shape according to ages, and the job satisfaction among the over-50 set teachers was higher than that of others. Other scholars analyzed the job satisfaction from education background and sexuality and so on. (Zhao et al., 2011; Yang et al., 2006; Wei et al., 2014; Cai, J. & Li, D., 2017).

So many literatures analyze the job satisfaction from definition, measurement scale, influence factors and differences in demography variables. However, few literatures focus on the satisfaction of teachers in university in China. As far as Henan province is concerned, it has enormous population and undergraduates in higher universities. Therefore, it is important to study the job satisfaction of teachers in order to promote the education quality. Besides, this paper will rank these factors with analytic hierarchy process.

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## EMPIRICAL RESEARCH

### Variables

This paper classifies the job satisfaction of teachers in Chinese higher universities into influence factors involving salary, working circumstance, organization, career development and reputation, and demographic variables including sexuality, age, academic degree and professional titles.

This paper defines *salary* as material return which is based on the titles and performances. It comprises basic wage, performances and allowances in Henan province. We set the subsidiary indicators involving basic wage, performance-related pay, family placement and paid holiday. *Working circumstances* is defined as academic atmosphere, teaching and research environment, working strength and human relations. This paper defines *organization system* as appointment financial, professional titles evaluation and performance appraisal system. *Career development* is defined as professional promotion, career prospects and future training system. *Reputation* is defined as professional honor, quality of students and accepted academic value.

### Hypothesizes

This paper will explore whether the job satisfaction of teachers in Henan universities is apparently different in demographic variables involving sexuality, age, professional titles and degree.

- Hypothesis 1:** There is apparent difference of satisfaction to teachers' salary in Henan universities in demographic variables.
- Hypothesis 2:** There is apparent difference of satisfaction to teachers' career development in Henan universities in demographic variables.
- Hypothesis 3:** There is apparent difference of satisfaction to teachers' reputation in Henan universities in demographic variables.
- Hypothesis 4:** There is apparent difference of satisfaction to working circumstance in Henan universities in demographic variables.
- Hypothesis 5:** There is apparent difference of satisfaction to organization system in Henan universities in demographic variables.
- Hypothesis 6:** There is apparent difference among five factors of job satisfaction.

Subsequently this paper unfolds the above hypothesis according to demographic variables as follows.

- Hypothesis 1a:** There is apparent difference of satisfaction to teachers' salary in Henan universities in sexuality.
- Hypothesis 1b:** There is apparent difference of satisfaction to teachers' salary in Henan universities in age.
- Hypothesis 1c:** There is apparent difference of satisfaction to teachers' salary in Henan universities in professional titles.
- Hypothesis 1d:** There is apparent difference of satisfaction to teachers' salary in Henan universities in academic degree.
- Hypothesis 2a:** There is apparent difference of satisfaction to teachers' career development in Henan universities in sexuality.
- Hypothesis 2b:** There is apparent difference of satisfaction to teachers' career development in Henan universities in age.
- Hypothesis 2c:** There is apparent difference of satisfaction to teachers' career development in Henan universities in professional titles.

**Hypothesis 2d:** There is apparent difference of satisfaction to teachers' career development in Henan universities in academic degree.

**Hypothesis 3a:** There is apparent difference of satisfaction to teachers' reputation in Henan universities in sexuality.

**Hypothesis 3b:** There is apparent difference of satisfaction to teachers' reputation in Henan universities in age.

**Hypothesis 3c:** There is apparent difference of satisfaction to teachers' reputation in Henan universities in professional titles.

**Hypothesis 3d:** There is apparent difference of satisfaction to teachers' reputation in Henan universities in academic degree.

**Hypothesis 4a:** There is apparent difference of satisfaction to working circumstance in Henan universities in sexuality.

**Hypothesis 4b:** There is apparent difference of satisfaction to working circumstance in Henan universities in age.

**Hypothesis 4c:** There is apparent difference of satisfaction to working circumstance in Henan universities in professional titles.

**Hypothesis 4d:** There is apparent difference of satisfaction to working circumstance in Henan universities in academic degree.

**Hypothesis 5a:** There is apparent difference of satisfaction to organization system in Henan universities in sexuality.

**Hypothesis 5b:** There is apparent difference of satisfaction to organization system in Henan universities in age.

**Hypothesis 5c:** There is apparent difference of satisfaction to organization system in Henan universities in professional titles.

**Hypothesis 5d:** There is apparent difference of satisfaction to organization system in Henan universities in academic degree.

### **Samples**

The questionnaires are sent out on November 23th 2016, and taken back on February 25th 2017. The number of effective questionnaires is 142, and return rate is 89.8%. The questionnaire we designed has three parts. The first part is prime situation involving interviewee' sex, age, professional titles and academic degree in order to classify the sample, showed in **Table 1**. The second part is questions about job satisfaction of teachers. The indicators are listed as **Table 2**. The last part includes questions about present status of job satisfaction for teachers in higher universities in Henan province showed in **Table 3**.

**Table 1** shows male and female are almost equal in interviewees, and the rate of teachers under 45 years old is up to 73% confirming to present status. As for titles and degree, the rate of lecturers and associate professors is 78.1% and that of masters and doctors is 83.8%.

From **Table 3**, it is obvious that teachers in higher universities are most satisfied with paid holiday and career honor, while are not satisfied with future training system, future development and accepted academic value.

Subsequently, this paper tests the reliability and validity of questionnaire which is significant at 0.00 level.

**Table 1.** Descriptive statistics of interviewees

		Frequency	Rate
Number of samples		142	100%
Sexuality	Male	75	52.8%
	Female	67	47.2%
Age	Under 25 years old	10	7%
	25-35 years old	54	38%
	36-45 years old	50	35%
	Over 46 years old	28	20%
Professional titles	Assistant	10	7%
	Lecturer	70	49.3%
	Associate professor	41	28.8%
	Professor	21	15%
Academic degree	Bachelor	23	16.2%
	Master	70	49.2%
	Doctor	49	34.6%

**Table 2.** The variables and indicators of job satisfaction

Variables	Indicators
Salary	Basic wage
	Performance wage
	Family placement
	Paid holiday
Career development	Career promotion
	Career prospects
	Future training system
Reputation	Career honor
	Quality of students
	Accepted academic value
Working circumstances	Academic atmosphere
	Teaching and research environment
	Working strength
	Human relations
Organization system	Appointment
	Financial
	Professional titles evaluation
	Performance appraisal system

\*The answers of questions are divided into 5 grades in accordance with Likert scale.

## EMPIRICAL RESULTS

This paper will empirically test the above hypothesizes with non-parametric tests. It uses Mann-Whitney U and Wilcoxon Sing Rank test in analyzing the effect of sexuality to job satisfaction, and KrusKal-Wallis test in analyzing the effect of other demographic indicators.

**Table 4** shows that the effect of sexuality to salary satisfaction is not significant, which suggests hypothesis 1a is rejected. As for ages, interviewees within different groups have apparent difference in salary satisfaction except paid holiday. Interviewees with professor title have more satisfaction to salary satisfaction. As far as academic degree is concerned, interviewees with doctor are satisfied with basic wage and family placement. Therefore, hypothesizes 1b-1d are accepted.

**Table 3.** Descriptive statistics of job satisfaction of teachers

Indicators	Number	Minimum	Maximum	Mean
Basic wage	142	2	5	3.37
Performance wage	142	1	5	3.26
Family placement	142	1	5	3.04
Paid holiday	142	2	5	4.23
Career promotion	142	1	5	2.99
Future development	142	1	5	2.67
Future training system	142	1	5	2.53
Career honor	142	2	5	4.06
Quality of students	142	2	5	3.17
Accepted academic value	142	1	4	2.68
Academic atmosphere	142	2	4	3.20
Teaching and research environment	142	2	5	3.47
Working strength	142	2	5	3.14
Human relations	142	2	5	3.57
Appointment system	142	2	5	3.50
Financial system	142	1	5	2.92
Professional titles evaluation	142	1	4	2.81
Performance appraisal system	142	1	4	2.92

**Table 4.** Demographic variables and salary satisfaction

		Number	Basic wage	Performance wage	Family placement	Paid holiday
Sexuality	Male	75	2492.00	2466.00	2158.00	2386.00
	Female	67				
		Significant		0.929	0.842	0.134
Age	Under 25 ys	10	8.056	8.913	16.599	0.572
	25-35 ys	54				
	36-45 ys	50				
	Over 45 ys	28				
		Significant		0.045	0.030	0.001
Professional titles	Assistant	10	16.132	14.301	41.246	8.099
	Lecturer	70				
	Associate	41				
	Professor	21				
		Significant		0.001	0.003	0.000
Academic degree	Bachelor	23	6.305	3.818	22.245	1.094
	Master	70				
	Doctor	49				
		Significant		0.043	0.148	0.000

**Table 5** describes the satisfaction of male teachers is apparently different from that of female teachers in future development and future training system. Teachers within different age groups have significant difference in career promotion and future development. Interviewees with different titles are not the same satisfied with career promotion, future development and future training system. Teachers with different academic degree are exactly the same. All in all, hypothesizes 2a-2d are accepted.

**Table 5.** Demographic variables and career development

		Number	Career promotion	Future development	Future training system
Sexuality	Male	75	3525.00	1919.00	1735.00
	Female	67			
	Significant		0.425	0.011	0.001
Age	Under 25 ys	10	19.754	9.585	3.499
	25-35 ys	54			
	36-45 ys	50			
	Over 45 ys	28			
	Significant		0.00	0.022	0.321
Professional titles	Assistant	10	31.484	18.931	9.956
	Lecturer	70			
	Associate	41			
	Professor	21			
	Significant		0.00	0.00	0.019
Academic degree	Bachelor	23	26.011	33.335	13.589
	Master	70			
	Doctor	49			
	Significant		0.00	0.00	0.001

**Table 6.** Demographic variables and reputation

		Number	Career honor	Quality of students	Accepted academic value
Sexuality	Male	75	2499.50	2398.00	1611.50
	Female	67			
	Significant		0.954	0.584	0.613
Age	Under 25 ys	10	14.804	22.204	17.727
	25-35 ys	54			
	36-45 ys	50			
	Over 45 ys	28			
	Significant		0.002	0.000	0.001
Professional titles	Assistant	10	21.035	9.385	22.427
	Lecturer	70			
	Associate	41			
	Professor	21			
	Significant		0.000	0.025	0.000
Academic degree	Bachelor	23	14.498	0.011	32.931
	Master	70			
	Doctor	49			
	Significant		0.001	0.994	0.000

It is obvious that hypothesis 3a is rejected for non-significant in **Table 6**. Interviewees within different age groups are not satisfied with career reputation, quality of students and accepted academic value. Teachers with professor title are more satisfied with the career. As for academic degree, interviewees with different degree have not the same satisfactions in career reputation and accepted academic value. In a word, hypothesizes 3b-3d are accepted.

**Table 7.** Demographic variables and working circumstance

		Number	Academic atmosphere	Teaching and research environment	Working strength	Human relations
Sexuality	Male	75	2282.00	1935.00	2503.50	2202.50
	Female	67				
	Significant		0.300	0.108	0.965	0.182
Age	Under 25 ys	10	10.174	0.103	0.421	12.715
	25-35 ys	54				
	36-45 ys	50				
	Over 45 ys	28				
	Significant		0.017	0.211	0.936	0.005
Professional titles	Assistant	10	2.646	15.814	8.642	4.162
	Lecturer	70				
	Associate	41				
	Professor	21				
	Significant		0.450	0.372	0.053	0.244
Academic degree	Bachelor	23	17.732	5.334	5.567	1.099
	Master	70				
	Doctor	49				
	Significant		0.010	0.069	0.062	0.577

**Table 8.** Demographic variables and organization system

		Number	Appointment system	Financial system	Professional titles evaluation	Performance appraisal system
Sexuality	Male	75	2301.50	2348.50	2237.50	2228.50
	Female	67				
	Significant		0.346	0.481	0.397	0.216
Age	Under 25 ys	10	4.931	7.290	17.732	2.329
	25-35 ys	54				
	36-45 ys	50				
	Over 45 ys	28				
	Significant		0.177	0.063	0.070	0.507
Professional titles	Assistant	10	9.268	29.820	5.892	9.187
	Lecturer	70				
	Associate	41				
	Professor	21				
	Significant		0.026	0.000	0.163	0.027
Academic degree	Bachelor	23	5.529	13.440	13.825	1.740
	Master	70				
	Doctor	49				
	Significant		0.063	0.001	0.071	0.419

**Table 7** shows that sexuality plays no role on the satisfaction of working circumstance. Therefore, hypothesis 4a is rejected. Teachers within separate age groups have not the same satisfaction except human relations. So, hypothesis 4b is accepted. There is no significant difference among teachers with diverse titles excluding teaching and training environment, and hypothesis 4c is rejected. Interviewees have not the same sense

**Table 9.** Information entropy and weight of subsidiary indicators

Variables	Indicators	Information entropy	Weight
Salary	Basic wage	0.94	36.59%
	Performance wage	0.968	19.53%
	Family placement	0.95	30.48%
	Paid holiday	0.978	13.4%
Career development	Career promotion	0.956	27.85%
	Future development	0.95	31.65%
	Future training system	0.936	40.5%
Reputation	Career honor	0.972	25%
	Quality of students	0.956	39.28%
	Accepted academic value	0.96	35.72%
	Academic atmosphere	0.948	28.89%
Working circumstance	Teaching and research environment	0.968	17.78%
	Working strength	0.954	25.56%
	Human relations	0.95	27.77%
Organization system	Appointment system	0.95	28.48%
	Financial system	0.94	34.59%
	Professional titles evaluation	0.968	21.53%
	Performance appraisal system	0.978	15.4%

**Table 10.** Variables Score

	Salary	Career Development	Reputation	Working Circumstance	Organization System	Job Satisfaction
Assistant	2.905	2.0304	1.6735	3.5644	3.1231	3.6000
Bachelor	3.1541	2.4836	2.0892	3.3420	3.0044	3.4857
Associate Professor	3.4802	2.9136	2.3351	3.2853	2.9774	3.8293
Professor	4.0656	3.3249	2.7019	3.3011	3.7820	4.4286
Under 25 ys	3.4403	2.6532	2.0352	3.4811	3.4384	4.0000
25-35 ys	3.1550	2.4632	1.9745	3.3022	2.9836	3.5000
36-45 ys	3.3523	2.7626	2.3514	3.4784	3.0877	3.7600
Over 46 ys	3.7682	3.0629	2.5325	3.0913	3.3269	4.0357

of academic atmosphere, teaching and training circumstance and human relations. As a result, hypothesis 4d is accepted.

It is obvious that male and female teachers have the same sense of organization system in universities. Interviewees within separate age groups have not significant difference in organization system. So, hypothesis 5a and 5b are rejected. However, teachers with different titles have distinct feeling in organization system except financial system. That is almost the same for teachers with different degree except performance appraisal system. Therefore, hypothesis 5c and 5d are accepted.

This paper uses entropy approach to give weights to the subsidiary indicators as showed in **Table 9**. For salary, basic wage and family placement play an important role for teachers. Future training system effects career development most. The three subsidiary indicators almost play the same role in reputation. As for working circumstance and organization system, academic atmosphere and professional appraisal system have the greatest impact on job satisfaction for teachers.

The final score of five variables are listed in **Table 10**.

Subsequently this paper will reorder the five variables with grey related analysis.  $X_i = (X_i(1), X_i(2), \dots, X_i(8)), i = 1, 2, \dots, 5$ ,  $X_1$  is salary incentive,  $X_2$  is career development incentive,  $X_3$  is reputation incentive,  $X_4$  is working circumstance incentive ;  $X_5$  is organization system.  $Y_0 = (3.6, 3.4857, 3.8293, 4.4286, 4, 3.5, 3.76, 4.0357)$ , which is the score of job satisfaction for teachers.

Therefore,  $\Delta_1 = (0, 0.1175, 0.1343, 0.1694, 0.0732, 0.1138, 0.1095, 0.1761)$ ;  $\Delta_2 = (0, 0.2550, 0.3713, 0.4074, 0.1956, 0.2409, 0.3162, 0.3875)$ ;  $\Delta_3 = (0, 0.2802, 0.3316, 0.3844, 0.1050, 0.2076, 0.3606, 0.3923)$ ;  $\Delta_4 = (0, 0.0306, 0.1420, 0.3040, 0.1345, 0.0458, 0.0686, 0.2538)$ ;  $\Delta_5 = (0, 0.0063, 0.1103, 0.0192, 0.0102, 0.0169, 0.0558, 0.0558)$ .

$$\min_i \min_k |X_0(k) - X_i(k)|; \max_i \max_k |X_0(k) - X_i(k)| = 0.4074$$

The grey relation coefficients are as follows.

$$\sigma_1 = |k=1, 2, \dots, 8) = (1, 0.6342, 0.6027, 0.5460, 0.7356, 0.6416, 0.6504, 0.5363)$$

$$\sigma_2 = |k=1, 2, \dots, 8) = (1, 0.4441, 0.3543, 0.3333, 0.5101, 0.4582, 0.3918, 0.3446)$$

$$\sigma_3 = |k=1, 2, \dots, 8) = (1, 0.421, 0.3805, 0.3464, 0.6599, 0.4953, 0.3610, 0.3418)$$

$$\sigma_4 = |k=1, 2, \dots, 8) = (1, 0.8692, 0.5892, 0.4012, 0.6023, 0.8165, 0.7481, 0.4453)$$

$$\sigma_5 = |k=1, 2, \dots, 8) = (1, 0.9702, 0.6486, 0.9139, 0.9525, 0.9234, 0.7850, 0.7851)$$

$$r_i = r_{0i} = \sum_{k=1}^8 \frac{\sigma_i(k)}{8}$$

$$r_1 = 0.6684 \quad r_2 = 0.6839 \quad r_3 = 0.5007 \quad r_4 = 0.4735 \quad r_5 = 0.8723$$

Finally, we reorder the five variables  $r_5 > r_2 > r_1 > r_3 > r_4$ .

## CONCLUSION AND RECOMMENDATION

Among the five factors, organization system plays an important role in job satisfaction for teachers. The reminders are career development, salary, reputation and working circumstance.

As for salary, it is age and profession title other than sexuality and paid holiday that effect salary satisfaction. The older the age is, more satisfied teachers are. That is the same to academic degree. Teachers pay more attention on basic wage and family placement.

Male teachers are more satisfied with training system and career development than female teachers. The higher profession titles and degrees are, more satisfied the teachers are in career development.

As for reputation is concerned, it is age and professional titles other than sexuality that effect reputation for teachers. The older the age is, more satisfaction the teachers are. The same is to professional titles. The teachers have almost the same satisfaction with different sexuality and titles. However, professional titles and degrees make more effect on organization system for teachers.

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