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RESEARCHING PUBLIC SATISFACTION IN SOCIAL GOVERNANCE THROUGH THE APPLICATION OF THE FUZZY COMPREHENSIVE EVALUATION METHOD

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Abstract. Social governance is an essential component of China's governance system and is the cornerstone of "Governance of China." In the new era, the Communist Party of China adopts the core value pursuit of "People-centered" as the rational choice for governing the country. "People-centered" is also the core concept of social governance in China. As participants in social governance, the satisfaction of the public is an important evaluation indicator for measuring the effectiveness of social governance. How to scientifically quantify and evaluate the satisfaction with social governance has always been a key issue in evaluating the effectiveness of social governance. This study constructs a scientific evaluation indicator system and uses the fuzzy comprehensive evaluation method to make a scientific evaluation of public satisfaction with social governance. This is also beneficial for carrying out other social governance work based on the evaluation results, thereby improving governance effectiveness.

Keywords: *Social governance; Public satisfaction; Fuzzy comprehensive evaluation method; Evaluation research.*

Rezumat. Guvernarea socială este o componentă esențială a sistemului de guvernare al Chinei și piatra de temelie a „Guvernării Chinei”. În noua eră, China adoptă urmărirea valorii de bază „centrată pe oameni” ca alegere rațională pentru guvernarea țării. „Centrat pe oameni” este, de asemenea, conceptul de bază al guvernării sociale în China. Satisfacția publicului este un indicator important de evaluare pentru măsurarea eficacității guvernării sociale. Modul de cuantificare și evaluare științifică a satisfacției față de guvernarea socială a fost întotdeauna o problemă cheie în evaluarea eficienței. Acest studiu construiește un sistem de indicatori de evaluare științifică și utilizează metoda de evaluare cuprinzătoare fuzzy pentru a face o evaluare științifică a satisfacției publicului față de guvernarea socială. Acest lucru este, de asemenea, benefic pentru desfășurarea altor activități de guvernare socială pe baza rezultatelor evaluării, îmbunătățind astfel eficiența guvernării.

Cuvinte cheie: *guvernare socială; satisfacția publicului; metodă de evaluare cuprinzătoare neclară; cercetare de evaluare*

1. Introduction

The report from the 20th National Congress of the Communist Party of China proposed that social governance should continuously perfect the governance system, improve the social governance system of co-construction, co-governance, and sharing, enhance the efficacy of social governance, ensure and regulate the channels for the expression of public demands, interest coordination, and rights protection, and build a social governance community where everyone is responsible, everyone fulfills their responsibilities, and everyone enjoys rights. As an important aspect of national governance, establishing a "people-centered" social governance concept is the core goal of social governance in the new era [1]. Based on the pluralistic co-governance theory of governance studies, the public is both a participant in and beneficiary of social governance, and public satisfaction with social governance to some extent determines the effectiveness of social governance [2]. Governance satisfaction is a dimension for measuring the effectiveness of social governance [3], and under the influence of the "people-centered" concept of modern social governance in China, public satisfaction with social governance will inevitably be an important indicator and one of the significant objectives of social governance. How to scientifically evaluate this subjective issue of social governance satisfaction and how to reflect it with scientific quantitative data poses a key question in evaluating the effectiveness of social governance, making a scientific assessment of governance effectiveness an extremely important aspect. Adhering to the principles of scientific and quantitative evaluation, this study chooses the fuzzy comprehensive evaluation method for an objective and scientific assessment of public satisfaction with social governance. This evaluation method is based on a scientifically reasonable set of evaluation indicators and transforms subjective judgments into evaluations that facilitate the analysis of the combined effects of various factors [4].

2. Methods

The fuzzy comprehensive evaluation method is a comprehensive evaluation approach based on fuzzy mathematics. This method transforms qualitative evaluations into quantitative evaluations according to the theory of membership degrees in fuzzy mathematics, that is, it uses fuzzy mathematics to make an overall evaluation of things or objects constrained by various factors [5]. It is characterized by clear results and strong systematicity, capable of effectively solving fuzzy and difficult-to-quantify problems, making it suitable for addressing various uncertainties [6].

2.1 Construction of a Public Satisfaction Evaluation Indicator System for Social Governance

The selection of evaluation indicators and the establishment of an evaluation indicator system are the premises and foundations for scientifically evaluating the satisfaction of residents with social governance. To ensure the scientific rigor of the evaluation, this study refers to the secondary indicator "Public Satisfaction" in the China Social Governance and Development Index (CSGDI) indicator system developed by Tsinghua University. This includes six dimension indicators: "Public satisfaction with the government, residents' sense of fairness, residents' sense of happiness, residents' sense of participation, residents' sense of security, and residents' future expectations" to construct the evaluation indicator system for public satisfaction with social governance.

2.1.1 Selection of Evaluation Indicators for Public Satisfaction with Social Governance

Building on the evaluation indicators from Tsinghua University's China Social Governance and Development Index (CSGDI), this study further elaborates on the six indicators related to public satisfaction according to the actual situation of the research. The aim is to ensure that the established indicator system is fully compatible with the evaluation method proposed in this paper, allowing for a more scientific and reasonable assessment of public satisfaction with social governance.

a) Public Satisfaction with the Government

Public satisfaction with the government refers to the public's psychological acknowledgment of the government based on subjective perception [7]. It includes emotional experience (i.e., citizens' positive or negative emotional responses to the government) and cognitive experience (referring to citizens' beliefs or perceptions about the government). Public satisfaction with government participation in social governance encompasses not only the satisfaction evaluation of government governance actions but also the level of satisfaction with public services provided by the government. Considering the theoretical practice of multi-stakeholder co-governance in social governance and the goals of "co-construction, co-governance, and sharing" in the new era of social governance, selecting public satisfaction with the government's social governance as an indicator for evaluating public satisfaction with social governance is both scientific and realistic.

b) Residents' Sense of Fairness

The public's sense of fairness is essentially a value judgment based on the foundation of equal rights and interests. A sense of social fairness arises only when individual rights and interests are protected [8]. Rawls (1988) proposed the principles of equal liberty, the difference principle, and the principle of equal opportunity in "A Theory of Justice" [9,10]. The public's sense of fairness is a subjective value judgment by citizens on whether they belong to a disadvantaged group. It's a psychological comparison that members of society make between themselves and others, and between the present and the future, influenced by cognition, reference objects, and personal emotions. Incorporating a sense of fairness into the evaluation of satisfaction with social governance and quantifying it through the fuzzy comprehensive evaluation method adds persuasive power and scientific validity to the assessment.

c) Residents' Sense of Happiness

Happiness is a mental state of being satisfied with one's life over a long period and maintaining a pleasant mood throughout [11]. The concept of happiness, originally derived from psychology, refers to psychological happiness. The notion of psychological happiness primarily stems from Maslow's Hierarchy of Needs Theory proposed in 1943 [12]. Psychological happiness emphasizes the realization and satisfaction of individual self-worth, with happy individuals often focusing more on the harmony between their self-worth and their true selves [13].

One of the main goals of social governance in the new era in our country is to meet the people's growing needs for a better life, the internal manifestation of which can be summarized as residents' sense of happiness. Therefore, including residents' sense of happiness as an evaluation dimension when assessing public satisfaction with social governance is necessary and reasonable.

d) Residents' Sense of Participation

The theory of social participation was proposed by the American scholar Barron in "The Right to Participate in Newspapers" as a right of citizens [14]. Participation means getting involved and taking part, referring to joining, integrating into, and engaging in the planning, discussion, and handling processes of an event or activity as a second or third party [15]. The 20th National Congress of the Communist Party of China proposed to perfect the social governance system, improve the system of co-construction, co-governance, and sharing, and enhance the efficacy of social governance. Building a social governance community where everyone is responsible, fulfills their duties, and enjoys rights advocates for residents' participation in social governance, where residents are both the subjects and beneficiaries of social governance. From the perspectives of pluralistic co-governance theory and the top-level design of national social governance, social governance emphasizes public participation, making residents' sense of participation one of the important indicators for evaluating public satisfaction with social governance.

e) Residents' Sense of Security

A sense of security is an innate feeling closely related to human needs, manifested as confidence, belief, and freedom. The concept of "sense of security" originally derived from Freud's "Theory of Anxiety" [16]. According to Maslow, a sense of security is an internal feeling. When people are freed from worries, the feeling of confidence and ease is the sense of security [17,18]. Giving people a feeling of confidence, determination, and freedom can enhance their sense of security. An important aspect of social governance is to enhance social safety and stability, and whether residents feel secure is a crucial indicator of the effectiveness of social governance.

f) Residents' Future Expectations

Future expectations refer to the belief in the occurrence of specific events in the future. Some scholars link future expectations with hope and an optimistic attitude, defining future expectations as holding a positive hope and an optimistic attitude toward possible outcomes in the future. This study considers residents' future expectations as their anticipation related to being the audience of social governance outcomes, direct participants in social governance, adapting to social governance results, and stimulating and achieving behaviors related to the anticipated future state. Setting residents' future expectations as an aspect of the evaluation of residents' satisfaction with social governance is beneficial for scientifically assessing social governance.

2.1.2 Establishment of the Evaluation Indicator System

a) Determination of Weights

Weights reflect the relative importance of each indicator in the overall evaluation. The purpose of setting weights is to highlight key aspects when evaluating public satisfaction with social governance, making it more scientific and realistic, and to build a flexible system for evaluations across different regions and demographic groups. Weights are determined among various evaluation indicators, with a set of weights corresponding to an evaluation indicator system forming a weight system. This paper uses the Delphi method to determine the weights of the indicator system. To ensure the practicality of the constructed indicator system, 20 experts in the field of social governance are selected nationwide, including 10 research experts from different regions, 10 social governance officials from different regions and levels, and 10 members of the public from different regions, ages, genders, and

educational backgrounds, to form an expert group. The Delphi method is used to assign weights to these six indicators. To ensure the comprehensiveness and democracy of the evaluation, 10 participants in social governance from Region A are also involved in the Delphi weighting process. After three rounds of back-to-back communication and feedback, the final weight coefficients are obtained. Following discussion by the expert group and considering the realistic impact of the evaluation, the weight coefficients for the evaluation indicators are set as: (0.2, 0.1, 0.1, 0.2, 0.1, 0.2).

b) Construction of the Indicator System

Based on the actual needs of evaluating residents' satisfaction with social governance and using the Delphi method for weighting the evaluation indicators, the following evaluation indicator system is ultimately established, Table 1.

Table 1

Evaluation Indicator System	
Indicator	Weight Coefficient
Public Satisfaction with the Government	0.2
Residents' Sense of Fairness	0.1
Residents' Sense of Happiness	0.2
Residents' Sense of Participation	0.2
Residents' Sense of Security	0.1
Residents' Future Expectations	0.2

2.2 Fuzzy Comprehensive Evaluation

The six indicators of public satisfaction with social governance are mostly psychological feelings, which are difficult to quantify. Applying the fuzzy comprehensive evaluation method in the study of the evaluation of residents' happiness in social governance converts qualitative comments into feasible quantitative evaluation results. This ensures the objectivity of the evaluation and the uniqueness and certainty of the evaluation results. In practical evaluation processes, these results can provide a scientific reference for assessing satisfaction with social governance and the effectiveness of social governance.

2.2.1 Establishment of the Factor Set

A scientific evaluation indicator system is the basis for evaluating public satisfaction with social governance. The comprehensiveness and scientific validity of the evaluation of social governance effectiveness and residents' satisfaction with the outcomes of social governance depend on the indicators. This paper takes the six indicators of public satisfaction with the government, residents' sense of fairness, residents' sense of happiness, residents' sense of participation, residents' sense of security, and residents' future expectations as examples to study the application of the fuzzy evaluation method in assessing named satisfaction in social governance. These factors form the indicator system for the evaluation scheme, using this evaluation indicator system to constitute the factor set of the fuzzy comprehensive evaluation: $U = \{U_1, \dots, U_n\}$. Where U_1 represents public satisfaction with the government; U_2 : residents' sense of fairness; U_3 : residents' sense of happiness; U_4 : residents' sense of participation; U_5 : residents' sense of security; U_6 : residents' future expectations.

2.2.2 Establishment of the Comment Set

Based on the establishment of the factor set, the comment set for evaluating the scheme is established. Select all residents of Area A (typically a specific community or administrative village) or randomly choose a portion of residents to form an expert evaluation team. Evaluations are conducted via questionnaires, categorized into five levels: Very Satisfied, Satisfied, Neutral, Dissatisfied, and Very Dissatisfied. Each indicator within the factor set is scored individually, Table 2.

Comment Set:

$$V = \{V_1, V_2, \dots, V_n\}, \quad (1)$$

where: V is collection of commentaries.

Among them, element V_n represents the n th evaluation result.

Table 2

Comment Set	
V	Comment
V_1	Very Satisfied
V_2	Satisfied
V_3	Neutral
V_4	Dissatisfied
V_5	Very Dissatisfied

Source: prepared by authors.

With the factor set and comment set established and referring to the weight coefficients, experts are organized to evaluate each single factor. The Delphi method can also be used at this stage to collect expert comments, further enhancing the scientific rigor and precision of the fuzzy comprehensive evaluation. After consulting experts, statistics for each single factor are compiled. For example, after evaluating the satisfaction with the government factor, data is collected showing that 30% of residents are very satisfied, 30% are satisfied, 10% are neutral, 20% are dissatisfied, and 10% are very dissatisfied. This results in an evaluation vector for the government satisfaction factor of (0.3, 0.3, 0.1, 0.2, 0.1). Using this method, evaluations for other factors can be conducted to obtain corresponding single-factor evaluation vectors, Table 3. By synthesizing these single-factor vectors, a comprehensive evaluation matrix for the satisfaction of residents with social governance in Area A can be constructed:

$$R = \{r_{ij}\} \quad n \times m, \quad (2)$$

where: R is evaluation matrix.

r_{ij} is the degree of membership of factor (indicator) i to comment j .

n is the number of comments.

m is the number of factors (indicators).

Table 3

Evaluation matrix								
		V	Weights	V ₁	V ₂	V ₃	V ₄	V ₅
R	U	U ₁	0.2	0.3	0.3	0.1	0.2	0.1
		U ₂	0.1	0.3	0.2	0.1	0.2	0.2
		U ₃	0.2	0.4	0.1	0.1	0.2	0.2
		U ₄	0.2	0.3	0.3	0.2	0.1	0.1
		U ₅	0.1	0.2	0.3	0.3	0.1	0.1
		U ₆	0.2	0.4	0.2	0.1	0.2	0.1

Note: R-evaluation matrix; U-Factor set; V-Comment set. Source:prepared by authors.

2.2.3 Establishment of Fuzzy Set

The fuzzy vector X on the factor set U is transformed into a fuzzy set on the comment set V through the judgment matrix R, applying the "weighted average type operator".

$$W = (0.2, 0.1, 0.2, 0.2, 0.1, 0.2) \times \begin{pmatrix} 0.3 & 0.3 & 0.4 & 0.3 & 0.2 & 0.4 \\ 0.3 & 0.2 & 0.1 & 0.3 & 0.3 & 0.2 \\ 0.1 & 0.1 & 0.1 & 0.2 & 0.3 & 0.1 \\ 0.2 & 0.2 & 0.2 & 0.1 & 0.1 & 0.2 \\ 0.1 & 0.2 & 0.2 & 0.1 & 0.1 & 0.1 \end{pmatrix} \quad (3)$$

3. Results and discussion

Calculations were conducted using the SPSSPRO software, with the algorithm being the fuzzy comprehensive evaluation. The variables are: {V₁, V₂, V₃, V₄, V₅}; variable weights were determined using the entropy method; fuzzy operators: {weighted average type M(*,+)}. After calculation, the evaluation results of the residents' satisfaction with social governance in Area A were obtained, Table 4.

Table 4

Calculation of Indicator Weights Using the Entropy Weight Method

Entropy Weight Method				
Indicator	Weight	Information Entropy Value	Information Utility Value	Weight (%)
Public Satisfaction with the Government	0.2	0.658	0.342	17.009
Residents' Sense of Fairness	0.1	0.829	0.171	8.505
Residents' Sense of Happiness	0.2	0.593	0.407	20.234
Residents' Sense of Participation	0.2	0.658	0.342	17.009
Residents' Sense of Security	0.1	0.658	0.342	17.009
Residents' Future Expectations	0.2	0.593	0.407	20.234

Source:prepared by authors.

The weight calculation results of the entropy weight method show that the weight of public satisfaction with the government at 0.2 is 17.009%, the weight of residents' sense of fairness at 0.1 is 8.505%, the weight of residents' sense of happiness at 0.2 is 20.234%, the weight of residents' sense of participation at 0.2 is 17.009%, the weight of residents' sense of security at 0.1 is 17.009%, and the weight of residents' future expectations at 0.2 is 20.234%. Among these, the highest weight is for residents' sense of happiness at 0.2 (20.234%), and the lowest is for residents' sense of fairness at 0.1 (8.505%).

Table 5

Calculation Results of the Membership Degree Matrix

	V ₁	V ₂	V ₃	V ₄	V ₅
Membership Degree	0.3234591049	0.2307931669	0.1510272633	0.1659818244	0.1287386402
	4	9	6	2	6
Membership Degree Normalization [Weight]	0.323	0.231	0.151	0.166	0.129

Note: V-Comment set. Membership degree is a number between 0 and 1, used to indicate the degree of belonging of the Evaluation object to the comment set V. Normalization of membership degree is the result of normalizing membership degree. Unlike membership degree, the sum of all comments normalized by membership degree is 1. *Source: prepared by authors.*

From Table 5, a fuzzy comprehensive evaluation is conducted for 6 indicators (0.2, 0.1, 0.2, 0.2, 0.1, 0.2) against 5 comments (V₁, V₂, V₃, V₄, V₅), utilizing the weighted average type M(*,+) operator for the study. Initially, the weight vector A for evaluation indicators (obtained through the entropy weight method) is used to construct a 6×5 weight judgment matrix R. Subsequent analysis yields membership degrees for the 5 comment sets at 0.323, 0.231, 0.151, 0.166, and 0.129, respectively. Therefore, it can be determined that the comment set "Neutral" has the highest weight. Applying the maximum membership degree rule, the final comprehensive evaluation result is "V₁".

After calculations with SPSSPRO, the evaluation result for the residents' satisfaction with social governance in Area A is obtained:

$$W=(0.323 \ 0.231 \ 0.151 \ 0.166 \ 0.129)$$

Building on this evaluation, it's possible to assign values to each comment, further scoring each comment, i.e., giving score C_j to V_j. This method provides more intuitive results and has greater practical value. Assign 100 points to V₁, 80 points to V₂, 60 points to V₃, 40 points to V₄, and 20 points to V₅. Utilize the following formula:

$$w = \sum_{j=1}^m c_j \times w_j \quad (4)$$

After performing the calculations, the final evaluation result for the residents' satisfaction with social governance in Area A is:

$$W=0.323 \times 100 + 0.231 \times 80 + 0.151 \times 60 + 0.166 \times 40 + 0.129 \times 20 = 69.085 \quad (5)$$

The final score of 69.085 represents the evaluation result for the residents' satisfaction with social governance in Area A, Table 6.

Table 6

Composite Score		
Variable	Coefficient	Assignment
V ₁	0.323	100
V ₂	0.231	80
V ₃	0.151	60
V ₄	0.166	40
V ₅	0.129	20
Evaluation Result W		69.085

Source: prepared by authors.

4. Case Study

Following this method, an evaluation of public satisfaction with social governance was conducted across 12 communities in Y Street, C City, S Region. The evaluation results served as a basis for assessing the effectiveness of social governance in these 12 communities. The communities were assigned codes as follows: Community A, Community B, Community C, Community D, Community E, Community F, Community G, Community H, Community I, Community J, Community K, and Community L. Two experts in the field of social governance, two staff members from the Y Street office, and a total of 12 residents from the communities (one randomly selected from each of the 12 communities) were hired to form the evaluation expert group.

Initially, the evaluation method, purpose, precautions, a simulated demonstration of the evaluation process, and information on the scoring method and workflow were introduced to the members of the expert group and the participating community residents. The evaluation ensured all participants were informed and prepared, with an expert scoreboard created and a specific assessment time set.

Subsequently, the five evaluation indicators proposed in this article were used to score the current state of social governance in the 12 communities by the experts, constructing the evaluation factor set. Objective scores were given based on the communities' social governance performance, and the first round of scoring results was compiled. Through multiple feedback rounds using the Delphi method, the initial evaluation results for each community were formed, constructing the comment set for the effectiveness of community social governance. With the factor set and comment set established, and referring to the weight coefficients (determined through a back-to-back approach by the expert group), an evaluation was conducted for each community. After consulting with the expert group, statistics for each community's single evaluation factors were compiled, with Community A's single-factor evaluation vectors in this evaluation round being:

Public Satisfaction with the Government	(0.19, 0.12, 0.17, 0.21, 0.16, 0.15)
Residents' Sense of Fairness	(0.21, 0.09, 0.18, 0.24, 0.17, 0.11)
Residents' Sense of Happiness	(0.18, 0.19, 0.15, 0.19, 0.21, 0.08)
Residents' Sense of Participation	(0.11, 0.17, 0.12, 0.18, 0.22, 0.20)
Residents' Sense of Security	(0.19, 0.16, 0.20, 0.14, 0.19, 0.12)
Residents' Future Expectations	(0.13, 0.14, 0.16, 0.19, 0.15, 0.23)

Constructing the Evaluation Matrix, Table 7:

Table 7

**Evaluation Matrix for Public Satisfaction with
Social Governance in Community A**

		V	Weight	V ₁	V ₂	V ₃	V ₄	V ₅
Community A	U	U₁	0.2	0.19	0.21	0.18	0.11	0.19
		U₂	0.1	0.12	0.09	0.19	0.17	0.16
		U₃	0.2	0.17	0.18	0.15	0.12	0.20
		U₄	0.2	0.21	0.24	0.19	0.18	0.14
		U₅	0.1	0.16	0.17	0.21	0.22	0.19
		U₆	0.2	0.15	0.11	0.08	0.20	0.12

Source: prepared by authors.

Through the judgment matrix R, the fuzzy vector X on factor set U is transformed into a fuzzy set on comment set V using the "weighted average type operator." The result $W = (0.198, 0.196, 0.199, 0.208, 0.199)$ is obtained. Assigning scores to each comment, with V_1 receiving 100 points, V_2 receiving 80 points, V_3 receiving 60 points, V_4 receiving 40 points, and V_5 receiving 20 points. After calculation, the final evaluation result for public satisfaction with social governance is 59.74.

After the entire evaluation process, the final ranking of public satisfaction with social governance across the 12 communities is as follows: Community L, Community B, Community F, Community D, Community J, Community I, Community E, Community G, Community A, Community C, Community K, Community H. The evaluation results transition from the initial qualitative comments: Very Satisfied, Satisfied, Neutral, Dissatisfied, Very Dissatisfied, to the final quantitative evaluation outcomes. This transition highlights the scientific nature of the evaluation process, as well as the accuracy and definitiveness of the final results.

5. Discussion

With the development of society and the increasing diversification of public demands, the level and effectiveness of social governance have attracted widespread attention. Public satisfaction, as an important indicator to measure the quality of social governance, highlights the significance of the scientific and accurate evaluation methods. This article utilizes the fuzzy comprehensive evaluation method to assess public satisfaction with social governance and delves into a discussion on the evaluation results. In the evaluation of public satisfaction with social governance, due to many factors that are difficult to quantify or have fuzzy boundaries, this method demonstrates unique advantages. By constructing factor sets, weight sets, and evaluation sets, the fuzzy comprehensive evaluation method can comprehensively and accurately reflect public satisfaction with social governance.

Based on current research, the application scope of the fuzzy comprehensive evaluation method is quite broad. This evaluation method, based on fuzzy mathematics, is suitable for evaluation problems involving fuzziness, uncertainty, or incompleteness. The academic community has applied this method in multiple fields, resulting in a wealth of research conclusions, mainly involving classroom teaching for civic lessons [19], investment in renewable energy [20], evaluation of flight performance for trainee pilots [21], evaluation of university students' learning [22], issues of electricity consumption [23], safety evaluation of pipelines in permafrost regions [24], cloud manufacturing service assessment [25], safety evaluation of commercial vehicle driving behavior [26], and measurement of information environment changes [27]. From the existing research on the application fields of the fuzzy comprehensive evaluation method, there is a scarcity of studies applying this method in the

field of social governance. This research, to some extent, expands the application scope of the method, presenting a novel perspective with significant inspirational and important value.

Additionally, this study observes that the theoretical research on public satisfaction with social governance is limited, with most studies employing qualitative research and empirical analysis, and fewer applying the fuzzy comprehensive evaluation method. The main methods include surveys and interviews [28], third-party evaluations [29], qualitative research methods, literature review [30], descriptive and inferential statistical methods [31], focusing on the introduction of "soft" indicators into good governance indicators [32], optimal scale regression model analysis [33], investigating conflicts of interest [34], and establishing hypothesis models with verification analysis using AMOS software [35]. Existing research on satisfaction evaluation in governance reveals a scarcity of studies applying the fuzzy comprehensive evaluation method to social governance satisfaction evaluations. This research explores evaluation methods for public satisfaction with social governance, most importantly, discovering that satisfaction, a qualitative measurement indicator, can be quantitatively measured, offering a new approach to other research aspects of social governance.

Therefore, this study believes that transforming satisfaction from qualitative to quantitative research holds significant value and meaning. Building on the theoretical foundation of social governance satisfaction research, presenting it in a quantified manner further emphasizes the scientific nature of the evaluation. This study, under the perspective of social governance, employs the fuzzy comprehensive evaluation method to evaluate and research public satisfaction with governance, further exploring its application scope. The use of the fuzzy comprehensive evaluation method in studying public satisfaction with social governance plays an important role, enriching the theoretical research on public satisfaction with social governance to some extent and potentially aiding the current stage in strengthening and improving evaluations of public satisfaction with social governance.

The application of the fuzzy comprehensive evaluation method in evaluating public satisfaction with social governance across 12 communities in Y Street, C City, S Region, has demonstrated effective evaluation performance, providing scientific and quantified evaluation results for the entire street's social governance. According to the calculations of the fuzzy comprehensive evaluation method, overall public satisfaction with social governance is high, but there is still room for improvement in specific aspects. The specific evaluation results can serve as an assessment of community governance performance, and the issues exposed during the evaluation process are relatively clear. Addressing these issues specifically in the subsequent social governance work can lead to targeted improvements. Evaluating public satisfaction with the government, residents' sense of fairness, happiness, participation, security, and future expectations can better reflect community residents' views on the social governance effectiveness of their grassroots self-governing organizations. Meanwhile, different levels of resident satisfaction reflected in different dimensions across communities indicate that communities with better performance can showcase their governance practices within Y Street, helping other communities to improve, further enhancing resident satisfaction with social governance in their community.

6. Conclusion

This study has scientifically selected six indicators that affect public satisfaction with

social governance and established an objective and reasonable set of comments. By utilizing the fuzzy comprehensive evaluation method, a scientific and reasonable evaluation of public satisfaction with social governance has been conducted. Evaluating public satisfaction with social governance has always been a challenging issue in assessing the performance of social governance. The application of the fuzzy comprehensive evaluation method provides a more scientific and reasonable approach for conducting evaluation research. The evaluation results possess certain scientific validity and practicality. These results can be used to carry out other aspects of work, promoting the improvement of social governance capabilities and the involvement of community residents in social governance to form a development trend of co-construction, co-governance, and sharing.

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