

Research on the standardization of social forces involved in the building of institutions providing childcare services against the backdrop of policies supporting fertility—Taking Hangzhou City in Zhejiang Province as an example

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Abstract: The low fertility rate is becoming a significant barrier to China's population growth. The state actively addresses population issues and makes ongoing improvements to the pertinent policy framework using mechanisms like fertility policy and fertility support policy. Creating equitable childcare options is a crucial endeavor for generating income. In the process of creating childcare services, societal forces play a significant role in addition to the government, but their management and operation in childcare service institutions is fraught with issues. This research offers pertinent countermeasures and recommendations for the development of social forces to engage in the creation of childcare service institutions by way of standardization through the effectiveness evaluation of the existing childcare institutions.

1. Introduction

The aging populace and low birth rate in China are made worse. To address this issue, the government has improved its fertility support policy and constantly adjusted its fertility policy in recent years. The two-child and three-child policies' complete implementation has resulted in a sharp increase in the need for public childcare services among families. The education and upbringing of young children, ages 0 to 3, has emerged as a contentious and challenging problem of general concern to society ^[1]. However, there are issues like poor management and supervision standards of childcare institutions, unprotected service quality, and low social efficiency at the moment because the primary group involved in the implementation of public childcare services in China is a single entity. To increase total effectiveness, social forces must urgently get involved in the creation of childcare services. A key strategy for delivering high-quality public childcare

services is the standardization of childcare service growth. Social forces, as the primary provider of socialized childcare, contribute to the standardization of childcare facilities' construction, which can significantly enhance the public childcare and care development system. It is challenging to implement social forces' participation in public childcare services in China on a big scale because it lacks a certain theoretical foundation and has not yet developed into a full-fledged standard system.

2. The effectiveness evaluation of the construction and management of childcare institutions in China

This study creates a pertinent index system using a questionnaire survey and assesses the efficacy of childcare institutions based on it in order to further improve the quality of childcare facilities in China.

2.1 Effectiveness evaluation model of construction and management of childcare institutions

This study creates an index system with "place facilities," "inner management," "service provision," and "social forces" as the first-level indicators. The second-level indicators of "place facilities" are "place requirements" and "supporting facilities," and the second-level indicators of "inner management" are "system norms", "training management" and "archives management". The creation of "service plans", "daily service", and "activity development" are second-level indications of "service provision," whereas "construction" and "operation" are second-level indicators of "social force." In this study, the building and administration of care institutions are empirically investigated using the entropy weight technique on the basis of taking care institutions and groups with care needs in Hangzhou as a whole.

2.2 Application analysis of the effectiveness evaluation model of the construction and management of nursery institutions

2.2.1 The principle of entropy weight method

A. Data standardization. The standardization of the construction and management of childcare institutions and the standardization of a three-level indicators of effectiveness are standardized respectively. Then the a indicators X_1, X_2, \dots, X_a , in any set of indicators $X_i = \{x_1, x_2, \dots, x_{105}\}$, the standardized value of the a indicator data is Y_1, Y_2, \dots, Y_a , then:

$$Y_{ij} = \frac{x_{ij} - \min(X_i)}{\max(X_i) - \min(X_i)} \quad (1)$$

B. Calculate the information entropy of a three-level indicator of the standardization and effectiveness of the construction and management of childcare institutions. According to the definition of information entropy, the information entropy of a set of data can be expressed as:

$$E_j = -\ln(n)^{-1} \sum_{i=1}^n p_{ij} \ln p_{ij} \quad (2)$$

$$p_{ij} = \frac{Y_{ij}}{\sum_{i=1}^n Y_{ij}} \quad (3)$$

Therefore, the information entropy of the index j is $E_j (j = 1, 2, \dots, a)$

$$E_j = -\ln(105)^{-1} \sum_{i=1}^{105} p_{ij} \ln p_{ij} \quad (i = 1, 2, \dots, 105) \quad (4)$$

C. Determining the weight of each index. According to the calculation formula of information entropy, the information entropy of each index is E_1, E_2, \dots, E_a . Then the weight of each index is

calculated by information entropy:

$$W_i = \frac{1-E_i}{k-\sum E_i} (i = 1,2, \dots, 105) \quad (5)$$

2.2.2 Optimizing the evaluation standard system of social forces participating in the construction and management of childcare institutions based on entropy weight method

With the help of MATLAB (R2021a), the weight of 33 three-level indicators in the standardized path analysis model for the construction and management of nursery institutions is solved by the above method. According to the weight of the corresponding three-level indicators, the weights of 10 second-level indicators and 4 first-level indicators are obtained (see table 1).

Table 1: Weight of each index in the analysis model of construction and management of childcare institutions

First-level index	weight	Second-level index	weight	Third-level index	weight
Place facility	0.2589	Place requirements	0.1555	Set up striking signs and safety warning signs for childcare institutions	0.0320
				Construct cultural content such as cultural wall and exhibition board of childcare institutions	0.0408
				No indoor and outdoor dangerous facilities and security risks	0.0394
				According to the age characteristics and growth needs of children, the activity areas are reasonably divided.	0.0433
		Supporting facilities	0.1035	It is equipped with bookshelves and more than 150 books for children of all ages.	0.0306
				Equipped with basic health care products, including disinfection supplies, first aid kits, etc.	0.0279
				Equipped with various sports sports equipment	0.0225
				Equipped with basic equipment, such as desks and chairs, office supplies, multimedia, etc.	0.0224
Inner management	0.3559	Institutional norms	0.1354	The management, operation and voluntary service system of childcare institutions form a text compilation, and the opening time and service content of the external announcement are announced.	0.0311
				Safety management and other relevant responsible persons are clear, and earnestly fulfill the responsibility of management and protection.	0.0257
				Component security crisis management team, the establishment of emergency plans to deal with various disasters, accidental injuries, infectious diseases and other emergencies, and to inform the guardian of the safety responsibility.	0.0308
				There are clear rules and regulations for fire prevention, discharge, accident prevention and other safety precautions.	0.0254
		Management training	0.1245	At least 2 times a year to carry out family education guidance services for parents.	0.0404
				Carry out family education practice twice a year.	0.0442
				Education and training for employees no less than once a month.	0.0399
		Archives management	0.0959	Establish children 's files for each child in the area of childcare services	0.0339
				It has an independent financial accounting system, an annual plan summary, fund management standards, special funds, and special accounting.	0.0346

First-level index	weight	Second-level index	weight	Third-level index	weight
Service provision	0.2818	Make service plan	0.0658	To achieve a visit survey to examine specific needs	0.0274
				Make annual service plan, monthly work plan, etc.	0.0384
		Daily services	0.0470	Morning and noon check-ups of children entering and leaving childcare institutions and registration manuals are conducted daily	0.0219
				Open nursery institutions every day, special circumstances English superiors to discuss decisions	0.0251
		Activities carried out	0.1690	According to the needs of children of different ages, activities such as games, entertainment, reading and social practice should be organized at least once a week.	0.0256
				No less than 2 security exercises are conducted every year.	0.0309
				Propagandize the knowledge of "five preventions," girls ' protection and children's rule of law to children and parents at least once a month.	0.0235
				Establish day care services in the jurisdiction, and provide course counseling and hosting services at least once a week.	0.0246
				Provide mental health services at least once a month.	0.0329
				Carry out not less than one summer camp, winter camp, labor experience, environmental protection and other practical activities every year.	0.0314
		Social forces	0.1808	Construction	0.0842
Indoor overall site area \geq 40 square meters	0.0284				
Operation	0.0966			With one or more full-time staff, including village (district) workers, children 's social workers, etc.	0.0277
				Have a stable service team, and can carry out daily activities.	0.0241
				Contains professional venues and facilities, and is equipped with the relevant health care, rehabilitation and special education expert database, conditional can be configured related personnel	0.0219
				Has a perfect party organization	0.0230

Table 1 shows that the internal management dimension accounts for the highest percentage. Thus, it is essential to enhance the internal management of childcare institutions in order to increase the high-quality development of social forces involved in the development and administration of childcare institutions. Although the weight of the dimension of social forces is only 0.18, it is nevertheless required to combine experience and analysis since it serves as a crucial benchmark for the long-term growth of childcare institutions.

3. The experience and challenges of the construction and management of childcare institutions in China

3.1 Experience of construction and management of childcare institutions

3.1.1 Promote the participation of social forces

As the first inclusive nursery institution in Hangzhou organized jointly by streets, communities, and social forces, the milk castle on Changqing Street in Gongshu District has received strong support from the streets in terms of venues, providing free nursery institutions with venues to bear the cost of water and electricity, etc., and lowering the price in terms of fees, which lessens the financial pressure on many parents and realizes the construction of an inclusive nursery. The involvement of social forces in the development of government-run and socially managed inclusive

childcare facilities is crucial. The government should actively take part in the development of inclusive childcare facilities, strictly prevent and regulate every aspect to encourage participation by the entire society, solve problems, create favorable conditions, prioritize the development of talents with special abilities, and allay the concerns of the parents. ^[2]

3.1.2 Ensure the health and safety of infants, pay attention to scientific growth

In order to handle safety supervision dynamically, cameras are installed from every angle in the Changqing Street kindergarten in Gongshu District. These cameras are all connected to Changqing Street and Hangzhou's "urban brain". Because childcare facilities need to be able to satisfy parents to the best of their ability, parents are most concerned about the health and welfare of their children. To prevent and manage every link, relevant departments across the nation should consider food safety issues carefully. Childcare facilities play a significant part in scientific childrearing in addition to their role in facilitating childrearing. As a result, the caliber of educators and caretakers in childcare facilities is also crucial. ^[3]

3.2 Challenges in the construction and management of childcare institutions

3.2.1 Typical absence of "defeat" absence of a qualified team, and short board

The quality of current childcare services and workers is uneven due to a lack of access, evaluation, assessment, and other standards. In childcare education, the moral character of workers and their psychological makeup are crucial. The entire society shares the shared goal of ensuring that children grow up in a secure and healthy environment. However, parents are more inclined to send their kids to public rather than private daycare facilities because they are less trustworthy and focus more on parents' financial circumstances.

3.2.2 Low enrollment rate, private childcare institutions in embarrassment

According to the survey, private childcare facilities are "promising," but some of them are stuck in the awkward situation of having to take on children who aren't happy. On the one hand, the kids live a group life once they start kindergarten. The one-to-one or even many-to-one refined care provided in the home differs from the one-to-five or one-to-seven care provided in institutions. On the other hand, many private childcare facilities charge prices that are out of reach for locals, thus inclusivity is still a ways off. Yet, childcare facilities also have challenges. It is critically necessary to find solutions for issues such as the significant one-time construction investment, rent, and labor costs that make it challenging to balance revenue and expenditure. ^[4]

4. Promoting social forces to participate in the construction and management of childcare institutions with standardization

Due to the uniformity of the following factors, this article elaborates on the implementation plan for encouraging social forces to take part in the creation and administration of childcare institutions.

4.1 Strengthen government-led and regulatory role

The government must improve management, implement "allow parents satisfied childcare," avoid focusing just on quantity without taking quality into account, and attempt to balance "quality" and "quantity" simultaneously and assume the role of the government's leader.^[5] Increase the importance of government oversight. The government needs to create and improve quality

standards for childcare services as well as a method for evaluating those services. The emphasis is on the quantifiable evaluation of different childcare indicators through official evaluation, institutional self-evaluation, and third-party evaluation. Create a dynamic supervision system and include daycare in the administrative supervision system. The service level and standard of childcare institutions' services are enhanced by the creation of a joint supervision leading group.

4.2 Give full play to social forces to participate in the standardization construction of childcare institutions

Financial assistance is needed in large quantities for the construction of childcare facilities. To support the quick and effective growth of the childcare services sector, the government should urge social capital to engage in the development of pertinent markets, integrate public and public capital, and collaborate in institutional construction and staffing. Making provisions for staff, locations, and facilities will enable societal forces to engage in the development of childcare institutions. Corresponding access standards must also be developed. We can only encourage the growth of the infant childcare industry in the direction of high quality and standardization by fully utilizing the advantages of social forces involved in the building of childcare institutions.

4.3 Innovate the smart childcare model and build a standardized system for smart childcare

The general trend in childcare is toward intelligence and technology. In order to address the specialized and varied needs of smart childcare, it is imperative to aggressively support the digital and intelligent transformation of childcare services.^[6] Actively develop innovative childcare models. First, we need to actively create a digital information platform, envision how childcare facilities manage their services and safety, and understand how regulators, childcare facilities, and parents are interconnected. Second, we must actively integrate social, medical, and other service resources while creating a system of diversified, intelligent childcare. Urge social forces to utilize their own assets and offer more services that are diversified.

5. Conclusion

To ensure that fertility support policies are implemented effectively, it is crucial to keep refining the system for implementing them, bolstering the government's and all other social sectors' roles in the effort to increase fertility rates, and making clear the power and responsibility relationships between the various subjects. An essential assurance for women's fertility and parenthood is provided by inclusive childcare services. It is important to actively promote the social force participation model. A crucial component of increasing reproduction is creating a system of uniform fertility support policies.

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References

- [1] Chen Jian, Wang Zongjing. *A Brief Analysis on the Construction of Childcare Service System for Infants Aged 0-3 in Qingdao City* [J]. *Education and Teaching Forum*, 2020, No. 484 (38): 131-132.
- [2] Zou Tiran, Liu Wei, Zeng Chenlu. *Nursery Park, so that employees can take their babies to work* [N]. *Workers' Daily*, 2022-07-26 (002).
- [3] Shi Chunyan. *Research on the Cultivation and Construction of Professional Talents in Infant Care Service and Management in Hangzhou Higher Vocational Colleges* [J]. *The Theory and Practice of Innovation and Entrepreneurship*, 2023, 6 (01): 64-66.
- [4] Qian Dongmei. *Research on the Nursery Care Service Management in China—Based on A Case Study in Hangzhou* [D]. *Shanghai Ocean University*, 2022.
- [5] Zhou Yingya. *Investigation and analysis of the service demand of parents of infants and young children aged 0-3 years in Jiangsu Province and suggestions for supply-side reform* [J]. *Oriental Dolls · Conservation and Education*, 2022, No. 842 (Z1): 45-49.
- [6] Huang Kuang, Li Zi. *Analysis of the current situation of smart childcare demand in China* [J]. *Population and Health*, 2021, No. 292 (12): 17-19.