ANALYSIS INVARIANCE BETWEEN GENDER OF THE SATISFACTION WITH PARENTING

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ABSTRACT

The analysis of multigroup invariance helps to test the validity of the research model. Satisfaction with parenting is one of the important factors regulating population reproduction and parenting willingness. Research on satisfaction with parenting of specific social groups can provide a more targeted understanding of the specific factors that affect their parenting behavior and parenting motivation. The satisfaction with parenting of parents with left behind experience may be affected by the primary family and the current family. The purpose of the present study was to examine the invariance between gender of the satisfaction with parenting for parents with left behind experience. The sample consisted of 431 parents (204 male and 227 female) with left behind experience, which conducted in 2021 in Sichuan, China. Multigroup analysis supported measurement invariance between gender, which include measurement weights, measurement intercepts, structural covariance, and measurement residuals. These results provide evidence that the model of satisfaction with parenting in the current and primary family for parents who were left behind children is a valid parenting satisfaction measure to be used among male and female actors with such experience in some regions - in particular, some regions with high number of left behind children in China.

INTRODUCTION

Satisfaction with parenting refers to the extent to which parents are satisfied with their children in relation to parent–child interactions (e.g., communication, activities, praise, punishment) and child behavior (e.g., compliance, responsibilities, actions) (Bradshaw and Donohue 2014).

Satisfaction with parenting is crucial in the implementation of parenting behaviors, as this satisfaction already has an impact not only on the parents themselves, but also on the overall health of the child's development, fertility and society.

The number of research results on "satisfaction with parenting" as the subject of "sociological research direction" retrieval on literature collection platforms in different countries are different, among which Web of Science has 65, E-library (Russia) has 1,636; CNKI (China) has 35 (both search dates are: February 23, 2023, and all search languages are the official languages of the country). Thus, we found that Russian scholars pay more attention to the topic "satisfaction with parenting". In these studies, related to satisfaction with parenting, scholars discussed more key words such as: family structure (Rogers and White 1998), parenting pressure (Carey et al. 2009; Sevastyanova 202), parental responsibility (Henderson et al. 2016), marital satisfaction (Perlowski et al. 2019; Malenova and Borovikova 2008), life satisfaction (Mahmoud et al. 2021).

It is worth mentioning that some Russian sociologists have proposed that parenting can be regarded as a labor activity, and the result of labor is children's human capital, and this kind of labor is a way of regulating the population that may help motivate the quantity and quality of the population in the future (Voroshilova 2015; Bagirova and Abilova 2017; Shubat and Bagirova 2020). It is very important to understand the parents' satisfaction with parenting to stimulate population reproduction effectively. Our research will take advantage of this concept by looking at parenting as a labor/work.

Scientists have offered different perspectives on studies examining satisfaction. In a study of job satisfaction, Hoppock noted that job satisfaction reflects the psychological and physical satisfaction of workers with job-related environmental factors and can also be interpreted as workers' subjective responses to the work environment. Hoppock also suggested exploring job satisfaction by examining the experiences of respondents in their current jobs.

In addition to theoretical studies, many researchers have created satisfaction models such as SCBC (Sweden Customer Satisfaction Barometer), ESCI (European Customer Satisfaction Index), ACSI (American Customer Satisfaction Index). To study the internal mechanism of the relationship between parents and children (Chinese college students and parents), the Chinese scientist Mei adjusted the ASCI satisfaction model and applied it to the field of parent-child relationships. To do this, he proposed four dimensions: user expectation, perceived quality, parent-child

relationship satisfaction, and parent-child confrontation. Moreover, due to parenting satisfaction may be affected by the participation of the parenting process and the quality of the parent-child relationship (Lackovic-Grgin 2011). With the help of these research concepts, especially the measurement of parent-child relationship satisfaction and perceived quality, we will look at satisfaction with parenting in these two aspects. We assume that satisfaction with parent-child relationships can be assessed through respondents' satisfaction with parent-child interaction and parenting style in the family, and perceived quality can be assessed through their satisfaction with integrity and intimacy in the family.

Study of satisfaction with parenting can yield different results for different population groups. After the reform and discovery of China, which occurred in the 70-80s. XX century, historical mass migration of the population occurred - this was mainly due to the mobility of excess labor from rural areas to the city. A group of people with special life experience arose in the country - namely left behind children. Today, some of the left behind children as adults already have their own children, and there are still a large number of left behind children in China (they may become future parents).

Therefore, the study of this group of satisfaction with parenting may not only enrich the research methods for field of parenting study, but also provide some empirical research data for local population departments, especially in some areas with high number of left behind children in China. Based on the literature, we tried to construct a model of satisfaction with parenting for parents, who were left behind children in China.

The way structures may be identified varies greatly due to the characteristics of the respondents, such as gender, age. The invariance of the measurement model indicated that the same underlying structure was measured across relevant comparison groups, which ensured the applicability of the model to respondents with different sociodemographic characteristics (Clench et al. 2011; Moksnes et al. 2013; Pevnaya et al. 2022).

RESEARCH QUESTIONS AND HYPOTHESES

The analysis of multigroup invariance helps to test the validity of the research model. This study aims to examine invariance of the 8-item Satisfaction with parenting between gender among parents who were left behind children in China.

We hypothesized that:
- Hypothesis 1: Men and women with left behind experience have equal measurement weights in the model of satisfaction with parenting.
- Hypothesis 2: Men and women with left behind experience have equal measurement intercepts in the model of satisfaction with parenting.
- Hypothesis 3: Men and women with left behind experience have equal structural covariance in the model of satisfaction with parenting.
- Hypothesis 4: Men and women with left behind experience have equal measurement residuals in the model of satisfaction with parenting.

DATA AND METHODS

The study of grown-up left behind children as parents is based on data from a survey of parents living in Sichuan, China (n=431, 204 respondents were male, 227 respondents were female), conducted in 2021 and combining online + offline survey mode. The Satisfaction with parenting is a five-item scale, which employs 8-item Satisfaction with parenting on a five-point scale (ranging from "strongly disagree" to "strongly agree"). Satisfaction with parenting of the respondents answered in two aspects - as satisfaction with the family, in which the actors of parenting were their parents (primary family), and as satisfaction with the current family, where they themselves are the actors of parenting. Therefore, we constructed the model of satisfaction with parenting using these 8 satisfaction items (Fig.1).
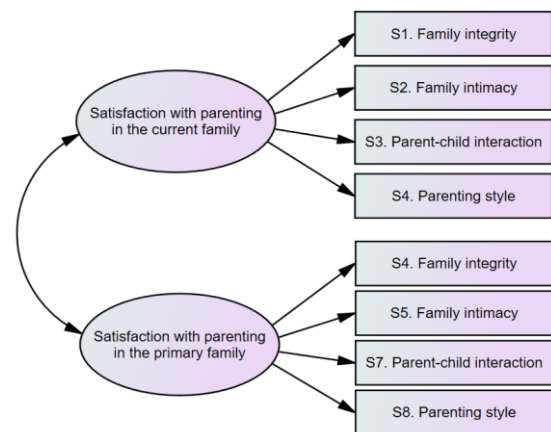
Figures 1: Conceptual model of the influence of satisfaction with parenting in the current and primary family

Note: S1-S8 - aspects of satisfaction with parenting in the current (S1-S4) and primary (S5-S8) families associated with: S1, S5 - family integrity; S2, S6 - family intimacy; S3, S7 - parent-child interaction; S4, S8 - parenting style. Double-sided arrows represent correlations; one-way arrows represent influence relationships.

Firstly, using SPSS 26.0 to descriptive analysis of statistics all items of satisfaction with parenting by gender.

Secondly, using Structural Equation Modeling (SEM) and Amos 26.0 for data analysis and model validation.

ANALYSIS AND RESULTS

Descriptive statistics for each item by gender are presented in Table 1, including the means, medians, mode and standard deviations pertaining to the eight variables of satisfaction with parenting are presented in Table 1.

Table 1: Descriptive statistics of each item for male and female groups

Variables	Mean	Median	Mode	Std. Deviation	Mean	Median	Mode	Std. Deviation
Sexes	Male (N = 204)				Female (N = 227)			
S1	3.94	4.00	4	1.115	4.06	4.00	5	1.083
S2	3.89	4.00	4	1.137	4.00	4.00	4	1.075
S3	3.96	4.00	4	1.070	4.07	4.00	4	0.950
S4	3.98	4.00	5	1.125	3.89	4.00	4	1.018
S5	3.94	4.00	4	1.135	3.82	4.00	4	1.103
S6	3.99	4.00	5	1.046	3.77	4.00	4	1.113
S7	3.90	4.00	4	1.189	3.85	4.00	5	1.197
S8	3.75	4.00	4	1.140	3.70	4.00	4	1.188

A prerequisite for conducting SEM analysis is the consistency of the model. The higher the consistency, the smaller the discrepancy between the original matrix and the matrix reproduced in accordance with the model. Consistency indicators and criteria (Hoyle and Panter 1995; Boomsma 2000; McDonald and Ho, 2002; Schreiber et al. 2006; Schreiber 2008; Jackson, et al, 2009), as well as the data of the model are given in Table 2.

Table 2: Summary of fit indices from Confirmatory factor analysis (CFA)

Indices	Recommendation values	Research Model Data
χ^2	smaller is better	61.906
χ^2/DF	1-3	1.629
GFI	>0,9	0965
AGFI	>0.9	0.934
RMSEA	<0.08	0.038
IFI	>0.9	0.990
CFI	>0.9	0.990
TLI	>0.9	0.986
SRMR	<0.05	0.0215

Note. χ2- Chi - square; χ2/DF - relative Chi-Square of the discrepancy; GFI - goodness of fit index; AGFI - adjusted goodness of fit index; RMSEA - root mean square residual; IFI - normed fit index; CFI - comparative fit index; TLI - non normed fit index; SRMR - standardized root mean square residual.

Table 2 shows that the data of the model of satisfaction with parenting for the parents who were previously left behind children correspond to the SEM recommendation values for compliance, which confirms the possibility of building a model.

To determine whether the model of satisfaction with parenting to parents with left behind experience is gender-equivalent, a multigroup invariance analysis was performed on the CFA. Table 3 shows recommendation values for some model parameters proposed by different scientists, as well as the results of the research model itself.

Table 3: Confirmatory factor analysis (CFA) (Stanislav and Kenneth 2008; Hair 2009; Fornell, Larcker 1981)

V	Unstd. E	S.E.	T-value	P	Std.E	SMC	C.R	AVE
RV	>0	>0	>1.96	< 0.05	0.5-0.9	>0.5	>0.6	>0.5
Male								
S1	1				0.792	0.627	0.89	0.66
S2	1.132	0.08	14.165	***	0.878	0.771		
S3	0.949	0.079	12.035	***	0.782	0.612		
S4	1.026	0.083	12.38	***	0.804	0.647		
S5	1				0.81	0.656	0.91	0.71
S6	0.91	0.07	12.953	***	0.799	0.639		
S7	1.121	0.077	14.585	***	0.867	0.751		
S8	1.107	0.073	15.12	***	0.892	0.796		
Female								
S1	1				0.801	0.642	0.87	0.63
S2	1.055	0.074	14.248	***	0.852	0.726		
S3	0.825	0.068	12.143	***	0.753	0.567		
S4	0.91	0.072	12.643	***	0.775	0.601		
S5	1				0.767	0.589	0.91	0.72
S6	1.151	0.081	14.213	***	0.875	0.766		
S7	1.231	0.087	14.182	***	0.871	0.758		
S8	1.238	0.087	14.235	***	0.882	0.777		

*Note. V- variables; RV - recommendation values; Unstd. E - non-standard estimates; S.E. - standard errors of approximation; T-value - critical ratio; *** - all represent less than 0.001; Std. E - factor loading, indicate the impact on their associated latent factors; SMC - square multivariate correlation coefficient (measurement model); C.R - composite reliability; AVE - extracted mean variance.*

Table 3 shows that male and female model parameters correspond to the criterion values, therefore, both factors have convergent validity (namely factor 1- satisfaction with parenting in the current family; factor 2- satisfaction with parenting in the primary family).

In addition, in order to test whether the correlations of the two factors are statistically significant, we tested their differential validity. For this, the AVEs of male and female model indicator were calculated, also shown in Table 3. The values indicate that there is differential validity between the factors.

According to our hypothesis, we determined the model of satisfaction with parenting measurement equivalence by gender. Including tests of measurement weights (MW), measurement intercepts (MI), structural

covariance (SC) and measurement residuals (MR) (Table 4).

Table 4 Invariance comparison of the model of satisfaction with parenting between gender groups

Model	DF	CMIN	P	NFI Delta-1	IFI Delta-2	RFI rho 1	TLI rho2	CFI
MW	6	7.24	0.3	0.003	0.003	-0.001	-0.001	0.99
MI	8	23.2	0.03	0.009	0.09	0.005	0.003	0.99
SC	3	4.33	0.23	0.002	0.002	0.000	0.003	0.98
MR	8	5.61	0.69	0.002	0.002	-0.003	0.000	0.98

Note. CMIN - Chi- square; NFI- Normed fit index; IFI - normed fit index; RFI - relative fit index; TLI - non normed fit index; CFI - comparative fit index.

Table 4 shows, except measurement intercepts (P =0.03), other models are not significant. Although it is possible to test other constraints as factor variances, covariances and mean intercepts and χ^2 difference ($\Delta\chi^2$) is employed as a statistical comparative evaluation of the constrained model and a nonsignificant value usually means multigroup equivalence (Byrne 2010; Kline 2010). However, some researchers also recommended the use of other fit indices, such as the CFI difference (ΔCFI), to evaluate measurement invariance - if ΔCFI differences lower than .01 suggests some evidence of equivalence (Cheung and Rensvold 2002).

Therefore, in Table 4, although the measurement intercepts model is significant, the ΔCFI=0. Thus, all hypothesizes are not rejected. In other words, the eight satisfactions with parenting items in our study and the model of satisfaction with parenting composed of these items are not only suitable for men (fathers) with left behind experience, but also suitable for woman (mothers) with such experience.

Some limitations should be considered regarding the obtained results. Due to cultural differences, population structure, parenting concept, etc., although the selected sample - namely, parents with left behind experience is representative of region China - especially the region with high number of left behind children, it is not representative of all regions with parents with such experience in other countries.

CONCLUSIONS AND OUTLOOK

This study found that the identity of the model of satisfaction with parenting of parents with left behind experience in Sichuan, China, was tested by gender grouping. There was no significant difference in the fit of the model whether male or female, which means that the model has cross-gender the invariant property of, indicating that the relationship between each item and the underlying structure is the same for both males and females.

The focus of this study is to explore the comparison of the models of satisfaction with parenting for parents with left behind children in China by gender. Therefore,

future research on the topic can concentrate on additional studies intended to other independent variables in the model of satisfaction with parenting of parents with left behind experience in China that have not been discussed or cross-cultural comparison between the models of satisfaction with parenting of parents with left behind experience.

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