

## The Structure Of Preschool Teachers' Work Engagement Survey In China

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**Abstract**—The aim of this research is to develop the preschool teachers' work engagement survey. On the basis of literature review, the items of preschool teachers' work engagement were compiled according to interview (N=24) and open questionnaire investigation (N=72); Four factors were extracted, namely work pleasure, work value, work obligation and work absorption according to the results of Explore Factor Analysis (N=516); The main psychological survey index of this survey were examined according to Confirm Factory Analysis and analysis of the reliability and validity (N=720), the results of analysis show that these index were up to the mustard. This survey has 21 items, of which the structure, reliability and validity are very good, it can be acted as the measurement tool of the preschool teachers' work engagement.

**Keywords**—preschool teachers; work engagement; Factory Analysis

### I. INTRODUCTION

The history of job burnout research has more than thirty years, in those years, job burnout became a focus of attention in academia, many related papers were published in some countries. But at the end of last century, more and more researchers had criticized on the traditional psychology research paradigm by the influence of Active Psychology, because it had a bit thick to illness, agony, disorder, disability and so on[1] [2] [3]. For example, Bakker and Schaufeli (2008) pointed out, "Psychology has been criticized as primarily dedicated to addressing mental illness rather than mental wellness"[4]. Therefore, some researchers began to study work engagement from the opposite of job burnout.

Recently, work engagement has become a rather popular term in academia, more attention has been paid to robust control, but it came from the term "employee engagement", which was first used in the 1990s by the Gallup organization[5]. The first scholar who conceptualized engagement was Kahn (1990), he described it as the "harnessing of organization members' selves to their work roles: in engagement, people employ and express themselves physically, cognitively, emotionally, and mentally during role performances[6]. Later Kahn (1992) differentiated the concept of engagement from psychological presence or the experience of "being fully there", namely when "people feel and are attentive, connected, integrated, and focused in their role performance" [7]. Rothbard (2001), who was inspired by the work of Kahn, took a slightly different perspective and defined engagement as a two-dimensional motivational construct that includes attention (eg: "the cognitive

availability and the amount of time one spends thinking about a role.") and absorption (eg: "the intensity of one's focus on a role.") [8]. Work engagement is assumed to be the positive antipode of burnout by Maslach and Leiter. They regarded that Energy, involvement, and efficacy—these are the direct opposites of the three dimensions of burnout. So, work engagement is assessed by the opposite pattern of scores on the three burnout dimensions. However, this way of operationalizing burnout and engagement is questionable in view of the debate on the polarity of positive and negative affect[9]. Because employee has not symptoms of job burnout, we can not say that he is in work engagement. Likewise, when employee has a low work engagement, we also can not say that he is in job burnout[10]. So, job burnout and work engagement should be seen as conceptually different states.

On the basis of predecessors' research work, Schaufeli et al.(2002)defined engagement separate from burnout, as a positive, fulfilling, work-related state of mind in its own right that is characterized by vigour, dedication, and absorption[11]. Vigor refers to high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence in the face of difficulties. Dedication refers to a sense of significance, enthusiasm, inspiration, pride, and challenge. Vigor and dedication are the direct positive opposites of exhaustion and cynicism, respectively. The third dimension of engagement is called absorption, which was found to be another constituting element of engagement in 30 in-depth interviews[12]. Absorption is characterized by being fully concentrated and happily engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work. Thus, engaged employees feel vigorous and strong, are enthusiastic about their work, and they often get immersed in their work activities. According to their definition of work engagement, Schaufeli et al. developed The Utrecht Work Engagement Scale, which included 24 items: 9 vigor items, 8 the dedication items, and 6 absorption items. After psychometric evaluation in two different samples of employees and students, 7 items appeared to be unsound and were therefore eliminated so that 17 items remained: 6 vigor items, 5 dedication items, and 6 absorption items[11]. Nowadays, The Utrecht Work Engagement Scale is the most extensive applied to measure employee's work engagement.

Work engagement research originated from The West, and it's still in primary stage now. There are many disputations about how to measure work engagement, up till now, nobody has developed the Preschool Teachers' Work

Engagement Survey. In China, only several researchers have introduced this theory, nobody has developed Work Engagement Survey according to the social culture background of our country, saying nothing of The Preschool Teachers' Work Engagement Survey. Therefore, we hope that we can develop The Preschool Teachers' Work Engagement Survey, in order to offer a tool that has good reliability and validity for researchers to measure preschool teachers' work engagement.

## II. INTERVIEW AND OPEN QUESTIONNAIRE STUDY

First of all, we have selected 6 preschool teachers for interview, which came from the city of Hangzhou, Jinhua, and Quzhou in china, in order to learn about the characteristics of preschool teachers' work engagement in china. The the syllabus of interview mainly contains three parts: (1) preschool teachers' working age, education background, styles of preschool, etc. (2) what's the feeling and behaviour when you are absorbed in working? (3) what's the reason and effect when you get immersed in your work?

Next, we have selected 72 preschool teachers for open questionnaire investigation to analyze the characteristics of preschool teachers' work engagement for an in-depth study. The participants are made up of Hangzhou 37, Jinhua 8, and Quzhou 27. There are four problems for preschool teachers to answer: (1) if let you judge a preschool teacher is absorbed in working or not, which facets do you take into account, and what's your evidence? (2) when you are absorbed in your work, what's your feeling about yourself, time, circumambient persons and things, etc.? (3) what's the reason make you engaged in your work and what's the effect when you are absorbed in your work? (4) what's the active and negative influences when you are absorbed in your work?

After that, we have compiled the items of Preschool Teachers' Work Engagement Survey in light of literature review, interview, and open questionnaire investigation, and then established the item store. we also invited 7 preschool teachers, 26 psychological postgraduate students and 6 psychological experts to amend the items. The following suggestions they can refer to: (1) if the design of dimensionalities are rational or not? (2) can each item embody or measure the characteristics of preschool teachers' work engagement? (3) if the grammar or spelling of all the items are correct or not? According to their suggestions, we got rid of or corrected some items. For example, "I feel disappointed when I can not work in kindergarten one day", etc.

Ultimately, we establish the preliminary preschool teachers' work engagement survey, which is composed of 71 items, containing 8 dimensionalities, namely work pleasure, work value, work obligation, work absorption, work enthusiasm, work attitude, work preparation, work sensibility, and work excess. All items were scored on a five-point rating scale, ranging from 1 (never) to 5 (daily).

## III. THE EXPLORE FACTOR ANALYSIS OF PRELIMINARY SURVEY

### Method

#### *Participants and Procedure*

A questionnaire was delivered to 516 preschool teachers of Hangzhou, Jinhua, Taizhou and Jiaying. Most of preschool teachers ( $N=512$ ) are female (99.2%), only 4 preschool teachers are male(0.8%). 111 preschool teachers' working age are only 1 year (21.8%); 212 preschool teachers' working age are from 2 to 5 years (41.6%); 111 preschool teachers' working age are from 6 to 10 years (21.8%); 41 preschool teachers' working age are from 11 to 15 years (8.0%); 19 preschool teachers' working age are from 16 to 20 years (3.7%); 9 preschool teachers' working age are from 21 to 25 years (1.8%); 7 preschool teachers' working age are longer than 26 years (1.4%). 28 preschool teachers are graduated from Secondary School (5.5%); 232 preschool teachers are graduated from Middle Normal School (45.2%); 181 preschool teachers are graduated from Technical College (35.6%); 72 preschool teachers are graduated from Undergraduate College (35.6%). 127 preschool teachers are from city public preschool (24.6%); 139 preschool teachers are from city private preschool (26.9%); 116 preschool teachers are from village public preschool (22.5%); 134 preschool teachers are from village private preschool (26.0%).

#### *Measurement Instruments*

The preliminary preschool teachers' work engagement survey.

#### *Statistics Instruments*

SPSS 15.0 for windows.

#### *Results and Analyses*

##### A. *KMO and Bartlett's Test of sphericity*

In this study, 71 items were analyzed, the results indicated that:

TABLE I. KMO AND BARTLETT'S TEST

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.964
Bartlett's Test of Sphericity	Approx. Chi-Square	18858.215
	Df	2415
	Sig.	0.000

Kaiser (1974) said that if  $KMO > 0.5$ , items of survey are fit for factor analysis[13]. As we can see from the table 1,  $KMO=0.964$ , that is to say, all the items of the preliminary preschool teachers' work engagement survey are fit for factor analysis.

##### B. *Factors Extraction*

First, we used "Principal Component Analysis" to work out initial Component Matrix; and then made use of

“Varimax with Kaiser Normalization” to work out Rotated Component Matrix. When we extracted factors, the following criteria were referred to: Initial Eigenvalues > 1.0; % of Variance > 2.0; Every factors must contain 3 items.

TABLE II. TOTAL VARIANCE EXPLAINED

Component	Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	7.744	35.202	35.202
2	1.970	8.956	44.157
3	1.171	5.321	49.478
4	1.058	4.810	54.288

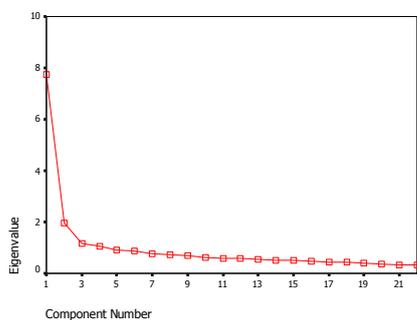


Figure 1. Scree Plot

According to psychological measurement criteria and study hypothesis, we deleted 48 bad items, 22 good items were leaved. As we can see from Table 1, Table 2, Table 3, and Figure 1, the factor loadings of all the leaved items more than 0.50. It means that all the 22 items are fit for psychological measurement criteria.

### C. Factors Name

Four dimensionalities were set down, which are base on above-mentioned analysis. The first dimensionality contains 6 items, which are all described the pleasure of preschool teachers in their work, so this dimensionality was named by “work pleasure”. The second dimensionality also contains 6 items, which are all described work significance of preschool teachers in their work, so this dimensionality was named by “work value”. The third dimensionality contains 5 items, which are all described work responsibility of preschool teachers in their work, so this dimensionality was named by “work obligation”. The last dimensionality also contains 5 items, which are all described work absorption of preschool teachers in their work, so this dimensionality was named by “work absorption”.

### D. The Form of Survey

The Preschool Teachers’ Work Engagement Survey came into being according to the explore factor analysis of preliminary survey. This survey is made up of 4 dimensionalities, namely work pleasure, work value, work obligation, and work absorption, 22 items altogether, all the

items were scored on a five-point rating scale, ranging from 1(never) to 5 (daily).

TABLE III. ROTATED COMPONET MATRIX

Item	Component			
	1	2	3	4
Item 5	0.694			
Item 4	0.662			
Item 7	0.649			
Item 37	0.600			
Item 22	0.585			
Item 71	0.549			
Item 33		0.707		
Item 25		0.639		
Item 26		0.615		
Item 55		0.604		
Item 64		0.583		
Item 46		0.576		
Item 2			0.776	
Item 3			0.735	
Item 28			0.695	
Item 8			0.639	
Item 27			0.557	
Item 65				0.682
Item 20				0.629
Item 23				0.590
Item 53				0.577
Item 68				0.546

## IV. THE CONFIRM FACTORY ANALYSIS OF FORMAL SURVEY

### Method

#### Participants and Procedure

A questionnaire was delivered to 720 preschool teachers of Hangzhou, Jinhua, Shaoxing, and Quzhou. Most of preschool teachers ( $N=716$ ) are female (99.4%), only 4 preschool teachers are male (0.6%). 123 preschool teachers’ working age are only 1 year (17.3%); 318 preschool teachers’ working age are from 2 to 5 years (44.8%); 155 preschool teachers’ working age are from 6 to 10 years (21.8%); 45 preschool teachers’ working age are from 11 to 15 year (6.3%); 40 preschool teachers’ working age are from 16 to 20 years (5.6%); 19 preschool teachers’ working age are from 21 to 25 years (2.7%); 10 preschool teachers’ working age are longer than 26 years (1.4%). 37 preschool teachers are graduated from Secondary School (5.1%); 207 preschool teachers are graduated from Middle Normal School (28.8%); 373 preschool teachers are graduated from Technical College (51.8%); 102 preschool teachers are graduated from Undergraduate College (14.2%). 128

preschool teachers are from city public preschool (17.8%); 211 preschool teachers are from city private preschool (29.3%); 175 preschool teachers are from village public preschool (24.3%); 206 preschool teachers are from village private preschool (28.6%).

### Measurement Instruments

The formal preschool teachers' work engagement survey.

### Statistics Instruments

LIREL 8. 70 for windows; SPSS 15. 0 for windows.

### Results and Analyses

TABLE IV. FIT INDEX OF M1 AND M2

	$\chi^2$	df	NFI	NNFI	CFI	IFI	RMR	RMSEA
M1	1217.42	203	0.95	0.95	0.96	0.96	0.060	0.083
M2	1042.82	183	0.95	0.96	0.96	0.96	0.057	0.081

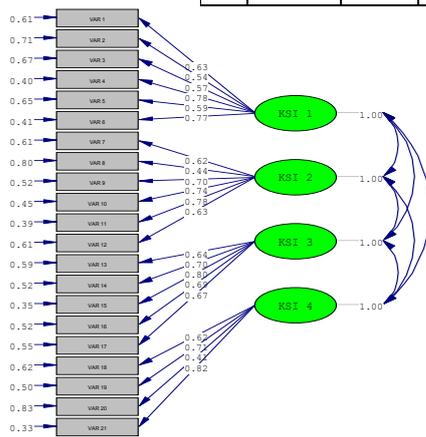


Figure 2. Factorial validity of M2

As we can see from the table 4,  $\chi^2 / df = 5.99$ , it's bigger than our anticipation, but the sample also very big, so it's still fit for psychological measurement criteria. NFI, NNFI, CFI, IFI > 0.95; RMR, RMSEA < 0.08, Fit index of M1 and M2 are both very good. However, MI of the item 65 is 0.11, it's very low, not fit for psychological measurement criteria (see Figure 2). So, we deleted item 65, and analyzed over again. In contrast to M1, both RMR and RMSEA of M2 are better. According to analyze above, we decided to delete item 65, the number of preschool teachers' work engagement was cut down from 22 to 21. The final survey is also made up of 4 dimensionalities, namely work pleasure, work value, work obligation, and work absorption, 21 items altogether. All items were scored on a five-point rating scale, ranging from 1 (never) to 5 (daily).

## V. RELIABILITY AND VALIDITY TEST

### Method

#### Participants and Procedure

The same to The Confirm Factory Analysis of formal survey.

#### Measurement Instrument

The formal preschool teachers' work engagement survey.

#### Statistics Instruments

SPSS 15. 0 for windows.

### A. Consistency Test

The internal consistency reliability and split-half reliability were applied in this analysis. The results of data analysis as follows:

TABLE V. THE CONSISTENCY OF EVERY DIMENSIONALITY AND SURVEY

dimensionality	Cronbach $\alpha$	split-half reliability	stability
work pleasure	0.79**	0.75**	0.83**
work value	0.77**	0.77**	0.83**
work obligation	0.77**	0.76**	0.75**
work absorption	0.70**	0.67**	0.63**
Total survey	0.91**	0.85**	0.84**

Note: \*\* $p < 0.01$ .

According to Gay's (1992) suggestions, if the Cronbach  $\alpha$  coefficient of measurement or survey more than 0.90, of which reliability is very good [13]. As we can see from the table 5, Cronbach  $\alpha$  coefficient of 4 dimensionalities ranging from 0.70 to 0.79, total survey is 0.91, all of which are fit for psychological measurement criteria. Furthermore, the split-half reliability coefficient of 4 dimensionalities ranging from 0.67 to 0.77, total survey is 0.85, all of which are also fit for psychological measurement criteria.

### B. Stability Test

We have selected 77 participants from the 720 sample to analyze the internal consistency reliability again after 30 days. The results showed that the stability coefficient of 4 dimensionalities ranging from 0.63 to 0.83, total survey is 0.84, all of which are also fit for psychological measurement criteria (see table 5).

### C. Validity Test

Maslach and Leiter (1997) regarded that engagement is characterized by energy, involvement, and efficacy which are considered the direct opposites of the three burnout dimensions exhaustion, cynicism, and lack of professional efficacy, respectively [14]. Therefore, we decided to use The Preschool Teachers' Work job burnout Survey [15] which was developed by Na, Z. and Jinliang, Q. to measure criterion-related validity of The Preschool Teachers' Work Engagement Survey. If between the both of survey, there is a negative correlation, that is to say, the validity of The Preschool Teachers' Work Engagement Survey is good. The

results of analysis presented that the two correlation coefficient is -0.61, which indicated that The Preschool Teachers' Work Engagement Survey has a good criterion-related validity.

## VI. DISCUSSION

By comparison with The Utrecht Work Engagement Scale, The Preschool Teachers' Work Engagement Survey not only assimilated the former's the pick of the basket, but also more innovational than it. The Utrecht Work Engagement Scale is made up of 3 dimensionalities, namely vigor, dedication, and absorption, while The Preschool Teachers' Work Engagement Survey is made up of 4 dimensionalities, namely work pleasure, work value, work obligation, and work absorption. By contrast, we can see that work pleasure and work obligation is innovations of The Preschool Teachers' Work Engagement Survey, which embodied the characteristics of Preschool Teachers in China. Preschool Teacher is a special profession, when they on duty, they often play with the kids, so they always feel very happy. In addition, China is a social democracy country, every preschool teacher has very strong obligation for the kids and their profession. As a result, the Preschool Teachers' Work Engagement Survey has good reliability and validity to measure preschool teachers' work engagement. However, there are some deficiencies, for example, the sample was selected only in Zhejiang province of China, if the Preschool Teachers' Work Engagement Survey can spread all over China even if other countries or not, it's need to farther study.

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## APPENDIX

### The Items of Preschool Teachers' Work Engagement Survey

#### *Work pleasure*

5. I feel very happy when I am working in the preschool.
4. I want to keep on working even if I was off duty.
7. when I am working in the preschool, I feel the time fly.
37. when I begin to work, I do not want to stop.
22. On holiday, I hope to go to preschool for working.
71. When I get up in the morning, I want to work right now.

#### *Work value*

33. I find the work of infant education very estimable.
25. I felt a sense of achievement when I was off duty.
26. The work of infant education can bring into playing my talent.
55. I love the work of infant education.
64. The work of infant education make me fill with self-confidence.
46. The work of infant education is full of challenges.

#### *Work obligation*

2. when I was working in the preschool, I arranged my work very well.
3. I think better of my work when I am working in preschool.
28. when I was on duty, I was stricted with myself.
8. I can persevere in working, even if I met the trouble.
27. I made a good plan before I was on duty.

#### *Work absorption*

20. when I am working, I forget myself..
23. when I am working, I forget everything around me.
53. when I am playing with the kids, I am full of expressions.
68. I am immersed in my work.