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How to ensure the sustainable supply of childcare educators: factors influencing student teachers' career choice

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Introduction: Guided by the Factors Influencing Teaching Choice (FIT-Choice) model, this study investigates the career choices of student teachers majoring in childcare and analyses the factors influencing their career choices to address the teacher recruitment issue in the childcare industry in China.

Methods: A total of 444 participants from vocational colleges were selected, and questionnaires were used to ask about their career choice intention and the influencing factors.

Results and discussion: The FIT-Choice model is theoretically acceptable, although the subscales for personal utility value should be reformulated. Students majoring in childcare have a positive but weak intention to become childcare educators. Their career choice intentions are jointly influenced by their social influences, task perceptions, values and fallback career, with task perceptions and values playing mediating roles between social influences and career choice intentions.

KEYWORDS

childcare services, childcare educator, FIT-choice model, career choice, student teachers

1 Introduction

It is widely recognized that providing children with good nutrition, enriching environment and high-quality care and education during their “first 1, 000 days” of lives can generate personal, social, and economic benefits (UNICEF, 2017). In 2019, the *Guidance on Promoting the Development of Childcare Services for Infants under the Age of 3* issued by the [General Office of the State Council \(2019\)](#) in China clearly points out that high-quality childcare services play an important role in improving people's livelihood, specifies for the first time at the national level the significance and national responsibility of childcare for 0–3-year-old infants, and emphasizes the integration of childcare services into socioeconomic development planning. According to academics, quality workforces are the key to ensuring the development of high-quality childcare services (Rad et al., 2022). To deal with the shortage of childcare educators,¹

¹ Childcare educator in this paper refers to any practitioner working with children aged 0–3 in childcare institutions.

we should, on the one hand, learn from the team-building experience of preschool² teachers to solve the turnover problem of in-service teachers in terms of salary, social security and work pressure and, on the other hand, be alert to the upstream movement of teacher turnover, i.e., childcare educators are already lost when students majoring in childcare make their career choices (Hong et al., 2020; Shi et al., 2022). This study aims to investigate the career choices of student teachers majoring in childcare and analyses the factors influencing their career choices to address the teacher recruitment issue in the childcare industry in China.

1.1 Childcare services for children aged 0–3 in China

In China, early childhood education includes childcare services for children aged 0–3 and preschool education for children aged 3–6. Childcare services have not been recognized by the national government until recently. Data from a nationwide survey in 2019 indicates a low enrolment rate of 5.50% for infants and toddlers under the age of three in childcare services (SCIO, 2021). After 2019, childcare has been entering a new phase of development. Policy-wise, the Chinese government issued the *Guidance on Promoting the Development of Childcare Services for Infants under the Age of 3* under the universal two-child policy to strengthen the development of childcare services because the development of high-quality childcare services is believed to be one of the critical measures to relieve the pressure of family care and stimulate fertility (Hong et al., 2022a). On the other hand, a growing number of parents are eager to enrol their children in high-quality childcare centres to better prepare them for an increasingly competitive society (Hong et al., 2019). Various types of childcare programs prospered in the last several years in China, including centre-based, home-based, as well as community-based childcare services (Wang et al., 2021; Hong et al., 2023). At the end of 2021, the number of childcare slots per thousand people has increased from nearly zero to 2.03. Despite the booming of childcare services, childcare slots are far below the national target of 4.50 slots per thousand people set in the “14th Five-Year Plan” for public services (NHCPD, 2022).

In addition to the shortage in quantity, the quality of childcare services does not reach an acceptable level. Structural quality in terms of the adult-child ratio and workforce qualification is not satisfactory (Hu et al., 2019). The majority of educators in childcare settings hold qualification certificates applicable to other education segments or other types of services, such as preschool teacher certificate, nursery governess certificate, and baby care certificate, none of which is entirely suitable for work in a childcare institution. Process quality, as measured by ITERS-R is relatively low according to a recent study (Hong et al., 2022b). Childcare educators lack professional knowledge and skills to provide quality experiences for young children and interact with them in a responsive and supportive way.

1.2 Training of qualified childcare workforce in vocational college

Teacher training is considered to be the most effective measure to improve the workforce quality and the quality of childcare services (Hu et al., 2017). The central government of China has been actively working toward cultivating highly qualified workforce in early childhood education to promote young children’s development (Liu and Boyd, 2020). Unfortunately, educational expenses and academic attention has primarily been paid on training preschool teachers catering to the needs of 3- to 6-year-old children (Li et al., 2017). In comparison to preschool education and preschool teacher education systems, China’s childcare industry starts relatively late. This backwardness is particularly evident in the training of childcare professionals, as there has been for a long time no childcare subject in teacher training colleges or universities in China.

It is only in recent years that childcare majors have been set up in vocational colleges, or the childcare direction has been set up in preschool education majors, aiming to cultivate competent educators who can engage in early childcare services, early education and other related work. Students majoring in childcare will get a junior college degree after three years of theoretical studies and practical internship. The specialized talent cultivated in vocational colleges will be the main source of childcare educators in the near future (Liu et al., 2020). However, a recent study found that most graduates from childcare majors in vocational colleges choose to be employed in preschools or private training institutions instead of entering the childcare industry (Hong et al., 2021). How to motivate student teachers in vocational colleges to engage in childcare-related work and how to reduce the upstream movement of childcare educators’ turnover are the keys to ensuring the availability of childcare workforce.

1.3 Factors influencing student teachers’ career choices

Career choice is a decision-making process in which individuals make value judgments by considering various subjective and objective influences (Jiang and Chen, 2015). Expectancy-value theory suggests that an individual’s success expectation and task valuation can interpret his or her behavior choice, persistence and performance (Wigfield and Eccles, 1992). In 2006, Australian scholars Richardson and Watt constructed the Factors Influencing Teaching Choice (FIT-Choice) model based on expectancy-value theory to explain why individuals choose teaching as a career (Watt and Richardson, 2007). In the FIT-Choice model, three major constructs, namely, task perceptions, self-perceptions of ability, and values, are taken as key indicators influencing individuals’ choice of teaching as a career.

Task perceptions encompass task demand and return. Teachers as professionals need to be professionally competent and adhere to the code of ethics, to support the holistic development of students as well as their own professional development (Wang et al., 2019). For childcare educators, apart from teaching, they have to undertake a lot of caring work, such as feeding, hygiene and sleep caring, because infants and toddlers are often unable to take care of themselves. All these demands add complexity to childcare educators’ working as professions (Yang and Wang, 2022). However, childcare educators are stereotyped in society as babysitters, and the professionalism of their

² Preschools or kindergartens in China mainly provide care and education for children aged 3–6, under the jurisdiction of the Ministry of Education, while the National Health Commission is fully responsible for childcare services for children aged 0–3.

work is not widely recognized (Chen, 2020). Consequently, childcare educators are perceived as a highly demanding yet less appealing career, which may influence student teachers' career choice.

Self-perception refers to individuals' perceptions of their teaching ability and professional competencies. Originating from Bandura's self-efficacy theory, Richardson and Watt (2006) emphasize that individuals' perception of their teaching abilities is a crucial motivator in choosing a teaching career. In 2012, Watt and Richardson used the FIT-Choice scale in a multi-country study, reaffirming the importance of individuals' perceived teaching abilities in career decisions (Watt and Richardson, 2012). Similar conclusions are verified in a study conducted in German (Stellmacher et al., 2020). However, a study in China finds a relatively weaker impact of self-perception of teaching abilities on preschool teachers' career motivation (Guo and Sun, 2018), highlighting the need for further exploration of its influence on childcare educators' career choice in the Chinese context.

Values are differentiated into the three subcomponents of intrinsic, personal utility and social value in the FIT-Choice model. Studies have found that some people choose to be preschool teachers because of their intrinsic interest, especially because they enjoy working with children (Yang and Wang, 2022). In addition to this, many people choose the profession because of the social value of teaching. Teachers make a social contribution by educating the next generation and nurturing human capital for societal development (Pang and Tang, 2023). There are also people who choose the teaching profession for its personal utility. Some appreciate the flexibility it offers in managing working hour and the summer and winter holidays that many other professions do not have, so that they can take better care of their families (Xing et al., 2023). Others value the job security of teaching, because teachers are authorized professionals in a "lifetime employment" system in Chinese basic education systems (Li et al., 2022). However, childcare educators are not in this 'lifetime employment' system and in most childcare institutions there are no summer or winter holidays at present. Therefore, it remains unclear whether personal utility value affects student teachers' career choice as childcare educators.

In addition to the three main constructs, social influences and fallback career also are considered in this model. Social influences are represented through two constructs, i.e., prior teaching and learning experiences and social support or dissuasion from important others. The role of social influences in student teachers' career choice has been well documented in literature. Opinions of family members, classmates, mentors and significant others have a significant influence on student teachers' career choice (Guo and Sun, 2018). At the same time, observational learning during teaching practicum is an important way for student teachers to acquire knowledge and attitudes. Good teacher role modeling may reinforce student teachers' sense of self-efficacy in teaching (Simić et al., 2022), or the reality shock during the internship may challenge their professional identity and make them doubt the value of teaching as a career (He et al., 2023). Fallback career reflects the possibility of individuals not choosing teaching but rather being unable to pursue their first-choice career. The model has been widely used in research on factors influencing teachers' career choices, and the FIT-Choice scale developed by Watt and Richardson (2007) also has been proven to adapt well to different cultural backgrounds and different teacher groups (e.g., Guo and Sun, 2018; Simić et al., 2022).

1.4 Research gaps and the present study

In this study, we address two major gaps in the literature. First, although the cultural adaptability of the model and scale has been proven in several studies, it would be a mistake to generalize it to all teachers in all settings (Watt and Richardson, 2012). For instance, in a Dutch sample of preservice teachers, the fallback career and job security (a subscale from the factor of personal utility value) factors were highly correlated, resulting in a single factor (Fokkens-Bruinsma and Canrinus, 2012a). The subscales on self-perception and intrinsic value were merged in a study conducted in Iran (Roudi, 2021). In addition, the samples in existing studies are mostly preservice or in-service teachers in primary and secondary schools, with few focusing on preschool teachers. Moreover, there is a lack of relevant studies on childcare educators. Our study, focusing on the teaching intentions and influencing factors of student teachers majoring in childcare, enriches research sample of teachers from different cultural backgrounds and different study stages.

Second, most existing studies explore which factors are evaluated as the most important or the relationship between motivational factors and other constructs. For instance, the *Asia-Pacific Journal of Teacher Education* published a special issue in 2012, focusing on teaching motivation studies using the FIT-Choice scale. In the six articles in this special issue, three compared motivations for different groups of teachers. For example, in a cross-cultural study, social values appeared higher in the US sample than in the Chinese sample (Lin et al., 2012). Another three studies examined how teaching motivations relate to other constructs, such as teachers' pedagogical knowledge (König and Rothland, 2012). Studies exploring the interrelationships between the influencing factors in the FIT-Choice model are rare. In the FIT-Choice model, Watt and Richardson (2007) regarded social influences and prior teaching and learning experiences as antecedent factors, which would have an impact on career choice through more proximal factors such as task perceptions, self-perception or values. However, few prior works have revealed the possible mediating effects of proximal factors.

2 Research questions and hypotheses

The Theory of Planned Behavior (TPB) is widely adopted to predict peoples' behavior or behavioral intention, such as parents' fertility decisions (Li et al., 2019), and parental intentions to enroll their children in early enrichment programs (Yu and Wang, 2020). According to TPB, an individual's actual behavior is determined by his or her behavioral intention, which, in turn, is jointly influenced by various factors including attitudes, subjective norms, and perceived behavioral control (Ajzen, 2011). As student teachers have not yet engaged in career choice behavior, this study adopts career choice intention as an indicator of career choice and examines whether and how factors proposed in the FIT-Choice model affect student teachers' career choice intentions. The specific research questions are as follows: 1. To what extent is the FIT-Choice model and scale applicable to student teachers majoring in childcare in China? 2. What is the current status of career choice intentions among student teachers majoring in childcare? 3. Do social influences, task perceptions, self-perceptions, values and fallback career influence career choice intention? If so, are there mediating effects of more proximal factors

(task perceptions, self-perceptions, and values) on the relationship between social influences and career choice intentions?

Regarding the first research question, we generally expect to replicate findings from previous works and confirm the construct of the FIT-Choice scale. Concerning the second research question, we assume that the intention to be a childcare educator is not strongly positive. For the last question, we hypothesize the following based on the FIT-Choice model: social influences, task perceptions, self-perceptions, values and fallback career influence career choice intentions, while task perceptions, self-perceptions and values play mediating roles in the relationship between social influences and career choice intentions.

3 Research design

3.1 Sample

A stratified sampling is taken. Initially, we conducted a preliminary screening based on the “Double High Plan” list in China. Vocational colleges categorized as A, B, and C levels, as well as ordinary vocational colleges not included in the “Double High Plan,” were stratified into the research scope. Through careful selection, we ultimately chose 20 vocational colleges and proactive efforts were made to establish contact with the officials responsible for each college. Through communication and negotiation, consent for participation was successfully obtained from 12 colleges. Colleges whose officials declined participation or did not respond were excluded from the study. Throughout the research process, we consistently adhered to and respected the principle of voluntariness, ensuring that student participation was based on personal willingness. A total of 471 student teachers majoring in childcare (or the childcare direction of the preschool education major) filled out the online questionnaire anonymously and 444 valid questionnaires were obtained after excluding 27 invalid ones. The characteristics of the sample are presented in Table 1.

3.2 Measures

Career choice intention was measured by the adapted behavioral choice intentions questionnaire (Song and Chathoth, 2008), which contains 3 items. Each item was rated on a 5-point scale ranging from 1 (not agree) to 5 (totally agree). The internal consistency was Cronbach’s alpha = 0.869.

Drawing on the Chinese version of the FIT-Choice scale applied in a cross-cultural study by Lin et al. (2012), the current study investigates the factors influencing student teachers’ career choice in five aspects: social influences, task perceptions, self-perceptions, values and fallback career.

The formulation of the original questionnaire has been adjusted to adapt to the characteristics of childcare services. Subsequently, two childcare experts (one is a researcher and the other is a teacher in this field) and six students from a vocational college were selected for interviews. Some questions were adjusted according to the interview results. For example, in the “social support” section, two items were added: “school support” (the professional learning experience in school laid the foundation for me to work in childcare settings) and “policy support” (the current policy environment provides good

TABLE 1 Sample characteristics (N = 444).

Measures	Frequency	Percentage %
Family locations		
Eastern region	235	52.9
Central region	62	14
Western region	147	33.1
School level		
Stage A	213	48
Stage B	35	7.9
Stage C	52	11.7
Others	144	32.4
Grade		
Grade 1	192	43.2
Grade 2	188	42.3
Grade 3	64	14.4
Internship experience		
No	216	48.6
Yes	228	51.4
Maternal education		
Middle school and below	294	66.2
High school	110	24.8
Junior college	18	4.1
Bachelor and above	8	1.8
Paternal education		
Middle school and below	272	61.3
High school	114	25.7
Junior college	36	8.1
Bachelor and above	9	2
Monthly household income (RMB)		
5,000–10,000	285	64.2
10,001–15,000	99	22.3
15,001 and above	60	13.5

development prospects for childcare educators). In the “prior experience” section, “internship experience” was added in addition to the original “learning experience.” After the questionnaire was finalized, a pilot survey was conducted with 34 student teachers majoring in childcare from a vocational college. The pilot results show that Point 1 and Point 7 of the original 7-point scale questionnaire are not selected and are invalid. The questionnaire therefore has been amended to a 5-point scale in the formal survey. The final FIT-Choice scale measures five factors using a total of 41 items. The item response options ranged from 1 (not important) to 5 (very important).

Task perceptions are measured by three subscales with 9 items. “Professionalism” asks about individuals’ perceptions of teaching as professions, requiring high levels of specialized knowledge and competencies; “occupational stress” refers to their perceptions of teaching as a career entailing a heavy workload and high emotional demand; “social status” items ask participants to rate the extent to which childcare teachers are respected and perceived as a high-status occupation. The scale of *Self-perceptions* has 3 items asking about participants’ perceptions of their teaching abilities. The factor *Values*

consists of 3 constructs. Intrinsic value is measured by one scale with 3 items; job security, time for family, and job transferability are the three subscales used to measure personal utility value; and social value has 2 subscales named social contribution and shape the future of children. *Fallback career* is measured by one scale with 3 items.

The antecedent factor *Social influences* is examined from the perspectives of “social support” and “prior experience.” “Social support” refers to the extent to which significant others (family, friends, teachers), school and policy environment are supportive of an individual’s career choice. “*Prior experience*” includes “learning experience” and “internship experience” for preservice student teachers. The “learning experience” subscale has 3 items. “Internship experience” focuses on whether students have apprenticeship and internship experience in childcare institutions. It was a binary variable with one item.

As background information, this study investigates the school level and parental socioeconomic status (SES). The school level is classified as “Stage A/B/C of the Double High Levels Plan” and “Others” with reference to the *List of Units to be Constructed under Double High Levels Plan* released by the Ministry of Education and the Ministry of Finance in December 2019, with Stage A representing the highest quality of preservice teacher training programs. Parental occupations are classified with reference to the index composition and corresponding measurement method of family SES defined by Ren (2010). The three components of parental education, occupation and household income are used as indicators to measure subjects’ SES. The formula shall be $SES = (0.82 \times \text{parental education} + 0.81 \times \text{parental occupation} + 0.76 \times \text{household income}) / 0.63$.

3.3 Procedure

Details of this research were presented to the 12 administrators who consented for participation. Poster of this study and the link of the online questionnaire were forwarded to student teachers by the college principles. Student teachers filled out the questionnaire voluntarily and anonymously. It takes approximately 15 min to complete the entire questionnaire, and bonus packets were randomly distributed to participants through the e-questionnaire platform after completion. The questionnaires were collected in June–July 2022.

3.4 Statistical analyses

Invalid cases with less than 3 min of answering time or zero variance of items were excluded. Harman’s single-factor test was performed before further analyses to check for common method variance (CMV; Harman, 1976). The results showed that 8 factors with

characteristic root values greater than 1 were identified, and the first factor explained 34% of the total variance, indicating that no significant CMV was found in this study. Then, confirmatory factor analysis (CFA) was performed using Amos 24 to explore the construct validity of the FIT-Choice scale. The ratio of chi-square goodness-of-fit per degree of freedom ($\chi^2 / df \leq 5$), approximate root-mean-square error (RMSEA ≤ 0.09), standardized root-mean-square residual (SRMR ≤ 0.10), comparative fit index (CFI ≥ 0.90) and Tucker Lewis index (TLI ≥ 0.90) were used as fit indices to describe the fitting effect of structural equation models (MacCallum et al., 1996; Hu and Bentler, 1999; Tabachnick and Fidell, 2007). Due to poor model fitting, we conducted exploratory factor analysis (EFA) using Stata 17 to explore a more explanatory theoretical model.

T test and ANOVA were applied to explore the group differences in career choice intentions among student teachers. Correlation analysis and hierarchical multiple regression were used to explore the effects of social influences, task perceptions, self-perceptions of ability, values and fallback career on career choice intentions. Finally, according to the theoretical model, the mediating effects were tested using Model 4 in the PROCESS plugins (Hayes, 2013).

4 Results

4.1 The structure of the fit-choice scale in China

CFA was conducted to model subscales as latent variables and estimate construct covariance and measurement errors. Following Watt et al. (2012), 9 factors for motivations for teaching were tested in the first model. As shown in Table 2, the global fit indices were unsatisfactory. Guided by expectancy-value theory, value- and expectation-related models also were tested with CFA, and the expectation-related 4-factor model yielded an acceptable global fit, while the results of the value-related model were unsatisfactory.

The poor model fit reported by CFA indicates that the data we collected did not conform to the structure of the original FIT-Choice model. Therefore, we conducted EFA to explore theoretical models that better fit the data in our study. We performed an EFA for the value-related items using maximum likelihood extraction and specifying 4 factors after 6 cross-loading items were deleted (see Table 3). The KMO value was 0.824, and the 4 factors explained 78.6% of the variance.

For further analysis, we opted for the adjusted 4-factor model for value-related constructs because it fits the data better and still highly corresponds to the theory. Cronbach’s alpha coefficients of internal consistency for all subscales were good, ranging from 0.797 to 0.944 (see Table 4).

TABLE 2 Goodness of fit indices of CFA for the FIT-choice scale.

	χ^2 / df	RMSEA	SRMR	CFI	TLI
Original 9-factor model	6.90	0.115	0.128	0.825	0.796
4-factor model (expectation)	4.50	0.089	0.071	0.962	0.947
4-factor model (value)	14.56	0.175	0.170	0.683	0.633

¹9 latent factors tested in the model were self-perceptions, intrinsic value, job security, time for family, job transferability, social contribution, fallback career, prior learning experiences and social support.

²4 latent factors tested in the model were professionalism, stress, social status, and self-perceptions.

³4 latent factors tested in the model were intrinsic value, personal utility value, social value, and fallback career.

TABLE 3 4 factors extracted and factor loadings of value-related items.

Items	Social contribution	Intrinsic value	Personal utility	Fallback career
SoC2	0.876			
SoC3	0.873			
SFC2	0.845			
SFC1	0.820			
SoC1	0.783			
InV2		0.884		
InV1		0.847		
InV3		0.845		
JoS1			0.924	
JoS2			0.899	
TF2			0.596	
JoT2			0.450	
FaC2				0.837
FaC3				0.814

¹SoC, social contribution; SFC, shape future of children; InV, intrinsic value; JoS, job security; TF, time for family; JoT, job transferability; FaC, fallback career.

TABLE 4 Items, constructs, and reliabilities for the FIT-Choice sub-scales.

Factors	Higher-order constructs	Sub-scales	Cronbach α	No. of items
Social influences	Social support		0.918	5
	Prior experience	Learning experiences	0.918	3
		Internship experiences	-	1
Task perceptions	Task demand	Professionalism	0.898	3
		Occupational stress	0.880	3
	Task return	Social status	0.944	3
Self perceptions	Perceived teaching ability		0.891	3
Values	Intrinsic value		0.904	3
	Personal utility value		0.810	4
	Social contribution		0.920	5
Fallback career			0.797	2

4.2 Career choice intentions of student teachers majoring in childcare

The mean score of career choice intentions was 3.467, which is at a medium level (4 points on the 5-point scale means AGREE). This indicates that students had a positive but weak intention to become childcare educators. Students from Stage A colleges in the “Double High Levels Plan” demonstrated a higher intention to become childcare educators than their non-Stage-A college counterparts (see Table 5).

4.3 Factors influencing the career choice intentions of student teachers majoring in childcare

A comparison of the mean of the factors influencing career choice intentions revealed that “professionalism” scored the highest, followed

by “social contribution” and “occupational stress” (see Table 6). The lowest scores were for “social status” and “personal utility value” (less than 3.5 points).

A hierarchical regression was conducted with career choice intentions being the dependent variable and social influences, task perceptions, self-perceptions, values and fallback career being independent variables. There was no multivariable collinearity (VIFs are below 5, TOL greater than 1). In Step 1, school level and SES were included as covariates; then, in Steps 2 and 3, subscales of social influences and those of task perceptions, self-perceptions, values and fallback career were added as predictors. The results are shown in Table 7.

In Step 1, school level was a significant predictor of career choice intention. In Step 2, the coefficients of social support and internship experience were significant. In Step 3, all predictors except for self-perceptions had significant effects on the dependent variable. Therefore, self-perception of ability was not included as a mediator in further mediation analyses.

TABLE 5 Group difference of career choice intention among student teachers majoring in childcare.

Variables	N	M	SD	Test for differences
School level				
Stage A colleges	213	3.5806	0.83083	$t = 2.652, p = 0.008$
Non-stage-A colleges	231	3.3623	0.89832	
Grade				
Grade 1	192	3.5258	0.96513	$F_{(2,441)} = 1.027, p = 0.359$
Grade 2	188	3.4452	0.78156	
Grade 3	64	3.3545	0.83121	
Family locations				
Eastern region	235	3.4696	0.97133	$F_{(2,441)} = 0.471, p = 0.625$
Central region	62	3.5542	0.88485	
Western region	147	3.4261	0.68234	
Total	444	3.467	0.872	

4.4 The mediating effects of task perceptions and values

The regression analysis found that two subscales of social influences (social support and internship experiences) had significant direct predictive effects on career choice intentions. Subsequent analyses further explored how social support and internship experience influence career choice intention. The results showed that the path coefficients of social support to both mediators (task perceptions and values) and the dependent variable were significant. The path coefficients of both mediators to career choice intention were significant as well (see Table 8). The bootstrapping analyses indicated that the indirect effect of social support on career choice intentions was 0.46. The 95% confidence interval (CI) of this mediating effect was [0.35, 0.56]. The CI did not include 0, indicating a significant mediating effect (Shrout and Bolger, 2002). Furthermore, task perceptions accounted for 17% of the mediating effect, while values accounted for the rest. The direct effect of social support on career choice intentions was 0.16, while the 95% CI of this effect was [0.03, 0.29].

The results also validated the full mediation of “task perceptions” and “values” between internship experiences and career choice intentions. The indirect effect was 0.16 [95% CI is (0.08, 0.24)]. Task perceptions accounted for 25% of the mediating effect, while values accounted for the rest. The direct effect of internship experiences on career choice was 0.11, which was insignificant. The path coefficients of mediation analyses were presented in Figure 1.

5 Discussion

The present study systematically examines the factors affecting the career choice intentions of student teachers majoring in childcare based on the FIT-Choice model. Its findings have practical implications for preservice teaching training in vocational colleges, teacher recruitment and retention in the childcare industry in China.

5.1 Applicability of the Fit-choice model and scale in China

The FIT-Choice model provides a comprehensive theoretical framework for studying preservice and in-service teachers' career

choices. For the samples in this study, the structure of variables related to success expectancy (task perceptions, self-perceptions) is supported by the data. The structure of value-related variables validated the original model's distinction among intrinsic value, personal utility value and social value but with little distinction among the subdimensions under personal utility value. The three dimensions in the original model could be concluded into a single personal utility value factor. Value is a broad concept, and the dimensionality of a set of items measuring different components of task value remains inconsistent across studies. Especially for personal utility value, previous studies also found that the subscales were highly correlated with each other and that some subscales were sensitive to culture, study stages, and subjects (König and Rothland, 2012; Fokkens-Bruinsma and Canrinus, 2012b). Although distinctions between different components are suggested theoretically, individuals may take a relatively holistic approach to professional value in terms of fulfilling personal goals rather than subdividing different components when making career choices (Eccles and Wigfield, 1995). In addition, childcare educators as professionals have special features compared with teachers of other study stages or subjects. In China, childcare institutions for 0–3-year-old infants are predominantly private (Wang et al., 2021). Childcare educators are not permanent employees, have no stable jobs and are highly mobile. Therefore, job security and transferability may not be primary concerns. In general, the latent factors proposed in the FIT-Choice model are validated, but the structure of the subscales is somewhat different from those of existing studies. This suggests that the model's applicability needs further validation in different cultural contexts and among different teacher groups.

5.2 Generally weak career choice intention among student teachers majoring in childcare

Students majoring in childcare have a positive but weak intention to become childcare educators. This is reasonable from several aspects. First, childcare educators are regarded by student teachers as a high-demand, low-return “dedication type” of occupation, and its social value is higher than its personal value. The social status of childcare educators also is low, with their professionalism not being fully recognized, as the public generally perceives childcare teachers as

TABLE 6 Descriptives and correlations among sub-scales.

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Career choice intentions	3.4670	0.87249	1												
2. SES	6.4876	2.80664	-0.016	1											
3. Internship experiences	0.5135	0.50038	0.086	0.011	1										
4. Learning experiences	4.0916	0.65772	0.239**	-0.025	-0.177**	1									
5. Social support	4.0968	0.72647	0.437**	-0.058	-0.116*	0.688**	1								
6. Professionalism	4.5326	0.60627	0.214**	-0.047	0.036	0.346**	0.448**	1							
7. Occupational stress	4.2314	0.71425	0.030	-0.078	-0.072	0.308**	0.323**	0.363**	1						
8. Social status	3.2578	1.13562	0.477**	0.112*	0.185**	0.025	0.147**	0.078	-0.205**	1					
9. Self-perceptions of ability	4.0132	0.63971	0.379**	0.066	-0.115*	0.760**	0.591**	0.290**	0.177**	0.231**	1				
10. Intrinsic value	3.8646	0.78852	0.560**	0.093	0.047	0.462**	0.493**	0.221**	-0.035	0.498**	0.696**	1			
11. Personal utility value	3.3885	0.83041	0.534**	0.110*	0.108*	0.167**	0.319**	0.110*	-0.119*	0.769**	0.330**	0.560**	1		
12. Social contribution	4.3054	0.60731	0.228**	-0.008	-0.017	0.493**	0.678**	0.647**	0.406**	0.144**	0.454**	0.365**	0.240**	1	
13. Fallback career	3.9673	0.87578	0.077	-0.080	-0.178**	0.409**	0.527**	0.228**	0.332**	-0.014	0.314**	0.138**	0.137**	0.450**	1

*p<0.05; **p<0.01; ***p<0.001.

“babysitters” (Wang, 2013). Second, as it is only in recent years that China has gradually begun to attach significance to early education for 0–3-year-old infants, the childcare industry is still in the initial development stage, lacking sufficiently attractive salary packages (Yang, 2021). Third, with the current low enrolment rate of infants, insufficient employment opportunities are provided (Hong et al., 2022a).

5.3 Career choice intentions of student teachers majoring in childcare are jointly influenced by various factors

This study found that social support and internship experience influence career choice intentions. As student teachers in vocational colleges are young (usually 16 years old when they enter vocational colleges after graduating from junior high schools), they rely heavily on the opinions of significant others when making career choices. In the job demands-resources model proposed by Demerouti et al. (2001), social support is a key component of job resources, which leads to individuals’ higher motivation and engagement in work. The availability of prior internship experience in childcare institutions also is an important influencing factor of student teachers’ career choices. Internship is an important teaching experience for student teachers before they enter the education field, which helps them understand the workplace and its content and build professional identity (Beauchamp and Thomas, 2011; Liu and Boyd, 2020).

Task perceptions and self-perceptions combined determine an individual’s success expectancy, i.e., the extent to which he or she is competent in the teaching occupation, and is thus an important factor influencing the individual’s choice of teaching career (Watt and Richardson, 2012). In previous studies, career requirements were believed to reduce individuals’ teaching intention. In contrast, results of the present study indicated that both job demands and rewards exert a positive influence on student teachers’ intention to pursue a teaching career. This result could be attributed to the insufficient societal acknowledgment of the occupational prestige associated with childcare educators, consequently leading to pervasive professional apprehension among those considering or already working in this field. It’s plausible that they believe an increase in professional requisites would serve to validate their occupational standing and enhance their social standing (Wang, 2013). The beliefs in one’s professional competence insignificantly affect teaching intention. This is inconsistent with prior research that generally emphasizes the role of individual self-efficacy on teaching motivation. This may be related to the fact that there are currently no clear professional entry qualifications for childcare teachers. The entry qualifications for childcare teachers for 0–3-year-old infants are not clear (Cai and Chen, 2020). The relevant qualifications include nursery certification, caregiver certification, an infant care occupational skill level certificate, family education instructor certification, nutritionist certification, etc. As a result, student teachers are unclear about what professional competencies are required to become childcare educators and what qualifications they need to obtain. This seems to be indicated by the fact that 79% of the student teachers in the sample had not obtained any certificate.

Individuals’ valuation of teaching had strong positive effects on their intentions to choose teaching as a career. This is broadly

TABLE 7 Regression coefficients for social influence, task perceptions, self perceptions of ability, value and fallback career on career choice intention.

	B	SE B	β	R^2	ΔR^2	F	ΔF
Step 1							
School level	0.218	0.082	0.125**	0.011		3.568	
SES	-0.005	0.015	-0.016				
Step 2							
Internship experiences	0.226	0.075	0.130**	0.206	0.199	23.953	36.962**
Social support	0.625	0.071	0.521**				
Learning experiences	-0.121	0.079	-0.091				
Step 3							
Professionalism	0.159	0.068	0.110*	0.461	0.262	30.166	26.953**
Occupational stress	0.107	0.051	0.088*				
Social status	0.114	0.045	0.148*				
Self-perceptions	0.077	0.092	0.056				
Intrinsic value	0.309	0.066	0.279**				
Personal utility value	0.221	0.063	0.210**				
Social contribution	-0.341	0.084	-0.238**				
Fallback career	-0.112	0.044	-0.112*				

* $p < 0.05$; ** $p < 0.01$.

TABLE 8 Mediation analyses: association between social support, internship experiences and career choice intentions through task perceptions and values.

Antecedent	Consequent											
	Task perceptions				Values				Career choice intentions			
	Coeff.	S.E.	t	95%CI	Coeff.	S.E.	t	95%CI	Coeff.	S.E.	t	95%CI
School level	-0.1378	0.0883	-1.5609	[-0.3113, 0.0357]	-0.2304	0.0754	-3.0553**	[-0.3787, -0.0822]	0.0496	0.0722	0.6862	[-0.0924, 0.1915]
Social support	0.6746	0.0612	11.0242***	[0.5543, 0.7948]	0.9558	0.0523	18.2839***	[0.8531, 1.0586]	0.1559	0.0657	2.3716*	[0.0267, 0.2851]
Internship experiences	0.3532	0.0840	4.2031***	[0.1881, 0.5184]	0.2872	0.0718	4.0003**	[0.1461, 0.4283]	0.1077	0.0697	1.5463	[-0.0292, 0.2447]
Task perceptions									0.1042	0.0474	2.1975*	[0.0110, 0.1974]
values									0.3431	0.0555	6.1820***	[0.2340, 0.4521]
R^2	0.2340				0.4409				0.3435			
F	44.8053				115.6490				45.8266			

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

described in the motivation and teacher education literature (Simić et al., 2022). In the motivation literature, people are more likely to engage in valued tasks that can fulfil their needs or facilitate reaching their goals (Wigfield, 1994). Research findings provide strong evidence that making a social contribution or giving back to society in a meaningful way is a reason for becoming a teacher (Kılınç et al., 2012; Salifu et al., 2018). Our results are in accordance with previous

findings in terms of social value, but personal interests and desires for teaching are less valued by student teachers in China compared with findings from Western countries (Fokkens-Bruinsma and Canrinus, 2012a; Simić et al., 2022).

Furthermore, this study found that social influences affect teaching intention through the mediating role of proximal variables, including task perceptions and values. Support from significant

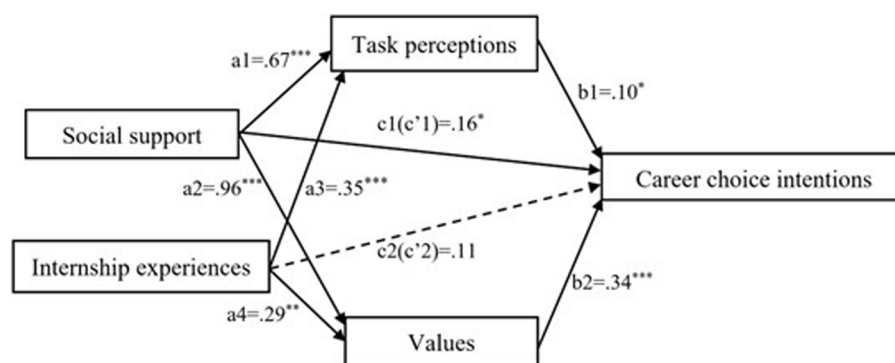


FIGURE 1

Conceptual model: how task perceptions and values mediate the association between social support, internship experiences and career choice intentions.

others, schools and policies influences individuals' beliefs about success on the one hand (Gu et al., 2017), and individuals who receive more support are more likely to make choices according to their own interests and follow their own value judgments on the other hand (Yu and Wang, 2020).

Research findings on student teachers' internships and teaching intentions are inconsistent. Some findings suggest a decline in teaching intentions after an internship (Li et al., 2022). This study supports the positive effects of internship experiences. On the one hand, individuals can have a better understanding of the profession and make informed decisions after their internship. On the other hand, through internships and daily interaction with young children, individuals are able to more directly perceive the meaning and value of being childcare educators (Beauchamp and Thomas, 2011). While this study considers only whether individuals have internship experiences, in-depth research can be conducted in subsequent studies on how the length, content and quality of internships affect student teachers' teaching intention.

6 Limitations and implications

Our study examines student teachers' intentions to choose teaching as a career in the early education industry instead of their actual career choice behaviors. Ajzen (2011) argued that behavioral intentions are robust indicators of actual behaviors. Probing student teachers' intentions provides valuable initial insights into their career choices, actual behavior may be influenced by a myriad of additional factors. It is suggested that researchers investigate student teachers' career choice behaviors and their career paths to gain a more comprehensive understanding of their career decision-making process in future studies. In addition, our research on career choice intentions is mainly based on student teachers' perspectives without considering the views of other social groups (e.g., teachers in vocational colleges, childcare providers and policy-makers). Future studies can take other groups of participants to examine their viewpoints on childcare teacher recruitment and retention.

Based on the results of this study, the following are some countermeasures to attract and retain childcare educators. Joint efforts

between vocational colleges and childcare organizations would enable student teachers to accumulate abundant practical experiences through providing diverse internship opportunities and to get comprehensive understanding of the jobs as well as their teaching abilities. The State needs to clarify entry qualifications at the policy level and improve the protection mechanisms related to childcare educators, such as salary, social security and working environment. At the same time, publicity work should be strengthened to foster greater public awareness of the significance of childcare educators and cultivate a societal atmosphere of caring, respecting, and supporting childcare educators to ensure the healthy and sustainable development of the childcare industry.

7 Conclusion

This study delved into the applicability of the FIT-Choice model among Chinese vocational college students, conducting a comprehensive analysis of the various factors influencing the career choice intentions of students majoring in childcare. The findings revealed that the FIT-Choice model demonstrates a certain degree of applicability within the Chinese cultural context. Student teachers majoring in childcare exhibited an overall positive but relatively weak inclination toward career choice to be childcare educators. Their career choices were jointly influenced by their social influences, task perceptions, values and fallback career, with task perceptions and values playing mediating roles between social influences and career choice intentions.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by the Faculty of Education, Beijing Normal University. The studies were conducted in accordance with the local legislation and institutional requirements.

The participants provided their written informed consent to participate in this study.

Author contributions

XW: Conceptualization, Funding acquisition, Methodology, Project administration, Resources, Supervision, Writing – original draft, Writing – review & editing. YL: Data curation, Formal analysis, Visualization, Writing – original draft. YQ: Data curation, Methodology, Writing – original draft. JT: Conceptualization, Investigation, Methodology, Writing – original draft. DW: Data curation, Investigation, Software, Writing – original draft. JZ: Resources, Validation, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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