Meritocracy or not: State, Elite Families, and the Examination System in the Qing Dynasty

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Declaration

I, Xizi Luo, certify that the thesis I have presented for examination for the MRes/PhD degree of the London School of Economics and Political Science is solely my own work other than where I have clearly indicated that it is the work of others (in which case the extent of any work carried out jointly by me and any other person is clearly identified in it).

I declare that my thesis consists of 46,425 words.

Abstract

This research investigates how social mobility and institutions interacted and shaped inequality in premodern Chinese society. The thesis consists of three interdisciplinary papers.

The first paper investigates the generational mobility of the elite. It challenges prevailing notions of Chinese society's high mobility and the Markov process assumption of multigenerational mobility. The intergenerational mobility rate is 0.58, whereas the rates of three- and four-generational mobility are 0.2 and 0.1, respectively. It emphasizes the transmission of family endowments in perpetuating elite status and underscores the civil service examination's role in ensuring social stability and authority.

The second paper sheds light on the marriage dynamics of elite families, unveiling women's higher bargaining power in the marriage market and their tendency to marry into higher social strata due to an unbalanced sex ratio. Moreover, this study challenges traditional notions of assortative mating by revealing that marriages were far more assortative than previously believed (0.8 vs. 0.4). This paper underscores the pivotal role of marriage in mitigating downward mobility risks and perpetuating lineage.

Paper three provides empirical evidence of the Qing rulers' strategic manipulation of the civil service examination system to maintain power and control over the elite class. By analyzing the mobility patterns between the bannermen and the Han Chinese, it reveals disparities in opportunities and outcomes. Bannermen had higher levels of absolute mobility and multigenerational mobility compared to their Han Chinese counterparts. However, both groups demonstrated similar levels of relative mobility, approximately 0.4.

This research underscores the interplay between the state, elite mobility, and

social stability in Qing dynasty China. It sheds light on the mechanisms through which the civil service examination system perpetuated social hierarchy. This thesis contributes to a deeper understanding of Qing society's complexities and challenges prevailing narratives regarding social mobility and governance.

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Chapter 1

Introduction

1.1 State, Meritocracy, and the Elite

Imperial China was seen as a meritocracy due to its practice of selecting officials based on their merit rather than their social status at birth. Throughout the Tang dynasty (618–907 ce) until the Qing dynasty (1644-1911), the civil service examination system underwent significant development and refinement. It offers numerate individuals from the mass an exceptional opportunity to join the ruling class, participate in political administration, and enhance their social standing. Imperial China thus gave rise to a new social class known as the gentry-literati.[1]

Following the 17th century, the Chinese population exploded from 160 million in 1650 to 353.3 million in 1750 (Cao and Y. Chen 2002). Nevertheless, the bureaucratic organisation did not expand in proportion to the population, leading to a reduced ratio between officials and commoners. In addition, the advancement of monetary economy resulted in tax payment being made in silver rather than agricultural produce. This resulted in a decrease in the necessary number of officers at the local level responsible for tax collection. As the Qing government's administrative authority did not extend to areas below the county level, a significant proportion of villages were not under the direct control of county magistrates. Instead, governance in these areas was entrusted to the local gentry. The local elites usurped governmental authority and personally intervened in village affairs. They assumed the role

[1] I follows Benjamin A. Elman 2013 for the definition of gentry-literati. The gentry were individuals who own land, occupied positions in government, or had previously served in government roles, hence exerting significant influence on local society and economy. Literati denotes a specific group of individuals from the gentry class who upheld their social standing as intellectual elites. Typically, they possessed academic qualifications, published works, and assumed responsibility for conducting ancestral ceremonies.

of intermediary between the bureaucratic institution and the rural inhabitants. The civil service examination, which confers social and economic authority onto gentry to govern the general population, established a strong connection between the state and the privileged class.

Another unique feature between the Qing authority and Chinese elite is that Qing was governed by an ethnic minority, the Manchus. They comprised a modest 0.009 to 0.018 percent of the overall population in the middle of 18th century. (Mark Christopher Elliott, C. Campbell, and J. Lee 2016; Cao and Y. Chen 2002). With the exception of scattered garrisons and certain provincial and central government officials, Han Chinese predominantly governed China proper, especially at the local level. The Qing state delicately managed power dynamics between the banner elite and the Han Chinese elite. While relying on the Han Chinese elite as intermediaries between the administration and the populace, the Qing government also ensured that Han Chinese power remained subordinate to that of the ruling elite through various institutional mechanisms.

The civil service examination system played a crucial role in this dynamic. Making the success in examination as the major bridge to wealth, power, and recognized social status for most people, the Qing state was able to have a social contract with the elites. Recruiting and evaluating officials through ability rather than inheritance, the state monopolized the government services and prevented the consolidation of power within specific lineages or families.[2] Meanwhile, the state reproduced loyal literati candidates and officials through the examination, meeting the requirement of supplying latent men for the bureaucratic system and the requirement of maintaining public order.

From the viewpoint of the elites, central government accorded them with social, political, and cultural prestige once they became degree holders or officials. In exchange for that, elites recognized the state's moral leadership and accepted the fierce competition caused by the artificial control of examination qualification and administrative posts, regardless of the risk of downward mobility. This support was contingent with the fact that fierce competition in examination and officialdom

[2]Only a few families were eligible to inherit social status over generations. Descendants of those families could only inherit lower positions or titles. Thus, their privilege vanished after few generations if the family failed to produce any officials through examination or military rewards.

became a purposive barrier between elites and the mass. Elite lineages monopolized degrees and positions in the imperial bureaucracy by translating their wealth and social capital into cultural and educational advantages, ensuring their social prestige across generations (Benjamin A. Elman 2013, p45-7).

Meanwhile, screening and judging under two distinct institutions, the Qing state effectively balanced power between Han Chinese elite and the banner elite. Under the eight banner system, the banner elite were mainly examined through military performance and yin privileges. Civil posts were acquired through translation examination and civil service examination, both of which were far less difficult than the examination took by Han Chinese. Combined with the policy of maintaining a balanced ethnic ratio in the central government, the bannermen maintained high social status across generations.

Together with the increased population, the limited number of examination qualification and official posts posed challenges for families aiming to sustain their social status. Elite families and society devoted numerous resources to producing degree holders, including strategic marriage alliances with influential lineages, wealth accumulation through commercial activities, establishment of charitable schools within lineages, and even the purchase of degrees or official titles.[3] Elite invested significant resources in it to maintain their status and became the most devoted advocates of the Qing state. The civil service examination gradually evolved into a mechanism for maintaining social stability and meritocracy was in name only. The side effects of this contract became obvious. Too much effort on producing degree holders who study Confucianism led to a shortage in the supply of the "right type" of human capital, which is critical for the development of technology.[4]

This thesis, therefore, is interested in the relationship between institutions, the state, and elite families during the Qing dynasty. I compiled a national-level dataset from the civil service examination papers (*Zhujuan* 朱卷). This dataset

[3]See L. Zhang 2013; Kracke 1947; Rowe 2002; Eberhard 1962; Esherick, Rankin, et al. 1990

[4]There are two types of knowledge: the one that tries to understand the mechanisms of the physical world and the one that tries to understand what constitutes right conduct. The Confucian classics emphasise the second type of knowledge. See Fei et al. 1953, p60-1. J. Y. Lin 1995 provided an inspired hypothesis that the failure to supply proper human capital led to the technology stagnation in late Imperial China. As having degree and entering into the ruling bureaucracy were the final goal of upward social mobility, people devoted most of their time in accumulating the human capital required for the examination rather than the human capital required for scientific research.

offers extensive information, including candidates' family genealogy, spanning four generations from 1614 to 1854. With 1608 candidates, the dataset comprises a total of 11,948 observations, covering 5974 male observations from direct ancestors and 5974 male observations from their wives' families. Each individual in the dataset has been assigned a social status rank based on factors such as educational outcomes, official positions attained, and publications. The social status scale ranges from 1 to 56, with 1 representing the lowest social status level, indicating no degree, official position, or publications.

To demonstrate that the function of civil service examination was mainly for tranquility rather than egality, this research attempts to investigate the relationship between the state and the elites through the examination system. It examines whether elites could perpetuate their social status under a purported meritocracy and how the state utilized this system to uphold public order and legitimize its rule.[5] Specifically, the study analyzes the mobility patterns of elites in the short and long term, elucidating the mechanisms through which these elites preserved their social standing across generations. Furthermore, it sheds light on the political inclinations of the Qing state by comparing the mobility patterns of Han Chinese elites with those of bannermen elites. The thesis consists of three interdisciplinary papers.

The first paper, Chapter 2, investigates the generational mobility of elite. Under the assumption that unobserved family endowments play a significant role in social status and family persistence, it applies the latent factor model to estimate generational elasticity. Evidence suggests that the intergenerational mobility rate during this period is 0.58, whereas the rates of three- and four-generational mobility are 0.2 and 0.1, respectively. This research not only challenges the prevailing notion that Chinese society was highly mobile, but also emphasises that social-economic mobility in pre-modern China did not follow a simple Markov process. The underlying endowments transmitted within families play a crucial role in perpetuating the status of elite families. By further investigating the mobility pattern among groups and over time, this paper shows that the civil service examination was served as a tool of ensuring social stability and upholding authority.

[5]The meritocracy system here refers to the administrative selection process based on ability rather than inheritance, including the civil service examination system and several rules applied in official appointment and promotion.

A marriage alliance is one of the alternative pathways that will assist a family in accessing positions of power. Intermarriage was common among local gentry to secure their monopoly over the establishment of connections between local, regional, and national political communities (Kracke 1947). In Chinese, there was a proverb "门当户对", which means marring people with the same social status. Additionally, families also utilize marriage as a way to increase their social status. During the Song dynasty, hypogamous marriage was common as well, in which the sons of a richer family married the daughters of educated elite families in exchange for their political or social positions (Hartwell 1982). Therefore, the second paper, Chapter 3, sheds light on the marriage dynamics of elite families. It reveals a phenomenon where women had more bargaining power in the marriage market and tended to marry into higher social strata, driven by the unbalanced sex ratio. Strong son preference, discouragement of remarriage, and concubinage contribute to this unbalanced sex ratio. Moreover, this study challenges traditional notions of assortative mating by revealing that marriages were far more assortative than previously believed (0.8 vs. 0.4), emphasizing the transmission of advantages among families through marital alliances. The research underscores the pivotal role of marriage in elite perpetuation, particularly in mitigating downward mobility risks. It highlights the significance of selecting families with a higher social status as a strategic move. Furthermore, it underscores the substantial associations among the social standings of father-in-law, groom, and subsequent generations, indicating the role of parentally arranged marriage alliances and affinal support in lineage perpetuation.

Paper three, Chapter 4, aims to provide empirical evidence supporting the hypothesis that the Qing rulers strategically manipulated the civil service examination system to maintain their power and control over the elite class. By analyzing the mobility patterns between the bannermen and the Han Chinese during the Qing era, the study seeks to uncover disparities in opportunities and outcomes. The research reveals that the Qing state, through preferential policies favouring the bannermen, ensured their higher social status over time. Bannermen exhibited higher levels of absolute mobility and multigenerational mobility compared to Han Chinese counterparts. Meanwhile, Han Chinese faced intense competition in examinations and bureaucratic systems, leading to a lower rate of absolute mobility and a greater likeli-

hood of downward multigenerational mobility. Despite these differences, both groups demonstrated similar levels of relative mobility, approximately 0.4. Additionally, the study examines family factors influencing ethnic similarities and disparities in mobility. Disparities in absolute and multigenerational mobility stem from the privileges afforded to bannermen in attaining high social standings. Conversely, Han Chinese employed strategies such as investing in education and forming marriage alliances, contributing to a comparable level of relative mobility and significantly increasing their probability of achieving elite status.

This thesis contributes to current literature from three perspectives. First, My thesis explores social mobility and inequality through a multigenerational lens, offering valuable insights into long-term trends. Previous studies on social mobility have primarily focused on two-generational correlations due to data limitations. Multigenerational correlation, on the other hand, had long been assumed to follow a Markov process. Until recently, scholars have digitized long-existing large-scale historical genealogies.[6] This significantly broadened the scope of research in inequality and demography, providing substantial new evidence that enhances and deepens our understanding of social mobility and demographic behaviour in the long run (Belloc et al. 2024; Ward 2023; Adermon, Lindahl, and Palme 2021; Braun and Stuhler 2018; Lindahl et al. 2015). Utilizing genealogical data to examine both short-term and long-term social mobility, my research makes significant contributions to this field of study. By delving into multigenerational dynamics, my work expands our understanding of the complex interplay between social mobility and inequality across generations.

In addition, inequality has long been a subject of interest for scholars and society alike. Many critical factors influencing individuals' well-being, irrespective of their personal choices, are inherited from their families, whether genetically or otherwise. Understanding these factors, along with assessing the extent of intergenerational transmission of outcomes, is crucial for addressing inequality and fostering fairness in society. Additionally, Piketty 2014 has demonstrated the enduring ability of the upper decile to perpetuate wealth over the long term and a rapid rise in

[6] Kaplanis et al. 2018 on the heritability of longevity, Clark 2023 on the heritability of social class, Carol H Shiue 2019 on the human capital and fertility, and Cummins 2017 on Noble lifespan and violence.

wealth inequality in the United States since 1980. This phenomenon has garnered considerable attention from both academics and policymakers.[7] Furthermore, attention has been drawn to inequality in ethnicity. Research of social mobility has shown that rates of mobility are biased without considering minorities (Ward 2023). Therefore, my research contributes to a comprehensive understanding of societal inequality from three perspectives: the mechanisms of elite perpetuation, the similarities and disparities in social mobility among different ethnic groups, and the factors contributing to inequality of opportunity.

Institutions play a pivotal role in shaping inequality, with a prevailing belief across the social sciences that social institutions exert a significant influence on rates of social mobility. While meritocracy theoretically promotes equality of opportunity by ensuring individuals' success based solely on merit, practical applications of meritocracy can perpetuate inequality when certain groups lack equal access to the resources and opportunities required to nurture their talents and capabilities. My research on Chinese social mobility offers a compelling case study to explore the immediate and long-term impacts of institutions on social mobility within a meritocratic framework. During the Qing dynasty (1644–1911), China implemented a civil service examination system to recruit talented individuals into official positions, primarily based on individual ability and merit, thereby embodying principles of meritocracy. This selection system exhibits a notable similarity to contemporary educational systems, which grant essential educational qualifications that are vital for the future career opportunities of individuals. By examining the historical patterns of social mobility in China, my research sheds light on both the challenges and advancements experienced under a meritocratic system. By uncovering patterns of inequality in the past, my research offers insights into the mechanisms through which meritocracy may exacerbate inequality, providing valuable lessons for understanding contemporary dynamics of social mobility.

The rest of this chapter is structured as follows: Section II offers an overview of Chinese society, focusing on socioeconomic stratification and the estimation of elite groups. Section III presents an introduction to the civil service examination system. Section IV provides an analysis of the data source utilised in this thesis. I

[7] Other developed countries follow the same trend.

carefully analyze its value in historical research. Section V shows the details of data construction. Section VI illustrates the representativeness of this dataset.

1.2 Social Stratification in Pre-Modern China

1.2.1 Social Hierarchy during the Qing Dynasty

Based on the Confucian principle of social stratification, traditional Chinese society was broadly classified into the ruling and the ruled, although it is virtually a multi-class society (Ho 1962, p17). Four stratus groups are delineated to make a minute stratification.

The upper stratum consisted of the emperor, imperial clansmen, nonimperial nobility, and direct descendants of Confucius, whose noble titles were hereditary within a predetermined number of generations. These individuals constituted less than 0.05 percent of the Qing dynasty's entire population. In the middle of the 20th century, the imperial lineage comprised approximately 200,000 people, with 80,000 people in the principal line and 120,000 in the collateral lines.[8] Numerous imperial clansmen with low ranks were at risk of slipping in economic and social scale, resulting in an even smaller share of the upper strata (Ho 1962; Jing 1993).

The gentry comprised those in the middle stratum of the hierarchy. Officials were at the apex of this group since their careers were the most prestigious in Qing society.[9] Approximately 5.5 million people, including their family members, comprised the middle stratum, constituting 1.5% of the entire population. In particular, there were 80,000 officials, accounting for 0.02% of the overall population. 27,000 out of 80,000 officials were actively involved in administration.[10]

Below the upper and middle groups were the commoners, who lacked any special

[8]Demographic features of the Qing nobility see J. Lee, Feng, and C. Campbell 1994. Estimation of Chinese population in the Qing dynasty see Cao 2002.

[9]Unlike the gentry class in Britain, which is defined based on landed property and other types of wealth, the gentry class in imperial China normally refers to retired officials, scholars, degree holders, and wealthy landholders. Although the definition of gentry in Chinese is still under debate. In this paper, I utilised the definition applied by Chang 1967 and Chou 1966, p1-3.Chang 1967 classifies the gentry class as a group of people who hold degrees through examination or purchasing and people who were active, retired, expectant, and potential officials. Chou 1966 follows the same definition. Whereas the demarcation of the gentry class is slightly different for Ho 1962, who exclude the *jian-sheng* as gentry. See Ho 1962, p40.

[10]There were around 1.1 million jian-sheng and licentiates. Those status were a prerequisite for being a gentleman. Multiplying this number with the average family size in pre-modern China, we have the total number of the gentry class. See Willcox 1930 Based on this estimation, the population in 1820 was around 374 million. See Cao 2002

status. They constituted more than 90 percent of the population.[11] Customarily, these individuals were further classified into three functional orders, the nong (农, peasant farmers), the gong (工, artisans and craftsmen), and the shang (商, merchants and traders). Traditionally, the broad functional classification of commoners included shi (士), who were scholars and were conferred a higher rank than commoners as their social status was at least as exalted as that of lower officials, especially for those with *jinshi* degrees (Jing 1993; Smith 1983).

The last layer consists of the declassed people called *jianmin*, who accounted for an insignificant proportion of the entire population. This group consisted of people such as entertainers and low-level government runners. Normally, they were unable to move upward as they were prohibited from taking civil service examination.[12]

The aforementioned classification mostly referred to Han citizens in the Qing dynasty. The Manchu, Mongol, and Han bannermen were governed by an independent administration and military system, known as the Eight Banner system. Based on the estimation, there were around 660,000 bannermen in 1720, with 616,436 located in the Beijing area. Initially, banner officials were appointed based on recommendations or military exploits. Both military and civil examinations were not the major mechanisms for their selection.[13] Later in the Qing dynasty, however, an increasing number of bannermen participated in the civil service examination to obtain official positions.

1.2.2 Elite in the Qing Dynasty

To further understand social status of elite within the gentry class and their status relative to total population, I further divide elite into subgroups. I categorise the population into five distinct groups and then calculate the percentage of each group in relation to the total population. Following Ho 1962, pp. 24–5 and Carol H Shiue 2019, I divide people into five categories based on their official positions: 1) common-

[11] A study shows that, among 4.5 million people, about 90% of the population was composed of peasants and farmers, 2.5 percent of artisans, and 4 percent of merchants in early twentieth century North China. See Rozman and Bernstein 1981

[12] Jianmin is the lowest social hierarchy in pre-modern China. People who were defined as jianmin do not have rights to participate in the examination. Merely around one percent of population belongs to this group. See Jing 1993, p31-6 and Ho 1962, p18-9

[13] The Eight Banner system is an institution created for managing the Manchu, Mongol, acculturated frontier Chinese, and Koreans. See Mark C Elliott 2001, p39, p118-9, p136.

ers (men without the degree and official position); 2) men with a degree but without an official title (including men with an expectant official position); 3) men with a low-ranking official position; 4) men with a middle-ranking official position; and 5) men with a high-ranking official position. Figure A.1 and Table A.1 in Appendix A show the administration structure and official posts of the Qing dynasty.

There are two important factors to consider while discussing population. I specifically omit individuals who are part of the royal families, the *jianmin* (socially marginalised individuals), and bannermen. The top tier of the social structure comprised a mere 0.05% of the overall population and mostly upheld their social standing through inheritance. Similarly, *jianmin* constituted a negligible part of the overall population and had limited prospects for improving their social standing.[14] There were around 2.6 million to 4.8 million banner population in 1720 (Mark Christopher Elliott, C. Campbell, and J. Lee 2016). Since bannermen had their own administration system, I exclude them in this calculation as well. I exclude females from the analysis.[15] After excluding the royal families and the *jianmin*, the total population in 1820 amounts to 379,997,000 individuals. Based on the ratio of 110 males to 100 women, it may be inferred that there were 188,317,254 men in the year 1820 (Cao 2002).

1.2.2.1 Number of Commoners

Since obtaining licentiates or *Jian-sheng* (the lowest degree level) is the primary step for men to obtain higher degree level or to obtain official titles, licentiates or *Jian-sheng* is composed by all degree holders and officials. The number of commoners is thus shown as Equation 1.1, where N_{com} is the number of commoners, N_m is the number of men in total, and $N_{lowdegree}$ is the total number of licentiates and *Jian-sheng*. According to Chang 1967, page 111, the total number of licentiates and *Jian-sheng* was 1,094,734 in a specific year. Knowing that the total male population was 188,317,254 in 1820, the number of commoners, therefore, is 187,222,520.

$$N_{com} = N_m - N_{lowdegree} \tag{1.1}$$

[14] Jing 1993 discusses the *Jianmin* class in detail.

[15] This is because social status of women in traditional China was inferior to that of most men. A woman was forbidden to participate civil service examination and her social value entirely depended on her father or husband.

1.2.2.2 Number of People with Official Title

The structural organization of Qing government is composed by military establishment, judicial supervision departments, and agencies for general administration.[16] Each has three tiers, which are central, prefecture, and local. The total number of officials was roughly constant over time. For each province and county, central government will assign one prefecture magistrate and one county magistrate.

Given that the number of official posts remains unchanged, I am able to approximate the annual count of current officials. According to Chang 1967, the Qing administration employed approximately 50,000 civil officials and 7,000 military officials, which also included retired officials. Out of the total of 50,000 civil officials, around 20,000 individuals acquired their official title by the "orthodox" route. This includes 15,000 individuals who passed an examination, 5,000 people who purchased their title, and 1,000 individuals who gained it through recommendation. The remaining 30,000 individuals obtained their title using the "unorthodox" route.

The number of officials can be categorised by their rank as follows: there were 3,500 officials in high-ranking positions, 13,500 officials in mid-ranking positions, and 40,000 officials in low-ranking positions. Military posts are generally classified as middle-ranking positions, as the majority of these posts are ranked above six. Consequently, there were a total of 13,500 officials in the intermediate level, which included 7,000 military officials. Given the fair assumption that purchases were primarily made for low-level official titles, individuals who attained official positions by unorthodox ways were seen to be low-level officials.

1.2.2.3 Number of People with Degree but without Official Posts

With the total number of degree holders and the number of people with official titles, I could easily calculate the number of people with degrees but without official titles. Table 1.1 demonstrates the number of people in each category and their proportion among total male population. It indicates that as social status increases, the share of that group decreases. The Chinese male population was predominantly composed

[16] Figure A.1 in Appendix A shows the administrative structure of Imperial China.

of commoners, making up approximately 99.4 percent. Degree holders and officials are highly distinguished in comparison to the general population. Among the gentry class, a significant proportion of people held just degrees, making up approximately 0.55 percent of the overall male population. The combined number of top and middle officials constituted a mere 0.009 percent of the entire male population. This table provides further visual representation of the elevated social standing of individuals who occupy official positions.

Table 1.1: Proportion of Each Class among Male Population

Social category	Number of people	Proportion(%)
Commoners	187,222,520	99.418676
Degree without official posts	1,036,734	0.550525
Low officials	41000	0.021772
Middle officials	13500	0.007169
Top officials	3500	0.001859
Total	188,317.254	100

Notes : This table illustrates the distribution of each class within the male population. The royal family, *jianmin*, and bannermen are excluded. The male population is derived from Cao 2002. The estimation of official holders is derived from Chang 1967. This is merely an approximate estimation.

1.3 The Civil Service Examination

The civil service examination system in the Qing dynasty was an examination system aiming to selecting candidates for the state bureaucracy. Its selection criteria is individual merit rather than birth. It was initially introduced in the Sui dynasty (581-618) and promoted during the Tang dynasty (960-1279). This system was fully developed during the Ming dynasty (1368-1644). The Qing state followed Ming dynasty and utilized this system to select Han bureaucrats. The examination system was composed by the biennial local examinations (童试, *tongshi*), triennial provincial examinations (乡试, *xiangshi*), metropolitan examinations (会试, *huishi*), and palace examination (殿试, *dianshi*).

The local examination, comprising county, department, and prefect tests, served as the initial step towards qualifying for the triennial provincial examination. The prefect tests were conducted biennially or triennially. By successfully completing the prefect tests, one would get a licentiate degree and gain eligibility to compete in the provincial examination. The provincial examination was conducted on a

triennial basis. Candidates who successfully pass the provincial examination will be awarded a *juren* degree and will then have the opportunity to participate in the metropolitan examinations the following spring, therefore achieving the status of *gong-shi*. Individuals who did not pass the provincial examination were required to take the biennial local examination again in order to maintain their licentiate status. Ultimately, all *gong-shi* will participate in the palace examination, which is overseen by the emperor following the provincial examination. Upon successful completion of the palace test, they will be awarded a prestigious *jinshi* degree.[17]

1.4 The Value of *Zhujuan*(朱卷) for Historical Research

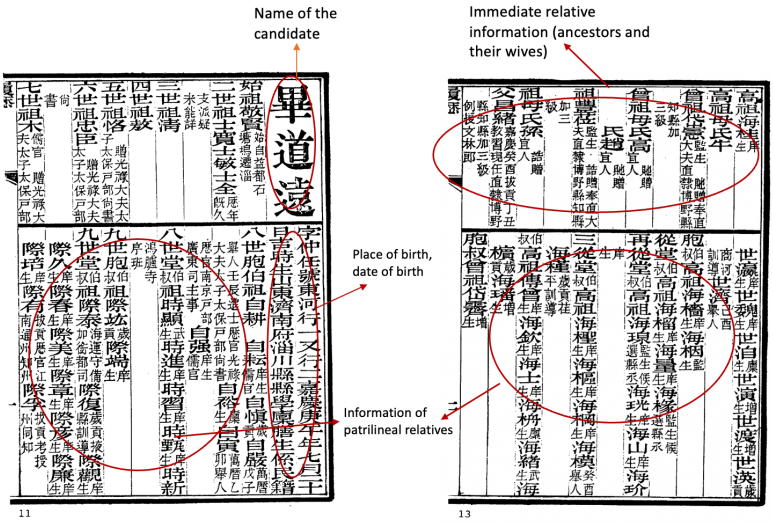
The *Zhujuan*(朱卷,examination essays) was the copy of candidates' exam scripts and the initial aim was to ensure the fairness of the examination. Under the provincial examination and the metropolitan examination, candidates' exam scripts will be transcribed by the government to prevent cheating or to ensure that examiners could not recognize candidates based on their handwriting. After obtaining juren, jinshi, or gong-sheng degrees, candidates collected and published their *Zhujuan*(朱卷) to share with other influential people, aiming to gain financial support from affluent people on the one hand and to increase prestige on the other (J. Zhang 2003). *Zhujuan*(朱卷) then developed a hallmark of socializing.

This historical resource contains 8364 exam essays, of which 1615 were from the metropolitan examination (会试, *huishi*), 5162 were from the provincial examination (乡试, *xiangshi*), and 1549 were from the examination for *kung-sheng* (gongshi). This study's primary data source is the genealogies of 1615 candidates who took the metropolitan examination. Table A.2 in Appendix A shows the summary of candidates from this source.

The conventional format of *Zhujuan*(朱卷) includes three parts. The first part is the candidate's personal resume, consisting of a candidate's personal information, family information (simplified genealogy), and teachers (see Figure 1.1). Personal information included candidate's name, order of birth, date of birth, birthplace, place of residence, and previous degree.

[17] More information about the civil service examination see Shang 1958

Figure 1.1: Example of Examination Paper



Notes : This figure is an example of an examination paper for the candidate 毕道远. It contains three main sections of information. The first section provides his personal details, including his name, place and year of birth, current degree or official positions, and registration status. The second section details his direct ancestors, spanning ten generations. It includes their degrees, official positions, and the social status of their wives' fathers and relatives. The third section documents information about his relatives within the lineage, including their degrees and official positions.

The simplified genealogy, which is the major source of our data, consisted of information from the principal line and collateral line, which could be traced back for at least five generations. The information about the principal line (from the candidate's immediate ancestors to his father) was detailed. Their degree levels, official rank, and publications were listed under their names to highlight their socioeconomic status. The collateral line also consisted of information about their collateral forebears and nephews within the lineage. Not only including information on males, this part also consecutively recorded the brief vitae of wives for each generation, which provided us with a clue to their family backgrounds. For instance, for each generation, the degree level and official rank of the wife's father and agnates are explicitly mentioned to showcase their social status.

Examiners who had provided comments to the candidate in the previous exam and teachers who had supervised or guided the candidates were all categorized as teachers and mentioned in this part. Their name, official title, and degree were mentioned to showcase the academic and family backgrounds of the candidates, as

candidates from prominent families had higher probabilities of being supervised by famous scholars.

The second part describes the subjects that candidates took and their performances. The third part is the candidates' exam articles, including comments from examiners.

Zhujuan(朱卷), in contrast with genealogy, local gazetteers, and biography, is considered as a particularly ponderable source in terms of veracity, comprehensiveness, and representativeness. It is more accurate since the information was verified by the state. It covers more information, as it is in the in the candidate's interest to describe his family's prosperity and to show themselves. Last but not least, it is a nationwide dataset covering candicates from various regions.

1.4.1 Veracity

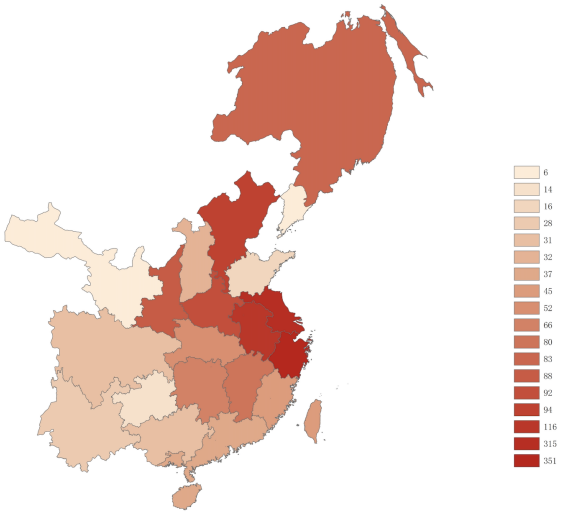
Zhujuan(朱卷) offers reliable and precise information about candidates while also preserving the lively biographies of the candidates. While gazetteers occasionally mention notable people, the information they provide is frequently inaccurate. Those archives were compiled by individuals with subjective biases. In contrast, the specific information provided in the exam essay must be precise, as it will be authenticated by examiners. Candidates will face consequences for their lack of integrity. One could precisely know the place of birth or date of birth of those people from their exam essays, including several influential celebrities, which is critical for historical research.

1.4.2 A National Dataset

Zhujuan(朱卷) offers an astonishingly wide range of diverse observations on a national scale. Traditional genealogies encounter a compromise between the variety and quantity of observations. Customarily,a genealogy could encompass over ten generations, potentially comprising more than 50,000 individuals in certain instances. Nevertheless, despite the vast number of observations in genealogy, all of them originated from the same lineage. This limits the range of observations to a particular geographic area. In contrast, candidates in *Zhujuan* were from a wide range of China, encompassing all provinces of the country.

The varied geographic dispersion of these households allows us to illustrate the overall representation of affluent families across different regions. This opportunity allows us to thoroughly examine the patterns of mobility trends across families at a national scale and assess the factors that influence these trends, such as family strategy, lineage organisation, state support, and natural resources. Families located in different provinces could have distinct choices to perpetuate their families. For families originating from culturally, educationally, and economically deprived provinces, it might be the best choice to concentrate families' resources on farming. In contrast, regions like south China, with a cultural tradition that values literature, may see a higher concentration of individuals achieving degree (*jinshi*). This is evident from historical data indicating a greater number of *jinshi* degree holders in south China compared to north China during the Qing dynasty Ho 1962. Consequently, strategies employed by families to maintain or enhance their social status could significantly differ among provinces. As depicted in Figure 1.2, our sample encompasses lineages from all 18 Qing provinces, aligning with the distribution of *jinshi* degree holders across China, as illustrated in Table 1.1. Provinces such as Zhejiang, Jiangsu, and Zhili were prominent regions for producing *jinshi* degree holders.

Figure 1.2: Geographic Distribution of Examination papers



Notes : The banner families are categorized into Manchu area since their places of birth are not available. The colour shows the number of papers in each provinces.

Table 1.2: The Comparison of Sample Distribution and Jinshi Degree Holder Distribution

Province	Number of jinshi	Percentage	Number of total Jinshi	Percentage
Zhili 直隶	94	5.94	2701	10.06
Zuji 族籍	83	5.24	1400	5.21
Zhejiang 浙江	351	22.17	2808	10.46
Yunnan 云南	28	1.77	693	2.58
Sichuan 四川	31	1.96	763	2.84
Shanxi and Gansu 陕甘	22	1.39	1385	5.16
Shanxi 山西	32	2.02	1431	5.33
Shandong 山东	88	5.56	2260	8.42
Jiangxi 江西	80	5.05	1895	7.06
Jiangsu 江苏	315	19.90	2920	10.88
Hunan 湖南	66	4.17	726	2.70
Hubei 湖北	52	3.28	1221	4.55
Henan 河南	92	5.81	1693	6.31
Guizhou 贵州	14	0.88	599	2.23
Guangxi 广西	31	1.96	570	2.12
Guangdong 广东	37	2.34	1012	3.77
Fujian 福建	45	2.84	1399	5.21
Fengtian 奉天	6	0.38		
Anhui 安徽	116	7.33	1189	4.43

Source: Li (2005) and author's calculation.

1.4.3 Comprehensive Information

1.4.3.1 Information from Paternal and Maternal Lines

The information included in *Zhujuan* is considerably comprehensive compared with genealogy. This archive not only consists of information included in genealogies but also covers multifarious information which is missed in other historical resources.[18] *Zhujuan* provided an in-depth description that encompassed migration, ethnic backgrounds, details about maternal relations, and information about teachers. Moreover, the level of degree, publications, and career path in officialdom of family members were listed under their name to highlight the prosperity of candidates' family. This information is extremely valuable as they reflect the literacy, wealth, population, family organization, and social network of a family, which allow us to portray an integrated picture of a Chinese family.

Moreover, as a condensed version of traditional genealogy, *Zhujuan* offers additional vital information – the family background of the wife. In traditional genealogies, a wife's information is limited to the place of birth, surname, and vital statistics (date of birth). While, in exam essays, candidates carefully included their father's and agnates' degrees and official positions. This allows us to examine assortative mating by comparing the family background of the grooms and the brides.

[18] Conventional genealogies solely consist of data about family members belonging to the male line of descent, encompassing vital statistics about all males and their spouses. See Carol H Shiue 2017; J. Zhang 2003.

This information is highly significant since it allows us to examine social mobility by providing insight into marriage alliances. By examining the family backgrounds of the husband and wife, one might evaluate their marriage preferences. This enables us to test the veracity of the claim that intermarriage between culturally rich households is a prevalent tactic employed by clans, while less wealthy merchant families utilise it to acquire and uphold their cultural capital and political benefits (Benjamin A. Elman 2013). Furthermore, it is possible to examine the impact of the maternal family's background on the socioeconomic outcomes of grooms and the subsequent generations. With assistance from the maternal side, a family has a high probability of attaining upward socioeconomic mobility. One might assess the mobility of women in pre-modern China by considering the social standing of their father, husband, and son.

1.4.3.2 Number of Children and the Order of Birth

Zhujuan records the order of birth of the candidate and records all male descendants of the lineage. Based on the number of children, one could infer the prosperity of a family in terms of population and wealth and further speculate the social status of this family among local neighbourhood. On the other hand, by analysing the relationship between educational attainment and the order of birth, one could investigate families' strategy in terms of allocating educational resources.

1.4.3.3 Ethnicity

Ethnicity is as significant as relatives' information. In addition to Han Chinese, this dataset includes Manchu and Han bannermen under eight banner system. This enables us to make comparisons between the development of families belonging to diverse ethnic groups. From the records of their ancestors' socioeconomic status, one could notice that Manchu families were able to leverage their military and political accomplishments to gain literacy and educational benefits. In this sample, there are 88 families who are Manchus or Han bannermen.

1.4.3.4 Occupation classification

The occupation classification captures the characteristics of family background and is intimately correlated with the social status of families. In *Zhujuan*, candidate noted their occupation classifications, which was a social hierarchy advocated by Confucian scholars. People were generally separated into five categories, which were shangji (merchants and traders), weiji (people with military backgrounds), zaoji (workers in the salt industry), Minji, and qiji (people from eight banners system).[19] The descendants of Confucius are specially treated as ruji. Table 1.3 demonstrates the distribution of families according to their occupation classification, in which families with Minji are the majority. 88 Families are from eight banner system and 31 families are with merchant backgrounds. The majority of individuals in zaoji families were either degree holders or offices. This indicates that they had relative high social status and were salt merchants.[20] Although families with occupational classification except Minji accounted small proportion of our sample, they still allow us to mitigate the effect of occupation classification on mobility pattern.

Table 1.3: Distribution of occupational Classification in Sample

Occupational classification	Frequency
Minji(Commoners)	1438
Workers in the salt industry (zaoji)	9
People with military backgrounds (weiji)	11
Merchants and traders (shangji)	31
Bannermen (baqi)	88
Descendants of Confucius(ru)	3

Notes: This table illustrates the distribution of male in each occupational classification in this dataset. People work in salt industry were considered as salt merchants given their high social status.

[19] Minji includes people with various backgrounds, such as farmers, artisans and craftsmen, and scholar-officials. Eight Banners were administrative/military divisions under the Qing dynasty into which governed Manchu, Mongol and Han Bannermen.

[20] Salt merchants had salt-monopoly granted by the state. They, therefore, accumulated large individual fortunes and social-political influence. More detail about salt merchants, see Ho 1954 who discussed salt merchants in Yangzhou(扬州) and Kwan 2001 who discusses salt merchants in Tianjin(天津).

1.4.4 A Good Source of Elite Families

Zhujuan(朱卷) is a good source representing national elite lineages. Given the fact that the examination was highly competitive, people who pass the exam were either talent or had numerous resources supporting him to prepare and pass the exam. It requires time and money to pass the exam. This part shows that the proportion of people who passed the exam and obtained any official position were extremely small within the society, indicating their outstanding status. Therefore, these lineages which successfully produced degree holders or official positions were elite lineages.

1.4.5 A Good Source for Mobility Study

The primary challenge in studying social mobility is that individuals' outcomes can only be observed once in a single year. This will not provide an accurate measure of social mobility, as an individual's income or social position may fluctuate over lifespan. Contemporary scholarships attempt to address this issue by linking census data to examine individual results at various stages of their lives (Ward 2023). *Zhujuan* offers an ideal answer since it documents the professional trajectory of individuals. Their life path, educational attainment, and professional progression in government are carefully documented in *Zhujuan*. Consequently, individual results could be accurately quantified.

Another crucial aspect of quantifying social mobility over time is that the benchmark for success will evolve over time. Income levels fluctuate throughout time due to factors such as inflation or economic development. The purchasing power of one hundred units in 1960 differs from that in 1980. Mere comparison of incomes between two generations is insufficient to accurately determine the extent of social mobility. An effective approach is to consider the impact of inflation and normalise income by using a reference year as a standard. An alternative approach suggested by scholars is to utilise social status or occupation as a measure for assessing social mobility. This method nevertheless has limitations due to the dynamic nature of occupational structures, which can change over time, and the emergence of new jobs as industries and economies evolve. For instance, the occupation of independent media producer did not exist twenty years ago. Recently, scholars utilize rank percentile based on income to deal with these problem (Chetty, Hendren, Kline, et al. 2014; Carol H Shiue 2019). In imperial China, the civil service examination served as a

standardised assessment of educational achievement, comparable to contemporary educational system. Imperial China possessed a well-developed bureaucratic system characterised by a unique hierarchical structure of official positions. The civil service examination system and bureaucratic structure have maintained a consistent standard for over three centuries. Thus, the comparison of social status based on educational attainment and government positions remains consistent throughout different periods.

Lastly, previous research on mobility have only examined the association between two generations, specifically between fathers and sons. Until recently, scholars have begun analysing multigenerational mobility using newly available genealogy data (Adermon, Lindahl, and Palme 2021). The genealogical records of individuals from *Zhujuan* provide information on ancestors spanning over five generations and all male relatives within the lineage. By acquiring data from additional generations, our comprehension of long-run social mobility will improve. This dataset enables us to examine long-term multigenerational correlations and intergenerational mobility. It also allows us to examine social mobility from a horizontal standpoint, by analysing the connections between outcomes among cousins.

1.5 Construction of Dataset

I obtained the metropolitan examinations candidates' exam essays between the years 1799 to 1904. There are a total of 1608 candidates, meaning 1608 clans are observed. The lifetime outcomes of the four preceding generations are collected from their genealogies. Unfortunately, only the candidates' date of birth is available. I have to estimate the date of birth for each generation by assuming that the average fathers' age at childbearing was approximately 30 years old.[21] By deducting the birth years of candidates by 30, I get their fathers' birth years. Using the same logic, I obtained the birth year of each generation.

Regarding the measuring of social status, sociologists and economists have investigated intergenerational mobility through various methods. Sociologists attempt to exam it via socioeconomic status, while economists concentrate on intergenerational

[21]The average age of having a first birth for fathers in China increased from 20-25 to 23-25 between 1680 and 1840. The father's mean age at last birth dropped from 40 to 35 (Feng, J. Lee, and C. Campbell 1995).

elasticity (IGE). The primary proxies for intergenerational mobility are income, education, and social status (Blau and Duncan 1967; Gary S. Becker and Tomes 1979). There is no consistent way for measuring socioeconomic rank in the social mobility of imperial China. Carol H Shiue 2019 and Chetty, Hendren, Kline, et al. 2014 use the rank percentile of positions. Hao 2021 followed Clark and Cummins 2015 in measuring social mobility using rare surnames. Yang 2022 constructed an occupational structure based on occupations observed in the late imperial China.

Due to the absence of income data and specific occupations for members of those families, this thesis constructs a status score based on the degree level and official titles. Similar as Table 1.1, I divide people into five categories based on their official positions: 1) commoners (men without the degree and official position); 2) men with a degree but without an official title (including men with an expectant official position); 3) men with a low-ranking official position; 4) men with a middle-ranking official position; and 5) men with a high-ranking official position. Men were further ranked within each category based on their degree level and official rank. The percentile rank is based on the distribution of status score. Table A.3 in the Appendix A outlines the detailed status score for each class.

1.6 The Superiority of Sample

A question of overriding importance is this historical resource's representativeness. People will argue that using the metropolitan examination to select families causes a problem with survivor bias. Because this resource could merely represent the mobility pattern of these elite families whose descendants passed the highest-level exam rather than the overall mobility trend of elite families in the Qing dynasty. However, obtaining the highest level of degree already demonstrated either exceptional individual latent or advanced family background. This is determined by the examination system's characteristics. The civil service examination in imperial China was available to all men, regardless of their family background. Merit and intelligence are the sole requirement for examination success. Nevertheless, due to the fierce competition, those from advanced background had a higher probability of passing as they have private tutors, knowledge and experience about the examination from

senior family members, and family financial support.[22] According to Q. Jiang and Kung 2021, the father's official status, which represents the family's distinctive tacit knowledge, is a strong predictor of *jinshi* exam achievement. Thus, it is logical to infer that individuals who successfully passed the *jinshi* exam were likely from privileged backgrounds.

Even though this data might introduce bias, several factors support the rationality of using individuals passing the *jinshi* exam as a criterion for selecting elite families. The rest of this section will illustrate it from three perspectives: the high proportion of scholars and officials among these families, high average status score of their families, and their high representative ratios.

1.6.1 High Proportion of Scholars and Officials

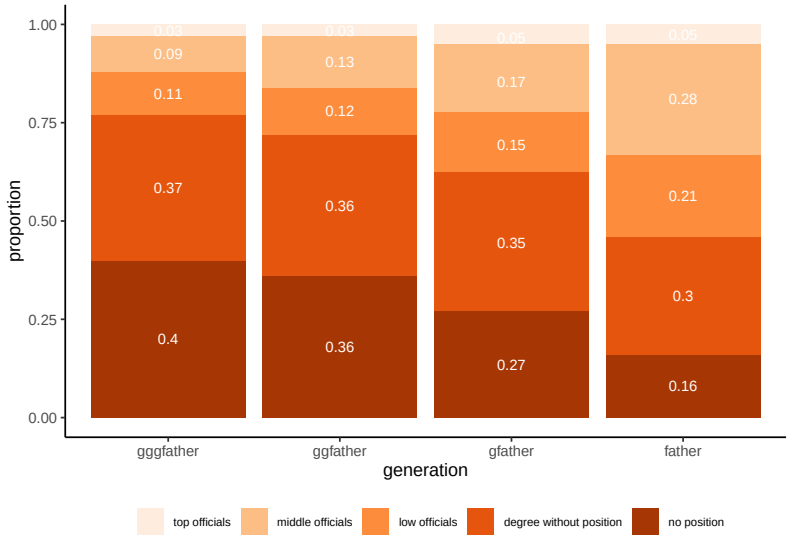
Figure 1.3 depicts the proportion of individuals in each class across generations. It corroborates previous analysis that these families are socially distinguished. More than 60 percent of family members in each generation are degree holders or officials, suggesting their superior social status given that degree holders and officials comprised merely 0.6 percent of the total male population. In contrast, only 16 percent of candidates were from common families, despite that 99.4 percent of the male population were commoners.[23]

Notably, this sample consists of a substantial proportion of individuals with degrees and government official posts. Even in the first generation, when the proportion of individuals with degrees is the least, approximately 60 percent of individuals in our sample are degree holders or officials. In comparison to the data presented in Table 1.1, where individuals with degrees or in official positions make up only 0.6 percent of the overall male population, this sample clearly represents the elite. Moreover, the proportion of degree holders and officials had increased through generations, indicating the accumulation of human capital and social capital. From great great-grandfather to father, the percentages of commoners and degree holders without official positions drop from 40% and 37% to 16% and 30%, respectively. In contrast, the proportion of officials soars from 21% to 52%, with a considerable increase in the number of low- and middle-ranking officials.

[22] See Benjamin A. Elman 1991 and Benjamin A. Elman 2013, p127-130

[23] Based on the author's estimation.

Figure 1.3: Proportion of Each Group Among Sample across Generations



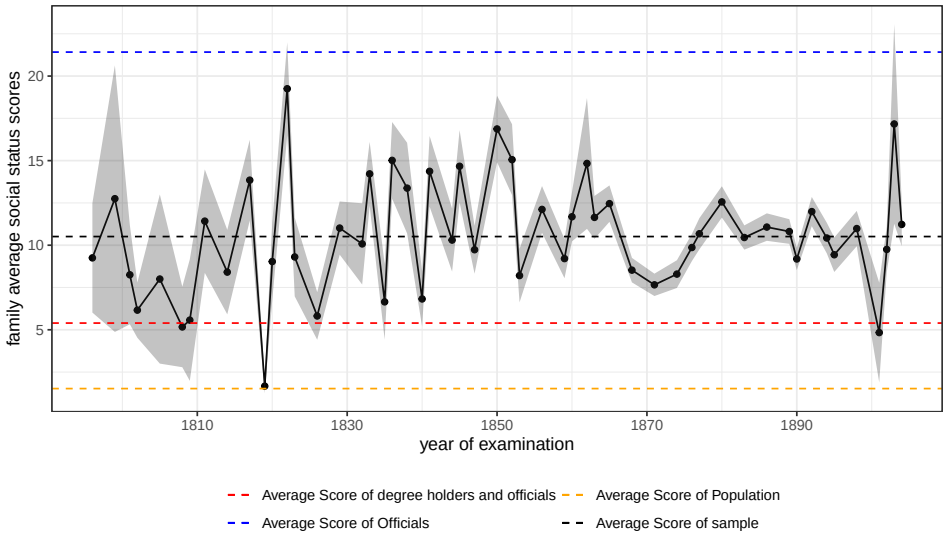
Notes: This figure illustrates the relative distribution of each group within the sample across different generations. Since the earliest generation, the great great-grandfather, there has been a decrease in the proportion of commoners. Conversely, the percentage of individuals occupying high-ranking positions is on the rise.

1.6.2 High Average Status Score

Figure 1.4 shows the averaged family status score at the time their progeny obtained a *jinshi* degree. The average social status of each family across four generations is calculated. Then averaging them based on the year when their last offspring participated in the examination. In Figure 1.4, the red line represents the averaged status score of the Chinese elite, whereas the blue line shows the average status score of the mass.

It indicates that, on average, those who passed the *jinshi* examination were from prominent social status households. The average status score of these candidates' families fluctuated around 10. Despite being slightly lower than that of the elite group, the samples' average status score is significantly higher than that of the mass, indicating their prominent social status. Q. Jiang and Kung 2021 argue that this is because after 1800, the Qing government was desperate to have *jinshi* candidates who could provide effective advice on the increasing conflicts it encountered. Effective advice requires tacit knowledge, which can only be acquired by experience in government service. Candidates who came from influential family background and

Figure 1.4: Average Family Status Score over Time



Notes: i) The x axis is the year that the last generation participated the metropolitan examination, which is also the year we observe those families. ii) Averaging status score of four generations for each family, we obtain the average family status score. Then averaging them based on the year we observe them, we have the family averaged status score by observed year. iii) The grey shape refers to the standard error in each exam year.

inherited tacit knowledge from their fathers or grandfathers, therefore, enjoyed significant advantages. Another possibility is that the competition for examination was intensified with the population increase, forcing people from common families out of the competition. Those from prominent families could afford a better education, boosting their chances of passing the exam.

Meanwhile, the lower average status score does not rule out the possibility that those families represent the elite group. The examination system and administrative selection process together had successfully transferred imperial Chinese society from one in which powerful and quasi-aristocratic families monopolized government service to one in which the state tightly controlled the allocation of government posts and utilized it as a reward for examination competition (Man-Cheong 2004, p16-24). It is rational to suggest that, in Qing China, every family descended from an ordinary family. Therefore, the average score of a family will be influenced by the social status of their initial ancestors, especially for families who have only recently attained a high status. Besides, given that the average status score of elites is derived from the average score of all officials and degrees, it is not surprising that

the sample average will be lower than the average score of officials.

1.6.3 High Representative Ratio

One might argue that the higher status score of these families is insufficient to prove their prominent social status, given the probability of an inflation in degrees and official positions. Therefore, the relative representative ratio is calculated to further demonstrate their distinguished social status.

$$R_t = \frac{Observed_t}{Proportion\ of\ elite\ among\ population} \tag{1.2}$$

Following the relative representative ratio defined by Clark and Cummins 2014, Equation 1.2 indicates the relative representative of this sample, where $Observed_t$ is the proportion of the elite in the sample, which is the total number of degree holders and officials divided by the total number of samples for each year. The increase in the ratio indicates that the sample are more representative of the elite group, while the decrease in it stands for a lower ability to represent the elite group.[24]

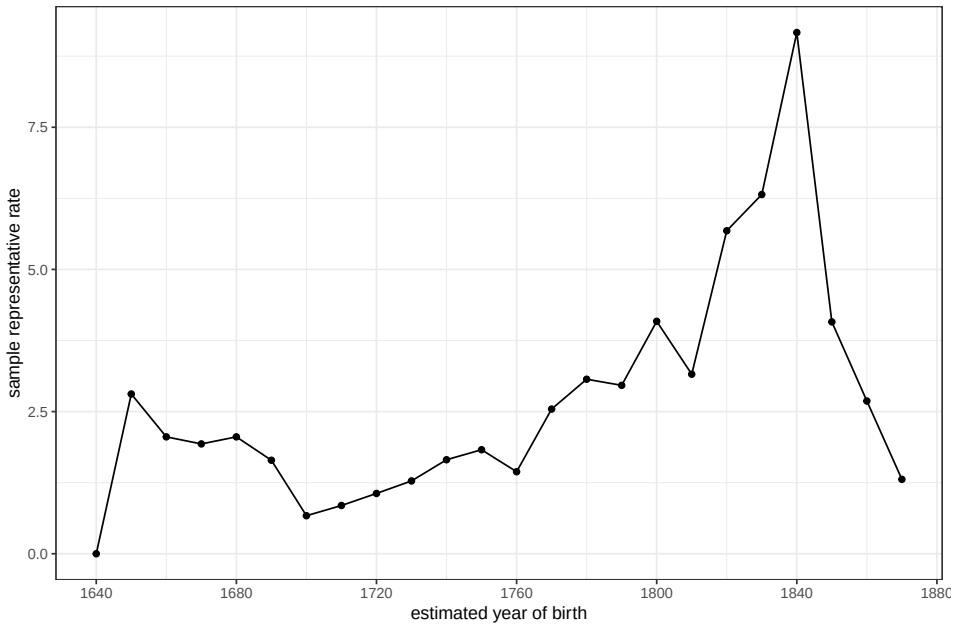
Figure 1.5 illustrates the relative representative ratio over time. It demonstrates that the sample could represent the elite group. Only after 1840 did the relative representative ratio begin to decline to the same level as in 1720, indicating that samples born after 1840 were less prominent. This is because, after the Opium war, the Qing government considerably expanded the quota for purchasing lower-level degrees and official titles, significantly undermining the integrity of examination qualifications.[25]

To sum up, although this sample is not ideal, it nonetheless provides a chance to depict the characteristics of advantaged families in terms of the perpetuation of their social status, marriage preference, and social capital by capturing some descendants of these elite families. In future analyses, the survivor bias could be

[24] As the quota for each examination was constant after 1744, the total number of elites in a specific year would be constant(Chang 1967).

[25] The average number of metropolitan degrees awarded jumped significantly after the Xianfeng emperor. See Man-Cheong 2004, p7. The total number of degree holders increased from 739,199 to 910597 after the Taiping rebellion. See Chang 1967, p83.

Figure 1.5: Representative Ratio of Sample over Time



Notes: This figure focuses on individual, using the representative ratio of sample, to indicate their prominent social status. The x axis is the estimated birth year of individuals. The y axis refers to the ratio of proportion of elite in sample and the proportion of those elite among population. We estimate the approximate birth year of individuals based on the birth year of their offspring.

mitigated by including the lineages' sub-branches. As genealogical records are not exclusively dedicated to elite status groups and include multiple households regardless of their social status, it is possible to identify defunct households by using the information of extended families.

Chapter 2

The Persistence of Status: Social Mobility in Imperial China, 1618-1854

2.1 Abstract

Using a new national dataset based on 1608 genealogies in imperial China between 1618-1854, this paper estimates social mobility by education and occupational attainment in officialdom. Under the assumption that unobserved family endowments played a significant role in social status and family persistence, it applies the latent factor model to estimate the generational elasticity for elite families. Evidence suggests that the intergenerational mobility rate during this period is 0.58, whereas the rates of three- and four-generational mobility are 0.2 and 0.1, respectively. This research not only challenges the prevailing notion that Chinese society was highly mobile, but also emphasises that social-economic mobility in pre-modern China did not follow a simple Markov process. The underlying endowments transmitted within families play a crucial role in perpetuating the status of elite families. By further investigating the mobility pattern among groups and over time, this paper shows that the civil service examination was served as a tool of ensuring social stability and upholding authority.

2.2 Introduction

How socially open was imperial China? Some believe that the Imperial Chinese society was relatively mobile. Ho 1962 finds that around 20 percent of *jinshi* come from humble families that failed to produce a single elementary degree holder in the three preceding generations. According to C. Campbell and J. Lee 2003, a substan-

tial proportion of the title holders were new. The institutions of civil examination and meritocratic bureaucracy underpin this social world. Instead of inheriting social status from forebears, pre-modern Chinese increase or preserve their social status through merit. Commoners who passed the examination and obtained a degree were eligible for positions as elite officials. In Qing China, the exam, which was open to all men regardless of family background, was the primary mechanism of social advancement. Since education predominated in establishing social status, scholars like Ho Pingti favour the conclusion that late Qing China was relatively more open than pre-modern Europe, where elite status was inherited from generation to generation.[1]

It would be wrong, however, to imagine that the imperial elite experienced similar mobility pattern as the commoners. It is highly possible that families with distinct background had starkly different mobility features compared with those with common background. Chinese elites enjoyed two distinct advantages. First, financial and academic support from preceding generations with higher status improved the odds of passing the examination.[2] Rural and urban prices for elementary education ranged between 1.4 and 3 taels per year (Evelyn Sakakida. Rawski 1979, pp. 104–6). By the 19th century, husband and wife could merely earn 26.61 taels per year, which was around three taels more than the cost of maintaining a family (Allen et al. 2011). Incorporating other costs of studying, such as travel expenses to the prefecture to take the examination, the cost of examination impeded academically qualified but financially disadvantaged people. In addition, elite families reserved their privileges through purchasing low-level degrees, inheriting titles, marrying individuals from influential or wealthy families, and engaging in commercial activities (Chou 1966; Esherick, Rankin, et al. 1990). Even if one passes the exam, post-exam career development is contingent on social capital and family network. Using regional data, Carol H Shiue 2019, C. Campbell and J. Lee 2003; C. Campbell and J. Lee 2008; C. Campbell and J. Lee 2011, and Mare and Song 2023, have illustrated a general principle that kinship and ancestors mattered but had a transitory impact on the social outcome of following generations.

[1] Clark and Cummins 2014show that the intergenerational elasticity of wealth across generations in England and Wales was around 0.75 between 1858-2012. Long and Ferrie 2013 indicate a relatively low level of occupational mobility in 19th century England compared with United States.

[2] See Benjamin A. Elman 1991; Benjamin A. Elman 2013, p127-9; Hartwell 1982; Man-Cheong 2004, p19

Previous study is qualitative and focuses primarily on elite characteristics.[3] Recent quantitative evidence of elite mobility derived from population-representative data is contradictory. Some findings claim that influential families experienced considerable downward mobility and failed to pass on privileges to subsequent generations (C. Campbell and J. Lee 2003). While Carol H Shiue 2019 and Hao 2021 refute this claim. In addition to relying data from a single province or focusing only on elite traits, one of the fundamental drawbacks of Chinese social mobility studies is the belief that Chinese from diverse background follow the same mobility trend.[4] It is reasonable to presume that commoners had some opportunities to advance through the examination system. Meanwhile, elite could perpetuate status as wealth and family support played a vital role in accessing educational resources and advancing one's career. It has been noticed that the Chinese elite reproduced through the examination and official position (Benjamin A. Elman 1991). According to Kracke 1947, the family background of Chinese officials, who represent the topmost elite, were considerably superior to those of males who passed the examination. This is reinforced by Q. Jiang and Kung 2021, who show that family background played a significant role in determining official appointments for those who passed the highest level of examination.

This research enriches existing literature by assembling a nationwide dataset encompassing elite families from 18 provinces and establishing metrics for the lifetime occupational and educational achievements of four generations of exam-takers' ancestors. It sheds light on the enduring presence of certain elite families in Imperial China. Employing a latent factor model, the study unveils a higher intergenerational correlation and a more pronounced transmission of fundamental attributes among elite families nationwide. Delving deeper into long-term mobility, I demonstrate how elite families have effectively maintained their social status across numerous generations, a phenomenon overlooked by conventional models.

As opposed to the traditional models of social mobility, which estimate the

[3] Fei et al. 1953 and Chou 1966 analyse their mobility modes and roles in community life. Man-Cheong 2004, on the other hand, analyse originality of exam candidates in 1761 and their post-exam paths.

[4] Elite in this study refers to a group of people who had high social status, such as degree or official positions but did not belong to Qing lineage. Mare and Song 2023 analyse the mobility pattern of Qing lineage. Carol H Shiue 2019 focuses on Anhui province. C. Campbell and J. Lee 2003; C. Campbell and J. Lee 2008 analyze data from Liaoning province.

influence of parental characteristics on child outcomes, this paper investigates the extent to which child characteristics can predict parental outcomes. This is done as I observe those families through successful exam takers. However, their ancestors are not selected based on any other metric and can be of any social origin. While I am unable to estimate a traditional parent-child social mobility correlations because these families produced a jinshi degree holder in the last generation, I can cleanly estimate the elasticity between children and parents. In simple terms, I estimate the scale of the connection between elite family members and their parents, who can be from any social background. Econometrically, as these families are observed through the exam papers of candidates who passed the provincial examination, traditional intergenerational correlations will be upwardly biased. The 'reverse regression' approach avoids this problem and identifies the intergenerational elasticity.

In addition, this paper investigates whether conventional estimates of parent-child correlations based on data from two successive generations can predict long-term mobility. Using historical data, the study of multigenerational mobility recently garnered great attention in many disciplines.[5] Current literature in premodern China has not adequately tested the Markovian hypothesis; it merely indicates the significant impact from grandfather (Q. Jiang and Kung 2021; Mare and Song 2023; Carol H Shiue 2019; C. Campbell and J. Lee 2008). In line with recent literature on multigenerational mobility, this paper first extends the analysis of the intergenerational mobility beyond two generations by including grandparent and further-removed generations. My results show that the grandfathers' status had a significant independent impact, even after controlling for the fathers' status. I then compare the correlations predicted across three and four generations by the conventional model to the actual multigenerational mobility rates derived from regressions. It indicates that the conventional method of calculating multigenerational correlations overestimates the mobility rate, as its correlations are 45 and 62 percent lower than those of the latter.

The significant influence of the grandfather and the higher observed multigenerational correlations imply that the conventional method fails to capture the un-

[5]Recent multigenerational mobility research includes the impact of grandfather and indicates that outcomes of distant family members such as grandfather had strong correlation with the outcome of descendants. See Lindahl et al. 2015; Long and Ferrie 2018; Braun and Stuhler 2018

derlying family characteristics that determine offspring's outcomes. Following Clark and Cummins 2014 and Braun and Stuhler 2018, this paper applies the latent factor model and showcases that it provides a more accurate approximation of status inequality across multiple generations. Results illustrate that multigenerational correlations predicted by the latent factor model are highly consistent with correlations derived from regressions. The heritability of the latent factor, on the other hand, is considerably larger than the observed intergenerational correlations, which is 0.58. These findings support the argument that the transmission process differs for groups with various background, with the elite exhibiting greater persistence. Similar to Braun and Stuhler 2018, this paper finds a lower persistence compared to that of England, as well as significant variations in its level over time.

To comprehend the route of persistence, this paper contrasts the transition matrix of educational outcome and occupational outcome in the officialdom separately. It shows that the society had greater educational mobility. Conversely, securing official positions was pivotal for families of higher social standing to perpetuate their advantages.

The rest of this paper organized as follows: backgrounds of social stratification in Chinese society and the process of civil service examination will be introduced in section II. Section III analyses the literature of prior studies on social mobility in pre-modern China, outlining relative arguments and evidence. Section IV discusses the contents and value of the exam essays (Zhujuan), the historical resource that this essay will utilise. Section V and VI describe the methodology and the empirical results, respectively. Section VII and VIII provide implication and conclusion.

2.3 Background

2.3.1 The Privilege of Gentry

The gentry enjoyed privileges in a wide array of perspectives, which distinguished them from commoners and *jianmin*. Every aspect of their daily life reflected their exalted status, including residents, the style of their garments, the type of carriage, and the number of servants. Furthermore, they enjoyed considerable financial privileges, which freed them from government exaction such as labour services and labour services tax. The state also provided special allowances of property, food, and money

to the upper-status group to ensure their life. Aside from certain economic privileges ensured by law, Chinese elites gain adequate financial resources from local managerial services due to their high prestige. For instance, they gain additional income by supervising local schools and academies, governing public projects (such as the river channel project), and running welfare programmes. [6]

Moreover, they were granted juridical privileges such as reductions in or exemptions from the penal code and corporal punishment; the right to send a representative to court rather than appear in person; and commutations (McKnight 1985; Jing 1993, p8-11).

Commoners, unlike people in the upper and middle strata, did not have those privileges. Members of commerce and craft guilds had fewer prestige, privileges, and stipends than corresponding members of the middle stratum could have had prior to 1860. The civil service examination, which was held every three years, became a decisive channel for commoners who could afford the cost and time.[7] After receiving a degree, individuals were regarded part of the scholar-official class and were eligible to the previously specified legal and fiscal privileges (Benjamin A Elman 2000, p123-3).

2.3.2 Mobilization through Examination and Purchase

In the Qing dynasty, there are three channels to enter the scholar-official class: exams (including civil and military examinations), recommendations, and purchases of official titles. A degree obtained through the civil examination or recommendation was regarded as an "orthodox" qualification, meaning that their legal status was fully recognised by society. Jianmin and royal family members were excluded from this system. The majority of participants were descended of the gentry and commoners (Ho 1962, p29).

The civil examination system includes biennial local examinations (童试, *tongshi*), triennial provincial examinations (乡试, *xiangshi*), metropolitan examinations (会试, *huishi*), and palace examination (殿试, *dianshi*). The local examination,

[6] Members of upper and middle classes were entitled to special clothes. For instance, some officials were granted to wear a decorative peacock feather and degree holders could wear gold or silver brocades. While commoners were forbidden to wear those special clothes made of special materials, see Chang 1967, p26-33. Per capita income of the Chinese gentry class was around sixteen times that of commoners. See Chang 1981

[7] An extra number of special examinations (called *enke*) were held when it was the birthday of the emperor or there were special events.

which included county, department, and prefect tests, was the first stage in qualifying for the triennial provincial examination. Those who failed the provincial examination had to retake the biennial local examination in order to keep their licentiate status. If candidates pass the provincial examination, they will be granted a *juren* degree and will be eligible to take metropolitan examinations the following spring (graduated as *gong-shi*). Finally, those who pass the palace examination, which was supervised by the emperor, will be granted a *jinshi* degree.

The recommendation was another "orthodox" to obtain degrees in the Qing dynasty. People with *sheng-yuan* degrees (licentiates) could be recommended to continue their studies at Imperial Academic or be assigned lower-level official titles. Those people were known as *Kung-sheng* (tribute student).[8]

Degree holders with degrees above *juren* or *gong-sheng* were qualified as officials. The administrative ranking scheme had nine full ranks, which were further subdivided into standard and secondary ranks, for a total of eighteen ranks. The upper official positions ranged from one to three, including roles such as head of six board or a provincial magistrate. Middle-level officials were those with ranks ranging from sixth to fourth. They held positions as prefecture magistrates, county magistrates, or secretary of various central organs. Positions below rank seven were low-level official positions. rank of official positions, see Appendix A Table A.1.

Unlike in Europe and Japan, where the demarcation between nobility and commoners was clear and commercial wealth was prevented from transferring into elite status, the Qing dynasty accorded people the opportunity to ascend to the middle strata by purchasing lower-level degrees and official titles.[9] Commoners could purchase Imperial Academic studentships to obtain an elementary degree (监生, *jian-sheng*), which is similar to *sheng-yuan* (licentiates). Elementary degree holders (*jian-sheng* or *sheng-yuan*) could also purchase the degree title of *kung-sheng*. Only low-level official posts were allowed to be purchased.

Allowing affluent families to obtain degrees through purchasing was a tool for

[8]There were five types of *Kung-sheng* (tribute students) based on the selection criteria. They are *fu-kung-sheng*, who were recognized as outstanding literacy performance, *yu-kung-sheng* (tribute student with special merit), *en-kung-sheng* (tribute student by emperor grace), *sui-kung-sheng* (annual tribute students), and *pa-kung-sheng*(specially selected tribute students). See Ho 1962, pp. 27–9

[9]In 1798, the total number of 4532 offices and titles was sold, exceeding the aggregate of ranked offices of central government by at least one third. See Benjamin A. Elman 1991; Ho 1962, p47

the emperor to balance political power among the middle strata and to avoid collusion prior to the Taiping rebellion. The Taiping rebellion engendered a considerably fiscal burden, forcing the Qing government to consecutively increase the quota of purchases degree. After the Taiping rebellion, the number of *jian-sheng* soared by half, from around 350,000 to 500,000 (Chang 1967, p71).

2.4 Literature Review

2.4.1 Social Mobility of the Mass

Numerous scholars have examined social mobility in imperial China from various angles.[10] There is a consensus that the civil service examination had a substantial influence on the promotion of commoners to the scholar-official (士, *shi*) class. 19 percent of *jinshi* were from families who had not produced a single elementary degree holder in the three preceding generations, despite that the competition for the examination was intense in the late Qing dynasty due to the growth in population and the steady quota of degrees (Ho 1962).

Other scholars, nevertheless, criticise the mobility camp for overestimating social mobility and the function of the examination in fostering it, since they ignore the significance of extended family, lineage organization, and affinal relatives. It is a healthy circulation of lower and upper elites rather than the mobility between the commoners and the scholar-official class. In actuality, the competition for the civil service examination was extremely fierce. According to estimates, 90 percent of the Chinese population was excluded from the examination since the majority of peasants still struggling for subsistence (Fei et al. 1953). Merely commoners whose families have adequate linguistic and cultural resources could be entitled to attend this competition (Benjamin A Elman 2000; Benjamin A. Elman 1991; Hartwell 1982). The clans converted their social advantages into academic advantages by providing their descendants with scholarships, lineage schools, and famous tutors to increase the likelihood of passing the examination (Chou 1966; Benjamin A. Elman

[10] Q. Jiang and Kung 2021 investigate the probability of passing metropolitan examination and shows that ability is vital. C. Campbell and J. Lee 2003 investigate the impact of relatives on obtaining status. Mare and Song 2023 analysis the impact of marriage and fertility on multiple generational mobility. Carol H Shiue 2019 using genealogy data investigate the relationship between inequality and social mobility in imperial China. Ho 1962 analyses the origins of *jinshi*.

1991). Because offering resources for descendants to obtain degrees was emblematic of clan interest. Getting degrees not only symbolised the honour of individuals, but also the honour of the clans.

Consequently, researchers contend that support from extended family or lineage organisation was a sine qua non for passing the exam, especially for degree holders from humble families. This process is referred to as social reproduction by Benjamin A. Elman 1991:

> "Wealth and power provide the resources for adequate linguistic and cultural training, which, in turn, legitimate and add to the wealth and power of a successful candidate in the examination cycle."

The facts that substantial percentage of basic education was provided by lineage schools as opposed to dynasty schools and that students from humble background were eligible for lineage subsidies support this (Evelyn Sakakida. Rawski 1979; J. Zhang 2003).

Researchers also critique Ho's (1962) research because he neglects the possibility that results from these individuals do not represent the population's mobility rate. Those who failed the *jinshi* examination were excluded from this analysis. I am unable to know the difficulty of passing the exam for individuals from varied background. It is highly possible that the overall number of candidates from humble families considerably exceeds those from influential families. Therefore, despite that the proportion of *jinshi* from humble families accounted for one-third of the total number of *jinshi*, it is possible that these candidates were a small proportion of candidates from humble families. In other words, the difficulty of passing the examination might be far higher for commoners than for those from prominent families, a fact that was neglected by his analysis.

In seeking to reconcile this debate, researchers apply new quantitative method and data to explore the openness of historical Chinese society. To verify Ho's hypothesis and circumvent the issue, Q. Jiang and Kung 2021 constructed a dataset that included candidates who passed and failed the *jinshi* exam. Age and initial *juren* exam ranking are used as proxies for one's ability, exam and career achievements of the candidate's ancestors are used as proxies for family background, and the number of wives and concubines is used as a proxy for family wealth. Their results

confirm Ho's argument, but also indicate the importance of family background in determining the *Palace examination* rankings and classes of honour. They explain that family background influences examination performance through the exclusion of tacit knowledge within families. C. Campbell and J. Lee 2003 use registration data of Liaoning province to investigate the impact of kin on social mobility. They conclude that pre-modern Chinese society is relatively fluid, even though kinship influences the chances of obtaining an official title (Q. Jiang and Kung 2021; C. Campbell and J. Lee 2003).

2.4.2 Social Mobility of the Gentry

Instead of investigating the social mobility of the masses in imperial China, numerate researchers intend to explore the mobility of the gentry (J. Zhang 2003; Chou 1966). Three avenues toward membership in the gentry. For socioeconomically privileged individuals to enter the gentry class or preserve their social status, obtaining degrees through exam success is the primary route (Chou 1966; Carol H Shiue 2019; Benjamin A. Elman 1991). Children from families with extensive financial and cultural resources enjoy enormous advantages in all three modes of acquiring an education: public school, private school, and private tutor. According to Hartwell 1982, the civil service examination served as a means for founding and professional elites to preserve the normal mechanism of social and political mobility.[11] J. Zhang 2003, analysing the component of degree holders among exam candidates, finds that the vast majority of first-degree holders were concentrated in distinguished Keju families, due to the financial and educational resources given by these families.[12]

In addition, military careers, government officials, and commerce are other avenues for them to ensure their social statusChou 1966. Having a degree is the first step for these families to perpetuate their privilege, as they were exempt from taxation and labour services. To further enforce their status, having official positions is

[11] Founding elites include military families, the personal staff of the founders, and the bureaucrats who had served in the capitals of the previous five dynasties. The professional elite were mainly the great clans of ancestry family members. See Hartwell 1982; J. Zhang 2003; Naquin and Evelyn Sakakida Rawski 1987, p123-4

[12] Keju family is defined as: 1) multigeneration live together and clan provides scholarship or funding to support descendants to take the examination. 2) a large number of posterities across several generations take the examination. 3) at least obtaining the degree above juren or gongshen. See J. Zhang 2003

a requisite. It is unclear whether opportunities in in imperial China's bureaucracy vary depending on a person's background. However, there is a claim that family networks matter in officialdom (Naquin and Evelyn Sakakida Rawski 1987, p123-4).

The third avenue of mobility, marriage alliance, was particularly prevalent in imperial China. During the shift of regional density of Chinese population from the north to the south and the transformation of political leadership, professional elites frequently contracted marital partnerships with wealthy South Chinese gentry in exchange for maintaining their social prestige and political opportunities. Afterwards, it involved into a family strategy for maintaining social status Hartwell 1982; Chou 1966, pp. 195–6. Mare and Song 2023 propose that in addition to the mobility and position attainment processes, marriage plays an important role in the multigenerational consequences of social mobility among the royal family and the population of Liaoning province (Mare and Song 2023).

Even though the avenues of mobility for the gentry have been explained, the long-term tendency of mobility for the gentry families remains blur. Several researchers argue that there was a considerable downward mobility within prominent families. According to Ho (1962), the composition of the officialdom was constantly in a state of flux. The majority of *jinshi* with high official ancestry was likely to end up lower in the official hierarchy, showing that it is difficult for top-ranking families to maintain their exalted status over time. This is supported by others research that the majority of notable families are unable to sustain their social rank for more than two generations (Ho 1962; C. Campbell and J. Lee 2003; Carol H Shiue 2019; Hsu 1949).

In contrast, the findings of Carol H Shiue 2019 rejects the assertion that prominent families were not guaranteed to maintain social status. Although there was a certain level of downward mobility trend among people from influential families and an upward mobility trend among those from poor families, she also finds that high status families maintained their status over time. Hao 2021 measures the social mobility of influential families between 1640 and 2002 using rare Chinese surnames as a proxy. The rate of social mobility throughout the imperial period was quite modest, according to the empirical evidence.

However, neither side systematically demonstrates the ability of elite families to

perpetuate their status over generations, not does either side consider the impact of family endowments. This paper intends to fill the gap on elite social mobility pattern. It employs the latent factor model to investigate the long-term trajectory of social mobility among 1608 elite clans. It shows that the ability of elite clans to perpetuate social status is considerably higher than previous research expected. Meanwhile, it demonstrates that the Qing China had a higher level of social mobility rate compared with Western countries, indicating that the Qing state utilised the examination system efficiently to prevent this stratum from consolidating their political power and reinforce the loyalty of the elite.

Moreover, this is the first work to quantitatively examine the role of examination and officialdom in maintaining social status, and it suggests that reproducing degree-holders was a crucial method of increasing social status.

2.5 Data

This paper uses the Compilation of Civil Examination Essays in Qing China (*Qingdai zhujuan jicheng*) to construct a unique dataset of Chinese elite group Gu 1992. The exam essays comprise a brief genealogy of the candidate's family, including the status outcomes of ancestors, the social class of their wives, and the social outcomes of all agnates in the lineage. The value of the *Zhujuan* has been discussed in chapter 1.

This historical resource contains 8364 exam essays, of which 1615 were from the metropolitan examination (会试*, huishi*), 5162 were from the provincial examination (乡试*, xiangshi*), and 1549 were from the examination for *kung-sheng* (gongshi). The primary data source of this paper is the genealogies of 1615 candidates who took the metropolitan examination. Specifically, I utilizes information of four generations ancestors of these candidates.

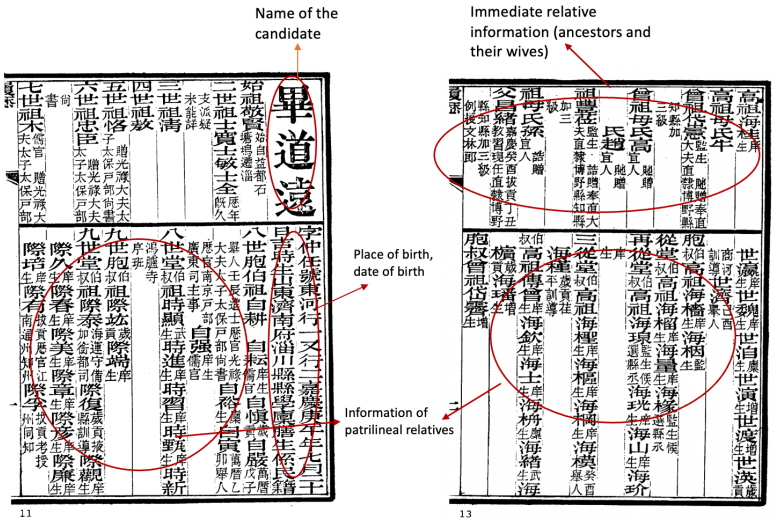
2.5.1 Civil Examination Essays (*Zhujuan)*

The *Zhujuan* (examination essays) was a copy of the candidates' exam scripts. Its initial objective was to assure the examination's fairness. Under provincial and metropolitan examinations, the government transcribed candidates' exam scripts to prevent cheating and prevent examiners from identifying candidates based on their handwriting. After acquiring *juren*, *jinshi*, or *gong-sheng* degrees, candidates

collected and published their Zhujuan to share with other influential figures in the hope of gaining financial support from them and gaining prestige J. Zhang 2003. *Zhujuan* then developed a hallmark of socializing.

The conventional format of *Zhujuan* consists of three sections. The first part is the candidate's personal resume, consisting of the candidate's personal information, family information (simplified genealogy), and teachers (see Figure 2.1). Personal information included the candidate's name, order of birth, date of birth, birthplace, place of residency, and previous degree. At least three generations could be traced back through the simplified genealogy. Examiners who had commented on the candidates' performance on a prior examination and teachers who had supervised or mentored the candidates were all classified as teachers. Their names, official titles, and degrees were mentioned. This part is intended to highlight the academic and family background of the candidates, as candidates from prominent families were more likely to be supervised by famous scholars and had more relatives with degrees and official titles.

Figure 2.1: Example of Examination Paper



Notes : This figure is an example of an examination paper for the candidate 毕道远. It contains three main sections of information. The first section provides his personal details, including his name, place and year of birth, current degree or official positions, and registration status. The second section details his direct ancestors, spanning ten generations. It includes their degrees, official positions, and the social status of their wives' fathers and relatives. The third section documents information about his relatives within the lineage, including their degrees and official positions.

The second part describes the subjects and performances of the candidates. The third section is the candidates' exam articles, including examiners' comments.

The genealogical information offered in examination essays can be characterised by four key characteristics. First, it is the lineage's long-term temporal records, which contain information on five or more continuous generations. Unlike censuses or household surveys, genealogies do not suffer from the difficulty that each household or individual cannot be tracked throughout censuses.Candidates represent the most recent cohort. The initial generation of a lineage can be traced as far back as the 16th century. Secondly, the achievements stated in genealogies are lifetime outcomes, which could be considered as the greatest personal accomplishment. This eliminates the difficulties associated with censuses and household surveys, which both assume that information obtained during registration is the lifetime outcome.

One distinctive aspect of genealogy in exam essays is the provision of an extensive range of diverse individual and household data throughout a large area of Qing China. Traditional genealogies provide information spanning a significant period of time, typically encompassing 10 or more consecutive generations. A genealogy may encompass more than 50,000 individuals and represent the inhabitants of a single village. Most genealogy studies, therefore, focus exclusively on a given region.[13] In contrast, exam participants came from a variety of provinces, considerably diversifying the data. Distribution of sample is shown in Figure 1.2 in Chapter 1.

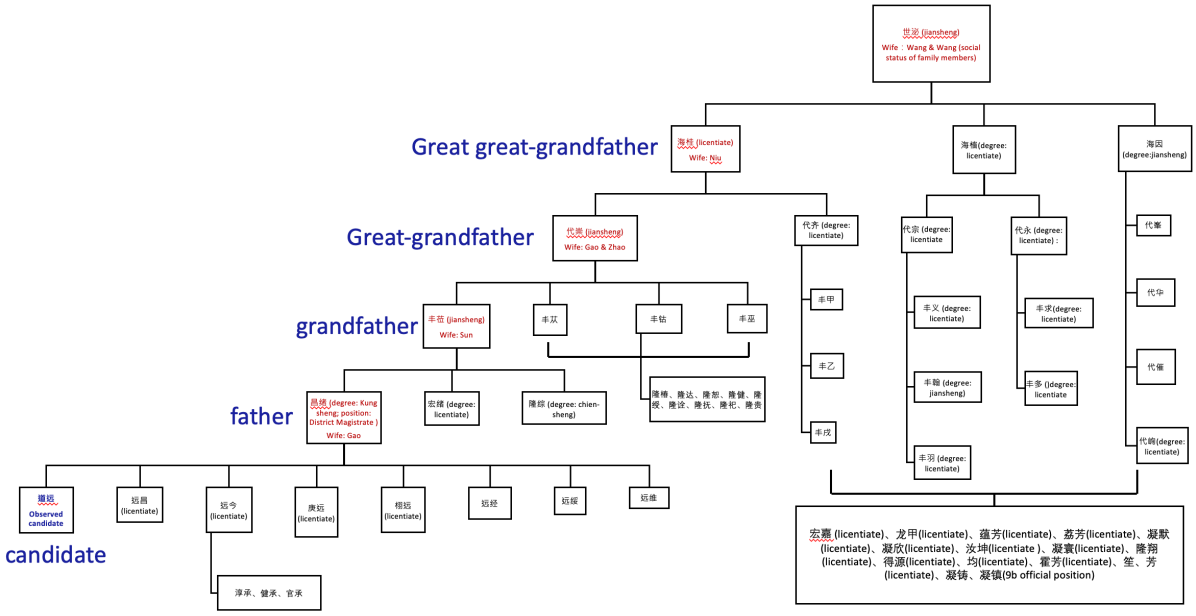
Furthermore, in addition to the fundamental material found in traditional genealogies, genealogies in exam essays provide supplementary crucial details, such as the wife's family background. Traditional genealogies often provide limited information about a wife, including her place of birth, surname, and vital facts such as her date of birth. Candidates in exam essays meticulously incorporated the academic qualifications and official positions of wives' fathers and male relatives. This enables us to analyse assortative mating by contrasting the familial background of the grooms and the brides.

The pedigree chart depicted in Figure 2.2 represents the lineage of candidate 毕道远, translated from Figure 2.1, illustrating the precise generational and relational links within his lineage. The information presented can be segmented into three

[13]Carol H Shiue 2019 investigates the demographic characteristics of Anhui, which is a province in the south of China. Mare and Song 2023 analyse data from imperial lineages.

main parts. Firstly, individuals highlighted in red denote the immediate ancestors of the candidates. Their names are accompanied by details such as their degree levels, official ranks, and publications, serving to emphasize their socioeconomic status. Remarkably, the candidate's lineage spans over five generations, tracing back from his father to his great-great-great grandfather. Notably, all of his direct ancestors attained at least the lowest level of degrees. For instance, his father, 昌绪, held the esteemed title of *gong-sheng* and held a 7a official position. Similarly, his grandfather, great-grandfather, and great-great-grandfather were either *jian-sheng* or licentiates. Additionally, alongside each immediate male ancestor, brief biographies of their respective wives are sequentially documented. Interestingly, it is notable that these wives all hailed from modest backgrounds. Secondly, a separate section in Figure 2.1 elaborates on the educational attainments and official positions of each male relative (agnate). These individuals are represented by names in black within Figure 2.2. This delineation provides a comprehensive overview of the academic and governmental accomplishments within the extended family tree.

Figure 2.2: Genealogy Information from Exam Essays.



Notes : This figure depicts lineage information of candidate 毕道远 from Figure 2.1. Individuals highlighted in red denote the immediate ancestors of the candidates. Individuals represented by names in black are male relatives within the lineage.

2.5.2 Construction of Dataset

I obtained the metropolitan examinations candidates' exam essays between the years 1799 to 1904. There are a total of 1608 candidates, meaning 1608 clans are observed. The lifetime outcomes of the four preceding generations are collected from their genealogies. Unfortunately, only the candidates' date of birth is available. I have to estimate the date of birth for each generation by assuming that the average fathers' age at childbearing was approximately 30 years old.[14] By deducting the birth years of candidates by 30, I get their fathers' birth years. Using the same logic, I obtained the birth year of each generation. For instance, candidate 毕道远 in Figure 2.1 participated in the metropolitan examination in 1841 at the age of 31. According to this, the estimated years of birth of his father, grandfather, great-grandfather, and great-great grandfather were 1780, 1750, 1720, and 1690, respectively. The estimated birth years of 6081 individuals from 1608 lineages were between 1498 and 1824.

Regarding the measurement of social status, I construct a status score based on the degree level and official titles. Following Ho 1962 and Carol H Shiue 2019, I categorize individuals into five groups and assign a status score to each class within each category. Table A.3 in Appendix A outlines the detailed status score for each class. To estimate the mobility table, I also categorize degrees and official positions into four groups ranging from 0 to 3. Zero represents commoners, one refers to licentiates, two is *juren* or *gong-sheng*, and three is *jinshi*. For officials, commoners, who have the lowest status, are represented by the number 0, and high-ranking officials are marked as 3. Table 2.1 shows the summary of the data.

2.6 Methodology

The intergenerational elasticity will be used to depict the intergenerational correlations among elite family members across generations. The transition matrix will be applied to capture the upward and downward mobility.

[14]The average age of having a first birth for fathers in China increased from 20–25 to 23–25 between 1680 and 1840. The father's mean age at last birth dropped from 40 to 35 (Fei et al. 1953).

Table 2.1: Summary of Statistic

Statistic	N	Mean	St. Dev.	Min	Max
Patrilineal information					
degree	6,086	0.90	0.91	0	3
official position	6,086	0.64	0.93	0	3
status score	6,086	10.67	14.23	1	56
number of wife	6,086	1.31	0.62	0	6
number of concubine	6,086	0.14	0.44	0	5
status score of first father-in-law	6,086	4.97	9.84	1	56
average status score first wife's family	6,086	5.56	9.34	1	56

Notes: All recorded social status are lifetime outcome. Status ranged from 1 to 56. I categorize degree and officials positions into four groups ranging from 0 to 3. Zero represents commoners, one refers to licentiates, two is *juren* or *gong-sheng*, and three is *jinshi*. For officials, commoners, who have the lowest status, are represented by the number 0, and high-ranking officials are marked as 3.

2.6.1 Conventional Model

The conventional method of estimating intergenerational mobility is to estimate the coefficient of a parent's status $y_{i,f}$ on a child's status $y_{i,s}$. As opposed to the traditional models of social mobility, which estimate the influence of parental characteristics on child outcomes, this paper investigates the extent to which child characteristics can predict parental outcomes. This is done as I observe those families through successful exam takers. However, their ancestors are not selected based on any other metric and can be of any social origin. While I am unable to estimate a traditional parent-child social mobility correlations because these families produced a *jinshi* degree holder in the last generation, I can cleanly estimate the elasticity between children and parents. In simple terms, I estimate the scale of the connection between elite family members and their parents, who can be from any social background. Econometrically, as these families are observed through the exam papers of candidates who passed the provincial examination, traditional intergenerational correlations will be upwardly biased. The 'reverse regression' approach, shown in Equation 2.1, avoids this problem and identifies the intergenerational elasticity. The coefficient β measures the elasticity of status between children and parents.

$$y_{i,f} = \alpha_i + \beta y_{i,s} + \epsilon_{is} \tag{2.1}$$

In terms of long-run social mobility, conventional method assumes that impacts of previous generations are transmitted merely through the parental generation. Therefore, multigenerational correlation follows the Markov process, as shown in

Equation 2.2. m refers to the number of generations.

$$\beta_m \approx (\beta_1)^m, \quad \forall m > 1 \tag{2.2}$$

Recent study provides ample evidence on multigenerational persistence and reveals that $\beta_m > (\beta_1)^m$, raising doubt on the Markovian process assumption (Stuhler 2012; Mare 2011; Solon 2004; Clark and Cummins 2014). Two models are particularly insightful to explain this "excess persistence".

Instead of assuming no direct impact from ancestors, some researchers argue that the social status of ancestors could have a direct influence on that of their grandchildren (Mare 2011; Long and Ferrie 2018). However, the multigenerational impacts from ancestors earlier than grandparents are restricted due to minimal direct personal contact between those ancestors and offspring (Mare and Song 2023). To capture the multigenerational impact, researchers rationally assume that grandparents independently influence the social status of grandchildren, which is represented by Equation 2.3, where $\gamma_1 > 0$ and $\gamma_2 > 0$. The $y_{i,gf}$ is the social status of grandfather, and γ_2 measures the direct influence of grandparents on grandchildren.[15]

$$y_{i,s} = \gamma_1 y_{i,f} + \gamma_2 y_{i,gf} + \epsilon_{i,s} \tag{2.3}$$

2.6.2 The Latent Factor Model

The latent factor model, on the other hand, investigates the inter- and multigenerational persistence in socioeconomic status by examining the inheritance of underlying latent factors that are neglected by the conventional estimation and the two-generation estimation (Stuhler 2012; Clark and Cummins 2014; Braun and Stuhler 2018). According to this model, the observable social outcomes $y_{i,t}$ for the one-parent one-offspring family are determined by the endowments $e_{i,t}$ inherited within families, which are transmitted across multiple generations and are determined by η, as shown below by Equation 2.4 and Equation 2.5, where t represents the generation.

$$y_{i,t} = \theta e_{i,t} + \mu_{i,t} \tag{2.4}$$

[15] See Long and Ferrie 2018; Lindahl et al. 2015

$$e_{i,t} = \eta e_{i,t-1} + \nu_{i,t} \tag{2.5}$$

The offspring inherits the parent's unobservable endowments with a coefficient of η. The endowments then transmit to the observed outcome with coefficient of θ. The intergenerational elasticity of observed outcome y between generation t and t-m equals to:[16]

$$\begin{aligned} \beta_m &= \frac{Cov(y_{i,t}, y_{i,t-m})}{Var(y_{i,t-m})} \\ &= \frac{\theta^2 Cov(e_{i,t}, e_{i,t-m})}{Var(y_{i,t-m})} \\ &= \theta^2 \eta^m \end{aligned} \tag{2.6}$$

Following the method pointed by Braun and Stuhler 2018, I could identify the θ and the η by estimating the coefficients of father-child β_1 and grandparent-child β_2:

$$\theta = (\frac{\beta_1^2}{\beta_2})^{1/2} \tag{2.7}$$

$$\eta = \frac{\beta_2}{\beta_1} \tag{2.8}$$

This research applies the latent factor model to estimate the inter- and multi-generational elasticity based on two considerations. First, multigenerational correlations derived from the latent factor model are more precise in reflecting the real multigenerational relationships. The observed multigenerational correlations are fund to be greater than the traditional estimation of multigenerational correlations (Stuhler 2012; Mare 2011; Solon 2004; Clark and Cummins 2014). While correlations from the latent factor model predict the correlations properly. Moreover, comparing the correlations from latent factor model and those from the traditional estimation under various setups, Stuhler 2012 indicates that extrapolation errors are negative

[16] $Var(y_{i,t-m}) = Var(y_{i,t-i}) = \sigma_u^2 + \frac{\theta^2 \sigma_v^2}{1-\eta^2}, \forall i \geq 0$ if $y_{i,t}$ is stationary.

in most scenarios.[17] This is because the extrapolation form β_1 overestimates the long-run mobility.

Another consideration is that the latent factor model is particularly suitable for the case in China. Within the framework of the civil examination system and administrative selection processes, individual achievements in education and official positions were supposedly chosen based on merit. Nevertheless, with the growth of the population and the unchanging quotas for educational and governmental posts, factors such as wealth and parental social capital started to have a substantial impact on the achievements of offspring. Unobservable traits that are passed down through generations are essential for maintaining social standing. The conventional multigenerational correlations, obtained by exponentiating the parent-child elasticity, fail to consider the inherited qualities that are passed down over generations. On the other hand, the latent factor model effectively encompasses the genetic and other causal pathways by which qualities are passed down from parents to offspring, including the underlying traits that are transmitted within families. This approach is especially beneficial in cases where wealth information is is overlooked and when there is a strong emphasis on family discipline.

2.6.3 Mobility Table

In addition to conventional regression analysis, I employ transition matrix to quantify the probability of individuals moving between different socioeconomic strata across generations. P_k of Equation 2.9 is the transition matrix of ethnic k, where P_{kij} represents the probability of transitioning from class i in the parental generation to class j in the offspring generation. All transition matrices in this study consist of four classes. For the general transition matrix which combines educational and occupational attainment, socioeconomic classes range from commoners to high officials. For transition matrix merely composing educational attainment, the classes range from non-degree holders to *jinshi* scholars. With the occupational attainment dimension, the classes extend from individuals holding no official positions to those with upper official positions.

[17] Extrapolation error is the difference between the exponentiation of the parent-child elasticity and the multigenerational correlations calculated from latent factor model with various setup.

$$P = \begin{bmatrix} P_{11} & \dots & P_{14} \\ \vdots & \ddots & \vdots \\ P_{41} & \dots & P_{44} \end{bmatrix} \tag{2.9}$$

2.7 Empirical Results

2.7.1 Generational Correlations from Conventional Model

Table 2.2 illustrates the reversed regression coefficients for the transfer of social status across two, three, and four generations. Model (1), (3), and (7) show the two generational correlations between father and grandfather. Model (2) and (6) demonstrate three-generational correlations between father and great grandfather. Model (5) shows four-generational correlation between father and great great grandfather. Father-son association ranged from 0.34 to 0.36. Grandfather matters for the grandchildren's outcomes. The associations of three-generational correlations are around 0.2, 50 percent lower than those of two-generational elasticity.

Table 2.2: Reversed Estimated Persistence across Generation

	Grandfather	Great-grandfather			Great-great Grandfather			
	Model 1	Model 2	Model 3	Model 4	Model 5	model 6	model 7	model 8
Father	0.339***	0.197***		0.084***	0.108***			0.018
	(0.023)	(0.020)		(0.020)	(0.019)			(0.018)
Grandfather			0.363***	0.333***		0.210***		0.096***
			(0.020)	(0.021)		(0.019)		(0.020)
Great grandfather							0.347***	0.294***
							(0.021)	(0.023)
Constant	6.210***	5.638***	4.527***	3.571***	5.154***	4.378***	3.753***	2.820***
	(0.504)	(0.449)	(0.374)	(0.437)	(0.414)	(0.358)	(0.327)	(0.408)
Observations	1,550	1,549	1,551	1,549	1,436	1,438	1,438	1,436
R^2	0.123	0.057	0.179	0.188	0.023	0.081	0.163	0.179
Adjusted R^2	0.123	0.056	0.179	0.187	0.022	0.080	0.163	0.177

Notes : This table demonstrates generational correlations using status score. I estimate correlations according to generation. Model (1), (3), and (7) show the intergenerational correlations between two generations. Model (2) and (6) demonstrate three-generational correlations between father and great grandfather. Model (5) shows four-generational correlation between father and great great grandfather. Status of observations are standardized.
$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Even after accounting for the social status of the father, the statistical significance of the grandfather remains evident in Model (4) and (8). This suggests that inheritances within privileged households were not just passed down from fathers, but also from distinct relatives. Furthermore, the multigenerational elasticity of status for the elite is significantly higher compared to that of the mass, which is

less than 0.08 as stated in Carol H Shiue 2019.[18] This finding provides evidence in favour of the notion that individuals from the upper class were more successful in passing on their advantages to their children. The ability of commoners to accumulate intergenerational advantages is limited, resulting in insignificant impacts from earlier generations. On the contrary, affluent families strategically obtained and transferred family assets and implicit knowledge over generations, thus ensuring the continuation of their social standing.

2.7.2 Underlying Persistence from the Latent Factor Model

The measurements of status utilised in this paper only capture a portion of hereditary characteristics. As previously stated, the latent factor model captures the transition of the unobserved traits within lineages more accurately. This section, therefore, utilises the latent factor model to identify the underlying inheritability within families.

Table 2.3 reports underlying intergenerational association from the sample. Columns one and two are the averaged regressed associations between two and three generations from Table 2.2. The β_1 is the averaged correlations of Model (1), (3), and (7) from Table 2.2. β_2 is the averaged three generational association from Model (2) and (6). I then follow equations (7) and (8) to obtain η and θ. Table B.1 in Appendix B shows the pooled generational associations. They are comparable to the averaged generational associations.

Table 2.3: Estimated Parameters from the Latent Factor Model

β_1	β_2	$\eta(\beta_2/\beta_1)$	$\theta^2(\beta_1^2/\beta_2)$	θ
0.35	0.20	0.58	0.6	0.78

Notes: 1) Generational coefficients in this Table are the averaged coefficients from Table 2.2. 2) The β_1 for family links is the averaged intergenerational correlations between father – grandfather, grandfather – great-grandfather, and great-grandfather – great-great-grandfather. β_2 is the averaged three generational association. 3) θ is the latent factor coefficient.

Two implications arise from comparing the parameters of the latent factor model

[18] Carol H Shiue 2019 shows that the multigenerational coefficients are below 0.08 by using genealogy data in Tongcheng county.

to those of the traditional model. Mere measurement of intergenerational correlations fails to accurately capture the true magnitude of the generational transmission process. The predicted parameter for the inheritance of endowments within a family (η) is 0.58, which is 50 percent higher than the size of the regressed correlations (β_1).[19] The underestimation mostly stems from an insufficient knowledge of the importance of extended family, lineage structure, and affinal relatives, as well as an inability to accurately assess family wealth (Benjamin A. Elman 1991; Benjamin A. Elman 2013, pp. 127–9; Man-Cheong 2004, p. 19; Hartwell 1982).

Chinese adjusted intergenerational association based on the latent factor model is lower than that from Britain and comparable with that of Germany.[20] It implies that families' ability of persistence responses to the economic and institutional environment.

2.7.3 Robustness Check

2.7.3.1 Rank Percentile

In stead of the status score, I also utilize the rank percentile to double check the results. I calculate rank-rank status of each generation and applied the reversed regression to calculate the generational associations. Table B.2 in Appendix B demonstrates the regressed associations across generations based on rank percentile. Generational associations under the rank percentile are higher than that using status score. Father-son associations range from 0. 35 to 0.443. Similar as using status score, grandfather matters for the outcomes of grandchildren. The associations between grandfather and grandchildren are around 0.25 to 0.296. The four-generational correlation is 0.143.

Based on the regressed associations, Table B.3 in Appendix B illustrates the estimated parameters under the latent factor model. The parameter of the underlying advantages is 0.66 using rank percentile, slightly higher (14 percent) than that using status score.

[19] Carol H Shiue 2019 indicates that generational correlation ranges between 0.3 and 0.6

[20] 0.75 for Britain between 1888-2021 Clark and Cummins 2015 and 0.45-0.69 for Germany between 1890-2000Braun and Stuhler 2018

2.7.3.2 Traditional Regression Association

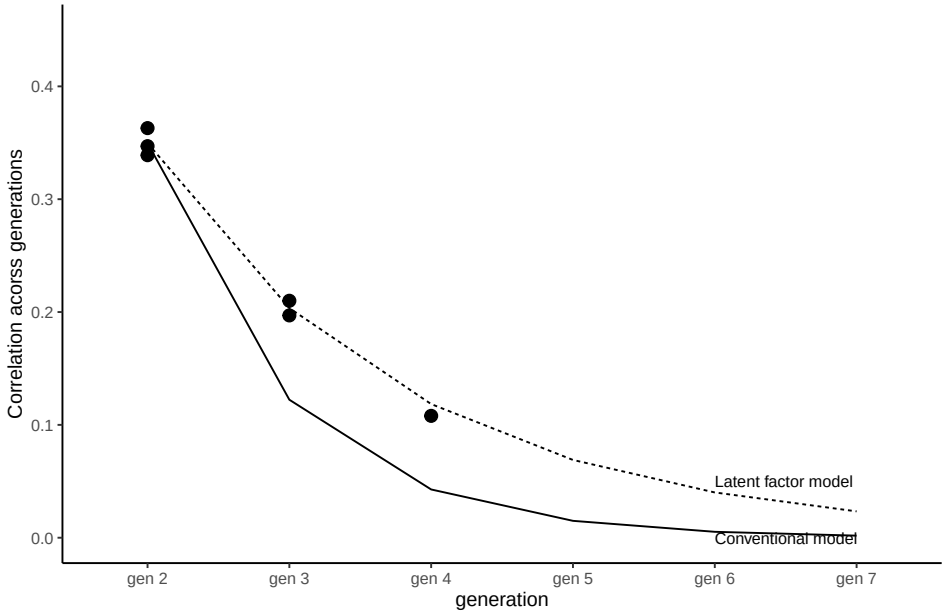
Furthermore, I employ traditional regression analysis to estimate generational correlations. Specifically, I regress the social status score of the father on that of the son to derive intergenerational associations. For three-generational correlations, I conduct regressions of the status score of the grandfather on that of the grandchildren. Similarly, for four-generational correlations, I regress the status score of the great-grandfather on that of the grandson. The results are presented in Table B.4 in Appendix B. As anticipated, the correlations obtained from these regressions are higher compared to those from the reversed regression (Equation 2.1), suggesting an upward bias. This reaffirms the appropriateness of employing the reversed regression approach.

2.7.4 Comparison of Persistence under Two Models

Having known that intergenerational mobility of elite is significantly higher than previous thought after considering the underlying advantages inherited within family, I am also interested in the long-run mobility of elite. This part showcases the multigenerational correlation under the latent factor model and compares it with that from conventional model. As shown in Figure 2.3, the latent factor model performs better in predicting multigenerational correlation. The solid line refers to the prediction based on conventional model. The dashed line is the predicted multigenerational correlations based on the latent factor model. The dots represent the regressed generational associations from Table 2.2.

The regressed intergenerational, three-generational, and four-generational associations are around 0.35, 0.2, and 0.1, respectively. The multigenerational transmission pattern anticipated by the latent factor model aligns closely with the regressed correlations. Based on the latent factor model, the correlation between fathers and great great grandfathers is approximately 0.1. On the other hand, the traditional model, which assumes that multigenerational association follows the Markov process, suggests a four-generational association of 0.05. It considerably underestimates the longevity of transmission. The two-generational association and three generational-correlation from the conventional model are 45 and 62 percent lower than the regressed correlations, respectively. This implies that the latent factor model is more

Figure 2.3: Comparison of Multi-generational Correlations from Two Models



Notes: This figure compares multigenerational correlations from the latent factor model and the conventional model. The solid line refers to the prediction based on conventional model. The dashed line is the predicted multigenerational correlations based on the latent factor model. The dots represent the regressed generational associations from Table 2.2.

proficient than the conventional model in predicting multigenerational persistence.

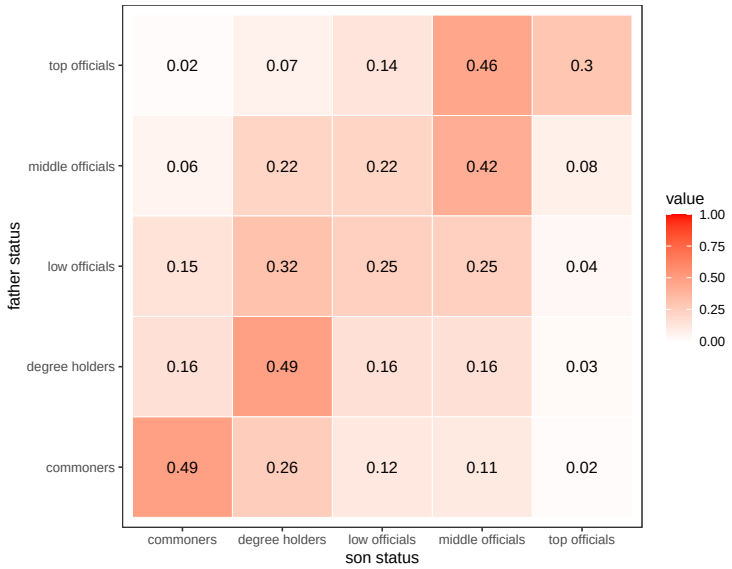
Furthermore, the traditional model proposes that individuals tend to revert back to the average score very rapidly within three generations. In contrast, the latent factor model demonstrates that the correlations between generations decrease gradually until the fourth generation, at which point they become less than 0.1. This further reinforces the idea that affluent families possess a greater ability to uphold their family's social status.

2.7.5 Upward and Downward Social Mobility

Figure 2.4 depicts the mobility table using social status scores that combines educational and official position attainments. Sons' position is highly associated with that of their fathers, except individuals in the middle strata. The likelihood of sons acquiring the same social status as their fathers is approximately 50%, except for sons whose fathers had low-ranking positions in the government. Individuals with fathers in low-ranking positions had around a 45% probability of experiencing downward mobility and a 30% probability of experiencing upward mobility.

In order to fully understand the fundamental mechanism of the mobility trend, I thoroughly analyse both upward and downward mobility. This section examines the separate influences of examination and officialdom on the perpetuation of lineages, as families employ various techniques such as obtaining degrees, acquiring official titles, marrying into prestigious families, and accumulating wealth to maintain their socioeconomic status(Chou 1966; Esherick, Rankin, et al. 1990). In Figure 2.5 (a) and (b), I show the transition matrix measured by degree and official positions separately to demonstrate the distinct role performed by degree and official position.

Figure 2.4: Intergenerational Mobility Table

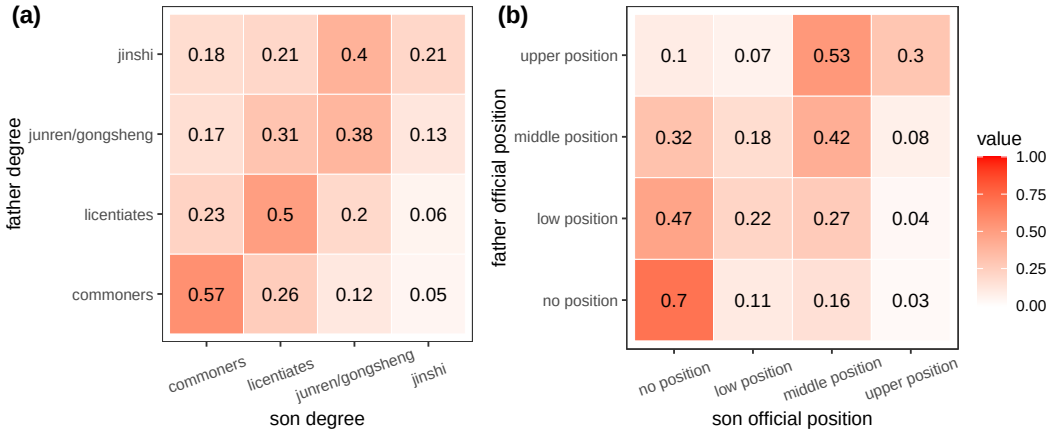


Notes : This figure shows the transition matrix of status score. The social status of sons is closely linked to that of their fathers, with the exception of persons in the middle class (low officials). This suggests that there was a greater degree of social mobility in the middle stratum as compared to the lower and upper strata.

The degree of father strongly predicts the educational attainment of son. People would have higher probability of obtaining a degree if his father is a degree holder. People whose fathers are degree holders have a 20 percent higher probability of having a degree than those whose fathers are commoners. The society is more solidified if we use official position as the measurement, especially for the bottom and upper elite. An individual with a father in a high-ranking position is highly likely to secure a position as a senior or mid-level official, with only a 10 percent chance of ending up in a lower-level class (no position). Conversely, those of low social status (commoners) face challenges in obtaining an official post. Their likelihood of

attaining the identical social standing as their father is approximately 70%.

Figure 2.5: Intergenerational Mobility Table by Degree and Official Position



Notes : This figure indicates that the society exhibits a certain degree of fluidity through examination, while the likelihood of descending from a high-ranking official post is exceedingly small. Panel a) shows the mobility table measured by educational attainment, in which individual whose father is a commoner have 50 percent likelihood of obtaining a degree. Panel b) is the mobility table measured by official positions. It shows that those whose fathers are low- or middle-level officials are at a greater risk of falling than those whose fathers are high-level officials.

Meanwhile, the society exhibits a certain degree of fluidity when viewed from two different angles. Firstly, examination allows for a certain level of flexibility. Although a father's initial level of education strongly influences his son's educational attainment, examination provided exceptional prospects for upward or downward mobility. Even if a son's father is a commoner, there is still a 50 percent likelihood that the son will acquire a degree. Similarly, if a son's father is a *jinshi*, there is approximately a 20 percent possibility that the son will become a commoner.

Using official titles as the measurement, the mobility rate within the middle stratus of elites is high. Compared with those whose fathers are high-level officials, those whose fathers are low- or middle-level officials are at a greater risk of falling. Individuals with fathers in low-level positions have a roughly 50 percent probability of not attaining any official positions. This is reasonable considering that the size of administration was far smaller than the number of examination quotas.[21] In

[21] Before the Taiping rebellion, there were a total of 25,089 quotas for each time the examinations were held. After the Taiping rebellions, this number increased to 30,113. The total number of officials in 1836 under record was around 9,000. There was already a significant disparity between the number of individuals with degrees and the number of available official positions, not to mention

reality, after the metropolitan examination, a considerable number of degree holders returned to their hometowns to wait for appointments for several years. Although some individuals managed to secure the position of county magistrate, the majority were unable to advance and remained in that role for the entirety of their professional lives.[22]

The most intriguing implication of the transition matrix table is that the likelihood of descending from a high-ranking official post is exceedingly small. Despite his father's prestigious *jinshi* degree, individuals nonetheless encountered a significant likelihood of experiencing social decline. This indicates that once a person reaches a certain level in the social hierarchy, the probability of experiencing a significant decline diminishes significantly.

2.7.6 Mobility Trend among Groups

The upward and downward mobility indicates that different group experienced various levels of mobility. This part, therefore, further categorises families into five groups based on the initial social status of the great-great great-grandfather to analyze their mobility patterns. Figure 2.6 demonstrates the average status score of these groups through generations, with the dashed line representing the average status score of the elite group and dotted line representing that of officials.

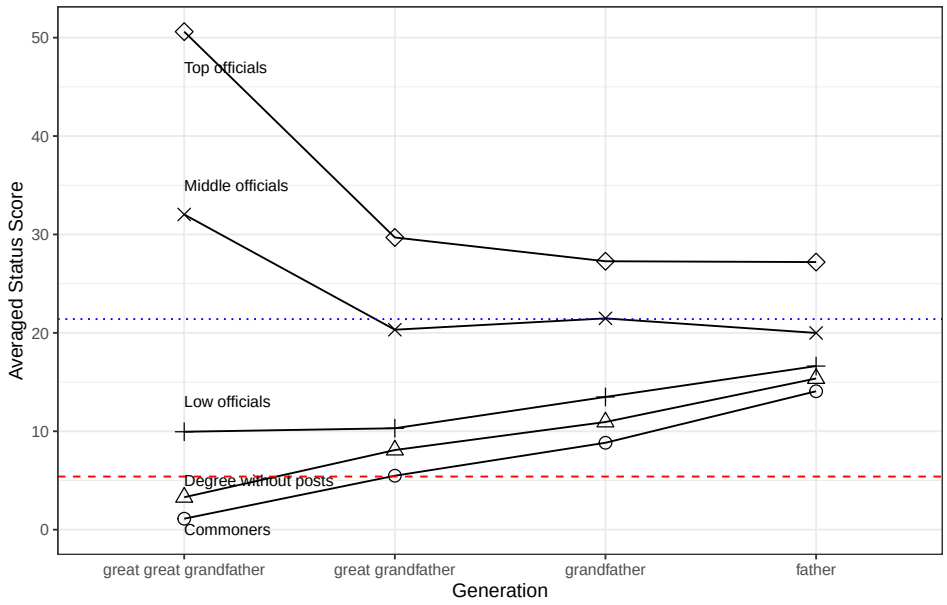
The instinct implication of this figure is that families with various background converged to the mean status of the elite over the long-term. Families whose initial ancestors were officials experienced varying degrees of downward mobility, whereas families whose initial ancestors were degree-holders or commoners continuously increased their social status over generations. Two points are noteworthy.

First, the examination system affords families from low hierarchical strata the opportunity to advance. As indicated in Figure 2.6, the social status of families whose ancestors were commoners increase considerably from slightly over zero to 15 after four generations. Nevertheless, the upward mobility is limited in scope. Families were unable to alter their relative positions within the elite group. After four generations of accumulation, the relative social status of these groups remains

the additional number of degree holders from prior exams who were awaiting appointments. See Chang 1967, p71, p96

[22]On average, 88.7% county magistrate failed to get promotion for their whole life h. Hu 2019.

Figure 2.6: Average Occupational Score Over Generations of Five Groups



Notes: This figure shows the mobility pattern over generations for five groups, which is categorized based on the initial status of great great-grandfather of those families. The dashed line refers to the average status score of elite families. The dotted line represents the average status score for officials.

unchanged. Families whose initial ancestors were commoners remain at the bottom of the elite stratum, while those whose initial ancestors were high-ranking officials remain in the upper stratum. The interpretation is that the civil service examination is the vital ladder of upward mobility for commoners, which is a relatively egalitarian system. Nonetheless, additional conditions, such as official positions and wealth, are necessary for families to sustain or increase their prosperity.

Besides, there is a crowding out effect in which the increase in social status for families with lower social status comes at the expense of a decrease in social status for families with higher social status. The Qing state imposed a quota on the number of degree recipients awarded for each examination and developed a bureaucratic organization that refused to expand substantially. This not only intensified the competition in the examination, but also restricted the number of administrative units, making it more difficult to enter the upper elite (Naquin and Evelyn Sakakida Rawski 1987, p124; Man-Cheong 2004, p142-3). Consequently, those who increase their social status through the examination or officialdom will displace families that are already in that class but have failed to reproduce degree holders or officials in

subsequent generations. Nevertheless, the crowding out effect has variable degrees of influence on the families of these groups. Families whose ancestors were middle-ranking officials were the most affected. Their averaged status score approached the mean of the official group within one generation. In contrast, families with a higher social status were less likely to be displaced by newcomers. This reconfirms findings in previous section that a higher-level official position has a greater capability to preserve families' social status.

Table 2.4 reports the regressed correlations and the estimated parameters of the latent factor model for each group. Column one, β_1, is the averaged intergenerational correlations between father-grandfather and grandfather – great-grandfather. Column two follows the same principle. Table B.5 in Appendix B shows the detailed regression associations among groups.[23]

Table 2.4: Estimated Parameters for Sub-samples

	β_1	β_2	$\eta(\beta_2/\beta_1)$	$\theta^2(\beta_1^2/\beta_2)$	θ
Whole sample					
Family	0.35	0.20	0.58	0.6	0.78
By group					
Commoners	0.29	0.11	0.36	0.82	0.90
Degree without position	0.29	0.12	0.40	0.73	0.85
Low officials	0.30	0.23	0.75	0.40	0.63
Middle officials	0.24	0.28	1.19	0.20	0.45
Top officials	0.50	0.35	0.70	0.71	0.85

Notes: This table shows regression coefficients of each generations from different groups. β_1 is the averaged intergenerational correlations between father – grandfather, grandfather – great-grandfather, and great-grandfather – great-great-grandfather. β_2 is the averaged three generational association. 3) θ is the latent factor coefficient.

It demonstrates three points. The one-generational correlations, β_1, confirm our previous interpretations that elite families experience a crowding out effect. The correlations for families whose ancestors are top officials are significantly higher than that of the other groups (0.5 for top official families and 0.2-0.3 for the other). The low mobility rates indicate that a person from the middle strata of the elite group is nevertheless susceptible to falling. Meanwhile, the great persistence of social status among high-ranking officials implies that the the mobility of families at the apex of society was considerably constrained. The one-generational correlation

[23] β_2 in Column two is the averaged correlations between father – grandfather and grandfather – great-grandfather.

for families whose initial ancestors were high-ranking officials is 43 percent greater than the correlations for the entire sample.

Table 2.4 further reveals that different groups have varying inheritability of family endowments. The estimates of η gradually declined from 0.9 for the group of commoners to 0.45 for the group of middle-level officials, then increased to 0.85. The progeny of both high- or low-status families were conspicuously influence by their family backgrounds. The underlying inheritability of individuals in the high-ranking official group is 0.85. Meanwhile, members of the group of commoners are negatively affected by this background, since their underlying inheritability is 0.9. On the other hand, low- and middle-ranking official groups have a considerably lower level of underlying inheritance. This supports the conclusion that a crowding out effect existed. The strength of the transmission mechanism is weaker in middle-class families.

2.7.7 Mobility Over Time

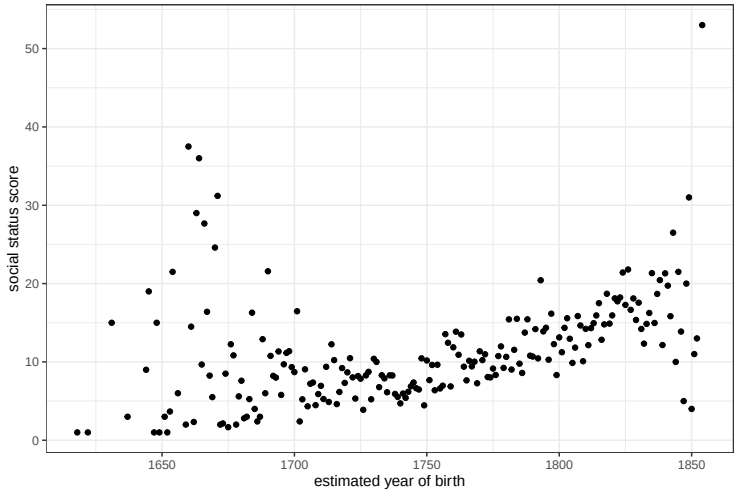
This section further analyses mobility over time. It begins by analysing the changes in the averaged status score over time, and then estimates the generational elasticity and underlying transmission parameters across the reigns of different emperors.

Figure 2.7 demonstrates the average status score between 1648 and 1854.[24] Two distinct findings stand out. First, the social status of these individuals increased over time. This presumably implies either that these families accumulated social capital over time, or that degrees and official positions were inflated over time. I have shown in previous sections that the latter statement is wrong and that lower social strata families utilise the examination system and official positions to ascend the social ladder and accumulate family endowments over generations.[25] Secondly, the variance of status score fluctuates through time, which gradually converged between 1640 and 1720. The increased variance of status scores in the early period indicates that those families come from diverse background. As the variance decreases in later periods, members of such families become more prominent.

[24] I averaged the status score of people who were born in the same year.

[25] Section 6.6 shows that families whose initial ancestors were commoners or degree holders gradually increased their average social status across generations. The representative ratio in section 6 of 1 also indicates that people in those families were increasingly superior.

Figure 2.7: Individual Average Occupational Score by the Year of Birth



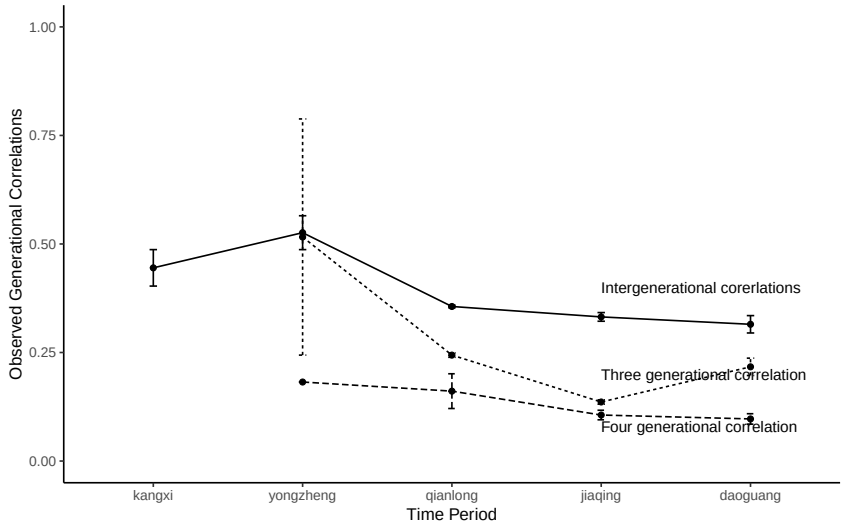
Notes: This figure plots the averaged status score of people who was born in the same year. The year of birth is based on estimation. The socioeconomic status of people in our sample increased over time.

The individuals are categorised into five groups according to their approximate year of birth: the Kangxi cohort (1661-1722), the Yongzheng cohort (1722-1735), the Qianlong cohort (1735-1795), the Jiaqing cohort (1795-1820), and the Daoguang cohort (1820-1850). Figure 2.8 shows the regressed generational correlations for different time periods (Table B.6 in Appendix B demonstrates the detailed regression information). The findings support the previous conclusion that social mobility varied throughout the Qing era. The rates of intergenerational mobility experienced a significant increase under the reigns of Kangxi and Yongzheng, surpassing a value of 0.4. Following the year 1735, there was a gradual decline in the intergenerational correlation, reaching approximately 0.3.

The latent parameter computed over time, as shown in Table 2.5, provides insights into the inherent characteristics of families and reveals two key results. In line with our previous discoveries, the predicted underlying variables are significantly higher than the observed intergenerational elasticity. This implies that affluent families move their inherited wealth to preserve their social standing, even in periods characterised by high social mobility.

Additionally, the estimated persistence of latent factor η fluctuated throughout time. During the reigns of Kangxi, Qianlong, and Jiaqing, the value decreased from 0.82 to 0.67, and then increased to 0.73, which is comparable to the value during

Figure 2.8: The Generational Correlations Over Time



Notes: This figure indicates the estimated generational correlations in different time periods. The solid line is the two generational correlations and dotted line is the three generational correlations cross various Emperors. It comes with the standard error, in which some coefficients are insignificant.

Yangxi's reign. The reduced heritability suggests a rise in social mobility over time. This corroborates the thesis that the stability of family status is influenced by the economic and political environment.

Table 2.5: Persistence from the Latent Factor Model Cross Time

Paramerers	Kangxi (1661-1722)	Yongzheng (1722-1735)	Qianlong (1735-1795)	Jiaqing (1795-1820)
η	0.816	0.727	0.668	0.729
θ	0.739	0.745	0.748	0.672

Notes : This table demonstrates the persistence of latent factors. The calculations are derived from regression correlations seen in Table . During the Qing dynasty, the rates of social mobility were high, ranging from 0.66 to 0.82.

The high estimated persistence of latent factor parameters over time implies that the examination system was utilised by the state as an instrument of regulating the elite group. It fundamental was not primarily intended to be an institution that promoted social mobility. In the early period of the reign of the Shunzhi emperor (1644-1661), the state sought the approval of the Chinese elite. It expanded the frequency and quota of the civil service examinations to attract elite participants

and enable more individuals to ascend the social ladder.[26]

In 1660, fifteen years after Manchu established the legitimate government, the Shunzhi emperor halved the quota of provincial examinations. This dramatically raised the difficulty of obtaining *juren* degree and, thus, official titles. The relatively higher underlying parameters showcase that well-organized kinship groups were less influenced, since they were able to translate their social and economic strength into examination success. With the expansion of Qing territory and tripled population, the Qing emperor slightly increased the provincial quotas at the request of officials' proposals.[27] The quotas was ultimately settled in 1744, but never recovered to its initial level. The interaction between the constant number of degree quotas, the endeavour to regulate the size of bureaucratic organisations, and the rapidly growing population exacerbated the strain on educational and administrative resources. Consequently, even those in the upper stratum of society encountered challenges in preserving their social standing, resulting in a decreased rate of passing on inherent privileges.

2.8 Implications

The significant capacity of the elite to pass on underlying advantages across generations poses a challenge to the meritocratic nature of civil service examinations. Despite the presence of some degree of social mobility, research indicates that privileged families were able to preserve their high social status over multiple generations, as evidenced by a coefficient of 0.58 for the entire sample and approximately 0.7 over time. Two implications are inferred.

First, the fundamental goal of examination is not to stimulate social mobility but to create a group that served as an intermediary between the state and the peasantry, as well as candidates who were well-trained Confucian subjects. Chinese elites were neither appointed or inherited, but were recognised for their literacy, leadership, knowledge, reputation, and other distinguishing qualities. With or without official titles, they represented the community as social leaders, organised the

[26] The average number of metropolitan degrees awarded for each examination was 370 in Shunzhi's reign. See Man-Cheong 2004, p7

[27] Population increased from 152,470,000 in 1644 to 311, 465,000 in 1776, and 383,100,000 in 1820, 436,042,000. See Cao 2002, p452, p704

defence of the community, and settled daily disputes within the village.[28] Holding a degree is the prerequisite of joining the club since it either increases income or boosts the probability of being an official (Chang 1981).

The state was able to reach a compromise with the gentry and commoners by linking a fair education system with a career in officialdom and social prestige. For the state, not only did the examination provide abundant loyal and latent candidates for the bureaucratic system, but it also precluded powerful lineages from being politically independent by limiting their reliance on inheritance. Moreover, elite enjoyed authorized privileges provided by the state through civil examination, bureaucracy, and moral atmosphere. State monopolisation and control of government service and examination quotas ensured the prestige. The commoners also acknowledge this system because it gives them opportunities for advancement.

The different values of underlying inheritance among various groups substantiate this conclusion. The middle strata were the most venerable class and had greater mobility compared to both the upper and lower strata. The examination system plays a role in this. It provided a fluid channel between the middle strata and the bottom, where individuals' social standing in the middle class was not assured and commoners had certain opportunities to move upward even though the odds were slim. For those who were from powerful lineages, their enhanced capacity to uphold their social rank under this system pushed them to endorse and promote it.

However, attaining a recognized social status or wealth was deemed essential for individuals aspiring to become part of the gentry class. As the population nearly tripled during this period, maintaining social standing through securing official positions became increasingly challenging and elusive. However, the imperial elite recognized the importance of conforming to ideological training in exchange for the privileges conferred through examination success. This consensus rested on the belief that academic achievement directly correlated with the acquisition of wealth and official appointments, thereby ensuring the perpetuation of social status. Rather than advocating for additional political rights or questioning the legitimacy of bureaucratic constraints and degree quotas, elite families focused their efforts on reproducing individuals with academic credentials and governmental roles. With ample

[28] See Chou 1966, p78-85

economic resources and social influence, these families bolstered their competitiveness in both examinations and officialdom, thereby reinforcing their social status. Consequently, they embraced the notion that prioritizing academic success and bureaucratic advancement was a rational strategy for maintaining their esteemed social status.

The high value of η underscores the significant role played by unobserved factors in perpetuating the status of elite families. These factors predominantly encompassed financial and academic support provided within the lineage. The rationale behind this collective effort within the clan stemmed from the understanding that each member's success reflected positively on the entire lineage. In essence, the academic achievements of one member could offset the shortcomings of another within the lineage, thereby ensuring the collective maintenance of social status as degree holders or officials. Consequently, there existed a strong incentive within the lineage to ensure that descendants had access to academic resources, often facilitated through charitable schools, to maximize the likelihood of producing degree holders and preserve social standing.[29]

The examination system of the time served a dual purpose, harmonizing the needs of both the elite and the state. It effectively balanced the aspirations of the elite class with the state's objectives of societal stability and authority maintenance. Even commoners found merit in this system, as it offered them avenues for social and professional advancement. This harmonious alignment of interests contributed to a societal framework where the aspirations of various segments were accommodated, ultimately fostering stability and reinforcing the authority of the state.

2.9 Conclusion

This research employs a newly created dataset comprising the educational achievements and official positions of individuals from 1608 families to estimate intergenerational elasticity for elite families across multiple generations and examine generational mobility over time. The findings challenge the notion of high social mobility during the Qing dynasty, revealing a significant influence of family endowments

[29]Charitable schools are local schools created and supported by local elites or lineages. It also provided scholarship for people from a poorer segment to support their study.

on descendants' social outcomes. Specifically, employing a latent factor model to account for unobserved family endowments, the study demonstrates substantially lower social mobility in Imperial China, indicated by notably higher intergenerational correlations (approximately 0.58).

Moreover, the research highlights that social-economic mobility in pre-modern China did not follow a straightforward Markov process. Correlations under the Markov assumption underestimate the multigenerational correlations by 45 and 62 percent compared to the observed two- and three-generational correlations, respectively. This suggests that the Markov process is not suitable for capturing the characteristics of multigenerational mobility in China. While comparing the observed correlations with the correlations from the latent factor model, I show that the latent factor model provides a more accurate approximation for status perpetuation across multiple generations. Evidence demonstrates that the influence of previous generations on offspring outcomes is notable. Elite families could maintain social status across at least four generations.

Using the mobility table to further analyzes the upward and downward mobility among these families, this paper illustrates that there was a certain level of mobility through examination, while society is more solidified if I use official position as the measurement. More importantly, different groups experienced distinct levels of mobility. Descendants from families with high-ranking official posts were less likely to move downward. Given this observation, this research evaluates the mobility patterns of different groups. It indicates that families in the upper strata were better able to retain their social status. Nevertheless, families at the bottom of the elite group endure tremendous competition from the commoners as a result of a crowding-out effect

Finally, this paper demonstrates that social mobility was relatively stable across time, regardless of changes in the economic and demographic environment. Analyzing the movement patterns across time reveals that well-organized kinship groups were less affected by the evolution of economic, political, and demographic forces. Because they were able to transform their social and economic strength into examination and authority.

Through an analysis of the social mobility patterns among Qing dynasty elites,

this paper challenges the meritocratic nature of civil service examinations. It posits that the primary objective of the examination system was not to foster social mobility per se but rather to cultivate a group that could effectively mediate between the state and the peasantry while embodying the ideals of well-trained Confucian scholars. Within this framework, attaining a recognized social status or wealth was essential for individuals aspiring to enter the gentry class. Families endowed with ample social resources were better equipped to maintain their social standing, thereby highlighting the role of familial background in shaping social outcomes.

This historical perspective offers valuable insights into contemporary social mobility dynamics. In the modern context, the education system serves as the primary conduit for facilitating social mobility. With educational expansion, other familial factors also come into play in determining the outcomes of offspring. Research by Clark and Cummins 2015 indicates that social mobility levels in England are lower than anticipated, with a mobility rate of 0.78. By drawing parallels between historical social mobility patterns and contemporary realities, we gain a deeper understanding of the complexities underlying modern social mobility dynamics.

Chapter 3

Parental Dictates: Marriage Sorting and Social Mobility in Imperial China, 1614-1854

3.1 Abstract

This study constructs a unique nationwide dataset encompassing the familial backgrounds of both brides and grooms during the Qing era. Drawing from Chinese civil examination papers, this research sheds light on marriage dynamics from the late 17th to the 18th centuries in China. It reveals a phenomenon where women had more bargaining power in the marriage market and tended to marry into higher social strata, driven by the unbalanced sex ratio. Strong son preference, discouragement of remarriage, and concubinage contribute to this unbalanced sex ratio. Moreover, the study challenges traditional notions of assortative mating by revealing that marriages were far more assortative than previously believed (0.8 vs. 0.4), emphasizing the transmission of advantages among families through marital alliances. The research underscores the pivotal role of marriage in elite perpetuation, particularly in mitigating downward mobility risks. It highlights the significance of selecting families with a higher social status as a strategic move. Furthermore, it underscores the substantial associations among the social standings of father-in-law, groom, and subsequent generations, indicating the role of parentally arranged marriage alliances and affinal support in lineage perpetuation.

3.2 Introduction

In addition to L. Stone and J. C. F. Stone 1995 who has revealed that the open elite theory in England prior to the nineteenth century is a long-standing illusion, the openness of a society has always attracted the interests of scholars.[1] Marriage, as an important mechanism by which individuals could share resources and maintain their social status, has been under the spotlight of research as well. Numerous scholars have shown that socioeconomic homogamy in marriage was prevalent in pre-industrial societies. Clark and Cummins 2022, for instance, show a strong and stable occupational assortment in England from 1837 to 2021. Craig, Eriksson, and Niemesh 2019 show a positive sorting based on occupational income score and real estate wealth between husband's and wife's fathers in Massachusetts, United States, over the period of 1850–1910. According to Dribe and Lundh 2009b, marriages in nineteenth-century Sweden were highly homogamous in terms of age, socioeconomic status, and birthplace, with social background being the primary criteria. M. Curtis 2020 shows that marriage was highly matched in nineteenth- and twentieth-century Quebec, Canada. Collado, Ortuño-Ortín, and Stuhler 2022, using "horizontal" approach, indicate that assortative mating of latent advantages was much stronger than previously thought.[2]

Though in pre-modern China there is a proverb that "one should marry someone with a similar social status (门当户对) ", the extent of assortative mating is open to debate and its impact on intergenerational mobility is unclear. In pre-modern China, marriage was a primary method of forming alliances between kinships.[3] It was closely linked to asset transmission, resource sharing, and procreation (C. Campbell and J. Lee 2008; Watson and P. B. Ebrey 1991, p17-18). As marriage was arranged by parents and senior family members, in theory, assortative mating based on socioeconomic status and wealth rather than affection should have been prevalent (Mann 1997). Nevertheless, the evidence is mixed. Carol H Shiue and Keller 2022 indicate

[1] Scholars investigate this question from different angles. Piketty 2014, for example, shows that the capital return is much higher than economic growth. Clark 2015 shows that the level of mobility is significantly lower in several counties.

[2] They compared different degrees of kinship within the same generation. For instance, they estimated correlations between cousins.

[3] Using a case study, P. Ebrey 2003 finds out that males coming from different families will become close because of marriage. Other examples, see H. Lin 2013; Mann 1997; C. Campbell and J. Lee 2008, p11; Watson and P. B. Ebrey 1991, p5

a positive matching of income in Tongcheng, Anhui, China between around 1300 and 1850. Hymes 1986, who studied marriages among 73 aristocratic families during the Song and Yuan dynasties (960–1368 AD), points out that marriage was utilised to strengthen ties with other official families or local landowners. This has been supported by Watson and P. B. Ebrey 1991. They show that families from diverse social classes applied various marital strategies. Through marriage, elite families formed political alliances and transferred property. In contrast, Bossler 1988 casts doubt on this rationale after analysing the marriage networks of elite families in the Northern Song (960-1127). Most studies of Chinese assortative mating rely on case studies to examine marriages between multiple families or kinships, limiting the scope of the research to a specific region. It is difficult to provide a generalized explanation of marital patterns in China, and it is impossible to tell how widespread assortative mating is.

In addition, scholars have shown that resources inherited within families play a crucial role in descendants' educational and occupational attainments.[4] Marital assortment, which reinforces family advantages by making allies, should be positively correlated with intergenerational mobility (Solon 1999). Specifically, descendants receive support and resources from both the patriline and the matriline, which increases their probability of obtaining high status. Higher similarity between a wife and husband will contribute to household income inequality and thus children's educational and occupational attainment (Greenwood et al. 2014). Given that individuals are free to choose their partners and many characteristics are difficult to quantify, the level of sorting may be greater than anticipated.[5]

Scholarship has attempted to reveal the impact of marital assortment on social reproduction and inequality in Western countries. Clark and Cummins 2022; M. Curtis 2020; Ermisch, Francesconi, and Siedler 2006; Dribe and Lundh 2009a have found that the socioeconomic status of partners matters for subsequent educational and occupational attainment. On the other hand, evidence of changes in inequality due to sorting is mixed. Along with increases in educational, income, and occupational inequality, within households inequality increases with a high level

[4] Abundant literature has indicated that the occupation or education of the father is associated with that of the offspring and that the underlying intergenerational mobility is much higher than previous research indicates. See Clark and Cummins 2015 and Braun and Stuhler 2018.

[5] This has been shown by Clark and Cummins 2022.

of assortative mating.[6] Recent studies, however, have shown that increased educational homogamy has not contributed to an increase in inequality in the United States (Breen and Salazar 2011). Keller and Carol H Shiue 2023's paper is one of the few research investigating the influence of marital assortment on intergenerational mobility in pre-modern China. They show that women who are first wives have higher status than other wives and that in-law families considerably contribute to daughter status.

In pre-modern China, however, sorting was based exclusively on family background. Marriage was decided by parents rather than the bride and groom.[7] What is the pattern of assortative mating in the Chinese context? Moreover, if it is true that marriage was highly assortative, what was the impact of parentally arranged marriages on social mobility in comparison to free-choice marriages? Was it an effective means of preserving social status? To answer these questions, this paper studies Chinese socioeconomic homogamy in marriage, which is measured by educational attainment and occupational attainment in officialdom, and its impact on social reproduction from 1614 to 1854.

This paper uses the Compilation of Civil Examination Essays in Qing China to construct a unique dataset of an elite Chinese group.[8] The exam essays comprise the candidate's pedigree, including the status outcomes of ancestors, the social class of their wives, and the social outcomes of agnates. There are a total of 1608 candidates, meaning 1608 lineages are observed. Four generations of information are collected for each lineage, including the social status of men (N = 6092) and their wives' fathers and relatives (N = 774). Specifically, starting from the candidate, I traced the candidate's direct ancestors four generations back (his father, grandfather, great-grandfather, and great-great grandfather). I also collected information on his ancestors' wives' families. Nevertheless, the candidates are excluded from the analysis because they are merely the intermediary agents who assist me in observing their ancestors. It contributes to current literature from four perspectives.

[6] See Greenwood et al. 2014; A. Hu and Z. Qian 2015 find out that increasing educational homogamy is associated with a growing inter-household earning gap in China between 1988 and 2007. Cross-country comparisons also indicate that educational assortative mating accounts for household income inequality, see Eika, Mogstad, and Zafar 2019.

[7] Traditional Chinese marriage required parental agreements and go-betweens ("父母之命，媒妁之言"). See X. Zhang 2003, p91-94.

[8] Data source: Gu 1992.

This paper collects a unique dataset from the civil examination papers that comprises 1,608 elite pedigrees from 18 provinces, called "China Proper". The "China Proper" data offers a comprehensive understanding of the Chinese national marriage pattern. It is one of the few quantitative studies of pre-modern Chinese marriage patterns, marital strategies, and marriage's impact on social mobility.[9] This study empirically validates the Chinese marriage proverb "one should marry someone with a similar social status (门当户对)". The comparison of the socioeconomic status of fathers and fathers-in-law indicates that Chinese marriages were homogenous. The observed social status correlation between fathers and fathers-in-law is around 0.4.

Secondly, this paper reveals a unique characteristic of the Chinese marriage market. Despite the high rate of marriage matching, inequality in the marriage market is significant. Women with greater bargaining power in the marriage market frequently marry men from superior families. This is caused by the combination of son preference, discouragement for women to remarry, and concubinage. The cultural preference for boys led to a relatively high probability of female infanticide, disordering the sex ratio in the marriage market. The cultural values of chastity and concubinage further limited the number of women available for marriage. Consequently, women of lower social standing were more likely to marry men of higher standing. In addition, families of various origins employed different strategies. Families at risk of downward mobility tended to choose girls from better families. In contrast, male hypergamy seems less crucial for functional families. The level of marital assortment remained constant over time.

Besides, this study applies the model introduced by M. Curtis 2020 and Clark and Cummins 2022 and modifies it given the context of China. Chinese marital assortment was considerably more significant than conventionally estimated. The model implies a correlation of around 0.8 between the socioeconomic status of the fathers and fathers-in-law, which is twice as large as the observed correlations. The lower level of matching observed is probably attributable to the measurement error in social status, which did not perfectly account for the influence of wealth and

[9]There are only three quantitative analyses of Chinese marriage assortment, conducted by B. Chen, C. Campbell, and Dong 2018b, who investigated the ethnic intermarriage between Han and non-Han Chinese in the Qing dynasty, Carol H Shiue and Keller 2022 and Keller and Carol H Shiue 2023, who investigate marriage matching in terms of family income between 1300 and 1850 Anhui, China.

other latent factors. This reveals the drawbacks of directly measuring correlations between fathers and fathers-in-law.

Finally, this paper provides a more complete view of social mobility by introducing relatives' information from the matrilineal side. According to research on distant relatives on the paternal side, distant relatives have a positive impact on the outcomes of future generations (C. Campbell and J. Lee 2008). In a separate paper, Campbell and Lee indicate that kinship plays a remarkable role in long-term inequality (C. Campbell and J. Lee 2011). However, previous studies on the impact of relatives have primarily focused on patrilineal relatives. Affinal relatives were overlooked because of a lack of information. Limited quantitative evidence has indicated that marriage alliances are an effective strategy for ensuring family reproduction and prosperity.[10] Using information from the wife's father and relatives, this research highlights one of the mechanisms via which marriage promotes the continuation of families. In addition to the substantial impacts of fathers-in-law on grooms, the status of the wife's father and relatives is significantly correlated with the outcomes of grandsons. This implies that marriage alliances and support from affinal contribute to the perpetuation of a lineage.

The rest of the paper is organised as follows: Section II describes the background of Chinese lineage organization and the comparison of Chinese and European marriage patterns. Section III provides the data this paper utilized. Parts IV and V describe the methodology and the empirical results, respectively. Section VI concludes.

3.3 Background

3.3.1 Chinese lineages

The lineage is a local group composed of individuals who share ancestors. It comprises both married and unmarried descendants of the same progenitor. Women joined the lineage of their husbands at marriage. Chinese lineages have three main characteristics. First, households within lineages were closely connected. They collaborated and executed coordinated economic and social actions, such as mutually

[10] Carol H Shiue and Keller 2022 show a positive influence of parental matching on children's income.

investing in land and other assets, building a lineage school to educate lineage members, and conducting festival and sacrifice activities. The lineage organisation also shared assets and obligations. Prosperous families donate land or assets to lineage.[11] The income from lineage land or properties will be utilised to support less fortune families or elder members, as well as finance lineage activities. Each branch within a lineage will be responsible for the costs associated with the care of elderly members, the administration of lineage property and land, and the coordination of sacrifices (H. Qian 2009, p47-48). Thirdly, households of the same lineage cohabited. In some regions, a village is composed of households with the same surname and common ancestry. The purpose of communal living is to ensure the security and stability of the lineage. Residents had few daily interactions with one another, as close kinship ties exist only within four generations of a lineage.[12] Only when their economic privileges or security are threatened will they band together to fight against outsiders.

Diverse viewpoints on the existence and significance of lineage structure in premodern China can be characterised in three ways. It pooled and shared resources among households to insulate members against economic and other sorts of stress Z. Chen 2021. Starting from Fan Zhongyan (989–1052), a scholar-official in the Song dynasty, officials and merchants contributed a portion of their salary or revenue to purchase lands and estates in the name of the lineage. These lands' income and harvests will be used to support disadvantaged households within the lineage. For example, the lineage had charitable granaries (义仓, yicang) that extended the ability of kinsmen to survive famine and related crises. Lineage schools provided scholarships to students from low-income households so they may participate in the civil service examination. For the homeless elderly and widows, the lineage had charity houses (pujitang).[13] One study by Z. Chen 2021 shows that lineage organisation was a crucial institution for risk-sharing since prefectures with stronger lineages had significantly higher population density due to greater resilience during

[11] The lineage land could be categorized into charity land, sacrificed land, and school land. The charity land was used for charity, assisting destitute kin; the sacrificed land was used to fund sacrifice ceremonies or festivals; and the school land was used to support lineage schools or grant scholarships to deserving students. For details, see Li and T. Jiang 2000, p71-72.

[12] The degree of Chinese mourning is determined by the mourning clothes worn at a funeral and the length of time a mourner is formally in mourning. The first degree of grieving is required for relationships such as father-son, which take three years. Those relationships beyond five degrees (五服) do not require grieving and are not related.

[13] See Carol H. Shiue 2004; Leung 2015

natural disasters. This is further supported by international comparisons of the influence of household organisation on individual outcomes. Bengtsson and Dribe 2010 found that mortality rates in China and Japan, both of which had relatively complex households, were less sensitive to economic fluctuations.

Due to this characteristic, Esherick, Rankin, et al. 1990 believe that lineages are first the result of elite efforts and are eventually embraced by commoners in order to support and aid the continuation and expansion of the patriline. Hymes 1986 suggests that networks of distant kin played an important role in determining elite position attainment. C. Campbell and J. Lee 2008's research on the impact of kin networks on marriage and social mobility reveals the complex role of distant kin.

The role of lineages was reinforced as an organisation that collected taxes and maintained social order through lineage discipline. The Qing tax system was based on the registration of households and land ownership. Every land-owning household was required to pay a predetermined amount of taxes based on the quantity and quality of the land it possessed, regardless of how much the land actually produced in a given year. On the other hand, there were relatively few administration officials. In the middle of the nineteenth century, each county magistrate was responsible for one of the approximately 1500 districts and controlled over 250,000 people. The estimated number of county-level tax officers was between 10,000 and 15,000 (Vries 2012). Consequently, tax collection was mostly the responsibility of local gentry and kinship organisations. The taxation system and tax collection practise incentivized individuals to devise corresponding strategies, which involved the collaboration of kin groups. For instance, Szonyi 2002 shows that individuals and groups in one region have reactive ties with other agnates who were already registered for tax payments in Fujian province for tax exemption.

In addition, lineage organisations were responsible for resolving conflicts. Due to the restricted number of officials, the ancestor hall resembled the local court, and the head of lineage resembled the judge, especially in areas dominated by lineage organisations. Many lineages had lineage regulations, such as requiring all members to pay tax unless there were extenuating circumstances, requiring all members to respect elder members, and prohibiting gambling.[14] For severe circumstance, those

[14]Examples see Li and T. Jiang 2000, p138-141

who breach lineage discipline are subject to punishment or banishment.

Consequently, both individuals and the state respected the lineage organisation. Individuals resort the lineage structure to lower their risks associated with uncertainty and implement strategic tax collection solutions. The state backed the lineage system because it relieved pressure on the government from the administration and stabilised the local community through lineage discipline.

3.3.2 Comparison between Chinese and European marriage

Table 3.1 summarises the parallels and differences between Chinese and Northwest European marriages.[15] Chinese marriage is characterised by parental arrangement and preference for matched marriage; early and universal marriage for females; a later and higher celibacy rate for males; monogamy with concubinage; and a relatively high marital fertility rate with female infanticide. Wealth and social status were key factors influencing the success of marriage and reproduction (S. Chen, J. Lee, and C. Campbell 2010; Ted A. Telford 1992).

Table 3.1: Marriages in Northwest Europe and China in the Nineteenth Century

	Northwest European	China
Marriage age	Late marriage	Early marriage for females
Celibacy	Frequent for both gender	High for males
Arrangement	Couples and parents	Parents
Dowry	Yes	Yes
Monogamy	Yes	Yes, but having concubine is allowed
Dwelling after marriage	Separate	With parents and other family members
Conjugal pair	The basic cell of social organization and weakness of extended kin groups	Has little strength because of patrilineality

Source: Lundh and Kurosu 2014 for comparisons of marriages between Europe and Asia; T. L. Engelen and A. P. Wolf 2005; P. Ebrey 2003; Goody 1999; Mann 1997; Hua 2014

3.3.2.1 European marriage pattern:

Patterns of marriage vary among European countries, which can be categorised into four parts: Northwest Europe, west-central Europe, the Mediterranean, and eastern Europe. The European Marriage Pattern, initially proposed by Hajnal 1982, was primarily the demographic structure of Northwest Europe. The fundamental pillars of this pattern are: 1) The prevalence of the nuclear family structure necessitates

[15] For more comparisons of marriages between Europe and Asia, see Lundh and Kurosu 2014.

that individuals become financially independent prior to starting a family. Parental responsibility for a child's consumption ended at marriage. Parents can no longer utilize their children as labourers. 2) Marriage is a form of social interaction. Individuals control birth rates through marriage and the age at which they marry (Perrin 2021).

Because of these characteristics, individuals in Northeast Europe enjoyed marital decision-making powers (Goody 1999, p24-25). The agreement of both parents and the couple was necessary for marriage. In addition, their marriage was heavily influenced by economic situations, which resulted in a high age at marriage and non-universal marriage for both females and males (T. L. Engelen and A. P. Wolf 2005, p45).

West-central Europe shares a similar pattern with Northwest Europe, though the nuclear family structure existed but was not dominant (Dennison and Ogilvie 2014). The demographic systems of the Mediterranean and eastern Europe differed significantly from those of west-central and northeastern Europe. They were portrayed as an early marriage and a complex household.[16]

3.3.2.2 Marriage and women in traditional China

There are three primary characteristics of Chinese marriage. Firstly, Chinese marriages were arranged by parents. The Chinese emphasis on lineage culture and Confucianism resulted in a strong patriarchy, which allowed parents to arrange children's marriages and treat them as resources (M. Wolf 1984). The Qing law stipulated two requirements for a marriage to be recognized: 1) The minimum ages of marriage for the groom were 16 and 14 for the bride, respectively. It was slightly earlier for Manchus; 2) parents or older relatives had to consent to a marriage. It must be completed by a go-between or matchmaker (X. Zhang 2003, p91-4). These two requirements were called "父母之命，媒妁之言, make match by parents' order and matchmaker's words ". Besides cultural customs and legal requirements, economic reasons also contributed to the fact that parents arranged marriages in China. Neither headship nor economic independence were prerequisites for a marriage. In elite families, sons and daughters married at an early age and stayed reliant on

[16] See M. Wolf 1984 Chapter 5 in detail.

the groom's parents or paternal grandparents during their reproductive years. The spouses were therefore minor players whose opinions were not sought.

In addition, marriages based on family background were widespread, especially among the elites.[17] Besides reproduction and old-age support, one of the primary functions of marriage was to forge kinship ties that would be advantageous for reproducing status hierarchies. The absence of a hereditary elite status and the fluid system of stratification provide no safety net for individuals whose wealth and power were dwindling.[18] Marriage, therefore, was essential for sustaining status or fostering social mobility (Hymes 1986; Watson and P. B. Ebrey 1991).

Another feature of Ming and Qing Chinese marriage was the existence of polygamy, in which a man could have only one wife but multiple concubines. The fundamental motivation for concubinage was the necessity of continuing the family line with a male successor. Constant population growth was insurance for the elite families' cultural prestige and political influences.[19] The marriage was sanctioned by a written contract and a full set of Six Rites.[20] Without a complete wedding ceremony, the woman was a concubine. Despite the public recognition of the privileges connected with a concubine's responsibilities as a birth mother and consort, the wife should not be readily divorced or replaced by a concubine. Within the household, the wife's standing was unquestionably higher than that of a concubine. However, sons of concubines had the same inheritance rights as sons of the wife, except for noble titles.[21]

Thirdly, female marriage was universal and early, whereas males had a higher

[17] Seeking a bride for a son, elite parents asked a go-between to look for families with roughly comparable social background. See Mann 1997, p12.

[18] Chinese degree holders and official status were non-inheritable. One needs to acquire these statuses by themselves through the civil service examination.

[19] The positive relationship between wealth and fertility has been shown by several scholars in pre-modern Europe and China. see Clark and Hamilton 2006; Bengtsson and Dribe 2010 in Sweden; S. Chen, J. Lee, and C. Campbell 2010; and Song, Cameron D. Campbell, and James Z. Lee 2015. Though Venice and Italy indicated a negative relationship, see Breschi et al. 2010.

[20] Traditional Chinese wedding customs were the Three Letters and The Six Etiquettes. The Three Letters include The Betrothal Letter 聘书 (pìn shū), which was a contract between the two families; The Gift Letter 礼书 (lǐ shū), a list of gifts that came with the bride's dowry; and the Wedding Letter 迎亲书 (yíng qīn shū), welcoming the bride into her new husband's home. The Six Etiquettes/Rites were the proposal 纳彩 (nà cǎi), asking for the bride's name and birthday 问名 (wèn míng), placement of the eight characters at the ancestral altar to confirm compatibility 纳吉 (nà jí), preparing and sending wedding gifts 纳征 (nà zhēng), choosing a ceremony date 请期 (qǐng qī) and the big day 迎亲 (yíng qīn). Without these processes, a women could not be legally recognized as wife.

[21] For further details of concubines' status, see Hua 2014.

celibacy rate and married later.[22] According to James Z Lee and Feng 2001, the vast majority of Chinese women were married by age 20 to 24. Nearly one-quarter of Chinese men were single at age 30. This was primarily caused by the imbalanced sex ratio in the marriage market.[23] In China, innate bias against daughters was common and pervasive. Economically and emotionally, daughters were viewed as inferior. Under the patrilineal and patrilocal family systems, only sons could carry the family name and generally inherit the family patrimony. Not only were daughters excluded from these practices, but they also required dowries when they got married. Consequently, Chinese parents frequently practiced infanticide to regulate the sex of their children.[24] In addition, remarriage was discouraged. To promote Confucian ideals, the Qing state honoured virtuous women and widows' chastity (Mann 1997, p73-4). The prevalence of infanticide, discouragement of remarriage, and support of concubinage led to a shortage of females on the marriage market. Therefore, females were universally married, and hypergamy was common for women.[25]

Finally, the fertility rate in pre-modern China is contested.[26] Malthus's (1766–1834) initial discussion of Chinese population dynamics implied that Chinese demography primarily followed the positive check, in which population growth was constrained by mortality crises, particularly famines. Numerous scholars apply the Malthusian model to interpret Chinese social and economic processes.[27] Plentiful scholars found empirical evidence supporting the notion that the Chinese fertility

[22]This is especially the case for men from humble families. The mean age of Ted A. Telford 1992 using genealogy data indicates substantial numbers of men never married and that social status was the primary condition of success in marriage and reproduction. S. Hu 2020 shows that the probability of marriage for men from poor families was considerably lower than that for men from influential families. In elite families, sons and daughters married young and remained dependent on the groom's parents or parental grandparents throughout the childbearing years Mann 1997, p11.

[23]T. L. Engelen and A. P. Wolf 2005, p29 also argue that early and universal marriage in China, Russia, and India was because parents wanted more dependents who could be used as labourers and servants.

[24]James Z Lee and Feng 2001 think infanticide is a key method of controlling both the number and sex of children. While Cao and Y. Chen 2002 argue that the function of infanticide as fertility control is less convincing as boys and girls were treated differently. T. L. Engelen and A. P. Wolf 2005, p232-235 also show that girls born into families with two or more children were three or four times as likely to be given away as girls born into childless families.

[25]Servants increased their social status by becoming concubines. Women coming from elite families could further increase their social status by becoming imperial consorts. Examples see Hua 2014.

[26]See detailed discussion in A. P. Wolf and T. Engelen 2008 and J. Lee, C. Campbell, and Feng 2002.

[27]The fundamental assumption of Elvin's high equilibrium trap model is that Chinese population growth without preventive check caused low marginal return of labour input, which further hindered economic development.

rate was high. For instance, M. Wolf 1984 and Ted A Telford 1995 both showed that the estimated total marital fertility rates in the twentieth century and late Ming Anhui were as high as 7.5 and 8.2, respectively. However, James Z Lee and Feng 2001 challenged this view by arguing that Chinese population was constrained by preventive check, in which couples restricted their marital fertility and practiced female infanticide. They showed the Total Marital Fertility Rate (TMFR) ranged from 5.3 for the Qing imperial lineage to a high of 6.5 for early twentieth-century Taiwan.

3.3.2.3 Marriage transactions and inheritance:

In China, the bride would join the groom's lineage after marriage. The family of the bride would prepare a dowry for their daughter. After marriage, the daughter lost her right to inherit her father's assets, unless there were exceptional circumstances.[28] This is similar to the inheritance tradition in Europe.[29] Meanwhile, the wife enjoyed complete ownership of her dowry. People on the husband's side were prohibited from using the dowry. Upon separation, the dowry must be returned to the wife.

3.4 Data

This paper uses the same data source as Chapter 2, the Compilation of Civil Examination Essays in Qing China to construct a unique dataset of Chinese elite group.[30] I use examination papers of individuals who passed the metropolitan examination and collect information of their ancestors and corresponding wives. Chapter 1 has discussed this data source and its value in detail.

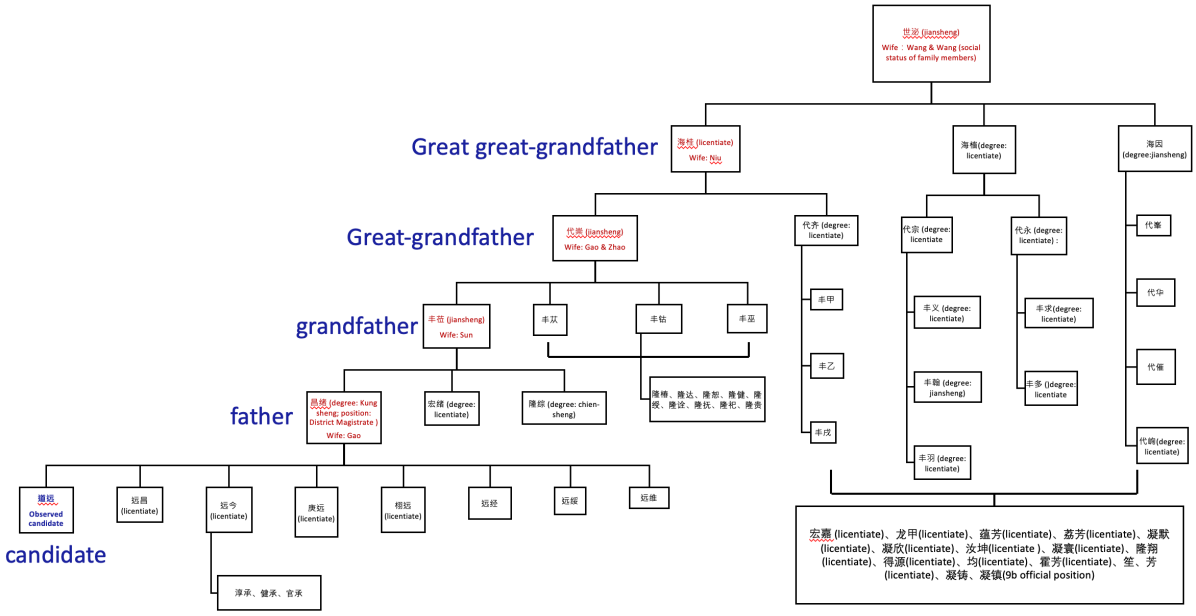
The pedigree chart depicted in Figure 3.1 represents the lineage of candidate 毕道远, translated from an examination paper, illustrating the precise generational and relational links within his lineage. The information presented can be segmented into three main parts. Firstly, individuals highlighted in red denote the immediate

[28] If there was only one daughter, who happened to be the only heir, she would become the heiress. When she gets married, at least one of her sons needs to have his mother's surname and have a claim to the inheritance of his maternal grandfather's assets. See Hua 2014, p51-53.

[29] Daughters obtained inheritance from dowry and died husband. More details See Goody, Thompson, and Thirsk 1976.

[30] Data source: Gu 1992

Figure 3.1: Genealogy Information from Exam Essays.

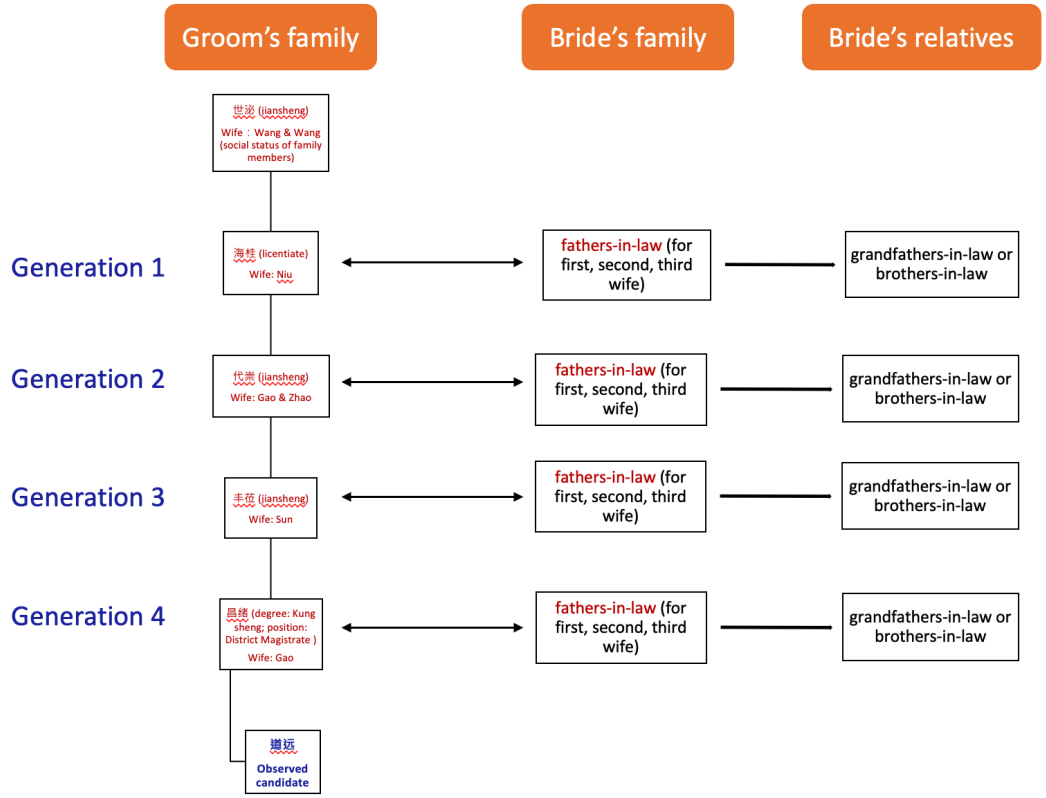


ancestors of the candidate. Their names are accompanied by details such as their degree levels, official ranks, and publications, serving to emphasize their socioeconomic status. Remarkably, the candidate's lineage spans over five generations, tracing back from his father to his great-great-great grandfather. Notably, all of his direct ancestors attained at least the lowest level of degrees. For instance, his father, 昌绪, held the esteemed title of *gong-sheng* and held a 7a official position. Similarly, his grandfather, great-grandfather, and great-great-grandfather were either *jian-sheng* or licentiates. Secondly, a separate section in an examination paper elaborates on the educational attainments and official positions of each male relative (agnate). These individuals are represented by names in black within Figure 3.1. This delineation provides a comprehensive overview of the academic and governmental accomplishments within the extended family tree.

In conjunction with each immediate male ancestor in every generation, concise biographies of their respective wives were carefully documented. Figure 3.2 presents the husband-wife information extracted from an examination paper, encompassing details such as the wife's father and relatives, including her brothers and grandfathers. Notably, for each generation, comprehensive information regard-

ing the social status of the wife's father was meticulously recorded. Furthermore, maternal relatives who possessed degrees or held official positions were also noted. In this particular case, it is noteworthy that the wives of the male ancestors all came from common families, as seen from their social backgrounds.

Figure 3.2: Family Background of Wife for each Generation from Genealogy



I obtained the metropolitan examinations candidates' exam essays between the years 1799 to 1904. There are a total of 1608 candidates, meaning 1608 lineages are observed. The lifetime outcomes of the four preceding generations are collected from their genealogies. Unfortunately, only the candidates' date of birth is available. I have to estimate the date of birth for each generation by assuming that the average fathers' age at childbearing was approximately 30 years old.[31] By deducting the birth years of candidates by 30, I get their fathers' birth years. Using the same logic, I obtained the birth year of each generation. For instance, candidate 毕道远 in Figure 2.1 participated in the metropolitan examination in 1841 at the age

[31]The average age of having a first birth for fathers in China increased from 20–25 to 23–25 between 1680 and 1840. The father's mean age at last birth dropped from 40 to 35 (Fei et al. 1953).

of 31. According to this, the estimated years of birth of his father, grandfather, great-grandfather, and great-great grandfather were 1780, 1750, 1720, and 1690, respectively. The estimated birth years of 6081 individuals from 1608 lineages were between 1498 and 1824.

Regarding the measurement of social status, I construct a status score based on the degree level and official titles. Following Ho 1962 and Carol H Shiue 2019, I categorize individuals into five groups and assign a status score to each class within each category. Table A.3 in Appendix A outlines the detailed status score for each class. To estimate the mobility table, I also categorize degrees and official positions into four groups ranging from 0 to 3. Zero represents commoners, one refers to licentiates, two is *juren* or *gong-sheng*, and three is *jinshi*. For officials, commoners, who have the lowest status, are represented by the number 0, and high-ranking officials are marked as 3. Table 3.2 shows the summary of the data.

Table 3.2: Summary Statistics

Statistic	N	Mean	St. Dev.	Min	Max
Status score of men	6,092	10.67	14.23	1	56
Number of wife	6,092	1.31	0.62	0	6
Number of concubine	6,092	0.14	0.44	0	5
Average status score of father	4,501	9.01	13.35	1	56
Average status score of father-in-law	6,092	4.91	9.21	1	56
Average status score of first wife's relatives	6,092	4.71	9.13	1	56
Average status score first wife's family	6,092	5.56	9.34	1	56
Family background of first wife					
Social status of father-in-law (first wife)	6,092	4.97	9.84	1	56
Degree level of father-in-law	6,092	0.40	0.72	0	3
Position of fathers-in-law	6,092	0.27	0.67	0	3
Relatives of first wife					
Total status score of relatives	1,682	41.13	48.67	2	448
Number of relatives	1,682	3.05	3.03	1	32
Number of degree holder	1,682	2.29	2.66	0	31
Number of officials	1,682	1.56	1.96	0	16

Notes : 1) All recorded social status are lifetime outcome. We can not know the exactly family background of the bride and groom when they married or get engaged. 2) Of the 6092 men, 5796 had at least one wife and 649 had at least one concubine. 3) information of 5981 fathers-in-law was recorded. Information for 1682 wife's relatives were recorded. 4) For all unrecorded information, we assign them with lowest social status score 1.

3.5 Methodology

3.5.1 Marriage Market and Sorting

Gary S Becker 1973; Gary S Becker 1974 illustrate a searching theory in the marriage market. He demonstrates that the marriage market bears resemblance to the labour market, as both reach equilibrium when individuals make diligent efforts to find suitable matches. Individuals' behaviour in making marriage decisions will be influenced by their gains in the marriage market. The bargaining power of both sides fluctuates depending on wages, height, attractiveness, race, sex ratios, and many other factors.

Becker's model assumes an equal number of women and men in the marriage market and diminishing returns from additional spouses in a household. Under these conditions, optimal sorting occurs when the sum of outputs across all marriages is maximized, leading to monogamous pairings as the optimal outcome. The model predicts a negative correlation between partners' wage rates in optimal sorting, while anticipating positive correlations in non-market traits such as parental wealth, human capital, and race. Maintaining the assumption of diminishing returns, the model suggests that imbalanced sex ratios and trait inequality among men could explain phenomena like polygyny or low sorting rates. Historical evidence supports these theoretical predictions. For instance, Abramitzky, Delavande, and Vasconcelos 2011 demonstrate that in the aftermath of World War I, French men experienced improved social positions and increasingly married women of higher social status. This trend was attributed to the war-induced imbalance in the sex ratio.

In the context of Qing dynasty China, marriage was primarily arranged by parents, with love playing a minimal role in partner selection. Instead, quantifiable traits were key determinants in successful matching. To illustrate this, let's consider a simplified marriage market with three men (M_i) and three women (F_i), where social status increases from M_3 to M_1 for men, and from F_3 to F_1 for women. In this model, parents aim to maximize gains from marriage, represented by a_{ij} and b_{ij} for the groom's and bride's families, respectively. The potential matching

solutions are demonstrated in Matrix 3.1. Assuming that marrying someone of higher social status yields greater benefits (i.e., a_{11} ¿ a_{21} ¿ a_{31} and b_{11}¿b_{12}¿b_{13}), and following Gary S Becker 1973's principle of maximizing total gains, the optimal sorting without polygyny and with balanced sex ratios would be (a_{11}, b_{11}), (a_{22}, b_{22}), and (a_{33}, b_{33}).

$$\begin{bmatrix} (a_{11}, b_{11}) & (a_{12}, b_{21}) & (a_{13}, b_{31}) \\ (a_{21}, b_{12}) & (a_{22}, b_{22}) & (a_{23}, b_{32}) \\ (a_{31}, b_{13}) & (a_{32}, b_{23}) & (a_{33}, b_{33}) \end{bmatrix} \tag{3.1}$$

However, the reality of Qing dynasty China challenges these assumptions. Due to strong son preference, there were typically fewer women in the marriage market. This imbalance transforms our matching matrix to:

$$\begin{bmatrix} (a_{11}, b_{11}) & (a_{12}, b_{21}) \\ (a_{21}, b_{12}) & (a_{22}, b_{22}) \\ (a_{31}, b_{13}) & (a_{32}, b_{23}) \end{bmatrix} \tag{3.2}$$

Under these conditions, the optimal sorting becomes (a_{11}, b_{11}), (a_{22}, b_{22}), leaving M_3 unmarried.

Further relaxing constraints to allow polygyny yields two different possible outcomes: 1) (a_{11}, b_{11}), (a_{11}, b_{21}),with both M_2 and M_3 remaining single; 2) (a_{11}, b_{11}), (a_{22}, b_{22}), leaving M_3 unmarried. The final outcome depends on the perceived benefits of becoming a concubine. Given that concubines held lower social status, families of decent social standing typically preferred their daughters to be primary wives rather than concubines. However, if the gains from becoming a concubine were substantial enough, the second scenario could be optimal. This was often the case for girls from very low social status families, for whom becoming a concubine to a high-status man might represent a significant improvement in their circumstances.

These scenarios more closely reflects historical realities, where families with

daughters held stronger bargaining power due to their scarcity. These families could demand substantial bride-prices or seek matches with higher-status men.

In practice, Chinese families often sought partners of similar or higher social standing. The combination of fewer women in the marriage market and high inequality among men meant that men of lower social or economic status were more likely to remain unmarried. Consequently, we would expect to observe few instances of women marrying men of lower social status in the Chinese marriage market of this period.

3.5.2 Measurement of Marital Assortment

Figure 3.3 depicts the matching relationships following Clark, Cummins, and M. J. Curtis 2022. It assumes that the underlying correlation between the fathers and the grooms, the fathers-in-law and the grooms, the fathers and the fathers-in-law are β, $\gamma\beta$, and γ respectively. The underling correlation between fathers and daughters is assumed to be identical to the correlation between fathers and sons.[32] Given that Chinese marriage was arranged by parents and the preference for a matched family background, the matching in this model occurs between fathers and fathers-in-law (γ) instead of grooms and brides.[33]

As measurement errors occur, the observed correlations among those groups will differ from the underlying correlations. For instance, wealth is a specific factor that could not be captured by the measurement of status proposed in this paper. Figure 3.4 shows the relationships of family matching under measurement error. $\phi\beta$ and $\phi\gamma$ are the observed correlations, in which ϕ is the measurement error. I further

[32]Empirical studies have shown that IGEs differ between women and men, with IGEs between father and daughter being smaller than the equivalent father-son ones. According to the majority of Scandinavian evidence, when comparing individual earnings, women's intergenerational earnings persistence is lower than that of men's. See Hirvonen 2008. While what they compare is the observed correlations of father-son and father-daughter, which had measurement error. Additionally, due to assortative mating and labour supply responses, it is reasonable that women's income will be lower than men. The observed lower IGEs, therefore, could not truly reflect the correlation between father and daughter. See Black and Devereux 2010. In this paper, I follow Clark and Cummins 2022, who assume a symmetry influence, in which the intergenerational correlation of actual occupational status for grooms with their fathers is the same as that of women with their fathers. They found that in Britain, men and women correlate relatively equally in underlying educational status with their fathers.

[33]In Western countries, where couples play the major role in marriage decisions, matching is between the brides and grooms. See Gary S Becker 1973; Gary S Becker 1974; Clark and Cummins 2022.

assume the same measurement error for all groups, given that it was mainly caused by the inadequate measurement of social status, which applies to all male members. However, the social status of Chinese women is unavailable. It was determined by her father before marriage and by her husband and son after marriage.

Figure 3.3: Relationship of Family Matching

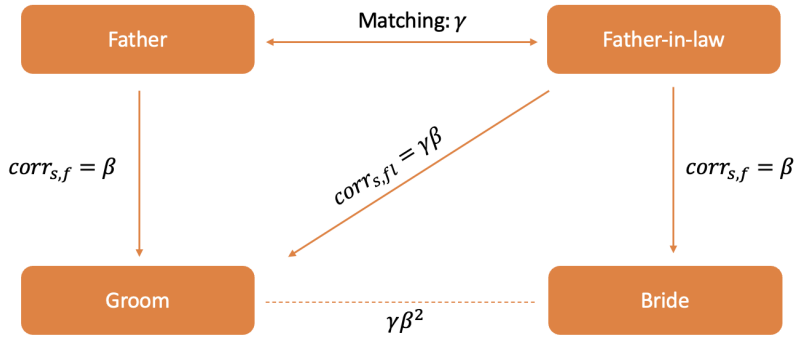
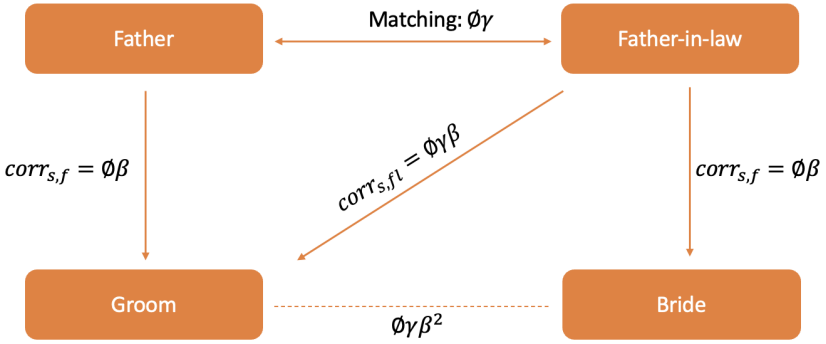


Figure 3.4: Level of Family Matching with Error



Based on these relationships, the underlying correlations of the fathers-in-law – grooms and brides-grooms are $\gamma\beta$ and $\gamma\beta^2$, respectively. Scholarships demonstrate the considerable links between individuals' earnings and the income of their in-laws and parents.[34] In China, the practice of lineage organisation and the idea of utilising marriage to forge ties with other powerful lineages would imply a strong correlation between the social status of in-laws and grooms. The ratio between fathers-in-law-

[34]Chadwick and Solon 2002 show high correlations in the U.S. Ermisch, Francesconi, and Siedler 2006 indicate 40% of family income persistence in the U.K and Germany results from assortative mating.

grooms correlation and father-son correlation will be the level of marital assortment (γ), as shown in Equation 3.3.

$$Matching = \frac{corr_{s,fl}}{corr_{s,f}} = \frac{\phi\gamma\beta}{\phi\beta} = \gamma \tag{3.3}$$

Additionally, using the ratio of regressed father-in-law-groom correlation and regressed level of matching ($\phi\gamma\beta$ and $\phi\gamma$), I will have the underlying level of intergenerational correlation, as shown in Equation 3.4.

$$\beta = \frac{corr_{s,fl}}{corr_{f,fl}} = \frac{\phi\gamma\beta}{\phi\gamma} \tag{3.4}$$

3.5.3 Marital assortment and social mobility

Assuming that individuals acquire their abilities equally from their mothers and fathers, individuals' abilities and outcomes are a product of their mothers' and fathers' social outcomes.

$$y_c = \alpha + \frac{1}{2}\beta(y_f + y_m) + \epsilon_i \tag{3.5}$$

c, f, and m refer to children, fathers, and mothers. y is the social status. β is the intergenerational correlation of occupational or educational abilities between parents and children. While in the Chinese context, the mother's social status was unavailable, marriage matching occurred among parents, and kinship ties benefited children's outcomes. Those could be interpreted as:

$$y_m = \alpha + \beta y_{mgf} + \delta_i \tag{3.6}$$

$$y_f = \alpha + \beta y_{gf} + \delta_i \tag{3.7}$$

$$y_{gf} = \alpha + \gamma y_{mgf} + \nu_i \tag{3.8}$$

y_{mgf} is the social status of the maternal grandfather, y_{gf} is the social status of the paternal grandfather, and γ is the correlation between maternal grandfather and paternal grandfather in occupational or educational outcomes. The intergenerational

correlation between children and a single parent will be:

$$b = \beta \frac{(1+\gamma)}{2} \tag{3.9}$$

This indicates that the level of assortative mating is positively correlated with the level of intergenerational correlation. A higher level of assortative mating infers a lower level of social mobility.

3.5.4 The Role of Affinal Relatives

Marriage serves as a link between two lineages or at least two families. They share family resources for mutual support. It was normal for fathers-in-law to provide support for their sons-in-law. Consequently, a man's social rank is influenced by both his father and father-in-law. To demonstrate the connection between marriage and social mobility, this research examines the relationship between the status of the groom and that of the father-in-law. Equation 3.10 estimates the correlations between social status of grooms' and fathers-in-law's, where y_g, y_f, and y_{mf} are the social status of the groom, his father, and his father-in-law. X_{mr} is the average social status of wife's relatives who have degrees or official positions.

Although these lineages were observed through the last generation, who obtained a *jinshi* degree, the last generations are excluded from the analysis. The non-selected ancestors of these *jinshi* degree holders have various social statuses. The correlations I observed could represent the elite, but they are potentially upward biased.

$$y_g = \alpha + \beta_f y_f + \beta_{mf} y_{mf} + \zeta_{mr} X_{mr} + \sigma \tag{3.10}$$

3.6 Emperical Results

3.6.1 Marriage Pattern

3.6.1.1 Upward, Early and Universal Marriage for Women

Figure 3.5 analyses the trend of averaged social status of agnates over time. I estimated the birth year of four consecutive ancestors of this candidate using the birth year of the last descendant who participated in the examination and subtracting 30 from the birth year of each generation.[35] I calculate the average social status of each group based on their birth year. Individuals with no record of their social status will be assigned the lowest social status, 1. This is a conservative estimation of status, as wealth is not reflected.

Figure 3.5 indicates three key features of these households. First, these families were wealthy and had relatively high social status. The average social status of men is 10.66, and the average number of wives for each family in this sample is around 1.31. While the national average status of males is 1.52, and the proportion of celibacy rate was high for Chinese males.[36] This indicates that these families' financial situation is superior to the national average. According to S. Hu 2020, the likelihood of a poor family not getting married is significantly higher than that of a prominent family.[37] Besides, wealthy families are financially capable of having another wife if their first wife dies.

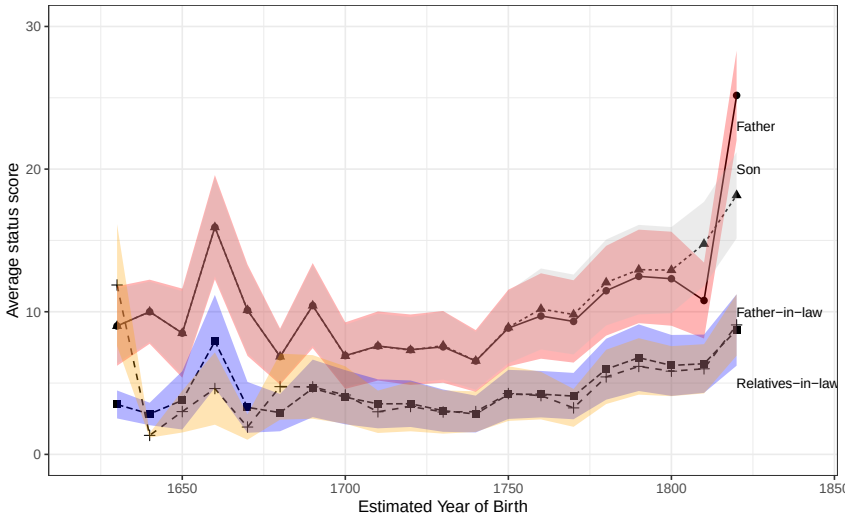
Second, it was common for females to marry up in traditional Chinese marriages. According to the figure, the brides have a weaker family background than the grooms. Fathers-in-law have an average social position of 4.91, whereas fathers have an average social status of 9.01. Even after accounting for the social standing of the bride's relatives, the average status of the bride's family is still 3.5 points lower than that of the groom's family. It should be noted, however, that social status of brides' family remains higher than that of common families, which is 1.52.

[35] Previous research shows that the average age of giving birth for a Chinese male is around 30. Ted A. Telford 1992 showed that the mean age of men having first-surviving son was 28.11 in Tongcheng, Anhui, between 1520 and 1661.

[36] The national average status of men is based on the author's calculation. According to James Z Lee and Feng 2001, around one-quarter of Chinese men were unmarried by age 30 in Liaoning province.

[37] The Malthusian model argues that marriage chances were constrained by decreasing real earnings. However, Lundh and Kurosu 2014 found little evidence supporting it. They show that transfer of resources from the parental household to a child that was going to get married was the major mechanism influencing first marriage.

Figure 3.5: Average Status Score of Families over Time



Notes : This figure plots the averaged status score over time by birth year. The solid line represents fathers, while the dotted line corresponds to sons. Father-in-law data is depicted with dashed line, and relatives-in-law is represented by long-dashed line. The rainbow indicates the standard error.

Thirdly, the recorded relatives have a high social status. They either are degree holders or have official titles. No records of relatives' social status mean they were commoners. Among first wives, information about 1682 relatives was recorded. On average, each family keeps track of three relatives with a total social status of roughly 41. For those families who recorded information about matrilateral relatives, the average social status of relatives is 13.5. This is even higher than that of the groom's father.

In terms of time trend, Figure 3.5 reveals two features. First, the averaged social status is stable before gradually increasing. For cohorts between 1670 and 1770, the averaged social status of the groom's family stabilized at 7.5, and the bride's family remained at 3. The average social status of those families gradually increased for cohorts after 1770. This implies that the social status of those families increased across generations. In other words, the ability to perpetuate has strengthened over time. Secondly, comparing the status of fathers-in-law and fathers confirms prior findings of widespread hypergamy. Through time, fathers-in-law and matrilateral relatives have had a lower social status than fathers.

Female marrying into higher social strata is the defining characteristic of Chinese marriages, as demonstrated by Figure 3.5. This feature is largely attributed

to an imbalanced sex ratio within the marriage market, where the number of men exceeded that of women. Cultural practices such as a strong preference for male offspring, discouragement of remarriage for women, and the institution of concubinage served as driving factors behind this phenomenon.[38]

First, patrilineal kinship systems and inheritance customs in China led to a preference for sons and an imbalanced sex ratio. The lineage organisation emphasised ancestral worship and family continuity. Men are the centre of Chinese lineage organisation, and women earned their places through marriage. Once getting married, daughters join their husband's lineage, bring certain amount of dowry, and forfeit their right to inherit from their natal family.[39] Besides, only men could bring glory to the lineage through the civil service examination, from which women were excluded. Therefore, girls are viewed as a drain on household resources, both emotionally and financially, whereas sons are essential to fulfilling the obligation of filial piety. This led to a strong preference for sons.

The direct consequence of son preference is a variety of practices to control the sex of children, such as female infanticide and less attention to girls (Das Gupta 2010; T. L. Engelen and A. P. Wolf 2005, p232-235). Infant mortality was remarkably higher among girls than among boys.[40] Even princesses were not exempt from gender discrimination. Evelyn S Rawski 1998, p145-146 indicates that one-third of the emperor's daughters died within the first two years of their lives in the Qing dynasty. Consequently, the Chinese child sex ratio was unbalanced.[41] Due to the fact that the legal age of marriage for boys and girls was low (16 for boys and 14 for girls), the sex ratio in the market for first marriages is unbalanced. Men with low socioeconomic status were unable to marry because they lacked sufficient

[38]Zang and H. Zheng 2018 analysed data from a subset of the China Multigenerational Panel Dataset-Liaoning (CMGPD-LN) and showed that the proportion of men in the marriage market was constantly around 55 between 1750 and 1900.

[39]The dowry customs varied among different regions of China. Families applied flexible rules in terms of dowry. Some areas did not require dowry at all, while in southern China, dowry was essential.

[40]Female infant mortality rates are ten times higher than male infant mortality rates during the first day of life, according to an analysis of imperial lineage data by James Z Lee and Feng 2001, p50. Even among commoners, female infant mortality was significantly higher James Z Lee, Cameron D Campbell, et al. 1997.

[41]Das Gupta 2010 estimated sex ratios using Chinese census data from 1953, 1964, 1982, and 1990. From 1920 to 1949, the sex ratio increased from 0.07 to 0.16. The excess ratios peak among cohorts born just before a war or famine, indicating that young girls experienced the highest excess mortality during times of crisis.

competitiveness.

In addition to sex control, rich families applied concubinage to ensure a high number of sons, and poor families achieved it by adopting a son from the same lineage (Hua 2014, p3-5). For women coming from low socioeconomic classes, they could either be servants in influential families or concubines of men with higher socioeconomic status. This further strengthened their bargaining power on the marriage market and allowed them to choose men with a superior family background.

Moreover, although remarriage was legal, it was discouraged for women.[42] Chastity for widows was prevalent during the Ming and Qing eras. The society eulogized widows' faithfulness to their patrilineal kin. They were expected to memorize their husbands, maintain fidelity, and resist temptation.[43] As a consequence, there were fewer women available on the marriage market, which increased competition on the market. Females were universally married, and female hypergamy was common.

Based on these facts, this paper analyses the impact of social status of brides' relatives on marriage and the outcomes of descendants. Along with the social status of fathers-in-law, the social status of close relatives influences the success of affine. When fathers-in-law have a lower social position, the high social status of matrilateral relatives countervail this disadvantage. In addition, given the strong relationship of families among each lineage, social resources and status of relatives benefit descendants.

3.6.1.2 Highly Sorted Marriage

Table 3.3 demonstrates the observed social status correlation for father—son, sons—fathers-in-law, and father—fathers-in-law for each generation (Table C.1 in Appendix C shows correlations based on rank percentile). For each generation, the status correlations are stable, hovering around 0.4. Correlations between fathers-in-law and grooms are lower than those between father—son and father—father-in-law, which are around 0.3.

Table 3.4 shows the trending of correlations by categorising the sample into

[42] The Qing code indirectly indicates that widows have two rights. They can manage their husbands' property and remarriage with men of their own choice. See Sommer 1996.

[43] While widows enjoyed a certain degree of freedom. Examples see Padern 1999.

Table 3.3: Social Status Correlations by Generations

generation	ρ_{sf}	se_{sf}	ρ_{sfl}	se_{sfl}	ρ_{fl}	se_{fl}
Father	0.355	0.026	0.268	0.026	0.405	0.027
Grandfather	0.448	0.027	0.367	0.026	0.440	0.027
Great-grandfather	0.456	0.028	0.329	0.026	0.350	0.027

Notes : sf refers to groom and father, sfl refers to groom and father-in-law, fl refers to father and father-in-law.

four groups according to the father's estimated year of birth. Correlations between father and son decline over time, whereas correlations between son—father-in-law and father—father-in-law show no pattern.

Table 3.4: Social Status Correlations by Time

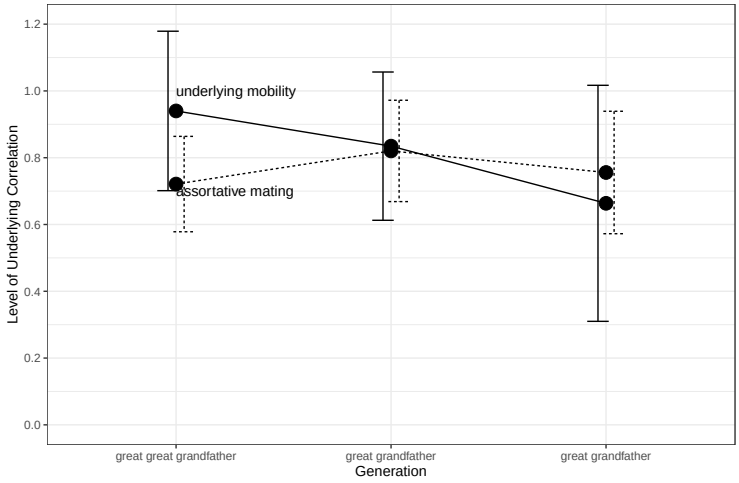
generation	ρ_{sf}	se_{sf}	ρ_{sfl}	se_{sfl}	ρ_{fl}	se_{fl}
1640-1709	0.487	0.052	0.303	0.051	0.383	0.051
1710-1749	0.465	0.024	0.359	0.024	0.396	0.024
1750-1789	0.376	0.025	0.320	0.025	0.415	0.025
1790-1820	0.356	0.041	0.256	0.041	0.381	0.041

Notes : sf refers to groom and father, sfl refers to groom and father-in-law, fl refers to father and father-in-law.

Based on observed correlations in Table 3.3 and Table 3.4, I apply Equation 3.3 and 3.4 to calculate the underlying degree of assortment and intergenerational mobility across generations and time frames, shown in Figures 3.3 and 3.7. The degree of sorting remains around 0.75 across generations and throughout the periods. The underlying degree of intergenerational mobility fluctuates between 0.6 and 0.8. Figure 3.8 and 3.9 compare the observed and underlying levels of marriage assortment across generations and over time. In both cases, the underlying levels of assortment are approximately twice as large as the observed degrees of assortment. This shows that degree of sorting and mobility are underestimated.

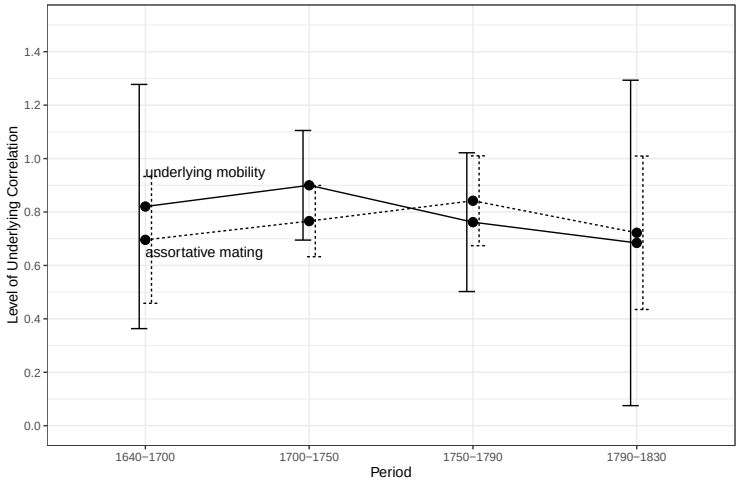
The possible explanation that caused the measurement errors and the underestimations are the ignorance of wealth and the latent advantages within families. Chinese marriage involves not just two young people but also two lineages. In addition to father's social status, relatives' social status and wealth also influence marriage matching. Especially when the fathers of brides were not degree holders or officials, wealth and social status of relatives compensated for the disadvantages.

Figure 3.6: Estimated Level of Assortative Mating Across Generation



Notes : This figure shows the underlying level of assortative mating across generation calculated from Table 3.3. Underlying matching = ρ_{sfl} / ρ_{sf}. Underlying mobility = ρ_{sfl} / ρ_{ffl}. The error bar is the 95% confidence interval from bootstrap.

Figure 3.7: Estimated Level of Assortative Mating Across Time



Notes : This figure shows the underlying level of assortative mating over time generation calculated from Table 3.4. Underlying matching = ρ_{sfl} / ρ_{sf}. Underlying mobility = ρ_{sfl} / ρ_{ffl}. The error bar is the 95% confidence interval from bootstrap.

The matching under the influence of these factors will not be reflected if the degree of sorting is measured solely based on fathers' status, and the observed degree of sorting will appear to be low.

Figure 3.8: Comparison of Observed and Underlying Correlations

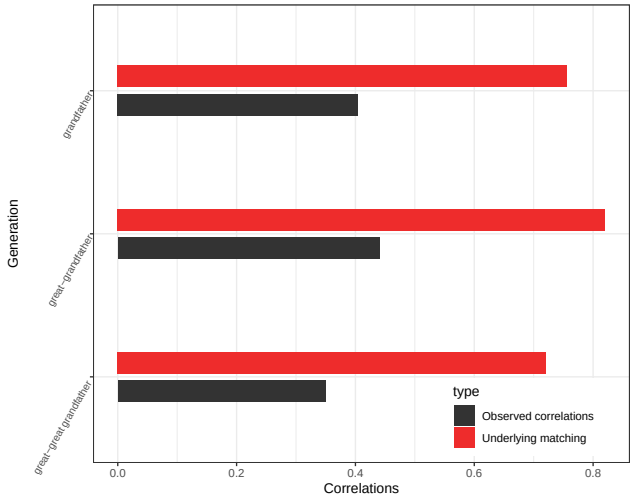
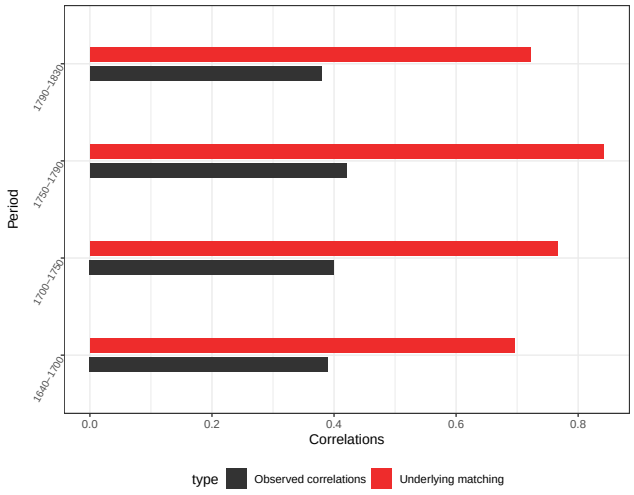


Figure 3.9: Comparison of Observed and Underlying Correlations Across Time



3.6.2 Highly Sorted but Upward Marriage Pattern

The phenomenon of highly assortative marriage in China, coupled with a large number of women marrying into higher social strata, presents a paradox. If a significant proportion of women possessed considerable leverage in negotiations and were capable of marrying men from higher social classes, we would not expect to see a high

degree of similarity in the social status of fathers and fathers-in-law in marriages. One possible explanation for this seeming contradiction lies in how we measure social status.

The status score measurement applied in this paper fails to account for the varying levels of effort required to attain different levels of status. For example, the level of difficulty in obtaining a 9a official appointment as a licentiate is significantly higher than the level of difficulty in obtaining a degree. Within this status score system, the difference between them is merely 10. The actual disparity is undoubtedly greater, but it cannot be accurately measured by the status score method. Consequently, the observed high level of assortment between the social statuses of fathers and fathers-in-law might be driven by this inherent measurement error. This issue could be resolved by utilizing the rank percentile as the measurement. The rank percentile measurement assigns a score to individuals based on their position in the sample. It allows for a finer differentiation between individuals based on their relative standing within the social hierarchy.

As indicated in Table 3.5, I compute the underlying assortment throughout generations using the relationships presented in Table C.1, which are based on the rank percentile measurement. When comparing with Table 3.3, no significant differences are observed. This implies that the measuring of status scores is not a problematic issue.

Table 3.5: Comparing of Underlying Matching

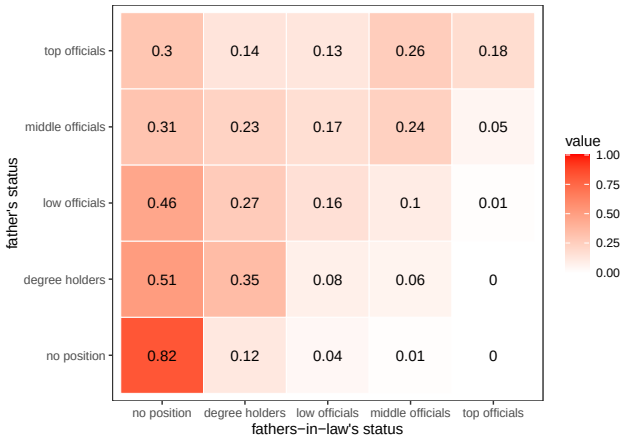
	Matching (ρ_{sfl} / ρ_{sf})	
Generation	Rank percentile	Status score
Father	0.69	0.75
Grandfather	0.82	0.82
Great Grandfather	0.71	0.72

Notes : This table compares the underlying level of matching using different measurement of social status. There are not significant differences between the level of matching based on two measurements.

In order to better understanding this paradox, I utilize transition matrix to deeply investigate matching. Figure 3.10 illustrates the probability of father-in-law

entering in each class given social status of father. In this matrix, the diagonal represents the matching between father and father-in-law. Higher values on the diagonal indicate a higher level of marriage matching between father and father-in-law. The left and right sides of the diagonal, respectively, measure the extent of women marrying up and down. The left side of the diagonal typically represents situations where social status of father is higher than that of father-in-law, indicating instances of women marrying up. By examining the values on each side of the diagonal, I can assess the degree to which women are marrying up or down. Higher values on the left side imply a greater proportion of women marrying partners of higher social status, whilst higher values on the right side reflect a greater prevalence of women marrying partners of lower social status.

Figure 3.10: Comparison of Observed and Underlying Correlations Across Time



Notes : This figure illustrates the probability of father-in-law entering in each class given social status of father. In this matrix, the diagonal represents the matching between father and father-in-law. Higher values on the diagonal indicate a higher level of marriage matching between father and father-in-law. The left and right sides of the diagonal respectively measure the extent of women marrying up and down.

The values along the diagonal of Figure 3.10 vary from 0.16 to 0.82. There is a considerable level of matching between father and father-in-law in the lower strata. The likelihood of a father without any degree or official position having a father-in-law who is a commoner is 82 percent. The percentage is slightly lower, at 35 percent, for fathers who hold degrees but do not have any official positions. Within the middle and upper strata, there is a significant drop in the degree of matching, with a range of 16 percent to 24 percent. There are higher values on the left side of the diagonal, indicating that large proportion of marriages occur when the social

status of father is higher than that of father-in-law. This indicating that women more frequently marry up.

Figure 3.10 explain the phenomenon of the coexistence of upward marriage and highly sorted marriage in China. A significant level of marital matching is observed due to a substantial percentage of families in the lower social classes choosing to marry individuals with comparable family backgrounds. Among the middle and upper echelons of the elite, a significant proportion of families engage in marriages where males possess a higher social standing.

3.6.3 Robustness Check

3.6.3.1 The Second Wife

I provide additional evidence for the findings of this paper by utilising information from the second wife (See Appendix C Table C.2 for summary of statistics). Men who lost their first wives remarried. The most prevalent causes of death were dystocia or diseases. By the time a man had a second wife, he was either considerably older or had achieved a certain social standing. Although his higher social standing will benefit him on the marriage market, his age will diminish this benefit as women with similar or better social background have engaged or married. Consequently, I anticipate less matching in second marriages.

Table 3.6 indicates the status correlations using information from the second wife. As anticipated, the observed correlation between fathers and fathers-in-law is significantly lower than when using first wife's information. Nonetheless, there is a substantial level of matching that is twice as large as the observed correlations. This indicates that conventional estimation of the level of matching is inadequate.

Table 3.6: Social Status Correlations by Generations (second wife)

generation	ρ_{sf}	se_{sf}	ρ_{sfl}	se_{sfl}	ρ_{fl}	se_{fl}	matching	beta
Father	0.371	0.047	0.179	0.046	0.279	0.046	0.482	0.642
Grandfather	0.440	0.054	0.265	0.053	0.296	0.053	0.602	0.895
Great grandfather	0.479	0.065	0.244	0.061	0.306	0.063	0.509	0.797

Notes : sf refers to groom and father, sfl refers to groom and father-in-law, fl refers to father and father-in-law. Matching is the ratio between ρ_{sfl} and ρ_{sf}. Beta is the ratio between ρ_{sfl} and ρ_{fl}

3.6.3.2 The Symmetry Assumption

An important premise of this paper is that the groom and bride share a symmetrical intergenerational relationship. In other words, it assumes that the underlying correlations of father-son, father-daughter, groom-son, and bride-son are identical. As shown in Figure 3.11, if these assumptions hold, the correlations between grandfather-men and grandfather-in-law-men will be identical. To test this assumption, I estimate educational and occupational correlations between grandfather-men and grandfather-in-law-men.

Figure 3.11: A Symmetry Relations for Men and Women

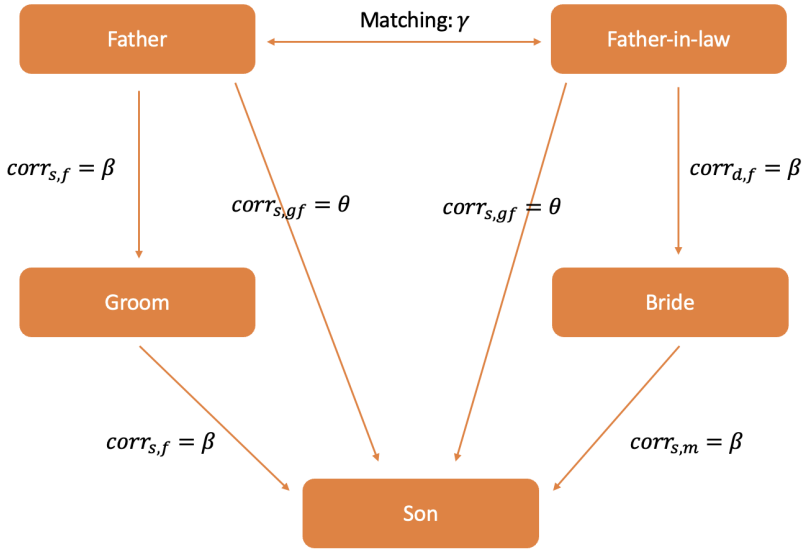


Table 3.7 shows the correlations of paternal grandfathers-grandsons and maternal grandfathers-grandsons. The first column uses the status score, which combines the educational and officialdom attainment. The second and third columns use education and official position as the measurement of status, respectively. The correlations are distinct when using status score as the measurement. The association between paternal grandfathers and grandsons is approximately 40 percent larger than the correlation between maternal grandfathers and grandsons. This is reasonable as Chinese marriage is patrilocal, where grandsons spent more time with paternal grandfathers.

However, this does not mean the symmetry assumption is violated. The status

Table 3.7: Correlations from Paternal Grandfathers and Maternal Grandfathers

	Status of Grandchildren		
	Status Score	Educational Attainment	Official Position Attainment
Status Score			
Paternal Grandfathers	0.284***		
	(0.025)		
Maternal Grandfathers	0.170***		
	(0.033)		
Education			
Paternal Grandfathers		0.222***	
		(0.022)	
Maternal Grandfathers		0.192***	
		(0.026)	
Official Position			
Paternal Grandfathers			0.250***
			(0.022)
Maternal Grandfathers			0.173***
			(0.029)
Constant	10.665***	0.853***	0.672***
	(0.334)	(0.023)	(0.020)
Observations	2,924	2,923	2,923
Adjusted R^2	0.079	0.074	0.075

Notes : This table shows the correlations of paternal grandfathers-grandsons and maternal grandfathers-grandsons. The first column uses the status score, which combines the educational and officialdom attainment. The second and third columns use education and official position as the measurement of status, respectively.$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

score is determined by both educational and officialdom attainment, in which educational attainment relies more on personal ability given a similar family background, while officialdom attainment is influenced by family social capital. Under patrilocal marriage, the influence from maternal grandfathers will naturally be smaller than the influence from paternal grandfathers.

On the other hand, the correlations solely based on educational attainment are close, in which the paternal grandfather-grandson correlation is 0.22 and the maternal grandfather-grandson correlation is 0.19. This supports the symmetrical intergenerational correlation assumption.

3.6.4 Marriage Strategy

3.6.4.1 The Role of Fathers-in-law

This section analyses the relationship between the outcomes of the grooms and their respective fathers-in-law, as assessed by status scores based on educational and occupational attainment in officialdom. Table 3.8 shows the magnitude to which marriage influenced the groom's outcomes under different scenarios (Table C.3 in Appendix C shows similar estimation based on rank-rank status). I divided marriage into two categories: female hypergamy, in which the father's social status is higher than that of the matrilateral relatives and father-in-law, and female hypogamy.

Table 3.8: Estimated Impacts from Patrilineal and Matrilineal Ancestors

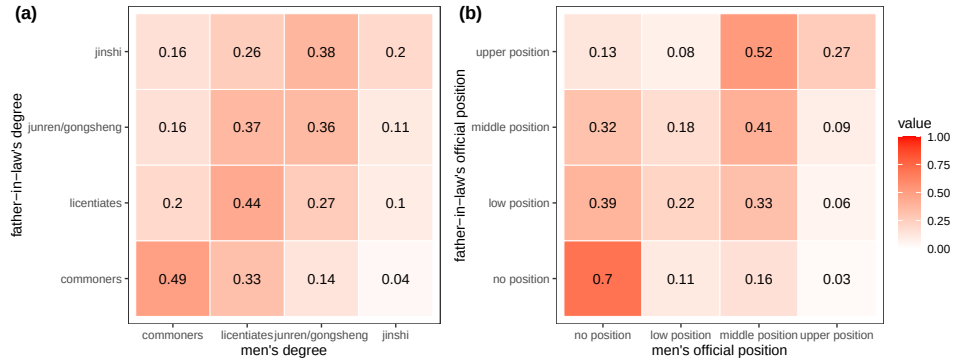
	Status Score of Men						
	Pooled model			Patriline dominated		Matriline dominated	
	Model 1	Model 2	Model 3	Model 4	Model 5	model 6	model 7
Status score of fathers	0.454***	0.379***	0.366***	0.393***	0.385***	0.392***	0.366***
	(0.015)	(0.017)	(0.017)	(0.023)	(0.023)	(0.052)	(0.052)
Status score of fathers-in-law		0.216***	0.161***	0.157***	0.107**	0.230***	0.173***
		(0.021)	(0.022)	(0.041)	(0.044)	(0.033)	(0.033)
Averaged status score of wife's relatives			0.171***		0.124***		0.213***
			(0.023)		(0.036)		(0.030)
Constant	7.880***	7.314***	6.834***	7.288***	6.966***	7.236***	6.583***
	(0.241)	(0.244)	(0.251)	(0.426)	(0.435)	(0.300)	(0.311)
Observations	4,604	4,604	4,604	2,076	2,076	2,528	2,528
Adjusted R^2	0.163	0.181	0.191	0.202	0.206	0.134	0.151

Notes: The first three models are based on pooled data. Model 4 and 5 are samples that social status of patriline dominated. In other words, score status of patrilineal ancestors are higher than that of matrilineal ancestors. Model 6 and 7 are samples in which score status of fathers-in-law is higher than that of men's fathers.$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Models 1–3 use pooled data. Excluding the fathers-in-law and matrilineal relatives, the coefficient between the fathers' status and the grooms' status is 0.45. Even after controlling for fathers' status, the correlation between fathers-in-law and grooms' outcomes is half that between fathers and grooms. Meanwhile, both fathers-in-law and matrilateral relatives are significantly correlated with the groom's outcome. Models 4-5 are scenarios when women marry up, where the fathers have a higher status than the matrilineal relatives and fathers-in-law. Models 6–7 are

opposite. They confirm that marriage is an effective means of maintaining family social status. When the grooms' family background is strong, the social status of their fathers-in-law is less correlated with the grooms'. The correlations between fathers-in-law and relatives are 38 percent and 42 percent smaller than when the situation is reversed, respectively. In the opposite situation, the correlations are higher. This type of marriage is based on the fact that fathers-in-law or matrilineal relatives will benefit from the son's success.

Figure 3.12: Mobility Table between Men and Fathers-in-law



Notes : This figure demonstrates mobility table between father-in-law and the groom. Panel a) displays the mobility table categorised by educational attainment, while panel b) presents the mobility table categorised by occupational attainment in officialdom.

This paper employs mobility tables to delve deeper into the relationship between the status of fathers-in-law and grooms. Figures 3.12 a) and b) present mobility tables based on educational attainment and official positions, respectively. The findings indicate a strong correlation between the educational attainment of fathers-in-law and that of the grooms. As illustrated in the figure, the probability of a groom obtaining a degree increases significantly as the educational attainment of the father-in-law rises. For instance, if the father-in-law is a commoner, the probability of the groom having a degree stands at around 51 percent. However, this probability jumps to approximately 80 percent if the father-in-law holds any type of degree. Furthermore, there's a positive association between the educational attainment levels of the father-in-law and the groom's likelihood of achieving higher degrees.

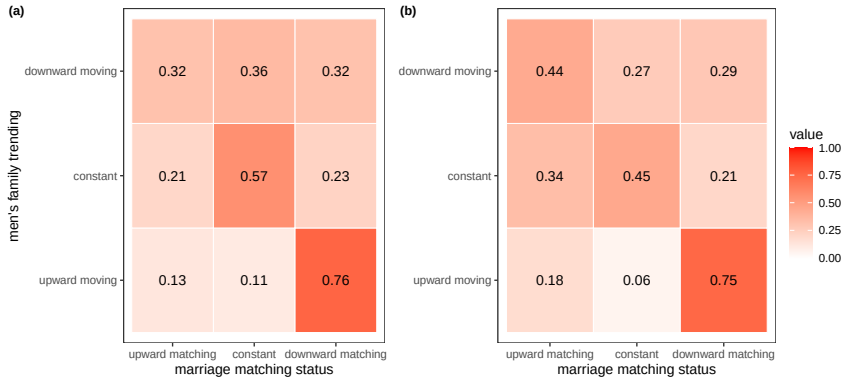
In contrast, when using official positions as the measure, the close relationship between the groom and father-in-law is predominantly observed in the lower and upper strata. If the father-in-law is a commoner, there is a 70 percent chance that the

groom will also be a commoner. Conversely, if the father-in-law is a high-ranking official, the probability of the groom attaining at least a middle-ranking official position is 79 percent. However, for fathers-in-law holding low- or middle-ranking official positions, there's a significant probability (around 30-40 percent) that their daughters will marry men without any official positions.

3.6.4.2 Influence of family trend

In addition to wealth and relatives, the overall trend of family status also influences marriage strategies. Marriage is less crucial to maintaining social status when kinship has an upward trend in social status. It is expected that grooms' families will place less emphasis on the family background of the bride when they are powerful, whereas choosing a wife from an influential family will be the dominant strategy when a family facing a downward trend.

Figure 3.13: Probability of Matching Under Various Situations



Notes :This table depicts the likelihood that males will marry up or down in certain conditions. The downward trend indicates that the social position of men's ancestors declined from grandfather to father. In downward matching, the social rank of the father of the man is higher than that of the father-in-law. N=2988. Status is measured by status score ranging from 1 to 56. Only third and fourth generations are included. In addition to status of fathers-in-law, panel b) used the averaged status of wife's family (including fathers-in-law and relatives)

Family trend is defined by the difference between fathers' and grandfather's social status. It is an upward trend if the difference is positive, a downward trend if it is negative, and constant if it is zero. Downward matching is defined as the situation where a father's social status is higher than that of a father-in-law; upward matching is when a father's status is lower than that of a father-in-law. Figure 3.13

illustrates the probability of matching under various scenarios, in which panel b) includes the social status of the wife's relatives.

Figure 3.13 supports the idea that marriage was used to ensure the reproduction of social status. When a family is on an upward trend, marriage and the background of the wife's family become less significant. The likelihood of a family finding a wife from a better family is only 13 percent, while the likelihood of having a wife with a lower social status is approximately 75 percent. In contrast, the probability of having a wife with a better family background increases to 32 percent when a family is on a downward trend. This number is even greater when relatives are considered.

3.7 Conclusion

Traditional Chinese marriages were determined by parents. This considerably enhanced the likelihood of sorting based on family background. There was even a proverb that says, "门当户对 (One should marry someone with a comparable background)". This paper quantitatively validates its reliability and quantifies the level of marriage assortment in terms of education and socioeconomic status. It demonstrates that the real extent of marital assortment is approximately two times greater than conventional estimation (0.8 vs. 0.4).

Besides, this paper reveals a unique characteristic of the Chinese marriage market. Despite the high rate of marriage matching, inequality in the marriage market is significant. Women with greater bargaining power in the marriage market frequently marry men from superior families. Concubinage, discouragement of women remarrying, and son preference are all contributing factors to this. The cultural preference for boys led to a relatively high probability of female infanticide, disordering the sex ratio in the marriage market. The cultural values of chastity and concubinage further limited the number of women available for marriage. Consequently, women of lower social standing were more likely to marry men of higher standing.

Finally, this paper extends our understanding of social mobility by considering the influence of marriage alliances. It shows that the social status of fathers-in-law and matrilineal relatives is positively correlated with that of grooms. This indicates either a strong sorting based on family background or a sharing of resources between two lineages based on marriage. Specifically, households at risk of social

decline utilized marriage as a way of maintaining social status. The correlations between social status of fathers-in-law or matrilineal relatives and that of grooms are stronger when males are marrying upward.

Chapter 4

Ethnic Similarities and Disparities in Intergenerational Mobility during the Qing Dynasty, 1614-1854

4.1 Abstract

By collecting lineage data from examination papers and constructing a comprehensive dataset spanning various ethnicities, this study delves into mobility patterns between the bannermen and the Han Chinese during the Qing era. It uncovers how the Qing state, through preferential policies favoring the bannermen, ensured the maintenance of their elevated social status over time. Specifically, the research reveals that bannermen exhibited higher levels of absolute mobility and multigenerational mobility compared to Han Chinese counterparts. Meanwhile, Han Chinese faced intense competition in examinations and bureaucratic systems, leading to lower rate of absolute mobility and a greater likelihood of downward multigenerational mobility. Despite these differences, both groups demonstrated similar levels of relative mobility, approximately 0.4. Additionally, the study examines family factors influencing ethnic similarities and disparities in mobility. Disparities in absolute and multigenerational mobility stem from the privileges afforded to bannermen in attaining high social standings. Conversely, Han Chinese employed strategies such as investing in education and forming marriage alliances, contributing to a comparable level of relative mobility and significantly increasing their probability of achieving elite status.

4.2 Introduction

Inequality and social mobility have long been under the spotlight. With the advent of more accessible historical data, researchers have recently been able to explore long-term social mobility trends across decades, generations, and ethnic groups (Jácome, Kuziemko, and Naidu 2021; Long and Ferrie 2018; Long and Ferrie 2013; Chetty, Hendren, Kline, et al. 2014). Scholars have increasingly recognized the significance of different demographic groups in relative intergenerational mobility (Chetty, Hendren, Jones, et al. 2020). For instance, Ward 2023 shows that American intergenerational relative mobility doubles after accounting for measurement error and the Black population.

Previous research on social mobility in premodern China has predominantly focused on the Han Chinese (Keller and Carol H Shiue 2023; Q. Jiang and Kung 2021; Carol H Shiue 2019). In this paper, I illuminate the disparities and similarities in generational mobility between bannermen (*baqi*) and Han Chinese groups during the Qing dynasty, when the minority Manchu population took power and enjoyed abundant privileges compared to the Han Chinese.[1] By investigating differences in family strategies, this paper implies that Qing state maintained a balance between the Han and Manchu elites through the examination system and the banner organization. Despite being a minority, the state provided the Manchus with privileges through a variety of channels to ensure their status. [2] Meanwhile, it provided Han Chinese avenues for upward mobility to ensure that inequality between Han Chinese and Manchus were under control, enhancing its control over Han Chinese.

The Qing dynasty was unique in that it was ruled by a minority group, the Manchus, who managed to control China for over two hundred years without losing their own ethnic cultural identity (Mark C Elliott 2001; Crossley 2021). After

[1] It is very important to distinguish between these terminologies. Manchus were the minority ethnic group from the north who later conquered Ming China. Bannermen (*baqi*) were Manchu's initial followers, which were composed by Manchus, Han bannermen, and Mogoals. Han Chinese were Chinese citizens who lived in China proper and governed by Ming state before Manchu's invasion. Although Han Chinese and Han bannermen were all Hans, they had distinct social status and political privileges. There is limited quantitative research about Manchus. James Z Lee and Feng 2001 applied records in Qing imperial lineage to investigate their demographic features. B. Chen, C. Campbell, and Dong 2018a investigate interethnic marriage in Northeast China.

[2] According to Mark Christopher Elliott, C. Campbell, and J. Lee 2016, the estimated population of the Banner in 1720 was between 2.6 million and 4.8 million. Among this population, Manchus make up around 22.2 percent, Han Chinese account for approximately 29.5 percent, Mongols account for 8.87 percent, and the remaining are bondservants. The Bannermen constituted between 1.36 and 2.53 percent of the overall population of the Qing dynasty.

entering central China and taking power, their initial followers, including Mogoals and some Han Chinese, were organized under an isolated social and military system known as the banner system. As the ruling class, bannermen received considerable preferential treatment to ensure their social status, primarily through military rewards and inheritance (Smith 2015, p117-210). With the Qing gaining control over Xinjiang, the frequency of wars significantly decreased, leading bannermen to rely more on inheritance, examinations, and civil positions to maintain their social status. However, regardless of the channels used, the Qing state introduced numerous policies to ensure the social status of the banner elite.[3]

Conversely, although the Han Chinese were the subjects, they constituted the majority of the population.[4] The Qing state governed the massive population with a small bureaucratic system. At the local level, considerable administrative tasks were handled by local gentry and county magistrates, who were Chinese. Bannermen typically hold official positions at the provincial level. Unlike bannermen, who easily obtained high status through various preferential treatments, Chinese increased social status by obtaining degrees and official positions, which were highly competitive.

This paper aims to explore the differences in social mobility between bannermen and Han Chinese under this unequal treatment. It compares the relative and absolute intergenerational mobility and multigenerational mobility between Han Chinese and bannermen. By showing a similar level of relative intergenerational mobility, it delves into why the Han Chinese accepted this inequality, particularly as the military power of bannermen waned. Furthermore, this paper is interested in the degree of inequality based on ethnicity. From the perspective of inequality of opportunity, it investigates factors contributing to the status gap between two groups and analyses the drivers of this disparity.

I constructed individual-level data collected from the civil service examination papers (朱卷, *Zhujuan*), which contained the genealogy of the candidate. I collected information from four generations of ancestors and their wives' fathers from

[3]Bannermen could take translation and civil service examinations to obtain degrees and lower-level official positions, which were considerably easier than the ones taken by ordinary Chinese citizens. In addition, the state implemented policies mandating an equal distribution of Manchus and Chinese for high-ranking government positions and exercising cautious discretion in the appointment of provincial administrators from both ethnic groups. See Smith 2015, p117-210

[4]Han people accounted for nearly 95 percent of the population in China proper. Smith 2015, p6

these candidates, from 1614 to 1854. The 1608 candidates finally resulted in 11,948 observations in total (5974 male observations from direct ancestors and 5974 male observations from their wives fathers). I assigned social status rank to individuals based on their degree, official position attainment, and publications. Social status ranges from 1 to 56, with 1 being the lowest level of social status, referring to no degree, no official position, and no publications. The detailed status table is shown in Appendix A Table A.3. Out of a total of 1608 lineages, 88 are classified as bannermen, leading to a total of 694 observations of bannermen, accounting for around 5 percent of the sample. They constitute between 1.36% and 2.53% of the entire banner population.

This study represents the first quantitative research investigating mobility between Han Chinese and bannermen. Previous research about bannermen has primarily focuses on Manchu's demographic features, ethnic identity, political institutions, and ruling strategies (James Z Lee and Feng 2001; Mark C Elliott 2001; Rhoads 2015; B. Chen, C. Campbell, and Dong 2018a; Crossley 2000; Waley-Cohen 2006). Under the Qing regime, it was commonly assumed that Manchu elites had a lower level of social mobility than Han elites. However, this paper challenges this assumption, indicating that Manchu and Han elites exhibit comparable levels of relative mobility, with the advantage of Manchu elites lying in absolute mobility. Specifically, the rate of relative intergenrational mobility for Han Chinese is 0.399 on average, while it is 0.445 for bannermen on average. Despite the various privileges enjoyed by bannermen, Han Chinese managed to transfer advantages through generations within existing institutions. The comparable level of relative intergenerational mobility indirectly explains why Han Chinese elite accepted subordination. Additionally, this paper explores the long-term mobility characteristics of Han Chinese and bannermen, revealing that bannermen have experienced higher levels of multigenerational mobility. The speed of their status convergence to the mean level is slower than that of Han Chinese elites. For instance, the three-generation correlations for bannermen and Han Chinese are 0.3 and 0.1, respectively.

The unexpected consistency in the level of intergenerational mobility and the noticeable difference in the level of absolute mobility between two groups is surprising, considering the preferential treatment of bannermen. This research delves

deeper into the examination of the elements that contribute to ethnic disparities in social rank, including social origins, marriage, wealth, and lineage heritage. The social origin of individuals is indicated by the degrees and official titles of their fathers. This paper considers relatives-in-law as an additional factor to fathers-in-law when examining the influence of marriage. Wealth is quantified by the number of wives and concubines one possesses. More precisely, it begins by examining the influence of these factors on the disparity in ethnic status. Next, analyzing the marginal effects of various factors on the likelihood of achieving elite status.

Without any controls, the average status gap between two groups stands at 14.38. However, after accounting for the social status of fathers, fathers-in-law, and wives's relatives, this gap substantially diminishes to 3.01. Notably, the social status of the wife's relatives emerges as the most significant contributing factor. Prior to controlling for the wife's relatives, the average status gap reduces from 14.38 to approximately 9.5 after considering the social status of fathers and fathers-in-law. This implies that family backgrounds such as parental status contribute to the reduction of the status gap between Han Chinese and bannermen, but with limited influence. The status gap further shrank from 9.7 to 3.01 after incorporating the influence of the wife's relatives. This underscores the pivotal role of marriage in mitigating status disparities between the two groups. Similarly, marriage mattered more for Han Chinese to obtain elite status than for bannermen. The probability of being elite increased from 0.2 to 0.35 after factoring in the social status of the wife's relatives. Nevertheless, there are minimal differences in the probability of attaining elite status among bannermen after controlling for various factors. This further emphasises the significance of marriage for Han Chinese compared to bannermen.

These findings enrich the current mobility literature on ethical differences by highlighting the different features of Chinese ethnic mobility. Chetty, Hendren, Jones, et al. 2020 shows that although black and white children have a comparable level of relative mobility, the average income rank of African Americans is around 12.5 percent lower than that of white people given parents at the 25th percentile and at the top 1 percent. The differences are caused by the fact that blacks have lower rates of upward mobility and a higher level of downward mobility than whites. Collins and Wanamaker 2022, on the other hand, investigates the evolution of black-

white differences in the transmission of labour market outcomes since 1880. They demonstrate large distinctions in mobility, where black children had considerable fewer chances of moving upward and a lower average income in every generation than white children from similar-ranked households. This paper suggests that, due to preferential treatment towards bannermen, they had significant advantages over Han Chinese. Nevertheless, the possibility of upward mobility was not completely restricted for the Han Chinese, as the Qing court provided avenues for advancement in administration through the civil service examination system. The Han Chinese took advantage of this opportunity and made every effort to maximise their chances of upward mobility. They utilised lineage networks, such as marital alliances, to optimise family resources and enhance the probability of acquiring degrees and government posts. Through substantial investments in education and a strong commitment to social networking, the Han Chinese population may achieve a degree of relative mobility that is comparable to that of the bannermen. Contrary to the Han Chinese, the bannermen, who were under the protection of the Qing state, were able to readily acquire the social standing that the Han Chinese elite sought after, and they were able to preserve this status for generations.

In addition, this paper contributes to another major debate in Qing history, the Sinicization of Manchus.[5] Conventional scholarship suggests that the Manchus were successful in governing China because they adopted Chinese culture and institutions (Ho 1967; Ho 1998). However, new evidence based on Chinese- and Manchu-language archives challenges the narrative of total assimilation (Evelyn S Rawski 1996; Mark C Elliott 2001; Crossley 2000). The New Qing history argues that it was the Qing difference that ensured its success. Research on this debate mainly focuses on military culture, ethnic identity, material culture, and the expansion and techniques of colonialism (Evelyn S Rawski 1996; Waley-Cohen 2006; Mark C Elliott 2001; Crossley 2000; Crossley 2021). This paper contributes to this debate from a new perspective, utilizing household-level data of Qing elites to investigate similarities and disparities in mobility between Han Chinese and bannermen. By examining elite family responses to Qing institutions, this paper argues that successful rule in

[5]The concept of "Sinicization" refers to the process by which non-Chinese ethnic groups in China adopt Chinese culture, language, and customs. The debate about Sinicization is that, despite being a non-Han ruling dynasty, the Qing state actively pursued Sinicization to integrate into Chinese society and gain the support of Confucian elites.

China was not contingent on maintaining differences but on efficiently utilizing various institutions. The Qing court adopted Ming dynasty institutions and culture to govern Han China while maintaining their own organization, the banner system, to govern bannermen. The civil service examination system provided Han Chinese elites with an effective way to ensure their interests in government, which cultivated a group of loyal official-scholars who supported the Qing court. Governing bannermen in a totally different institution, the Qing court maintained the privilege of bannermen. When necessary, the Qing court was willing to create new institutions to enhance control, such as the translation examination system for bannermen to increase their chances of maintaining or increasing social status after military rewards became less available. Institutions such as the civil service examination, translation examination, preservation of Manchu lifestyle, and the practice of ensuring the number of bannermen officials above provincial governments were all geared towards balancing power dynamics between Han Chinese and bannermen, ensuring societal stability, and preserving Manchu supremacy.

The Qing dynasty successfully attained political balance between the Han Chinese and bannermen, as well as between the central and local government powers. Bannermen maintained their social standing by implementing protective policies, whereas Han Chinese utilised education and marriage as means to optimise their family's resources, hence enabling successful intergenerational mobility for both groups. The Han Chinese elite utilised their superior knowledge in examinations and literacy to exclusively control the acquisition of degrees and low-ranking government positions. In order to ensure the successful transmission of benefits to future generations, these Confucian elites pledged their loyalty to the Qing court. Nevertheless, the transmission of benefits through examination from one generation to another within the Han Chinese elite is not as efficient as the guaranteed status enjoyed by the banner elite. The Han Chinese elite were ultimately unable to overtake the banner elite in the long term. Therefore, the banner elite had no concern that the Han Chinese would supplant their dominance in power.

The rest of the paper is organised as follows: Section II describes the background of the eight-banner organization, including their privileges and means of mobility. Section III provides the data this paper utilized. Parts IV and V describe

the methodology and the empirical results, respectively. Section VI and VII conclude.

4.3 Background

4.3.1 The Eight Banner system

The Eight Banner System is a military and social organization. Nurhaci (1559–1626), who was the ancestor of all Qing emperors, established this organization. This organization consists of three ethnic groups: the Manchus, Mongols, and Han Chinese. Each ethnic group had their own set of eight banners, for a total of twenty-four banners in the entire banner force (Mark C Elliott 2001, p40-43). Aside from its military nature, it also functions as a social entity, encompassing both banner soldiers and their dependents, which includes individuals of all genders and ages (Smith 2015, p54-5; Rhoads 2015, p18-9). Members of the system were known as "banner people". Based on Mark Christopher Elliott, C. Campbell, and J. Lee 2016, banner population in 1720 ranged between 2.6 million and 4.8 million, accounting for around 1.36 percent to 2.53 percent of the total population. This section will provide an overview of the Eight Banner organization, focusing on its military and social traits.

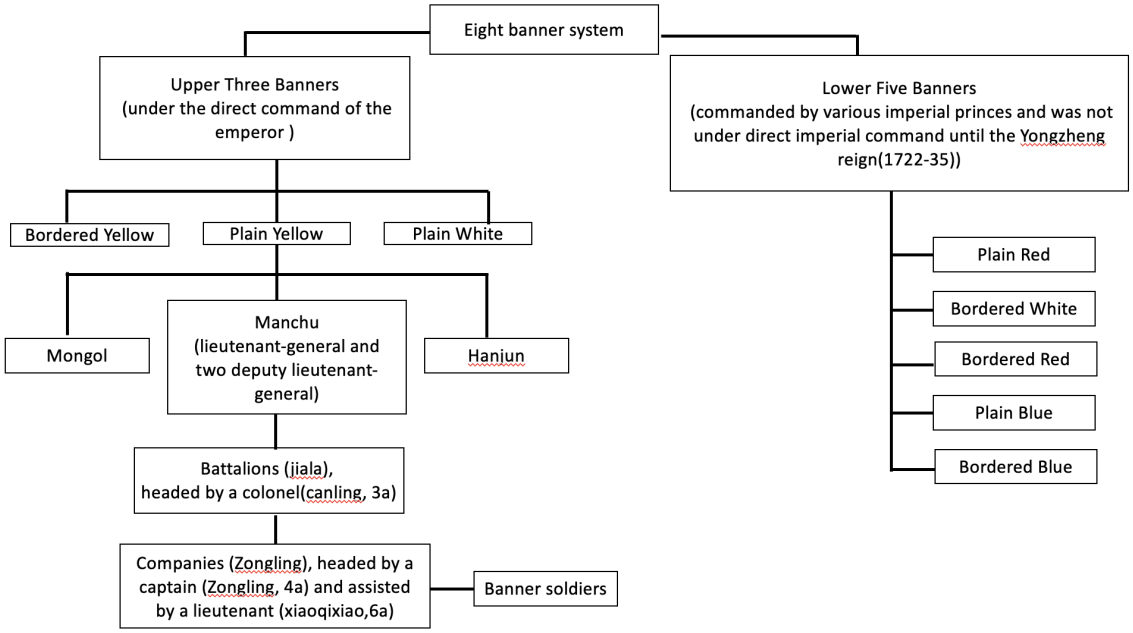
Following his conquest of eastern and northern Manchuria, Nurhaci established the Eight Banner system in 1615. Initially, Nurhaci organized all the scattered Jurchen tribes into eight "banners". As Nurhachi and Hong Taiji expanded their territory into the plains of southern Manchuria and western Manchuria, they defeated and enslaved increasing numbers of Mongols and Han Chinese (Mark C Elliott 2001, p59-60). In 1635, Hong Taiji established a separate Eight banner organization for Mongols residing in western Manchuria and eastern Mongolia. In 1642, The Han Chinese in southern Manchuria were incorporated into their own set of banners known as Hanjun (Mark C Elliott 2001, p59-60; Rhoads 2015, p18-9). The Manchus held the highest status and were the most prominent group inside the system. Hanjun held the lowest position, while the Mongols occupied an intermediate rank (Mark C Elliott 2001, p78-79). There was an additional group of people, bondservants, who had even lower social ranking than Hanjun.[6] Those owned by the emperor belonged

[6]Bondservants were slaves of banner households.

to the Upper Three Banners and were served in the palace. Those owned by various imperial princes belonged to the Lower Five Banners (Rhoads 2015, p20-23).

Each of the eight banners was identified by the colour of its flag, which was either "plain" or "bordered" and adorned with a red or white fringe. The social hierarchy of the banners was determined in descending order of importance: Bordered Yellow, Plain Yellow, Plain White, Plain Red, Bordered White, Bordered Red, Plain Blue, and Bordered Blue (Figure D.1 in Appendix D shows the pictures of flags). The first three banners, known as the Upper Three Banners, were directly under the emperor's control, whereas the remaining five banners, known as the Lower Five Banners, were initially under the command of various imperial princes and had a lower status than the Upper Three. Figure 4.1 shows the structure of the banner system, which exemplifies the military structure of the Plain Yellow banner.

Figure 4.1: Administrative Structure of the Eight Banner System



Notes : This figure illustrates the administrative structure of one banner within the Eight Banner system. Similar to the Plain Yellow banner, all other banners adhere to the same organizational framework. Each banner comprises Mongol, Manchu, and Hanjun banners.

As shown in Figure 4.1, each banner was commanded by a lieutenant-general (Dutong, rank 1b) and two deputy lieutenant-general (Fudutong, rank 2a). It was then organized into battalions (Jiala), which were further subdivided into companies. The battalions were headed by colonels (Canling, rank 3a). Companies were led by a

captain (Zongling, rank 4a) and assisted by a lieutenant (Xiaoqixiao, rank 6a). The number of companies within a battalion varied among the three ethnic components, with fourteen to nineteen in the Manchu banners, eleven to fifteen in the Mongol banners, and five to nine in the Hanjun (Rhoads 2015, p24-5).

There are three types of companies based on their location: outer, inner, and garrison. The outer companies, or Metropolitan Banners, were groups of regular banner units located in and around Beijing, totaling 1,147 companies. According to various estimates, the number of soldiers and officers in the Metropolitan Banners ranged from approximately 125,000 to 150,000 (Rhoads 2015, p26-7). The inner companies were comprised of bondservants and were located in Beijing, Zhili, and Fengtian, amounting to a total of 115 companies. Garrison companies were standardised military units stationed at multiple sites throughout the nation. Based on The Collected Statues of the Great Qing (Da-Qing huidian), there were a total of 817 garrison companies, which were distributed among 91 garrisons. Each company was assigned a quota of banner soldiers (qibing), who were the basic unit of companies and were distributed among various service branches.[7]

The Eight Banner System served as the primary institution that brought together the Manchu people and established their distinct identity. In addition to the banner soldiers, their wives, children, and other dependents were also included in the Eight Banner system. Membership in the system was hereditary (Elliott, 2006, p40). Women altered their banner affiliation upon marriage. The banners and companies served as crucial symbols of social identity for bannermen, similar in significance to the province and county for the majority of Chinese individuals. In addition, bannermen were allocated residences according to ethnicity and the colours of their banners, resulting in two residential features. First, different coloured banners were assigned to specific compass directions. Within the system, yellow branches were located in the northern area, white branches in the eastern area, red in the west, and blue in the south. For instance, bannermen belonging

[7]There were seven service branches. The Escorts (Qinjunying), Vanguard (Qianfengying), Guards (Hujunying), Light Cavalry (Xiaojunying), Infantry or Gendarmerie (Bujunying), Firearms Division (Huoqiying), Yuanmingyuan Guards, and Scouts (Jianruiying). They were ordered in prestige. The first five service branches were established by Nurhaci and Hong Taiji era. The last three were created in the early Qing. See Rhoads 2015, p26-27. Only Metropolitan Banners had all seven service branches. The provincial garrisons did not have Escorts and Guards. See Rhoads 2015, p29-31.

to the Plain yellow banner resided in the northern region of Beijing. Secondly, the Manchus, Mongols, and Hanjun banners resided in their own separate quarters. The sectors were categorised by colour and then subdivided into three districts depending on ethnicity. As a result, people of different ethnicity and colours resided in separate locations. Most garrisons in other places followed this residential arrangement.

4.3.2 The Differences between Bannermen and Han Chinese

While historians had consensus that Han Chinese assimilated the Manchus and the Manchus actively pursued "Sinicization", the Manchus made significant efforts to preserve their ethnic distinctions. First, the Manchus and Han Chinese were administrated separately, following the principle "separate government of banner people and civilians" (旗民分治). People belonging to the Eight Banners were officially classified as "banner people" and were seldom granted permission to leave their residences, whereas Han Chinese were generally registered as "civilian". Neither of the two groups had jurisdiction over the other (Ding 2003, p129). The Han Chinese were governed by the standard local administrative system, while the banner people were under the authority of their own officials (their leaders of companies and banners).

Second, the occupational choices of the bannermen and Han Chinese were different. The bannermen belonged to the military organization, the Eight Banner System, which excluded the Han Chinese. Their membership was both inheritable and permanent. When they were not soldiering, individuals were limited to pursuing either official posts or farming as their only employment.

Besides, there was a rigorous segregation between the residents of Manchu and Han Chinese (Mark C Elliott 2001, p99-101). As mentioned before, half of the banner population was hereditarily assigned to the Metropolitan Banners in Beijing. The rest were unevenly deployed among different garrisons (Mark C Elliott 2001, p93-95). The designated locality within the urban centre where the banner soldiers and their families resided was referred to as "Manchu cities". There were four types of Manchu cities, categorised based on their spatial relationship with the indigenous population. The first type is the attached twin city, referring to the Beijing Inner city, which was located outside but adjacent to the walled city where Han Chinese

resided. The second type is the detached twin city. It was a newly constructed walled city and was adjacent to but distinct from an existing walled city. The third type settlement, known as "intramural", was located within an existing Han city. The last and predominant type is the residential area that lacked complete enclosure by its own set of walls, instead sharing a portion of the larger Han city's external walls.[8] Banner people and Han Chinese had a living boundary that theoretically forbidden to cross.[9] They reside and engage in recreational activities within their respective territories. But Han Chinese were allowed to conduct various economic activities in Manchu cities. They engaged in trade, worked as labourers, and operated businesses such as shops, taverns, and pawnshops. Gradually, shopkeepers managed to gain admission into the Manchu cities, but the banner population was still dominated.[10]

Although the Qing code did not officially mention the prohibition of marriages between the Manchu and Han ethnic groups, it was a well-established practice since the Kangxi dynasty (Du 2008, p537-540; Rhoads 2015, p35-8) This restriction predominantly affected bannerwomen. Bannermen could marry Han women without constraints. Exceptions existed in Manchuria, where individuals in Manchus, Mongols, and Han banners were allowed to intermarry. Consequently, the banner people were not only spatially but also socially isolated from the Han.

Furthermore, the Qing emperors upheld their unique culture by adopting "the Manchu way", which was the use of national speech and a lifestyle of mounted archery (Mark C Elliott 2001, p8). The National speech during the Qing period was Manchu. Schools were established for banner youth to learn Manchu. Translation examinations were institutionalized to screen officials (Rhoads 2015, p42-44). Soldiers and officers took an oral examination in the Manchu language every five years. High performers receive bonuses, rewards, and other material benefits. Individuals who demonstrated incompetence were subjected to penalties. Nevertheless, decreasing usage of the Manchu language among the banner people is unavoidable and accelerated after the eighteenth century. For instance, by the late nineteenth century, only approximately one percent of the Manchus residing in the Hulan banner

[8] More details and examples of the Manchu cities see Mark C Elliott 2001, p100-110

[9] The regulations vary across regions. In Beijing, non-banners could visit the Inner City but not dwell there. While in Zhenjiang, Han Chinese were forbidden to enter. See Rhoads 2015, p38.

[10] The banner people account for 54 percent of the 414,528 residents in the Inner City in Beijing, 53 percent of the households in the Manchu City in Chengdu, and 64 percent in Xi'an. Rhoads 2015, p38-9

of Heilongjiang province could read Manchu. Archival records indicate that most banner officials exclusively wrote in Manchu in the early Qing period. However, there was a gradual transition in the mid-Qing period, when they began to write in both Manchu and Chinese. Eventually, by the late Qing period, they exclusively wrote in Chinese (Rhoads 2015, p53-4).

On the other hand, maintaining the traditional Manchu lifestyle, mounted archery, is another core attempt. The Manchus have regarded horsemanship and archery as the core essence of their culture. Both banner soldiers and ordinary bannermen were expected to possess the skills of horsemanship and bowmanship. Mounted archery was incorporated into the standard curriculum for students at banner schools. The training of banner soldiers primarily revolved around the mastery of horse riding and archery. Those skills were practiced on a regular schedule. Similar to the effort in maintaining Manchu language, the effort of maintaining traditional mounted archery encountered obstacles. The common bannermen abandoned their traditional way of life and shifted their attention towards non-military pursuits, such as raising birds, collecting pigeon whistles, and singing Beijing opera (B. Zheng et al. 2018). The effectiveness of banner army likewise diminished as the traditional mounted archer lifestyle waned. After the conquest of Xinjiang in the 1750s, the final military engagement in which banner soldiers constituted the majority force, the Qing government increasingly relied on non-banner armies. Initially, the Army of the Green Standard (Hanjun) was employed, followed by locally raised militias and, ultimately, regional Han armies.

4.3.3 The Privileges of Bannermen

Bannermen, as conquerors, enjoyed numerous privileges from multiple perspectives in comparison to their Han subjects. While the policy does not explicitly discriminate against the Han Chinese or favour bannermen, the preferential treatment given to bannermen has led to an unequal status for the Han Chinese in terms of their legal, political, and economic standing. Bannermen were exempt from the jurisdiction of Han officials. Even if they were found guilty, they received less punishment compared to a Han individual. They were not even obligated to kneel before the magistrate.

Politically, they received advantageous treatment in the process of recruitment,

appointment, and tenure. Unlike the Han people, who enter the government mainly by passing the civil examination system and buying degrees and positions, bannermen had a wide range of avenues for entry. Talented bannermen could participate in the regular civil service examination, which allocated separate and more generous quotas specifically for them. Except for the degree of prefix fanyi (fanyi Jinshi), bannermen could also take a separate translation (fanyi) examination to obtain degrees that were equivalent to those obtained through the standard civil examination. This examination was significantly less challenging and specifically targeted bannermen. Thus, it was less competitive compared to the regular literary examination, resulting in a passing rate that was several times higher than that of the civil examination. If bannermen encounter difficulty with the examination, they could take another translation examination that qualified them for employment as low-ranking metropolitan officials known as Manchu-language scribes (笔帖式). Finally, bannermen could secure official posts either through their fathers' inherited yin privileges or by purchasing degrees or positions.

Bannermen, especially the Manchus, were granted exclusive rights in the appointment of positions. The Qing government adhered to a policy of maintaining a balance between Han Chinese and other ethnic groups in the metropolitan administration (Smith 2015, p117-210). Half of high-ranking jobs were, therefore, allocated to individuals from imperial clans, Manchu bannermen, Mongol bannermen, Hanjun, and bondservants of the Upper Three Banners. Although this rule did not extend to the provincial and local levels, posts in the highest two ranks of the provincial administration were still informally divided between Han and the Manchus. The appearance of the Manchus declined as the post declined in significance. Banner officials accounted for approximately 60 percent of the civil officials in the central government (B. Chen 2019). Twenty-one percent of prefectorial officials were Manchus (Rhoads 2015, p47-48).

Economically, bannermen were treated preferentially over Han. Despite the fact that banner people could only be officials, soldiers, and farmers, banner soldiers received regular stipends and subsidies from the state to sustain their families and dependents, primarily in the form of silver and grains (Ding 2003, p194-7). Monetary grants were provided to cover the expenses of their weddings and funerals.

However, it has been pointed out that a significant number of banner people were living in poverty by the nineteenth century (B. Zheng et al. 2018). This is due to the failure of the banner system to grow proportionally with the growing banner population. There were limited employment opportunities for them. By the late Qing, only around one in ten bannermen could become a banner soldier (Rhoads 2015, p49).

4.3.4 Mobility Channels for Bannermen

Unlike Han Chinese who barely obtained hereditary positions and achieved mobility mainly through passing the civil service examination, bannermen had various ways of mobility, including military rewards, examinations (normal and translation examinations), inheritance, and purchases. Bannermen had a unique channel of upward mobility.[11] They could obtain hereditary military positions and hereditary noble positions through military achievements, family background, and loyalty. Members of the imperial clan automatically obtained noble titles based on the proximity or remoteness of branches and familial relationships within the imperial lineage. Ordinary bannermen obtained hereditary military positions and noble titles mainly through military accomplishments.[12] This part will discuss the three primary means of mobility of bannermen.

4.3.4.1 Examination

As mentioned before, the Qing state allowed bannermen to obtain official positions through passing translation and the civil service examinations. The state established official Manchu schools to educate banners (Smith 2015, p114). It was the main source of administration officials. Once enrolled for a specified period of time (typically ten years), pupils are required to pass translation examinations. Individuals who demonstrate exceptional performance will be designated administrative

[11] The rule of inheritance of hereditary noble title and military positions is carefully discussed by Lei 2006.

[12] Military positions within the Manchu Eight Banners were typically obtained through the bestowal of noble titles (世爵). The promotion of hereditary noble titles and military positions was closely tied to an individual's performance in both military and political fields. Success in military campaigns or exceptional service in administrative roles could contribute to the elevation of noble titles and military positions (Lei, 2006, p63-65). For more information of mobility through noble titles and military positions see Lei 2006, chp2 and 3.

positions, such as clerks and grand secretariats.[13] The examination was conducted annually. Those who failed the exam will resume their studies in preparation for the next year exam.

Descendants of Eight Banners Nobilities have their own educational institutions dedicated to the instruction of mounted archery and the Manchu language. Following three years of study, they will be required to sit an examination. Those with first class will be assigned as imperial guards (侍卫, rank 3a-6a) or runners (行走). Second class students will become runners of their banners. Third class students continue their study until they gain first or second class.

In addition to participate the translation examination, bannermen could also take the civil service examination to obtain licentiate and *juren* degrees. Their exam, however, is distinct from that of Han Chinese, which had a different quota and was considerably simpler.

4.3.4.2 Military Rewards and Imperial Appointment

Positions under deputy lieutenant-general (Fudutong, rank 2a) were recommended by general and deputy lieutenant-general. The emperor held the authority to nominate merit Manchu officials from the central government as generals in the region. The emperor makes the final decision after the Ministry of War has nominated a number of officials.

Except imperial appointment, the primary and direct means by which common bannermen acquired official positions and promotions was through their performance on battlefields. Three factors were considered when granting positions. Being the first to attack is the first criteria, often achieved by leading a group to board ships or assaulting a city. The significance and magnitude of the city being conquered is the second criteria (Lei 2006, p67). Finally, merit certificate was awarded to individuals as a recognition of valour on the battlefield. With certain amount of merit certificates, individuals could entitle corresponding noble titles or military positions.[14]

[13]Most of bannermen hold position of Bitieshi (笔帖式), which was one of the exclusive positions for Manchu officials during the Qing Dynasty. The primary responsibilities of this position included translating memorials and documents between Chinese and Manchu language, copying official documents, annotating, and proofreading memorials written in both Chinese and Manchu language

[14]There are two types of merit certificate. The first type is Direct granted merit certificates, which

4.3.4.3 Inheritance

The inheritance traditions are different for imperial descendants and non-imperial lineages. The sons of princes do not automatically inherit the same rank as their father's titles. The titles were diminished by one rank as it passed down to each subsequent generation. Once demoted to a specific noble title, it became permanently inherited by subsequent generations.[15] Table D.1 in Appendix D demonstrates the imperial Nobel titles. However, descendants of the 12 princes, who were called the "iron-cap princes", were awarded the privileges of perpetual heritability (世袭罔替). Their titles can be inherited by subsequent generations without downgrading. Not all sons of princes have equally right of inheritance. The order of birth will be the determinant. For example, first son of legitimate wife or primary consort will inherit a title one rank lower than his father. The remaining sons could obtain hereditary titles or military positions by passing translation and equestrian archery examinations (Lei 2006, pp. 63–5).

For non-imperial bannermen, only titles that have been passed down through fifteen generations are inherited perpetually (Lei 2006, p134-6). The duration of inheritance depends on the rank of the titles, with higher titles being inheritable for more generations. For example, the title of Yunqiwei (云骑尉) could be only inherited once, while the title of third class Baron could be inherited for up to eight generations. Table D.2 in Appendix D showcases the non-imperial Nobel titles.

4.4 Data

This paper uses the Compilation of Civil Examination Essays in Qing China to construct a unique dataset of Chinese elite group.[16] The exam essays comprise the

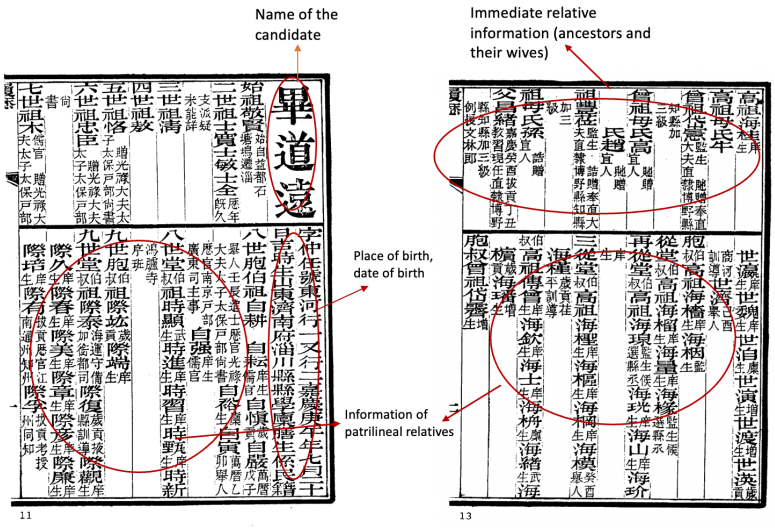
could be directly used for granting titles and positions. This certificate further categorized into two certificates: "leading the masses merit certificate" and "naval battle and boarding certificate". The second type is accumulated granted merit certificate. It was categorized into "Banner's advance merit certificate" and "ordinary merit certificate". An accumulation of three first-class "Banner's advance merit certificate" will be eligible for hereditary titles or positions. Lei 2006, p73-5. Further details see Lei 2006

[15] Four generations for direct imperial princes with Eight Privileges. For direct imperial princes without Eight Privileges, they could inherit the tile without downgrading after they become General Who Receives Grace (奉恩将军). The Eight Privileges includes many privileges, encompassing clothing, residence decoration, types of transportation, residence specifications, and the right to enter the imperial palace.

[16] Data source:Gu 1992

candidate's pedigree, including the status outcomes of ancestors, the social class of their wives, and the social outcomes of agnates (See Figure 4.2).

Figure 4.2: Example of Examination Paper



Notes : This figure is an example of an examination paper for the candidate 毕道远. It contains three main sections of information. The first section provides his personal details, including his name, place and year of birth, current degree or official positions, and registration status. The second section details his direct ancestors, spanning ten generations. It includes their degrees, official positions, and the social status of their wives' fathers and relatives. The third section documents information about his relatives within the lineage, including their degrees and official positions.

4.4.1 Civil Examination Essays (Zhujuan)

There are five key characteristics of the pedigree presented in examination essays. First, it is the lineage's long-term temporal records, which contain information on five or more continuous generations. Unlike censuses or household surveys, pedigrees do not suffer from the difficulty that each household or individual cannot be tracked throughout censuses (Carol H Shiue 2017). It is not a cross-sectional data but a panel data of 1608 lineages. Candidates represent the most recent cohort. The earliest generation within a lineage could be traced back to the 16th century.

Secondly, the achievements stated in pedigrees are lifetime outcomes, which could be considered as the greatest personal accomplishment. This eliminates the difficulties associated with censuses and household surveys, which both assume that information obtained during registration is the lifetime outcome. This assumption will lead to errors when we calculate intergenerational mobility (Ward 2023).

Providing inconceivable diversified individual and household data throughout a vast region of Qing China is another uniqueness of pedigree in exam essays (Zhujuan). Traditional genealogies record information on a long-run temporal scope, which covers 10 or more than 20 continuous generations. A genealogy could contain over 50,000 individuals and represent the residents of a single village. Most studies of genealogies, therefore, are concentrate on a specific area.[17] In contrast, exam participants came from a variety of provinces, considerably diversifying the data pool. It includes lineages from all 18 Qing provinces and its distribution is consistent with the distribution of Jinshi degree holders within China. Zhejiang, Jiangsu, and Zhili were the main areas producing jinshi degree holders.

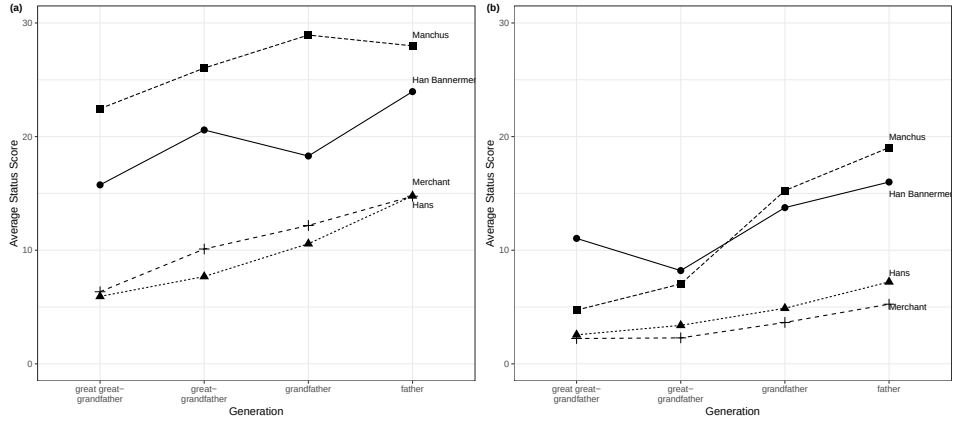
Moreover, as a condensed version of traditional genealogy, pedigrees in exam essays offer additional vital information, such as the family background of the wife, in addition to the basic information already included in traditional genealogies. In traditional genealogies, wife's information is limited to the place of birth, surname, and vital statistics (date of birth). While in exam essays, candidates carefully included their father's and agnates' degrees and official positions. This allows us to examine assortative mating by comparing the family background of the grooms and the brides.

Finally, this dataset comprises families with various ethnic backgrounds. 88 families in our sample of 1608 families are Han bannermen or Manchus. Within the dataset, there are 5974 observations, with 5627 being Han Chinese and 347 representing male bannermen. Ethnic nature is as significant as relatives' information. As a result of a variety of preferential treatment accorded to bannermen, their social standing differs significantly from that of Han Chinese. Figure 4.3 shows the average social status of individuals across generations for both the Han Chinese and bannermen. Panel a) compares social status from the groom's family, while panel b) contrasts the status from the bride's family. A notable distinction emerges in the social standing of Han Chinese and bannermen, with the former exhibiting a considerably lower average social status than the latter. Specifically, the average social status of Manchus across generations is approximately 28, whereas Han Chinese have an average of only 10. The gap between bannermen and Han Chinese is

[17] Carol H Shiue 2019 investigates the demographic characteristics of Anhui, which is a province in the south of China. Mare and Song 2023 analyse data from imperial lineages.

slightly small from the bride's family, which is around 10. This information affords us a valuable opportunity to compare and quantify in depth the development of families with diverse ethnic backgrounds. Table D.3 in Appendix D further details the population size of bannermen for reference.

Figure 4.3: Average Social Status among Various Groups



Notes : Panel a) compares social status from the groom's family, while panel b) contrasts the status from the bride's family. I categorize samples based on generations. Gggfather refers to great great-grandfather; ggfather is great-grandfather; and gfather is grandfather.

4.4.2 Construction of Dataset

I obtained the metropolitan examinations candidates' exam essays between the year 1799 and 1904. There are a total of 1608 candidates, meaning 1608 lineages are observed. Among these clans, the 1608 jinshi candidates were excluded from the analysis. They are merely the intermediators of observing these lineages. I collect four generations' lifetime outcomes for each lineage, totalling 6092 individuals. In addition, the social status of their wife's fathers and relatives is collected for estimating the level of marital matching. Among the 1608 lineages, 88 are banner families. In total, I have 11,948 observations, including men and their father-in-law. Among these observations, Han Chinese account for 94 percent and bannermen account for 6 percent. Our bannermen sample accounts for around 0.02 percent to 0.03 percent of bannermen population. Han Chinese sample account for 0.01 percent of Han population. Both samples represent the elite group (see Table D.4 in Appendix D).

Unfortunately, only the candidates' date of birth is available. I have to estimate the date of birth for each generation by assuming that the average fathers' age

at childbearing was approximately 30 years old.[18] By deducting the birth years of candidates by 30, I get their fathers' birth years. Using the same logic, I obtained the birth year of each generation. For instance, a candidate participated in the metropolitan examination in 1841 at the age of 31. According to this, the estimated years of birth of his father, grandfather, great-grandfather, and great-great grandfather were 1780, 1750, 1720, and 1690, respectively. The estimated birth years of 6081 individuals from 1608 lineages were between 1498 and 1824.

Regarding the measuring of social status, sociologists and economists have investigated intergenerational mobility through various methods. Sociologists attempt to exam it via socioeconomic status, while economists concentrate on intergenerational elasticity (IGE). The primary proxies for intergenerational mobility are income, education, and social status (Blau and Duncan 1967; Gary S. Becker and Tomes 1979).

There is no consistent way for measuring socioeconomic rank in the social mobility of imperial China. Carol H Shiue 2019 and Chetty, Hendren, Kline, et al. 2014 use the rank percentile of positions. Hao 2021 followed Clark and Cummins 2015 in measuring social mobility using rare surnames. Yang 2022 constructed an occupational structure based on occupations observed in the late imperial China (Chetty, Hendren, Kline, et al. 2014; Carol H Shiue 2019; Hao 2021; Clark and Cummins 2014; Yang 2022).

Due to the absence of income data and specific occupations for members of those families, this paper constructs a status score based on the degree level and official titles. Following Ho 1962 and Carol H Shiue 2019, I divide people into five categories based on their official positions: 1) commoners (men without degree and official position); 2) men with a degree but without an official title (including men with an expectant official position); 3) men with a low-ranking official position; 4) men with a middle-ranking official position; and 5) men with a high-ranking official position. Men were further ranked within each category based on their degree level and official rank. The status score ranges from 1 for lowest to 56 for highest status.

The degree and officials are categorised into four groups ranging from 0 to 3

[18] The average age of having a first birth for fathers in China increased from 20 – 25 to 23 – 25 between 1680 and 1840. The father's mean age at last birth dropped from 40 to 35 Feng, J. Lee, and C. Campbell 1995.

for the transition matrix. Zero represents commoners, one refers to licentiates, two is juren or kong-sheng, and three is jinshi. For officials, commoners, who have the lowest status, are represented by the number 0, and high-ranking officials are marked as 3.

Table 4.1 contains summaries of the statistics for Han Chinese and Bannermen. First, bannermen and Han Chinese samples are comparable. There are no significant differences in sample distribution in terms of average socioeconomic status, degree, official positions, and number of wife and concubines (the distribution of status scores for fathers and sons is provided in the Appendix Figure D.2 and D.3). Secondly, the average social standing of Bannermen is approximately 15 points greater than that of Han Chinese. Han Chinese had a higher level of average degrees, while bannermen had a higher level of official positions on average. This feature applies to the fathers-in-laws and relatives of their wives.

4.5 Methodology

4.5.1 Intergenerational mobility

I apply the conventional model to estimate correlations between a parent's status $y_{f,k}$ and a child's status $y_{s,k}$ in ethnic group k, as shown in Equation 4.1. α_k measures the absolute mobility for children given their father holds the lowest social status. β_k measures relative mobility. Giving the average rank of father's social status $y_{f,k}$, β_k is the correlation between average social status of children and average status of father for ethnic k, which measures the relative mobility.

$$y_{s,k} = \alpha_k + \beta_k y_{f,k} + \epsilon_k \tag{4.1}$$

I am interested in whether there are any differences in relative and absolute mobility between bannermen and Han Chinese. Since the Qing dynasty was a Manchu-led state, Han Chinese were the subjects and bannermen were in dominate and had higher social status in various perspectives. Consequently, bannermen elite had a higher level of absolute mobility ($\alpha_B > \alpha_H$). Figure 4.4 compares the average social status between Han Chinese and bannermen across generations. There is a continues gap of social status between bannermen and Han Chinese, implying a difference

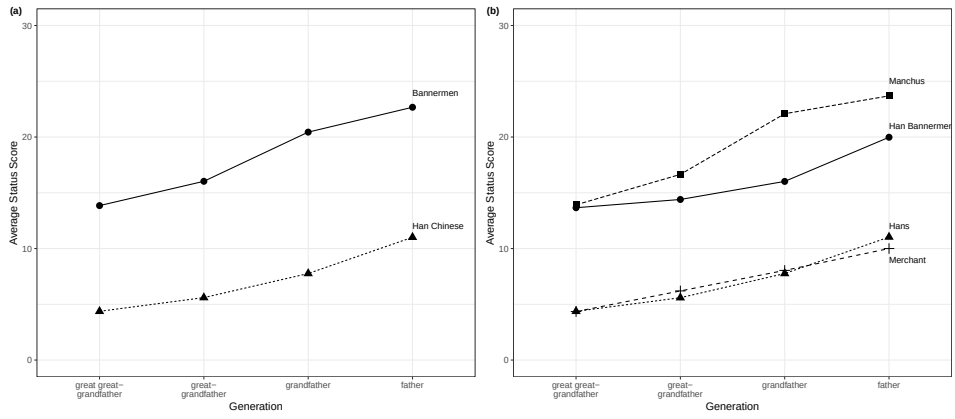
Table 4.1: Summary of Statistics

	N	Mean	St. Dev.	Min	Max
Han Chinese					
Men's information					
Status score of Han Chinese	5,627	9.81	13.41	1	56
Degree	5,627	0.92	0.90	0	3
Position	5,627	0.58	0.89	0	3
Number of wife	5,627	1.31	0.61	0	5
Number of concubine	5,627	0.13	0.44	0	5
Fathers − in − law's information					
Status score of fathers-in-law	5,627	4.58	9.01	1	56
Degree	5,627	0.41	0.72	0	3
Position	5,627	0.25	0.63	0	3
Relatives of first wife					
Total status score of relatives	1,566	40.51	49.17	2	448
Number of recorded relatives	1,566	3.12	3.09	1	32
Number of degree holders	1,566	2.39	2.69	0	31
Number of officials	1,566	1.56	2.00	0	16
Bannermen					
Men's information					
Status score of Baqi	347	24.55	19.44	1	56
Degree	347	0.54	0.97	0	3
Position	347	1.46	1.15	0	3
Number of wife	347	1.39	0.70	0	6
Number of concubine	347	0.12	0.45	0	4
Fathers − in − law's information					
Status score of fathers-in-law	347	11.81	17.85	1	56
Degree	347	0.16	0.56	0	3
Position	347	0.65	1.06	0	3
Relatives of first wife					
Total status score of relatives	92	54.28	42.65	3	200
Number of recorded relatives	92	1.93	1.54	1	11
Number of degree holders	92	0.65	1.28	0	9
Number of officials	92	1.59	1.38	0	7

Notes : The summary of the statistics is displayed in this table. The status score has a range of 1 to 56. The degree and positions span from 0 to 3.

in absolute mobility. From generation great great-grandfather to generation father, the gap of their social status is around 10 points. Panel b) of Figure 4.4 further separates Han Chinese into Hans and merchants and bannermen into Han bannermen and Manchus. Within the banners, Manchus had higher social status than Han bannermen. This supports the idea that even within banners, the preferential treatment was presented towards Manchus. In contrast, the social status of merchants and Hans are comparable.[19]

Figure 4.4: Comparison of Average Status Score between Han Chinese and Bannermen



Notes : This figure compares the average social status between Han Chinese and bannermen. Observations includes 1608 candidates' four generations ancestors and these ancestors' father-in-law. Panel b) further separates the sample into Han bannermen, Manchus, merchants, and Hans. Hans refers to Chinese citizens who are not bannermen, including people with various occupations and ethnic backgrounds.

However, even though bannermen enjoyed significant preferable treatments in obtaining degrees and positions in officialdom, large amount of Han Chinese obtained upward mobility through the civil service examination. As shown in Table 4.1, the average degree level of Han Chinese is 0.92, while it is 0.54 for bannermen. The Qing state gradually relied on Han Chinese in later era, especially after the Taiping rebellion. Therefore, it is possible that Han Chinese had a higher level of relative intergenerational mobility ($\beta_H > \beta_B$). Given the fact that bannermen elite had a higher level of absolute mobility, there are three scenarios: 1) the relative mobility

[19]In this paper, I use Hans to refer Han Chinese, who are not bannermen. It composed individuals with different occupations, such as merchants, peasants, and people worked in salt industry. In Chinese administration system, individuals with various linguistic, cultural, ethnic, or regional features in China proper were all categorized as Han Chinese. For instance, the sub-groups of Han Chinese include Hakka-speaking groups, Min-speaking groups, and Yue-speaking groups. Details see Gernet 1996, p5-12. Servants and declassed people are excluded.

of Han Chinese is higher than that of the bannermen ($\beta_H > \beta_B$); 2) the relative mobilities of two groups are same ($\beta_H = \beta_B$); 3) and banners had a higher level of relative mobility ($\beta_H < \beta_B$). If the level of relative mobility of Han Chinese is considerably higher than that of bannermen ($\beta_H < \beta_B$), Han Chinese families will have a chance to surpass bannermen elite families within a generation.

In the long run, if the multigenerational mobility follows the Markov process, under scenario three ($\beta_H < \beta_B$), Han Chinese will be able to ensure this advance across generations. However, as many studies have shown that multigenerational mobility does not follow Markov process, the long run trending of social status between Han Chinese and bannermen is unclear (Lindahl et al. 2015; Long and Ferrie 2018; Braun and Stuhler 2018). There are also three scenarios: 1) the multigenerational mobility of Han Chinese is higher than that of the bannermen ($\beta_H^n < \beta_B^n$); 2) two groups' multigenerational mobilities are same ($\beta_H^n = \beta_B^n$); 3) Han Chinese have a lower level of multigenerational mobility than that of bannermen ($\beta_H^n > \beta_B^n$).

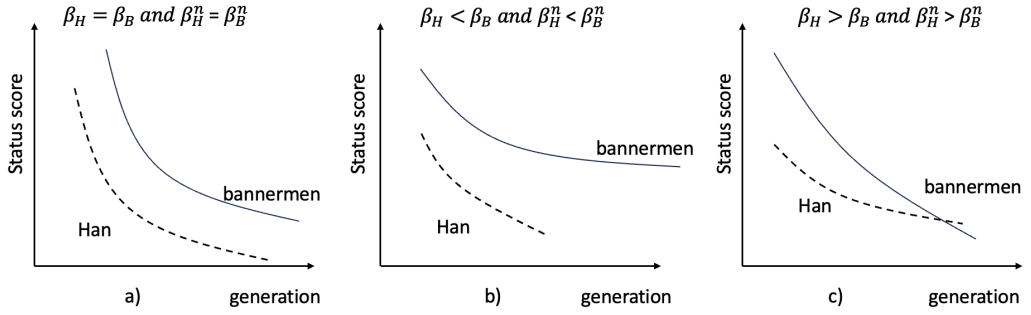


Figure 4.5: Three scenarios of long-term trending of two groups

Notes : This figure demonstrates three scenarios of long-term status trending between two groups. β captures the level of intergenerational mobility. β^n measures the level of multigenrational mobility. With different combination of intergenrational and multigenerational correlations, we will have various scenarios of long-term trending.

The combination of same intergenerational mobility and multigenerational mobility of two groups will result in Figure 4.5 panel a), where ($\beta_H = \beta_B$) and ($\beta_H^n = \beta_B^n$). The combination of different intergenerational mobility and different multigenerational mobility will lead to several different situations. For example, one of the combinations ($\beta_H < \beta_B$) and ($\beta_H^n < \beta_B^n$) will result in Figure 4.5 panel b). Under both scenarios, bannermen would maintain advantages through generations.

If it is the combination of ($\beta_H > \beta_B$) and ($\beta_H^n > \beta_B^n$) , Han Chinese will have a change to surpass bannermen in later generations, as shown in Figure 4.5 panel c).

4.5.2 Factors Influencing Ethnic Disparities

To further understand factors contributing to mobility gap between two groups, this paper utilizes the ordinary linear square regression (Equation 4.2). Meanwhile, the Probit model is applied to investigate how family factors affect the probability of being upper elite. I take into account the social status of fathers-in-law, the educational and officialdom attainment of paternal and maternal father, the wealth of family which is measured by the number of wives and concubines, and the influence of maternal family, which is measured by the social status of maternal relatives.

$$y_{i,s} = \alpha_i + \beta_f * y_{i,f} + \beta_b * bannermen_i + \beta_{b,f} * bannermen_i * y_{i,f} + \gamma X_i + \sigma_i \quad (4.2)$$

where $y_{i,s}$ is the social status of son, $y_{i,f}$ is father's social status, $bannermen_i$ is an indicator of being bannermen, X_i is a set of variables including the social status of fathers-in-law, the degree and official position of father and father-in-law, the number of wives, the number of concubines, and the social status of maternal relatives. Under this specification, the intergenerational gap of social status between the Han Chinese and the Bannermen at a given status is:

$$\Delta = \beta_b + \beta_{b,f} y_{i,f} \quad (4.3)$$

I intend to investigate how Δ varies when a set of familial factors are accounted for.

In addition to the general influence of family factors on intergenerational gap of social status between different ethnics, I am especially interested in how family factors affect the probability of being upper elites. Therefore, I examine the effect of each factor on the likelihood of achieving upper elite status for the Han Chinese and Bannermen by using the format presented below:

$$p_{i,upp} = \alpha_i + \beta_b * bannermen_i + \beta_f * y_{i,f} + \gamma X_i + \theta_i \quad (4.4)$$

where $p_{i,upp}$ is a binary variable and 1 means that the individual is an upper

elite. Individuals with a social status of 24 or higher are defined as belonging to the upper elite. In other words, those who hold at least the 7th official position will be considered as upper elite. The right side of the equation contains the identical variables as Equation 4.3.

4.6 Empirical Results

4.6.1 Intergenerational Mobility by Ethnic

In this section, I characterize the evolution of racial disparities across generations using the framework in Section IV. I begin by estimating relative and absolute intergenerational mobility α and β for each racial group using the specification in Equation 4.1. I measure father's and son's status using status score, which is based on degree and official position.

Table 4.2 displays the intergenerational correlations in each generation for Han Chinese and Baqi group separately. For Han Chinese, the averaged estimated intergenerational correlation is around 0.399. A 10 points increase in father's status score is associated with a 3.99 points increase in son's social score. The relationship between son and father's status varied across generation. The correlations between great grandfather and grandfather is highest, which is 0.445 and is approximately 33 percent higher than that between father and grandfather. For the Baqi group, the rates of intergenerational correlations are comparable to Han Chinese, but there is no trend across generations. The averaged β for Baqi group is 0.43, which is slightly higher than that of Han Chinese.

In addition, the Baqi group has higher rates of absolute mobility than Han Chinese. The average social score of bannermen given the lowest level of father's status (social status =1) is 17.39 for grandfather-father generation. Whereas it is 11.53 for Han Chinese with father at lowest level status, 33.7 percent lower than bannermen whose father was at the same status. For earlier generations, this gap is even higher. This means that a man whose father has the lowest social status will automatically have higher social status if he is a bannerman as opposed to a Han Chinese.

Table 4.2: Comparison of Persistence among Ethnic Groups (Status Score)

	Han			Baqi		
	father	grandfather	great grandfather	father	grandfather	great grandfather
Status of Grandfather	0.334***			0.379***		
	(0.026)			(0.092)		
Status of Great Grandfather		0.445***			0.487***	
		(0.030)			(0.090)	
Status of Great Great grandfather			0.420***			0.344***
			(0.031)			(0.097)
Constant	11.198***	7.150***	5.414***	17.015***	14.078***	17.501***
	(0.469)	(0.419)	(0.356)	(2.972)	(2.833)	(2.864)
Observations	1,460	1,461	1,354	88	88	83
Adjusted R^2	0.099	0.132	0.117	0.154	0.243	0.122

Notes :This table displays Han and Baqi intergenerational correlations. In general, they have comparable rates of relative mobility. The rates of intergenerational mobility of both categories is roughly 0.40. The Baqi group has higher rates of absolute mobility than Han Chinese. The average rates of absolute mobility are 16.2 for the Baqi group and 7.92 for Han Chinese. This means that a man whose father has the lowest social status will automatically have twice the social status if he is a bannerman as opposed to a Han Chinese. However, as the Baqi group is constituted of Manchu, Mongolian, and Han bannermen, it is possible that the Han bannermen are responsible for this similar correlation. I further subdivided the baqi into Manchu and Han bannermen and analysed their intergenerational correlations independently. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

4.6.2 Multigenerational Mobility by Ethnic

So far, it has been demonstrated that bannermen exhibited a greater degree of absolute intergenerational mobility while maintaining a similar level of relative mobility in comparison to Han Chinese ($\alpha_H = \alpha_B$ and $\beta_H = \beta_B$). I further use the regression to calculate multigenrational moblity of both groups. The correlations between Han Chinese and bannermen at the one, two, and three generational correlations are displayed in Table 4.3. The intergenerational correlation between bannermen and Han Chinese is comparable, at approximately 0.4. This corresponds to the outcome obtained when intergenerational correlation is computed by generations. However, bannermen exhibited a greater degree of multigenerational moblity than Han Chinese. Their correlation between father and great grandfather is 0.339, which is approximately 24 percent greater than that of Han Chinese. The three-generational correlation between bannermen and Han Chinese is 0.293 versus 0.109, which is approximately 1.5 times greater.

Figure 4.6 depicts the rates of multigenerational mobility among four groups.The points are the average observed correlations across generations for each group. Han Chinese had relatively low rates of multigenerational mobility.

Han Chinese two- and three-generational correlations are approximately 30 and 60 percent lower than Manchus, respectively. Indicating that the relationship of multigenerational correlations between Han Chinese and bannermen is $\beta_H^n < \beta_B^n$.

In sum, an intergenerational perspective indicates that the Han and Baqi group have comparable rates of relative mobility, but the Baqi group has higher rates of absolute mobility. In the long run, bannermen preserved their advantages and had a higher level of multigenerational mobility. However, Han Chinese accumulated their status across generations and gradually reduced the gap with bannermen.

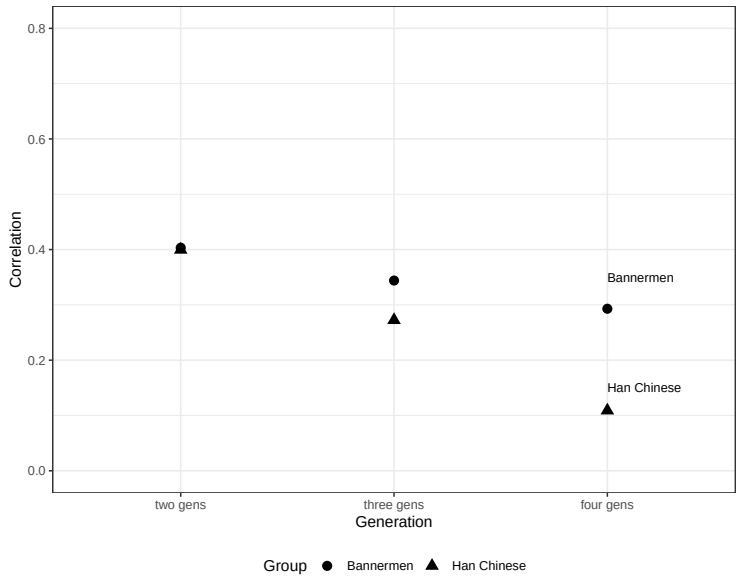
Table 4.3: Multigenerational Correlations among Ethnic Group

	Han			Bannermen		
	father	father	father	father	father	father
Grandfather	0.413***			0.402***		
	(−0.002)			(−0.099)		
Great Grandfather		0.273***			0.339***	
		(−0.004)			(−0.112)	
Great great-grandfather			0.109***			0.293*
			(−0.011)			(−0.173)
Constant	7.798***	10.973***	14.363***	16.300***	18.843***	20.624***
	(0.050)	(0.118)	(0.236)	(3.645)	(4.662)	(7.083)
Clustered by family	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,275	2,808	1,352	259	171	83
R^2	0.128	0.039	0.005	0.181	0.144	0.121
Adjusted R^2	0.127	0.039	0.004	0.178	0.138	0.110

Notes: This table shows the multigenerational correlations of both Han Chinese and Bannermen. It pooled all observations and calculate one, two ,and three generational correlations of two groups. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Combined all findings together, the long run trending of social status between Han Chinese and bannermen are shown in Figure 4.7. Bannermen had a higher level of absolute mobility and multigenerational correlations than Han Chinese. Given this features, Han Chinese is impossible to surpass Bannermen in the long run. This is in line with expectations, given that bannermen are the ruling class and receive preferential treatment across various dimensions. However, the unexpected similarity in relative intergenerational mobility levels between Han Chinese and bannermen raises questions. Unlike bannermen, who could inherit titles and status from their fathers or easily secure official positions, Han Chinese maintained their social standing across generations primarily through the highly competitive civil service examination, characterized by a high failure rate. Consequently, one would

Figure 4.6: Multigenerational Correlations of Bannermen and Han Chinese



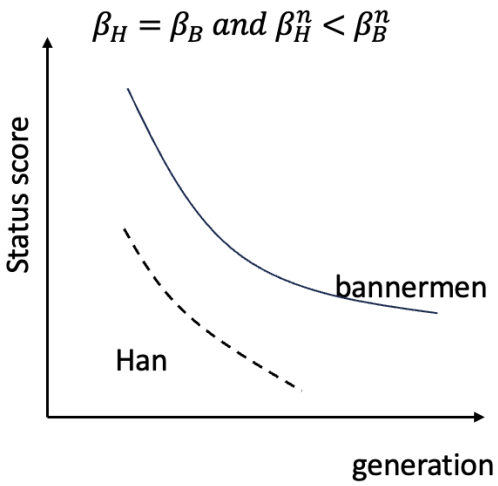
Notes : This Figure depicts the rates of multigenerational mobility among two ethnic groups. Based on information from four generations in each family, I calculated the rates of mobility across two, three, and four generations. The X axis shows the gap between generations, ranging from two generations (father-grandfather) to four generations (father - great-great-grandfather). The points are the average observed correlations across generations for each group. Han Chinese had relatively low rates of multigenerational mobility.

assume that the banner elite should exhibit a higher level of relative mobility as well. What are the driving forces behind this surprising similarity in relative mobility?

4.6.3 Factors Contributing to Ethnic Similarities

There are multiple factors that contribute to this resemblance in relative mobility and disparities in absolute and multigenerational mobility. Given that the Baqi group consists of bannermen from Mongolia, Manchuria, and Han Chinese, it is possible to imagine that Han bannermen and Manchu individuals had different levels of absolute and relative mobility. The higher level of relative mobility of bannermen as a whole may be attributed to the Han bannermen, who benefited from the privileges granted by the Qing dynasty and shared comparable traditions and advantages in examinations as the Han Chinese. They received favourable treatment in official appointments as part of the bannermen. They may also perform better in translation examinations. Another potential explanation is that the comparable levels of relative mobility might be attributed to the Han Chinese, who have found

Figure 4.7: Mobility Relationship between Bannermen and Han Chinese



Notes : This figure compares the mobility trending of Han Chinese and bannermen. The red line represents Han Chinese, while the black line represents bannermen. The graph reveals that bannermen had a higher level of absolute mobility compared to Han Chinese. The relative mobility for both groups appears to be identical, as indicated by parallel lines.

a method to secure their advantages for future generations. They utilised marriage to establish networks in officialdom, invested more in education than bannermen to ensure the attainment of degrees, and shared resources within lineages to increase the likelihood of lineage perpetuation. Hence, in order to delve deeper into the factors that contribute to this similarity and differences in intergenerational and multigenerational correlations, I initially examine the intergenerational correlations within the subgroup of the banner system. Subsequently, I employ the model outlined in section IV to explore the impact of different factors on the ethnic status gap.

4.6.3.1 The role of Manchu and Han Bannermen

I subdivided the Baqi group into Manchu and Han bannermen and analysed their intergenerational correlations separately. Table 4.4 represents the correlations within the Baqi group. The intergenerational correlations for Manchus and Han bannermen are 0.4 and 0.35, respectively. The β of Manchu is approximately 14.29 percent more than that of Han Bannermen. With the lowest level of paternal social rank, the Manchus had an average social score of 17.787, which is 19.16 percent higher

than that of the Han bannermen. This implies that, on average, Manchus children begins with a comparatively high social status. Combined with higher level of intergenerational mobility, Manchus children enjoyed higher status relative to Han bannermen.

The comparison within banner group indicates that the Manchus exhibited greater levels of both absolute and relative correlations compared to the Han bannermen. It supports the fact that Manchus had a highest status in banner system. Furthermore, it suggests that high rates of relative mobility of bannermen in Table 4.2 are largely determined by Manchus rather than Han bannermen inside the banner system.

Table 4.4: Comparison of Persistence within Banners

	Bannermen	
	Son status score	
	Han bannermen	Manchus
Father status score	0.350*	0.400**
	(−0.179)	(−0.179)
Constant	14.577**	17.387**
	(6.407)	(6.825)
Clustered by family	YES	YES
Observations	72	187
R^2	0.141	0.176
Adjusted R^2	0.129	0.172

Notes : This table compares the intergenerational correlations within the banner group. Han bannermen had both a lower level of relative intergenerational mobility and absolute mobility than Manchus. Rate of relative intergenerational moblity for Manchu is 14.29 percent higher than that of Han bannermen. Given the lowest level of father's status, the average social score of Manchu is 17.787, which is 19.16 percent higher than that of Han bannermen. This supports the fact that Manchus had highest status in banner system. It also indicates that high rates of relative mobility is mainly driven by Manchus rather than Han bannermen in banner system. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

However, the driven factors of ethical disparities in terms of the mean of social reproduction for Han Chinese and Manchus are still unclear. Theoretically, the Han Chinese followed the path of passing the civil service examination and subsequently acquiring an official position. The civil service examination was extremely competitive, and therefore candidates relied heavily on family resources for financial support

and tacit knowledge to pass it. While the primary means by which Manchus attained official positions was through military rewards or inheritance. Ordinary Manchus could also participate in the translation examination, which was significantly simpler than the civil service examination. Both channels require fewer family resources.

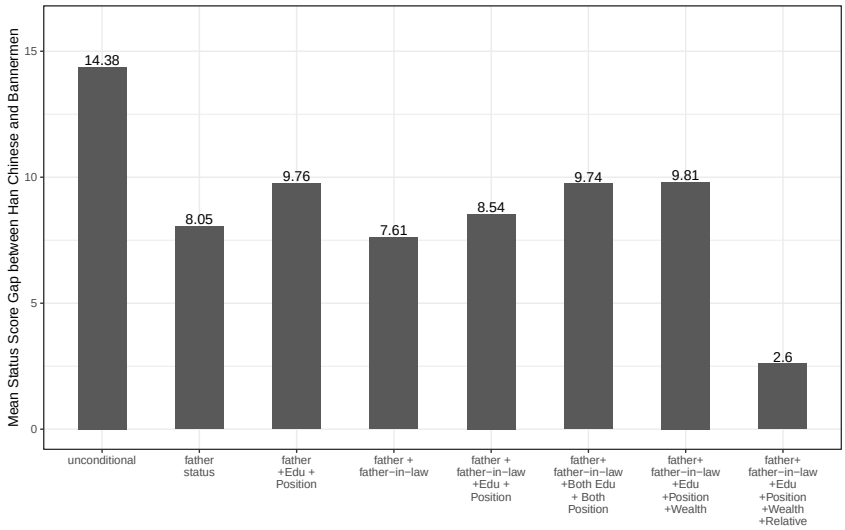
4.6.4 Factors Influencing Ethnic Disparities

This section explores potential factors that contribute to the intergenerational gap between the Han Chinese and the Bannermen by analysing factors that vary across the Han Chinese and Bannermen besides father's social status. I take into account the social status of fathers-in-law, the educational and officialdom attainment of paternal and maternal father, the wealth of family which is measured by the number of wives and concubines, and the influence of maternal family, which is measured by the social status of maternal relatives.

I first explore the gap directly by using the OLS regression, following Equation 4.2 and 4.3(regressions details are shown in Appendix Table D.5). Figure 4.8 depicts how Δ changes after controlling for numerous family factors given the average status of sample ($\overline{y} = 11.87$). The first bar shows the unconditional difference in the Han Chinese and the Bannermen's social status scores. Without controlling for father's status and any other familial elements, the ethnic disparity in mean status score is 14.38. In other words, the Bannermen's average social status is 14.38 points higher than that of the Han Chinese within the elite group. This gap shrinks to 8.05 and 7.61 after I control for the social status of father and father-in-law, as shown by the second and fourth bars. This is in line with the notation that the Baqi group receives preferential treatments as they are members of the ruling group.

The remaining bars in Figure 4.8 illustrate the variations in status scores after the implementation of a series of controls. Previous studies have indicated that factors such as the social status of the previous generation, wealth, and marriage significantly impact individuals' opportunities in attaining status (Clark and Cummins 2015; Braun and Stuhler 2018; Solon 1999). By incorporating controls for the social status of fathers and fathers-in-law, their educational and occupational achievements, wealth, and the social status of affinal relatives, I examine their effects on ethnic disparities in status scores.

Figure 4.8: Effects of Family Factors on Han-Bannermen Status Gap



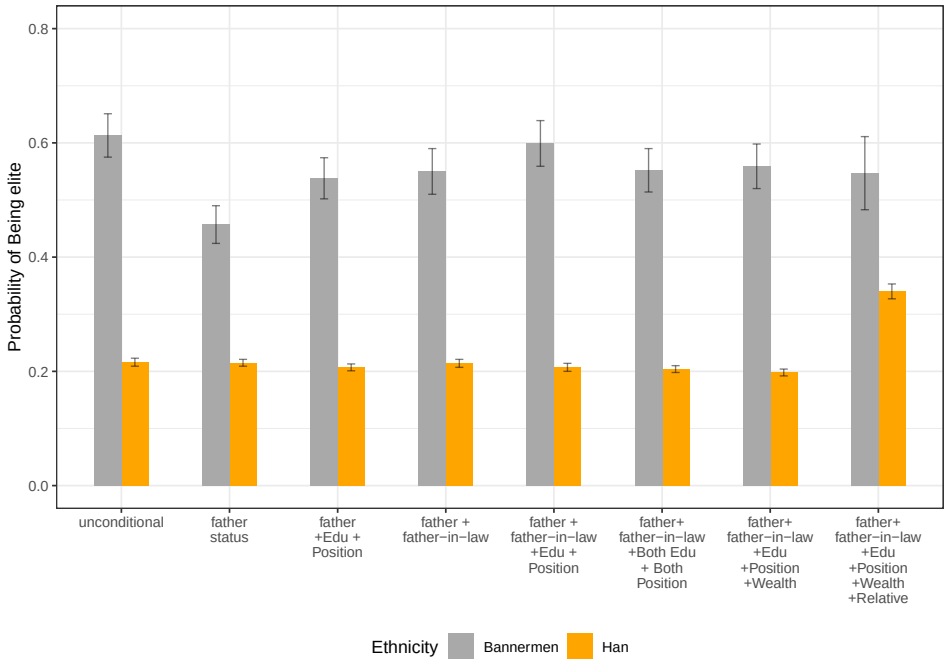
Notes : This figure demonstrates the status gap between Han Chinese and bannermen given the average status score of sample. It indicates how the ethnic status gap changes after controlling for different factors. The first bar shows the unconditional average status gap between Han Chinese and bannermen. The second bars shows the status gap given the average social status of father. Wealth is measured by the number of wife and number of concubine. Relative is the averaged of social status of all recorded relatives.

The third and fifth bars in Figure 4.8 represent the control for the educational background and official position of the father and father-in-law, respectively. After adjusting for these factors, the status gaps rebounded to 9.76 and 8.54, respectively. This indicates that both the education and official titles of both the father and father-in-law contribute to the intergenerational disparities between the Han Chinese and the Baqi, with the father's influence being slightly more pronounced. The observed increase in the status gap after controlling for the educational and official attainments of fathers suggests that preferential treatments towards bannermen, such as inheriting titles, have effectively reduced the difficulty of obtaining degrees and official positions for them. The sixth bar in figure 4.8 includes both the educational and official positional attainment of both father-in-law and father. It reports a similar intergenerational gap as in bar three.

The last two bars of Figure 4.8 incorporate proxies of family wealth and the influence of marriage. The number of wives and concubines serves as a proxy for family wealth. Wealthier families theoretically could afford additional wives once the first wife dies and could simultaneously maintain more concubines. The in-

fluence of family wealth on the intergenerational gap is comparable to that of the educational and occupational attainment of the father and father-in-law. After controlling for family affluence, the intergenerational gap between the Han Chinese and the Baqi group is 9.81 points. Additionally, I introduce the average social status of maternal relatives. Notably, among families that recorded the social status of affinal relatives, the intergenerational gap between the Han Chinese and the Baqi group significantly reduces to 2.6 points. This estimate suggests that maternal relatives play a remarkable role in influencing Han Chinese social status. Marriage served as an essential channel for the Han Chinese to attain a high social status. Further evidence supporting this hypothesis is provided in the following section.

Figure 4.9: Marginal Effects of Family Factors on the Probability of Being Elite



Notes : This figure shows the marginal effect of family factors on the probability of being elite under the mean of other controls. For instance, without any controls, the probability of being elite is around 0.22 if individual is Han Chinese. The probability increases to 0.61 if he is bannermen. Given the average status of father, the probability of being elite decreases to 0.46 if he is a bannerman. Given the social status of father, father-in-law, and wealth, the probability of being elite maintains around 0.2 if he is Han Chinese. Only when social status of affinal relatives are controlled, the probability of being elite for Han Chinese increases to 0.35. Wealth is measured by the number of wives and the number of concubines. Relative is the average social status of all recorded relatives.

One step further, I follow Equation 4.4 to calculate the marginal effect of family factors on the probability of being elites (regression details are shown in Appendix

Table D.6). Figure 4.9 demonstrates the marginal effects between Han Chinese and Bannermen. The controlled family factors are the same as before in Figure 4.8. For banner families, the probability of attaining elite status follows a similar trajectory as depicted in Figure 4.8. Initially, it declines from 0.6 to 0.45, then rebounds to 0.52 and stabilizes at that level. This trend corresponds to the conclusion drawn from Figure 4.8 that the Bannermen are favoured more by the education and bureaucratic systems than Han Chinese as they were provided with various preferential policies. Both educational and official position attainments contribute to the Bannermen's high status. Additionally, the Bannermen are less influenced by family wealth and marriages that is measured by status of in-laws and maternal relatives. The probability of being elites is barely altered with the introduction of these factors.

In contrast, with the introduction of all family elements, the probability of being elites remains unchanged at 0.2 for the Han Chinese, except when the social status of maternal relatives is included. The probability rises from 0.2 to 0.35. This first explains the reduction of intergenerational gaps I observed between Bannermen and Han Chinese in bar eight of Figure 4.8. Second, it confirms the significance of maternal relatives and offers support to the notion that marriage was a crucial means for Han Chinese to attain high status.

4.6.4.1 Marriage

As marriage has been shown important for reducing the status gap between two groups and increasing the probability of being elite for Han Chinese. This section further analyzes marriage features of two groups.

Table 4.5 displays the marital status by ethnicity. The majority of this sample has wives regardless of their ethnicity. For instance, only 106 males out of 5627 Han Chinese did not have a wife (around 1.88 percent). This is comparable to Baqi, where approximately 2% of men did not marry in their lifetimes. On the other hand, marital status suggests that bannermen had a more robust family background. More Baqi males than Han Chinese have multiple wives. Approximately 33 percent of Baqi men and 27 percent of Han Chinese males had more than one wife.

To investigate ethnic disparities in marriage patterns, I characterise the rates of marriage assortment of Han Chinese and the bannermen. I calculate the correlations

Table 4.5: Marital Status by Ethnic Group

N	Wife		Concubine	
	Han Chinese	Baqi	Han Chinese	Baqi
0	106	7	5029	316
1	3980	227	475	22
2	1299	90	97	7
3	201	20	16	1
4	36	2	8	1
5	5	1	2	0
Total Obs	5627	347	5627	347

Notes : This table displays the marital status of individuals by race. It represents two points. First, the status of both Han Chinese and Bannermen in this sample was relatively high. Only 106 males out of 5627 Han Chinese did not have a wife (around 1.88 percent). This is comparable to Baqi, where approximately 2% of men did not marry in their lifetimes. In contrast, marital status suggests that bannermen had a more robust family background. More baqi males than Han Chinese have multiple wives. Approximately 33 percent of Baqi men and 27 percent of Han Chinese males had more than one wife.

between father and father-in-law using their social status score, which exemplifies the level of marital assortment. The correlations between variables are presented in Table 4.6 for each group. A notable distinction emerges between the Han Chinese and the Baqi regarding marriage patterns. Han Chinese exhibited higher rates of matching than bannermen, with a total sample correlation of 0.42 for Han Chinese and 0.32 for bannermen. This observation aligns with the characteristic feature of Chinese marriage, which is often arranged by parents and rooted in family background. Consequently, a strong correlation between the father and father-in-law is expected.

Table 4.6: Marriage Correlations by Ethnicity

Group	Correlation	N	Standard Error
Han Chinese	0.42	4277	0.01
Bannermen	0.32	259	0.06

Notes : This table indicates the correlations between father and father-in-law among two groups. The social status ranging from 1 to 56, which is categorized into three subgroups. Score range between 1 and 6 refers to father who are commoners or degree holders. Score range between 44 and 56 refers to father who hold official positions above 3b.

4.7 Implication

Through different avenues, both Han Chinese and bannermen experienced a comparable level of relative intergenerational mobility, challenging the notion that Han Chinese had higher social mobility. Despite bannermen holding prestigious positions and encountering competitive obstacles such as the civil service examination, Han Chinese leveraged family and marriage networks to pass down advantages to subsequent generations, ensuring a comparable level of relative mobility. However, this doesn't necessarily imply that Han Chinese had the opportunity to surpass bannermen in the long term. Policies safeguarding the status of bannermen led to a higher level of absolute intergenerational mobility for bannermen compared to Han Chinese. These protective measures allowed bannermen to maintain their privileged position over successive generations. Given the lowest status of father, bannermen typically holding a higher social status, approximately twice as high as that of Han Chinese. With bannermen typically holding a higher social status and despite their privileges in examinations, official appointments, and inheritance, their higher absolute intergenerational mobility didn't result in greater multigenerational mobility compared to Han Chinese. As such, it seems unlikely for Han Chinese to exceed bannermen in the long run. This suggests a disparity in long-term mobility prospects between the two groups, with implications for their respective societal positions over time.

Further exploration into factors shaping mobility trends reveals that bannermen derive greater benefits from degrees and official titles. This is because the Qing court provided separate examinations with bannermen, which were more simple and had more quotas. Moreover, there was a practice to ensure the number balance between Han Chinese and bannermen (especially for Manchus) in officialdom. Consequently, despite typically lower educational levels, bannermen could secure higher degrees or official positions. In contrast, Han Chinese heavily relied on civil service examinations and networking strategies for advancement, particularly through marriage alliances. For Han Chinese, having degrees was the primary and traditional route to upward mobility, and marriage played a pivotal role in forging alliances and expanding social networks. Having the ticket of being officials, they leveraged their familial and marital connections to maximize their influence within official circles. However, without preferential policies, maintaining their status in the long term

posed greater challenges for them compared to bannermen. This alignment with the Qing court's objectives aimed to strike a balance between the interests of Han Chinese and bannermen, while also preserving the exceptional status of bannermen, particularly the Manchus.

As a result, the Qing state achieved political equilibrium between Han Chinese and bannermen, as well as between central and local government authorities. Bannermen sustained their status through protective policies, while Han Chinese leveraged education and marriage to maximize familial resources, facilitating effective intergenerational mobility for both groups. Administrative authority was distributed between Han Chinese and bannermen, with Han Chinese predominantly overseeing local governance and bannermen holding sway above the provincial level. This is achieved by the practice of maintaining a semblance of numerical parity between the two groups at higher administrative tiers. Protective policies for bannermen and strategic administrative divisions contribute to the Qing state's mission of stabilizing society and upholding the dominant position of the Manchus.

Institutions such as the civil service examination, translation examination, preservation of Manchu lifestyle, and the practice of ensuring the number of bannermen officials above provincial governments were all geared towards balancing power dynamics between Han Chinese and bannermen, ensuring societal stability, and preserving Manchu supremacy. For instance, the provision of bannermen officials in key positions above provincial governments was a strategic move to centralize power and control. By placing bannermen in influential administrative roles and ensuring a sufficient number of Manchu officials, the Qing court could effectively exert authority over local governance and ensure compliance with imperial policies. Hence, the concept of "Sinicization" is validated. The Qing state indeed efficiently adopted and applied various institutions to win these Confucian elite over and to secure their allegiance, even after the suppression of the Taiping Rebellion by the Han army.

4.8 Conclusion

In conclusion, the examination of intergenerational mobility among Han Chinese and bannermen during the Qing dynasty reveals a nuanced picture of social dynamics

and power structures within imperial China. Despite initial assumptions regarding bannermen superiority in social mobility, both groups experienced comparable levels of relative intergenerational mobility. This challenges the prevailing notion and underscores the complex dynamics at play in Qing society. While bannermen held esteemed positions and enjoyed privileges, Han Chinese utilized family and marriage networks to transmit advantages across generations, maintaining a comparable level of relative mobility. However, this did not necessarily translate into a long-term opportunity for Han Chinese to surpass bannermen. Protective policies for bannermen conferred them with higher absolute intergenerational mobility, sustaining their privileged status over successive generations.

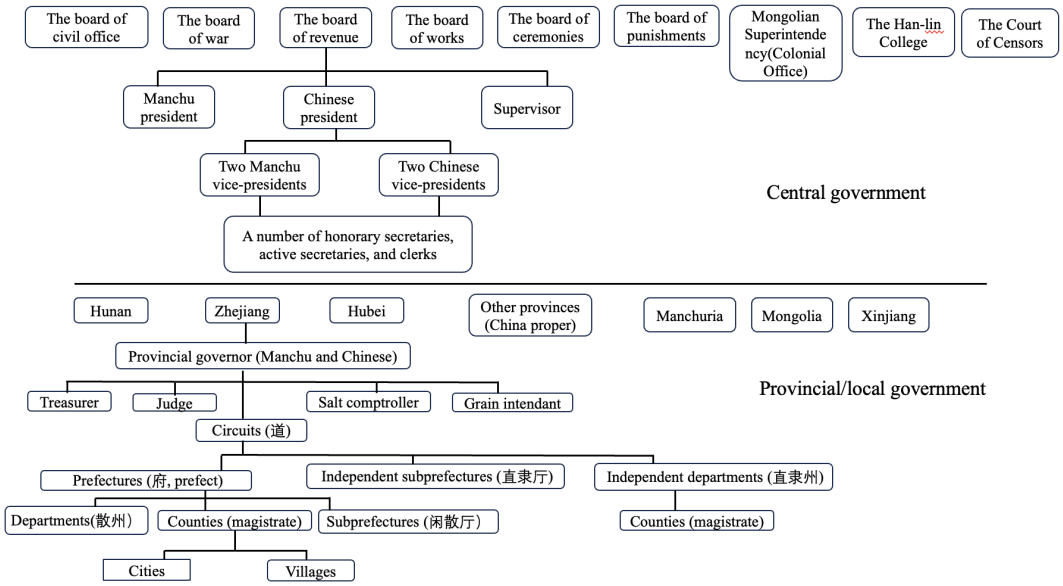
Further examination of factors contributing to this mobility feature reveals differential benefits derived from education and official titles. Bannermen secured higher degrees and official positions due to various preferential policies provided by the Qing state. In contrast, Han Chinese heavily relied on civil service examinations and networking strategies, particularly through marriage alliances, for upward mobility.

This paper, from a household-level and inequality perspective, shows that the Qing state's policies aimed to strike a delicate balance between Han Chinese and bannermen, while preserving the exceptional status of the latter, particularly the Manchus. By ensuring the probability of transferring advantages to the next generation, the Qing court gained allegiance of the Confucian elite.

Appendix A

Political and Social Structure of the Qing dynasty

Figure A.1: Administrative Structure of the Qing dynasty



Notes : This figure demonstrates the administrative structure of the Qing dynasty. For more detailed discussion of political system of the Qing dynasty, see Quigley 1923.

Table A.1: Official Posts Classification

Rank of posts	Example of posts	
1a	Grand secretary (大学士)	General (防驻将军)
1b	President of the Six Board (部院尚书)	Colonel (都统)
2a	Governor-general (总督)	Vice-colonel (副都统)
2b	Governor (巡抚)	Division deputy commander (副将)
3a	Chief minister of the court of judicial review (大理寺卿)	Assistant commander (参将)
3b	Salt distribution commissioner (都转盐运使)	Hunting grounds supervisor in Rehe (河总管)
4a	Vice minister of the court of judicial review (大理寺少卿)	Assistant captain (佐领)
4b	Prefect (知府)	Leader of imperial bodyguards (侍卫班领)
5a	Magistrate of the independent departments (直隶州知州)	Battalion commander (千户)
5b	Vice director of a board (员外郎)	Battalion vice commander (副千户)
6a	Assistant minister of the court of judicial review (大理寺丞)	lieutenant (骁骑校)
6b	Assistant magistrate of the salt controller (盐运使运判)	
7a	District magistrate (知县)	Company commander (把总)
7b	Junior compiler of the Hanlin Academy (翰林院编修)	
8a	District vice magistrate (县丞)	
8b	Assistant instructor in a district Confucian school (儒学训导)	
9a	Assistant District magistrate (主簿)	
9b	Police chief (巡检)	

Notes : This table illustrates the classification of official positions in the Qing dynasty. I also provide some examples of civil and military official posts.

Table A.2: Summary Statistics of Exam Candidates.

Statistic	N	Mean	St. Dev.	Min	Max
age	1,539	32.34	8.15	15	94
year of examination	1,539	1,872.24	22.27	1,796	1,904
page number of genealogy	1,539	5.69	3.93	1	54

Table A.3: Table of Ranked Social Status

degree	official position	rank
	Commoners	
No degree	no position	1
No degree with publication	no position	2
	Degree without position	
Licentiates/fengsi	no position	3
Jiansheng/rich	no position	4
Juren/gongsheng	no position	5
Jinshi	no position	6
	Low officials	
No degree	expectant position	7
Licentiates	expectant position	8
Juren/gongsheng	expectant position	9
Jinshi	expectant position	10
No degree /jiansheng	low position	11
Licentiates	lower ninth	12
Licentiates	upper ninth	13
	...	
	High officials	
	...	
Jinshi	lower thrid	51
Jinshi	upper third	52
Jinshi	lower second	53
Jinshi	upper second	54
Jinshi	lower first	55
Jinshi	upper first	56

Notes : Based on degree and position status, people are signed score ranging from 1 to 56.

Appendix B

Appendix of Chapter 2

B.1 Pooled Regression

Table B.1: Multigenerational Correlations of Pooled Sample (status score)

	Grandfather	Great grandfather	Great great grandfather
	(1)	(2)	(3)
Father	0.361***	0.208***	0.108***
	(−0.002)	(−0.002)	(−0.005)
Constant	4.708***	4.970***	5.154***
	(0.041)	(0.063)	(0.138)
Clustered by family	Yes	Yes	Yes
Observations	4,539	2,982	1,436
R^2	0.163	0.070	0.023
Adjusted R^2	0.162	0.070	0.022

Notes : This table demonstrates the generational correlations across three generations. Model (1) is the intergenrational corerlations between fathers and sons. Model (2) shows the two generational correlation between grandfathers and sons. Model (3) is the three generational correlation. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

B.2 Robustness Check

B.2.1 Rank Percentile

Table B.2: Reversed Estimated Persistence across Generation (rank percentile)

	Grandfather	Great grandfather			Great geat grandfather			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Father	0.351***	0.251***		0.109***	0.143***			0.003
	(0.023)	(0.024)		(0.024)	(0.024)			(0.023)
Grandfather			0.443***	0.403***		0.296***		0.125***
			(0.022)	(0.024)		(0.024)		(0.026)
Great grandfather							0.441***	0.384***
							(0.022)	(0.025)
Constant	0.325***	0.375***	0.279***	0.244***	0.429***	0.352***	0.280***	0.244***
	(0.014)	(0.014)	(0.013)	(0.015)	(0.014)	(0.014)	(0.013)	(0.016)
Observations	1,550	1,550	1,550	1,550	1,550	1,550	1,550	1,550
R^2	0.126	0.066	0.200	0.211	0.022	0.092	0.200	0.213
Adjusted R^2	0.126	0.065	0.200	0.210	0.021	0.091	0.199	0.211

Notes : This table demonstrates generational correlations using rank percentile. I estimate correlations according to generations. Model (1), (3), and (7) show the intergenerational correlations between two generations. Model (2) and (6) demonstrate three-generational correlations between father and great grandfather. Model (5) shows four-generational correlation between father and great great grandfather. The rank percentile correlations are generally higher than correlations based on status score in Table 2.2. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table B.3: Estimated Parameters from the Latent Factor Model

β_1	β_2	$\eta(\beta_2/\beta_1)$	$\theta^2(\beta_1^2/\beta_2)$	θ
0.41	0.27	0.66	0.52	0.72

Notes: 1) Generational coefficients in this Table are the averaged coefficients from Table B.2. 2) The β_1 for family links is the averaged intergenerational correlations between father – grandfather, grandfather – great-grandfather, and great-grandfather – great-great-grandfather. β_2 is the averaged three generational association. 3) θ is the latent factor coefficient.

B.2.2 Normal Regression

Table B.4: Multigenerational Correlations

	Father				Grandfather			Great grandfather
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Grandfather	0.364***			0.301***				
	(0.025)			(0.028)				
Great grandfather		0.287***		0.120***	0.494***		0.432***	
		(0.030)		(0.035)	(0.027)		(0.030)	
Great great grandfather			0.210***	0.037		0.384***	0.181***	0.471***
			(0.036)	(0.038)		(0.034)	(0.035)	(0.028)
Constant	11.263***	12.939***	14.246***	10.837***	7.174***	9.072***	6.620***	5.671***
	(0.466)	(0.464)	(0.479)	(0.523)	(0.418)	(0.449)	(0.453)	(0.369)
Observations	1,550	1,549	1,436	1,436	1,551	1,438	1,438	1,438
R^2	0.123	0.057	0.023	0.127	0.179	0.081	0.197	0.163
Adjusted R^2	0.123	0.056	0.022	0.125	0.179	0.080	0.196	0.163

Notes : This table demonstrates generational correlations. It regresses status of father on that of son to obtain the intergenerational correlations. I estimate correlations according to generations. Model (1), (5), and (8) show the intergenerational correlations between two generations. Model (2) and (6) demonstrate three-generational correlations between father and great grandfather. Model (3) shows four-generational correlation between father and great great grandfather. As expected, correlations are higher than correlations from the reversed regression, indicating an upward bias. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

B.3 Persistence by Group and Time

Table B.5: Persistence among Groups (status score)

	Commoners	Degree without official posts	Low officials	Middle officials	Top officials
Father-grandfather(β_1)	0.302***	0.317***	0.235***	0.232**	0.408***
Grandfather-great grandfather(β_1)	0.286***	0.266***	0.367***	0.243**	0.591***
Father-great grandfather(β_2)	0.106***	0.117***	0.225***	0.283**	0.349***
N	577	534	160	125	36

Notes : This table demonstrates the generational correlations among five groups. They are used to calculate the latent parametors in Table 2.4 $^{***}p < 0.000$; $^{**}p < 0.001$; $^{*}p < 0.01$

Table B.6: Persistence over Time (status score)

Correlations	Kangxi (1661-1722)	Yongzheng (1722-1735)	Qianlong (1735-1795)	Jiaqing (1795-1820)	Daoguang (1820-1850)
β_1	0.445***	0.526***	0.356***	0.332**	0.315***
N	193	177	2436	1058	623
β_2	0.396	0.516*	0.244***	0.136**	0.217***
N	30	45	1219	1034	624
β_3	2.333	0.182***	0.161***	0.106**	0.097***
N	4	3	272	551	584

Notes : This table demonstrates the generational correlations among five groups. They are used to calculate the latent parametors in Table 2.4 $^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$

Appendix C

Appendix of Chapter 3

Table C.1: Social Status Correlations by Rank Percentile

generation	ρ_{sf}	se_{sf}	ρ_{sfl}	se_{sfl}	ρ_{fl}	se_{fl}
Father	0.355	0.019	0.246	0.020	0.391	0.021
Grandfather	0.448	0.020	0.366	0.021	0.441	0.021
Great-grandfather	0.456	0.021	0.323	0.020	0.350	0.021

Notes : sf refers to groom and father, sfl refers to groom and father-in-law, fl refers to father and father-in-law.

C.1 Second Wife

Table C.2: Summary Statistics of Information from Second Wife

Statistic	N	Mean	St. Dev.	Min	Max
Status Score					
Second fathers-in-law	1,234	6.74	12.01	1	56
Fathers	1,150	10.73	14.72	1	56
Son	1,234	16.34	17.00	1	56
Rank Percentile					
Second fathers-in-law	1,234	0.50	0.26	0.13	1
Fathers	1,150	0.50	0.28	0.13	1
Son	1,234	0.55	0.27	0.04	1

C.2 The Role of Father-in-law

Table C.3: Estimated Impacts from Patrilineal and Matrilineal Ancestors (rank-rank)

	Ranked Status of Men						
	Pooled model			Patriline dominated		Matriline dominated	
	Model 1	Model 2	Model 3	Model 4	Model 5	model 6	model 7
Ranked status of fathers	0.378***	0.301***	0.294***	0.260***	0.243***	0.264***	0.252***
	(0.014)	(0.014)	(0.014)	(0.040)	(0.040)	(0.031)	(0.031)
Ranked status of fathers-in-law		0.223***	0.168***	0.203***	0.139***	0.277***	0.228***
		(0.015)	(0.017)	(0.042)	(0.046)	(0.029)	(0.030)
Averaged ranked status of wife's relatives			0.126***		0.180***		0.120***
			(0.018)		(0.056)		(0.022)
Constant	0.299***	0.225***	0.193***	0.256***	0.222***	0.205***	0.175***
	(0.008)	(0.009)	(0.010)	(0.025)	(0.027)	(0.011)	(0.012)
Observations	4,647	4,647	4,647	1,531	1,531	2,804	2,804
Adjusted R^2	0.143	0.180	0.189	0.071	0.077	0.232	0.240

Notes : The first three models are based on pooled data. Model 4 and 5 are samples patriline dominated. In other words, ranked status of patrilineal ancestors are higher than that of matrilineal ancestors. Model 6 and 7 are samples in which at least ranked status of fathers-in-law is higher than or equal to that of men's fathers.$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Appendix D

Appendix of Chapter 4

D.1 The Eight Banner System

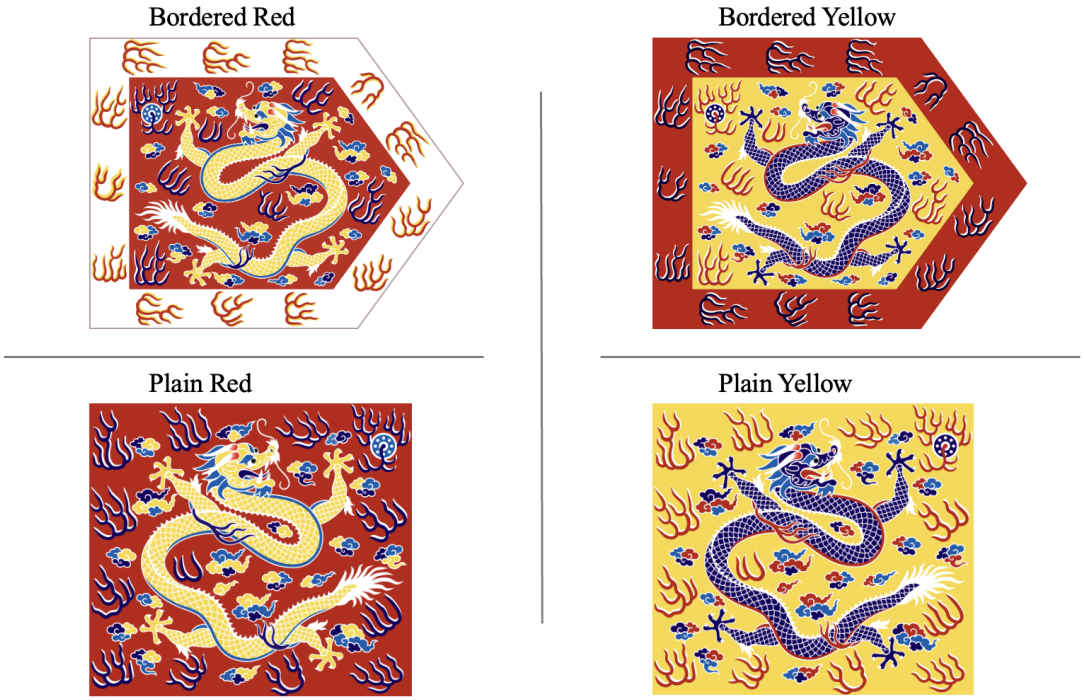


Figure D.1: Flags of the Eight Banner System

Notes : This figure illustrates four example flags of the Eight Banner system.

Table D.1: Imperial Nobel Titles in the Qing Dynasty

Titles for Imperial Descendants	Class
Princes of the First Rank (和硕亲王)	Above ranks
Prince of the Second Rank (多罗郡王)	Above ranks
Prince of the Third Rank (多罗贝勒)	Above ranks
Prince of the Fourth Rank (和固山贝子)	Above ranks
Duke Who Receives Grace and Guards the State (奉国公)	Above ranks
Duke Who Receives Grace and Assists the State (辅国公)	Above ranks
Duke Without the Eight Privileges Who Guards the State (不入八分镇国公)	Above ranks
Duke Without the Eight Privileges Who Assists the State (不入八分辅国公)	Above ranks
General Who Guards the State (镇国将军)	1
General Who Assists the State (辅国将军)	2
General Who Receives the State (奉国将军)	3
General Who Receives Grace (奉恩将军)	4

Notes : This table shows the imperial noble titles

Table D.2: Non-imperial Nobel Titles in the Qing Dynasty

Non-imperial nobility titles	Class
Duke	Above ranks
Marquis	Above ranks
Count	Above ranks
Viscount	1
Baron	2
Qingche duwei 轻车都尉 (Master Commandant of Light Chariot)	3
Jiduwei 骑都尉 (Master Commandant of Cavalry)	4
Yunqiwei 云骑尉 (Knight Commandant of the Cloud)	5
Enjiwei 恩骑尉 (Knight Commandant by Grace)	6

Notes : This table shows the non-imperial nobel titles.

D.2 Size of Banner Population

Table D.3: Estimated Range of Banner Population

	Manchu		Mongaol		Han Chinese		Bondservants/others		Total	
1684										
Males	111,871	210,506	58,232	109,574	92,752	174,530	438,920	825,912	702,239	1,321,397
Females	95,090	178,930	49,497	93,138	78,839	148,351	373,082	702,025	596,903	1,123,188
Total	206,961	389,436	107,729	202,712	171,591	322,881	812,002	1,527,937	1,299,142	2,444,585
Male/total male(%)	15.93	15.93	8.29	8.29	13.21	13.21	62.50	62.50		
1720										
Males	311,876	586,665	124,599	234,458	414,448	779,863	554,163	1,042,764	1,404,926	2,643,635
Females	265,010	497,815	105,909	199,289	352,281	662,884	471,039	886,349	1,194,187	2,247,090
Total	576,786	1,083,480	230,508	433,747	766,279	1,442,747	1,025,202	1,929,113	2,599,113	4,890,725
Male/total male(%)	22.20	22.19	8.87	8.87	29.50	29.50	39.44	39.44		

Notes : This estimation is calculated by Mark Christopher Elliott, C. Campbell, and J. Lee 2016.

Table D.4: Sample Size of Bannermen

	Han Chinese	Bannermen	
sample size	12820	786	786
proportion(%)	0.01	0.02	0.03
population size	188,317,254	2,599,113	4,890,725

Notes : Samples includes all males and their wife's fathers and relatives. Banner population is calculated by Mark Christopher Elliott, C. Campbell, and J. Lee 2016. Han Chinese population is based on Cao 2002, Chang 1967, and author's calculation.

D.3 Distribution of Sample

Figure D.2: Distribution of Sample by Ethnic – Father and Son

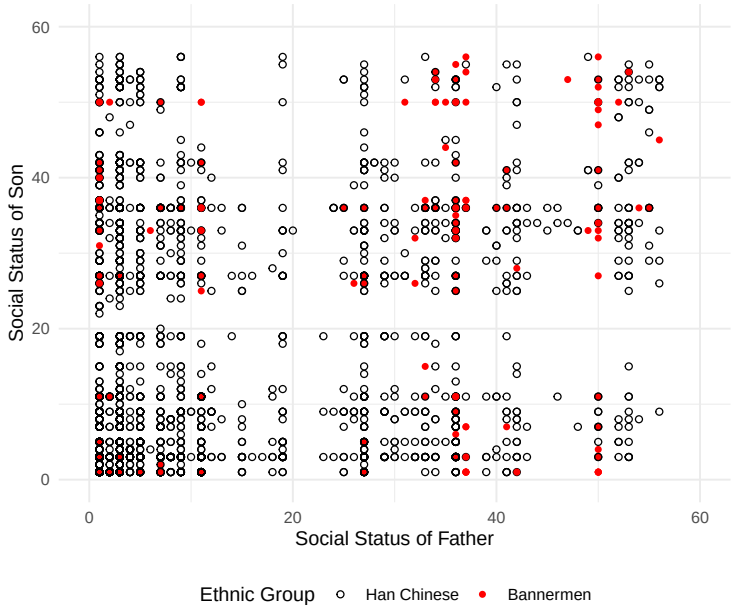
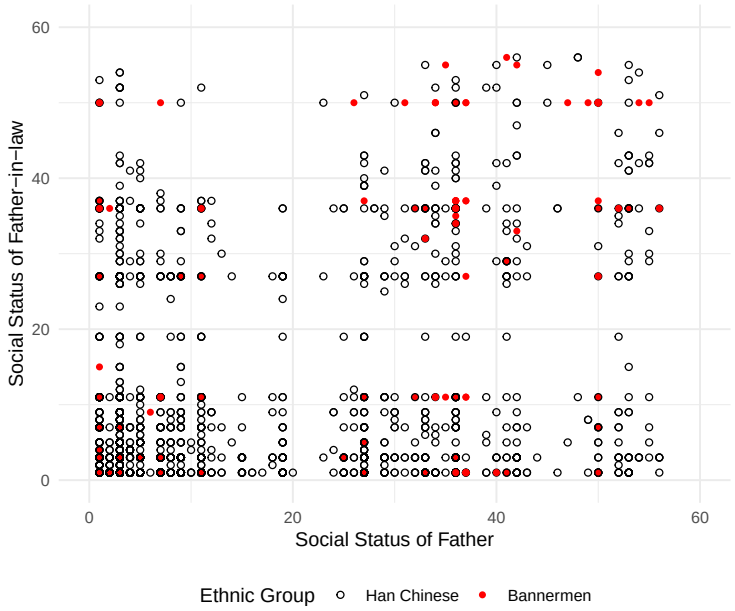


Figure D.3: Distribution of Sample by Ethnic – Father and Father-in-law



D.4 Regression results

Table D.5: Regression of Social Status under Various Controls

	Sosical status of son						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bannermen	8.084***	8.782***	7.791***	8.162***	8.652***	8.518***	0.096
	(1.308)	(1.302)	(1.303)	(1.299)	(1.296)	(1.255)	(2.809)
Status score of father	0.415***	0.202***	0.350***	0.333***	0.166***	0.147***	0.199***
	(0.017)	(0.044)	(0.018)	(0.018)	(0.044)	(0.043)	(0.068)
Father:bannermen	−0.003	0.082*	−0.015	0.032	0.092**	0.109**	0.211**
	(0.045)	(0.046)	(0.045)	(0.045)	(0.046)	(0.045)	(0.093)
Status score of father-in-law			0.201***	0.043	0.057	0.025	−0.023
			(0.021)	(0.050)	(0.050)	(0.048)	(0.073)
Father degree		2.398***			1.885***	1.690***	1.063**
		(0.295)			(0.301)	(0.292)	(0.526)
Father position		1.749***			1.498**	1.345**	0.439
		(0.585)			(0.582)	(0.567)	(0.936)
Father-in-law degree				2.019***	1.599***	1.707***	0.298
				(0.314)	(0.320)	(0.310)	(0.503)
Father-in-law position				1.398**	1.197*	1.336**	1.338
				(0.682)	(0.682)	(0.662)	(0.989)
Number of wife						2.607***	2.602***
						(0.332)	(0.687)
Number of concubine						6.088***	6.084***
						(0.404)	(0.690)
Relative							0.075**
							(0.033)
Constant	7.812***	6.715***	7.311***	6.874***	6.146***	2.146***	5.870***
	(0.249)	(0.284)	(0.254)	(0.266)	(0.290)	(0.518)	(1.139)
Clustered by family	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,512	4,512	4,468	4,468	4,468	4,461	1,536
R^2	0.178	0.190	0.195	0.202	0.210	0.259	0.195
Adjusted R^2	0.177	0.189	0.194	0.201	0.208	0.258	0.189

Notes : Degrees and positions are discrete variables ranging from 0 to 3. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table D.6: Probability of being Elite under Conditions

	(1) elite	(2) elite	(3) elite	(4) elite	(5) elite	(6) elite	(7) elite	(8) elite
Bannermen	1.072***	0.680***	0.909***	0.920***	1.067***	0.957***	0.998***	0.532**
	(0.104)	(0.0851)	(0.0948)	(0.105)	(0.107)	(0.1000)	(0.104)	(0.167)
Status score of father		0.0312***	0.0127**			0.0108*	0.0101*	0.0169**
		(0.00162)	(0.00432)			(0.00442)	(0.00458)	(0.00628)
Father degree			0.221***			0.177***	0.164***	0.0844
			(0.0308)			(0.0323)	(0.0329)	(0.0498)
Father position			0.171**			0.147*	0.140*	0.00792
			(0.0610)			(0.0624)	(0.0637)	(0.0871)
Status score of father-in-law				0.0276***	0.00598	0.000327	-0.00212	-0.00169
				(0.00194)	(0.00475)	(0.00508)	(0.00526)	(0.00716)
Father-in-law degree					0.249***	0.169***	0.187***	0.0401
					(0.0316)	(0.0330)	(0.0338)	(0.0466)
Father-in-law position					0.202**	0.130	0.145*	0.116
					(0.0685)	(0.0709)	(0.0731)	(0.0975)
Number of wife							0.228***	0.148*
							(0.0360)	(0.0608)
Number of concubine							0.512***	0.515***
							(0.0525)	(0.0875)
Relative								0.00630*
								(0.00307)
Cinstant	-0.786***	-1.070***	-1.198***	-0.951***	-1.031***	-1.267***	-1.659***	-1.198***
	(0.0250)	(0.0260)	(0.0321)	(0.0263)	(0.0283)	(0.0332)	(0.0605)	(0.106)
N	4640	4512	4512	4595	4595	4468	4461	1536
pseudo R^2	0.036	0.119	0.131	0.079	0.093	0.146	0.183	0.126

Notes : This table shows the probability of being elite given various controls. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

D.5 Intergenerational Mobility (Transition Matrix)

In addition to conventional regression analysis, I employ a transition matrix to quantify the probability of individuals moving between different socioeconomic strata across generations. P_k is the transition matrix of ethnic k, where P_{kij} represents the probability of transitioning from class i in the parental generation to class j in the offspring generation. All transition matrices in this study consist of four classes. For the general transition matrix which combines educational and occupational attainment, socioeconomic classes range from commoners to high officials. For transition matrix merely composing educational attainment, the classes range from non-degree holders to Jinshi scholars. With the occupational attainment dimension, the classes extend from individuals holding no official positions to those with upper official positions.

$$P = \begin{bmatrix} P_{11} & \dots & P_{14} \\ \vdots & \ddots & \vdots \\ P_{41} & \dots & P_{44} \end{bmatrix} \tag{D.1}$$

Figure D.4 shows that the relationship between sons' and fathers' outcomes is convex for Han Chinese. Around 50 percent commoners ended up as commoners, and this probability of ending up at the same social categories decreases as the prestige of the fathers increases. The probability of a man holding a higher official position decreases to 23 percent, but is 52 percent if he ended up at middle official category.

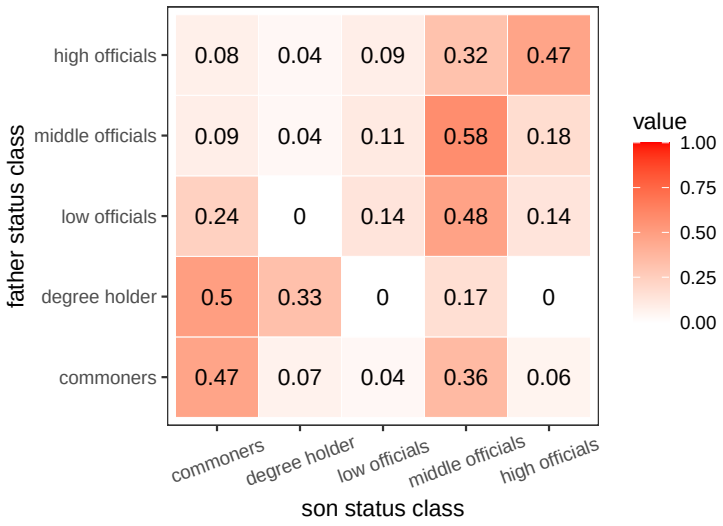
For bannermen, Figure D.5 reveals that the relationship between the social status of offspring and fathers is even stronger among the Baqi bannermen than among Han Chinese. Ordinary bannermen has 47% probability of being commoners. Meanwhile, the level of mobility of elite bannermen is substantially lower. When fathers hold high official titles, their children have a 0.32 and 0.47 chance, respectively, of holding middle or high official positions. However, I still observe considerable upward mobility in the Baqi group. A bannerman whose father is a commoner has a 36 percent chance of becoming a middle official. This is considerably greater than that of a common Han, which is merely 10 percent.

I further compare the educational and positional mobility table of two groups

Figure D.4: Mobility Table of Han Chinese

Notes : This figure display the mobility table of Han Chinese. I classified individuals into five categories according to their degree level and official positions, starting from commoners to high officials. For Han Chinese, there is a strong correlation between the social status of sons and fathers. For instance, the probability of a men to become a commoner is 0.49 when his father is a commoner, but is zero when his father is a high official. When a men coming from a high official family, the probabilities of obtaining middle and high official position are 0.52 and 0.23, respectively.

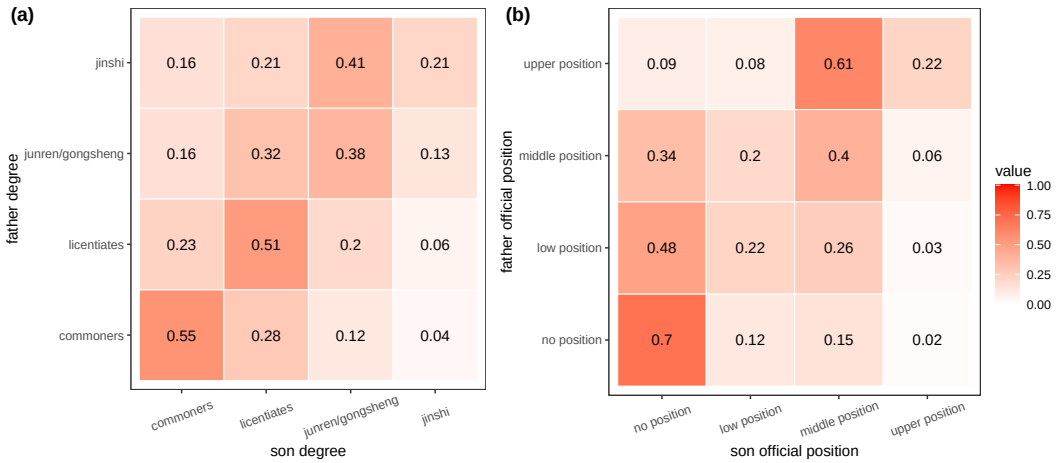
Figure D.5: Mobility Table of Baqi



Notes : This chart illustrates the mobility of Baqi bannermen. There is an even stronger relationship between the social status of offspring and fathers among Baqi bannermen. Compared to Han Chinese, it is easier for ordinary Baqi bannermen to attain higher official titles. A bannerman whose father is a commoner has a 36 percent chance of becoming a middle official. This is considerably greater than that of a common Han, which is merely 10 percent. The level of mobility of elite bannermen is substantially lower. When fathers hold high official titles, their children have a 0.32 and 0.47 chance, respectively, of holding middle or high official positions.

to investigate whether two groups had distinct features in educational and positional moblity. Panels a) and b) in Figure D.6 display the mobility table of Han Chinese in terms of educational and official position attainment respectively. For Han Chinese, the educational attainment of fathers and offspring is closely related. A man with a commoner ancestry has a 55 percent chance of becoming a commoner. Even for the highest level of degree, *jinshi*, a man with a *jinshi* father has a 21 percent probability of obtaining a *jinshi* degree and a 41 percent chance of having a *juren* degree. The relationship between fathers' and sons' official positions is relatively weaker in middle classes (for low position and middle position categories), but convex in the upper tail (upper position). The probabilities of a male from an upper official family holding a middle or upper official position are 61% and 22%, respectively. This is 21% greater than the probability that a man with a *jinshi* father has a *jinshi* or *juren* degree.

Figure D.6: Educational and Positional Mobility Table of Han Chinese

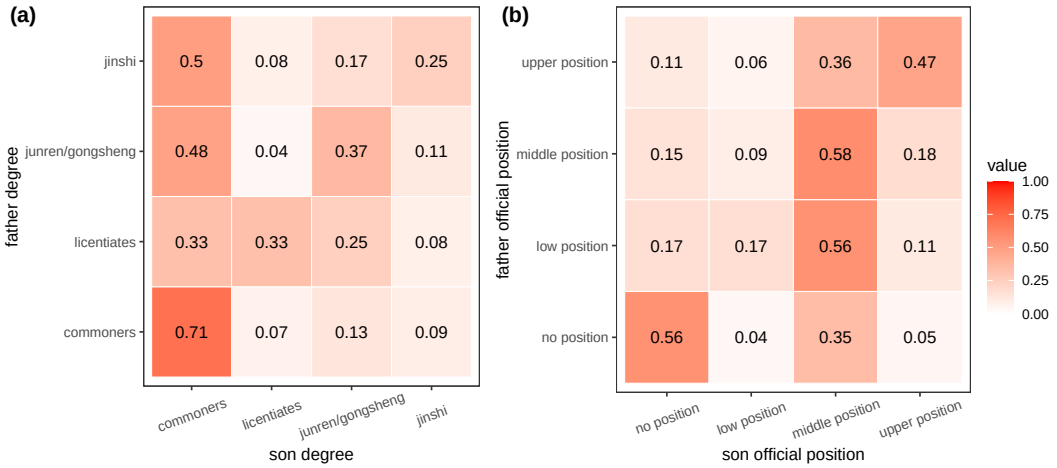


Notes : Panels a) and b) in this figure showcase the educational and positional mobility tables of Han Chinese, respectively. For Han Chinese, the educational attainment of fathers and offspring is closely related. A man with a commoner ancestry has a 55 percent chance of becoming a commoner. Even for the highest level of degree, *jinshi*, a man with a *jinshi* father has a 21 percent probability of obtaining a *jinshi* degree and a 41 percent chance of having a *juren* degree. The relationship between fathers' and sons' official positions is relatively weaker in bottom and middle classes, but convex in the upper tail (upper position). The probabilities of a male from an upper official family holding a middle or upper official position are 61% and 22%, respectively. This is 21% greater than the probability that a man with a *jinshi* father haa a *jinshi* or *juren* degree.

Figure D.7 depicts the educational and positional mobility tables for the Baqi group. The Baqi group exhibits a distinct mobility characteristic compared with Han Chinese. As noted before, the Han Chinese rely significantly on educational

attainment for reproduction, whereas the Baqi prioritise obtaining official positions. From panel a), the probability of being a commoner ranges between 33% to 71% for every class, indicating that educational attainment is not an essential way for them to maintain social status. A man with a *jinshi* father still has a 50 percent probability of being a commoner, which is 34 percent higher than Han Chinese. In contrast, having an official position is essential for bannermen in every classes. a bannermen with a commoner father will have a 40% chance of having a middle or high official position. When a bannerman's father holds at least a low official position, the likelihood of obtaining a middle or high official position increases to approximately 75%.

Figure D.7: Educational and Positional Mobility Table of Baqi



Notes : This figure depicts the educational and positional mobility tables for the Baqi group. The Baqi group exhibits a distinct mobility characteristic compared with Han Chinese. As noted before, the Han Chinese rely significantly on educational attainment for reproduction, whereas the Baqi prioritise obtaining official positions. For the Baqi group, a man with a *jinshi* father still has a 50 percent probability of being a commoner, which is 34 percent higher than Han Chinese. In contrast, When a bannerman's father holds at least a low official position, the likelihood of obtaining a middle or high official position increases to approximately 75%.

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