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Research on satisfaction of Vietnamese university lecturers

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Abstract: For universities, lecturers are the human resources who directly carry out the training task to create human resource training products for society; lecturers play an important role in determining the strategic development of the school. Universities that motivate lecturers to work will create satisfaction for lecturers, promote creativity to contribute to the school. This study addresses the job satisfaction of lecturers, including public universities and non-public universities to identify and compare the differences in job satisfaction of lecturers at universities in Vietnam. The author uses quantitative methods through a survey of 800 lecturers from 10 universities in Vietnam to collect data for the study. The research results show that salary, work itself, development opportunities, recognition, relationships at work, working environment and conditions have an impact on the job satisfaction of lecturers. However, the level of impact of each factor on the satisfaction of lecturers at public universities is different from that of lecturers at non-public universities; showing a clear difference in job satisfaction of lecturers at two types of universities in Vietnam. With the results of this research, the author finds that salary, work itself, development opportunities, recognition, relationships at work, working environment and conditions have an impact on the job satisfaction of lecturers at non-public universities; lecturer satisfaction also contributes significantly to the success of universities, it determines the quality of higher education, promotes innovation in universities.

Keywords: *Job satisfaction, Non-public universities, Public universities, Universities lecturers, Vietnam.*

1. Introduction

In terms of organizational management practices, employee job satisfaction plays an important role in the sustainable development of organizations. According to Spector (1997), employee behavior depends on the extent to which they are satisfied with their jobs; employee satisfaction will generate positive behaviors and vice versa, employee dissatisfaction will lead to negative behaviors; in addition, satisfaction can be considered a good indicator related to organizational innovation, suggesting innovations to increase organizational performance.

For lecturers, job satisfaction also plays an important role in the success of universities; it determines the quality of universities, making lecturers attached to the university and work more effectively, creatively, and less likely to look for new jobs in a new environment (Kaur, 2019; Gessesse et al., 2023). On the contrary, dissatisfied lecturers will have the desire and intention to leave the organization, look for new jobs and reduce their attachment and loyalty to the organization, affecting the quality of university education (Pienaar et al., 2008; Webber et al., 2018).

On a larger scale, the quality and efficiency of lecturers will determine the quality of a nation's human resources, because university education is a high-level technical and professional training, creating high-quality human resources for the state and society. Bentley et al. (2013) argued that universities can create competitive advantages for countries and contribute to the development of the

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global knowledge economy if they attract the best and brightest. Sharing this view, Gessesse et al. (2023) further emphasized that the teaching staff is the treasure of universities, an important human resource of the nation.

With the characteristics and roles of lecturers in the development of universities and the development of the country explained above, it is very necessary for universities to implement policies to create motivation to improve the quality of lecturers. That helps create satisfaction, commitment, and creativity of lecturers in scientific research and professional teaching to contribute more intellectual products to the development of universities and the country. This is also the reason why the author chose to conduct this study.

2. Literature Review

Job satisfaction has attracted the attention of many researchers and has focused more on businesses; while in educational and training organizations (universities), the number of studies is still quite small. According to Spector (1997), job satisfaction is approached from the perspective of need fulfillment, meaning that a job that meets needs will create satisfaction and it is considered a type of emotion at work. Similarly, some other researchers describe satisfaction as an emotional response to work, an individual's assessment of whether the job is good or bad and whether they are satisfied or dissatisfied with the job (Weiss, 2002; Gessesse et al., 2023).

Along with the increasing number of studies on job satisfaction, satisfaction measurement scales are also increasingly developed. Cross (1973) said that there are 6 factors that create job satisfaction including: Organizational factors; salary; work motivation; job characteristics; supervision; colleagues. According to Hackman et al. (1975), the factors: Job security; salary; social relationships; supervision; development opportunities, are factors that create satisfaction of human resources in the organization. Previously, Smith et al. (1969) also built an index model to describe jobs and evaluate job satisfaction through 5 factors: Salary; promotion; colleagues; supervision; job characteristics. Although many people believe that using a questionnaire that is too long makes it difficult for surveys to collect data, difficult to assess all the different levels of employee satisfaction, or does not have a question that assesses the overall satisfaction of employees in the organization according to theory of Spector (1997), the job description index model of Smith et al. (1969) is still used in many studies, such as those of Roznowski (1989), Ironson et al. (1989), Kass et al. (2001), Kinicki et al. (2002), Nagy (2002).

Regarding job satisfaction, Herzberg et al. (1993) found that there are two groups of factors that influence job satisfaction: The group of factors that create satisfaction and the group of factors that can hinder satisfaction, which are the source of job dissatisfaction. Factors that create satisfaction are motivators, which come from the intrinsic conditions of the job such as the job itself, responsibility, growth opportunities, job challenges, achievement and recognition. Factors that hinder job satisfaction are often satellite factors such as salary and bonuses; working environment and conditions; relationships at work; management style; job security; organizational policies, etc. The two-factor theory of Herzberg et al. (1993) has been tested in many studies, such as those of DeShields et al. (2005), Bassett et al. (2005), Hutchinson et al. (2013), Toropova et al. (2021).

Another approach to job satisfaction is provided by Rue et al. (2003) with 8 different factors influencing job satisfaction including: Leadership concern for employees; job design; remuneration; working conditions; social relationships; perception of development opportunities; perception of other opportunities; salary ambition and need for achievement. Rue et al. (2003) also argued that employee satisfaction will have a positive impact on the organization, creating long-term commitment and attachment of employees to the organization; conversely, dissatisfaction will lead to reduced revenue, absenteeism at work, work accidents, strikes and complaints.

There is a broad consensus among researchers that salary, relationships with coworkers and supervisors, and job security are considered important components of satisfaction (Cross, 1973; Hackman et al., 1975). Building on these studies, Spector (2022) generalized a scale of job satisfaction including: Appraisal, communication, coworkers, benefits, working conditions, nature of work, organization itself, organizational policies, salary, personal development, promotion opportunities,

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recognition, protection, and supervision. Spector (2022) also proposed a scale of job satisfaction including salary, motivation, supervision, benefits, rewards, operating procedures, coworkers, nature of work, and communication.

For lecturers, their job satisfaction plays an important role in the development of the university. There have been many studies on the job satisfaction of lecturers such as Lacy et al (1997), Ssesanga et al. (2005), Gessesse et al. (2023). Some studies use the two-factor theory of Herzberg et al. (1993) to examine the impact of factors on the job satisfaction of lecturers. Through this, the scientific value of the theory is affirmed: Lacy et al. (1997) concluded that there is no model of job satisfaction that challenges Herzberg's two-factor theory; but the research results of Ssesanga et al. (2005) do not seem to support Herzberg's theory, that any factor can cause satisfaction or dissatisfaction of the teaching staff.

In another attempt, some researchers have developed two-factor theory of Herzberg et al. (1993) to make it more relevant to the human resource of university lecturers. Hagedorn (2000) developed two-factor theory of Herzberg et al. (1993) to explore the job satisfaction of lecturers, specifically dividing the factors that create satisfaction into two groups: Triggers and mediators. Triggers are important life events that may or may not be related to work, affecting a person's frame of reference such as promotion, transfer/change of agency or marriage, etc. Mediators are described as a variable or situation that influences the relationship between other variables or situations creating an interaction effect or in other words, providing a context that creates satisfaction. The six proposed triggers include changes in life stage, changes in personal or family circumstances; changes in rank or tenure, moving to a new unit, changes in perceptions of justice, and changes in mood or emotional state. The three proposed mediators are Herzberg's et al. (1993) motivators and hygiene factors, demographics, and environment.

Bentley et al. (2013) used Hagedorn's conceptual framework to compare differences in job satisfaction among academic groups in 12 different countries around the world; OLS linear regression results showed that Hagedorn's framework was more applicable in the United States, United Kingdom, Australia, and to a lesser extent in Brazil, Canada, and Germany. Rebello (2013) in his study on job satisfaction among Argentinean academics also pointed out that the items that influence job satisfaction are physical conditions; service provision; teaching issues; scientific research issues; the level of personal influence on work in the organization; and supporting institutions and policies. Rebello's (2013) study also confirmed that physical conditions, service provision, teaching and research issues, and organizational support are considered inadequate - that is, do not create satisfaction for teachers in Argentina.

The study by Gessesse et al. (2023) demonstrated the impact of salary, supervision, organizational policies and practices, interpersonal relationships, job security, promotion, and the job itself on job satisfaction. The results of the study indicated that lecturers at universities in Addis Ababa were dissatisfied with their jobs, except for the characteristics of the job itself; lecturers were satisfied with salary and supervision at non-public universities; and were satisfied with job security at public universities. Other studies have also identified factors that negatively impact academic job satisfaction, such as work overload (Monnapula, 2002), role conflict (Miller, 2003), lack of autonomy, support for teaching and research, racial and gender discrimination (Barkhuizen et al., 2004), poor communication (Ball, 2004), and management style (Barkhuizen et al., 2004). Overall, studies have found differences in academic job satisfaction, depending on the individual and the context in which the academic lives and works (Lacy et al., 1997).

3. Research Methodology

The author uses quantitative research methods to explore the differences in job satisfaction between lecturers of public universities and non-public universities in Vietnam. First, the author studies the factors affecting the job satisfaction of lecturers through analyzing the factors affecting satisfaction; testing the reliability of the scale using Cronbach Alpha, exploratory factor analysis (EFA) and multiple linear regression analysis with Pearson correlation coefficient. Multiple regression analysis was designed and used twice with two groups of lecturers, including the group of lecturers of public

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universities and the group of lecturers of non-public universities. The purpose of regression analysis is to compare the differences in the results of measuring the impact of independent variables with the variation of dependent variables in different groups of subjects. Next, the author compares the differences in job satisfaction of lecturers between public universities and non-public universities in Vietnam through one-way ANOVA analysis technique. Technical operations are performed with the help of SPSS software.

To fit the research context of universities in Vietnam, the author uses independent variables to determine general job satisfaction including: (i) Income, inheriting the research content of Smith et al. (1969), Cross (1973), Hackman et al. (1975), Trung et al. (2021), Specto (2022); (ii) the job itself, inheriting the research content of Smith et al. (1969), Cross (1973), Scarpello et al. (1983), Khaleque et al. (1987); (iii) development opportunities, inheriting the research content of Herzberg et al. (1993), Hagedorn (2000); (iv) recognition, inheriting the research content of Yuzuk (1961), Khaleque et al. (1987), Macdonald et al. (1997); (v) interpersonal relationships, inheriting the research content of Cross (1973), Khaleque et al. (1987), Scarpello et al. (1983); (vi) working environment and conditions, inheriting the research content of Yuzuk (1961), Scarpello et al. (1983), Khaleque et al. (1987). The theoretical framework of the study includes the scales summarized in Table 1.

Table 1.
Theoretical framework.

Symbols	Scales	Original references
INC	**Income (Salary, bonus, other income earned from teaching and scientific research)**	
INC1	Salary matches job requirements	Smith et al. (1969), Spector (1997)
INC2	I have many other incomes besides my salary	Trung et al. (2021), Spector (2022)
INC3	My income is fair compared to other professions	Smith et al. (1969), Spector (1997)
INC4	My income meets my personal needs	Smith et al. (1969)
INC5	The income I receive matches my expectations	Smith et al. (1969)
WPJ	The job itself	
WPJ1	This job is clearly described	Spector (1997)
WPJ2	All my knowledge and skills are used at work	Smith et al. (1969)
WPJ3	I feel interested in doing this job	Smith et al. (1969), Spector (1997)
WPJ4	This job helps me have many relationships	Cross (1973)
WPJ5	I'm proud to do this job	Spector (1997)
OFP	Development opportunities	
OFP1	I get promoted if I do a good job	Spector (1997)
OFP2	Promotion opportunities here are as good as anywhere else	Spector (1997)
OFP3	I have many opportunities to improve my own abilities	Smith et al. (1969)
OFP4	I have many opportunities to develop my career while doing this job	Spector (1997)
REC	Recognition	
REC1	My achievements are recognized by the university for personnel evaluation	Macdonald et al. (1997)
REC2	University leaders highly appreciate my abilities	Macdonald et al. (1997)
REC3	I am respected by students and colleagues	Macdonald et al. (1997)
REC4	My work is respected by society	Yuzuk (1961)
REC5	I receive recognition when I do a good job	Yuzuk (1961)
RAW	Relationships at work	

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Symbols	Scales	Original references
RAW1	I get along well with my supervisor	Smith et al. (1969)
RAW2	University leaders are fair to me	Spector (1997)
RAW3	I like people at work	Spector (1997)
RAW4	Students always trust and love me	Macdonald et al. (1997)
RAW5	I have many good relationships at work	Yuzuk (1961)
EWC	Environment and working conditions	
EWC1	I am provided with sufficient resources for teaching and scientific research (lecture halls, mechanisms, policies, libraries, learning materials)	Scarpello et al. (1983), Khaleque et al. (1987)
EWC2	The equipment and tools used for learning and scientific research are of good quality	Scarpello et al. (1983), Khaleque et al. (1987)
EWC3	The university's support services ensure quality	Scarpello et al. (1983), Khaleque et al. (1987)
EWC4	My working environment is quite good	Scarpello et al. (1983), Khaleque et al. (1987)
JOS	Job satisfaction	
JOS1	I have always loved this job	Taylor et al. (1995)
JOS2	I feel valued doing this job	Gessesse et al. (2023), Taylor et al. (1995)
JOS3	This job brings me a lot of joy and happiness	Gessesse et al. (2023), Taylor et al. (1995)
JOS4	If I could choose again, I would continue to choose this job	Rebello (2013), Bentley et al. (2015)
JOS5	This is a good time for any young person starting a career in his or her field	Rebello (2013), Bentley et al. (2015)
JOS6	I am satisfied with my current job	Rebello (2013), Bentley et al. (2015)

According to data published by the Ministry of Education and Training of Vietnam, by 2024, Vietnam has over 78000 lecturers teaching at universities. Of which, the number of lecturers at public universities is over 58,000; the number of lecturers at non-public universities is over 20000. Applying the sampling formula of Yamane (1967) with an expected error of 5%, the research sample size is from 385 or more ($N \geq 385$).

The author surveyed 800 university lecturers, including 400 lecturers from public universities and 400 lecturers from non-public universities ($N > 385$). Since this study aimed to compare the job satisfaction of lecturers from public universities and lecturers from non-public universities, the number of lecturers surveyed at each group of universities was the same. This study used a convenient random sampling method: 10 public universities and 10 non-public universities were selected for the survey; the number of surveys at each university was determined based on the size of the university's teaching staff (Table 2). The results of 400 surveys at 10 public universities and 400 surveys at 10 non-public universities were used for analysis. All surveys were conducted directly with the help of colleagues working directly at the selected universities. The survey structure was adjusted to attempt to distribute the sample appropriately across groups of lecturers with criteria for age, gender, highest qualification achieved, teaching seniority and lecturer's major.

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Table 2.
Proportion of research sample.

Public universities				**Non-public universities**			
University symbols	Overall (Ni)[1]	Survey sample (N)	Use for analysis	University symbols	Overall (Ni)[2]	Survey sample (N)	Use for analysis
UNi1	428	39	39	UNi11	314	30	30
UNi2	794	55	55	UNi12	381	29	29
UNi3	678	44	44	UNi13	301	28	28
UNi4	501	40	40	UNi14	370	39	39
UNi5	418	32	32	UNi15	487	79	79
UNi6	445	38	38	UNi16	322	42	42
UNi7	482	37	37	UNi17	414	37	37
UNi8	577	46	46	UNi18	392	40	40
UNi9	381	34	34	UNi19	211	32	32
UNi10	422	35	35	UNi20	456	44	44
Total	5126	400	400	Total	3648	400	400

4. Research Results

In quantitative research, according to Hair et al. (2009), scales are reliable when the Cronbach's Alpha coefficient > 0.6. The results of testing the reliability of the scale using the Cronbach's Alpha coefficient show that the independent variables and dependent variables all have Cronbach's Alpha coefficient > 0.6 (Table 3), in which the income variable INC has the largest Cronbach's Alpha coefficient of 0.891 and the environment and working conditions variable EWC has the smallest Cronbach's Alpha coefficient of 0.823. This shows that all scales ensure unidimensionality and reliability, and can continue to be used in research when performing subsequent analyses.

Table 3.
Cronbach's alpha coefficient.

No	**Symbols**	**Scales**	**Cronbach's alpha**
1	INC	Income	0.891
2	WPJ	The job itself	0.834
3	OFP	Development opportunities	0.874
4	REC	Recognition	0.883
5	RAW	Relationships at work	0.856
6	EWC	Environment and working conditions	0.823
7	JOS	Job satisfaction	0.865

The results of Cronbach's Alpha analysis also show that the observed variables all have correlation coefficients with the total variable (scale) reaching a level greater than 0.3 (Corrected Item-Total Correlation > 0.3). This shows that the observed variables of the scales are reliable and can be used to

[1] The number of lecturers of 10 public universities was estimated through a preliminary survey.
[2] The Number of lecturers of 10 non-public universities estimated through preliminary survey.

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measure factors affecting job satisfaction of lecturers at public and non-public universities in Vietnam. In addition, there is no case where the correlation coefficient of the observed variable with the total variable is greater than the Cronbach's Alpha coefficient of the total variable, so all variables are retained for inclusion in the EFA analysis.

EFA analysis was performed using Principal axis factoring and Promax rotation. Separating the two groups of independent variables and dependent variables helped the author check the suitability of the variables. The results are as follows:

- With independent variables: The KMO coefficient obtained when performing EFA with independent variables is 0.814 ($0.5 < KMO < 1$), allowing the conclusion that the independent variables are eligible for inclusion in EFA analysis. The EFA results with independent variables are acceptable with the collected research data set. The significance level of Bartlett's test is 0.000 (Sig. <0.05), proving that the observed variables in the factors are correlated with each other, the factor analysis results are consistent with the 95% confidence level. The Eigenvalue of the 6 factors affecting the job satisfaction of the teaching staff is 2.019 > 1, so all 6 factors are kept intact in the analysis model. The total variance extracted from 6 factors reached 72.197%, satisfying the condition > 50% and showing that 6 factors in the model explained 72.197% of the variation in the data.

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Table 4.
Total variance explained with independent variable.

Component	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.263	22.364	22.364	6.263	22.364	22.364	3.843	13.724	13.724
2	3.822	13.645	36.009	3.822	13.645	36.009	3.667	13.090	26.814
3	3.271	11.678	47.687	3.271	11.678	47.687	3.505	12.517	39.331
4	2.578	9.201	56.888	2.578	9.201	56.888	3.435	12.262	51.593
5	2.268	8.105	64.993	2.268	8.105	64.993	2.986	10.662	62.255
6	2.019	7.204	72.197	2.019	7.204	72.197	2.785	9.942	72.197
…	…	…	…						
28	0.169	0.579	100.000						

Extraction method: Principal component analysis.

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The rotated matrix image in EFA shows that 28 observed variables converge into 6 factors: INC - income, WPJ - the job itself, OFP - development opportunities, REC - recognition, RAW relationships at work, EWC – environment, and working conditions, respectively. All observed variables have factor loadings of more than 0.5 and no variable loads on multiple factors. Thus, EFA shows that there are 6 representative factors extracted and the 6 factors as well as the observed variables of each factor are consistent with the proposed research model.

Table 5.
Rotation matrix.

	Component					
	1	**2**	**3**	**4**	**5**	**6**
INC5	0.762					
INC4	0.872					
INC1	0.869					
INC3	0.865					
INC2	0.742					
REC5		0.842				
REC1		0.841				
REC4		0.838				
REC2		0.822				
REC3		0.811				
RAW3			0.869			
RAW1			0.865			
RAW2			0.857			
RAW4			0.853			
RAW5			0.745			
WPJ4				0.817		
WPJ2				0.866		
WPJ5				0.787		
WPJ1				0.773		
WPJ3				0.761		
OFP2					.879	
OFP1					.874	
OFP4					.863	
OFP3					.841	
EWC2						.875
EWC1						.833
EWC3						.820
EWC4						.778

Extraction method: Principal component analysis
Rotation method: Varimax with kaiser normalization

Note: a. Rotation converged in 6 iterations

- With the dependent variable: The KMO coefficient reached 0.808 ($0.5 < KMO < 1$), allowing the conclusion that the dependent variable is eligible for EFA analysis. The EFA result with the dependent variable is acceptable with the collected research data set; the significance level of the Bartlett test reached 0.000 (Sig. <0.05), proving that the observed variables in the scale are correlated with each other, the factor analysis results are consistent with the 95% confidence level.

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The eigenvalue of the dependent variable University lecturer satisfaction reached 4.126 > 1, so all observed variables were kept intact in the analysis model. The total extracted variance of the independent variable reached 67.878%, satisfying the condition > 50%, the dependent variable in the model explained 67.878% of the variation in the data. The image of the unrotated matrix in EFA shows that the observed variables of the dependent variable all have factor loading coefficients greater than 0.5 and are assigned to only 1 factor. Thus, EFA analysis shows that the observed variable components of the dependent variable ensure unidimensionality and are consistent with the proposed research model.

Testing the correlation between variables gave the Sig. coefficient, Pearson correlation test between independent variables (INC, WPJ, OFP, REC, RAW and EWC) and dependent variable (JOC) with Sig. < 0.05, showing that the correlation coefficient is statistically significant; meaning that there is a linear relationship between independent variables and dependent variables. The EFA analysis results show the reliability of the scale and research model. Therefore, regression analysis techniques can continue to be used to test the impact of each factor on job satisfaction of lecturers. Multiple regression analysis with linear regression function was performed using the one-time inclusion method. The author conducted regression analysis with two groups of lecturers at public universities and lecturers at non-public universities.

The results show that the adjusted R^2 coefficient representing the explanatory power of the model is 0.654 for the group of public university lecturers and 0.648 for the group of non-public university lecturers. That is, for the group of public university lecturers, the independent variables included in the regression analysis explain 65.4% of the variation in the dependent variable JOS; for the group of non-public university lecturers, the independent variables included in the regression analysis explain 64.8% of the variation in the dependent variable JOS.

In addition, the Durbin-Watson test gives a coefficient of 1.603 for public universities and 1.621 for non-public universities (1 < d < 3), so the results do not violate the first-order serial autocorrelation assumption. Regarding the suitability of the research model, in the variance analysis table, the F value is statistically significant with Sig = 0.000 (Sig. < 0.05) in both groups of universities.

Thus, the proposed linear regression model fits the actual data collected and the variables included are all statistically significant at the 5% significance level. In addition, the regression coefficients for the 6 independent variables INC, WPJ, OFP, REC, RAW and EWC in both public and non-public university groups have VIF values < 2 (1 < VIF < 2); Sig. <0.05, so it can be concluded that there is no multicollinearity between the independent variables in the research model. The regression coefficients of all variables are positive, indicating that the independent variables INC, WPJ, OFP, REC, RAW and EWC have positive/positive impacts on the dependent variable JOS.

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Table 6.
Regression coefficients.

Institution		Unstandardized coefficients		Standardized coefficients	t	Sig.	Collinearity statistics	
		B	Std. error	Beta			Tolerance	VIF
Public universities $R^2 = 0.648$	(Constant)	-0.558	0.247		-2.271	0.024		
	INC	0.083	0.036	0.108	2.404	0.000	0.928	1.077
	WPJ	0.247	0.055	0.241	4.637	0.000	0.686	1.461
	OFP	0.141	0.038	0.169	3.597	0.000	0.808	1.237
	REC	0.013	0.037	0.018	.344	0.728	0.869	1.153
	RAW	0.516	0.047	0.494	11.149	0.000	0.939	1.067
	EWC	0.223	0.043	0.266	5.288	0.000	0.732	1.368
Non-public universities $R^2 = 0.654$	(Constant)	-2.043	0.328		-6.238	0.000		
	INC	0.334	0.056	0.281	6.083	0.000	0.898	1.116
	WPJ	0.217	0.041	0.246	5.427	0.000	0.901	1.113
	OFP	0.249	0.049	0.252	5.206	0.000	0.808	1.238
	REC	0.347	0.057	0.304	6.121	0.000	0.812	1.235
	RAW	0.123	0.056	0.125	2.256	0.000	0.922	1.084
	EWC	0.272	0.048	0.247	5.555	0.000	0.938	1.068

Note: a. Dependent variable: JOB.

The research results also show that, for the group of lecturers at non-public universities, the Sig. coefficient of the t-test for all 6 independent variables is less than 0.05, so all hypotheses are acceptable; 6 factors of income, work itself, development opportunities, recognition, relationships at work, working environment and conditions all affect the job satisfaction of lecturers. However, at public universities, the Sig. coefficient of the t-test with the independent variable REC - recognition is 0.728, showing that this variable is not significant in the regression model; in other words, this variable does not affect the dependent variable JOS. The remaining variables including INC, WPJ, OFP, RAW and EWC all have t-test sig less than 0.05, so these variables are all statistically significant and affect the dependent variable JOS.

Regarding the regression coefficients, for both groups of public universities and non-public universities, the regression coefficients of the independent variables are positive, indicating that the independent variables have a positive/positive impact on the dependent variable. There is a difference in the standardized Beta coefficients of the dependent variables at public universities and non-public universities as this coefficient tends to be more polarized at public universities and less polarized at non-public universities. Specifically, at public universities, the largest standardized Beta coefficient is 0.494 while the smallest value is 0.18; the largest and smallest coefficients of non-public universities are 0.304 and 0.125. Table 7 below shows the comparison of the regression coefficients of factors affecting job satisfaction at public and non-public universities.

Table 7.
Standardized regression coefficients.

Factors		Standardized regression coefficients	
Symbols	Variables	Public universities	Non-public universities
INC	Salary	0.108	0.281
WPJ	Job itself	0.241	0.246
OFP	Development opportunities	0.169	0.252
REC	Recognition	0.018	0.304
RAW	Relationships at work	0.494	0.125
EWC	Environment and working conditions	0.266	0.247

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In public universities, workplace relationships are considered to have the greatest impact on lecturers' satisfaction (regression coefficient is 0.494) while in non-public universities, the impact of these factors is quite small (pooled regression coefficient is 0.125). In contrast, factors of recognition and development opportunities have a fairly strong impact on lecturers' job satisfaction in non-public universities with regression coefficients of 0.304 and 0.250 respectively, but are insignificant or very small compared to public universities with quite low regression coefficients of 0.18 and 0.169. The impact of the job itself and the working environment and conditions in both groups of universities have almost the same impact on lecturers' work motivation.

The independent sample T-test technique was further used to compare the job satisfaction levels of the two groups of lecturers. The Sig. coefficient of the F test gave a value of 0.004 (Sig. < 0.05), indicating that there was a difference in the job satisfaction levels of the two groups of lecturers from public universities and non-public universities. Similarly, the Sig. T-test achieved a value of 0.001 (Sig. < 0.05), meaning that there was a mean difference in the job satisfaction levels of lecturers from different university groups. The mean value of job satisfaction of the public university lecturer group was 3.8546 while that of the non-public university lecturer group was 3.5431. Both groups of lecturers were quite satisfied with their jobs, although their satisfaction levels were different. The results of the independent sample T-test are completely consistent with the results of the regression and correlation analysis above, showing interesting findings on the level of job satisfaction of lecturers at public and non-public universities.

Table 8.
Independent sample t-test results.

Independent sample test										
		Levene's Test for Equality of Variances		**t-test for equality of means**						
		F	**Sig.**	**t**	**df**	**Sig. (2-tailed)**	**Mean difference**	**Std. error difference**	**95% confidence interval of the difference**	
									Lower	**Upper**
Job	Equal variances assumed	8.348	0.004	3.441	397	0.001	0.31348	0.09112	0.134365	0.49261
	Equal variances not assumed			3.438	394.237	0.001	0.31348	0.09122	0.13417	0.49278

6. Discussing Research Results

With the F value in the regression analysis of 0.000 < 0.001 in both public and non-public university groups, it shows that the overall regression model is very significant. The research model explains more than 60% of the job satisfaction of lecturers at public and non-public universities in Vietnam. The independent variables are very significant in the overall model and are consistent with the actual research data. These variables include income, work itself, development opportunities, relationships at work, working environment and conditions with P coefficients all less than 0.05. For the variable REC - recognition, the P value is 0.728 in the public university group, showing that recognition of achievements has almost no impact on lecturers' satisfaction, although this factor is significant for lecturers at non-public universities.

This study's results are different from Maslow's (1954) hierarchy of needs theory, which states that the need for self-esteem is expressed in the recognition of individual achievements by the organization, if not satisfied, will motivate people to make efforts to meet their needs. Similarly,

recognition/acknowledgement is one of the motivating factors that increase employee motivation according to Herzberg et al. (1993); it has an impact on job satisfaction according to Hagedorn (2000) and Bentley et al. (2015). However, this result is consistent with the findings of research in public universities when explaining that salary is the factor that has the lowest impact on teachers' job satisfaction. When there is no recognition of employees' achievements, the salary, income or benefits that teacher receive will not be commensurate with their contributions. The research results are also consistent with the reality in Vietnam where reward, recognition and commendation activities have not received due attention and are still formal; rewards and recognition are not timely and have not been widely promoted; employees' contributions are not respected (Nguyen, 2019).

This study assesses the level of job satisfaction of university lecturers; using the reliability test technique with Cronbach's Alpha coefficient, the research results show that the scales are reliable and measure the variables in the model well. According to the research results, for the group of public universities, income, work itself, development opportunities, relationships at work, working environment and conditions have an impact on the job satisfaction of lecturers, although the impact level of these factors is different. Working environment and conditions are the strongest influencing factors with a multiple regression coefficient of 0.494.

Next are environmental factors and working conditions with a multiple regression coefficient of 0.266; the job itself with a focused regression coefficient of 0.241; development opportunities with a multiple regression coefficient of 0.169; and salary and income with a coefficient of 0.108. For the group of lecturers at non-public universities, recognition is the factor with the strongest impact on job satisfaction. Although the research results are consistent with hierarchy of needs theory of Maslow (1954), two-factor theory of Herzberg et al. (1993) or the results of practical research and experience of Hagedorn (2000), Bentley et al. (2015), the different results between public universities and non-public universities raise the need for further research on the causes leading to this difference. Also with the group of lecturers at non-public universities, the impact level of factors such as income, work itself, development opportunities, working environment and conditions on satisfaction is quite similar when the multiple regression coefficients do not have significant differences (Table 6).

Job satisfaction is considered as an emotional response to work, which can be either liking or disliking the job (Weiss, 2002). Studies by Cross (1973), Hackman et al. (1975), Smith et al. (1969) and Spector (2022) demonstrate that salary or income has a positive impact on job satisfaction. According to the two-factor theory of Herzberg et al. (1993), salary is a factor that can maintain employee motivation. The results of this study clearly show that salary has a positive impact on job satisfaction of lecturers, that is, the higher the salary and income, the greater the satisfaction. However, the impact of salary on job satisfaction of lecturers in non-public universities (standardized Beta coefficient 0.281) is greater than that of public universities (standardized Beta coefficient 0.108).

Currently, the payment of salaries at public universities is carried out in accordance with the provisions of the Law on Civil Servants 2010 (Law No.58/2010/QH12), amended in 2019 (Law No.52/2019/QH14) and a number of other relevant sub-law documents. Accordingly, the salary of public university lecturers is determined by multiplying the basic salary by the salary coefficient. This salary is much lower than the salary of employees with equivalent qualifications in the non-public sector. In some financially autonomous universities, salaries and income of employees are allocated according to the performance of the school, so the salary of lecturers is higher, but still much lower than the salary of the private sector.

In contrast to salary, the workplace relationship factor has a stronger impact on the satisfaction of lecturers at public universities while it has a smaller impact in private universities. The coefficient of impact of the workplace relationship factor on the satisfaction of lecturers at public universities is 0.494 - the strongest impact factor among the impact factors. This research result is similar to the study of Bentley et al. (2015), although it is only true for the group of lecturers at public universities. The coefficient of impact of workplace relationship on the satisfaction of lecturers at non-public universities is very low (0.125), showing the limitations in building workplace relationships at non-public universities compared to public universities. Hagedorn's (2000) study used workplace relationships as

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part of the work environment, acting as a mediating factor affecting satisfaction, which was significant for the group of lecturers with 20 years of service or less than 5 years; Herzberg's (1976) study showed that workplace relationships can be a source of dissatisfaction; Carnevale's (1995) study on industrial relations and organizational theory, pointed out that social relations and working relationships as well as satisfactory working conditions are beneficial for the organization to increase the level of job-related satisfaction. Therefore, building good relationships for lecturers in non-public universities is of great significance in creating satisfaction and long-term commitment of lecturers. The research results of Smith et al. (1969), Cross (1973), Scarpello et al. (1983) Khaleque et al. (1987) showed that the job itself has a positive impact on job satisfaction. The research results of Yuzuk (1961), Scarpello et al. (1983), Khaleque et al. (1987) also demonstrated that the working environment and conditions positively affect satisfaction. The results of this study demonstrated that both the job, the working environment, and the working conditions have a positive impact on the job satisfaction of lecturers. Moreover, there was no significant difference in the impact of these two factors on the job satisfaction of lecturers in public universities and non-public universities. This shows that the form of ownership does not play an important role in the job, the working environment, and the working conditions.

Although in fact, the conditions and facilities of non-public universities seem to be much better than those of public universities, this does not greatly affect the satisfaction of lecturers of public universities. In general, universities that want to create job satisfaction for faculty can influence these two factors: Creating richer, more interesting and more valuable work combined with creating a good working environment and conditions for faculty can create faculty satisfaction and this satisfaction can lead to commitment, performance and long-term attachment of faculty to the university. Pepe et al. (2017), Kaur (2019) argue that working conditions affect employee satisfaction in the public sector; Gessesse et al. (2023) argue that employees are not satisfied with their jobs other than the work itself. Therefore, the results of this study are similar to the results of Kaur (2019) and Gessesse et al. (2023).

Development opportunities are a concern for most adult workers. Herzberg (1976) argued that development opportunities are the source of employee satisfaction; Jawahar (2012) argued that job-provided development opportunities are significantly related to employee satisfaction, promoting employee loyalty. Research by Kalleberg et al. (2000) and Kuvaas et al. (2009) also found that investing in employee development represents a high commitment strategy, influencing employee commitment and motivation and providing the organization with a competitive advantage. Therefore, creating employee development opportunities is of great significance in creating employee satisfaction. The results of this study complement Herzberg's (1976) conclusions and provide further evidence of the relationship between growth opportunities and satisfaction among university faculty, including both public and private universities. Universities that want to have long-term commitment from faculty can make an impact by providing growth opportunities for faculty such as training opportunities, promotion opportunities, or faculty professional development.

In addition to the regression analysis results, the F test results gave Sig value = 0.004 (Sig. < 0.05) and the T test results gave Sig value. = 0.001 (Sig. < 0.05), once again confirming the difference in job satisfaction levels between lecturers at public universities and non-public universities. Similarly, the average value of job satisfaction among the group of lecturers at public universities reached 3.8546 while this value among the group of lecturers from non-public universities reached 3.5431. The research results allow to conclude that the difference in governance models between public universities and non-public universities can lead to differences in lecturer satisfaction. This result contrasts with the finding of Bassett et al. (2003) who stated that organizational characteristics appear to have little impact on faculty satisfaction. However, Bentley et al. (2013), Webber et al. (2018), Gessesse et al. (2023) all found some differences between organizational types in faculty satisfaction. The findings in this study again confirm that difference.

7. Conclusions

The empirical results in this study indicate that there is a clear difference in job satisfaction between public university lecturers and non-public university lecturers. The author found that salary, work itself,

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development opportunities, recognition, workplace relationships, working environment and conditions have an impact on job satisfaction of non-public university lecturers. These factors also affect the satisfaction of public university lecturers, except for the recognition factor.

The results of this study also show that the satisfaction level of public university lecturers is higher than that of non-public university lecturers, as shown by the average value of satisfaction. In addition, the impact of the factors in the model on the job satisfaction of lecturers is different between non-public university lecturers and public university lecturers. While salary has a large impact on the job satisfaction of non-public university lecturers, its impact on the satisfaction of public university lecturers is less. An unexpected finding of this study is that the working environment and conditions at public universities have a strong impact on lecturers' satisfaction, while for the group of non-public university lecturers, the impact is weaker. The author believes that this is surprising because in fact, working conditions at non-public universities are often better, both in terms of facilities and teaching equipment. On the other hand, recognition of faculty contributions at non-public universities has the strongest impact on faculty satisfaction, but it does not mean much to lecturers at public universities.

Finally, from the empirical results on the difference in the level of satisfaction of lecturers in public universities and non-public universities, this study has demonstrated that the university governance model has an impact on the level of job satisfaction of lecturers. The author believes that more in-depth studies are needed in the future to explain more clearly the impact of the university governance model on the level of job satisfaction of lecturers. The form of ownership, management style, university governance policy mechanism... can be the factors that make the difference in the level of job satisfaction of lecturers.

Overall, this study contributes to the literature by providing empirical evidence on the relationships between salary, work itself, development opportunities, recognition, workplace relationships, working environment and conditions, and job satisfaction of university lecturers, as well as the differences in job satisfaction of lecturers between public and non-public universities. This study also contributes to laying the foundation for research in Vietnam on lecturers' job satisfaction and complements international research on human resource satisfaction in organizations. However, this study was conducted in the context of Vietnamese universities with a sample size that is considered appropriate to the size of Vietnamese universities. It is particularly important to expand the scope of the study and present cross-national evidence on this topic. In addition, this study focused on the differences in job satisfaction of lecturers from universities with different ownership backgrounds without mentioning the differences in gender, age, education level, seniority, etc. and the impact of these factors on lecturers' satisfaction. Further studies in the future can expand the study to include more intervening factors.

This study also provides some policy implications, that the job satisfaction of lecturers is important not only for universities but also for the development of high-quality human resources of a country. The training quality of a university depends largely on the quality, work efficiency and creativity of lecturers. And job satisfaction will encourage lecturers to improve the quality of teaching, the quality of scientific research and their creativity; thereby, new scientific ideas can be developed and spread in society. Improving employment, salary, income, working environment and conditions or recognizing the contributions of lecturers are the premise for creating remarkable changes in the quality of training, innovation and contributions of universities to the quality of national human resources and the overall development of society. Policy makers and university leaders should think more deeply about this issue, especially in developing countries where science is not as developed as it is in Vietnam today.

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