

## Stability and Quality of Preschool Teachers in Southwest China: Hygiene and Motivator Factors

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**Abstract:** The demand for Chinese preschool teachers continues to improve, but the problems of "not being able to retain" and "not being able to do a good job" of Chinese preschool teachers are serious, which results from the fact that the influencing factors of Chinese preschool teachers' work are not well secured. However, there are too many factors that we can't secure all of them at the same time with limited resources. Therefore, based on the framework of the two-factor theory, this study aims to investigate the current condition and influencing factors of preschool teachers' turnover intention and job quality in Southwest China through a questionnaire survey and to investigate which influencing factors have a hygiene effect (preventing teachers from turnover and improving the stability of the teacher workforce) and which influencing factors have a motivator effect (improving teachers' job quality). The results indicate that three influencing factors, including the relationship with colleagues, professional identity and recognition, have both hygiene and motivator effects. Thus, we should pay special attention to securing the three influencing factors mentioned above, so as to improve the stability and quality of the preschool teacher workforce, then promote the sustainable development of preschool education in China.

**Keywords:** Turnover intention; Job quality; Hygiene effect; Motivator effect; Preschool teacher

### 1. Introduction

Early childhood is a critical period for children's development, and the growth of children at this stage will help to lay a solid foundation for their sustainable development. As the premier resource for education development, teachers, both in a high quantity and of high quality, are critical to the achievement of the goal of high-quality development of education all over the world, and China is no exception (State Council, 2021; Ministry of Education, 2021). Studies have shown that preschool teachers in China have a high turnover rate and a high tendency to leave the profession, resulting in instability in the preschool teacher workforce, which affects the quality of preschool education and may create a vicious cycle (He & Yang, 2015). To stabilize the preschool teacher workforce in China, reduce the turnover rate of preschool teachers and improve their job quality, this study, based on a "two-factor" theoretical framework, explores the reasons for preschool teachers' intention to leave, and investigates in depth which influencing factors have a hygiene effect (preventing teachers from turnover and improving the stability of the teacher workforce) and which influencing factors have a motivator effect (improving the job quality of preschool teachers). We then propose countermeasures to solve the problems for Chinese preschool teachers of "not being able to retain" them and for them "not being able to do a good job" to effectively improve the stability of the preschool teacher workforce in China and the quality of preschool education development and then promote the sustainable development of preschool teachers.

## 2. Literature review

### 2.1. *Preschool education in China: policies and problems*

Compulsory education in China lasts for 9 years from K1 to K9, and the preschool stage for 3- to 6-year-old children is not included in the government's scope of compulsory education. Therefore, the proportion of public kindergartens in China that receive government funding and have relatively high educational quality is low (Feng, 2010). Young children who are unable to attend public kindergartens have to choose private kindergartens that charge higher fees and are of lower quality. For a long time, many families in China have faced the twin problems of "difficult to access" kindergartens (few opportunities to attend public kindergartens) and "expensive to access" kindergartens (high fees for private kindergartens) (Feng, 2010 & Xin News Agency, 2018).

In past decades, the Chinese government has been making early childhood development its policy priority and focus, setting the goal for preschool education to provide universal access and high-quality education for all school-age children (Ministry of Education, 2022). To achieve the first goal of universal access, the Chinese government has made great efforts to develop a new type of "Generally Beneficial Kindergartens" (or "Common Good Kindergartens"), which can be either public or private, and to charge families a very low fee that is strictly set and regulated by the government, thus providing kindergarten access for children from low- or middle-income families (Ministry of Education, 2020; Qin & Wang, 2012). By 2021, the number of Generally Beneficial Kindergartens in China has reached 245,000, accounting for 83% of the total number of kindergartens, of which public and private kindergartens each account for approximately 50% (Ministry of Education, 2022).

Because of the three-year gross enrollment rate of 88.1% in 2021, which is set to reach more than 90% by 2025 (State Council, 2021; Ministry of Education, 2021) preschool education in China is now on the verge of contributing to the achievement of the first and basic goal of universal access among school-age children. Although the rapid growth in Generally Beneficial Kindergartens has largely solved the problems of "difficult and expensive to access" kindergartens for Chinese families, the limited funding resources and low level of school operational fees have led to worrying conditions (poor education quality, limited authorized strength for stall, poor teaching & working conditions) of this kind of kindergarten (Ren & Bian, 2021; Zheng et al., 2021; Lin et al., 2019), which gives rise to the problem of it being "hard to attract" and "hard to retain" teachers in such kindergartens. In addition, teachers already working in such poor kindergartens often lack the motivation to improve the quality and efficiency of their work. This phenomenon may hinder the achievement of the Chinese government's goal of providing high-quality preschool education for school-age children.

### 2.2. *Theoretical foundation: two-factor theory*

In the late 1950s, Herzberg used the interview survey method to collect information on "factors", "attitudes" and "effects" of employees' work with a sample of engineers and accountants and categorized the factors influencing employees' work into two categories: hygiene factors and motivator factors. As a result, the two-factor theory was formally proposed (Herzberg, 1968). According to this theory, the main role of hygiene factors is to eliminate employees' dissatisfaction with their jobs, reduce the turnover rate, and ensure that they can complete their basic work. Hygiene factors refer to external factors related to the work environment, such as company policy and administration, supervision, relationship with supervisor, work conditions, salary, relationship with peers, personal life, relationship with subordinates, status and security, etc.; the main role of motivator factors is to stimulate employees' satisfaction with their jobs (Herzberg, 2017) and then motivate employees to perform well in tasks other than basic work. Motivator factors refer to internal factors related to the work itself, such as achievement, recognition, workability, advancement, growth, etc. Since the two-factor theory was proposed, researchers in various countries have tried to test the theory. Some studies have found that hygiene factors do not exist and that motivator factors have both hygiene and motivator effects (Ren et al., 1987). Other studies have found that some hygiene factors can also have a motivational effect (Yang & Feng, 2016). Some scholars have

even broken the framework of the two-factor theory and proposed the “three-factor” theory (Qu & Chen, 2016).

### *2.3. Teachers' Turnover and its influencing factors based on empirical research*

Empirical research has focused more on the working status of primary and secondary school teachers and the factors that influence them and less on preschool teachers. International studies on the work of preschool teachers indicate that the turnover rate of preschool teachers is rather high. High teacher turnover rates and few training opportunities are the main characteristics of preschool education in the United States (De Vita et al., 2002); the teacher turnover rate in Florida childcare centers was as high as 31% between 1988 and 1997 (Whitebook et al., 1998); the turnover rate of public preschool teachers in Norway has been increasing since 1998 (OECD, 2003); and turnover rates in preschool education institutions in countries such as Switzerland, Belgium, and Denmark are as high as 30% or more per year (Jian, 2005). Combined with numerous pieces of research, we find that the main reasons for the turnover of preschool teachers include long working hours, few vacations, and high working pressure; poor salary, few training opportunities, and limited promotion space; inefficient kindergarten administration and bad leadership style; poor working environment, low social status, and lack of support and respect from parents of young children. In addition, the turnover of preschool teachers is also influenced by personal characteristics such as gender, age, and marital status, as well as school characteristics such as school type and administration system.

In recent years, Chinese researchers have paid attention to the turnover problem of preschool teachers and conducted empirical studies, which found a high percentage of preschool teachers with a tendency to leave their jobs, and the percentage has shown an increasing trend in recent years. Li Pan (2013) found that 47.5% of preschool teachers in Henan Province, China, had experienced turnover, 26.7% of them expressed the intention to turnover to other kindergartens, and 39.9% of them expressed the idea of changing occupations. Ding Yalan (2017) found that 49.3% of private kindergarten teachers in urban areas of Hebei Province, China, had shown a tendency to turnover, of which 47.5% tended to turn over to other kindergartens and 52.5% tended to turn over to other occupations. Du Ping et al. (2013) conducted an empirical study on the tendency of preschool teachers to leave their jobs in four Chinese provinces and cities, Beijing, Jilin, Yunnan, and Liaoning, and found that 20.5% of preschool teachers intended to turn over to other kindergartens in the next three years and 21.1% intended to turn over to other occupations in the next three years. Cai Yingqi et al. (2011) conducted an empirical study on the turnover intention of preschool teachers in central China and found that the number of preschool teachers with turnover intention increased year by year in Hubei Province. In addition, related studies have found that seven categories of preschool teachers, including young teachers, private kindergarten teachers, teachers with low education levels, teachers with less teaching experience, teachers with low professional titles, married teachers, and teachers without formal teacher quotas, have higher turnover intentions. Chinese scholars have summarized the factors that influence the work of preschool teachers. Data from Li Pan (2013) indicated that the working environment, career stability, interpersonal relationships, and administration system influenced the work of preschool teachers in China. Liang Chunjuan (2010) concluded that factors such as salary, social status, teacher quota, professional title evaluation, training opportunity, merit evaluation, professional identity, role identity, and parental recognition influence the work of preschool teachers in China. In addition to the influencing factors mentioned above, Ding Yalan (2017) found that salary differences within and outside the profession, the natural environment of kindergartens, facilities, and equipment for teaching, the humanistic environment, the personnel system, and family factors also affect the work of preschool teachers in China.

### *2.4. Conceptual definition of turnover*

Preschool teacher turnover refers to the behavior of preschool teachers leaving their particular kindergarten position, which includes two different patterns (Zhou, 2015; Carver-Thomas & Darling-Hammond, 2017): (1) Attrition refers to the act of preschool teachers leaving the preschool education profession and moving to work in other sectors. Preschool teachers of this kind are called “leavers”. (2) Mobility refers to the lateral movement of

preschool teachers within the kindergarten system, such as taking up positions in other kindergartens. Preschool teachers of this kind can be called “movers” .Either pattern of preschool teacher turnover can be a major loss to the preschool teacher workforce. It not only contributes to shortages but also creates costs and disruptions in the kindergartens they leave behind. Most importantly, preschool teacher turnover has been reported to be associated with serious educational problems such as low student achievement and, in turn, low-quality preschool education (Levy et al., 2006; Aragon, 2016; Toropova et al., 2021; García & Weiss, 2019).

### 2.5. Summary of the present study

In summary, studies on teacher turnover and turnover intention in China have typically focused on teachers in compulsory education. Few studies focused on preschool teachers have found that their overall turnover rate and intention are high and show signs of worsening over time. However, there are few empirical studies on preschool teachers, a disadvantaged group with high rates and turnover intentions, and there is a lack of a complete and systematic framework for examining the causes and factors influencing preschool teacher turnover, not to mention distinguishing the different roles played by influencing factors and providing targeted measures and suggestions.

## 3. Methodology

### 3.1. Participants

Preschool teachers in Sichuan Province and Chongqing Municipality (a city directly under the Central Government) in Southwest China were selected as the participants of this study. The economic level of Southwest China is relatively backward compared to Eastern China, and the population of ethnic minorities in Southwest China is large; thus, the education level there is relatively lagging behind and needs more policy attention. Sichuan and Chongqing are two representative provinces in the southwest region, and they also have a rather large population of school-age children among the provinces in the southwest region. The selection of preschool teachers in Sichuan and Chongqing as participants can reflect the situation of the preschool teacher workforce in less developed regions of China while ensuring the quantity and quality of the samples. A convenience sampling method was used to conduct the online questionnaire survey with the help of the online data collection software “Wenjuanxing<sup>1</sup>”. A total of 153 questionnaires were distributed, and 121 valid questionnaires were returned.

### 3.2. Data collection

This study developed a “Preschool Teacher Working Condition Questionnaire” for data collection. The questionnaire consists of four parts: the first part collects basic individual information about preschool teachers, the second part collects factors affecting teachers’ work using the “Preschool Teachers’ Work-influencing Factors Scale”, and the third and fourth parts investigate the stability of the teacher workforce and job quality of preschool teachers using the

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1. “Wenjuanxing” is a professional online platform for surveys, exams, assessments, and polls. It focuses on providing users with powerful and user-friendly services for designing online questionnaires, collecting data, customizing reports, analyzing survey results, and more. Compared with traditional survey methods and other survey websites or systems, Wenjuanxing has obvious advantages in terms of speed, ease of use, and low cost. It has been widely used by many enterprises and individuals. The Wenjuanxing website for distributing the questionnaires of this study is <https://www.wjx.cn/wjx/design/previewmobile.aspx?activity=147816261&s=1>.

“Preschool Teachers’ Turnover Intention Scale” and the “Preschool Teachers’ Job Quality Scale”, respectively.

Among them, the “Preschool Teachers’ Work-influencing Factors Scale” draws on the definition and classification of influencing factors in Herzberg’s two-factor theory and includes eleven dimensions with 36 question items. Among the dimensions, seven dimensions, including social status, working conditions, living conditions, administration system, relationship with leadership, relationship with colleague, and compensation package, are hygiene factors; four dimensions, including recognition, professional identity, taking responsibility, and growth and development, are motivator factors. A five-point Likert scale was used, with options ranging from 1 to 5. Higher scores indicate better job security for Chinese preschool teachers; the “Preschool Teachers’ Turnover Intention Scale”<sup>2</sup>, with four question items, asks specifically whether preschool teachers are bored with their current jobs, whether they had ideas and possibilities to turnover, and which occupation they would choose if they could choose again. Higher scores indicate a higher turnover intention; the “Preschool Teachers’ Job Quality Scale”<sup>3</sup> examines whether preschool teachers can maintain a proactive, hard-working attitude in the working process, establish harmonious interpersonal relationships with colleagues, and obtain good work output. Specifically, it includes three dimensions of work interaction, work pursuit, and work effectiveness, with a total of 20 question items. A seven-point Likert scale was used, with options ranging from 1 to 7. Higher scores indicate higher levels of job quality for preschool teachers.

The reliability test showed that the Cronbach Alpha reliability coefficients of the above three scales were 0.957, 0.796, and 0.972, respectively. Thus, the reliability of the questionnaire was good.

### 3.3. Data analysis

This study used descriptive statistics to analyze the basic information of the sample, the factors influencing the work of preschool teachers, the turnover intention of preschool teachers and their job quality; used a difference test to analyze the turnover intention and the level of job quality of preschool teachers with different characteristics; and used correlation analysis and linear regression models to explore the factors influencing the turnover intention and the job quality of preschool teachers in China.

### 3.4. Variable definition

#### 3.4.1. Dependent variables

The dependent variables in this study are preschool teachers’ turnover intention and job quality. The former examines whether preschool teachers are willing to stay in their current jobs and not move to other kindergartens or leave the preschool education profession. It measures the job stability of preschool teachers and is a low-level goal for constructing a preschool teacher workforce in China. The original four question items (job boredom, idea and possibility of turnover, and recollection of occupation) were downscaled with the help of factor analysis techniques to generate factor scores for teachers’ turnover intention. The latter examines whether preschool teachers can work with high quality, and it is a high-level goal for constructing a preschool teacher workforce in China. With the help of factor analysis techniques, three dimensions of job interaction, job pursuit, and job effectiveness were downscaled to generate factor scores of job quality.

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2. Adapted from the “Rural Preschool Teacher Turnover-willingness Questionnaire”, conducted by the team of Wang Yanling from Yunnan Normal University in China.

3. Adapted from the job quality section of Xiao Lijun’s “Preschool Teacher Working-condition Questionnaire”.

Based on Herzberg’s idea of classifying the factors influencing employees’ work and accounting for the real-life problems faced by the preschool teacher workforce in China, this study hypothesizes that if an influencing factor (independent variable) has a significant effect on preschool teachers’ turnover intention, then the factor would be considered to have a hygiene effect; and if an influencing factor (independent variable) has a significant effect on preschool teachers’ job quality, then the factor would be considered to have a motivator effect.

#### 3.4.2. Independent variables

The independent variables for this study are the factors that influence preschool teachers’ work. Both the definition and classification of the influencing factors are drawn from Herzberg’s two-factor theoretical framework. However, before conducting the empirical study, it is necessary to discuss and verify the appropriateness of the two-factor theory for use in this study. This is because, first, the two-factor theory was born in the 1960s, and in the 60 years since it was proposed, countries worldwide have experienced tremendous social changes in politics, economics, and culture; second, the participants of the study for the two-factor theory were company employees in America, while the participants of this study are preschool teachers in China; third, in terms of the research methods, the two-factor theory was proposed by collecting qualitative data through the interview survey method, while this study plans to quantitatively analyze the influencing factors through the questionnaire survey method. Based on the reasons mentioned above, the “hygiene–motivator” framework of the two-factor theory may be different from the framework of the factors influencing the work of Chinese preschool teachers.

To verify whether the influencing factors and their classifications in the two-factor theory can be localized, this study examined the structural validity of the original scale based on Herzberg’s two-factor theory by conducting factor analysis on the “Preschool teachers’ Work-influencing Factors Scale”. After removing the items that could not be entered into the common factors, the structural dimensions of the factors influencing preschool teachers’ work in China were reclassified, and a total of three common factors were extracted <sup>4</sup>. Based on the content of the items included in each common factor, the three common factors were renamed external, internal, and mixed, as shown in Table 1.

**Table 1. Dimensions and Structure of Factors that Influence the Work of Preschool Teachers in China.**

<b>External factors</b>	<b>Internal factors</b>	<b>Mixed factors</b>
Working conditions	Professional identity	Compensation package
Living conditions	Recognition	Growth and development
Administration system	Taking responsibility	
Relationship with leadership		
Relationship with colleagues		

#### 1. External factors;

External factors include working conditions, living conditions, administration system, relationship with leadership, and relationship with colleagues. These five factors describe the environmental characteristics of preschool teachers’ lives and work and are categorized as hygiene factors in Herzberg’s two-factor theory, in which they are considered to play a role in eliminating employees’ dissatisfaction with their job. In this study, they are categorized as external environmental factors that influence the work of Chinese preschool teachers, and their effects on preschool teachers in the Chinese context will be verified later.

#### 2. Internal factors;

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Note 4. Public Factor 1 contains eighteen items, Public Factor 2 contains eight items, and Public Factor 3 contains six items.

Internal factors include recognition, professional identity, and taking responsibility. These three dimensions describe the intrinsic meaning and value of preschool teachers' work and the internal psychological feelings that preschool teachers gain from their work. They are categorized as motivator factors in Herzberg's two-factor theory, in which they are considered to promote employees' satisfaction with their jobs. This study defines them as internal psychological factors that influence the work of preschool teachers, and their effects on preschool teachers in the Chinese context will be verified later.

### 3. Mixed factors.

Compensation package and growth and development are categorized as hygiene factors and motivator factors, respectively, in Herzberg's two-factor theory, but in this study, these two variables form a new dimension. This may be because compensation package and growth and development have both hygiene and motivator effects on preschool teachers in China, so this study renames them mixed factors and will later verify their effects on preschool teachers in the Chinese context.

### 3.4.3. Control variables

To ensure the scientific accuracy and validity of the findings, gender, age, highest education level, marital status, fertility status, teaching experience, whether they hold an executive position, whether they are from a normal college/major, whether they have teaching certificates, whether they have formal teacher quotas, the location of the kindergarten, and the nature of the kindergarten are also added to the research model as control variables in this study.

## 4. Results

### 4.1. The level of stability and quality of preschool teachers in China

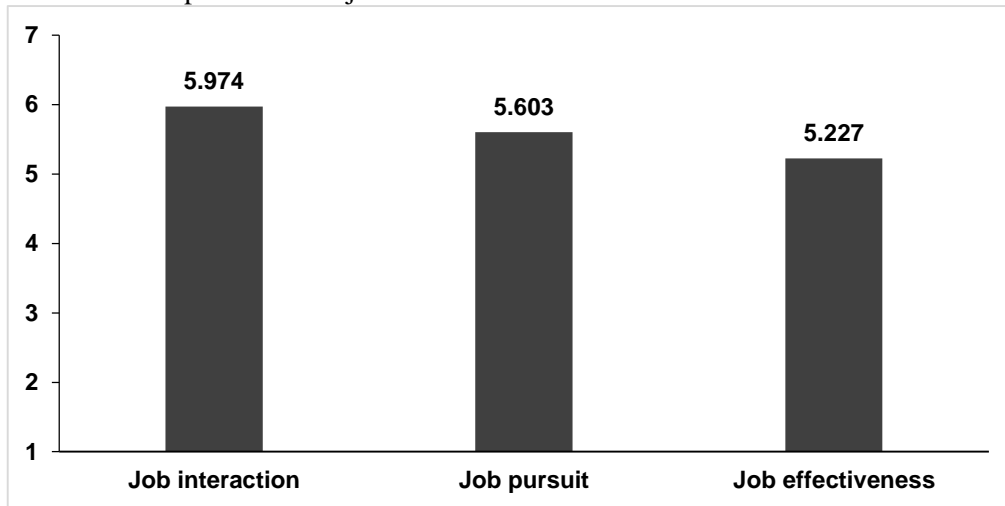
Four questions, "Are you bored with your job?"; "Do you have any intention of turnover?"; "Possibility of turnover in the next three years"; and "If you could choose again, where would you work?", are used to investigate preschool teachers' turnover intention in China from different aspects. The results in Table 2 show that preschool teachers in China have a high intention to leave their jobs. Specifically, more than half (54.5% + 11.6%) of Chinese preschool teachers are bored with their jobs, more than 90% have thought about moving to other kindergartens or other professions, and nearly half think they are certain they will move to other kindergartens or other professions (40.5% of preschool teachers think they are 100% likely to move to other kindergartens or other professions in the future), and 24% would pursue a career outside the preschool education profession if allowed to choose again.

**Table 2. Descriptive statistical results of Chinese preschool teachers' turnover intention.**

Variables	Options	Percentage
Are you bored with your job?	Never	5.0%
	Occasionally	28.9%
	Sometimes	54.5%
	Frequently	11.6%
Do you have any intention of turnover?	Never	7.4%
	Occasionally	73.6%
	Always	19.0%
Possibility of turnover in the next three years	0%	2.5%
	Less than 20%	3.3%
	20%-50%	7.4%
	50%-80%	19.8%
	More than 80%	26.4%
If you could choose again, where would you work?	100%	40.5%
	Stay at the current kindergarten	33.9%
	Go to a private kindergarten with better conditions	19.8%
	Go to a public kindergarten with better conditions	22.3%
	Go to primary school or other kinds of	2.5%

schools to teach  
 Work outside the teaching profession 21.5%

After understanding the turnover intention of Chinese preschool teachers, we conducted descriptive statistics on the job quality of preschool teachers in China. The mean value of Chinese preschool teachers' job quality is 5.714, and the overall job quality of preschool teachers is above average level concerning the middle score of the seven-point Likert scale. Specifically, the results in Figure 1 show that the mean values of job interaction and job pursuit are 5.974 and 5.603, respectively, and the mean value of job effectiveness is 5.227. Thus, preschool teachers perform relatively well in job interaction, followed by job pursuit, but there is some room for improvement in job effectiveness.



**Fig.1 Descriptive statistical results of Chinese preschool teachers' job quality**

Note. "Preschool teachers' Job Quality Scale" is in the form of a seven-point Likert scale; the height of the bars indicates the mean value of preschool teachers' scores on the dimension.

#### 4.2. The level of factors influencing the stability and quality of preschool teachers in China

According to Table 3, the factors influencing Chinese preschool teachers' work are only at a moderate level, with all influencing factors scoring no more than 4. Among them, the internal factors have the highest scores and the mixed factors have the lowest scores, and there is a large room for improvement of all the factors.

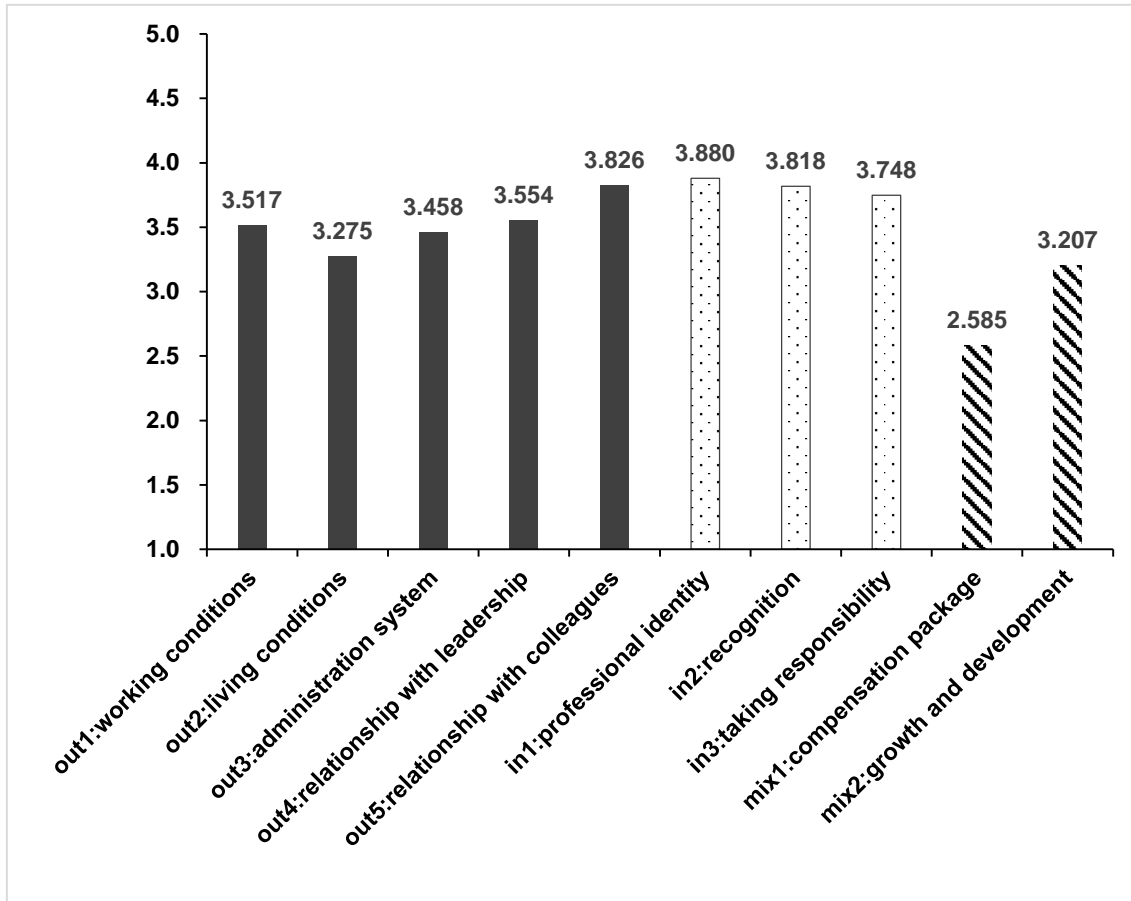
**Table 3. Descriptive statistical results of factors influencing the work of preschool teachers in China.**

Variables	Mean value	Standard deviation	Minimum value	Maximum value	
Influencing factors	External factors	3.522	0.676	1.330	5.000
	Internal factors	3.816	0.674	1.380	5.000
	Mixed factors	2.792	0.799	1.000	5.000

Note. "Preschool teachers' Work-influencing Factors Scale" takes the form of a five-point Likert scale.

According to Figure 2, among the five indicators of external factors, relationships with colleagues scored the highest, and living conditions scored the lowest. This indicates that preschool teachers have good relationships with colleagues, but their daily living conditions are poor; three indicators of internal factors, including professional recognition, getting recognition, and taking responsibility, are relatively good overall; two indicators of mixed factors, namely, compensation package and growth and development, both have low scores, with compensation package being the worst. This indicates that Chinese preschool teachers have poor compensation packages and limited room for growth and development.





**Fig.2 Descriptive statistical results of the factors influencing the work of preschool teachers in China**

Note. “Preschool Teachers’ Work-influencing Factors Scale” is in the form of a five-point Likert scale; the height of the bars indicates the mean value of influencing factors’ scores on the dimension; out is short for outside factors, in is short for inside factors, mix is short for mixed factors in figure2.

*4.3. Differences on turnover intention and job quality of Chinese preschool teachers with different individual characteristics*

The results of the difference test of turnover intention among preschool teachers in Table 4 show that turnover intention is significantly affected by the highest education level, post, whether they are from normal colleges/majors, whether they have teaching certificates, and the nature of their kindergartens. Specifically, turnover intention is significantly higher among preschool teachers with the highest education level of junior college and undergraduate (adult and formal regular education), with the post of assistant teacher, with a professional background of a normal college/major, with a teaching certificate, and in a public kindergarten.

**Table 4. Results of difference test in turnover intention and job quality among Chinese preschool teachers with different individual characteristics.**

Variables		Turnover intention		Job quality					
				Job interaction		Job pursuit		Job effectiveness	
Gender	Female	-0.009	t = -0.637	0.041	t=2.959**	-0.018	t=-1.276	0.009	t=0.645
	Male	0.364		-1.601		0.714		-0.360	
Marital status	Unmarried	0.128	t=1.201	-0.172	t=-1.665	0.220	t=2.132*	-0.304	t=-3.015**
	Married	-0.093		0.126		-0.160		0.221	
Fertility status	Has children	-0.062	t = -0.630	0.089	t=0.927	-0.193	t=-2.026*	0.295	t=3.198**
	No children	0.053		-0.077		0.166		-0.254	
Highest level education	Vocational school/junior school/technical school	high high-1.331		0.312		-0.411		-0.160	
	High school	-0.682		0.122		-0.286		0.518	
	Junior college	-0.026	F=6.230**	-0.207	F=1.008	-0.017	F=1.847	-0.091	F=3.057*
	Undergraduate higher education) (adult	0.218		0.165		-0.140		0.339	
	Undergraduate higher education) (regular	0.216		-0.092		0.377		-0.387	
Teaching experience	3 years or less	0.165		-0.229		0.332		-0.346	
	4-5 years	0.117	F=0.642	0.022	F=1.576	-0.018	F=2.708*	-0.087	F=2.588*
	6-10 years	-0.125		-0.174		0.018		0.150	
	11-15 years	-0.076		0.371		-0.125		0.262	

	16-20 years	-0.232		-0.234		0.107		0.327	
	21 years and above	-0.205		0.302		-0.470		0.376	
	Lead teacher	-0.008		0.029		-0.138		0.164	
Post	Assistant teacher	0.284	F=7.435**	-0.103	F=0.491	0.317	F=3.711*	-0.251	F=2.380
	Nursery teacher	-0.878		0.186		-0.327		-0.023	
	Yes	0.123		-0.014		0.045		-0.006	
Normal college/major	No	-1.019	t=4.510**	0.118	t = -0.457	-0.370	t=1.442	0.052	t = -0.204
	Yes	0.118		0.025		0.023		0.005	
Teaching certificate	No	-0.833	t=3.618**	-0.179	t=0.753	-0.166	t=0.695	-0.035	t=0.148
	Yes	0.016		0.322		-0.023		0.535	
Executive position	No	-0.002	t=0.063	-0.039	t=1.257	0.003	t = -0.090	-0.064	t=2.120*
	Public	0.119		0.004		-0.000		0.071	
Nature of kindergarten	Private	-0.535	t=2.856**	-0.018	t=0.095	0.002	t = -0.010	-0.321	t=1.717

Note. \*\* p<0.01, \* p<0.05.

The results of the difference test of job quality among preschool teachers in Table 4 show that, first, job interaction of preschool teachers is significantly influenced by gender, specifically, the level of job interaction of female preschool teachers is significantly higher than that of males; second, job pursuit of preschool teachers is significantly influenced by their marital status, fertility status, teaching experience, and post, specifically, those who are unmarried, have no children, have 3 years or less of teaching experience, and have the post of assistant teacher have a higher level of job pursuit; finally, the job effectiveness of preschool teachers is significantly influenced by their marital status, fertility status, highest education level, teaching experience, and whether they hold an executive position; specifically, those who are married, have children, have a degree of undergraduate (adult higher education), have 21 years or more of teaching experience, and hold an executive position have a higher level of job effectiveness. All of the above demographic variables that significantly affect the turnover intention and job quality of preschool teachers need to be used as control variables in subsequent regression analysis to more scientifically explore the factors influencing turnover intention and job quality.

#### 4.4. Differences on turnover intention and job quality of Chinese preschool teachers under different levels of influencing factors

To examine the hygiene and motivator effects of various influencing factors, we ranked and grouped the scores of external, internal, and mixed factors in ascending order: scores in the lowest 27% were in the low group, and scores in the highest 27% were in the high group. Differences in turnover intention and job quality were then examined between the low group and the high group. The results are shown in Table 5.

**Table 5. Results of difference test in the turnover intention and job quality of Chinese preschool teachers at different levels of influencing factors.**

Variables		Tendency to turnover		Job quality	
<b>External factors</b>	Low group	0.625		-0.685	
	High group	-0.658	t=5.537**	0.617	t=-6.066**
<b>Internal factors</b>	Low group	0.336		-0.650	
	High group	-0.182	t=2.136*	0.765	t=-7.457**
<b>Mixed factors</b>	Low group	0.490		-0.258	
	High group	-0.385	t=3.083**	0.593	t=-3.387**

Note. External factors include working conditions, living conditions, administrative system, relationship with leadership, relationship with colleagues; internal factors include professional identity, getting recognized, taking responsibility; mixed factors include compensation package, growth, and development. \*\* p<0.01, \* p<0.05.

For preschool teachers' turnover intention, those who scored lower on external, internal, and mixed factors had significantly higher turnover intention than those who scored higher on the three categories. This suggests that the lower the level of security for preschool teachers is, the lower their job stability.

For preschool teachers' job quality, those who scored higher on external, internal, and mixed factors had significantly higher job quality than those who scored lower on the three categories. This suggests that the higher the level of security for preschool teachers is, the higher the job quality.

#### 4.5. Hygiene factors: factors influencing the turnover intention of preschool teachers in China

According to the results of the previous difference test in preschool teachers' turnover intention, the five variables of highest education level, whether or not the teacher had a normal college/major, whether or not the teacher has a teaching certificate, the nature of the kindergarten, and post have significant effects on preschool teachers' turnover intention. Therefore, multiple regression models are constructed using these five variables as control variables, external, internal, and mixed factors as independent variables, and turnover intention as the dependent variable. Model 1, Model 2, and Model 3 examine whether each indicator of external, internal, and mixed factors has hygiene effects on Chinese preschool teachers, respectively. Model 4 and Model 5 are full models, of which Model 4 includes the total

dimensional scores of external, internal, and mixed factors to compare the relative effects of the three types of factors; Model 5 includes all indicators of external, internal, and mixed factors at the same time to examine the relative hygiene effects of the three types of factors in detail. The regression results are shown in Table 6.

**Table 6. Results of regression analysis of factors influencing the turnover intention of preschool teachers in China.**

	Model(1)	Model(2)	Model(3)	Model(4)	Model (5)
<b>1. External factors</b>				-0.431***	
				(0.106)	
Working conditions	-0.163				-0.077
	(0.116)				(0.130)
Living conditions	-0.387***				-0.331***
	(0.110)				(0.110)
Administrative system	-0.023				-0.032
	(0.160)				(0.165)
Relationship with leadership	0.166				0.131
	(0.133)				(0.148)
Relationship with colleagues	-0.161*				-0.128
	(0.093)				(0.101)
<b>2. Internal factors</b>				0.026	
				(0.095)	
Recognition		0.289**			0.239*
		(0.127)			(0.121)
Professional identity		-0.592***			-0.323**
		(0.125)			(0.136)
Taking responsibility		0.024			0.058
		(0.103)			(0.107)
<b>3. Mixed factors</b>				-0.072	
				(0.092)	
Growth and development			-0.149		0.000
			(0.110)		(0.116)
Compensation package			-0.211**		-0.075
			(0.105)		(0.102)
<b>4. Control variables</b>	√	√	√	√	√
R-squared	0.484	0.406	0.343	0.432	0.520

Note. Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

From the results of model (1), without considering the internal and mixed factors, living conditions among external factors have a significant negative effect on preschool teachers' turnover intention, playing a hygiene effect, i.e., the better the living conditions of preschool teachers, the lower their turnover intention; from the results of model (2), without considering

the external and mixed factors, professional identity among internal factors has a significant negative effect on preschool teachers' turnover intention and plays a hygiene effect, i.e., the higher the level of value teachers receive from their jobs, the lower their turnover intention; from the results of model (3), without considering the external and internal factors, compensation package among mixed factors has a significant negative effect on preschool teachers' turnover intention and plays a hygiene effect, i.e., the higher the level of compensation package teachers receive, the lower their turnover intention. Notably, being recognized among internal factors fails to play a hygiene effect in reducing preschool teachers' turnover intention but stimulates preschool teachers' turnover intention, i.e., the higher the level of recognition preschool teachers receive from their jobs, the higher their turnover intention.

The results of the full model (4) show that the hygiene effects of external factors are more significant on turnover intention relative to internal and mixed factors. The results of the full model (5) present the relative hygiene effects of all indicators of the three types of influencing factors. Among external factors, living conditions, and among internal factors, professional identity have relatively more hygiene effects on preschool teachers' turnover intention. In contrast, the hygiene effect of compensation packages among mixed factors is no longer significant compared to other external and internal factors that have hygiene effects. Among internal factors, recognition still significantly and positively predicts turnover intention.

#### 4.6. Motivator factors: factors influencing the job quality of preschool teachers in China

According to the results of the previous difference test in preschool teachers' job quality, the seven variables of whether to hold an executive position, gender, highest education level, fertility status, marital status, teaching experience, and post have significant effects on preschool teachers' job quality. Therefore, multiple regression models are constructed using these seven variables as control variables, external, internal, and mixed factors as independent variables, and job quality as the dependent variable. Model 1, Model 2, and Model 3 examine whether each indicator of external, internal, and mixed factors plays motivator effects on Chinese preschool teachers, respectively. Model 4 and Model 5 are full models, of which Model 4 includes the total dimensional scores of external, internal, and mixed factors to compare the relative effects of the three types of factors; Model 5 includes all indicators of external, internal, and mixed factors at the same time to examine the relative motivator effects of the three types of factors in detail. The regression results are shown in Table 7.

**Table 7. Results of regression analysis of factors influencing the job quality of preschool teachers in China.**

	Model(1)	Model(2)	Model(3)	Model(4)	Model(5)
<b>1. External factors</b>				0.407*** (0.095)	
Working conditions	0.284*** (0.107)				0.215* (0.120)
Living conditions	-0.121 (0.098)				-0.115 (0.097)
Administrative system	-0.023 (0.145)				0.007 (0.147)
Relationship with leadership	0.231* (0.120)				0.159 (0.132)
Relationship with colleagues	0.424*** (0.083)				0.379*** (0.089)
<b>2. Internal factors</b>				0.396*** (0.082)	
Recognition		0.263** (0.126)			0.196* (0.112)
Professional identity		0.241*			-0.020

			(0.126)		(0.125)
Taking responsibility			0.165		0.071
			(0.100)		(0.098)
<b>3. Mixed factors</b>				0.026	
				(0.081)	
Growth and development			0.354***		-0.125
			(0.128)		(0.115)
Compensation package			0.118		0.100
			(0.115)		(0.096)
4. Control variables	√	√	√	√	√
R-squared	0.614	0.496	0.317	0.606	0.643

Note. Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

From the results of model (1), without considering the internal and mixed factors, among external factors, working conditions, relationship with leadership, and relationship with colleagues have significant positive effects on preschool teachers' job quality, playing motivator effects, i.e., the better the working conditions and relationship with leadership and colleagues, the higher their job quality; from the results of model (2), without considering the external and mixed factors, among internal factors, recognition and professional identity have significant positive effects on preschool teachers' job quality and play motivator effects, i.e., the more recognition and the higher level of value teachers receive from their jobs, the higher their job quality; from the results of model (3), without considering the external and internal factors, among mixed factors, growth and development has a significant positive effect on preschool teachers' job quality and plays a motivator effect, i.e., the more opportunity of growth and development teachers receive, the higher their job quality.

The results of the full model (4) show that the motivator effects of external and internal factors are more significant on job quality relative to mixed factors. The results of the full model (5) present the relative motivator effects of all indicators of the three types of influencing factors. Among external factors, working conditions and relationships with colleagues, and among internal factors, being recognized, have relatively more motivator effects on preschool teachers' job quality. In contrast, the motivator effect of growth and development among mixed factors is no longer significant compared to other external and internal factors that play motivator effects.

According to Table 8, the influences of the three factors (external, internal, and mixed) on preschool teachers' turnover intention and job quality are clearer.

**Table 8. Summary of the results of regression analysis of factors influencing the turnover intention and job quality of preschool teachers in China.**

			Hygiene effects only	Motivator effects only	Both hygiene and motivator effects
<b>Absolute model</b>	<b>Model(1)</b>	External factors	Living conditions	Working conditions, Relationship with leadership	Relationship with colleagues
	<b>Model(2)</b>	Internal factors			Recognition, professional identity
	<b>Models(3)</b>	Mixed factors	Compensation package	Growth and development	
<b>Relative model</b>	<b>Models(4)</b>	Total dimensional scores		Internal factors	External factors
	<b>Models(5)</b>	External Factors	Living conditions	Working conditions,	

	Internal factors Mixed factors	Professional identity	relationship with a colleagues	Recognition
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Note. The influencing factors and their specific indicators presented in the table all play significant effects in the regression analysis.

### 5. Conclusions

This study examines the factors influencing the turnover intention and job quality of preschool teachers and their hygiene and motivator effects in Sichuan and Chongqing provinces in Southwest China and concludes with the following findings:

First, the structure of factors influencing the work of Chinese preschool teachers differs from that proposed by Herzberg using employee data from companies in Western countries: the factors influencing the work of Chinese preschool teachers can be divided into three categories: external, internal, and mixed factors. The category of external factors mainly includes the hygiene factors defined by Herzberg, the category of internal factors includes the motivator factors defined by Herzberg, and the category of mixed factors includes both the hygiene factors and motivator factors defined by Herzberg in the original two-factor theory. Second, the turnover intention of preschool teachers in Southwest China is relatively high, with more than half of preschool teachers feeling bored with their jobs, more than 90% having the idea of moving to other kindergartens or other professions, and more than 20% thinking they would pursue other careers outside the preschool education profession if given the opportunity. Among preschool teachers in Southwest China, those who have better conditions themselves have higher turnover intentions. Third, the job quality of preschool teachers in Southwest China is good, and their job interaction, job pursuit, and job effectiveness are all above average, but job effectiveness is at a lower level than job interaction and pursuit. Among preschool teachers in Southwest China, those who are female have higher levels of job interaction, those who have less seniority have higher levels of job pursuit, and those who have more seniority have higher levels of job effectiveness. Fourth, relationships with colleagues, recognition, and professional identity have both hygiene effects (reducing turnover intention) and motivator effects (improving job quality), while living conditions and compensation packages have only hygiene effects (reducing turnover intention) but no motivator effects (improving job quality), and working conditions, relationships with colleagues, and growth and development have only motivator effects (improving job quality) but no hygiene effects (reducing turnover intention).

### 6. Discussion and implications

#### 6.1. Paying attention to the turnover of preschool teachers in southwest China and strengthening the preschool teacher workforce

Preschool education is the beginning of the basic education stage, has a significant impact on the growth and development of young children, and can affect the sustainability of subsequent education stages. Since preschool teachers are very important to the quality of preschool education, the problem of preschool teacher turnover and the construction of a preschool teacher workforce should be taken seriously. The results of this study show that preschool teachers in Southwest China have a high turnover intention and that there is poor stability of the teacher workforce. While the Chinese government has long focused its policy attention on compulsory education, the existing severe crisis of preschool teachers' turnover reminds the Chinese government to change its mindset, increase resource investment in the preschool education stage, pay more policy attention to the turnover problem of preschool teachers, and strengthen policy guarantees for the stability of the preschool teacher workforce.

#### 6.2. Properly treating the mobility of preschool teachers and establishing a feedback mechanism for outstanding preschool teachers who have moved to other kindergartens

Upward mobility is conducive to the personal and professional development of preschool teachers, and for outstanding preschool teachers, mobility to a better work platform is an



inevitable trend. The results of this study also show that the more recognition preschool teachers receive from their work, the higher their job quality and the higher their turnover intention. Therefore, kindergarten administrators should treat the mobility of outstanding preschool teachers correctly and should not impede the upward mobility of particularly outstanding preschool teachers. Administrators for preschool teachers and policymakers can take full advantage of the teacher rotation system in compulsory education to give full play to the leadership role of outstanding preschool teachers who have moved upward. In China, the concept of “regular teacher exchange” was first introduced in 1996, and a system of rotating teachers and principals within county regions was introduced in 2010 to guide the movement of outstanding teachers and principals to rural schools and weak schools to promote the balanced development of compulsory education (Ministry of Education, 2014). The Chinese government and education departments can develop a rotation policy for preschool teachers and focus on establishing a “feedback” mechanism for outstanding preschool teachers so that teachers who have moved upwardly from disadvantaged areas or kindergartens can return to the areas or kindergartens where they have worked in the past through rotation. This will enable them to share their experiences or provide training and guidance to disadvantaged areas or kindergartens and improve the quality of education in those areas or kindergartens.

### *6.3. Improving the system of career access and professional development of preschool teachers in China to enhance their professional identity*

The results of this study show that the higher the level of professional identity of Chinese preschool teachers is, the lower their turnover intention and the higher their job quality. Therefore, enhancing the professional identity of Chinese preschool teachers is conducive to efficiently promoting the construction of a preschool teacher workforce. Thus, the Chinese government and education authorities can intervene from two aspects: career access and professional development. First, it is important to further promote the construction of the preschool teacher qualification entry system, appointment system, and post system to screen preschool teachers with a good sense of professional identity to enter the preschool education profession and enhance the professionalization of preschool teachers from the entrance end (Peng, 2012); second, to establish preschool teacher training bases covering the whole province or the whole city, actively promote the construction of teacher training schools at district and county levels (Peng, 2012), establish a training and professional development system for all preschool teachers, and enhance preschool teachers’ professional identity through postservice professional development in the end.

### *6.4. Building a professional learning community of preschool teachers and promoting the establishment of harmonious interpersonal relationships*

The results of this study show that the better the relationships with colleagues of preschool teachers, the lower their turnover intention and the higher their job quality. Therefore, establishing harmonious and friendly colleague relationships can efficiently promote the construction of the preschool teacher workforce. In kindergartens, the growth and development of young children are the result of the joint efforts of all preschool teachers; therefore, colleague relationships in kindergartens are not the same as those in enterprises; that is, preschool teachers are not in fiercely competitive relationships but in a harmonious and cooperative ones. A professional learning community should be built among preschool teachers to teach and research together and discuss together. Kindergartens should pay attention to building a cooperative culture and constructing a common vision for preschool teachers. Kindergartens should also establish motivational mechanisms for preschool teachers to participate in the professional learning community, such as establishing a sound evaluation system, reward and punishment system, and quality assessment system for preschool teachers, to appropriately unify the individual interests of preschool teachers, the collective interests of the professional learning community, and the collective interests of the kindergartens and to stimulate the participation of preschool teachers (Shi, 2013).

### *6.5. Improving the guarantee mechanism for monetary and nonmonetary pay of preschool teachers and implementing the corresponding environmental condition support*

The results of this study show that the higher the levels of the compensation package and living conditions, the lower the turnover intention of Chinese preschool teachers, and the higher the level of working conditions, the higher their job quality. A compensation package is a direct monetary payment for preschool teachers, but living conditions (children's school-enrolling issues, rental subsidies, housing subsidies, etc.) and working conditions (separate office, office equipment, drinking fountains, sofas, etc.) are kinds of non-monetary pay, which are factors that represent indirect nonmonetary payments for preschool teachers. Previous teacher welfare policies in China have focused on monetary pay and ignored nonmonetary pay, which has a significant impact. Therefore, with limited resources, the Chinese government and education authorities should secure preschool teachers' nonmonetary pay as much as possible and include the guarantee of living and working conditions in the incentive policies for preschool teachers while securing monetary pay.

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