ingegneria sismica
International Journal of Earthquake Engineering
Anno XLIII - Num. 2 - 2026

The Relationship Between Civil Servant Incentive Mechanisms and Job Satisfaction: A Meta-Analysis

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SUMMARY: *As work pressure accumulates over time, employees experience profound fatigue, ultimately leading to decreased job satisfaction among grassroots civil servants. In response, this study investigates the relationship between civil servant incentive mechanisms and job satisfaction based on meta-analysis. Computer-based literature retrieval was employed to gather relevant studies on the relationship between civil servant incentive mechanisms and job satisfaction. Applicable references were screened using exclusion criteria, providing data support for subsequent research analysis. Research variables and hypotheses were defined, and the research design was finalized. Guided by this framework, an investigation into the relationship between civil servant incentive mechanisms and job satisfaction was conducted. The Q-statistic for the relationship between civil servant incentive mechanisms and job satisfaction was Q=224.408, satisfying Q>k-1, indicating heterogeneity and correlation between the variables. Additionally, the Nfs value was 8172, failing to meet Nfs<5K+10, thus confirming no publication bias. Given the heterogeneity issue, an analysis of the moderating effect of job type on the relationship was supplemented. With P<0.05 for all variables, the moderating role of job type was confirmed.*

KEYWORDS: *Meta; Job Satisfaction; Incentive Mechanism; Heterogeneity; Moderating Effect*

1 Introduction

With the continuous development of national economic strength, technological capabilities, and comprehensive national power, the formal promulgation of the National Civil Service Law necessitates the optimization and refinement of policies related to the motivation and development of the civil service. This ensures alignment with socioeconomic progress and meets the demands for governance and service capabilities. The civil service management system has been progressively improved, advancing toward standardization, scientific management, and normalization [1-4]. However, in practical work, situations where civil servants exhibit low work motivation, inefficiency, and poor job satisfaction still occur frequently. This can easily reduce work performance and result in low service quality [5, 6]. Job satisfaction refers to an individual's perceptions and feelings about their work during the work process, significantly influencing their work performance, motivation, and effectiveness. Within the civil service, high job satisfaction enhances commitment and self-motivation, elevates work quality and efficiency, and improves public service delivery [7, 8]. Yet current challenges—including limited promotion opportunities, occupational burnout, low grassroots compensation, and heavy workloads—are increasingly evident, acting as significant barriers to

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https://doi.org/10.65102/is2026641
Published: 30 April, 2026

civil servant satisfaction [9, 10].

Civil servants serve as the link between government organizations and the public. To enhance government effectiveness and improve the image of governmental institutions, boosting civil servants' job satisfaction and work enthusiasm is a powerful approach. Establishing an effective incentive system is undoubtedly the most potent measure to elevate job satisfaction [11]. At present, the incentive system for civil servants—comprising material incentives, promotion incentives, reward-punishment incentives, and career planning—is gradually being refined [12, 13]. Yet the low job satisfaction among civil servants indicates that the current incentive system still has many shortcomings in fulfilling its motivational role [14]. Continuously refining the incentive system, addressing its shortcomings, and integrating all components to maximize its effectiveness will enhance civil servants' job satisfaction, boost their enthusiasm, improve work efficiency, and align individual career goals with organizational development objectives. This ultimately facilitates the seamless transition toward a service-oriented government [15-18].

Effectively motivating civil servants is a critical task for enhancing the job satisfaction of entry-level civil servants at this stage. Salary and benefits constitute significant motivational factors within the civil service workforce. Reasonable compensation and comprehensive welfare systems can increase civil servants' satisfaction and loyalty [19]. Additionally, promotion mechanisms, organizational culture, professional training, supplementary allowances, differentiated incentives, and recognition awards also serve as motivational drivers within the civil service. Numerous studies have examined the relationship between these motivational dimensions and civil servant job satisfaction. Waris et al. [20] employed descriptive methods and quantitative analysis to explore how direct incentive measures significantly and positively influenced job satisfaction among civil servants in a district of South Sulawesi Province, Indonesia. Rosdiana et al. [21] found that provisions for additional income for civil servants in the Jambi region effectively enhanced their job satisfaction and directly or indirectly positively influenced work performance. Srna and Dinc [22] determined through descriptive statistics, correlation analysis, and nonparametric independent sample tests that non-monetary incentive mechanisms effectively enhance civil servants' work motivation. Lu and Chen [23] noted that the strength of public service motivation influences work engagement, organizational commitment, and job satisfaction, with work engagement and organizational commitment mediating public sector employees' job satisfaction. Lim et al.[24] examined through hierarchical regression analysis that the implementation of extrinsic rewards failed to effectively enhance civil servants' job satisfaction. Furthermore, the positive relationship between perceived extrinsic rewards and job fit/satisfaction exhibited spillover effects. Prihantoro and Sutianingsih[25] emphasized that corporate incentive measures significantly and positively influence employee job satisfaction and retention rates, with job satisfaction mediating the relationship between incentives and employee retention. Taba[26] analyzed the association between incentive systems (intrinsic and extrinsic) and job satisfaction among civil servants and non-civil servants in a national bank, finding that reward systems influence employee job satisfaction through the mediating effects of job performance and organizational commitment. Benatallah and Rosman [27] surveyed police, fire, and rescue personnel employed by the National Security Agency in a Libyan city. Compared to material incentives, these workers' job satisfaction was more strongly driven by psychological incentives. This demonstrates that both non-material and material characteristics of incentive mechanisms influence employee job satisfaction. Nwafor et al.[28], grounded in expectancy theory, found that welfare plan arrangements for civil servants significantly impacted their job satisfaction. Silva and Rodrigues[29] concluded through a mediation model analysis that job satisfaction

among Portuguese public sector employees was indirectly influenced by employee training, mediated by performance appraisal. Cantarelli et al. [30] conducted a multilevel analysis of civil service data across multiple countries, revealing that the impact of performance reward systems on job satisfaction varies by nation—being greater in affluent countries than in poorer ones. Furthermore, the relationship between performance reward systems and job satisfaction positively correlates with a country's GDP. Baniamin et al. [31] revealed that relationships with colleagues, work environment, and compensation are key factors influencing civil servants' job satisfaction. Conversely, promotion policies and human resource development plans may negatively affect job satisfaction by increasing employees' negative emotions. Utomo et al. [32] examined job satisfaction among bank employees, finding that effective job rotation and promotion strategies can enhance job satisfaction and positively impact employee performance.

This study combines meta-analysis methodology, civil servant incentive mechanisms, and job satisfaction theory to formulate the research design. First, relevant literature was retrieved using keywords such as “civil servants,” “incentive mechanisms,” and “job satisfaction.” Literature screening criteria were established, ultimately selecting 35 relevant studies: 28 domestic and 7 international, with a total sample size of 75,192. Subsequently, the literature was coded based on publication format, sample origin, and other factors. The research model and hypotheses were then clarified. Analysis of the relationship between civil servant incentive mechanisms and job satisfaction revealed heterogeneity in this relationship. Consequently, an analysis was conducted on the moderating effect of job type on the relationship between civil servant incentive mechanisms and job satisfaction.

2 Overview of Meta-Analysis Theory and Methods

2.1 Core Concepts

2.1.1 Meta-analysis

Meta-analysis is a statistical method that synthesizes findings from individual studies to integrate existing evidence [33]. Furthermore, meta-analysis is a category of statistical methods used to compare and synthesize research outcomes addressing the same scientific question. Whether the conclusions drawn from such comparisons and syntheses are meaningful depends on whether the studies meet specific criteria. Meta-analysis is considered a form of statistical analysis that quantitatively synthesizes the results of numerous studies addressing similar questions.

2.1.2 Incentive Mechanisms for Civil Servants

From an economic perspective, incentive mechanisms embody the overall functions and relationships of interactions and constraints among constituent elements and subsystems within an economic or management system. Grounded in organizational objectives, culture, and material and non-material rewards, they aim to stimulate, guide, and sustain the work enthusiasm and creativity of organizational members. Research indicates that adequate incentives can significantly enhance employee performance, with the gap reaching 45% to 65%. In organizational management, motivation is the process of fulfilling employees' intrinsic needs to ignite their work enthusiasm, enabling them to engage more proactively and efficiently. This achieves organizational goals while reducing costs and maximizing returns. This psychological process emphasizes satisfying individual needs to drive efficient task completion. For public sector employees like township cadres, internal motivation proves more effective than external incentives in mobilizing their initiative and ensuring goal attainment. Implementing incentive

mechanisms requires defining clear objectives, employing appropriate methods and models, and addressing employees' psychological needs to stimulate their initiative. As part of the management framework, incentive mechanisms encompass the sum of incentive systems and models. They utilize tools from management science, psychology, and economics to mobilize organizational members' enthusiasm and creativity while coordinating internal and external relationships. Governments design incentive mechanisms to guide civil servants in establishing sound administrative perspectives and achieving governance objectives.

2.1.3 Job Satisfaction

Job satisfaction refers to an employee's sense of fulfillment regarding their work and environment, primarily manifesting on psychological and physiological levels. It represents an individual's subjective perception or emotional expression and may also be termed employee job fulfillment. In this context, job satisfaction is a double-edged sword: high satisfaction fosters collaborative efforts between individuals and organizations, enhances work efficiency, and motivates staff. Conversely, low job satisfaction can lead to adverse effects such as burnout and diminished productivity. Exploring the relationship between civil servant incentive mechanisms and job satisfaction plays a crucial role in civil service development. This research helps better understand and address challenges in civil servant management, improve government department performance levels, enhance governance capabilities, and attract and retain talented personnel within the civil service.

2.2 Meta-Analysis Process

The process of meta-analysis shares both similarities and differences with general quantitative research and is conducted in seven steps. The specific description is as follows:

2.2.1 Defining the Research Topic

First, researchers determine the topic of their meta-analysis based on their interests, specifically addressing issues where there is disagreement or controversy. Meta-analyses focus on areas of contention.

2.2.2 Literature Review

Clearly define the inclusion and exclusion criteria for individual studies, as well as the literature search methodology and statistical analysis methods to be employed. During the actual search process, both computer-assisted and manual searches may be utilized, with older studies often requiring manual retrieval. It is important to ensure a broad scope of retrieval, encompassing back issues, current publications, review articles, and unpublished materials such as conference papers, privately exchanged documents, and master's/doctoral theses. During the retrieval process, no significant literature should be omitted. When necessary, consult experts to compile a list of references, particularly for key publications.

2.2.3 Quality Assessment and Screening

Evaluation criteria should be established based on specific objectives and professional expertise, including determining inclusion criteria for subjects, sample size, randomization methods, blinding protocols, relationships between variables (univariate, bivariate, or multivariate), degrees of freedom, and other factors. Exclude studies that fail to meet these criteria to ensure the validity of the meta-analysis.

2.2.4 Document Coding

After collecting the literature, each item must be reviewed and coded according to the following criteria:

Substantive aspects of the literature. Including sample sources; demographic characteristics, personal attributes, diagnostic features; independent variables such as theoretical orientation, levels described, organizational characteristics, implementation models, characteristics of intervention personnel, etc.

Quantitative research methods and procedures. This includes sampling procedures or methods, survey design, statistical power, nature of measurements, forms of data analysis, methods for arranging conditions, nature of control groups, blinding, and the role of experimenters.

Description of literature sources. This covers publication formats (journals, books, master's/doctoral theses, technical reports, etc.), publication years, languages of publication, research sponsors and funding sources, and researcher characteristics.

2.2.5 Synthesis of Data

Due to the varying nature of studies, their metrics differ across research projects. Therefore, meta-analysis must convert these metrics into a unified indicator—the effect size—which serves as its core concept. The quantitative information collected in meta-analysis can fall into multiple categories, each corresponding to distinct effect sizes. After presenting these effect sizes, one should analyze their distribution, calculate their mean, compute confidence intervals, and assess homogeneity.

Mean effect size. These values are combined using weights to calculate a pooled average statistic. The average effect size is computed by weighting each effect size $\left(ES_i\right)$ by the inverse of its variance $\left(w_i\right)$, i.e., multiplying each effect by its respective weight, summing the results, and dividing by the sum of the weights.

Calculating Confidence Intervals. A confidence interval for the average effect size is based on the standard error of the mean and a critical value from the z-distribution. The standard error of the mean equals the square root of the sum of the reciprocals of the variance weights, expressed as:

$$SE_{ES} = \sqrt{1 \div \Sigma w} \tag{1}$$

With the standard error of the mean, we can calculate the confidence interval, whose lower and upper bounds are:

$$\overline{ES_L} = \overline{ES} - Z_{(1-\alpha)}\left(SE_{ES}\right) \tag{2}$$

$$\overline{ES_U} = \overline{ES} + Z_{(1-\alpha)}\left(SE_{ES}\right) \tag{3}$$

2.2.6 Homogeneity Test

Meta-analysis has a prerequisite: multiple independent studies should be similar. If homogeneity exists among these studies, multiple statistics can be combined using weighting; if inconsistencies arise, outliers—extremely large, small, or directionally opposite statistics—can be excluded before synthesis. Should requirements remain unmet after this step, meta-analysis methods cannot be applied. Common homogeneity tests include: graphical methods

(histograms, stem-and-leaf plots, scatter plots, error bars, boxplots, etc.), Q-tests (where the Q statistic-based chi-square follows a chi-square distribution with k-1 degrees of freedom, k being the number of effect sizes), as well as I^2 tests and H tests.

2.2.7 Publication Bias Test

Beyond synthesizing effect sizes from multiple studies, meta-analysis also aims to examine the relationship between study characteristics and effect sizes. Study characteristics encompass both substantive and methodological attributes. The former includes factors such as participants, time, location, and study design itself. The latter involves aspects like literature selection criteria, measurement indicators, and weighting methods. This analysis helps identify reasons for variation among studies and assesses the quality and validity of the meta-analysis.

Publication bias assessment serves as one indicator for evaluating meta-analysis authenticity. This assessment can consider factors such as the quality evaluation of original literature, variance assessment across studies, and the magnitude of sampling bias. We can also calculate the fail-safe N statistic. The fail-safe N estimate indicates the number of unpublished studies with negative results required to reduce the cumulative effect across all studies to non-significance—or, in other words, the number of negative results needed to reverse the conclusion.

3 Study Design

Analysis of relevant literature reveals that scholars have explored the relationship between civil servant incentive mechanisms and job satisfaction, accumulating valuable data for future research. Current studies on this topic primarily consist of literature reviews and empirical summaries, with limited empirical research. While these theoretical findings hold some value, their practicality and effectiveness require further validation. Therefore, this study employs a meta-analysis approach, utilizing Pearson's correlation coefficient to evaluate the relationship between civil servant incentive mechanisms and job satisfaction. This provides a foundation for future research on this relationship.

3.1 Research Methods

3.1.1 General Information

The search was conducted through the Computerized Social Sciences Literature Database (CBM), China National Knowledge Infrastructure (CNKI) Full-Text Database, Social Sciences Periodicals Database (VIP), and Wanfang Database. The Chinese search terms were “job satisfaction” and “civil servant incentive mechanisms.” The search period spanned from February 2018 to December 2024, supplemented by literature tracing to identify as comprehensive a body of research as possible.

3.1.2 Inclusion and Exclusion Criteria for Data

Inclusion Criteria: (1) Literature published between February 2018 and December 2024. (2) Research subjects are junior civil servants aged 25 or older at the level of Section Chief or below, engaged in government work at their units. (3) Research design is a cross-sectional survey. (4) Research variables are incentive mechanisms and job satisfaction. (5) Outcomes demonstrate correlations between the two variables, with effect measures expressed as r values and complete data sets. (6) Articles are written in Chinese.

Exclusion Criteria: (1) Non-permanent staff positions, such as temporary contract workers.

(2) Studies using self-designed assessment scales. (3) Duplicate publications, studies lacking valid data, or those without full-text access.

3.1.3 Literature Quality Assessment

Based on the quality assessment criteria for observational studies recommended by the U.S. Agency for Healthcare Research and Quality (AHRQ), the evaluation standards for cross-sectional studies comprise 11 items answered as "Yes," "No," or "Unclear." These criteria assess the literature quality and methodological rigor of current studies across multiple dimensions: data sources, study settings, participants, variables, data collection, bias, sample size, quantitative variables, statistical methods, and follow-up.

3.1.4 Data Extraction

After reading the full text, data extraction was performed. Two evaluators screened the included literature, while another two conducted data extraction. Discrepancies were resolved through discussion. Data extraction included: first author and publication year, study period, region, sample source (community), sample size (male/female), age (mean), sampling method, scale used, Pearson correlation coefficient r value, and primary conclusions.

3.1.5 Outcome Measures

All included studies employed internationally recognized scales for civil servant motivation mechanisms and job satisfaction to evaluate the status of these factors. The correlation between civil servant motivation mechanisms and job satisfaction was expressed using Pearson's correlation coefficient r.

3.1.6 Statistical Analysis Methods

Data were statistically analyzed using Revman 5.3. Heterogeneity was assessed via the I^2 test. When the I^2 test P-value was <0.1, a random-effects model was employed for meta-analysis; when P > 0.1, a fixed-effects model was used. The pooled r values and 95% confidence intervals (95% CI) were calculated for each study. Forest plots were used to display the characteristics of individual study results. Funnel plots were employed to assess publication bias. Prior to meta-analysis, extracted data were converted using the following formula:

$$fisher'sZ = 0.5 \times \ln \frac{1+r}{1-r} \tag{4}$$

$$V_z = \frac{1}{n-1} \tag{5}$$

$$SE = \sqrt{V_z} \tag{6}$$

$$Summary_r = \frac{e^{2x}-1}{e^{2x}+1} \tag{7}$$

Z represents the summary Fisher's Z-value.

3.2 Encoding

Literature meeting the above inclusion criteria was coded, treating each independent sample as a separate unit. If a single piece of literature contained multiple independent samples, it was coded multiple times accordingly. The coding included: (1) Basic information, such as first author, publication date, sample type, sample name, etc. (2) Sample size. If an article uses different sample sizes when calculating correlation coefficients between variables and only provides a range, the minimum value is used for calculation. For multiple studies using the same sample, only the article with the most variables is selected. (3) Pearson correlation coefficients: If only correlations between scores on dimensions of civil servant incentive mechanisms and job satisfaction variables are reported, the arithmetic mean of correlations between each dimension of the study variable and job satisfaction is coded based on data processing methods. (4) Other statistics: Based on extracted Pearson correlation coefficients and sample sizes, Z-values, standard errors, 95% confidence intervals, and weighted statistics are calculated.

3.3 Research Model and Hypotheses

3.3.1 Research Model

Based on the research objectives of this paper, and grounded in the aforementioned literature collection, screening, and coding process, as well as the empirical findings of existing studies, job satisfaction adopts a two-dimensional structure: extrinsic satisfaction and intrinsic satisfaction. Since six variables—compensation, promotion, managers, benefits, job content, and interpersonal communication—have been shown in prior research to significantly correlate with job satisfaction, these six variables within the civil servant incentive mechanism are selected as influencing factors for job satisfaction. Similarly, empirical literature on job satisfaction indicates a significant relationship between job satisfaction and the civil servant incentive mechanism (compensation, promotion, managers, benefits, job content, and communication). Consequently, these six variables are selected as outcome factors for job satisfaction.

3.3.2 Research Hypotheses

Based on the aforementioned research model, twelve research hypotheses can be proposed, as detailed below:

H1: Compensation within the civil servant incentive mechanism is positively correlated with extrinsic satisfaction.

H2: Promotion within the civil servant incentive mechanism positively correlates with extrinsic satisfaction.

H3: Management within the civil servant incentive mechanism positively correlates with extrinsic satisfaction.

H4: Benefits within the civil servant incentive mechanism positively correlate with extrinsic satisfaction.

H5: Job content within the civil servant incentive mechanism positively correlates with extrinsic satisfaction.

H6: Communication within the civil servant incentive mechanism positively correlates with extrinsic satisfaction.

H7: Compensation within the civil servant incentive mechanism positively correlates with intrinsic satisfaction.

H8: Promotion within the civil servant incentive mechanism positively correlates with

intrinsic satisfaction.

H9: There is a positive correlation between managers in the civil servant incentive mechanism and intrinsic satisfaction.

H10: There is a positive correlation between benefits in the civil servant incentive mechanism and intrinsic satisfaction.

H11: There is a positive correlation between job content in the civil servant incentive mechanism and intrinsic satisfaction.

H12: There is a positive correlation between communication in the civil servant incentive mechanism and intrinsic satisfaction.

4 Empirical Research Analysis

4.1 Data Collection and Processing

4.1.1 Data Acquisition

This study searched relevant literature using keywords such as “civil servants,” “incentive mechanisms,” and “job satisfaction.” The selection of literature strictly adhered to the aforementioned criteria, ultimately screening 35 relevant studies—28 from China and 7 from other countries—with a total sample size of 75,192.

4.1.2 Data Processing

During the literature coding process, data were coded from two perspectives: research descriptions and statistical effect values. Research descriptions encompassed basic literature information, variables, and samples. For studies reporting effect values across multiple dimensions of public service incentive mechanisms and job satisfaction, this paper incorporated either weighted or separate effect values based on practical circumstances. For example, if the same literature reports that the civil service incentive mechanism (compensation, promotion, management, benefits, job content, communication) correlates with extrinsic satisfaction at coefficient r_1, and with intrinsic satisfaction at coefficient r_2, then r_1 and r_2 should be weighted averaged to yield a single effect value for inclusion. Within the same literature, if correlation coefficients exist between different dimensions of civil servant incentive mechanisms and different types of job satisfaction, both should be included. Following these coding principles, 107 effect sizes were ultimately obtained from 35 literature sources, as detailed in Table 1. Standard meta-analysis uses the inverse of the standard error of the correlation coefficient as the weight for combining effect sizes. Since not all studies reported standard errors, this study employed CAM3.0 software. The correlation coefficient r between civil servant incentive mechanisms and job satisfaction was selected as the statistic. Fisher's Z was applied to derive the transformed correlation coefficient r_z as the effect size. The standard error of r_z was calculated based on sample size for the final comprehensive analysis.

Table 1: Sample literature and effect value situation

Incentive mechanism	The number of China documents involved	The number of other countries documents involved	Number of effect values k
Remuneration	9	2	27
Promotion	3	1	15
Manager	2	1	11
Interest	4	0	16
Job content	4	2	28
Communication	6	1	10
Total	28	7	107

4.2 Research Findings

4.2.1 Homogeneity Test

The homogeneity test is used to determine whether the aforementioned relationship holds consistently across different effective samples. It employs the Q-value to assess the significance of differences in average effect sizes across these samples. The results revealed a Q-value of 224.408 ($p < 0.001$), indicating heterogeneity among the data. Furthermore, $Q = 224.408 > k$ (number of effect sizes) - 1 = 107 - 1 = 106. Therefore, we employed a random-effects model for analysis. The homogeneity test results are presented in Table 2. Table 2 indicates that the random-effects model yielded a pooled effect size of 0.104 ($p<0.001$). This suggests a correlation coefficient of 0.104 between civil servant incentive mechanisms and job satisfaction in general, confirming a positive relationship between the two. Appropriately optimizing the civil servant incentive mechanism can enhance job satisfaction. For instance, a narrow pay gap among civil servants may demotivate high-performing employees and fail to constrain low-performing ones, potentially leading to slacking and free-riding. It may also result in insufficient pay for supervisory roles, causing adverse selection among leaders or ethical lapses that harm interests and reduce performance. Widening the pay gap can motivate employees to increase work efficiency, thereby maintaining high job satisfaction.

Table 2: Homogeneity test results

Name	Effect value and 95% confidence interval				Homogeneity test		
	k	Point estimation	Lower limit	Upper limit	Z-Value	P-Value	Q-Value
Fixed effect	107	0.107	0.102	0.118	22.926	0.001	224.408
Random effect	107	0.104	0.064	0.127	6.026	0.002	

4.2.2 Publication Bias Test

The effect sizes of the literature are uniformly and symmetrically distributed around the mean effect size, indicating a low likelihood of publication bias. The results of the publication bias test are shown in Figure 1. The failure-free index (Nfs) is 8172, meeting the research standard ($Nfs < 5K + 10$ indicates severe publication bias, where K represents the number of effect sizes). Furthermore, relevant tests revealed $Z=0.02$ ($P>0.05$), and the Egger regression coefficient test showed $t=0.513$ ($P>0.05$), both indicating no publication bias.

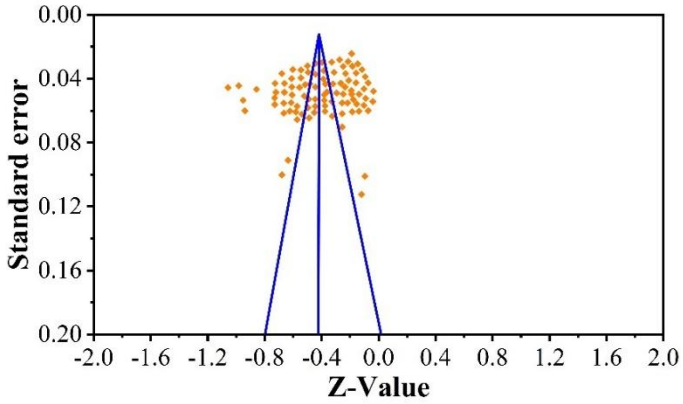

Figure 1: Publish the results of the bias test

4.2.3 Relationship Between Variables and Extrinsic Satisfaction

This study employed CMA3.0 software to analyze 107 effect sizes from 35 studies included in the meta-analysis, investigating the relationship between various variables of civil servant incentive mechanisms and extrinsic satisfaction. Through publication bias and homogeneity tests, it was determined that no publication bias existed across these relationships, but heterogeneity was present. This heterogeneity may stem from factors influencing the relationships between variables. Therefore, subgroup analysis within the meta-analysis was employed to identify potential causes of heterogeneity. The results of the relationship analysis between civil servant incentive mechanisms and extrinsic satisfaction are presented in Table 3. According to Pearson's correlation coefficient theory, a coefficient below 0.1 indicates no relationship between variables. Coefficients between 0.1 and 0.3, 0.3 and 0.5, and above 0.5 denote low, moderate, and high relationship strengths, respectively. For instance, the correlation between compensation and extrinsic satisfaction is 0.446, with a confidence interval of 0.453–0.629. This indicates a positive correlation between compensation and extrinsic satisfaction, validating the previously proposed hypothesis (H1). The same logic applies to the remaining five items.

Table 3: The relationship between incentive mechanisms and external satisfaction

Variable	K	Sample size	Combined effect value	Z-Value	P-Value	95% confidence interval		Result
						Lower limit	Upper limit	
Remuneration-External satisfaction (H1)	27	11	0.446	9.168	7E-4	0.453	0.629	Through
Promotion-External satisfaction (H2)	15	4	0.477	4.866	7E-4	0.485	0.772	Through
Manager-External satisfaction (H3)	11	3	0.446	9.804	8E-4	0.548	0.646	Through
Interest-External satisfaction (H4)	16	4	0.398	4.751	2E-4	0.539	0.619	Through
Job content-External satisfaction (H5)	28	6	0.394	6.642	7E-4	0.202	0.881	Through
Communication-External satisfaction (H6)	10	7	0.488	7.497	4E-4	0.384	0.881	Through

4.2.4 Relationship Between Variables and Intrinsic Satisfaction

After examining the relationship between civil servant incentive mechanisms and extrinsic satisfaction, we proceed to analyze the relationship between these mechanisms and intrinsic satisfaction. The results of this analysis are presented in Table 4. The results indicate, for example, that the correlation coefficient between remuneration and intrinsic satisfaction is 0.382, with a confidence interval of 0.455–0.767. The relationship between the two is significant ($Z = 9.766$, $p = 0.000$), thus supporting the aforementioned hypothesis H7. The same applies to the remaining five items, with hypotheses H8–H12 all being validated.

Table 4: The analysis results of the relationship between the two

Variable	K	Sample size	Combined effect value	Z-Value	P-Value	95% confidence interval		Result
						Lower limit	Upper limit	
Remuneration-Internal satisfaction (H7)	27	11	0.382	9.766	2E-4	0.455	0.767	Through
Promotion- Internal satisfaction (H8)	15	4	0.538	7.312	8E-4	0.408	0.778	Through
Manager- Internal satisfaction (H9)	11	3	0.475	5.873	1E-4	0.595	0.683	Through
Interest- Internal satisfaction (H10)	16	4	0.366	11.209	9E-4	0.541	0.685	Through
Job content- Internal satisfaction (H11)	28	6	0.323	10.403	6E-4	0.544	0.787	Through
Communication- Internal satisfaction (H12)	10	7	0.457	12.174	6E-4	0.264	0.612	Through

4.2.5 Analysis of Regulatory Effects

The results of the heterogeneity analysis indicate that heterogeneity exists across studies, likely attributable to certain moderating variables. Therefore, this study introduces moderating variables to explore the sources of heterogeneity. Typically, moderating variables are determined based on the characteristics of the included literature. Given the characteristics of the literature included in this study, the analysis will focus on job type (routine versus non-routine jobs).

(1) Moderating Effect of Job Type on Extrinsic Satisfaction

Using the meta-analysis method in CMA 3.0 software, we examined the moderating effect of job type on extrinsic satisfaction. Table 5 presents the moderating effect of job type on extrinsic satisfaction. Results indicate that in the relationship between compensation and extrinsic satisfaction, the correlation for repetitive job types ($r=0.409$) is weaker than that for non-repetitive job types ($r=0.598$), with $p < 0.05$ and a Q-value of 4.217. This demonstrates significant group heterogeneity, confirming that job type moderates the relationship between compensation and extrinsic satisfaction. Similar findings apply to other variables.

Table 5: The moderating effect of job type on external satisfaction

Variable	Job position type	Combined effect value r	Inter-group heterogeneity	
			Q-Value	P-Value
Remuneration	Repeat	0.409	4.217	0.004
	Non-repetition	0.598		
Promotion	Repeat	0.371	3.289	0.005
	Non-repetition	0.577		
Manager	Repeat	0.324	1.976	0.001
	Non-repetition	0.568		
Interest	Repeat	0.405	2.335	0.002
	Non-repetition	0.428		
Job content	Repeat	0.429	4.051	0.002
	Non-repetition	0.482		
Communication	Repeat	0.324	3.942	0.008
	Non-repetition	0.599		

(2) The Moderating Effect of Job Type on Intrinsic Satisfaction

Using the aforementioned methodology, we further examined the moderating effect of job type on intrinsic satisfaction. The corresponding moderation results are presented in Table 6. The table indicates that among the six variables of the civil servant incentive mechanism and intrinsic satisfaction, the combined effect size for repetitive job types is smaller than that for non-repetitive job types, with $P < 0.05$. This confirms the moderating effect of job type on intrinsic satisfaction.

Table 6: Adjustment result

Variable	Job position type	Combined effect value r	Inter-group heterogeneity	
			Q-Value	P-Value
Remuneration	Repeat	0.431	4.782	0.001
	Non-repetition	0.461		
Promotion	Repeat	0.342	5.896	0.003
	Non-repetition	0.395		
Manager	Repeat	0.205	3.645	0.005
	Non-repetition	0.288		
Interest	Repeat	0.294	2.072	0.005
	Non-repetition	0.434		
Job content	Repeat	0.258	4.357	0.001
	Non-repetition	0.323		
Communication	Repeat	0.438	5.211	0.009
	Non-repetition	0.568		

5 Conclusion

This study employs meta-analysis based on existing research to examine the relationship between civil servant incentive mechanisms and job satisfaction. The primary findings are as follows:

(1) The six variables within the civil servant incentive mechanism exhibit heterogeneity with job satisfaction, with a Q-value of 224.40 ($P<0.01$) and a composite effect size of 0.104.

(2) The non-replication safety factor (Nfs) is 8172, satisfying Nfs>5K+10 where K=107, indicating no publication bias between the two.

(3) The correlation coefficient between the remuneration variable in the civil servant incentive mechanism and extrinsic satisfaction is 0.446, with a confidence interval of 0.453–0.628 and $P < 0.05$. Results indicate a positive correlation between remuneration and extrinsic satisfaction. The remaining five variables also exhibit significant positive correlations with extrinsic satisfaction, confirming all six research hypotheses (H1–H6) proposed in this study.

(4) The Pearson correlation coefficient between compensation and intrinsic satisfaction is 0.382, with an upper bound of 0.629 and a lower bound of 0.453, indicating a significant relationship. The same applies to the other variables, fully supporting hypotheses H7–H12.

(5) Job type moderates the relationship between civil servant incentive mechanisms and job satisfaction, with $p < 0.05$. The effect size for repetitive job types is smaller than that for non-repetitive job types.

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