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Professional development, work environment, and job satisfaction in higher education: Implications for teacher education

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Abstract

This study aims to examine the interrelationships among professional development, work environment, and job satisfaction in higher education, with a particular focus on their implications for teacher education in the context of Shenzhen, China. A cross-sectional survey design was employed, involving 384 university teachers across different academic ranks and disciplines. Data were collected using a structured questionnaire and analyzed through descriptive statistics, correlation analysis, and multiple regression models to evaluate the effects of salary, work environment, and career development on job satisfaction. The results indicate that the quality of the work environment has the strongest positive effect on job satisfaction, followed by salary and career development opportunities, while transparent promotion systems, adequate institutional support, and collegial collaboration emerged as critical factors sustaining long-term faculty engagement. Overall, job satisfaction among university teachers is influenced by a combination of extrinsic and intrinsic factors, with the work environment playing a pivotal role; salary and professional growth opportunities, while important, are insufficient in isolation to sustain satisfaction. The findings highlight the need for higher education institutions to adopt a holistic strategy that integrates competitive compensation, supportive workplace cultures, and transparent career advancement pathways, as such measures are essential for enhancing teacher satisfaction, reducing turnover, and ensuring the sustainability of teacher education and higher education institutions at large.

Keywords: Education quality, Higher education, Professional development, Sustainable development, Teacher education.

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1. Introduction

In recent decades, the rapid expansion and diversification of higher education in China have brought unprecedented challenges and opportunities to university faculty. Shenzhen, as a leading economic hub and a pilot city for educational reform, has become a focal point for attracting and retaining academic talent. University teachers not only contribute to teaching and research but also shape institutional reputation and innovation capacity. However, ensuring their job satisfaction remains a complex task influenced by multiple, interrelated factors [1].

Job satisfaction has long been studied as a determinant of employee performance, organizational commitment, and turnover intention. Internationally, Herzberg's two-factor theory [2] distinguishes between hygiene factors such as salary and working conditions and motivators such as achievement and recognition. Subsequent empirical studies in Western contexts [3] have found that both financial and non-financial factors significantly affect academic staff satisfaction. In the Chinese context, research has highlighted the influence of competitive compensation schemes, administrative support, and professional development opportunities [4].

Salary is often considered the most tangible factor, particularly in regions with high living costs. Studies in both developed and developing economies show that competitive pay can attract talent but does not guarantee sustained job satisfaction [5]. For university faculty, intrinsic motivations such as research autonomy and academic recognition often weigh more heavily over time [6].

The work environment is another critical determinant. International literature emphasizes the role of supportive leadership, collegial relationships, and access to resources in fostering a positive academic climate [7, 8]. In China, rapid institutional expansion has sometimes led to increased workloads and administrative burdens, which can undermine faculty morale despite improvements in infrastructure and funding [9].

Career advancement opportunities, including promotion pathways, tenure systems, and access to professional development, are consistently linked to job satisfaction in higher education worldwide [10]. In the Chinese higher education system, recent policy reforms have aimed to align promotion criteria with international standards, but disparities in implementation across regions remain a challenge.

Despite growing scholarly attention, there is limited research focusing specifically on the combined effects of salary, work environment, and career advancement opportunities within the context of Shenzhen's unique economic and educational environment. Given the city's rapid urbanization, competitive labor market, and ambitious higher education strategies, understanding these dynamics is essential for improving faculty retention and institutional performance. This study therefore examines the interplay of these three factors and their impact on job satisfaction among university teachers in Shenzhen, integrating insights from both domestic and international literature to provide evidence-based recommendations for policy-making and institutional management in higher education.

2. Materials and Methods

2.1. Extent of Researcher Interference

In this study, the researcher keeps involvement at a low level, which is a common practice in quantitative research. The main tasks of the researcher are to create the questionnaire, send it to the participants, and study the responses. The teachers will complete the survey by themselves, without help or direction from the researcher. This allows their answers to be honest and free from outside pressure. The researcher will explain the goal and process of the study but will not try to guide the answers in any way. Keeping involvement low is important because it helps ensure that the results are fair, correct, and based only on what the participants truly believe.

2.2. Research Setting

This research was done in a cross-sectional setting in universities because they are the main places of interest, and university teachers are the group being studied. To make the results more reliable, the study included teachers from different universities instead of choosing only one. By getting answers from several schools, the study tries to show different thoughts and situations. This helps make the results more helpful for universities in different areas. The research collected data at one time only, giving a clear picture of how teachers feel about their jobs and what affects their satisfaction. This kind of cross-sectional study works well for the goals of the research because it helps look closely at how things are now in the field of higher education.

2.3. Unit of Analysis and Time Horizon

This study looks at each university teacher as an individual. By focusing on teachers one at a time, the study can better understand how they feel about salary, work environment, chances for career growth, and job satisfaction. This helps show how these things affect each person in a different way. It also helps find out if factors like job title or teaching experience can change how someone feels about their job. Looking at the data this way gives a clearer and more complete view of what shapes job satisfaction.

The study uses a cross-sectional time frame, which means all data is collected at one time. This kind of design works well because it gives a picture of how teachers feel right now. It also helps the researcher gather a lot of data quickly. This makes it easier to see how salary, work setting, and career growth connect with how happy teachers feel in their jobs.

2.4. Sample Design

The sample for this study will include 384 university teachers from different subjects and job levels. A stratified random sampling method will be used to make sure that all important groups in the population are included. The participants will be grouped by academic rank, such as Lecturer, Associate Professor, and Professor, and by years of teaching experience. This helps to make sure that each group is well represented. This method also helps reduce sampling bias and makes the results more useful for understanding the wider group of university teachers [11].

$$n=z^2\sigma^2/d^2$$

n: Required sample size
Z: Z statistic for the confidence level (for a 95% confidence level, Z statistic is 1.96)
σ: Population standard deviation (chosen as 0.5)
d: Half-width of the confidence interval (chosen as 5%)

2.5. Data Collection

The data for this study will be collected through a structured questionnaire. The questionnaire will be shared online through the Wenjuanxing platform. This platform makes it easy to collect answers from a wide group of people in a safe way. The survey will stay open for two weeks so that participants have enough time to fill it out. During this time, reminders will be sent to help increase the number of responses.

Some open-ended questions will also be added to the main survey. These questions will give participants a chance to share their thoughts and feelings using their own words. Their answers will help give more meaning to the survey results and help show how they feel about their work and chances for career growth.

2.6. Data Analysis

Data analysis is a key step in finding the links between pay, work setting, career growth, and job satisfaction among university teachers. This study will use both descriptive and inferential statistics to look at the answers collected through the questionnaire. These methods will help show a full view of the factors that affect job satisfaction. The analysis will follow several steps. First, the data will be sorted and checked to make sure it is correct. After that, proper tests will be used to find patterns and relationships in the data. All analysis will be done using SPSS (Statistical Package for the Social Sciences), which helps with data entry, handling, and running tests such as frequency counts, correlation, regression, and ANOVA. SPSS is easy to use and has strong tools for both simple summaries and deeper data checks [12].

2.6.1. Descriptive Analysis

Descriptive statistics will be used to show and explain the main parts of the data. This includes finding the average, the number of responses for each answer, and how much the answers are spread out [13]. The key variables are how teachers feel about their pay, their work setting, their chances to grow, and their job as a whole. These numbers will help give a first view of the data by showing common trends in the group. For example, the number of responses can show how many teachers feel their pay is fair or unfair, or how many feel their work setting is good or poor. The average will show the most common answer, and the spread will show how different the answers are from one another. Descriptive statistics will also give a summary of teacher background, such as age, gender, job level, and how long they have been working [14].

This type of analysis can also help show the general level of job satisfaction. By looking at the answers to job satisfaction questions, the study can find out how many teachers feel happy, unsure, or unhappy with their work. This helps give a clear picture of how teachers feel about their jobs.

2.6.2. Inferential Analysis

Along with descriptive statistics, this study will also use inferential statistics to look at the relationships between the main factors. The independent variables are salary, work environment, and career growth. The dependent variable is job satisfaction. Pearson's correlation will be used to see how strong and in what direction these factors are connected. For example, this test will help find out if there is a clear link between how teachers feel about their pay and how they feel about their job overall, or between career growth and views on the work setting [15].

The study will also use multiple regression to see how the three factors together affect job satisfaction. This test will help show the effect of each factor while looking at the others at the same time. It will help explain which factor has the biggest impact on how teachers feel about their jobs.

Chi-square tests will also be used to check if background details like age, gender, and job title are linked to different levels of job satisfaction. This will help show if certain groups of teachers feel more or less happy with their jobs because of their personal or work situations.

2.6.3. Measurements

For this study, a three-point scale with the options Yes, No, and Uncertain will be used for each question in the survey [14]. This scale will help measure the different factors that affect job satisfaction among university teachers. Each response will be given a value. A "Yes" answer will be counted as 1, a "No" as -1, and "Uncertain" as 0. This type of scale makes it easy for people to answer quickly and helps with organizing and analyzing the results.

Using this kind of scale has some clear advantages. It reduces the number of choices, which can make it easier for people to give answers. It also helps speed up the process of filling out the survey. While it does not offer as much detail as a scale with more levels, it works well when the goal is to keep the questions simple and the answers easy to compare. This makes it easier to look for patterns and understand what most people think or feel.

The study will investigate four of the most important variables. The first is satisfaction with pay. This determines if the teachers think they are being adequately paid in light of what they do and their credentials. "Yes" means they are satisfied, "No" means they are not satisfied, and "Uncertain" means they are unsure or uncertain.

The second variable is the work environment. This includes things like the condition of classrooms, help from the school administration, relationships with coworkers, and how the workload is handled. The scale will show whether teachers feel the environment supports their needs. "Yes" shows satisfaction, "No" shows dissatisfaction, and "Uncertain" shows a neutral or unclear view.

The third variable is career advancement. This looks at whether teachers feel they have chances to move forward in their careers. It includes chances for promotion, training, or gaining recognition in their field. If a teacher chooses "Yes" it means they feel such chances are there. A "No" means they do not see such chances, and "Uncertain" means they are unsure about it.

The last variable is overall job satisfaction. This checks how satisfied teachers feel about their work in general. It includes their views on salary, work conditions, and career growth. The three-point scale will help measure if teachers are satisfied, dissatisfied, or uncertain about their job as a whole.

By using this simple scale, the study hopes to clearly show how these different areas affect job satisfaction. The goal is to make the findings easy to understand and helpful for improving the working lives of university teachers.

3. Results

3.1. Reliability Analysis

Table 1.
Reliability Analysis.

Cronbach's Alpha	Number of Items
0.945	19
0.896	6
0.942	6
0.938	6

The results of the reliability analysis show that the overall Cronbach's α coefficient for the 19 observation items is 0.945 Table 1. This value is much higher than the commonly accepted level of 0.7. It shows that the questionnaire has very high internal consistency. The items are closely related to each other, and the content being measured is stable and reliable. This means that the data can be used for further analysis. In detail, the α coefficient for the salary section is 0.896. The work environment section has a coefficient of 0.942, and the career development section has a coefficient of 0.938. All three sections have values above 0.8, which shows that the items in each section are very similar in meaning. This means that the questions under each section can clearly reflect the key ideas of that part of the study.

3.2. Validity Analysis

Table 2.
Validity Analysis.

KMO Measure of Sampling Adequacy		0.889
Bartlett's Test of Sphericity	Approx. Chi-Square	167.431
	Degrees of Freedom	171
	Significance	0.000

The results of the validity analysis show that the KMO value is 0.889 Table 2. This means that the validity of the questionnaire is very high. In general, when the KMO value is between 0.6 and 0.7, the validity is acceptable. When it is between 0.7 and 0.8, the validity is good. When it is above 0.8, the validity is considered very strong. The approximate chi-square value from Bartlett's test of sphericity is 167.431. The degrees of freedom are 171, and the significance level is

0.000. Since the significance level is less than 0.05, the null hypothesis is rejected. This result shows that the variables are closely related to each other, and they are not independent.

3.3. Factor Analysis

3.3.1. Common Factor Variance

Table 3.
Common factor variance.

Item	Initial	Extraction
5.My salary adequately reflects my workload	1.000	0.848
6.The salary adjustment process is transparent	1.000	0.852
7.Non-salary benefits are competitive	1.000	0.703
8.Compensation recognizes my professional expertise	1.000	0.627
9.I'm satisfied with the recent salary growth frequency	1.000	0.893
10.Salary increase policies improve my work satisfaction	1.000	0.744
11.Teaching facilities meet my instructional needs	1.000	0.765
12.Administrative support is timely and effective	1.000	0.881
13.Collaborative culture among colleagues is strong	1.000	0.924
14.My workload is reasonable and manageable	1.000	0.822
15.The physical environment is safe and comfortable	1.000	0.709
16.The current teaching environment need significant improvement	1.000	0.776
17.Promotion criteria are clear and reasonable	1.000	0.865
18.I have access to adequate academic development resources	1.000	0.797
19. Promotion evaluation processes are fair	1.000	0.819
20.A clear career progression path exists for my position	1.000	0.635
21. I'm satisfied with my current career advancement opportunities	1.000	0.876
22. I do not face major barriers to my career advancement.	1.000	0.570

According to the results of the common factor variance analysis, the initial communalities for all 18 items are 1.000. The extracted communalities are between 0.570 and 0.924 Table 3. This means that most items can be well explained by the common factors, and the proportion of variance explained is quite high.

The item “Team collaboration atmosphere is strong” has the highest communality at 0.924. This shows that it has a strong connection with the common factor. The item “I have not encountered major obstacles in promotion processes” has the lowest communality at 0.570. However, this value is still above the commonly accepted level of 0.4. This means its information can still be used effectively.

In general, all items meet the basic conditions for factor analysis. This shows that the items match well with their related hidden factors, and the data is suitable for further analysis.

3.3.2. Total Variance Explained

Table 4.
Total Variance Explained.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% Var	Cum.%	Total	% Var	Cum.%
1	7.215	40.083	40.083	7.215	40.083	40.083
2	6.582	36.567	76.650	6.582	36.567	76.650
3	1.771	9.840	86.490	1.771	9.840	86.490
4	1.023	5.683	92.173			
5	0.815	4.528	96.701			
6	0.593	3.299	100.000			

The results of the total variance explanation show that the first three principal components extracted through principal component analysis explain a cumulative variance of 86.49%. This means that these three components can capture most of the information from the original data and reflect the main features of the research variables Table 4.

The first principal component has an eigenvalue of 7.215 and a variance contribution rate of 40.083%. It has the strongest explanatory power and holds most of the common information from the original items. The second principal component has an eigenvalue of 6.582 and a variance contribution rate of 36.567%. Together with the first component, it explains 76.65% of the total variance, which adds to the key information. The third principal component has an eigenvalue of 1.771 and a variance contribution rate of 9.840%. Although it is weaker than the first two, when added to them, the total explanation rate goes beyond 85%. This shows that the first three components together can reflect the main structure of the original data.

3.3.3. Component Score Coefficients

Table 5.
Component Score Coefficients.

Item	Component		
	1	2	3
5.My salary adequately reflects my workload	0.142	0.117	-0.225
6.The salary adjustment process is transparent	-0.255	-0.186	-0.051
7.Non-salary benefits are competitive	0.249	0.112	0.059
8.Compensation recognizes my professional expertise	-0.204	0.231	-0.218
9.I'm satisfied with the recent salary growth frequency	0.383	-0.248	0.017
10.Salary increase policies improve my work satisfaction	0.044	0.016	0.123
11.Teaching facilities meet my instructional needs	0.233	0.186	-0.016
12.Administrative support is timely and effective	-0.196	-0.029	0.405
13.Collaborative culture among colleagues is strong	0.214	0.181	-0.212
14.My workload is reasonable and manageable	-0.021	-0.379	0.113
15.The physical environment is safe and comfortable	0.047	0.318	0.218
16.The current teaching environment need significant improvement	0.316	-0.189	-0.009
17.Promotion criteria are clear and reasonable	-0.092	0.353	0.347
18.I have access to adequate academic development resources	0.252	0.094	0.045
19. Promotion evaluation processes are fair	0.174	-0.046	0.090
20.A clear career progression path exists for my position	0.224	0.013	0.316
21. I'm satisfied with my current career advancement opportunities	0.011	0.239	-0.341
22. I do not face major barriers to my career advancement.	0.047	0.217	0.195

The component score coefficient table shows how each of the first three common factors is related to each item. A larger absolute value means a stronger connection between the item and the factor. In the first common factor, the item "satisfied with the frequency of recent salary increases" has the highest coefficient at 0.383. This means it is the most important item for this factor. The next highest values are for "non-salary benefits are competitive" at 0.249 and "the current teaching environment does not need major improvements" at 0.316. This shows that the first factor mainly reflects how teachers feel about their salary and the teaching environment Table 5.

In the second common factor, the item "my workload is reasonable and controllable" has the largest absolute value at -0.379. The item "clear and reasonable promotion standards" also has a high value at 0.353. This suggests that the second factor is related to the fairness of workload and promotion.

In the third common factor, "administrative support is timely and effective" has the highest coefficient at 0.405. The items "satisfied with current career promotion opportunities" at -0.341 and "there is a clear career development path" at 0.316 also have high values. This means the third factor is mainly about support from administration and career development.

Overall, the first three factors match well with the main ideas in the study, which are salary, work environment, and career development. The way the coefficients are spread supports the idea that the items are grouped correctly.

3.4. Descriptive Statistical Analysis

3.4.1. Basic Descriptive Statistical Analysis

Table 6.
Basic Descriptive Statistical Analysis.

	N	Min.	Max.	Mean	SD	Var
Salary Dimension	384	1.17	2.83	1.98	0.33	0.11
Work Environment Dimension	384	1.00	3.00	1.99	0.35	0.12
Career Development Dimension	384	1.17	2.83	2.01	0.34	0.11
Job Satisfaction	384	1.00	3.00	2.03	0.83	0.69
Gender	384	1.00	2.00	1.43	0.50	0.25
Age	384	1.00	4.00	2.89	1.01	1.03
Years of Teaching	384	1.00	4.00	2.57	1.07	1.15
Professional Title	384	1.00	3.00	1.85	0.80	0.64

The descriptive statistics of 384 valid samples in this study show that among the three main independent variables, the average score for the career development dimension is 2.01. This is slightly higher than the salary dimension at 1.98 and the work environment dimension at 1.99. All three scores are in the middle of the scale, which means that teachers gave similar overall evaluations to these areas. The standard deviations of the three dimensions are between 0.33 and 0.35, and the variances are between 0.11 and 0.12 Table 6. These small values show that the responses are close together. This suggests that different teachers have similar views on these topics and that group opinions are consistent.

The average score of the dependent variable "job satisfaction" is 2.03, which is also at a medium level. However, its standard deviation is 0.83 and its variance is 0.69. These values are much higher than those of the independent variables. This means there are clear differences among teachers in how they feel about their jobs. It shows the need to look more closely at how salary, work environment, and career development affect job satisfaction.

For the background information, the gender mean of 1.43 shows that the number of female teachers is a bit higher than male teachers. The age mean of 2.89 suggests that most teachers are between 31 and 50 years old. The teaching experience mean of 2.57 shows that most teachers have more than six years of teaching experience. The professional title mean of 1.85 suggests that most teachers in the sample are lecturers or associate professors.

3.4.2. Basic Information Dimension Chart

Table 7.
Basic Information Dimension.

Item	Sub-category	Frequency	Proportion
Gender	Male	220	0.5729
	Female	164	0.4271
Age	20-30 years old	41	0.1068
	31-40 years old	98	0.2552
	41-50 years old	109	0.2839
	51 years or older	136	0.3542
Years of Teaching	1-5 years	79	0.2057
	6-10 years	102	0.2656
	11-15 years	110	0.2865
	16 years or more	93	0.2422
Professional Title	Lecturer	155	0.4036
	Associate Professor	131	0.3411
	Professor	98	0.2552
	Other	0	0.0000

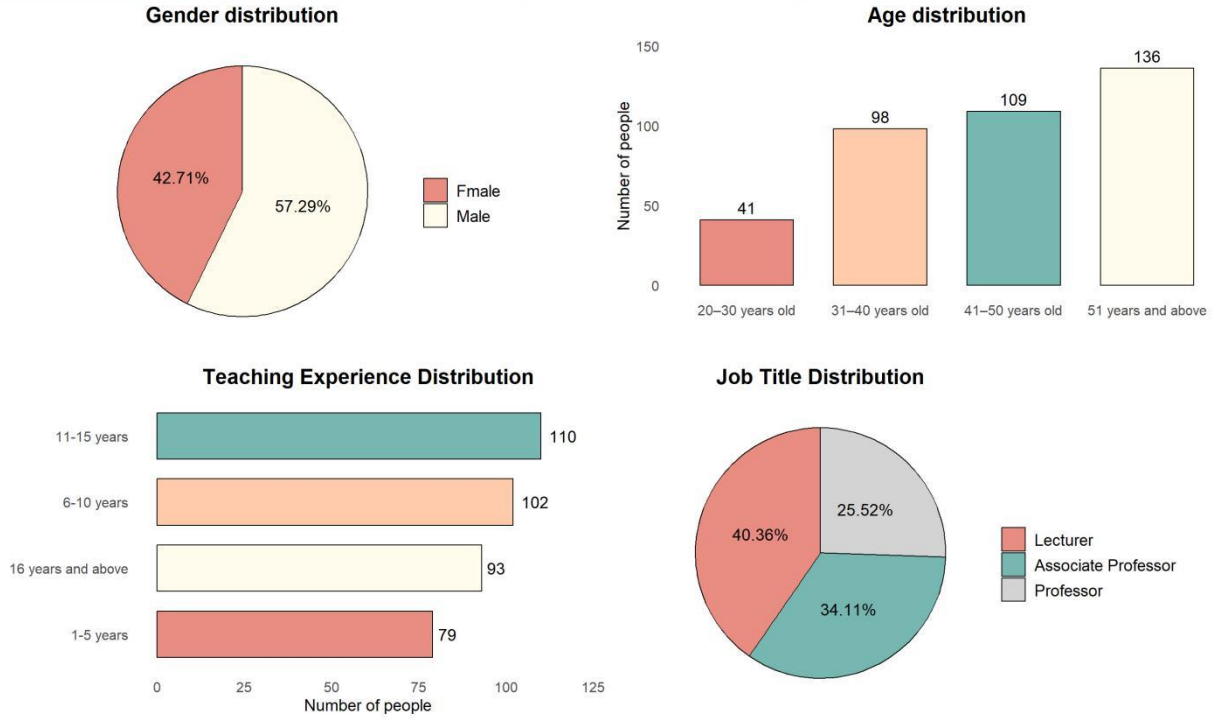

Figure 1.
Basic Information Dimension Issues.

From the descriptive statistical analysis of the basic information, the results show that in the gender group, there are 220 male teachers, making up 0.5729 of the sample, and 164 female teachers, making up 0.4271. This shows that there are more male teachers than female teachers in the sample. In terms of age, the number of teachers aged 20 to 30 is 41, those aged 31 to 40 is 98, those aged 41 to 50 is 109, and those aged 51 and above is 136. The proportions are 0.1068, 0.2552, 0.2839, and 0.3542. These results show that the number of teachers grows with age, which may suggest that age and experience are linked to working in education (Figure 1).

In teaching experience, the number of teachers with 1 to 5 years is 79, those with 6 to 10 years is 102, those with 11 to 15 years is 110, and those with 16 years or more is 93. Their proportions are 0.2057, 0.2656, 0.2865, and 0.2422. The largest group is teachers with 11 to 15 years of experience. This may suggest that this group is in a steady stage of their career.

In the professional title group, there are 155 lecturers, 131 associate professors, and 98 professors. Their proportions are 0.4036, 0.3411, and 0.2552. This shows that most teachers are lecturers, while professors are fewer. These results show the structure of titles in the sample and provide support for the next parts of the research on teacher characteristics.

3.4.3. Salary Dimension Chart

Table 8.
Salary Dimension.

Item	Sub-options	Frequency
5.My salary adequately reflects my workload	Yes	126
	Uncertain	134
	No	124
6.The salary adjustment process is transparent	Yes	133
	Uncertain	132
	No	119
7.Non-salary benefits are competitive	Yes	128
	Uncertain	128
	No	128
8.Compensation recognizes my professional expertise	Yes	135
	Uncertain	133
	No	116
9.I'm satisfied with the recent salary growth frequency	Yes	125
	Uncertain	137
	No	122
10.Salary increase policies improve my work satisfaction	Yes	134
	Uncertain	117
	No	133

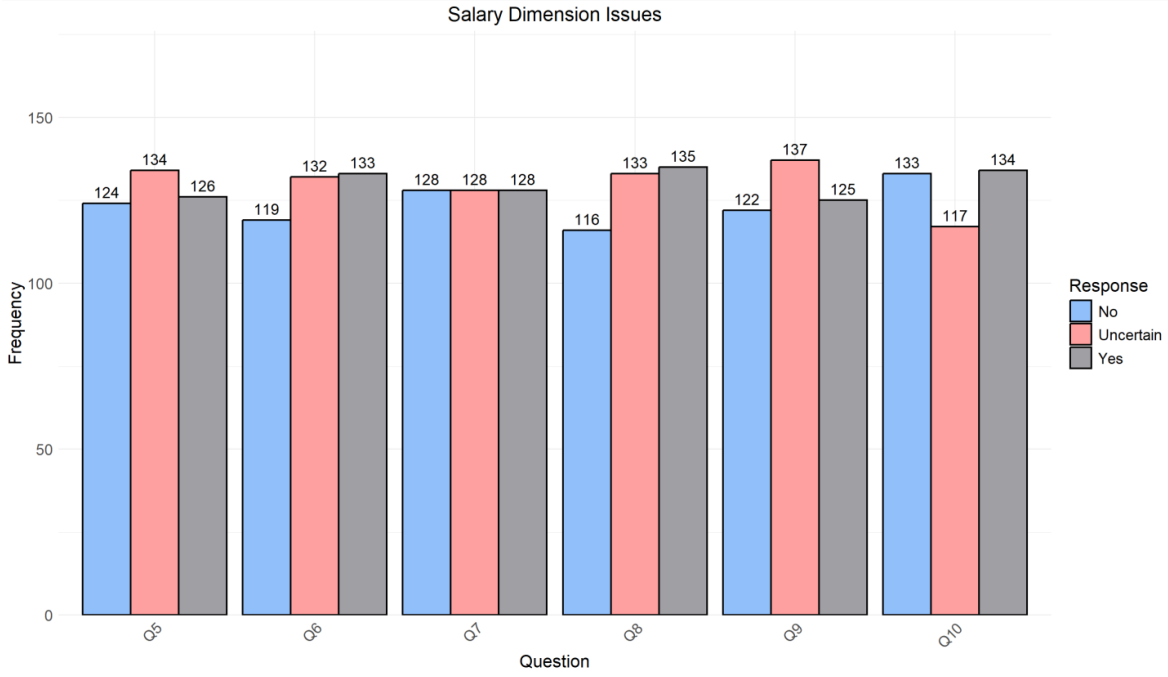

Figure 2.
Salary Dimension Issues.

From the descriptive statistical analysis results of the salary dimension items Table 8, it can be seen that in the item "Salary fully reflects the workload", the frequency of "yes" is 126, "uncertain" is 134, and "no" is 124, reflecting that teachers have different opinions on the matching degree of salary and workload, and nearly half of the teachers have vague or negative attitudes; in "Transparency of salary adjustment process", the frequencies of "yes", "uncertain" and "no" are 133, 132 and 119 respectively, indicating that although the transparency of salary adjustment has been partially recognized, more than one-third of teachers still have doubts; the frequency of the three options of "non-salary benefits

competitiveness" is 128, showing a completely balanced distribution, highlighting the high uncertainty of teachers' cognition of this welfare dimension, which indirectly reflects that the non-salary benefits system may not be fully realized. Form a clear competitive advantage; in "salary reflects professional skill level", "yes" 135, "uncertain" 133, "no" 116, positive attitude slightly prevails, but there are still a large number of teachers with vague attitudes, suggesting that the association mechanism between salary and skill level has not been fully recognized; "satisfied with the frequency of recent salary increases" "yes", "uncertain", "no" frequency is 125, 137, 122, "uncertain" accounted for a relatively prominent proportion, reflecting that the frequency of salary increases has not formed a stable teacher satisfaction; in "the impact of current salary increase methods on job satisfaction", "yes" 134, "uncertain" 117, "no" 133, positive and negative attitudes are close, indicating that the incentive effect of salary increase methods is controversial. Overall, the subjective evaluation of teachers in various dimensions of salary presents complex and diverse characteristics (Figure 2).

3.4.4. Work Environment Dimension Chart

Table 9.
Work Environment Dimension.

Item	Sub-options	Frequency
11.Teaching facilities meet my instructional needs	Yes	121
	Uncertain	129
	No	134
12.Administrative support is timely and effective	Yes	117
	Uncertain	128
	No	139
13.Collaborative culture among colleagues is strong	Yes	148
	Uncertain	106
	No	130
14.My workload is reasonable and manageable	Yes	140
	Uncertain	134
	No	110
15.The physical environment is safe and comfortable	Yes	151
	Uncertain	96
	No	137
16.The current teaching environment need significant improvement	Yes	113
	Uncertain	151
	No	120

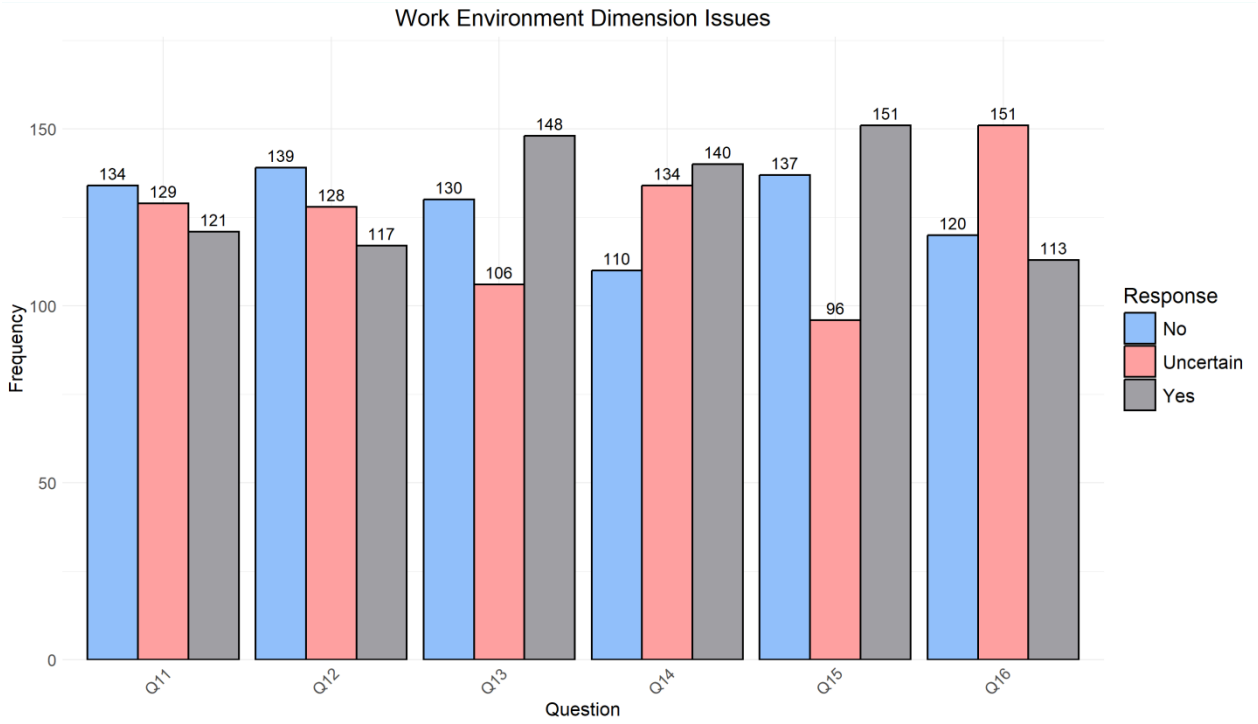

Figure 3.
Work Environment Dimension Issues.

The results of the descriptive statistical analysis of the salary-related items show that teachers have different views on whether their salary matches their workload Table 9. In the item "Salary fully reflects the workload," 126 teachers answered "yes," 134 said "uncertain," and 124 said "no," suggesting that nearly half of the teachers hold unclear or negative opinions. For "Transparency of salary adjustment process," the responses were 133 for "yes," 132 for "uncertain," and 119 for "no," which means that although some teachers think the process is clear, many still have doubts. The item "Non-salary benefits competitiveness" shows a completely balanced distribution, with 128 teachers choosing each option, which reflects that many teachers are not sure about this part of the system and may feel that the non-salary benefits are not clearly defined or effective. In the item "Salary reflects professional skill level," 135 teachers said "yes," 133 said "uncertain," and 116 said "no," showing a slightly more positive view, but the high number of unclear responses suggests that the link between salary and skill is not fully accepted. For "Satisfied with the frequency of recent salary increases," the numbers were 125 for "yes," 137 for "uncertain," and 122 for "no," which shows that many teachers are unsure and that the raise frequency may not meet expectations. In "The impact of current salary increase methods on job satisfaction," 134 answered "yes," 117 said "uncertain," and 133 said "no," which suggests that the methods used to increase salaries are seen differently by teachers. In general, teachers' opinions on different aspects of salary show a mix of views and a high level of uncertainty, which may reflect the lack of a clear and widely accepted salary system**(**Figure 3**)**.

3.4.5. Career Development Dimension Chart

Table 10.
Career Development Dimension.

Item	Sub-options	Frequency
17.Promotion criteria are clear and reasonable	Yes	127
	Uncertain	122
	No	135
18.I have access to adequate academic development resources	Yes	129
	Uncertain	134
	No	121
19. Promotion evaluation processes are fair	Yes	121
	Uncertain	120
	No	143
20.A clear career progression path exists for my position	Yes	128
	Uncertain	127
	No	129
21. I'm satisfied with my current career advancement opportunities	Yes	151
	Uncertain	96
	No	137
22. I do not face major barriers to my career advancement.	Yes	135
	Uncertain	124
	No	125

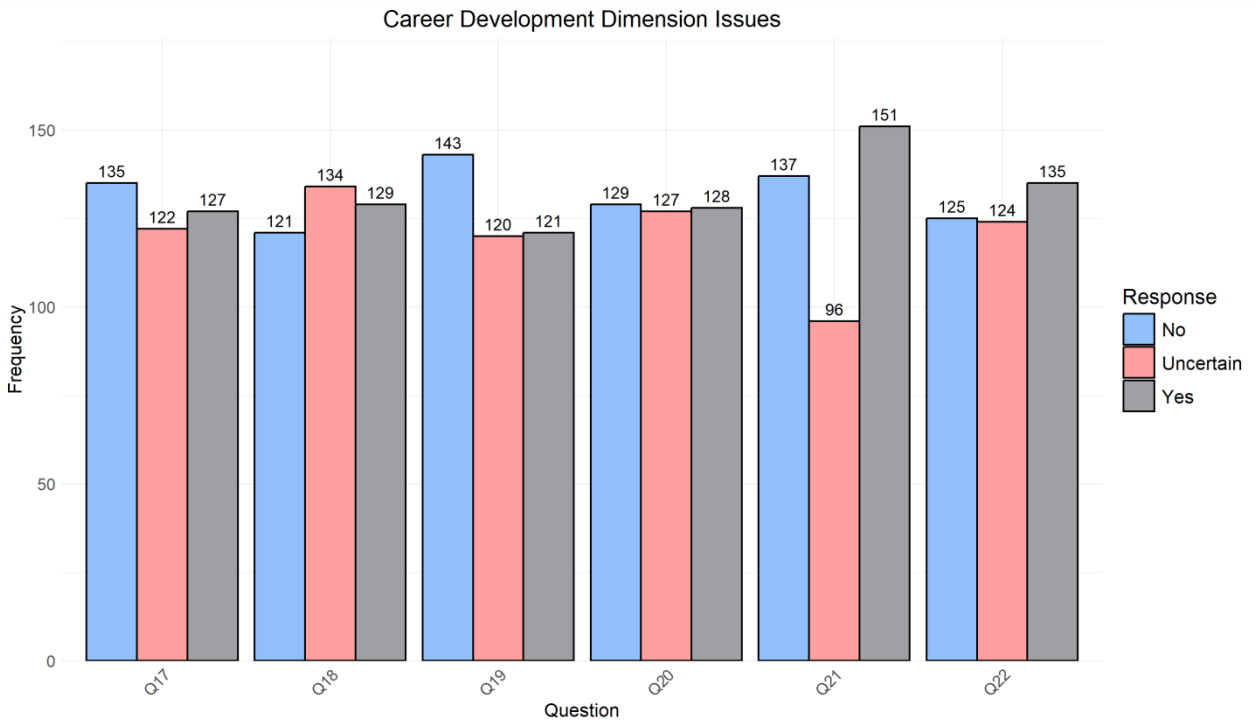

Figure 4.
Career Development Dimension Issues.

The results of the descriptive statistical analysis of the career development dimension show that teachers have mixed feelings about different aspects of their professional growth Table 10. In the item "Are promotion standards clear and reasonable," 127 teachers chose "yes," 122 chose "uncertain," and 135 chose "no," with negative attitudes slightly more common. This shows that many teachers question how fair and clear the promotion standards are. In the item "Acquisition of academic development resources," 129 teachers said "yes," 134 said "uncertain," and 121 said "no," with many feeling unsure, which suggests that access to academic resources may not be stable or easy enough to meet teachers' needs. For the item "Is the promotion evaluation process fair," 121 teachers chose "yes," 120 chose "uncertain," and 143 chose "no," showing that a large number of teachers are not satisfied with the fairness of the process. In the item "Clear career development path," 128 teachers said "yes," 127 said "uncertain," and 129 said "no," showing that the responses are almost evenly split, and many teachers may not have a clear picture of their career direction. In "Satisfied with career advancement opportunities," 151 teachers said "yes," 96 said "uncertain," and 137 said "no." Although the number of positive responses is higher, over 40 percent of teachers are still not satisfied, which means that the way opportunities are given may still need to be improved. In the last item, 135 teachers said "yes," 124 said "uncertain," and 125 said "no," with positive and negative responses almost equal. This shows that the difficulties teachers face in career growth are not the same for everyone (Figure 4). Overall, teachers have different experiences in each part of their career development, and the lack of clear standards and fairness in promotion is seen as an important issue.

3.5. Correlation Analysis

Table 11.
Correlation Analysis.

		Job Satisfaction	Salary Dimension	Work Environment Dimension	Career Development Dimension
Job Satisfaction	Pearson Correlation	1	0.864	0.942	0.769
	Significance	0.000	0.004	0.001	0.023
Salary Dimension	Pearson Correlation	0.864	1	0.653	0.714
	Significance	0.004	0.000	0.086	0.063
Work Environment Dimension	Pearson Correlation	0.942	0.653	1	0.649
	Significance	0.001	0.086	0.000	0.094
Career Development Dimension	Pearson Correlation	0.769	0.714	0.649	1
	Significance	0.023	0.063	0.094	0.000

The results of correlation analysis show that there is a significant positive correlation between job satisfaction and the three core independent variables, and the strength of the correlation shows a certain difference. Specifically, the Pearson correlation coefficient between job satisfaction and the work environment dimension is the highest, which is 0.942, and the significance level is 0.001 (P<0.01), indicating that there is a strong linear correlation between the two, and the quality of the work environment has the most direct impact on teachers' job satisfaction; the correlation coefficient with the salary dimension is 0.864 (P=0.004<0.01), and the correlation strength is second, indicating that the rationality of salary and benefits is also an important factor affecting job satisfaction; the correlation coefficient with the career development dimension is 0.769 (P=0.023<0.05), and the degree of correlation is relatively weak, but it still reaches a statistically significant level, indicating that the positive impact of career development opportunities on job satisfaction cannot be ignored. From the perspective of the correlation between the independent variables, the correlation coefficient between the salary dimension and the work environment dimension is 0.653 (P=0.086>0.05), the correlation coefficient between the salary dimension and the career development dimension is 0.714 (P=0.063>0.05), and the correlation coefficient between the work environment dimension and the career development dimension is 0.649 (P=0.094>0.05). None of the three reached the statistically significant level, indicating that there is no strong collinearity problem between the three independent variables Table 11. This provides data support for the subsequent inclusion of them into the regression model and the separate examination of their respective impacts on job satisfaction, thereby avoiding regression result bias caused by the high overlap between the dependent variables.

3.6. Regression Analysis

Table 12.
Regression Analysis.

Model	Unstandardized Coefficients		Standardized Coefficients	t	95.0% Confidence Interval of B		Collinearity Statistics	
	B	Std. Error	Beta		Lower	Upper	Tolerance	VIF
Constant	0.326	0.042	2.158	0.032	0.634	0.912	/	/
Salary Dimension	0.428	0.087	0.365	4.912	0.257	0.599	0.892	1.121
Work Environment Dimension	0.573	0.092	0.489	6.228	0.392	0.754	0.886	1.129
Career Development Dimension	0.291	0.084	0.247	3.463	0.126	0.456	0.905	1.105

The results of regression analysis show that the P values of salary dimension, work environment dimension and career development dimension are 0.000, 0.000 and 0.001 respectively, all less than 0.05, that is, the three dimensions have a significant positive impact on teachers' job satisfaction. From the standardized coefficient (Beta value), the influence of the work environment dimension is 0.489, which has the highest impact on educational job satisfaction, indicating that when other variables are controlled, the job satisfaction of teachers will increase significantly by 0.489 standard deviations for every 1 standard deviation increase in the work environment; followed by the salary dimension (0.365), that is, for every 1 standard deviation increase in the salary level, the job satisfaction will increase by 0.365 standard deviations; the impact of the career development dimension is relatively weak (0.247), indicating that the improvement of career development opportunities can also have a positive effect on job satisfaction. In addition, the VIFs of the three independent variables in the model are close to 1, far below the critical value of 10, indicating that there is no multicollinearity problem between the variables, and the regression results are stable and reliable. The significance of the constant term is 0.032 (P<0.05), indicating that when all three dimensions are at the baseline level, teachers still have a certain basic job satisfaction Table 12. Overall, the working environment is the primary factor affecting teachers' job satisfaction, followed by salary and benefits, and career development opportunities also play a certain role.

4. Discussion

4.1. The Role of Salary in Job Satisfaction

The first hypothesis, asserting that salary positively influences job satisfaction, was strongly supported by the findings of the study. Teachers with higher salaries tended to report higher levels of job satisfaction, affirming the critical role that salary plays in shaping teachers' overall job satisfaction. This finding aligns with Herzberg's Two-Factor Theory, where salary is classified as a "hygiene factor" – a basic requirement that prevents dissatisfaction but does not necessarily promote long-term satisfaction on its own [16, 17].

However, the study revealed that salary alone is not sufficient to ensure sustained job satisfaction. While salary is important for providing financial stability, almost half of the teachers surveyed expressed uncertainty or dissatisfaction with their compensation in relation to their workload, highlighting that salary adjustments, even if positive, do not necessarily lead to lasting increases in teacher motivation or loyalty. This points to the need for universities to consider salary alongside other factors such as work environment and career growth opportunities to create a more comprehensive approach to enhancing teacher satisfaction.

Furthermore, the findings suggest that salary increases are valued by teachers, but the frequency and transparency of these increases also matter [18]. Teachers expressed a preference for clear and transparent systems for salary revisions that reflect the cost of living and market standards. This is particularly important in a context like Shenzhen, where the rising

cost of living places added pressure on university instructors. Thus, while salary adjustments can contribute to improved job satisfaction, the study emphasizes that these must be part of a broader, more holistic strategy that addresses teachers' intrinsic needs and professional aspirations.

4.2. The Impact of Work Environment on Job Satisfaction

The second hypothesis, which posited that a positive work environment contributes to higher job satisfaction, was also strongly supported. The results demonstrate that teachers who perceive their work environment as supportive, collegial, and resource-rich report higher levels of job satisfaction [19]. This supports existing research that underscores the crucial role of work environment in shaping teachers' attitudes toward their jobs. In particular, factors such as leadership support, adequate teaching resources, a safe and comfortable physical environment, and positive relationships with colleagues were found to be significant contributors to teacher satisfaction.

A notable finding from the study is that the work environment encompasses more than just physical elements, such as classrooms or teaching tools; it also includes the social dynamics and organizational culture of the university. Teachers who felt supported by their colleagues and leadership, and who experienced a sense of camaraderie and teamwork, reported a stronger sense of job satisfaction. This highlights the importance of fostering a supportive community and collaborative culture within universities to ensure that teachers feel valued and connected to their work environment.

On the other hand, the study also found that teachers who experienced poor administrative support, heavy workloads, and a lack of resources were significantly more likely to report lower satisfaction levels. These negative aspects of the work environment contributed to increased stress, decreased morale, and a sense of isolation among faculty members [20]. This finding aligns with previous research that stresses the importance of leadership support and institutional culture in maintaining a healthy work climate. Universities must ensure that administrative processes are efficient, that resources are adequate, and that workload expectations are reasonable in order to create an environment conducive to teacher satisfaction and retention.

4.3. The Role of Career Advancement in Job Satisfaction

The third hypothesis, asserting that career advancement opportunities positively influence job satisfaction, was also strongly supported. Teachers who perceived clear opportunities for professional growth, including promotion, academic recognition, and opportunities for skill development, were more likely to report higher job satisfaction [21]. This finding highlights the importance of career development in maintaining long-term teacher engagement and satisfaction. For university teachers, career advancement is not only about financial rewards but also about intellectual and professional growth, which are key factors in sustaining motivation and interest in their work.

However, the study also revealed that the fairness and transparency of career advancement processes play a critical role in determining whether teachers feel satisfied with their opportunities for progression. Teachers who perceived the promotion process as unclear or unfair were less satisfied with their jobs, regardless of the actual opportunities for career growth. This emphasizes the need for universities to establish clear, transparent, and equitable promotion policies, ensuring that all faculty members have a fair chance to advance based on their contributions to teaching, research, and service.

Moreover, the study found that career advancement opportunities should be complemented by institutional support, such as mentoring, professional development programs, and leadership training. Teachers who had access to these types of support reported higher levels of satisfaction, particularly younger faculty members who are still navigating the early stages of their academic careers. By offering targeted support, universities can help teachers build the skills and experiences necessary for career progression, which in turn can contribute to greater job satisfaction and retention.

In conclusion, the findings of the study strongly support the idea that salary, work environment, and career advancement are all crucial factors in determining job satisfaction among university teachers. These factors are interconnected and should be addressed holistically to create an environment that fosters teacher well-being, engagement, and retention. Institutions that focus on improving these areas will be better positioned to retain high-quality faculty members and maintain the strength and quality of their academic programs over time.

5. Conclusion

This research highlights the importance of a balanced approach to enhancing job satisfaction among university teachers in Shenzhen. While salary is a necessary factor in preventing dissatisfaction, it is insufficient on its own to ensure high levels of job satisfaction. A positive work environment and clear career advancement opportunities are critical to fostering long-term teacher engagement. The study underscores the need for universities to not only offer competitive compensation but also invest in creating a supportive workplace culture and transparent career development pathways. By addressing these areas, universities can improve teacher satisfaction, reduce turnover, and contribute to the overall quality of higher education. Future research could further explore how these factors interact over time and in different institutional contexts to offer more targeted strategies for improving faculty well-being.

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