



A Methodology and Empirical Study of Government Quality Evaluation from the Perspective of Market Entities

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Abstract. As one of the main service objects of the government, market entities' evaluation of government quality work is an important criterion for measuring the level of government quality work. Based on the perspective of market entities, this paper constructs an evaluation index system for government quality work, covering four monitoring areas: quality policy system, quality and safety supervision, quality promotion measures, and quality infrastructure. The paper also studies data collection methods and evaluation models and collects a sample of 6,200 market entities from 31 provinces for empirical analysis. The survey results show that the overall evaluation of market subjects has been improved compared with last year, but regional differentiation still exists. The score of eastern region is higher than that of western region. It is suggested to continue to implement the equalization of regional development of quality work as a specific requirement of the concept of "coordinated development".

Keywords: Indicator system, evaluation model, empirical analysis

1 INTRODUCTION

In recent years, the central leadership of the Communist Party of China has attached unprecedented importance to quality work. The 19th National Congress of the Party declared that "China's economy has shifted from a phase of high-speed growth to a stage of high-quality development." The Party Central Committee with Comrade Xi Jinping as the core has placed quality in a prominent position and proposed a series of major decisions and deployments on quality work. In September 2017, the Central Committee of the Communist Party of China and the State Council issued the "Guiding Opinions on Carrying Out Quality Improvement Actions" (Central Document No. 24, 2017), which proposed to give more prominent position to the strategy of building a quality country, make the greatest effort to comprehensively improve quality, and promote China's economic development into the era of quality. As one of the main service objects of the government, the satisfaction evaluation of market entities on the government's quality work is an important criterion for measuring the level of government quality work[1][2].

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The evaluation of government quality work by market entities investigates the quality work of 31 provinces (regions, municipalities) from the perspective of market entities, comprehensively understands the needs of market entities, collects "pain points" and "bottlenecks" issues of market entities, and forms market entity evaluation indexes for quality work in various regions to promote continuous improvement of quality work and promote quality improvement at the local level.

2 Evaluation Content

The satisfaction evaluation of market entities on government quality work covers four monitoring areas: quality policy system, quality and safety supervision, quality promotion measures, and quality infrastructure. Thirteen monitoring indicators were selected by screening and refining the issues that market entities are most concerned about [3][4]. The specific indicators are shown in Table 1.

Table 1. Evaluation Index System of Government Quality Work for Market Entities.

Monitoring Area	Monitoring Indicators
Quality Policy system	Policy Awareness
	Policy Propagation
	Policy Assistance
	Business Environment
Quality and Safety Supervision	Supervision and Inspection
	Administrative Law Enforcement
	Law Enforcement and Counterfeit
Quality Promotion Measures	Quality Activities
	Quality Awards
	Quality Management
	Quality Complaints
Quality Infrastructure	Capacity Building
	"One-stop" Service Efficiency

3 Data Collection Method

3.1 Survey Method

The evaluation of government quality work by market entities was conducted in the form of a questionnaire survey, which was carried out through face-to-face interviews, telephone interviews, and online surveys.

3.2 Sample Size and Distribution

According to the requirement of statistical accuracy, under the limitation of "90% confidence level and 7% error", samples were evenly distributed based on the enter-

prise scale and industry attributes of each province, and the sample size estimation was conducted using the sample size formula $n = z^2(p(1-p)) / E^2$ (where z is the critical value at the confidence level of 90%, with a value of 1.64; E is the allowable error; p is the proportion or percentage of the population, and n is the maximum when $p=0.5$). The effective sample size of each province (region, city) was estimated to be 196 using the formula. In order to facilitate statistical analysis, 200 samples were drawn from each province (region, city), and the total sample size of the whole country was 6200[5][6][7].

4 Evaluation Model

4.1 Assigning Values to Survey Questionnaire

The survey questionnaire was assigned values using a ten-point scale, where option 10 was assigned 100 points, option 9 was assigned 90 points, option 8 was assigned 80 points, option 7 was assigned 70 points, option 6 was assigned 60 points, option 5 was assigned 50 points, option 4 was assigned 40 points, option 3 was assigned 30 points, option 2 was assigned 20 points, and option 1 was assigned 10 points. For questions where participants selected "Don't know/Not sure", those responses were excluded from the sample for that question[8][9][10].

4.2 Evaluation Model

The score of each question is shown in equation (1)[1][3][4].

$$T = \sum_{t=1}^{10} m_t \cdot S_t \tag{1}$$

Where: T is the score of a single question.

$m_t = \frac{n_t}{N}$ (N : Total number of effective samples; n_t : Number of samples selected for each level of evaluation) ;

S_t is the percentage score corresponding to each option in the 10-point scale.

Score of monitoring indicators is shown in equation (2).

$$B_{ij} = \sum_{k=1}^{n_{ij}} r_{ijk} \cdot T_{ijk} \tag{2}$$

Where:

B_{ij} is the score of a single monitoring indicator;

T_{ijk} is the weight of each question, determined based on historical survey data and the Delphi method, and the weight satisfies formula $\sum_{k=1}^{n_{ij}} r_{ijk} = 1$;

T_{ijk} is the score of each question under a single monitoring indicator;
 n_{ij} is the number of questions included in a single monitoring indicator.
 Score of Monitoring Areas is shown in equation (3).

$$A_i = \sum_{j=1}^{n_i} q_{ij} \cdot B_{ij} \tag{3}$$

Where:

A_i is the score of each monitoring area;

q_{ij} is the weight of each monitoring indicator, determined based on historical survey data and Delphi method, satisfying the formula;

B_{ij} is the score of each monitoring indicator under each area;

n_i is the number of monitoring indicators included in each area.

Overall score is shown in equation (4).

$$S = \sum_{i=1}^4 p_i \cdot A_i \tag{4}$$

Where:

S is the total score of market entities' satisfaction with government quality work;

p_i is the weight of each field, determined by historical survey data and Delphi method, and satisfies formula $\sum_{i=1}^4 p_i = 1$;

A_i is the score of each area.

4.3 Evaluation Results

According to the evaluation model, 6,200 survey samples collected across the country are calculated, and the calculation results are as follows in Table 2.

Table 2. National Evaluation Results.

Monitoring Area	Area score A (Ai)	Total Score (S)
Quality Policy system	76.70	79.77
Quality and Safety Supervision	81.07	
Quality Promotion Measures	80.64	
Quality Infrastructure	80.66	

According to the regional division of 31 provinces by the National Bureau of Statistics¹, the scores of each province within the region were weighted and evaluated to obtain the regional scores, as shown in Table 3.

Table 3. Region Evaluation Results.

	Quality Policy system	Quality and Safety Supervision	Quality Promotion Measures	Quality Infrastructure	Region Total Score
Eastern Region	78.22	82.14	81.26	81.63	80.81
Central Region	77.01	80.5	79.66	79.98	79.29
Northeast Region	75.1	81.75	81.69	81.57	80.03
Western Region	75.67	80.3	80.35	79.96	79.07

5 Evaluation Result Analysis

5.1 Survey Overview

This study covered 31 provinces across China and surveyed enterprises registered and located within their respective administrative regions. The survey was conducted online, with a total of 6,200 samples collected from each province. For different-sized enterprises, medium-sized enterprises had the highest proportion while micro-sized enterprises had the lowest proportion. In terms of different types of enterprises, private enterprises and state-owned enterprises had a relatively high proportion, while foreign-funded enterprises and other enterprises had a relatively low proportion. They are shown in Figure 1.

5.2 Evaluation Results

The overall evaluation score of the government's quality work market subject is 79.77 points, an increase of 0.38 points compared to 79.39 points in 2021, showing a stable upward trend. They are shown in Figure 2.

¹ The 10 eastern provinces (municipalities) include Beijing, Tianjin, Hebei, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong and Hainan; The six central provinces include Shanxi, Anhui, Jiangxi, Henan, Hubei and Hunan; The 12 western provinces (autonomous regions and municipalities directly under the central government) include Inner Mongolia, Guangxi, Chongqing, Sichuan, Guizhou, Yunnan, Tibet, Shaanxi, Gansu, Qinghai, Ningxia and Xinjiang; The three provinces in Northeast China include Liaoning, Jilin and Heilongjiang.

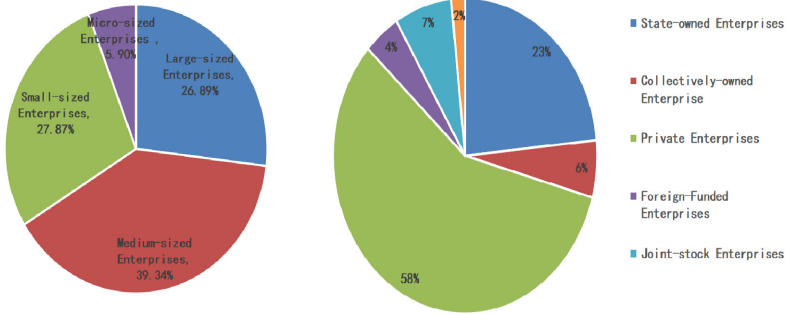


Fig. 1. Proportion of Sample Sizes for Different Types of Enterprises

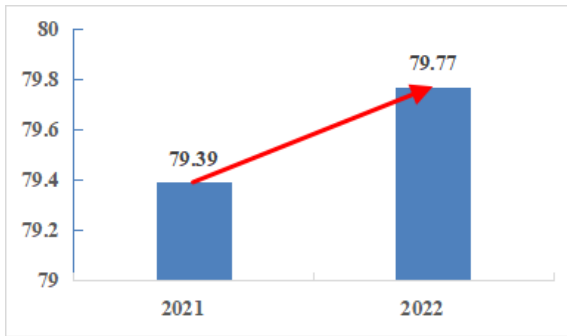


Fig. 2. Overall Evaluation of Government Quality Work by Market Entities.

The satisfaction scores of the four areas of market entities evaluation from high to low are: quality and safety supervision (81.07 points), quality infrastructure (80.66 points), quality promotion measures (80.64 points), and quality policy system (76.70 points). They are shown in Figure 3.

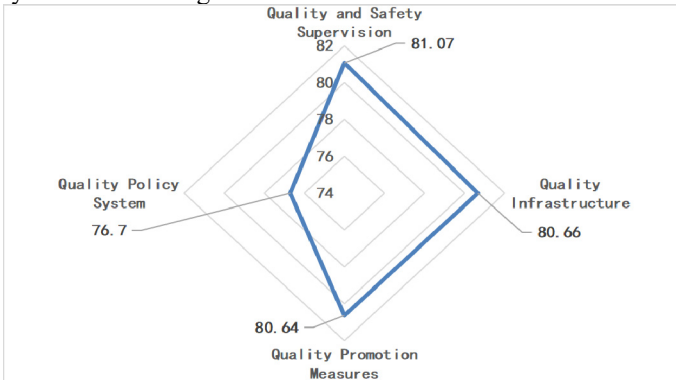


Fig. 3. Evaluation of Government Quality Work in Various Fields by Market Entities.

In terms of regions, the scores are ranked from high to low as follows: the eastern region (80.81 points), the northeast region (80.03 points), the central region (79.29 points), and the western region (79.07 points). They are shown in Figure 4.

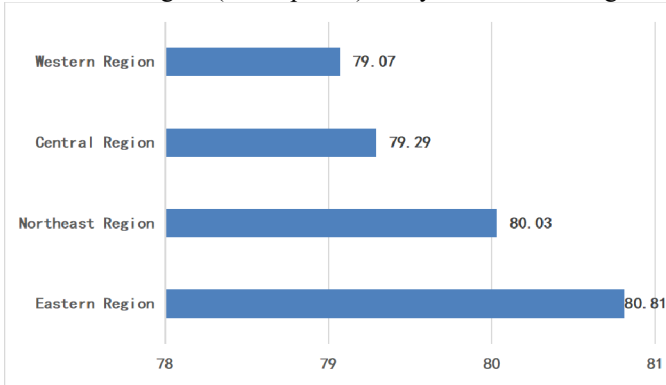


Fig. 4. Market Entity Evaluation Scores by Region s by Market.

6 Conclusions

From an overall perspective, this evaluation reflects the continued uneven development among regions. The overall score for the country is 79.77, with the central region scoring lower in "quality policy system" (77.01) and "quality promotion measures" (79.66) than the overall score, while the western region's "quality policy system" score (75.67) is lower than the overall score. Due to the relatively developed economy and higher market activity in the eastern region, market entities are more concerned about government quality, and once relevant policies are introduced, they can quickly respond in the market, resulting in better policy promotion and implementation. However, during the critical period of economic development in the central and western regions, while increasing the overall economic volume, the interests of market entities are often overlooked. There are few methods for policy promotion, policy support, business environment construction, and addressing enterprise problems, and the initiative is not strong, resulting in low satisfaction among market entities. The uneven satisfaction levels of market entities in the eastern and western regions directly reflect the imbalance in regional quality development.

It is recommended to implement the equalization of quality work regional development as a specific requirement of the "coordinated development" concept, establish a sound system and mechanism for regional coordinated development, and achieve cross-regional integration of quality work. Furthermore, further improve the policy support for regional development quality linkage, strengthen the adaptability of quality supply policies to regional development needs, make quality policies an effective supply that can be implemented and implemented, strengthen policy effectiveness evaluation, and ensure the further realization of the equalization of quality work regional development.

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