



Article Linking Preschool Teachers' Pay Equity and Turnover Intention in Chinese Public Kindergartens: The Mediating Role of Perceived Organizational Support and Job Satisfaction

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Abstract: The turnover rate, income levels, and salary distribution among kindergarten teachers in China have gained increasing attention as these issues may negatively affect teacher quality. They largely impede the sustainable development of preschool education. This study aimed to explore the level of perceptions of pay equity among preschool teachers and examine the relationships among pay equity, turnover intention, perceived organizational support (POS), and job satisfaction. A survey was conducted with 2029 preschool teachers from Chinese public kindergartens, and descriptive analysis and covariance-based structural equation modeling (CB-SEM) were used to analyze the data. The results showed that the level of pay equity for preschool teachers was moderate, with a significant difference between teachers with Bianzhi and those without. The structural equation model revealed a significant negative relationship between teachers' pay equity and their intent to leave. Perceived organizational support and job satisfaction independently mediated the relationship between pay equity and turnover intention, with a serial mediation effect observed. These findings highlight the importance of considering teachers' pay equity, POS, and job satisfaction in order to retain high-quality teachers.

Keywords: pay equity; perceived organizational support; turnover intention; teacher retention; preschool teachers

1. Introduction

Access to early childhood education (ECE) may benefit young children by improving their school readiness and lifelong developmental outcomes [1,2]. The effect of ECE services generally relies on their quality [3]. Among the factors contributing to quality ECE services, the quality of ECE teachers plays a pivotal role [4,5]. With this in mind, many countries have endeavored to enhance the quality of ECE teachers through promoting in-service training and other professional development activities [6]. However, ECE teachers' high turnover rate, which considerably jeopardizes teacher quality [7,8], has been witnessed in different countries [9,10]. If highly skilled teachers cannot be retained in the ECE sector, strategies exclusively focusing on professional development might yield disappointing outcomes. Moreover, the high turnover rate will hinder progress towards achieving the sustainable development goals pertaining to SDG 4.2, ensuring that "all girls and boys have access to quality early childhood development, care and pre-primary education".

During the past decade, the Chinese government has increased public investment in enhancing ECE teachers' quality. However, the high teacher turnover rate of China is hindering efforts to improve ECE personnel quality [11,12]. Therefore, it is necessary to identify the factors leading to ECE teachers' turnover intention to retain high-quality teachers. Previous studies explored the relationship between teachers' salary and turnover intention or turnover behaviors [13,14], and compensation is considered to be one of the most important factors contributing to ECE teachers' decision to leave or stay [15]. However,



Citation: Liu, Y.; Yu, Y.; Zeng, X.; Li, Y. Linking Preschool Teachers' Pay Equity and Turnover Intention in Chinese Public Kindergartens: The Mediating Role of Perceived Organizational Support and Job Satisfaction. *Sustainability* **2023**, *15*, 13258. https://doi.org/10.3390/ su151713258

Academic Editor: Grigorios L. Kyriakopoulos

Received: 28 April 2023 Revised: 16 August 2023 Accepted: 23 August 2023 Published: 4 September 2023



Copyright: © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https:// creativecommons.org/licenses/by/ 4.0/). researchers have mainly focused on the salary level instead of on teachers' subjective perceptions of salary, which have an important effect on employees' work behaviors and attitudes [16,17]. Besides, not only low salary level but also pay inequity is a widespread concern among Chinese preschool teachers. There is a scarcity of research on pay equity and turnover intention in the context of China and the early childhood education field. However, the importance of equity may vary with changes in culture [18,19], and the predictive effect of pay equity on turnover intention for teachers may also differ from that for other occupations as teachers are more motivated by intrinsic factors than external ones [20].

Addressing this research gap, this study formulates a model to investigate the influence of pay equity on turnover intention among Chinese preschool teachers, while also examining the underlying process. Based on both equity theory and a social exchange perspective, we propose that pay equity has a negative relationship with turnover intention. In addition, we posit two important mediators: POS and job satisfaction. These factors are crucial for a long-term sustainable organization. POS and job satisfaction are expected to played both an independent and a serial mediation role in this study.

1.1. ECE Teacher Turnover in China

Since 2010, the Chinese government has implemented great changes in the ECE landscape [21]. A series of policies and regulations, including the establishment of numerous higher education institutions for preparing ECE teachers, have been issued to ensure a sufficient supply of qualified ECE teachers. Despite the achievements that have been made, there continues to be a shortage of qualified ECE teachers. This problem might arise from the high turnover rate of preschool teachers. Unfortunately, it is difficult to obtain accurate turnover rate data; thus, some researchers have focused on studying turnover intention, which is the strongest indicator predicting actual turnover behavior [22,23]. Previous studies have revealed that the high turnover rate of preschool teachers is a severe problem in China [24]; thus, there is a need for more studies on Chinese preschool teachers' turnover intention and its antecedents.

1.2. Perception of Pay Equity and Its Relationship with Turnover Intention

While there are a number of studies on the impact of pay on employees' turnover [14,25,26], these studies have reached inconsistent conclusions, potentially due to the distinction between pay level and subjective perception of salary. While people tend to assume that actual salaries and pay perceptions are identical, they are, in fact, different concepts. For example, a meta-analysis found that pay level had a weak relationship with pay satisfaction, which is a form of subjective perception of salary [27]. Given the insufficient investigations on the relationship between subjective perceptions of salary and turnover intention, further research is warranted [28].

Pay equity is a type of subjective perception of pay for employees. The income of Chinese preschool teachers is not only criticized for being low (even lower than that of nannies), but also for being unfair [29]. Teachers doing the same work with an equivalent background get paid differently just because of different employment types. Those with Bianzhi (a tenured position with favorable compensation and benefits offered to those who pass the recruitment examination related to the position with Bianzhi) in public kindergartens earn as much as double or even triple what their counterparts without Bianzhi earn in the same centers [30]. Accordingly, perception of pay equity is worthy of investigation in the context of Chinese public kindergartens.

Pay equity is defined as employees' judgement of equality when they feel that their input-to-output ratio and that of others are comparable [31]. It is, however, a complex construct. Hartmann and Slapničar indicated that it comprises distributive equity and procedural equity [32]. Distributive equity can be distinguished as both internal equity and external equity, since people tend to utilize both internal and external referents to determine pay equity [33,34]. Furthermore, when employees are compensated in accordance with their

own sense of worth, personal equity exists [35,36]. In our study, we focus on distributive equity, which refers to the equity of outcome. For one thing, the unfairness of salary distribution for kindergarten teachers in China is particularly prominent. For another thing, procedural justice effects are considered "pan-cultural", whereas different cultures place varying importance on outcome justice [37].

The relationship between pay equity and teachers' turnover intention is supported by Equity Theory. This theory posits that individuals perceive fairness when their input/output ratio matches that of their referent others [31]. If this ratio falls short of that of their comparison groups, employees may experience a sense of relative deprivation and perceive injustice. When left unaddressed, this inequity can lead to psychological distress [31]. As such, individuals tend to seek to restore equity to alleviate this emotional distress; a common method of addressing this inequity is to adjust their input/output ratio [31,38]. Withdrawal attitudes and behaviors, including turnover intention, absenteeism, and actual turnover, may appear [39,40]. Specifically, when the equity treatment in the current organization seems impossible, employees will probably leave and search for an alternative work option which may offer a more equitable reward [40]. There are a few empirical studies that have examined the relationship between pay equity and employees' turnover intention in the business field [33,41]. Compared to other professionals, teachers might be less sensitive to salary when considering entering or leaving their position [42]. However, pay equity is a perception of equity, which is not equivalent to pay itself. A teacher may care less about actual pay but still be concerned about pay equity. Thus, based on equity theory and empirical research in other areas, we present the first hypothesis:

Hypothesis 1. Pay inequity is negatively related to Chinese preschool teachers' intention to leave.

1.3. Perceived Organizational Support (POS) as a Mediator

Although the relationship between pay equity and turnover intention has been the focus of some studies, the mechanisms between the two variables remain unclear. POS refers to the extent to which the organization values employees' contributions and cares about their well-being [43]. Social exchange theory suggests that employees and organizations are in a reciprocal relationship. Employees expect rewards from the organization that are proportionate to their contributions. Such rewards need not be excessive, but should be commensurate with the level of effort put in. When appropriate rewards are provided promptly and regularly, employees develop confidence that the organization will meet its obligations [44]. In addition, they feel that their value is recognized, thereby increasing POS [45]. Previous studies have revealed pay [46], as well as fair treatment [41,47], as being strongly related to POS in a predictable way. According to Eisenberger et al., particularly when employees believe that the organization has high discretionary control, the favorability of working conditions have a strong relationship with POS [48]. Therefore, our second hypothesis is as follows.

Hypothesis 2. *Chinese preschool teachers' pay equity is positively related to POS.*

Guided by the norm of reciprocity, employees who perceive a fair distribution of resources and translate this perception into POS are likely to invest more effort into their work cognitively, physically, and emotionally. In contrast, the perception of unfairness could lead to feelings of unappreciation for their contributions and value, subsequently resulting in a withdrawal of their work engagement. Specifically, the POS theory posits that POS increases an employee's effort–outcome expectancy [43] and satisfies socio-emotional needs such as recognition, belonging, and self-esteem [49]. It facilitates the assimilation of an individual's organizational membership into his or her self-identity [50]. Thus, the effort–outcome expectancy and a sense of integration of organizational membership fostered by enhanced POS may reduce their tendency to leave the organization. In empirical studies, withdrawal behaviors are identified as important outcomes of POS, such as absenteeism,

turnover intention, and actual turnover behavior [46,51]. Accordingly, we propose our third hypothesis.

Hypothesis 3. *The POS of Chinese preschool teachers negatively predicts turnover intention.*

Additionally, affective regard, communal uniqueness, and a sense of belonging are key characteristics of social exchange relationships [52]. Organizational justice plays a crucial role in shaping social exchange relationships and then motivating employees to develop stronger attachments and higher levels of commitment to their work [53]. Several studies have examined the mediating role of POS between fairness and work attitudes and behaviors [50,54]. For example, Loi et al. investigated practicing solicitors in Hong Kong and found that POS mediated the effect of justice perceptions on intention to leave [50]. Biswas et al. found that the POS of 238 Indian managers mediated the relationship between distributive justice and employee engagement [45]. Thus, we have the following hypothesis:

Hypothesis 4. *POS mediates the relationship between pay equity and turnover intention.*

1.4. Job Satisfaction as a Mediator

Another possible mediator is job satisfaction. Job satisfaction is one of the most intensively studied topics in organizational research [55]. It refers to individuals' perceptions of their own positive emotional states as a result of their job evaluations [56]. According to equity theory, when employees perceive inequity in their circumstances, they experience a sense of relative deprivation and consequently express dissatisfaction. The personal outcome model in organizational justice theory suggests that distributive justice is the primary factor in predicting work attitudes (e.g., job satisfaction), which are linked to personal outcomes [57]. Previous research has confirmed that the job satisfaction of teachers, who are believed to be much more motivated by intrinsic than extrinsic factors, has a significant relationship with working conditions [58,59].There is empirical evidence of the positive relationship between distributive justice and teachers' job satisfaction [60,61]. Consequently, we have the following hypothesis.

Hypothesis 5. Chinese preschool teachers' pay equity positively predicts job satisfaction.

Furthermore, as the theory of planned behavior suggests, job satisfaction is a behavioral attitude and an antecedent of planned behavior intention [62]. When employees are dissatisfied with their jobs, such behavioral attitudes may stimulate intentions to leave [63]. A number of studies throughout these years have confirmed that job satisfaction is negatively related to turnover intention [64,65]. In this study, we propose as follows:

Hypothesis 6. Job satisfaction is negatively related to turnover intention.

Moreover, cognitive dissonance theory suggests that individuals experience tension when they perceive inequity and dissatisfaction, which then motivates them to address or alleviate it. Altering inputs or outputs is often the preferred solution to alleviate this tension [66]. In extreme cases in which possibilities for modifying inputs or outputs are limited, individuals may choose to leave the organization. Numerous empirical studies have examined the mediating role of job satisfaction in turnover intention models [67–69]. However, research that specifically examines the mediating role of job satisfaction in the relationship between pay equity and job satisfaction is limited [70,71]. Therefore, based on the theoretical foundation, existing empirical evidence, and limitations of the current understanding in explaining the mediating role of job satisfaction in linking pay equity and job satisfaction, we present the following hypothesis. **Hypothesis 7.** *Pay satisfaction functions as an independent mediator in the relationship between pay equity and turnover intention.*

1.5. Serial Mediating Role of POS and Job Satisfaction

As discussed above, POS and job satisfaction each play an independent role in mediating the relationship between pay equity and turnover intention. However, the way in which these two factors work together to influence the relationship is still unclear. As Hayes pointed out [72], when more than one mediator is included in the mediation model, serial mediation may occur if the mediators are related to each other. POS has been shown to contribute to overall job satisfaction by a number of studies [51,73]. In line with social exchange theory, employees with high POS find themselves valued and cared for by the organization, and balance their relationship with the organization by developing positive attitudes and engaging in behaviors consistent with POS [51]. Thus, it is reasonable to assume that preschool teachers who experience more positive treatment will feel more supported by the organization and, in turn, develop good work attitudes.

All in all, the final hypothesis is as follows.

Hypothesis 8. POS and job satisfaction work together to play a serial mediating role in the relationship between pay equity and turnover intention.

1.6. The Current Study

Accordingly, this research sought to investigate the current status of pay equity, and its direct and indirect relationship with the turnover intention of Chinese preschool teachers in public kindergartens. As is shown in Figure 1, we assume that pay equity negatively predicts turnover intention. Besides, POS and job satisfaction could independently and sequentially mediate the relationship between pay equity and the turnover intention of Chinese preschool teachers in public kindergartens.

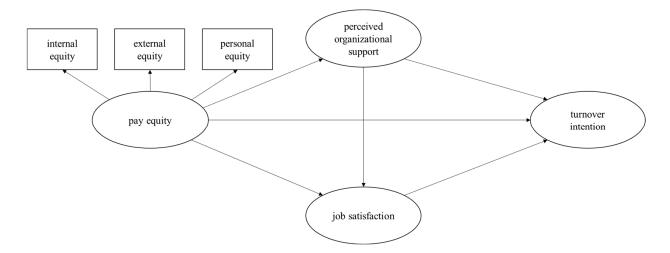


Figure 1. Serial multiple mediation of POS and job satisfaction in the relationship between pay equity and preschool teachers' turnover intention.

2. Materials and Methods

2.1. Participants and Procedures

Preschool teachers in public kindergartens in Guangdong and Jilin provinces served as the sample population for this study. A questionnaire was disseminated online through the free and professional network platform called "Questionnaire Star". We sought the help of several university teachers in Jilin and Guangdong provinces. They disseminated the online questionnaires to preschool teachers through their available communication channels. Although the project was supported by the local university teachers, we made it clear in the introductory part of the survey that teachers' participation was completely voluntary and anonymous. Preschool teachers were invited to voluntarily complete the questionnaire online within one week. We collected a total of 2175 questionnaires. We first used the response time as a tool to screen the data. The questionnaires that were completed in less than one minute were discarded. We then screened for 15 unchanging answers in a row, as too many identical answers can indicate a lack of effort. After screening all questionnaires, 2079 questionnaires with valid information were obtained, giving a valid response rate of 95.59%.

As shown in Table 1, 97.7% of participants were female and 2.3% were male. Approximately 48.1% of the respondents lived in towns and rural areas. Teachers below age 30 accounted for 38.4% of the participants. Most respondents (66.3%) had worked as early childhood teachers for no more than 15 years. The majority of participants held an associate degree and had majored in early childhood education. About half of the respondents had Bianzhi and a professional title.

Variables	Item	%	Variables	Item	%
	City	34.6%		Less than 2 years	16.2%
T (*	County	17.4%		2–5 years	20.3%
Location	Town	36.5%	Teaching	6–15 years	29.8%
	Rural	11.6%	experience	16–30 years	22.6%
Gender	Female Male	97.7% 2.3%	-	More than 30 years	11.1%
— .	Jilin	57.4%	— , ,	With Bianzhi	54.8%
Province	Guangdong	42.6%	Bianzhi	Without Bianzhi	45.2%
	18–25	17.3%		Below high school	1.9%
	26-30	21.1%		High school	4.3%
Age	31-40	29.9%	Qualification	Associate	46.7%
0	41-50	20.3%		Bachelor	46.0%
	Older than 50	11.5%		Graduate	1.1%
Title	With title	52.1%	Major	Early Childhood Education	73.3%
	Without title	47.9%	,	Other	26.7%

Table 1. Demographic Characteristics of Participants.

2.2. Instruments

2.2.1. Demographic Characteristics

Considering that personal demographic characteristics may relate to preschool teachers' turnover intention, as indicated by previous studies [74,75], demographic characteristic information including preschool teachers' gender, age, education level, and Bianzhi, was collected through the questionnaire. The following variables were included as control variables in the current study. Gender and Bianzhi were coded as dichotomous variables (1 = female, 0 = male; 1 = Bianzhi, 0 = no Bianzhi). Education level was coded as 1–3 (1 = high school or below, 2 = associate degree, 3 = bachelor degree or above). Age was coded as 1–4 (1 = 18–25 years old, 2 = 26–30 years old, 3 = 31–40 years old, 4 = older than 40 years). All the control variables were converted into dummy variables and then included in the tested model.

2.2.2. Pay Equity

This research adopted and revised the pay equity scale originally adopted by Lin et al. [76]. Pay equity in this study, which focuses on distributive outcomes, has three dimensions, namely internal equity, external equity, and personal equity. People tend to use internal and external referents to determine pay equity [33,34]. Internal equity refers to the perception that employees have when they compare their input-output ratio to that of their peers in the same organization. External equity refers to the perceptions generated

when the comparison objects are counterparts outside their organization. Personal equity refers to the perception teachers have when they compare the rewards from the organization for their efforts, contribution, duty, risk, and performance. The scale has a total of 10 items in total and uses a 5-point Likert scale ranging from 1 (extremely inconsistent) to 5 (extremely consistent). The average scores were calculated for internal equity, external equity, and personal equity, with higher scores denoting higher perceptions of pay equity.

2.2.3. The Turnover Intent

The turnover intent scale was revised from the instrument developed by Farh et al. [77]. It contains three items and uses a 5-point Likert scale to assess the score. The score ranges from 1 (extremely inconsistent) to 5 (extremely consistent). A higher score indicates that teachers are more likely to leave.

2.2.4. Perceived Organizational Support

This research used the perceived organizational support questionnaire originally developed by Eisenberger et al. [43] and simplified by Loi et al. [50]. The instrument has six items. It uses a 5-point Likert scale to assess the score, ranging from 1 (extremely inconsistent) to 5 (extremely consistent). The higher the score is, the higher the level of POS is.

2.2.5. Teacher Job Satisfaction

The job satisfaction scale was developed by Judge et al. [78]. Its predictive effect on Chinese preschool teachers' job satisfaction has been verified [79]. This instrument consists of 5-point Likert-type scale items, ranging from 1 (extremely inconsistent) to 5 (extremely consistent). A higher score denotes a higher level of job satisfaction.

2.3. Data Analysis

SPSS 23.0 was used for the descriptive statistics, reliability, and Pearson's correlation analysis. Mplus 7.4 was used to examine the individual item reliability, internal consistency reliability, discriminant validity, convergent validity, and the mediating roles of POS and job satisfaction in the relationship between pay equity and turnover intention.

To clarify, the current study employs CB-SEM instead of partial least squares structural equation modeling (PLS-SEM) for several reasons. First, this research includes only reflective measure constructs without any formative measure constructs. Second, the sample size in this research is relatively large. Lastly, the purpose of this research is to test an existing theory rather than focus on the predicting and explaining of target constructs [80].

3. Results

3.1. Testing for Common Method Bias

To avoid common method bias, which can result from using the same data collection method for both independent and dependent variables, we allow completely anonymous responses to the questionnaires and include reverse statement items. To further ensure that serious common method bias is not present, we use Harman's single-factor test to detect the effects of common method bias [27]. An unrotated principal component factor analysis of all items of the variables revealed 13 factors with eigenvalues greater than 1, and the first factor explained 31.24% of the variance, which is less than the 50% cutoff recommended by [81], indicating that the common method bias is not a major concern here.

3.2. Reliability and Validity

To ensure the reliability and validity of the measurement, a confirmatory factor analysis (CFA) was conducted to assess the measurement model. The reliability of individual items, internal consistency reliability, discriminant validity, and convergent validity were assessed.

3.2.1. Individual Item Reliability

Individual item reliability is assessed by calculating standardized factor loadings of each item on its respective variable. According to Hair et al. [81], the recommended standardized loading estimate for each item is at least 0.5, with an ideal threshold of 0.7 or higher. Most individual items in this study have loading values greater than 0.7 for their respective variable. However, there is only one item that loads below 0.7, but still above 0.5. The individual item reliability is considered acceptable.

3.2.2. Internal Consistency Reliability

Internal consistency reliability in this study is assessed using composite reliability. The criterion for CR is usually a value of 0.7 or higher. Table 2 shows that the internal consistency of each variable in this study is satisfactory.

Construct	Items	Loadings	CR	AVE	
	IE1	0.924			
Internal equity	IE2	0.946	0.944	0.849	
1	IE3	0.892			
	EE1	0.905			
External equity	EE2	0.936	0.936	0.829	
	EE3	0.891			
	PE1	0.913			
Porconal aquity	PE2	0.954	0.0((0.977	
Personal equity	PE3	0.926	0.966	0.877	
	PE4	0.955			
	PO1	0.796			
	PO2	0.831			
POC	PO3	0.873	0.951	07(7	
POS	PO4	0.929		0.767	
	PO5	0.924			
	PO6	0.893			
	JS1	0.802			
Job satisfaction	JS2	0.892	0.004	0 (50	
JOD Satisfaction	JS3	0.932	0.884	0.659	
	JS4	0.643			
	TI1	0.851			
Turnover intention	TI2	0.951	0.937	0.832	
Note: AVE – Average varian	TI3	0.931			

Table 2. Factor loadings, composite reliability and average variance extracted.

Note: AVE = Average variance extracted; CR = Composite reliability.

3.2.3. Convergent Validity

Convergent validity among item measures can be estimated using various methods, as suggested by [81]. Standardized loading estimates should exceed 0.5 and all factor loadings should be statistically significant. When using CFA, an average extracted variance (AVE) greater than 0.5 indicates satisfactory convergent validity. The construct reliability value should be at least 0.7 [81]. As is shown in Table 2, except for the CR and factor loading value, the AVE for all variables in this study also meet the requirement for adequate convergent validity.

3.2.4. Discriminant Validity

CB-SEM typically relies on the Fornell–Larcker criterion to assess discriminant validity [82]. When comparing the AVE estimates of any two variables in this study, it is found that they are greater than the square of the correlation between the two factors, which is shown in Table 3. This indicates that this instrument has sufficient discriminant validity.

Construct	IE	EE	PE	POS	JS
Internal equity					
External equity	0.906				
Personal equity	0.727	0.711			
POS	0.561	0.467	0.529		
Job satisfaction	0.441	0.357	0.392	0.528	
Turnover intention	-0.423	-0.427	-0.439	-0.437	-0.583

Table 3. The correlation between the two variables.

3.3. Descriptive Statistics and Bivariable Correlations

In this study, we first conducted the descriptive analysis of pay equity and its dimensions. Regarding the level of pay equity, it was found that the overall mean score was 3.24 (SD = 0.88), indicating a moderate level. Among the three dimensions, internal equity had the highest mean score (Mean = 3.56, SD = 0.89), followed by personal equity (Mean = 3.12, SD = 0.97) and external equity (Mean = 3.06, SD = 1.00).

As is shown in Table 4, the independent sample *t*-test showed that the perception of pay equity among Chinese preschool teachers in public schools varied significantly according to their employment type (t = 17.167, df = 2077, p < 0.001, d = -0.755). The ANOVA analysis revealed a statistically significant difference in pay equity between at least two age groups (F(3,2075) = 28.977, p < 0.001) and across different education level groups (F(2,2076) = 3.582, p = 0.028).

		Ν	M(SD)	T/F	Post Hoc Test	
Employment type	With Bianzhi	1140	3.516(0.804)		,	
	Without Bianzhi	930	2.896(0.838)	17.167 ***	/	
Age	18–25 year-old	797	3.185(0.821)			
	26–30 year-old	622	3.072(0.875)	28.977 ***	4 > 3 > 1 > 2	
	31–40 year-old	421	3.338(0.918)	20.977		
	older than 40	239	3.650(0.828)			
Education level	High school or below	129	3.049(0.834)		3 > 1; 2 > 1	
	Associate degree	971	3.229(0.892)	3.582 *		
	Bachelor degree or above	979	3.267(0.862)			

Table 4. *t*-test and ANOVA analysis of preschool teachers' perception of pay equity (N = 2079).

Notes: * *p* < 0.05; *** *p* < 0.001.

Finally, descriptive statistics for other variables in the model and bivariate correlations are presented (see Table 5). The results indicate that pay equity was negatively related to turnover intention (r = -0.453, p < 0.01), while positively related to job satisfaction (r = 0.435, p < 0.01) and POS (r = 0.549, p < 0.01). Similarly, job satisfaction was positively related to POS (r = 0.521, p < 0.01), but negatively related to turnover intention (r = -0.601, p < 0.01). We also found that POS was negatively related to turnover intention (r = -0.419, p < 0.01). Importantly, all the tested variables were significantly interrelated.

	M(SD)	5	6	7	8
Gender	0.98(0.15)				
Employment type	0.55(0.50)				
Age	2.05(1.02)				
Education level	2.40(0.60)				
Pay equity	3.24(0.88)	/			
Perceived					
organizational	3.55(0.80)	0.549 **	/		
support					
Job satisfaction	4.05(0.76)	0.435 **	0.521 **	/	
Turnover intention	2.18(1.02)	-0.453 **	-0.419 **	-0.601 **	/

Table 5. Descriptive Statistics and Bivariate Correlations (N = 2079).

Notes. ** *p* < 0.01. M: mean; SD: standard deviation.

3.4. Model Test

We used the maximum likelihood estimation to analyze the mediating roles of POS and job satisfaction. The mediation model was analyzed based on 1000 bootstrapped samples and 95% confidence intervals.

Multiple mediators can be arranged in parallel models or serial models. A main difference between the models is whether one mediator exerts a causal influence on another [72]. We calculated the partial correlation between POS and job satisfaction, controlling pay equity as the controlled variable. The analysis revealed a significantly positive correlation between POS and job satisfaction (r = 0.375, p < 0.001). This finding suggests the potential presence of a serial multiple mediator model. We also compared the parallel and serial mediation models to determine the more suitable one. Since the parallel model is embedded within the serial mediation model, a chi-square difference test was employed. The goodness-of-fit indicators of the parallel model were unsatisfactory ($\chi 2 = 2929.733$, df = 204, RMSEA = 0.080, CFI = 0.916, TLI = 0.904, SRMR = 0.098). Conversely, the serial mediation model was acceptable ($\chi 2 = 2631.184$, df = 203, RMSEA = 0.076, CFI = 0.925, TLI = 0.914, SRMR = 0.068). In other words, the serial mediation model produced a better match to the data. Additionally, a significant difference was observed between the parallel model and serial mediation model ($\Delta \chi 2 = 289.549$, $\Delta df = 1$, p < 0.001). Therefore, the serial mediation model was considered more appropriate for this study.

Pay equity was directly and indirectly correlated with the turnover intention of Chinese preschool teachers in the serial mediation model, as illustrated in Figure 2. Table 6 confirms the direct and indirect correlations between pay equity and turnover intention assumed in this study. Specifically, the effect size of the direct relationship was 0.189 (p < 0.001). Pay equity had a significant negative correlation with turnover intention, independent of POS, with an effect size of -0.052 (p < 0.01). Job satisfaction served as an independent mediator between pay equity and turnover intention, with an effect size of -0.075 (p < 0.001). Additionally, a serial mediating role of POS and job satisfaction was identified in the relationship between pay equity and turnover intention, with an effect size of -0.103 (p < 0.001).

In the serial mediation model, as is shown in Figure 2, pay equity was directly and indirectly negatively related to the turnover intention of the Chinese preschool teachers. The direct and indirect relationships between pay equity and turnover intention assumed in this study were confirmed and are presented in Table 6. Specifically, the effect size of the direct relationship was 0.189 (p < 0.001). Pay equity was significantly and negatively related to turnover intention through the independent mediating role of POS with an effect size of -0.052 (p < 0.01). Job satisfaction also acted as an independent mediator between pay equity and turnover intention with an effect size of -0.075 (p < 0.001). Besides, a serial mediating role of POS and job satisfaction in the relationship between pay equity and turnover intention with an effect size of -0.103 (p < 0.001).

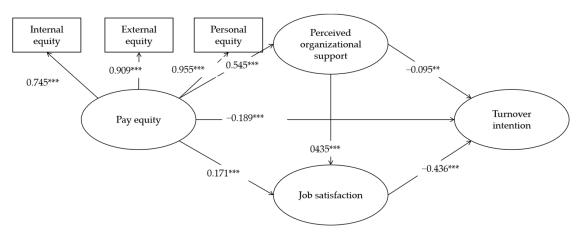


Figure 2. Serial multiple mediation of POS and job satisfaction in the relationship between pay equity and turnover intention with standard path coefficients. Note. ** p < 0.01, *** p < 0.001.

Table 6. Direct and indirect relations of pay equity to turnover intention in the serial multiple mediation model.

Effect	β	SE	р	95%CI
Direct effect	4	01	P	<i>JU</i> /0 C
Pay equity—Turnover intention	-0.189	0.028	0.000	(-0.246, -0.139)
Indirect effects				
Pay equity—POS— Turnover intention	-0.052	0.017	0.002	(-0.086, -0.021)
Pay equity—Job Satisfaction—Turnover intention	-0.075	0.013	0.000	(-0.100, -0.049)
Pay equity—POS—Job Satisfaction—Turnover intention	-0.103	0.010	0.000	(-0.124, -0.086)
Summary of indirect effects	-0.230	0.18	0.000	(-0.262, -0.195)

Note. SE = standard error; 95% CI = 95% confidence interval.

4. Discussion

Pay has increasingly gained attention in tackling preschool teachers' turnover issue. However, previous studies focused more on the actual pay level than subjective perceptions of pay. Studies in the context of Chinese public kindergarten are even more limited. In this study, we have advanced the research by exploring the current level of preschool teachers' pay equity and applying a serial mediating model to investigate the relationship between pay equity and turnover intention with the independent and serial mediating roles of POS and job satisfaction.

There were significant differences in pay equity among Chinese preschool teachers. Pay equity was significantly higher for preschool teachers with Bianzhi compared with those without it. Additionally, preschool teachers with higher education levels reported significantly higher levels of perceived pay equity than teachers with high school or lower education levels. According to Adams's theory, employees with higher education levels may have higher expectations, resulting in lower perceptions of equity due to relative deprivation compared with their counterparts [66]. However, a significant income disparity exists among preschool teachers in China, particularly between teachers with different types of employment, resulting in income gaps up to two to three times [30]. Consequently, this situation induces a stronger sense of relative deprivation and significantly lower perceived pay equity, regardless of lower expectations, due to the extremely low-income level for teachers without Bianzhi and those with lower education levels compared to their counterparts. Another possible explanation relates to culture. As previous studies indicate,

equity is not a universal construct, as is largely affected by culture and ideology [19]. In a highly collectivist society like China, people would expect equal rewards compared to others [83,84]. This inclination affects their perceptions of pay equity, resulting in lower scores for teachers without Bianzhi.

This research found a negative predictive effect of pay equity on the turnover intention of Chinese preschool teachers, which is consistent with prior studies in other sectors [33,41]. Teachers are typically believed to be motivated more by intrinsic factors than extrinsic factors (such as salary), in comparison to other professionals [20]. Pay equity encompasses not only monetary aspects but also considerations of justice. Teachers, who care less about pay level, may decide to leave the school due to concerns regarding justice. As the equity theory supposes, when employees perceive unfavorable treatment compared to others in similar positions, they experience tension, leading to destructive organizational behaviors including withdrawal, harassment, and turnover [85,86]. It is highly probable that teachers would choose to leave preschools in search of more appealing alternatives that provide equitable treatment. The findings of the current study align with previous research showing that fairness at the school level has a direct impact on teachers' turnover intentions [87]. Furthermore, despite some studies establishing a positive relationship between preschool teachers' income and turnover intention [14,24,25], the direct predictive effect of income on turnover intention has not been supported [24]. This research identified a direct effect of perception of pay equity on intention to quit. The differing result may stem from the distinction of pay and pay equity. The former pertains to the actual pay level and structure, while the latter concerns the subjective evaluation and perception of pay. In accordance with the stimulus-cognition-response model, income serves as the external stimulus, while pay equity represents preschool teachers' attitudes. Compared to pay, pay equity connects to preschool teachers' response more directly.

This study confirmed that POS plays a mediating role between pay equity and turnover intention, supporting the existence of an indirect effect. This finding is consistent with previous studies that have investigated POS as a mediator in the social exchange process, specifically examining how work experience variables, such as distributive justice, influence work attachment variables [45,50,54,88]. In the social exchange process between preschool teachers and public kindergartens, fair treatment from preschools communicates a sense of value and care to teachers. Consequently, this fosters a stronger emotional attachment and higher level of involvement, making teachers less likely to leave their jobs. Moreover, this study revealed that job satisfaction partially mediates the relationship between pay equity and turnover intention [70,71,89]. However, these findings are not entirely consistent with similar studies considering the mediating effects of job satisfaction and POS. For example, Suifan et al. discovered that job satisfaction fully mediated the relationship between distributive justice and work attitudes [71]. This discrepancy could be attributed to various factors, such as differing definitions and dimensions of pay equity, as well as differences in the industries where studies were conducted.

Finally, this study also confirmed the serial mediating effect of POS and job satisfaction between pay equity and turnover intention. As previous studies have found, POS contributes to teachers' job satisfaction [51,73], while job satisfaction is a primary predictor of teachers' turnover intention [90,91]. Thus, the negative relationship between pay equity and turnover intention can be gradually lowered through the chain-mediating path of POS and job satisfaction among Chinese public kindergarten teachers.

4.1. Conclusions

To guarantee the sustainable development of quality ECE, it is necessary to reduce the turnover rate of ECE teachers. Despite various studies on preschool teachers' turnover intention, there remains a scarcity of examination of the effect of pay equity, particularly in the context of China. This gap in knowledge obstructs our understanding of potential factors contributing to the mobility of preschool teachers and diverts the attention of governments and preschools from implementing appropriate strategies to stabilize the

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personnel in preschools. Drawing primarily from equity theory and a social exchange perspective, we formulated a model and tested it using data collected from a sample of public preschool teachers in China.

In this study, pay equity was discovered to have both a direct and indirect influence on Chinese preschool teachers' turnover intention. POS and job satisfaction, which can reduce turnover intention and increase loyalty, thus contributing to sustainability at the organization level [92], have been found to exert both independent and sequential mediating effects on the relationship between pay equity and turnover intention.

4.2. Limitations

This research has several limitations. First, this research primarily relied on the equity theory and social exchange theory to develop hypotheses. However, equity theory has been criticized for assuming a personal profit-maximization norm applied universally to all individuals [93]. To address this limitation, future studies could include variables such as equity sensitivity as moderators. Second, this study did not distinguish the effect of different dimensions of pay equity. Internal equity and external equity may have different effects on teachers' work attitudes [33], especially in China, where people may place more importance on in-group social status as it is more closely related to social esteem [94]. Future research could explore the relationship between different dimensions of pay equity and work attitudes. Thirdly, this study adopted a cross-sectional design. Although the model was constructed based on theories and previous research, it is important to note that a causal relationship between pay equity and turnover intention cannot be established. To further confirm the direct and indirect influences of pay equity on preschool teachers' work attitudes, it is recommended to consider a longitudinal research design.

4.3. Implications for Practice

As suggested in this study, turnover intention can be viewed as an outcome of social exchange. It was found that pay equity had a negative predictive effect on the turnover intention of Chinese preschool teachers' turnover in public kindergartens and the mediating roles of POS and job satisfaction. Considering that a high teacher turnover rate is detrimental to young children's development and ECE providers [7,15,95], we strongly recommend improving preschool teachers' pay equity and POS to facilitate the sustainable development of quality education.

Policymakers and ECE service providers should ensure that their distribution procedures and policies lead to high perceptions of pay equity. The key to achieving a strong sense of pay equity lies not only in increasing teachers' pay levels, but also in providing appropriate rewards based on their contributions to work. It is crucial to maintain a consistent input/output ratio within preschools that is comparable to other teaching professions. Currently, in China's public preschools, income is allocated based on teachers' employment status rather than their actual contributions [96]. Public financial funding only covers the salaries of teachers with Bianzhi positions, while other teachers rely solely on parental fees, resulting in unstable and significantly lower incomes for those without Bianzhi positions. To address this issue, we recommend that the current public investment mechanism be reformed by estimating operating costs and allocating public funds based on the number of students, thereby ensuring that the salaries of teachers without Bianzhi positions are covered by public funds. The principle of "equal compensation for equal effort" should be incorporated into funding systems as a condition for public funding. Preschools should endeavor to utilize funding to secure teachers' income and establish a fair distribution process that guarantees equitable outcomes.

In addition, public kindergarten principals are advised to take measures to enhance teachers' POS. Not only fair rewards should be allocated to teachers to convey the recognition from the organization, but also open and transparent communication is suggested [46]. Regularly sharing information, implementing a transparent reward process, and providing timely feedback will help teachers to feel valued and cared for.

Author Contributions: Conceptualization, Y.L. (Ying Liu) and Y.Y.; methodology, Y.L. (Ying Liu) and X.Z.; software, Y.L. (Ying Liu) and X.Z.; validation, X.Z. and Y.L. (Yufei Li); formal analysis, Y.L. (Ying Liu) and X.Z.; investigation, Y.L. (Ying Liu) and Y.Y.; data curation, Y.L. (Yufei Li); writing—original draft preparation, Y.L. (Ying Liu); writing—review and editing, Y.L. (Ying Liu) and Y.Y.; visualization, Y.L. (Ying Liu); supervision, Y.Y.; project administration, Y.Y.; funding acquisition, Y.L. (Ying Liu). All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the National Social Science Fund of China, grant number. CHA200267.

Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki. No official ethics approval number was provided since the ethic committee in our university was yet to be formed at the time of writing this paper.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data set analyzed in the current study has not been published yet. Please contact the author if necessary.

Acknowledgments: We thank the researchers who helped assist with the investigation and the kindergarten teachers in this survey who cooperated with us.

Conflicts of Interest: No potential conflicts of interest were reported by the authors.

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