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Family Miniaturization and Its Influencing Factors in Urban China

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Abstract

Urban families in mainland China trend compressed and diversified in transitional period. With the development of economy, urbanization, and cultural diversification, the graying of Chinese society, is markedly increasing, during the transitional period. Using box plot to show the change of Chinese family. The results show that: (a) the family structure change reflected that family with high population size and high intergenerational level turn to family with small population size and simple intergenerational level, with time, (b) Social security and employment, urbanization level, the proportion of the third industry, gross regional production (GDP), natural population growth rate, and minimum life security are notable factors of family miniaturization. The research on the temporal and spatial variation and influencing factors of urban families' structure in mainland China is meaningful to well-being of urban residents, and sustainable development of the community.

Key words: Family miniaturization; Intergenerational level; Population size; Chinese resident

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INTRODUCTION

Since the founding of new China, we had carried out six national census from 1953 to 2010. Furthermore, 1% of the nation's population were sampled from 1987 to 2005, from which the urban statistics show: The number of urban households and the average household population in China has changed significantly. The size of average household and number of inter-generational in Chinese cities are shrinking according to the census. With the economic and social development and population changes, the average size of urban families begins to shrink. Especially since 1980s, this trend has been more significant and will reduce further.

1. MODEL BUILDING

The miniaturization of family structure often manifests as the decrease in the intergenerational level and the population size. The change of family structure is represented respectively by the generation index, the scale index and the structural index, the intergenerational index measures family intergenerational level, the scale index is for family population, and structure index is used to measure the degree of miniaturization of family structure. The calculation formula is as follows:

$$\alpha = 1 \times \frac{G_1}{G_t} + 2 \times \frac{G_2}{G_t} + \ldots + n \times \frac{G_n}{G_t}$$

$$\beta = 1 \times \frac{M_1}{M_t} + 2 \times \frac{M_2}{M_t} + \ldots + n \times \frac{M_n}{M_t}$$

$$\gamma = \frac{\alpha + \beta}{2}$$

γ is structure index, α represents generation index, G_1 is a first generation households, G_T is the total number of regional, G_2 is a second generation households, G_n generation households. B stands for scale index, M_1 is 1 member household, 2 members households for M_2, n for number of households

2. THE CHANGE OF THE INTERGENERATIONAL LEVEL FROM1982 TO 2010

We choose box plot to show the changes of the inter-generational level and population size of China urban families from 2000 to 2010.

2.1 Analysis on the Inter-Generational Level in 1982-2010

In 2000, the mean (mean) of the inter-generation index of China urban family structure was 1.776，the standard deviation is 0.837, the upper quartile of box plot, the median and the lower quartile is 2.077，2.123 and 2.183 respectively and the IQR is 0.106. In 2010, the mean (mean) of the inter-generation index of China urban family structure was 1.680，the standard deviation is 0.542, the upper quartile of box plot, the median and the lower quartile is 1.748，1.823 and 1.933 respectively and the IQR is 0.185. Obviously, in 2010, the mean and the median of the inter-generational index of China urban family structure all decreased and the standard deviation reduced as well，which reflects the inter-generational level of China urban family structure is lowering (Table 1, Figure1).

Table 1
The Characteristics of Box Plot of Number of Generation in Chinese Family

Year	1982	1990	2000	2010
Minimum	2.055	2.049	1.799	1.598
Maximum		2.221	2.141	2.027
Lower quartile	2.077	2.067	1.921	1.748
Median	2.125	2.110	1.990	1.823
Upper quartile	2.183	2.163	2.008	1.933
IQR	0.106	0.096	0.183	0.185
Mean	1.776	1.876	1.680	1.680
S.D.	0.837	0.697	0.542	0.542

2.2 Analysis on the China Urban Family Structure in 1982-2010

In 1982, the mean (mean) of the population size of China urban family structure was 3.816, the standard deviation is 1.650, the upper quartile of box plot, the median and the lower quartile is 4.732, 4.446 and 4.047 respectively and the IQR is 0.6858. In 2010, the mean (mean) of the population size of China urban family structure was 2.833, the standard deviation is 0.9541, the upper quartile of box plot, the median and the lower quartile is 3.322, 3.033 and 2.800 respectively and the IQR is 0.522, which illustrate the population size of China urban family structure is shrinking.

Table2
The Characteristics of Box Plot of Number of Generation in Chinese Family

Year	1982	1990	2000	2010
Minimum	3.590	3.134	2.789	2.451
Maximum	5.035	4.384	4.496	4.023
Lower quartile	4.047	3.434	3.218	2.800
Median	4.446	3.736	3.527	3.033
Upper quartile	4.732	3.921	3.718	3.322
IQR	0.686	0.487	0.500	0.522
Mean	3.816	3.300	3.203	2.833
S.D.	1.650	1.256	1.069	0.954

3. ANALYSIS OF INFLUENCING FACTORS OF FAMILY MINIATURIZATION

At present, the research on the influencing factors of family miniaturization is mostly qualitative research. In this paper, we try to analyze the influence factors more clearly by using the quantitative analysis method.

The family miniaturization has the spatial heterogeneity and the variability with time, the social security, economic development, industrial structure, population and other factors may lead to changes in the family structure (Ding, 2003; Hu, 2004; Luo, 2012; Ma et al., 2011; Shen, 2010; Tang, 2010; Wang, 2014a; Wang, 2014b; Hu, 2004; Yang & He, 2014; Yu & Yang, 2015; Zhang, 2012; Zhu, 1984). Based on existing research, this paper 2014 relative 2000 years of social security and employment spending changes, changes in the level of urbanization, changes in the proportion of the third industry, changes in GDP, the natural population growth rate changes, the change of urban residents minimum living expenditure, graduated from junior high school, the changes of number, changes in per capita GDP, population density changes, changes in the average sales price of commercial housing, and urban residents' consumption level changes as independent variables.

Table 3
Possible Influencing Factors of Family Miniaturization

Factor	Nonstandardized coefficient	S.E.	Standardization coefficient	*T*-values	*P*	Tolerance	VIF
Social security and employment expenditure	0.53	0.29	0.59	1.86	0.01	0.12	8.59
Urbanization level	0.10	0.23	0.08	0.42	0.00	0.32	3.16

To be continued

Continued

Factor	Nonstandardized coefficient	S.E.	Standardization coefficient	*T*-values	*P*	Tolerance	VIF
Tertiary industry proportion	0.24	0.37	0.18	0.67	0.03	0.17	5.88
Gross regional production	0.49	0.41	0.52	1.18	0.03	0.06	6.14
Population growth	0.42	0.16	0.46	2.71	0.01	0.41	2.44
Minimum living expenses	0.19	0.15	0.18	1.25	0.00	0.54	1.84
Junior high school graduates	0.29	0.43	0.28	0.67	0.05	0.07	14.92
GDP per capita	0.40	0.38	0.40	1.04	0.05	0.08	12.30
Population density	0.45	0.49	0.40	0.90	0.04	0.06	16.30
Commercial housing prices	0.28	0.40	0.26	0.69	0.05	0.08	12.50
Household consumption level	0.07	0.43	0.06	0.17	0.09	0.08	11.98
(constant)	0.41	0.19		2.11	0.00		

Note. (a) Dependent variable: Miniaturization index, (b) The standard formula is $y_{ij} = \frac{x_{ij} - \min(x_j)}{\max(x_j) - \min(x_j)}$.

Family miniaturization is the result of the interaction of multiple factors and the multiple collinear it between multiple regression factors is inevitable. Because of the high correlation between variables, the algorithm can not accurately separate the influence of each factor on the target variable, thus causing the increasing deviation of coefficient estimation.

3.1 Social Security

Social security and employment expenditure (*X*1) coefficients is positive, indicating that social security and employment spending have a significant positive impact on the trend of family miniaturization. With the gradual improvement of social security, there is an increasing trend in the miniaturization of the urban family structure in such provinces. The coefficient of the spending on minimum living guarantee for urban residents (*X*6) in most of the provinces is positive, indicating that urban residents minimum living security expenditure for family miniaturization trend has obvious positive effect. With the increase of the minimum living security expenditure of urban residents, the miniaturization trend of the urban family in most provinces of China will be intensified.

3.2 Economic Development

The coefficient of Urbanization level (*X*2) is positive, indicating that the urbanization level has a significant positive effect on family miniaturization trend. With the gradual improvement of social security, there is an increasing trend in the miniaturization of the urban family structure in such province, especially in Gansu and Jiangxi Province. GDP (*X*4) coefficients is positive, showing that GDP has a significant positive effect on family miniaturization trend, especially in Shanxi Province and Jiangxi.

3.3 Industrial Structure

The coefficient of the proportion of tertiary industry (*X*3) is positive, showing that the proportion of the third industry has a significant positive impact on family miniaturization trend, most notably in Tibet, Yunnan, Hainan, Jiangxi, Gansu and Beijing provinces and cities.

3.4 Population

The coefficient of natural population growth rate (*X*5) is positive, indicating that natural growth rate of population has a significant positive effect on family miniaturization trend, most of all in Henan and Jiangxi Provinces.

CONCLUSION

As miniaturization having been the variation trend of China urban family structure, the miniaturization degree are generally deepening from 1982 to 2010 and has spatial continuity. Compared with the western cities, the tendency of miniaturization is more evident in eastern cities. As regards to time, from 1982 to 2010, the inter-provincial differences of miniaturization gets smaller.

As respect to family, the shrinkage of inter-generational level and population size of family structure tends to match, indicating the improvement of family structure modernization. The size of the population and the level of intergenerational family structure changes are reflected by the transformation from high population scale, high level to the low level of intergenerational population scale, low generational.

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REFERENCES

Ahern, T. H., & Young, L. J. (2009). The impact of early life family structure on adult social attachment, alloparental behavior, and the neuropeptide systems regulating affiliative behaviors in the monogamous prairie vole (Microtus ochrogaster). *Frontiers in Behavioral Neuroscience, 3*, 17.

Amato, P. R. (1993). Family structure, family process, and family ideology. *Journal of Marriage & Family, 55*, 50-54.

Anderson, O. D., & Greene, F. C. (1997). The alpha-gliadin gene family. II. DNA and protein sequence variation, subfamily structure, and origins of pseudogenes. *Theoretical & Applied Genetics, 95*, 59-65.

Bao, C. J., Guo, X. L., Qi, X., Hu, J. L., Zhou, M. H., Varma, J. K., …Cui, L. B. (2011). A family cluster of infections by a newly recognized bunyavirus in eastern China, 2007: Further evidence of person-to-person transmission. *Clinical Infectious Diseases an Official Publication of the Infectious Diseases Society of America, 53*, 1208-1214.

Choquet, M., Hassler, C., Morin, D., Falissard, B., & Chau, N. (2008). Perceived parenting styles and tobacco, alcohol and cannabis use among French adolescents: Gender and family structure differentials. *Alcohol & Alcoholism, 43*, 73-80.

Cooper, C. E., Mclanahan, S. S., Meadows, S. O., & Brooks-Gunn, J. (2009). Family structure transitions and maternal parenting stress. *Journal of Marriage & Family, 71*, 558-574.

Granovetter, M. (1985). Economic action and social structure: The problem of embeddedness. *American Journal of Sociology, 91*, 481-510.

Liu, X., Zhen, F., & Zhang, M. (2015). Research review of online shopping impact on personal travel and urban retail space and implications. *PROGRESS IN GEOGRAPHY, 34*, 48-54.

Mataix-Cols, D., Boman, M., Monzani, B., Rück, C., Serlachius, E., Långström, N., & Lichtenstein, P. (2013). Population-based, multigenerational family clustering study of obsessive-compulsive disorder. *Jama Psychiatry, 70*, 1-9.

Nguyen, D. D., Wu, C. H., Moree, W. J., Lamsa, A., Medema, M. H., Zhao, X., …Jackson, C. (2013). MS/MS networking guided analysis of molecule and gene cluster families. *Proceedings of the National Academy of Sciences of the United States of America, 110*, 2611-2620.

Ruggles, S. (1969). The origins of African-American family structure. *American Sociological Review, 59*, 136-151.

Sharma, P., & Manikutty, S. (2005). Strategic divestments in family firms: Role of family structure and community culture. *Entrepreneurship Theory & Practice, 29*, 293-311.

Wang, Y. (2006). Family structure change in contemporary China. *Chinese Social Sciences, 1*, 108.

Wang, Y. S. (2011). Sustainments,changes and trends of relation between generations of Chinese family. *Jianghuai BBS*, 122-129.

Wang, Y. S., & Lin, W. P. (2014). China's urban and rural family structure change analysis: Based on the 2010 census data. *Social Sciences in China*, 60-77.