

# Reference Effect of Preschool Teachers' Salary and Its Influence on Preschools' Service Quality: An Empirical Study in China

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**Abstract:** Research from the Organisation for Economic Co-operation and Development (OECD) has found strong links between the pay and conditions of preschool teachers and the quality of preschool service provided. In order to improve the quality of private preschool, China puts forward "Several Opinions on Deepening the Reform and Standardized Development of Preschool Education" at the end of 2018, which mentioned that private preschool teachers' salaries should refer to public preschool teachers. This involves the influence of different types of preschool teachers, and the impact of their salaries on the quality of preschools. Although teacher's salary is an important research topic in the world, the reference of teachers' salary between different types of preschools and its influence on preschools' service quality have not been studied in previous literature. In order to solve this question, this study draws the following three conclusions based on a survey in two districts from China with different numbers of public and private preschools: (1) The teachers' salary of public preschools does have a referential effect on the teachers' salary of private preschools; (2) It works only when the supply of public preschools in a region is relatively inadequate, the teachers' salary of public preschools will play a reference role on the teachers' salary of private preschools; (3) Compared to regions with reference salaries, regions without reference salaries are more conducive to the improvement of preschool service quality. While the education system differ, the problem discussed in this research reflects a challenge faced by many countries.

**Keywords:** Preschool Teachers, Teachers' Salary, Service Quality, Policy

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## 1. Introduction

The salaries of early childhood teachers are a key factor to improve the service quality of Early Childhood Education and Care (ECEC). As well as qualifications and experience the Organisation for Economic Cooperation and Development (OECD) found that staff salary and conditions were a significant quality lever for the delivery of programs for young children (2012). In the publication *Starting Strong III: A quality toolbox for early childhood education and care* (2012), the OECD identified improving working conditions as a main policy lever for developing high-quality early childhood education services. Competitive salaries were seen as a main way to improve working conditions. This finding

presents a problem for many countries, not only because early childhood staff tend to lag behind those in similar positions working in formal education settings with older children but a push for universal access in recent years has meant many countries face severe staffing shortages in the early childhood workforce. Countries that face this problem include China, Australia and Germany. This is a common issue.

Many countries have made policies to improve ECEC staff pay. For instance New Zealand, who has supply side funding that allocates more resources to centres with higher levels of qualified staff [1]. Sweden introduced a Teacher Salary Boost Initiative in 2016 which is presently being evaluated [2]. China's policy initiatives, announced in 2018 [3], are described later in the paper. Australia has been criticized by

the OECD (2019) for the amount it budgets for ECEC and having no policy to boost the salaries of qualified staff. In recent years more and more researchers and policy makers have focused on the salaries of preschool teachers [4]. They regard raising teachers' salaries as an important means to provide high service quality of ECEC.

Then an important question naturally arises: how can the government ensure that teachers have the potential to provide high-quality services in the public and private sectors with different sources of funding? The research reported on here is framed within the new policy agenda, announced by the Chinese government in 2018, which seeks to expand public provision of early childhood education and also control fees by subsidizing preschools that will be registered as 'affordable preschools'. The "Opinions" clearly require private preschool teachers to refer to the salary of public preschool teachers to ensure the service quality of private preschool. An empirical study was conducted to see if preschool teachers' salary would be affected by such a policy change. This study compared the salaries of teachers' in public, affordable and private preschools, in two districts of Beijing with similar demographic profiles but differing numbers of public preschool services. Based on different types of services and teachers, and their respective salary levels, the empirical question explored was:

*Will the salary of teachers in public preschools have a reference effect on the salary of teachers in private preschools? Under what conditions does this reference effect work? Will this kind of reference effect affect the quality of private preschools' service?*

The paper presents a brief review of the literature on early childhood teachers' salaries and then explains the Chinese context for the research. The research project is described and data analysed. Findings are presented for the study and implications of the findings are discussed in the broader international early childhood context. As countries strive to provide universal, accessible early childhood education there are useful discussions for policy makers to consider if strategies are to be implemented that will support preschool service quality in a mixed market environment.

## 2. Literature Review

Salary is an important factor in attracting staff to enter the early childhood education sector [5]. Low salaries will impact on quality of living and it is difficult to evaluate the value of the work. It also depreciates the social status of the occupation. When the salary is obviously lower than that in other fields, it is difficult to attract qualified graduates to engage in early childhood education and care. Those employed in the industry may choose to leave and improve their economic situation through professional cross-industry flow [6].

Early childhood education and care is a female-dominated industry. Structural theory argues that the difference of gender behavior and perception grows out of the different social locations occupied by men and women [7]. West and Zimmerman proposed the theory of "doing gender" which

describes gender differences as the outcome of interactions constructed and reproduced on a society level between men and women [8]. Women are often viewed as traditional nurturers with primary responsibility for caring for their children. Taking care of children is considered a feminine occupation. So ECEC positions are deemed to require feminine behavior. Men act like men because they occupy the jobs that require competition, physical confrontation and leadership in society. Although women make up the majority of the workforce in the early childhood education and care industry, this is a relatively low-wage industry and it also has gender pay gap. For instance, women being over 89% of all employees in the sector in Australia, and over 97% in China. But in Australia women earn on average 31.9% less than men. In China, women earn on average 32.1% less than men. In the early childhood industry one finding is that there is a different division of labor between men and women which leads to unequal distribution.

Meanwhile, lack of trained staff and public investment can lead the government to relax the requirements for the qualifications of early childhood teachers and educators [9] which helps to confirm and strengthen the low expectations the society has for the abilities of these staff and thus forms a vicious circle of salary level maintenance or continuous decline. This situation makes it difficult to achieve the policy aim of improving the entry threshold of early childhood teachers and strengthening training to improve service quality and enact reforms in the sector [10]. The higher the qualifications and abilities of staff, the higher their investment in human capital. The external competition mechanism of salary will lead to a loss of talent from the industry. Meanwhile, there are also huge wage differences within the early childhood education and care industry. Highly qualified or experienced, staff are more likely to move between preschools in search of better pay and working conditions [11].

Staff insecurity and low retention has an impact on a number of areas of practice. In early childhood education, the staff-child relationship and parent-relationship are especially important providing continuity, stability and mutual trust which are very important for children and their families [12]. Frequent staff turnover breaks the possibility of establishing a continuing and stable relationship between staff and children, staff and parents, and even colleagues in preschools. Lack of supportive on-going relations can negatively affect the development of children's language and social development [13].

Low salaries and social status may also affect the psychological state of staff, their attitude to their work, motivation and have side effects like high absenteeism [11]. Some studies have found that low income is related to job burnout [11], job burnout, at its most serious can see staff become insensitive to children's needs and can cause long term damage to children and the staff member if they are unable to carry out an effective education program. Low income can lead to financial stress, weaken the motivation of staff to seek further educational opportunities and training [11]. As identified by the OECD (2012, 2019), salary is a measure of service quality and is a crucial policy lever [5].

However, we can not look at the salary of early childhood teachers in general. Because early childhood teachers work in a sector that is often a mix of public and private. Especially as preschool education is not part of compulsory education, which is dominated by the public sector. In different regions of China the proportion of private preschools in ECEC varies greatly. James (1993) framed an explanation of reasons for the emergence of private education services. According to her theory, the emergence of private education can be divided into two: excess demand and differentiated demand [14]. The former is due to public spending being inadequate to meet the quantitative needs of the family, which led to the emergence of private educational institutions to supplement the public education. This explanation of the emergence of private education is closer to the traditional Chinese saying about private education “complementary theory”, that is, “private education is a useful supplement to public education” [15]. Differentiated demand is due to family desire to seek a

different form of education from that offered in the public sector. Demand for such programs might stem from cultural or quality preferences, or for special services. James explanation also provides a rationale for the existence of private preschool education in different regions.

The reason why the private sector is offering educational services in particular areas may have an upward or downward influence on quality [16]. This influence mechanism comes from the form of educational services provided as James said. And teachers are the carrier of different forms of educational services. Therefore, the different forms of educational services provided by private sector may lead to the formation of reference teachers' salaries between the private preschools and public preschools. Especially when these two types of teachers can cross-preschool flow within the industry through the form of salary reference. Previous studies have not addressed the reference between these salaries and their possible impact on the quality of preschool service.

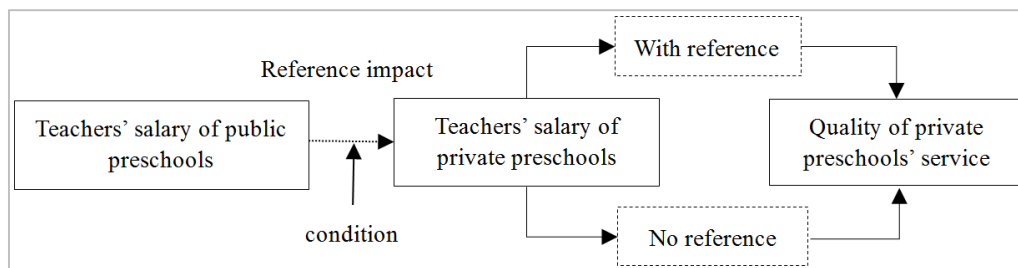


Figure 1. The framework of this research.

### 3. The Chinese Context

At the end of 2018, the Central Committee of the Communist Party of China and the State Council issued “Some Opinions on Deepening the Reform and Normative Development of Early Childhood Education”, which can be considered to be the most concrete and powerful policy document for standardizing the development of early childhood education in China in the past ten years. The “Opinions” on the construction of a preschool educator workforce are reflected in the fifth section, which states the aim of strengthening the building of the early childhood educator workforce.

The “Opinions” paid great attention to the status and salaries of preschool teachers in section five. Among the document recommendations is one that suggests to enhance work conditions for preschool teachers and attract more teachers, and public preschool salaries should be the benchmark to determine the salary level of teachers in private preschools. Policymakers want public and private preschool teachers to be paid at the same level. The aim is to set a reference standard for the salary of private preschool teachers driven by the market and to reduce the turnover rate of private preschool teachers.

Preschools in China can be divided into three kinds: Public preschools; Affordable preschools; Private preschools [4]. Their characteristics can be seen in the Table 1.

Table 1. Types of preschools in China.

Preschool Types	Fund	Tuition fee	Motivation
Public	Funded by local government	Tuition regulated; Low	Social Welfare Drive
Affordable	Funded by private sources and subsidized by local government	Tuition regulated; Low	Social Welfare Drive
Private	Funded by profit	Tuition is not regulated; High	Market-driven and for profit

Correspondingly, there are three kinds of preschool teachers in China: Government teachers (1) in public preschools; Non-government teachers (2) in public preschools; Private teachers (3) in affordable preschools and private preschools [4]. Their characteristics can be seen in the Table 2.

Usually, the order of preschool teachers' salaries in a region is: (1)> (2)> (3). Due to the low salary of private preschool

teachers, the government finds that the quality of teachers in private preschools is worrying [17], and there have been scandals of child abuse by teachers [18]. The “Opinions” were aimed at raising the salary of private preschool teachers by using public preschool teachers as a reference and standard. Some Chinese researchers believe that the intention of the government is to refer the private preschool teachers (3) to the

level of the public preschool teachers (1) [4]. However, they suspect that private preschools will not refer to (1) in reality, but refer to the non-government teachers in preschools (2).

One reason is that neither (2) or (3) are government employees and they can move between non-government positions without obstacles.

*Table 2. Types of preschool teachers in China.*

Teacher types	Employment	Salaries	Staff turnover
Government teachers (1)	Work in public preschools. Government employees paid directly from government budget	High. Paid by the same system as public primary school teachers. Discretion of the Director.	Low
Non-government teachers (2)	Work in public preschools. Paid directly from the preschool through government subsidies that are determined by child staff ratio	May pay lower salaries than (1) and use extra funds for other purposes.	High. Very few (2) can get a government position to become (1). But (2) and (3) can flow without obstacles.
Private teachers (3)	Work in affordable preschools and private preschools. From small business through to foreign corporation. Paid indirectly from tuition fees and government subsidies.	Market driven. One market driver might be salaries of non-government teachers.	High. Some of them become to (2).

Based on the above analysis, we propose the research hypothesis: in the two regions with the same level of socio-economic development, the salary of private preschool teachers in the regions with more non-government teachers (2) is lower.

## 4. Research Design and Method

As the Chinese government attempts to regulate affordability of early childhood education and care through targeted subsidies and similar strategies we asked: In what circumstances will teachers' salaries in public preschools play a reference role in determining the salaries of teachers in the private preschools? Whether this referential effect affects differences in the quality of private preschool service? Therefore, the question for this research was: Will the salary of non-government teachers in public preschools have a reference effect on the salary of teachers in private preschools? Under what conditions does this reference work? Will this kind of reference affect the quality of private preschool service?

The research was designed to verify whether the lower salary of teachers in private preschools is influenced by non-government teachers from public preschools, that is the conjecture of the Chinese scholars cited above. They believe that the existence of more non-government teachers in public preschools will depress the salaries of teachers in private preschools. Therefore, two areas with similar economic status, land area, population and development level were chosen for this study. The difference is in the level of public provision of early childhood services in each area. If area A has more public non-government teachers than area B, observing whether the salary of private preschool teachers in area A is lower will help answer the question.

For this quantitative case study two districts of Beijing were selected, Haidian district and Chaoyang district in order to validate the conjecture that the salaries of private teachers will be more strongly referenced to non-government public teachers than to public teachers. A randomized controlled trial was initiated with an experimental unit to meet the conditions of random distribution [19]. This research method is often used in

psychology because of its advantages in addressing causal inference. However, in other social sciences because of research ethics and budget constraints, it is difficult to really carry out a randomized controlled trial, so the researchers tend to choose in a more natural experiment under the condition of processing methods, according to different individuals due to the system, the location, the policy or project implementation differences such as time, make the situation between the individual differences in look "like" is randomly assigned, we call this approach quasi-experiment or natural experiment. Natural experiment can effectively avoid the research ethics and capital budget constraint limits on to conduct research. The research method used in this study is exactly based on such a natural experiment.

### 4.1. The Setting

The reason for choosing Haidian District and Chaoyang District is because they constitute two suitable groups for a natural experiment for the purpose of this research. The two are very close in total economic volume. In the 2016 GDP ranking of Beijing, Haidian District ranked first with 50.36 billion yuan and Chaoyang District ranked second with 50.16 billion yuan. In terms of per capita GDP, Haidian District ranked forth with per capita GDP of 144,000 yuan and Chaoyang District ranked fifth with per capita GDP of 134,000 yuan. The per capita disposable income in Haidian District ranked third and was 71986 yuan while Chaoyang District ranked fourth with 64841 yuan the per capita disposable. The population of Chaoyang District ranked first in Beijing with 39.555 million people, and Haidian District ranked second with 36.944 million people. They are also very close in terms of size. The land area of Chaoyang District is 470.8 square kilometers, and Haidian District is 430.8 square kilometers. The area of the two is the closest in the six main districts of Beijing. These two districts are located in the east and west of Beijing City. The geographical distance between the two districts is about a one-hour drive. A major difference between the two is the proportion of registered public preschools. At the end of 2016, the number of registered public preschools in Chaoyang District was 109,

and the number of registered public preschools in Haidian District was 146. But the number of registered preschools in Chaoyang District was 299, much more than the 188 in Haidian District. The proportion of public preschools in Haidian District is therefore more than twice that of Chaoyang District. Table 3 gives a brief socio/demographic description of each area.

**Table 3.** A brief socio/demographic description of each area.

Indicators for 2016	Haidian District	Chaoyang District
GDP (RMB)	50.36 billion	50.16 billion
Per capita GDP (RMB)	144 thousand	134 thousand
Per capita disposable income (RMB)	71986	64841
Population	36.944 million	39.555 million
Area covered (KM <sup>2</sup> )	430.8	470.8
Public Preschools (Numbers)	146	109
Registered Preschools (Numbers)	188	299
The proportion of public preschool	77.70%	36.5%

Note: Beijing Statistical Bureau (2017) (<http://tjj.beijing.gov.cn/>).

Because the number of government teachers in public preschools are regulated at a fixed rate Haidian District has a larger group of non-government teachers in public preschools than Chaoyang, which creates favorable conditions for conducting a natural experiment. Haidian District was a treatment group, Chaoyang District was a control group, and a controlled trial analysis was conducted to observe whether or not private preschool teachers in Haidian District have lower salaries. If the conjecture held then the findings would indicate that the salary of private preschool teachers in Haidian District should be lower than that in Chaoyang District. Then we further observed the service quality difference between private preschools in Haidian district and Chaoyang District.

#### 4.2. Data and Analysis

Data were collected from a questionnaire survey of 693

in-service preschool teachers in Beijing in 2019. Our questionnaire was distributed randomly when these teachers were participating in an on-the-job training organized by Beijing Municipal Education Commission. These teachers come from 15 different districts in Beijing. Among them, there were 112 teachers in Haidian District from 63 different preschools and 123 teachers in Chaoyang District from 91 preschools. The teachers came from the three different types of preschool identified, public preschools, private preschools and affordable private preschools. 28 teachers in Haidian district and 15 teachers in Chaoyang district belong to the government teachers (1). But we don't care about this group. To order to understand the reference function of non-government teacher's (2) salary to private teacher's (3) salary, we only focus on the remaining 84 teachers in Haidian district and the remaining 108 teachers in Chaoyang District. Among them, Haidian District has 42 non-government teachers (2) and 42 private teachers (3). Chaoyang District has 32 non-government teachers (2) and 76 private teachers (3).

Information was gathered on two levels. The first level was to understand the basic situation of preschool teachers: This data consisted of information about the preschool region, the type of preschool, the quality rating and scales in terms of size and number of children. Because we collect data from teachers, in the absence of early childhood development assessment data, we use the preschool quality ratings as a proxy for measuring the quality of preschool service. There are four levels about the quality of preschool service: Municipal model, Rank 1, Rank 2, Rank 3. Their service quality gradually declines. (see Table 4).

The second level of data collected was personal information about individual of teachers. Data included gender, age, education background, preschool work experience, position, preschool type and quality ranking and average monthly salary. Table 5 presents the characteristics of the preschool teachers. (see Table 5).

**Table 4.** Characteristics of preschool.

Preschool	Haidian District		Chaoyang District			
		No.	%	No.	%	
Region	Main city	49	77.8	Main city	64	70.3
	Suburbs	14	22.2	Suburbs	27	29.7
	Total	63	100	Total	91	100
Type	Public	38	60.3	Public	28	41.8
	Private	23	36.5	Private	64	49.3
	Affordable private	2	3.2	Affordable private	8	8.9
	Total	63	100	Total	91	100
Overall Rating	Model	18	28.6	Model	10	11.0
	Rank 1	11	17.5	Rank 1	14	15.4
	Rank 2	14	22.2	Rank 2	27	29.6
	Rank 3	20	31.7	Rank 3	40	44.0
	Total	63	100	Total	91	100

Note: 1. Haidian District and Chaoyang District have a large area, both of which include areas close to the economic prosperity of the city center and areas at the edge of the city where economic development is backward. The former is called Main city. The latter is called Suburbs. 2. Beijing preschools are divided into three grades. Private preschools volunteer to participate in the evaluation. Rank 1 represents the best quality. Next is Rank 2. Rank 3 is mostly new preschools and some international preschools. Model belongs to the Rank 1, but its quality is higher in Rank 1 and becomes the model of other preschool.

*Table 5. Characteristics of preschool teachers in the survey.*

Staff	Haidian District			Chaoyang District		
		No.	%		No.	%
Years of schooling	9 years	1	1.2	9 years	2	1.9
	12 years	22	26.2	12 years	33	30.6
	15 years	47	56.0	15 years	60	55.5
	16 years	14	16.6	16 years	13	12.0
	Total	84	100	Total	108	100
Position	Lead Educator	7	8.3	Lead Educator	14	13.0
	Assistant Educator	43	51.2	Assistant Educator	46	42.6
	Nurse	34	40.5	Nurse	48	44.4
	Total	84	100	Total	108	100
Preschool Type	Public	42	50.0	Public	32	29.6
	Private	5	6.0	Private	59	54.6
	Affordable private	37	44.0	Affordable private	17	15.8
	Total	84	100	Total	108	100
Preschool Ranking	Model	34	40.5	Model	15	13.9
	Rank 1	11	13.1	Rank 2	15	13.9
	Rank 2	19	22.6	Rank 2	36	33.3
	Rank 3	20	23.8	Rank 3	42	38.9
	Total	84	100	Total	108	100
Salary:(RMB/month)	<2000	0	0	<2000	5	4.6
	2000-3000	22	26.1	2000-3000	33	30.5
	3000-4000	42	50.0	3000-4000	46	42.6
	4000-5000	13	15.5	4000-5000	14	13.0
	5000-6000	5	6.0	5000-6000	8	7.4
	>6000	2	2.4	>6000	2	1.9
	Total	84	100	Total	108	100
	Average	3325.1		Average	3189.8	

James' s (1993) theory of the causes of private education has been used to analyse and explain the difference of teachers' salaries between private preschools in the two regions. According to James's theory, Haidian District, should present as a strong traditional education area that has abundant public education resources across all stages of education, and a large number of public preschools dominate the field of preschool education. Therefore, the emergence of private preschools was assumed to be based on the differential needs of the people, rather than the excessive demand caused by a lack of public education.

In comparison, Chaoyang District has a large population and the public education in Chaoyang District is relatively inadequate in terms of meeting the needs of the public for basic access. The emergence of private education is based on the needs of the people to have access to preschools, though other factors may also be in play. Primarily private preschools are a supplement to the shortage of public preschools.

## 5. Results

### 5.1. Comparing Teachers' Salaries in the Two Districts

According to the statistical results, the average salary of the two types of teachers in Haidian and Chaoyang is 3325.1 yuan per month and 3189.8 yuan per month respectively. Among them, the average salary of non-government teachers in public preschools in Haidian district is 3254.6 yuan per month, while the average salary of non-government teachers in public preschools in Chaoyang district is 3326.1 yuan per month, but the two did not pass the significant difference test at the 5% level ( $\chi^2=3.209$ ,  $P>0.05$ ). The average salary of private

preschool teachers in Haidian District is 3395.6 yuan per month, while that of private preschool teachers in Chaoyang District is 3053.5 yuan per month, and the two have passed the significant difference test at the level of 5% ( $\chi^2=15.659$ ,  $P<0.05$ ). We found that Haidian District has more public preschools, so there are more non-government teachers in public preschools in Haidian District. In the sample, 50% of teachers in Haidian District are from public preschools, while in the sample, the proportion of non-government teachers in Chaoyang District is only 29.6%. Haidian district, however, private preschools teachers' salaries is not due to this area with a lot of public preschools and results in the decrease of private preschools teachers' salary, on the other hand, the average wage of private preschool teachers in Haidian district (3395.6 yuan/month) is obviously higher than that of Chaoyang district private preschools teachers' average salary (3053.5 yuan / month).

The above conclusion has more sufficient demonstration in the salary of private preschool with Model and private preschool with rank 3 in Haidian District and Chaoyang District. The average salary of teachers in private preschool with Model in Haidian District is 3285.3 yuan per month, which is significantly higher than the average salary of teachers in private preschool with Model in Chaoyang District, which is 3168.1 yuan per month. Moreover, which passed the significant difference test at the 5% level. The average salary of teachers in rank 3 private preschools in Haidian District was 3589.4 yuan per month, which was also significantly higher than the average salary of teachers in rank 3 private preschools in Chaoyang District, which was 3067.3 yuan per month, and passed the significant difference test at the 5% level. At the same time, we

found an interesting phenomenon, Haidian district, teachers' salaries in private preschool with rank 3 is significantly higher than private preschool with Model, which is the important reason to rise the private preschools teachers' average salary. Rank 3 private preschool often include many private international preschools and new preschools which aim to provide a different kind of early education and sometimes don't match the official rating system, but their high-quality preschool services tend to attract a lot of high-end families. So the salary premium for teachers from these preschools is higher. Chaoyang district did not have such a situation, showing a consistent trend. This may also prove that the private preschool in Haidian District are more differentiated. (see Table 6).

**Table 6.** Comparison of Teachers' Salaries in Private Preschools of Different Ranking in Haidian District and Chaoyang District.

Staff salary (RMB/month)	Haidian	Chaoyang	Difference test
Non-government (2)	3344.0	3382.7	-38.7
Private (3)	3395.6	3053.5	342.1**
The average salaries of (2) and (3)	3325.1	3189.8	135.3*
Private & Model	3285.3	3168.1	117.2**
Private & Rank 3	3589.4	3067.3	522.1**

## 5.2. Verification of Mincer's Income Equation

The influence of "Area" on the salary of private preschool teachers in Haidian District and Chaoyang District was examined through the extended Mincer income equation to further validate the influence of different factors on the salary of private preschool teachers.

In model (1), the Area variables on the basis of Mincer's equation have been added. In model (2), Area and Rank variables are added. In model (3), Area, Rank and Position variables are included. In each model, coefficients of Years of experience and Area are significant. It shows that besides work experience, the influence of the area where private preschool teachers work on their salaries is significant, and their education years are not significant in the three models. This also indicates that the salaries of private preschool teachers in Haidian District are higher than those of private preschool teachers in Chaoyang District. (see Table 7).

**Table 7.** Estimates of the Model for the salary of private preschool teachers in Haidian District and Chaoyang District.

Variables	model (1)	model (2)	model (3)
Years of schooling	.0157(0.618)	.0152(0.619)	.0158(0.619)
Years of experience	.0318**(0.343)	.0320**(0.333)	.0295*(0.332)
Years of experience <sup>2</sup>	-.0003(0.172)	-.0003(0.173)	-.0002(0.170)
Area	.0648*(1.901)	.0650*(1.903)	.0623*(0.903)
Rank		.0036(1.810)	.0024(1.872)
Position			-.0224(0.1276)
Adjusted R <sup>2</sup>	0.1612	0.1613	0.1642
D-W	2.3211	2.2123	2.1315
F	16.333	34.562	40.341

Note: \*p<.05; \*\*p<.01; \*\*\*p<.001.

## 5.3. Analysis to Service Quality

Now we investigate whether this kind of reference will affect the service quality of private preschool. Through the above

analysis, we know that preschool teachers' salary in Haidian District do not seek salary reference from non-governmental teachers' salary in public preschools, but Chaoyang district will. We take the "Area" as the reference independent proxy variable (Haidian=1; Chaoyang=0) and the private preschool quality ratings as the proxy dependent variable of quality (Model=0; Rank 1=1; Rank 2=2; Rank 3=3). Then we add some control variables that may affect the service quality, such as the size of the private preschool, the teachers' education background, the teachers' experience, and the private preschool tuition fees. Since the dependent variable has four quality ratings, we used the sorting data model and analyzed it using the Ologit regression. (see Table 8).

**Table 8.** The influence of salary reference on the service quality of private preschools.

Variables	Rank
Years of schooling	-.1863**(0.504)
Years of experience	-.0131(0.322)
Area	-.3151**(1.404)
Tuition fee	-.0083(1.586)
Size of preschool	-1.2280833
Cut 1	-1.4238
Cut 2	-0.3506
Cut 3	0.7809
Pseudo R <sup>2</sup>	0.1021

Note: \*p<.05; \*\*p<.01; \*\*\*p<.001.

We found that teachers' educational background and Area had the most significant influence on rank ordering, followed by size of preschool, while the others were not significant. That is to say, the behavior of private preschool teachers in Haidian district not referring to the salary pricing of non-government teachers in public preschools is conducive to the improvement of preschool service quality level.

## 6. Discussion

### 6.1. Salary Reference Conditions and Service Quality Derive from the Affluence of Public Education

Haidian District, as a strong traditional education area, has abundant public education resources at all levels and all kinds, and the number of public preschools dominate the field of preschool education. Therefore, according to James (1993) the emergence of private preschools is mostly based on the differential demands of the people, rather than demand caused by the lack of public education. Especially in Haidian District, there are more senior intellectuals and higher levels of educational needs. In the environment of public preschools, a small number of private preschools must have their own characteristics to meet the higher demands of the people entering the preschools. Therefore, private preschools will not refer to the operation of public preschools at this time. Private preschools must compensate teachers for more diverse services with higher human costs. More teachers' labor cost expenditure has a significant positive impact on the service quality improvement of private preschools in Haidian District. So in Haidian District, which is rich in public education, the

service quality of private preschools is also high.

On the contrary, public education in Chaoyang District is limited and inadequate for the large population. The emergence of private education is mainly based on the excessive demands of the people to access preschool education. Private preschools have become a supplement for the shortage of public preschools. At this time, private preschools are at the stage of imitating and catching up with public preschools, so they often refer to the operational behavior of public preschools to achieve organizational convergence, for example, the salary of teachers. If the pay gap between private preschools and public preschools is too large, it will cause private preschools teachers to move to public preschools as non-government teachers. In order to avoid this situation, private preschools will take public preschools as a reference system, and ultimately achieve a balance between the two. This kind of reference makes the private preschools in Chaoyang district only take the public preschools as the benchmark and catch up with the public preschools rather than surpass them in terms of service quality.

It therefore appears the answer to the research question will be that it is conditional whether non-government teachers in public preschools will play a reference role in the salary of teachers in private preschools: When the supply of public education in a region is relatively sufficient then private preschools will be established to meet differential demands and the salary of teachers in private preschools will not refer to the salary of non-government teachers in public preschools. At this point, they will also be of higher service quality. Only when the supply of public preschools in a region is relatively inadequate (rather than absolutely inadequate, absolutely inadequacy would lead to the non-mobility of teachers between public and private preschools), then non-government teachers will play a reference role in the salary of teachers in private preschools. As a result, their service quality is also provided in a lower way. So we can see the phenomenon of teachers with high salaries often occurs in private preschools that provide high-quality service to meet differential demands. And private preschools in the stage of meeting excessive demands are often the representatives of low salaries of teachers. From this perspective, we can also see the relationship between teachers' high salary and high quality of ECEC service.

As few scholars have studied the influence of salary reference of different types of teachers on preschool quality, it is difficult to make a horizontal comparison of the results of this paper. Chinese scholar Zeng once mentioned that the private preschool teachers' salary refer to public preschool teachers' salary might lower the quality of private preschool, but the article did not carry out empirical test [20]. This paper makes up for the blank of academic research in this field through empirical study.

## 6.2. Implications for Policy Makers

Sossinsky, Lord and Zigler explored the difference between for-profit and not-for-profit early childhood services in the

United States [16]. Staff salaries and turnover were important quality factors they considered. The overall picture they painted was that the in the profit sector salaries are lower than the nonprofit sector and so is service quality. This situation is not unusual [21], but for many countries, for example, China, Australia, the UK and USA. Implications from the research reported on here provides guidance on how government policy and planning decisions can promote access, affordability and service quality in a mixed system of public and private provision.

For policy makers, who wish to guarantee the salary of private preschool teachers, as a quality strategy there are a number of issues to address. To begin there is a need to consider causes of why private preschools are in the area, are they supplementing the shortage of market supply or serving differential demands. Government planners have a role to play in supporting appropriate provision in different areas. The low salary of teachers in private preschools is more likely to occur when there is inadequate provision from the public sector. Private preschools are supplementing insufficient supply and if quality assurance measures are not in place the temptation to decrease costs will be great. Therefore, the government needs sound planning legislation and also a means of regulating the private sector in the interests of quality. Under the circumstance that the government's limited financial resources cannot increase the supply of public preschools in the region, private preschool teachers' salaries can be subsidized by other means. For instance, there is a successful case from Dongguan City, Guangdong Province. when the monthly income of Dongguan private preschool teachers is no less than 60% of the average monthly income of Dongguan urban residents, Dongguan Finance Bureau gives their working preschool extra subsidies to improve teachers' salaries and guarantee teachers' quality.

Although the "Opinions" (2018) stated that "private preschools should refer to the salary level of teachers in local public preschools", they did not focus on the different types of teachers in public preschools, the government and non-government staff. The original intention of the government was that the salary of teachers in private preschools should refer to the group of government teachers in public preschools to ensure the service quality of private preschools. In the long run the government should strive regulate to reduce the differences in salaries and conditions across the public and private sectors. If this cannot be done the private sector remains a threat to service quality, especially early childhood education in regions where the government has been unable to provide sufficient public resources. In this case the public sector will ultimately play a negative reference role to private preschools, cannot improve the service quality of private preschools, even destroying the ecological environment of preschool education. In conclusion, as early childhood education becomes acknowledged as an important part of building educated citizens and a future workforce, there is increased need for governments to provide high-quality ECEC services. In many countries both the private and the public sector will be needed to ensure universal



access. Funding models, regulations and planning will need to be nuanced to bring the different systems together to create the highest level of synergy in serving young children and their families.

## 7. Limitations and Future Directions

By comparing the salary status of teachers in private preschools in Haidian district and Chaoyang district of Beijing, this research obtained the reference conditions of public teachers' salary to private preschool teachers' salary, and the impact of this reference on the service quality. However, how does the salary of non-governmental teachers in public preschools formed and why are these teachers willing to accept salaries different from those of government teachers in the same public preschool. These questions may need to be brought into public preschool and investigated in additional research that included interviews with directors, non-government teachers and government teachers. Although these non-government teachers' salaries will have a reference effect on the salaries of private preschool teachers, their formation mechanism is different. Knowing the salary formation mechanism of non-governmental teachers can better understand how their salaries have a reference effect on private preschool teachers.

## 8. Conclusions

In this article, we argued that it is conditional for the salary of private preschool teachers to refer to public preschool teachers' salaries. We have to consider the reasons for the emergence of private preschools in a region. When private preschools in the region are in excessive demand, the salary of private preschool teachers will refer to the non-government teachers of local public preschool. They are also relatively low in service quality. When private preschools in the region are in differential demand, the salary of private preschool teachers will not refer to the teachers of local public. They are of relatively high service quality. Therefore, when the policy makers want to regulate the salary of local private preschool teachers, they should take into account the demand stage of local private preschool education. Private preschool teachers in areas with insufficient public preschools may be the group that needs more attention.

## Declarations

### *Availability of Data and Materials*

Raw data are held by the authors. Data for this paper are reported in Tables 4 and 5.

### *Competing Interests*

The authors declare that they have no competing interests.

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