The Evolving Chinese Family in 2000: A Typological Analysis of Structural, Socioeconomic, Migratory, and Policy-Driven Transformations

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Abstract

This study examines the family structure in China in 2000 from four dimensions: structure, socio-economic, migration, and family planning policy. Using the 2000 census data and multi-dimensional clustering, the research results reveal the existence of extended families in affluent urban households, which contradicts the prediction of universal denuclearization and thus challenges the theory of modernization. Higher socioeconomic status is associated with an increase in cohabitation with elderly family members, challenging the Western assumption about family division. The household registration system leads to "separated families," "left-behind children," and "empty-nest elders." It is noteworthy that families with multiple children have a higher level of education than those with only one child. This challenges the stereotype that parents make concentrated investments. These research results demonstrate the adaptive resilience of Chinese families during social transformation and the influence of national policies and economic factors on the formation of family structure. This research helps to understand family changes in non-Western contexts and provides a class-level perspective rather than a population-level one.

Keywords: Chinese family, typological analysis, socioeconomic status, hukou system, One-Child Policy

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1. Introduction

This beginning section provides a brief historical context of China's modernization, and the reason for studying China's family typologies in the 2000s.

1.1 Historical Context and Modernization in China

Historically, the Chinese family has been an economic, political and legal unit composed of patriarchy, the patrilineal line and the patriarchal tradition (Jankowiak & Sun, 2014). This system stipulates that sons are permanent members of the family, while daughters leave their birth families after getting married. The social ideal is a multi-generational extended family where all sons and their descendants live under one roof, although this is rarely a universal reality. In practice, economic and social instability often limits family size, and the "stem family," where parents live with a married son and his children, is a more common pattern (F. Chen, 2009).

After the founding of the People's Republic of China in 1949, socialist policies, especially the urban "danwei" (work unit), began to change the traditional family dynamics. In this era, urban families have adopted new living rules and bilateral bloodlines, with the husband's family and the wife's family being equally important. Male authority, especially that of fathers, has been systematically weakened in urban environments (Jankowiak & Sun, 2014). The late 1970s marked a fundamental shift with the initiation of Deng Xiaoping's "Reform and Opening-up" policy. This era of economic liberalization and rural de-collectivization triggered profound social changes, bringing new pressures and opportunities to family life. The classic modernization theory prevailing in Western sociology holds that the processes of industrialization, urbanization and education will inevitably lead to a linear development towards smaller nuclear families, and the influence of the traditional extended kinship structure will decline accordingly (Parsons, 1964). Although some aggregated data from this period (Hu & Peng, 2015; Settles et al., 2013) seem to support this view, a deeper stratified analysis reveals a more complex and nonlinear reality.

1.2 China's Demographic and Socioeconomic Landscape in 2000

The 2000 China census provided a snapshot of Chinese society amid rapid demographic changes. The population of the Chinese mainland had reached 1.266 billion, an increase of 132 million compared with 1990. This growth was accompanied by a significant decline in the average household size, from 3.96 people per household in 1990 to 3.44 people in 2000 (National Bureau of Statistics of the People's Republic of China, 2001). This reduction is part of a long-term trend, with the average size first falling below 4.0 in 1990 (Yi & Wang, 2003a). However, the data collection for the 2000 census faced significant challenges. A recognized problem is the underreporting of the number of births and the "floating population," which was more serious in the 1990s than in previous censuses (Qiao, 2002). It has been noted that this statistical insufficiency exaggerates the decline in the average family size (Yi & Wang, 2003a).

The census also shows that China's urbanization rate was 36.09% (National Bureau of Statistics of the People's Republic of China, 2001), a significant increase from 26.23% in 1990

(National Bureau of Statistics of the People's Republic of China, 1990) and much higher than previous urban registration data. This disparity is likely due to the census's broader definition of "urban." For the first time, it counted rural migrants who had lived in urban areas for more than six months, successfully recording tens of millions of people who had previously been overlooked (Qin & Zhang, 2014). Other demographic changes included an increase in the proportion of the population aged 65 and above to 6.96%, a significant decline in the illiteracy rate, and an increase in the number of people with a college education (National Bureau of Statistics of the People's Republic of China, 2001).

The aggregate data from the 2000 census, such as the decline in average household size and the increase in urban population, might initially confirm the modernization thesis. However, a superficial explanation of this macro trend overlooks the complex and often contradictory micro dynamics of family changes. The uncertainty brought about by underreporting in the census highlights the need to go beyond simple statistics and consider factors that affect the quality and background of family life.

The prevailing analytical model of Chinese family change, which often frames it as a uniform, post-Mao transformation, has been criticized as being too restrictive (Jankowiak & Sun, 2014). Although the macro-level statistics of the 2000 census provided information, they masked the significant heterogeneity of family forms that emerged in different social landscapes across the country. The core challenge of the analysis is to go beyond these universal trends and identify the specific "strata" or family typological clusters that existed at the turn of the century. These clusters are defined not only by the place of residence (urban versus rural), but also by the intersection of socioeconomic status (wealth, education, employment), immigration status, and the direct or indirect influence of national policies.

This study addresses this gap by synthesizing the research materials into four interrelated typological clusters. By examining the structural composition, socio-economic dynamics, migration patterns and impacts of family planning, a new and more comprehensive paradigm for family transformation in China can be constructed. This approach reveals the complex interweaving of family life, where traditional values, market forces and state intervention create unique and sometimes contradictory outcomes for different population groups.

2. Related Works

This section examines the existing literature on Chinese family structures through four distinct but interconnected typological lenses. analyzing structural compositions, socioeconomic dynamics, migration patterns, and family planning policy impacts makes it possible to better understand how Chinese families have evolved beyond simplistic modernization narratives. Each typology reveals unique adaptations to institutional constraints, economic pressures, and cultural traditions that have shaped diverse family forms across urban and rural China at the turn of the millennium.

2.1 Structural Typologies: The Myth of Nuclearization

Structural typologies examine the physical composition and living arrangements of Chinese families, challenging dominant assumptions about modernization and nuclearization. This perspective reveals that family forms are not simply evolving from traditional extended structures to modern nuclear units, but are instead adapting dynamically to specific social and economic conditions. The evidence suggests a more complex pattern of family evolution that defies simplistic modernization narratives.

2.1.1 The Decline of the Joint Family Ideal

The historical ideal of a four-generation extended family (si shi tong tang) is a powerful cultural symbol of the family's continuation and prosperity. However, as historical and sociological research at the end of the 20th century revealed, such an ideal has never been the norm in Chinese society. A series of factors, including high mortality rates, economic pressure, and possible conflicts among family members, make it difficult to maintain such large families. (F. Chen, 2009; Sheng, 2005) Family division (fen jia), the process of splitting a large family into smaller core units, driven by economic factors and relationship conflicts, is a common and often inevitable part of the family cycle (F. Chen, 2009).

While the number of nuclear families did grow in the post-Mao era, particularly in urban areas with the rise of the danwei system (Jankowiak & Sun, 2014), the transformation was not a simple, linear progression. Sociological research has begun to qualitatively analyze the modernization thesis, arguing that specific national policies are the main factors in shaping urban family forms and sometimes lead to the formation of larger multi-generational families. This complexity indicates that Chinese families are not simply declining from traditional ideals, but are constantly adapting to the changing institutional and economic conditions.

2.1.2 The Rise of the Multi-Generational Household

One of the most important and counterintuitive findings from the analysis of the 2000 census and subsequent studies is that the proportion of three-generation households has increased significantly, while the proportion of two-generation nuclear families dropped by approximately 17% between 1990 and 2000 (Yi & Wang, 2003b). This change does not represent a return to tradition. On the contrary, this was a new phenomenon caused by the unique social and economic conditions at that time.

Economic reforms, especially the rise of dual-earner families in urban areas, have created a high demand for childcare. Therefore, many grandparents live together with their adult children to take care of their grandchildren, forming a new type of multi-generational family (Wang, 2006). Due to the rapid exodus of young parents to cities in search of jobs, this kind of intergenerational cohabitation has also increased in rural areas. Such emigration has led to the emergence of "skip-generation" families, where grandparents live with their grandchildren when their parents are away. Other new family arrangements have also emerged, such as "empty-nest" families (grandparents living alone) and "network households " (families separated but living near each other) (Yi & Wang, 2003b).

These new forms of family challenge the notion that modernization inevitably leads to the disintegration of families. On the contrary, they demonstrate an adaptive response to the social and economic pressures of this era. Although patrilocal coresidence is becoming increasingly common in cities, paternal cohabitation still dominates in both rural and urban areas of China. With the rise of the traditional patrilineal pattern and the newer matrilocal models, the evolution of this life arrangement reflects a vibrant tradition rather than a stagnant one (Gruijters & Ermisch, 2019; Hu & Peng, 2015; Y. Huang et al., 2022; Lavely & Ren, 1992; Ma & Xu, 2025). Data shows that in 2000, multi-generational families were still very common in China, much more so than in the United States (Wang, 2006).

2.2 Socioeconomic Typologies: Wealth, Status, and Intergenerational Reciprocity

Socioeconomic typologies focus on how material resources, status considerations, and patterns of exchange shape family structures and relationships. This analytical framework examines the dual role of economic factors as both centripetal forces that bind families together and centrifugal forces that drive family division. The intersection of traditional values with modern economic realities creates complex systems of intergenerational reciprocity that influence living arrangements and family cohesion.

2.2.1 The Family as an Economic Unit

The economic reforms in the late 20th century had a profound dual impact on the family as an economic unit. On the one hand, certain economic factors play a centripetal role, promoting the stability and cohesion of the family. For instance, when family members are involved in a family business, their shared labor and capital create a strong motivation for them to remain in the family. The non-collectivization of agriculture restored the status of the family as the main production unit and also encouraged large-scale households to postpone family division (F. Chen, 2009).

On the other hand, economic factors also exert a powerful centrifugal force. This force has caused families to split and led to the formation of nuclear families. For urban families, employment in the state-owned sector offers significant benefits such as better housing, child care services and pensions, which helps encourage the establishment of independent marital units (F. Chen, 2009). With the housing reform in 1998, home ownership became possible, and this was also an important driving factor for family division. Data shows that adult children who own their own houses are significantly less likely to live with their parents (Z. Zhang et al., 2014). Parents pass on wealth to their children, usually in the form of a down payment for a house purchase. This has become a key factor in enabling young people to own a house and is associated with the social norm of owning a marital home, the English translation for “hun fang” (Meng et al., 2023). This intergenerational transfer of wealth and professional status, while fostering the nuclear family form, also exacerbates intergenerational housing inequality (He, 2025).

2.2.2 The Nexus of Filial Piety and Exchange

Traditional Confucian values, especially the concept of filial piety, have long been the cornerstone of Chinese families. Studies have confirmed that the more filial adult children are, the greater the possibility that they will live with their elderly parents (Z. Zhang et al., 2014). However, family life in 2000 was not a simple replication of the past. The data reveals the complex interaction between this traditional altruistic motivation and the more modern reciprocal motivation.

The family has evolved into a system of intergenerational exchange. Adult children are more likely to live with their elderly parents who previously provided them with a great deal of support, such as grandchild care and financial assistance (Yi & Wang, 2003b). Conversely, parents who offer such assistance are more likely to receive financial support from their children in later life (Z. Zhang et al., 2014). This reciprocal relationship indicates that intergenerational transfer is not always unconditional but often based on expectations of future support.

There are significant urban-rural differences in these dynamics. In rural areas where the national welfare system is not well developed, living with grandchildren is associated with higher life satisfaction among the elderly. In contrast, in urban communities, living in "skip-generation" families is associated with lower life satisfaction, indicating that the social functions and psychological impacts of these arrangements vary by environment. The ability of the elderly to choose to live independently is also influenced by their economic resources. Elderly people in rural areas with more resources are increasingly choosing to live alone (Yi & Wang, 2003b). This dual dynamic of altruism and exchange indicates that in the rapidly changing Chinese family landscape, tradition and modernity are not mutually exclusive but actively adapt and coexist.

2.3 Migration and Hukou Typologies: The Separated Family

Migration and hukou typologies examine how institutional barriers and labor mobility have created new forms of family separation and geographic dispersion. This perspective highlights the role of state policies, particularly the household registration system, in shaping family structures through forced separation. The resulting left-behind families represent a distinctly modern phenomenon that reflects the tensions between economic development and family unity.

2.3.1 The "Floating Population" and Urban-Rural Apartheid

A defining feature of Chinese society in 2000 was the scale of internal migration. It is estimated that the floating population, defined as those people who leave their permanent residence temporarily (D. Li, 1994), ranged from 60 million to over 100 million (National Bureau of Statistics of the People’s Republic of China, 2001). The surplus of rural labor force and the expected higher wages in China's booming urban centers have driven this large-scale migration from rural areas to cities. However, such migrations usually do not involve the entire family moving together.

The main institutional obstacle to family migration is the hukou (household registration) system (Gul & Lu, 2011). In the 1950s, in order to control population mobility and ensure the labor force in specific regions, China established the system, which linked an individual's access to social security, education, medical care and housing to their legal place of residence. Therefore, if rural migrants move their children to cities, these children will not be able to attend school locally or receive medical care provided by the state (M. Lin et al., 2024). This institutionalized apartheid between urban and rural residents has created a strong incentive for working-age adults to migrate alone, leaving behind their children and elderly parents.

2.3.2 The Emergence of the "Left-Behind" Family

This institutional barrier has given rise to a new and widespread family typology: the separated family. In 2000, approximately 20 million rural children were regarded as left-behind children, accounting for 13% of rural children aged 0 to 17. At this time, the first generation of left-behind children usually live with their mothers and grandparents because it is predominantly their fathers who go out to work (Sun, 2024). This migration has also had a significant impact on the well-being of left-behind elderly people. The longer their children are away, the more their mental health will be affected (A. Li, 2022).

The social and psychological consequences of this institutionalized family separation are well documented. For children, parental migration is associated with poor mental health and negative educational outcomes, including declining test scores and lower enrollment rates (Liang & Sun, 2020; Ren & Treiman, 2016). The impact on the elderly is also profound. Because they have no adult children, their mental health is seriously affected, but if they receive financial support or care for their grandchildren, this impact can be alleviated. The emergence of this type of family indicates that economic reform and growth has a huge human resource cost (Sun, 2024). A specific, state-controlled system has created a disadvantaged class, namely the institutionally separated family.

2.4 Family Planning Typologies: The "Only-Child" and its Social Legacies

Family planning typologies investigate how state demographic policies have fundamentally altered family size, composition, and intergenerational relationships. This analytical framework examines the far-reaching consequences of the One-Child Policy beyond simple fertility reduction, including changes in gender roles, socialization patterns, and kinship structures. The policy's varied implementation across different populations created diverse family experiences that continue to shape contemporary Chinese society.

2.4.1 Policy Implementation and Its Varied Enforcement

The One-Child Policy implemented from 1979 to 2015 had a profound impact on the structure and size of Chinese families. The implementation of the family planning policy was aimed at curbing population growth and allowing China to achieve the ambitious Four Modernization plan (Dreyer, 2019, pp. 259–260). Although this policy was strictly implemented in most urban areas, it also had significant exemptions. The strict one-child policy applied to approximately 36% of the population, while the remaining 53% could have a second

child if the first one was a girl. Minority and rural families were usually granted exemptions. If the first child was a girl, rural families could have a second child, which reflected the recognition of the traditional demand for male agricultural labor (Callick, 2007). This selective enforcement had created a fundamental gap between urban and rural areas in terms of family size and composition, as urban families were more likely to have only one child.

2.4.2 Demographic and Social Consequences

The policy was a powerful driver of demographic change. The national fertility rate declined and dropped below two children per woman in the mid-1990s. A significant and often-cited consequence was the skewed sex ratio toward males, a direct result of a cultural preference for sons and the availability of sex-selective abortions (Hesketh et al., 2005). The policy also had widespread social consequences beyond demographics, profoundly reshaping gender roles and family life. It contributed to greater familial investment in the education of girls, with evidence suggesting that women of Han ethnicity were more likely to complete senior high school. This increased educational attainment for women, coupled with reduced childcare responsibilities, also led to greater workforce participation (W. Huang, 2017).

The policy also created a new kinship structure known as the "4-2-1" family, where four grandparents and two parents focus all their resources and expectations on a single child (Song, 2000; Wang & Fong, 2009). This concentration of familial resources on a single individual has created a new pattern of socialization with both perceived and real consequences (Dreyer, 2019, p. 260).

2.4.3 The "Only-Child" Socialization Pattern

A popular stereotype in China is that only children are lonelier than their peers who have siblings (S. Lin et al., 2021). However, empirical evidence directly refutes this view. Multiple studies have found that young Chinese people who grew up with their siblings are actually more lonely than only children (X. Chen et al., 2014; S. Lin et al., 2021; X. Zhang et al., 2010). This discovery highlights the huge gap between cultural beliefs and life realities.

The explanation for this phenomenon lies in the unique socialization model of the only child. Compared with children who have siblings, they tend to spend more time with their parents and have a closer relationship with them. Their contact with their grandparents has also become more frequent, and this phenomenon has become even more significant due to the rise of skip-generation and multi-generational families (S. Lin et al., 2021). In a society where only children have become the norm, especially in urban areas, these children may not feel a lack of sibling interaction because they do not expect it. Therefore, under the influence of the One-Child Policy, families have created a new and non-traditional socialization model, in which only children are at the center of a powerful and extensive intergenerational support network.

3. Methodology

This section outlines the methods used in this study to investigate the typology of Chinese families using the data from the 2000 census. It first describes the dataset, followed

by the preprocessing steps for constructing family-level features which creates new dimensions for analysis. Next, the clustering process for each aspect of family typography is introduced. Final, it explains how the hypotheses are validated using statistical tests.

3.1 The Dataset

The dataset used in this study is the Fifth National Population Census conducted at the turn of the century. Specifically, it reflects the Chinese population on November 1st 2000 (State Council Population Census Office, 2000). The dataset is provided by IPUMS International (Ruggles et al., 2025). The statistical office providing the data is the National Bureau of Statistics, China. The data extract is a 1% sample of the entire census, containing 11,804,344 unique entries.

3.2 Anticipated Typologies

Based on the literature review, we propose several hypotheses across four distinct typological dimensions that capture the complexity of Chinese family structures in 2000.

Regarding structural typologies, we anticipate that household wealth plays a stabilizing role in maintaining extended family structures, though this effect is moderated by educational attainment (H1.1). Families with greater economic resources may be better positioned to support multi-generational living arrangements, but higher education levels might counteract this tendency by promoting more individualistic values. Additionally, we expect that urbanization processes create distinct family patterns, with urban areas fostering nuclear family arrangements while rural areas maintain more traditional extended family structures (H1.2).

For socioeconomic typologies, we hypothesize that families with high parental socioeconomic status will demonstrate lower rates of intergenerational co-residence (H2.1), as economic independence reduces the practical necessity for shared living arrangements. Furthermore, we anticipate that higher offspring income levels will foster instrumental family ties, characterized by separate living arrangements but continued economic interdependence and resource sharing (H2.2).

The migration and hukou typologies are expected to reveal several distinct patterns. Gender-based institutional barriers should create identifiable clusters of male-dominated migrant families (H3.1), reflecting the gendered nature of labor migration in China. We also anticipate that spousal migration patterns will significantly alter household labor arrangements, with this effect being moderated by the presence of co-resident elderly family members who can provide domestic support (H3.2). Additionally, rural-to-urban migration flows should generate two distinct family types: urban singles representing young migrants, and rural "generation-skipping" households where grandparents care for grandchildren while parents work in cities (H3.3).

Finally, regarding family planning policy impacts, we expect that the One-Child Policy will promote the formation of nuclear families with weaker extended kinship networks (H4.1), as smaller family sizes reduce the density of family relationships. However, policy exemptions should allow for larger family sizes among rural populations and ethnic minorities (H4.2). We also anticipate significant socialization differences in only-child families, particularly an

increased focus on academic achievement as parents concentrate their resources and attention on a single child (H4.3).

The individual hypotheses are shown below:

Structural Typologies Hypotheses

H1.1: Household wealth stabilizes extended structures, moderated by education.

H1.2: Urbanization creates urban nuclear versus rural extended families.

Socioeconomic Typologies Hypotheses

H2.1: High parental SES lowers co-residence.

H2.2: Offspring income fosters instrumental ties (separate living, shared economics).

Migration and Hukou Typologies Hypotheses

H3.1: Gender barriers create male migrant clusters.

H3.2: Spousal migration alters housework (moderated by co-residence with elders).

H3.3: Rural-urban flows create urban singles and rural skipping.

Family Planning Typologies Hypotheses

H4.1: Policy promotes nuclear families with looser kinships.

H4.2: Exemptions allow larger rural/minorities families.

H4.3: Socialization shifts in only-child families (e.g., academic focus).

3.3 Data Preparation

The original data from the 2000 census was at the individual level, which means each row represents one person. To analyze the family structure, the first step is to convert these individual-level data into family-level records. This is accomplished by grouping individuals through a unique SERIAL identifier corresponding to each family.

For each household, a single record is created containing aggregated and synthesized features. These features include:

- Household-level information: The number of people in the household (family_size) and the number of children (nchild).
- Head of Household information: This includes demographic data for the household head, such as sex, ethnicity, age, and details about their social and economic status, like education level, occupation, industry, and income source.
- Spouse information: Data on the head's spouse is included, covering similar variables like age, education, and occupation. A binary variable, has_spouse, is created to indicate their presence.

- Dependents' information: The number of children (num_children) and the number of elderly members (num_elderly) are counted. Their average age and maximum education level are also calculated.
- Synthesized features: To capture the complexity of family dynamics, several new variables are created. These include generation_count to represent the number of generations living together, and a categorical family_type_category (e.g., 'three-generation', 'with-elderly', 'nuclear'). A composite score for socioeconomic status (ses_composite) is also created by weighting the household head's education, occupation, and age.

The families that have a size larger than seven are dropped, as they only represent less than 1% of the total families. The result is 3,567,586 family entries.

3.4 Clustering Dimensions

To analyze the multi-faceted nature of Chinese families, this paper adopts a multi-dimensional clustering method. Rather than a single, holistic cluster analysis, families are clustered in four different dimensions of theoretical derivation. This approach can provide a more detailed understanding of how different factors (structure, economy, immigration and policy) influence family forms. The dimensions selected for each cluster are as follows:

Table 1 Dimentions Selected for Each Typology Cluster

Cluster Name	Dimension Name	Description	Processing Step
Structural Cluster	Household Size	The total number of people in a household.	Standardized.
	Generation Count	The number of generations (e.g., two-generation, three-generation) living in the household.	Processed as an ordinal variable and then standardized.
	Family Type Category	A synthesized category defining the household type (e.g., 'three-generation', 'nuclear').	One-hot encoded, creating new binary variables for each category.
	Number of Children	The count of children in the household.	Standardized.
	Number of Elderly	The count of elderly members in the household.	Standardized.
	Has a Spouse	A binary indicator (1 if the household head has a spouse, 0 otherwise).	Used directly.
Socialeconomic Cluster	Average Family Education	The average education level of all family members.	Standardized.
	Head's Education Score	A score representing the education level of the household head.	Processed as an ordinal variable and then standardized.
	Socioeconomic Composite Score	A weighted score based on the head's education, occupation, and age.	Standardized.
	Head's Occupation	The household head's occupation category (e.g., professional, service worker).	Processed as an ordinal variable and then standardized.
	Head's Industry	The household head's industry category.	One-hot encoded.
	Income Diversity	The number of unique income sources within the family.	Standardized.

Migrational and Hukou Cluster	Head's Migration Reason	The reason for the household head's migration.	One-hot encoded.
	Head's Registration Type	The household head's registration type (urban or rural).	One-hot encoded.
	Is a Migrant Family	A binary indicator (1 if the household is a migrant family).	Used directly.
	Urbanization Proxy	A score indicating the degree of urbanization of the household's location.	Standardized.
	Split Family Indicator	A binary indicator for families with separated spouses or children.	Used directly.
	Head's Age	The age of the household head.	Standardized.
Family Planning Policy Cluster	Policy Compliance	A binary indicator (1 if the household complied with the One-Child Policy for their demographic).	Used directly.
	"4-2-1" Structure	A binary indicator (1 if the household fits the "4-2-1" structure).	Used directly.
	Number of Children	The number of children in the household.	Standardized.
	Head's Ethnicity	The ethnicity of the household head.	One-hot encoded.
	Children's Maximum Education	The highest education level among children in the household.	Processed as an ordinal variable and then standardized.
	Household Size	The total number of people in the household.	Standardized.

For Structural Typologies, two synthesized variables are used: a Generation Count, which is calculated by checking for the presence of three distinct age groups (elderly, working-age adults, and children) and a Family Type Category, a categorical variable derived from the presence of children and elderly members (e.g., 'three-generation', 'nuclear'). For Socioeconomic Typologies, a Head's Education Score is assigned a numerical value based on their education level, and this is used to create a Socioeconomic Composite Score, a weighted average of the head's education, occupation, and age. The Migration and Hukou Typologies use three synthesized variables: an Urbanization Proxy score, which combines the head's official urban registration with their current residence type; a Migrant Family Indicator, which is marked as true if their registration and residence types differ; and a Split Family Indicator, which identifies households with fewer than three people but including a married couple. For Policy Impact Typologies, a Policy Compliance binary variable is used to identify families that adhered to the one-child policy, while a "4-2-1" Structure variable identifies households with exactly one child, two parents, and at least one elderly member.

For each of the clusters, the K-means clustering algorithm is applied for clustering. The number of clusters are determined by the elbow method.

3.5 Validation of Hypotheses

After the clustering has been applied, we use descriptive statistics and various statistical tests to validate the hypotheses proposed in Section 3.2. This section outlines the statistical methods employed and their relevance to our research questions.

For the Structural Typologies, we employ linear regression with interaction terms to test the hypothesis that household wealth stabilizes extended family structures, with education as a moderator (H1.1). Linear regression is particularly valuable in this study as it allows us to examine relationships between continuous variables while controlling for other factors, making it ideal for testing how wealth, education, and socioeconomic status influence family structures. The inclusion of interaction terms enables us to test moderating effects between these variables. The relationship between family size and migration patterns is examined through Chi-square tests, while Analysis of Variance (ANOVA) is used to compare the average family sizes of urban and rural households. ANOVA helps determine whether observed differences between groups are statistically significant or merely due to random variation, making it ideal for testing the hypothesis about urbanization creating distinct family forms (H1.2).

The Socioeconomic Typologies are validated by testing the hypothesis that high parental socioeconomic status (SES) lowers co-residence. Linear Discriminant Analysis (LDA) is employed to determine how well the clusters are predicted by key SES variables, validating our clustering approach by showing how well socioeconomic variables predict cluster membership. The effect of children's education on income diversity is tested using linear regression, allowing us to identify relationships between educational attainment and family economic structures.

To validate the Migration and Hukou Typologies, we use logistic regression to predict migrant family status from demographic variables. This method is particularly appropriate for examining binary outcomes, allowing us to identify which demographic factors significantly increase the probability of specific family arrangements. This directly addresses the hypothesis about the creation of male migrant clusters (H3.1). We also employ Chi-square tests to analyze gender and household splitting patterns, and T-tests to compare family characteristics by registration type. Chi-square tests are valuable for analyzing demographic data where many variables are categorical rather than continuous, making them ideal for examining associations between family size and migration patterns (H3.3).

Finally, the Policy Impact Typologies are validated by testing the hypotheses related to the One-Child Policy. Chi-square tests examine associations between family size compliance and ethnic or regional patterns (H4.1, H4.2). ANOVA compares education outcomes across families with different numbers of children, and T-tests analyze dependency ratios in "4-2-1" structures.

4. Results

This section presents the findings from the typological analysis of the 2000 Chinese census data. The results are organized into four key areas, each corresponding to the typologies discussed in the literature review: structural, socioeconomic, migration and hukou, and policy

impacts. Each subsection details the distinct family patterns that emerge from the clustering analysis.

4.1 Structural Typologies

The analysis of household structure yielded five distinct clusters, each with a unique demographic profile.

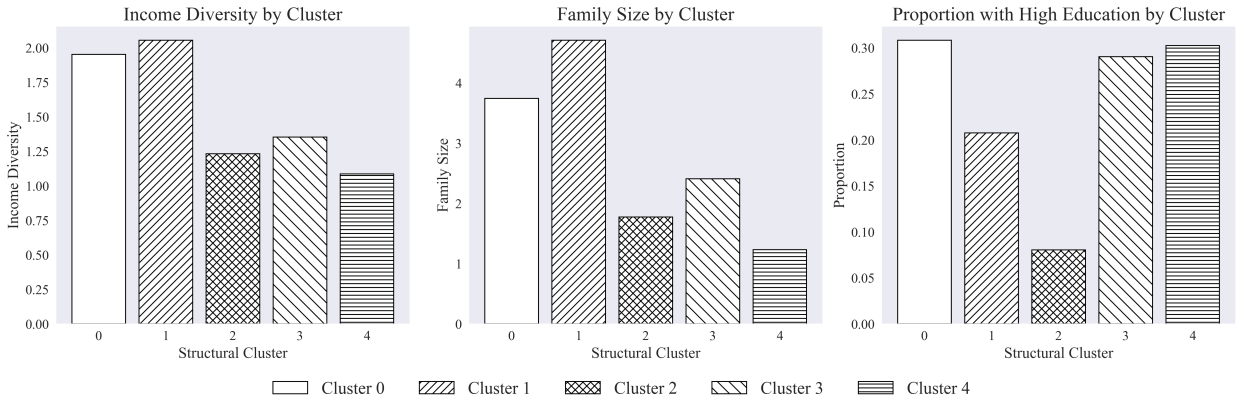

Figure 1 Education as a Moderator of Wealth's Effect on Family Structure

The hypothesis that household wealth stabilizes extended structures, moderated by education is validated. The data shows a significant negative interaction between wealth and education, with a coefficient of -0.442 ($p<0.001$). While Cluster 1, characterized by a large family size (4.7) and high income diversity (2.05), fits the profile of a wealthy extended family, it also has a relatively low proportion of highly educated members (20.8%) (see Figure 1). This suggests that as education increases, its moderating effect on wealth weakens the tendency to form larger family structures. Highly educated families, even if wealthy, appear to favor smaller, more nuclear arrangements.

Figure 2 Urban Extended Families Challenging the Rural-Extended/Urban-Nuclear Dichotomy

The hypothesis that urbanization creates urban nuclear versus rural extended families is invalidated. The data, shown in Figure 2, contradicts this simple dichotomy by identifying a large, multi-generational Cluster 1 that is both highly urban (87.1% urban) and highly extended (2.84 generations). This suggests that in 2000, affluent urban families maintained extended households to pool resources, provide childcare for working parents, and care for elders. This

pattern shows how wealth can sustain traditional family structures in a modern urban environment.

The hypothesis that mobility creates rural generation-skipping clusters is also invalidated. The analysis reveals that the phenomenon of generation-skipping, where grandparents raise grandchildren, is found almost exclusively in the urban Cluster 1 (7.6%). This finding contradicts the assumption that this family type is predominantly rural. A plausible explanation is that this cluster may represent families who have moved to the city, or whose official registration is urban, but who maintain multi-generational households to support the migration of working-age adults.

4.2 Socioeconomic Typologies

The clustering on socioeconomic variables produced four distinct groups, and the results from the discriminant analysis (with an accuracy of 84.6%) show that these clusters are well-separated based on their socioeconomic characteristics.

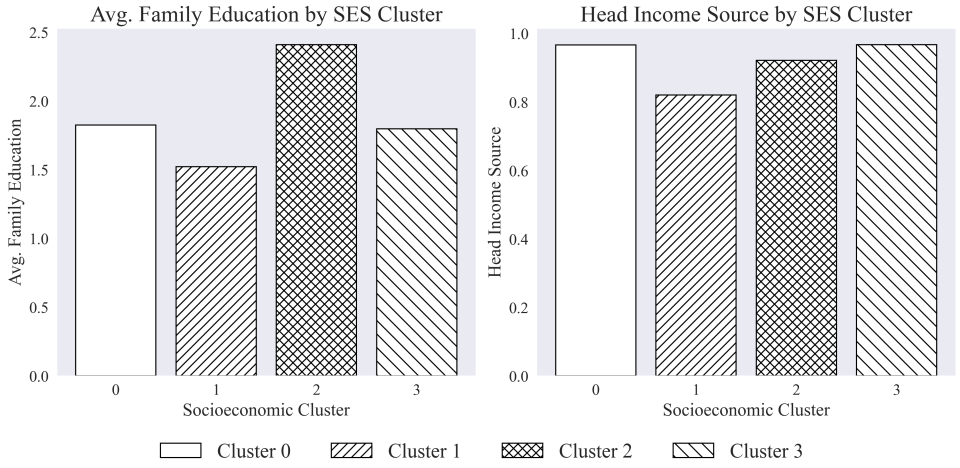

Figure 3 Education and Elder Care: Higher Education Associated with Increased Elder Co-residence

The hypothesis that high parental SES lowers co-residence is invalidated. The results show a positive relationship between socioeconomic status (as proxied by family education) and co-residence with elders. Cluster 2, with the highest average family education (2.41), has a very high rate of co-residence with elderly members (92.2%) (see Figure 3). This suggests that for high-SES families, co-residence may be a choice enabled by wealth (e.g., affording a larger home) and driven by cultural values or the practical need for childcare, rather than a necessity.

The hypothesis that offspring income fosters instrumental ties is validated. The linear regression analysis shows a positive coefficient (0.227, $p<0.001$) between a child's education and the family's income diversity. This finding suggests that higher-educated children are more likely to contribute to a diverse family income, consistent with the concept of instrumental ties where families live separately but share financial resources.

4.3 Migration and Hukou Typologies

The analysis of migration patterns revealed a complex reality beyond simple demographic trends. The logistic regression model accurately predicted migrant family status (87.7% accuracy), with being male (head_sex coefficient: 0.750, $p<0.001$) and having an urban registration type (head_regtype coefficient: 0.814, $p<0.001$) significantly increasing the probability of being a migrant family.

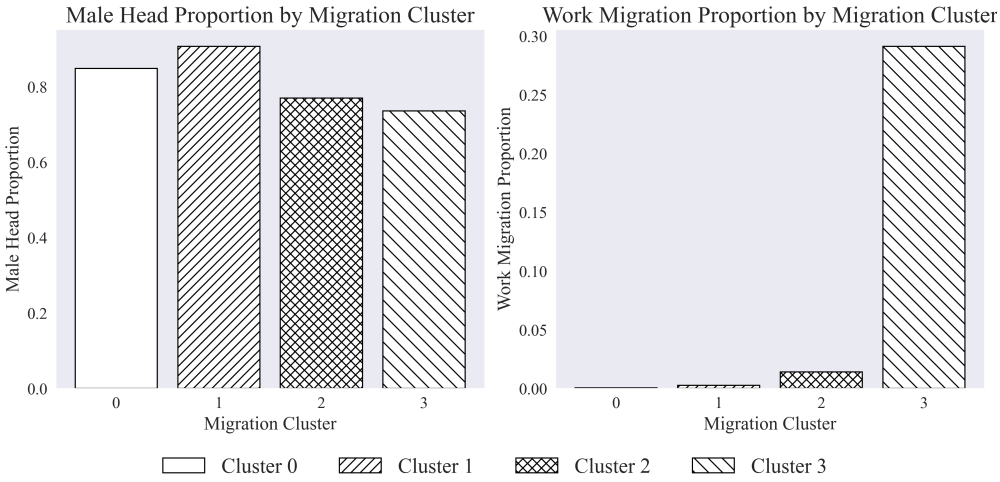

Figure 4 Beyond Gender Barriers: Migration Rates and Male Household Headship Across Clusters

The hypothesis that gender barriers create male migrant clusters is partially validated. While the logistic regression confirms a general trend of male-led migration, the most actively migrant cluster (Cluster 3, with 29.1% migrating for work) has the lowest proportion of male heads (73.6%) (see Figure 4). This indicates that while male migration was a dominant trend in 2000, a significant proportion of highly mobile households were female-led, suggesting that age (Cluster 3's average age is 29.9) may be a more defining characteristic of this group than gender alone.

The hypothesis that spousal migration alters housework, moderated by co-residence with elders, is validated. The data shows a strong negative association between elderly co-residence and household splitting. Cluster 1, with the highest rate of elderly co-residence (19.6%), has a very low rate of split households (0.6%). In contrast, Clusters 2 and 3, with fewer co-resident elders, have much higher rates of split households (7.1% and 18.6%, respectively). This suggests that grandparents provide crucial support (e.g., childcare, household chores) that enables families to remain together even when a spouse migrates.

The hypothesis that rural-urban flows create urban singles and rural skipping is partially validated. While the "rural skipping" part was not supported by the data (as discussed in Section 4.1), the "urban singles" part of the hypothesis is strongly supported. Cluster 3 is characterized by being young (average age 29.9), highly mobile (53.3% are migrant families), and having a high proportion of small (1-2 person) households (46.6%). This profile perfectly aligns with a cluster of young, urban migrants.

4.4 Policy Impact Typologies

The final dimension examines the impact of the One-Child Policy, revealing three distinct clusters.

The hypothesis that the policy promotes nuclear families with looser kinships is validated. Cluster 0 is the strongest example of this, with 100% policy compliance, a family size of three or fewer, and a generation count of 1.1. This cluster's structure is a direct result of adhering to the policy, which leads to small, nuclear families.

Figure 5 Urban Diversity and Policy Non-Compliance: Challenging Rural-Minority Exemption Assumptions

The hypothesis that exemptions allow larger rural/minorities families is partially validated. The data, shown in Figure 5, confirms that families in Cluster 1, with the lowest policy compliance, have more children (2.06) and the highest proportion of minorities (9.3%). However, this cluster is also the most urban (77.4%). This suggests that while rurality is a strong predictor of non-compliance in the overall population, the specific cluster of most non-compliant families may represent affluent urban minorities who could afford fines or fell under specific exemptions.

The hypothesis that socialization shifts in only-child families is invalidated. The data effectively challenges the assumption that only-children, due to concentrated parental attention, achieve higher academic outcomes. Cluster 1, the multi-child cluster, shows significantly higher average educational attainment for its children (2.14) compared to the predominantly single-child Cluster 2 (1.04). This suggests that socioeconomic factors and parental resources are more critical determinants of a child's educational success than the number of siblings.

5. Conclusion and Discussion

The analysis of structural typologies reveals that, contrary to modernization theory's prediction of universal nuclearization, extended family structures persisted and even thrived in certain contexts. Particularly noteworthy is the finding that wealthy urban families maintained multi-generational households, contradicting the assumption that urbanization inevitably leads to nuclear family formation. This suggests that economic resources can enable the continuation

of traditional family arrangements when they serve practical functions, such as childcare provision and elder support.

The socioeconomic analysis further complicated the modernization narrative by demonstrating that higher socioeconomic status was associated with increased, not decreased, co-residence with elderly family members. This finding challenges the Western-centric assumption that economic development necessarily leads to individualism and family fragmentation. Instead, it suggests that in the Chinese context, prosperity can strengthen intergenerational bonds by providing the material resources needed to maintain extended family structures.

The migration and hukou typologies highlighted how institutional barriers created distinctive family forms, particularly the separated family phenomenon. The hukou system's restrictions on access to urban social services forced millions of rural migrants to leave family members behind, creating unique household arrangements such as "left-behind children" and "empty-nest elderly." This demonstrates how state policies can directly shape family structures, sometimes in ways that impose significant social and psychological costs.

Finally, the family planning policy analysis revealed the differential impact of the One-Child Policy across social groups. While the policy did create smaller nuclear families in urban areas, its uneven implementation allowed for significant variation in family size and composition. Particularly striking was the finding that multi-child families showed higher educational attainment for children than single-child families. This challenges popular stereotypes about the advantages of concentrated parental investment in only children.

This study has several limitations that suggest directions for future research. First, the analysis relies on cross-sectional data from 2000, which cannot capture the dynamic processes of family formation and dissolution over time. Longitudinal studies would provide valuable insights into how family structures evolve in response to changing circumstances.

Second, while the typological approach identifies distinct family clusters, it cannot fully explain the causal mechanisms driving these patterns. Future research using mixed methods, including qualitative interviews with families from different clusters, would enhance our understanding of the decision-making processes behind different family arrangements.

Third, the study focuses on the year 2000, a specific moment in China's rapid transformation. Follow-up research examining how these typologies have evolved in subsequent decades would provide a more complete picture of family change in contemporary China, particularly following major policy shifts such as the relaxation and eventual abandonment of the One-Child Policy.

Finally, comparative studies examining how these typologies compare to family patterns in other East Asian societies undergoing similar economic development but with different policy environments would help distinguish universal aspects of modernization from China-specific factors.

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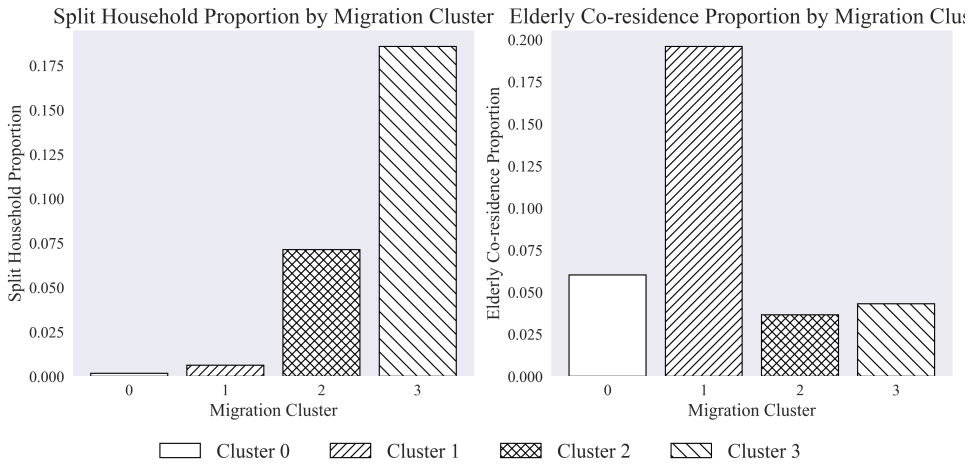
Appendix A

Appendix A Regression Results of Relationship Between Wealth and Education

Variable	Coefficient
Constant	-0.871
	(0.000)
Income Diversity	2.502***
	(0.001)
Family Max Education	0.673***
	(0.001)
Wealth-Edu Interaction	-0.442***
	(0.001)
R-squared	0.345
No. observations	3567586

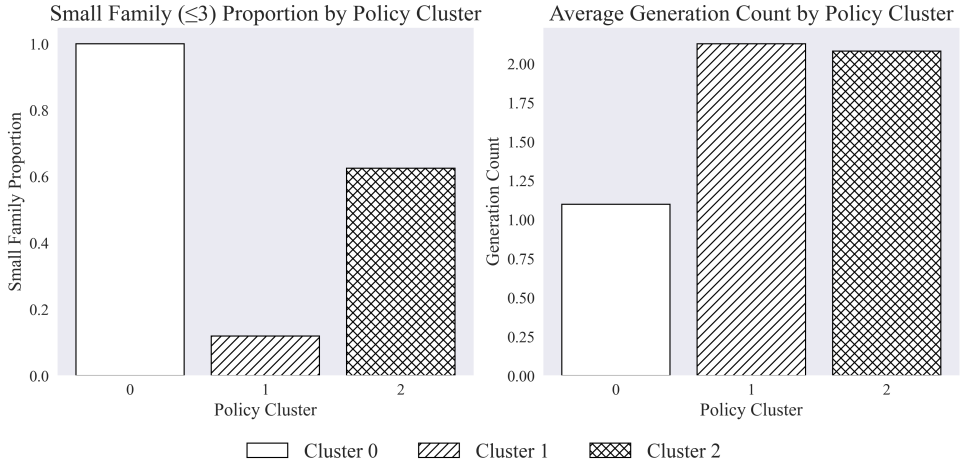
Standard errors are reported in parentheses. *, **, *** indicates significance at the 90%, 95%, and 99% level, respectively.

Appendix B



Appendix B Negative association between elderly co-residence and household splitting

Appendix C



Appendix C Contradictions to the assumption that only-children receive concentrated parental attention

Appendix D

Appendix D Logistic Regression Results for Migration Patterns

Variable	**B**	**SE B**	**Wald χ^2**	**p**	**OR**	**95% CI OR**
Sex of Household Head	0.75	0.063	141.348	<0.001	2.118	1.871-2.397
Age of Household Head	-0.085	0.002	1326.38	<0.001	0.918	0.914-0.923
Registration Type of Household Head	0.814	0.06	186.751	<0.001	2.258	2.009-2.537
Intercept	-0.664	-	-	-	0.515	-

Appendix E

Appendix E Logistic Regression Results for Policy Compliance

Variable	**B**	**SE B**	**Wald χ^2**	**p**	**OR**	**95% CI OR**
Ethnicity	-0.022	0.006	12.271	<0.001	0.978	0.967-0.990
Rural	1.068	0.05	456.01	<0.001	2.91	2.638-3.210
Age	-0.003	0.001	25.984	<0.001	0.997	0.996-0.998
Intercept	0.29	-	-	-	1.337	-