The Organizational Demography of the Qing Civil Service, 1830-1911

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Forthcoming 2024 in 社会科学研究 (Social Science Research)

Recommended citation:

康文林 (Cameron Campbell) and 高帅奇(Gao Shuaiqi). Forthcoming 2024. 清代文官的组织人口学研究, 1830-1911 (The Organizational Demography of the Qing Civil Service, 1830-1911). *社会科学研究 (Social Science Research).*

1 November 2023

ABSTRACT

We study the organizational demography of the Qing civil service from 1830 to 1911. Before the 20th century, the Qing bureaucracy was one of the largest non-military organizations in the world in terms of numbers of regular employees. At any given time, approximately 13,000 officials held formal appointments. We present the basic features of its organizational demography using data on nearly all civil officials with formal appointments from 1830 to 1912. We make use of longitudinally linked records of officials in the China Government Employee Database – Jinshenlu (CGED-Q JSL) to reconstruct rates of exit from service, the career lengths of officials, and the number of years since first appointment for currently serving officials. While previous studies of the Qing have examined turnover in specific types of posts, they have not considered the dynamics of complete careers. We find that exit rates in the first year of service were high and then low and stable afterward. While most officials only served for a short time, currently serving officials were relatively experienced. We also show that rates of exit from service declined for much of the last half of the 19th century, and then increased in the first decade of the 20th century. Declining turnover in the last half of the 19th century would have reduced opportunities for degree holders seeking posts and for officials seeking promotion at a time when the number of holders of purchased degrees competing for posts was increasing. We also compare different categories of officials. The results not only illuminate basic features of the organizational demography of Qing officialdom, but also provide a baseline for interpreting results from case studies of specific groups of officials or specific time periods.

Introduction

We examine the organizational demography of regular Qing civil officials between 1830 and 1911. Organizational demography refers to the composition and internal dynamics of the employees of a formal organization (Pfeffer 1983). The organizational demography of the Qing bureaucracy is important because before the 20th century, it was one of the largest non-military organizations in the world in terms of the number of regular salaried employees. At any given time, it employed approximately 13,000 officials with formal appointments, as well as large but varying numbers of officials with temporary or other irregular appointments. It was also well ahead of its time in terms of its sophistication, with well-defined procedures for appointment, performance review, promotion, transfer, or demotion, and termination. In the 19th century, elements of the system like the civil service examination inspired imitations in the West and elsewhere.

We focus on the exit rates of officials, their career lengths, and their composition in terms of years since their first appointment. Exit rates determine career lengths, turnover, and the composition of officials in terms of experience. We are especially interested in trends over time and comparisons between subgroups of officials: Banner versus civilian, central government versus local government, examination degree versus purchased degree, and bureaucratic rank. Exit rates provide insight into turnover. Differentiated by years since appointment, they identify the career stages that were the most precarious. Career lengths of officials offer an individual-level perspective on what an aspiring official could expect if they were appointed. The distribution of officials by numbers of years of experience measures the experience of currently serving officials at an aggregate level. We use it to assess whether the civil service was made up of long-serving officials who had many years of experience, less experienced officials who only had a few years of experience, or some mixture of the two. Time trends, meanwhile, reveal whether the disruptions and efforts at reform in the last half of the 19th century and beginning of the 20th century had any effects on the organizational demography of officialdom.

This study offers a new perspective on the Qing state during the 19th century. Institutional histories and case studies have produced detailed insights into the policies and regulations that governed the recruitment and management of personnel, but only the data on regular civil officials that we analyze here that can provide a complete picture of the implications of the system for basic parameters like the exit, career lengths and cumulative years of experience of serving officials, whether overall or in specific time periods or subgroups. Accordingly, the results of this study will serve as a baseline for comparison in detailed studies of the appointment, promotion, and exit of specific groups of officials in the CGED-Q like Campbell (2020), Chen et al. (2018), Hu et al. (2020; 2021) and Xue and Campbell (2022). The study also contributes a historical, non-Western case to the literature on organizational demography (Pfeffer 1983, 1985; Stewman and Konda 1983; Stewman 1986).

The study will also improve our understanding of appointment dynamics and state capacity in the 19th century. Previous studies reported high turnover and short appointment lengths for specific posts by analysis of information in gazetteers, resumes (履历), and other sources. They suggested that high turnover in local posts impaired state capacity, especially in the late 19th century, because the relevant officials had less experience to bring to bear to their responsibilities. Until now, the lack of complete career data has precluded assessment of whether careers were also becoming shorter, or stayed the

same length or became longer. The former corresponds to a situation where officials may have been steadily less experienced over time, while the latter corresponds to a situation where officials had stable or increasing amounts of experience. Shorter careers and accompanying higher turnover would have increased opportunities for appointment for degree holders, whereas longer careers and less turnover would have reduced opportunities. The results will also contextualize recent case studies that have used the diaries of Qing officials by clarifying whether these officials' qualifications, length of service, and other career parameters were typical or atypical.[1]

We use a dataset that is uniquely suited to the study of the organizational demography of Qing officialdom: the China Government Employee Database-Qing Jinshenlu (CGED-Q JSL) (Chen et al. 2020). We constructed the CGED-Q from surviving editions of the *Jinshenlu*, a roster produced each quarter that listed central, provincial, prefectural, and county government posts and the officials who held them. This is one of the largest and most detailed databases describing the employees of a formal organization before the 20th century. We can examine the exit rates, length of service, and other features of the careers of officials because we have linked records of the same officials across editions to produce career histories for them (Campbell and Chen 2022). We focus on the period from 1830 to 1911 because that is the period for which the coverage of surviving editions is most complete. Coincidentally, that is also a period during which the Qing experienced frequent and severe disruptions, and in the final decades, made efforts at reform. We have transcribed at least one edition almost every year between 1830 and 1911. In most of these years, we have all the editions.

We divide the remainder of the paper into four parts. In the first part, we provide background. We introduce organizational demography and briefly review features of appointment and promotion in the Qing civil service relevant to the analysis. In the second part, we introduce the China Government Employee Dataset-Qing that we use for the analysis, highlighting relevant strengths and weaknesses. In the third part, we present our results on exit rates, career lengths, and time since first appointment for currently serving officials. In the fourth part, we discuss implications and conclusions.

Background

Organizational Demography

Organizational demography is the application of demographic techniques to study of the composition and internal dynamics of the employees or, more broadly, the members of a formal organization (Pfeffer 1983). Composition by length of service (years since first appointment) for current employees replaces age composition, entry and exit rates replace birth and death rates, and the career length of individual employees replaces life span. One line of research emphasizes the influence of the composition of an organization in terms of length of service and other attributes on such outcomes as diversity, ability to adapt and innovate, formation of cliques based on entrance year, and employees' mobility expectations and/or aspirations (Pfeffer 1983, 1985). One recent empirical finding directly relevant to our analysis is

[1] Examples include Li Xizhu's (2020) and (2022) studies of the work and life of late Qing provincial educational administrators based on the diary of Lu Baozhong, and Qiu Jie's (2008) and Zhang Yan's (2009) studies based on Du Fengzhi's diary.

that in organizations like the Qing bureaucracy that have only limited opportunities for internal promotion, reductions in the exit rates of the most senior employees diminish the prospects of their junior colleagues (Bianchi et al. 2023). Another line of research considers the interaction of the populations of employees and positions and focuses on how job vacancies interact with the circulation of employees within the organization (Stewman and Konda 1983; Stewman 1986). This work showed that even a modest rate of exit from the organization for employees could stimulate circulation and advancement within the organization by initiating vacancy chains. Except for the studies of California state workers by Barnett et al. (2000) and the United States federal civil service by Diprete (1989), large-scale academic studies of the organizational demography of civil servants remain rare.

Compositional Features of Qing Officialdom

From 1760 to just before 1911, that is almost the entire period covered by the CGED-Q JSL, there were approximately 12,000 regular central, provincial, prefectural and county government posts. These were recorded in every edition of the *Jinshenlu* and the officials who held these posts were subject to formal procedures for appointment, promotion, demotion and termination. On average, 93% of these posts were occupied at any given time. The remaining 7% were vacant, though some of these apparently vacant posts may have been occupied by officials with acting appointments that were not recorded in the *Jinshenlu*.

Chen et al. (2020) described the composition of regular Qing officials recorded in the CGED-Q JSL in terms of their affiliation with the Eight Banners, service in the central government, and type of degree. First, affiliates of the Eight Banners and the Imperial Lineage were overrepresented in officialdom. Bannermen only accounted for 2-4% of the population of the Qing but accounted for 21.5% of regular officials (Chen et al. 2016:454).[2] They were mostly Manchu or Mongol, but a small number of them were identified as Han Marital. Imperial Lineage members who accounted for no more than 0.01% of the population of China accounted for 1.8% of regular officials. Non-Banner officials, hereafter civilian officials (民人), accounted for 76.2% of officials, that is just over three-quarters of officials. Most of these officials were what would now be referred to as Han. Second, 75% of officials served outside the central government in provincial, prefectural, or county administrations (Chen et al. 2020:455). Third, nearly one-third of officials, 35.5%, held purchased degrees.

Appointment Dynamics of Officials in Late Imperial China

Previous studies of the career dynamics in the Ming and Qing civil services examine length of time appointed to specific posts but consider the total lengths of careers or the number of years of experience of serving officials. In a comprehensive study of the Ming, Parsons (1963:346-351, 1970:458-459) examined trends over time in the average lengths of appointment for officials in different types of posts and related them to dynastic stability. One line of studies for the Qing focuses on local officials. Li and Zhou (1974:317-326) used information in local gazetteers to estimate the distribution of magistrates and prefects by the length of time in their post. According to their estimate, half of these local officials served in their post for one year or less. These results contradicted the common understanding that

[2] For a detailed discussion of appointment and promotion of Banner officials, see Chapter 3 of Chen (2019).

appointments to local offices typically lasted for three years (三年一任). Wu and Wan (2018) compared the lengths of appointments of county magistrates in southern Sichuan according to whether they were regular, acting, or proxies. The average length of appointment of regular country magistrates was 2.4 years, the average length of acting (署任) country magistrates was 0.9 years, and the average length of county magistrates serving as proxies (代理) was 1.5 months.

Another line of studies examined the lengths of appointment for higher officials serving outside the capital. Wei Xiumei (1971, 1972, 1973, 1976, 1981, 1984) used information in resumes to study provincial administration commissioners 布政使 (1971), envoys 按察使 (1972), provincial governors 督抚(1973), provincial education administrators 学政(1976), garrison commanders 驻防将军都统 (1981), garrison vice-commanders 驻防副都统 (1984). These studies examine the geographic and social origins, career dynamics, and most relevant to this study, the appointment lengths of the official in the posts. Wei concluded that there was no fixed upper limit to the length of an appointment of governors. The shortest appointments were for only a few months, and the longest were for as long as 10 years. The average lengths of appointment for governors-general (总督) was between 2 and 3 years and for provincial inspectors-general (巡抚) it was 1-2 years.

Findings on trends in the lengths of appointments are mixed. Wei and others reported that in the late Qing, the lengths of appointments to specific posts fell and turnover increased. This seems to be best documented for county and prefectural officials and has inspired suggestions that high turnover reflected and/or led to impaired state capacity. Zhang Zhenguo (2018:77-80) suggested that as provincial governors increased their control over appointments of local officials, the central government had more difficulty enforcing rules related to the appointments of local officials, including the lengths of their terms. Wei Xiumei suggested that the short terms and frequent transfer of officials was a key factor in the prevalence of corruption among Qing officials (Wei 1973:291-292). You Chenjun reviewed studies of the appointment lengths of county officials in the Ming and Qing and argued that increasing turnover impaired the capacity of local officials to handle litigation (You 2022:190-191). Turnover for higher officials may have been lower: Yang Junmin (2010:108-110) reported that the appointment lengths of governors-general lengthened over the course of the 19th century.

These studies of the lengths of appointments to specific posts suggest directions for our study of entire careers using the CGED-Q. First, we will examine whether entire careers, like appointments to the specific posts that made up a career, were also short. Second, we will examine whether there was a decline over time in career lengths and years since first appointment that corresponded to the decline during the 19th century in the lengths of appointments to specific posts.

Data and Methods

We make use of the China Government Employee Dataset-Qing (CGED-Q) Jinshenlu (JSL). We describe the CGED-Q JSL in detail elsewhere (Ren et al. 2016, 2019; Chen et al. 2020), thus here we only describe features specifically relevant to the analysis of the organizational demography of officials. The *Jinshenlu* from which we created the CGED-Q JSL was a quarterly roster of civil officials. Originally it was produced by the government for internal use, but during the 19th century publishers began producing and selling commercial editions based on the government editions. The original government editions only included officials who held regular appointments. Commercial publishers competed by including in the editions

they sold some other officials with temporary or irregular appointments. Sometimes they also included details about each official. The type and detail of this extra information varied across publishers and sometimes between editions from the same publisher.[3]

The government and commercial *Jinshenlu* have limitations relevant to the analysis (Chen et al. 2020). They did not normally record officials in the prefectures or counties who held acting as opposed to regular appointments. Especially towards the end of the Qing, increasing numbers of local officials were appointed for at least short periods on an acting basis (Hu 2022, Wu and Wan 2017). The *Jinshenlu* did not include clerks and others (*muliao* 幕僚) who served county and prefectural officials and who were not paid by the central government. Because communication was slow, appointments, transfers or exits from employment of officials outside the central government may have taken three or more months to be reflected in the *Jinshenlu* (Ren et al. 2016). If the lag was consistent and the delays in the recordings of entrances and exits were similar, this should not have affected estimates of career lengths. Similarly, while Wu (2022) provides specific examples of discrepancies between the information about local officials recorded in the *Jinshenlu* and other sources, these should not have affected the broader trends and patterns presented here. Yet another limitation is that the *Jinshenlu* did not record why officials exited. Thus, when an official was no longer listed in the Jinshenlu, we have no way of determining whether they died, resigned for poor health or other reasons, took mourning leave and then did not return, or were fired.

The CGED-Q JSL contains 4,433,600 records of civil and military offices between 1760 and 1912. The basic information included in each record in the government editions depended on whether officeholders were civilians or affiliates of the Eight Banners. For affiliates of the Eight Banners, records include given name, Banner affiliation, current post, whether they were Manchu, Mongol, or Han, Imperial Lineage affiliation (if any), and degree qualification (if any). For everyone else, records in government editions include surname, given name, province and county of origin, current post, and degree qualification. If an office was vacant, the name was left blank.

We produced career histories of officials in the CGED-Q JSL by probabilistic linkage of records across different editions. Campbell and Chen (2022) describe linkage procedures in detail, thus here we only summarize key features. Procedures for the linkage of records depended on whether they recorded Eight Banner affiliates. Linkage of officials who were not Eight Banner affiliates was straightforward because combinations of surname, given name, and province and county of origin were typically unique and could be used as primary attributes for linkage. The main challenge in linkage was accommodating inconsistencies across editions in the orthography of a character in a name, and the replacement of characters with different ones that looked or sounded similar. Probabilistic linkage allowed for matching on secondary attributes like position and degree held to offset inconsistencies in the characters recorded in name. Linkage of Eight Banner affiliates was more difficult because only given name and Banner affiliation were available as primary attributes for linkage, and their combination was less likely to be unique than the combination of the primary attributes available for civilian officials. Again,

[3] See Chen et al. (2020) for a comparison of the contents of government and commercial editions.

probabilistic linkage allowed for use of secondary attributes to separate records of officials with identical given names and Banner affiliations.[4]

For this analysis, we make use of a subset of the records in the CGED-Q JSL. First, we restrict to records of officeholders from 1830 to 1911, when coverage of the editions in the CGED-Q JSL is most complete. For this period, the CGED-Q JSL includes 3,379,958 records of civil offices, of which 3,144,711 (93.2%) were occupied. After we exclude records of temporary or irregular offices that were not consistently recorded in every edition and a small number of duplicated or invalid records, we are left with 2,771,447 records. We then restrict to records of officials who began their careers between 1830 and 1880. We also excluded all records in which at least one character in the recorded surname or given name was illegible.[5] This ensures that we have at least 30 years of follow-up for each official from the start of their career. This leaves 1,934,749 records of 75,172 civil officials.

We compare officials according to whether they were civilian (民人) or Bannermen (旗人) and whether they were central government officials (京官) or provincial, prefectural, or county officials (外官). Civilians accounted for 73.9% of the records and 71.3% of officials in our analysis and Bannermen accounted for the remaining 26.1% of records and 28.7% of officials. Bannermen accounted for more officials than records because as will be apparent below, their careers were shorter. Central government officials accounted for 26.1% of records and 27.8% of officials in our analysis, and non-central government officials accounted for the remainder. The vast majority of civilians served outside the central government, and they accounted for the vast majority of officials outside the central government: 92.8% of civilians served outside the central government, and 92.8% of the officials serving outside the central government were civilians. Conversely, Bannermen mostly served in the central government, and central government officials were mostly Bannermen: 79.5% of Bannermen served in the central government, and 79.6% of central government officials were Bannermen.

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[4] On top of the linkage described in Campbell and Chen (2020), we conducted two additional rounds. In the first, we grouped records by post, sorted them by year, and then for officials who appeared to be newly appointed, compared their information with that of the official in the previous record of the post, and if they matched on a string composed of their concatenated surname, given name, and province and county of origin with only one discrepancy, linked their records to those of the previous officials. Specifically, for records of newly appointed officials, we compute the Levenshtein edit distance between their concatenated surname, given name, and province and county of origin and that of the official in the previous record, and if the edit distance is 1, we link the records. This addressed a problem we identified where discrepancies in the information recorded for the same official in the same post in adjacent editions differed in ways that could not be addressed by adjusting the weights in the probabilistic linkage without causing other problems. To compute the edit distance, we use the STATA `strdist` package (Barker and Pöge 2012). In the second, we identified all situations where the career histories created in previous rounds had a gap where there was an edition with no record of that official, and matched those to records in that edition that were no linked to any other edition. We did this because in a manual inspection we found that many of the records not linked to any other records in previous rounds belonged to other officials, but were not linked because of combinations of discrepancies.

[5] We found that records with an illegible character in the surname or given name were especially likely not to be linked to records in adjoining editions, even when they should have been.

We distinguish civilians according to their degree credentials and Bannermen according to the nature if their Banner or Imperial Lineage affiliation. For civilians, we compare holders of three types of examination degrees: Metropolitan Degrees *jinshi* (進士), Provincial Degrees *juren* (舉人), and regular Tribute Students (*gongsheng* 貢生) and two types of purchased degree: purchased *gongsheng* (異途貢生) and *jiansheng* (監生). Most of the civilians who served in the central government were *jinshi*, while those serving outside held lesser degrees. For Bannermen, we distinguish between the Upper 3 Banners (上三旗), the Lower 5 Banners (下五旗), and members of the main line (*zongshi* 宗室) and collateral line (*jueluo* 覺羅) of the Imperial Lineage. Members of the Imperial Lineage had the highest status, followed by members of the Upper 3 Banners, and then members of the Lower 5 Banners.

Results

Exit Rates

We first examine exit rates for officials. By exit rates, we mean the numbers of officials per 1,000 who exited from government service in the following three months, that is between the current edition and the next. Table 1 presents exit rates by number of years since first appointment. The overall three-month exit rate was 35 per 1000. This implies an annual exit rate of 132.8 per 1000, or 13.8%.[6] Since the total number of officials was stable, it also implies that half of officials were replaced every 5.1 years, and 90 percent were replaced every 16.7 years. The overall three-month exit rates of civilian and Banner officials were identical, and both 35 per 1000.

Table 1. Number of Regular Officials Per 1000 Exiting in the Next 3 Months by Civilian/Banner, Central/Non-Central Government, and Degree or Banner Status, 1830-1911

	Years Since First Appointment							
	0 ‰	1-4 ‰	5-9 ‰	10-19 ‰	20-29 ‰	30+ ‰	Total ‰	N (Records)
Civilian								
Non-Central Government								
Degree Type								
Jinshi	42	34	34	35	42	38	36	113,022
Juren	46	29	32	37	49	64	35	326,814
Gongsheng	87	40	36	39	48	53	47	158,724
Purchased Gongsheng	43	28	29	36	46	55	34	195,612
Jiansheng	32	29	30	32	37	46	31	531,830
Non-Central Subtotal	47	30	31	35	42	49	35	1,326,002
Central Government								
Degree Type								

[6] 1000-((1000-40)/1000)^4=150.6

Jinshi	49	39	28	27	26	30	34	59,101
Juren	81	47	43	39	50	39	52	19,049
Gongsheng	121	48	41	41	38	38	60	7,517
Purchased Gongsheng	71	54	36	37	27	68	52	6,742
Jiansheng	70	55	31	40	40	29	49	10,748
Central Subtotal	66	44	33	31	30	33	42	103,157
Civilian Total	49	31	31	35	41	47	35	1,429,159
Banner								
Non-Central Government								
Banner Status								
Lower 5 Banners	97	48	38	37	37	33	48	86,605
Upper 3 Banners	76	51	36	40	35	25	47	13,457
Jueluo	93	41	22	41	25	87	42	1,956
Zongshi	157	49	67	29	39	50	54	1,551
Non-Central Subtotal	95	48	38	37	36	35	48	103,569
Central Government								
Banner Status								
Lower 5 Banners	95	29	24	26	26	24	33	319,266
Upper 3 Banners	73	25	24	24	32	36	30	47,342
Jueluo	99	26	18	22	16	24	26	17,377
Zongshi	89	27	14	19	17	25	26	18,036
Central Subtotal	93	29	23	25	25	25	32	402,021
Banner Subtotal	93	33	26	27	27	27	35	505,590
Total	59	32	30	33	37	37	35	
N	231,331	584,486	445,074	451,351	157,290	65,217		1,934,749

Note: Restricted to records in edition where the next quarterly edition was also available.

The exit rates of new officials were high. According to Table 1, in the first year of service, 49 per 1000 civilian officials exited in the next three months. At this rate, nearly one-fifth (18.2%) would have exited in their first year. Exit rates were higher in the central government than outside it: 66 versus 47 for civilians. The lowest three-month exit rates for first-year officials, 32 per 1000, were for holders of *jiansheng* purchased degrees who served outside the central government. The highest exit rates were for holders of *gongsheng* examination degrees, regardless of where they served. Within the first year, the highest exit rates were in the first three months of service, and they declined afterward: 61.3, 46,

47, and 39 per 1000 in the first, second, third and fourth three months. These findings are consistent with the published ones for prefectural and county posts summarized earlier, and suggest that those officials were not moving to other posts but were leaving service.

Exit rates for Bannermen in the first year were substantially higher, with 93 per thousand leaving in the next three months. For Bannermen in their first year, there was little overall difference by whether they served in the central government. Affiliates of the Upper 3 Banners had the lowest exit rates. In the central government, the *jueluo* had the highest first-year exit rates. Patterns within the first year were like those for civilians, though higher overall, and especially high in the first three months: the exit rates for Bannermen were 148.7, 66.9, 53.3, and 40.1 in the first, second, third, and fourth three-months.

Exit rates declined after the first year. For officials in their 1st through 4th years, the three-month exit rate was only 32 per 1000. Rates were even lower for officials in their 5th through 9th years and 10th through 19th years: 30 per 1000 and 33 per 1000, respectively. Even after 20 and 30 years, exit rates were only slightly higher: 37 per 1000. Overall, according to our calculations, the three-month exit rate after the 1st year was only 33 per 1000. This implied an annual exit rate of 125 per 1000. At this rate, half of the officials with more than one year of experience would be replaced every 5.4 years, and 90 percent would be replaced every 17.8 years. The stability of the exit rates even for officials who had more than 30 years of experience is surprising, since if they were first appointed when they were 30, they would be at least 60 years old, and close to retirement age in contemporary societies.

Career Length

As a result of elevated exit rates in the first year, and slightly elevated exit rates in years one through four, most officials had short careers. Table 2 presents the distribution of career lengths in years, as well as mean and median career lengths. Just as Li and Zhou (1974) and others reported that most appointments to specific posts were only for a short duration, we find that 20.7% of officials lasted less than one year, and another 27% lasted between 1 and 5 years. The similarity between our results for careers and earlier results for appointments reflects that according to our own examination of the data, most officials only had one appointment. 52.3% of officials had a career that lasted more than 5 years. 11.6% of officials had careers that were 20 years or longer: 8.0% between 20 and 30 years, and another 3.5% more than 30 years. Because there were a small number of officials with especially long careers, mean career length was much longer than median career length: 8.3 years versus 5.0 years.

Table 2. Career Lengths of Newly Appointed Officials by Civilian/Banner, Central/Non-Central Government, and Degree or Banner Status, 1830-1881

	Career Length in Years								
	0 %	1-4 %	5-9 %	10-14 %	20-29 %	30+ %	Mean	Median	N (Officials)
Civilian									
Non-Central Government									
Degree Type									
Jinshi	16.9	30.2	21.1	22.8	7.0	2.0	8.0	5.5	3,273
Juren	15.9	26.9	22.7	23.6	8.8	2.1	8.6	6.3	13,542

Gongsheng	30.4	31.9	18.5	13.1	4.5	1.6	5.6	3.0	8,494
Purchased Gongsheng	15.7	26.9	22.1	22.1	9.0	4.2	9.2	6.5	5,862
Jiansheng	13.1	29.1	22.4	22.3	9.3	3.8	9.2	6.5	17,613
Non-Central Total	17.5	28.8	21.7	21.1	8.1	2.9	8.3	5.5	48,784
Central Government									
Degree Type									
Jinshi	16.0	19.2	14.8	25.3	16.5	8.2	12.2	9.9	2,846
Juren	19.4	25.4	20.9	20.3	10.1	3.9	9.1	6.0	891
Gongsheng	24.4	22.6	16.4	20.2	9.9	6.5	9.8	5.5	505
Purchased Gongsheng	17.6	24.4	24.4	21.6	6.3	5.7	8.9	5.9	176
Jiansheng	20.1	24.6	17.8	19.8	11.7	6.1	9.6	5.9	394
Central Total	17.9	21.3	16.7	23.2	13.9	7.0	11.1	7.8	4,812
Civilian Total	17.5	28.1	21.2	21.3	8.7	3.2	8.6	5.8	53,596
Banner									
Non-Central Government									
Banner Status									
Lower 5 Banners	30.2	32.1	18.8	13.4	3.9	1.5	5.6	3.0	4,514
Upper 3 Banners	27.4	36.1	17.6	14.5	3.0	1.3	5.6	3.3	822
Jueluo	29.1	31.6	12.7	20.3	5.1	1.3	6.6	2.8	79
Zongshi	44.6	23.1	21.5	7.7	3.1		3.9	1.5	65
Non-Central Subtotal	30.0	32.6	18.6	13.6	3.8	1.5	5.6	3.0	5,480
Central Government									
Banner Status									
Lower 5 Banners	28.0	21.8	18.1	19.5	7.6	5.0	8.5	5.0	13,041
Upper 3 Banners	31.4	21.3	17.2	17.4	8.4	4.4	8.1	4.3	1,993
Jueluo	25.1	17.9	15.7	21.6	10.3	9.3	10.7	6.8	610
Zongshi	31.2	19.5	12.2	20.8	10.2	6.2	9.0	4.5	452
Central Subtotal	28.4	21.5	17.8	19.4	7.9	5.1	8.6	5.0	16,096
Banner Subtotal	28.8	24.3	18.0	17.9	6.9	4.2	7.8	4.3	21,576
Total	20.7	27.0	20.3	20.3	8.1	3.5	8.3	5	
N	15,589	20,312	15,254	15,265	6,116	2,636			75,172

The career lengths of officials differed by whether they started their career in the central government and by their degree or Banner status. Civilian officials had longer careers than Banner officials: a median of 5.3 versus 4.3 years. This partly reflected differences in the exit rate in the first year: 17.5% of civilian officials left in the first year, versus one-third 28.8% of Banner officials. Officials who started their careers inside the central government had longer careers than officials who started their careers outside it: medians of 7.8 versus 5.5 for civilian officials, and 4.3 versus 3.0 for Banner officials. Among civilian officials outside the central government, holders of purchased degrees had longer careers than holders of examination degrees: medians of 6.5 for purchased *gongsheng* and *jiansheng* versus 5.5, 6.3 and 3.0 for *jinshi*, *juren* and regular *gongsheng*. Among those who started their careers in the central government, *jinshi* had higher median career length than *juren*, 9.9 years versus 6.0 years.[7] As for Banner officials, those who started in the central government had longer careers than those who started outside it: 5.0 years versus 3.0 years.

Years Since First Appointment

Even though many officials had only short careers, most currently serving officials had many years of experience. Table 3 presents years since first appointment for currently serving officials as a measure of their collective experience. According to Table 3, at any given time only a small share of currently serving officials, 12.3%, had been on the job for less than one year, even though 20.7% of officials served for less than one year. 11.2% of serving officials had at least 20 years of experience, and more than one-third, 34.3% had 10 or more years of experience. Similarly, the median number of years since first appointment for officials overall, 6, was higher than median career length, 5. The discrepancy between the career lengths of officials and years of experience of currently serving officials is a product of the variance in career lengths: by definition, the officials who had short careers did not serve long enough to affect the composition of officials by total years since appointment very much.

Table 3. Years of Service of Currently Serving Regular Officials by Civilian/Banner, Central/Non-Central Government, and Degree or Banner Status, 1830-1911

	Years Since Appointment								
	0 %	1-4 %	5-9 %	10-19 %	20-29 %	30+ %	Mean	Median	N
Civilian									
Non-Central Government									
Degree Type									
Jinshi	9.2	25.1	21.2	27.0	12.0	5.5	11.3	8.5	149,388
Juren	12.3	32.0	24.5	23.0	6.8	1.4	8.0	5.8	431,424
Gongsheng	16.4	34.3	23.7	18.9	5.2	1.5	7.1	4.8	201,631
Purchased Gongsheng	13.1	33.7	24.5	20.9	5.8	2.0	7.7	5.5	236,500
Jiansheng	11.7	31.7	23.3	22.6	8.1	2.6	8.6	6.0	662,654

[7] We do not compare the holders of purchased degrees in the central government because they were uncommon.

Non-Central Total	12.4	31.8	23.6	22.4	7.5	2.3	8.4	6.0	1,681,597
Central Government Degree Type									
Jinshi	16.5	30.1	16.2	22.4	9.3	5.6	9.6	5.8	73,825
Juren	21.4	38.9	19.4	14.1	3.7	2.5	6.4	3.3	23,247
Gongsheng	21.5	35.5	18.8	14.9	4.7	4.6	7.4	3.8	9,559
Purchased Gongsheng	22.8	38.9	16.7	14.8	4.3	2.5	6.3	3.0	7,948
Jiansheng	21.1	35.9	19.4	15.5	4.5	3.5	7.1	3.5	12,842
Central Total	18.6	33.2	17.3	19.2	7.1	4.5	8.4	4.5	127,421
Civilian Total	12.8	31.9	23.2	22.2	7.4	2.5	8.4	5.8	1,809,018
Banner									
Non-Central Government Banner Status									
Lower 5 Banners	14.2	29.0	21.7	22.7	8.4	4.0	9.2	6.3	113,436
Upper 3 Banners	16.7	30.8	21.1	20.8	7.0	3.5	8.3	5.5	17,969
Jueluo	7.6	17.9	17.5	28.3	20.5	8.3	13.9	12.3	2,711
Zongshi	9.0	17.8	17.2	32.2	15.7	8.1	13.3	12.0	2,045
Non-Central Government Subtotal	14.3	28.9	21.5	22.7	8.5	4.1	9.2	6.3	136,161
Central Government Banner Status									
Lower 5 Banners	10.3	25.7	23.3	25.8	9.4	5.6	10.6	7.8	407,083
Upper 3 Banners	9.9	25.7	23.7	26.7	9.8	4.3	10.3	7.8	60,659
Jueluo	6.8	18.1	20.4	29.7	14.9	10.0	13.9	11.0	23,289
Zongshi	8.3	20.3	21.5	29.3	13.4	7.2	12.2	9.8	22,533
Central Government Subtotal	10.0	25.1	23.1	26.2	9.8	5.7	10.8	8.0	513,564
Banner Subtotal	10.9	25.9	22.8	25.5	9.6	5.4	10.5	7.5	649,725
Total	12.3	30.3	23.1	23.1	8.0	3.2	8.9	6.0	
N	302,900	745,106	567,366	567,137	196,630	79,604			785,886

Once again, there was substantial variation by whether an official was in the central government, and by their degree or Banner status. Banner officials tended to be more experienced than civilian officials, with a median of 7.5 years since appointment versus only 5.8 years for civilian officials. The most experienced currently serving Banner officials were the members of the Imperial Lineage. Members of the main line (*Zongshi*) had median years since the first appointment of 12 and 9.8 years according to whether they served outside of or inside the central government. For members of the collateral lines (*jueluo*), the corresponding numbers were 12.3 and 11.0 years according to whether they served outside of or inside the central government. Among serving civilian officials, the most experienced were the *jinshi*. Those serving outside the central government had a median of 8.5 years since first appointment, and those serving in the central government had a median of 5.8 years. Currently serving officials outside the central government who held *gongsheng* examination degrees, meanwhile, were the least experienced, with a median of only 4.8 years since their first appointment. This reflected the unusually short careers for individual *gongsheng* apparent in Table 2.

Time Trends

To assess how the organizational demography of Qing officialdom evolved over the 19th century, we examine trends over time in the exit rates of officials. These will shape career lengths and average years of experience. Declining exit rates will lead to longer careers, and more years of experience for serving officials. Increasing exit rates will have the opposite effect. We begin with an overview, differentiating trends in exit rates by numbers of years of experience. We then differentiate trends in exit rates by bureaucratic rank, Banner/civilian, and central/non-central to assess implications for specific groups of high- and low-ranked officials. We apply smoothing to clarify medium- and long-term trends, and leave examination of year-to-year fluctuations to future studies examining specific time periods.

Exit Rates by Years of Experience

Exit rates rose from the 1830s, peaked in the 1840s and 1850s, and then for most officials, declined until the 1890s and then rose again in the 1910s. Figure 1 presents smoothed annual exit rates for officials, overall and by years of experience.[8] Rates for officials with 1-4, 5-9, 10-19, and 20-29 years of experience all followed this trend and moved in parallel. Even though according to the studies summarized earlier turnover in specific county and prefectural posts increased over the last half of the 19th century, overall turnover of officials mostly declined. In later work we will examine whether as suggested in the studies summarized earlier, the pace of circulation between posts actually quickened.

[8] For all figures, we use a lowess smoother with a bandwidth of 0.2.

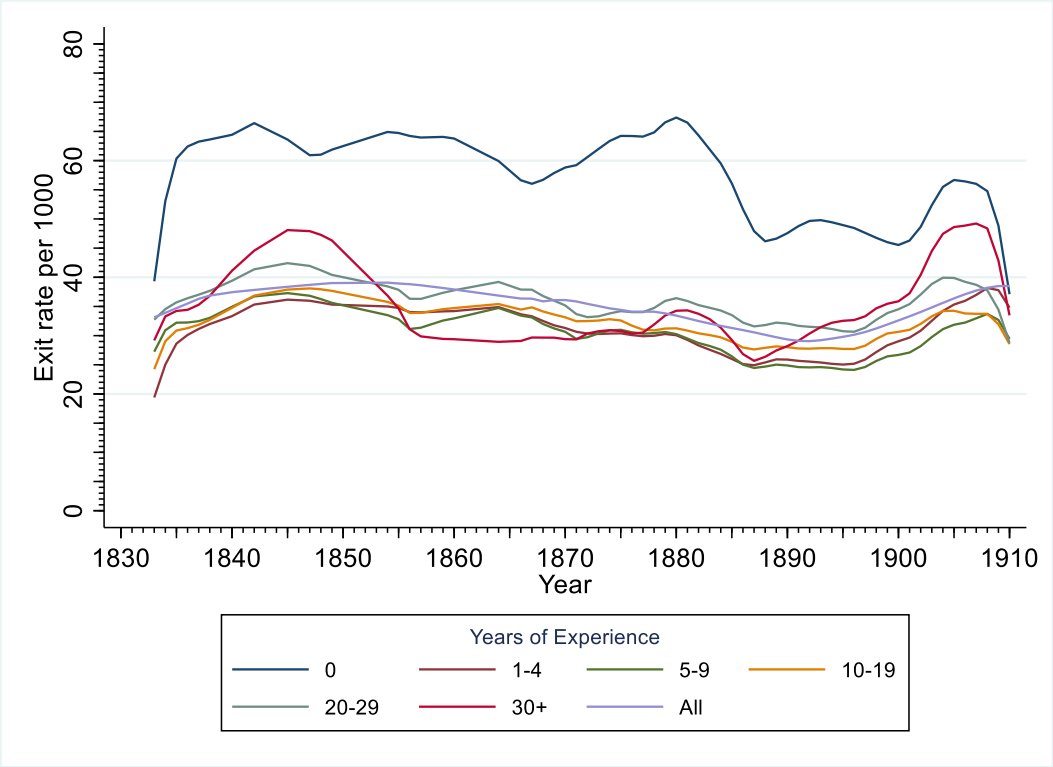

Figure 1 Smoothed Exit Rates in the Next 3 Months by Year and Number of Years Since Appointment (Lowess with Bandwidth 0.2)

The decline in exit rates over the last half of the nineteenth century reduced opportunities for appointment for eligible degree holders. The number of regular posts listed in the CGED-Q was steady during this period (Chen et al. 2020), thus any reduction in the rate at which currently serving officials exited would have led to a reduction in the numbers of new officials entering the system. While the rise in the number of holders of purchased degrees has been widely noted for its role in intensifying competition over appointments, the results here imply that the expanding pool of degree holders qualified for appointment must have been competing over a steadily shrinking number of vacancies. The steady reduction in the number of officials who left after less than a year would have had an especially large impact on the numbers of vacancies.

Trends differed for the most and least experienced officials. Exit rates for officials with less than one year of experience had an anomalous peak in the 1880s, and then stability or decline in the 1900s, when rates for other officials were rising.[9] The exit rates of officials with 30 or more years of experience fell more rapidly during the Taiping Rebellion period than for any other officials, so that in the late 1860s they had the lowest exit rates of any officials. This would be consistent with the suggestion that during times of crisis, the government retained its most experienced officials. In the 1890s, however, their exit

[9] According to calculations not shown here, the peak in the 1880s was driven mostly by a massive increase in exit rates in the central government for officials with less than one year of experience.

rates rose quickly, so that in the late 1900s they were higher than those of anyone but newly appointed officials.

We can speculate on explanations for the decline in exit rates for most officials that started during the Taiping Rebellion and continued until the end of the 19th century, and for the increase that started in the 1890s. Regarding the long-term decline, one possibility is that as crises accumulated, the government sought to retain experienced officials. Conversely, as conditions deteriorated, serving officials may have found alternatives to continued service less appealing. At the same time, declining adherence to rules regarding appointment, review, and promotion or termination and increasing use of office purchase may have made it easier for officials to extend their careers. We cannot adjudicate between these and other plausible explanations here, but they should be a fruitful direction for future research. As for the upswing in the late 1890s and 1900s, this is likely to be related to the reform efforts underway at the time.

Exit Rates by Bureaucratic Rank

While there was a long-term decline in exit rates for central government officials in the last half of the nineteenth century, followed by an increase in the 1900s, there were large fluctuations around the trend, and some categories of officials deviated. The long-term decline in exit rates, especially those of highly-ranked officials, was potentially important because as pointed out by Stewman (1986) and Stewman and Konda (1983), reductions in the exit rates of senior employees in an organization could create chain reactions of reduce opportunity for promotion that cascaded down the ranks and affected promotion opportunities for newer and lower-ranked employees, and appointment opportunities for aspiring employees.

Figure 2 presents exit rates in the next 3 months for Bannermen and civilians in the central government according to their rank. For each of these two groups, we distinguish between 1-4 *pin*, 5-7 *pin*, and 8-9 *pin* officials. Exit rates for the 1-4 *pin* civilian officials in the central government fluctuated, with peaks between 1845 and 1860 and again around 1880, and then were generally lower after the 1880 peak. The exit rates of 5-7 *pin* officials paralleled those of 1-4 pin officials, with peaks in the 1850s and early 1860s and around 1880, but then instead of declining, they stayed stable and then rose rapidly in the 1900s. The exit rates of 8-9 *pin* civilian officials in the central government fell rapidly until the 1850s, were stable until the 1890s, and then rose rapidly afterwards. Rates for 8-9 pin civilian officials fluctuated, falling from the 1830s to the 1860s, and then peaking in the late 1870s, 1890s, and 1900s.

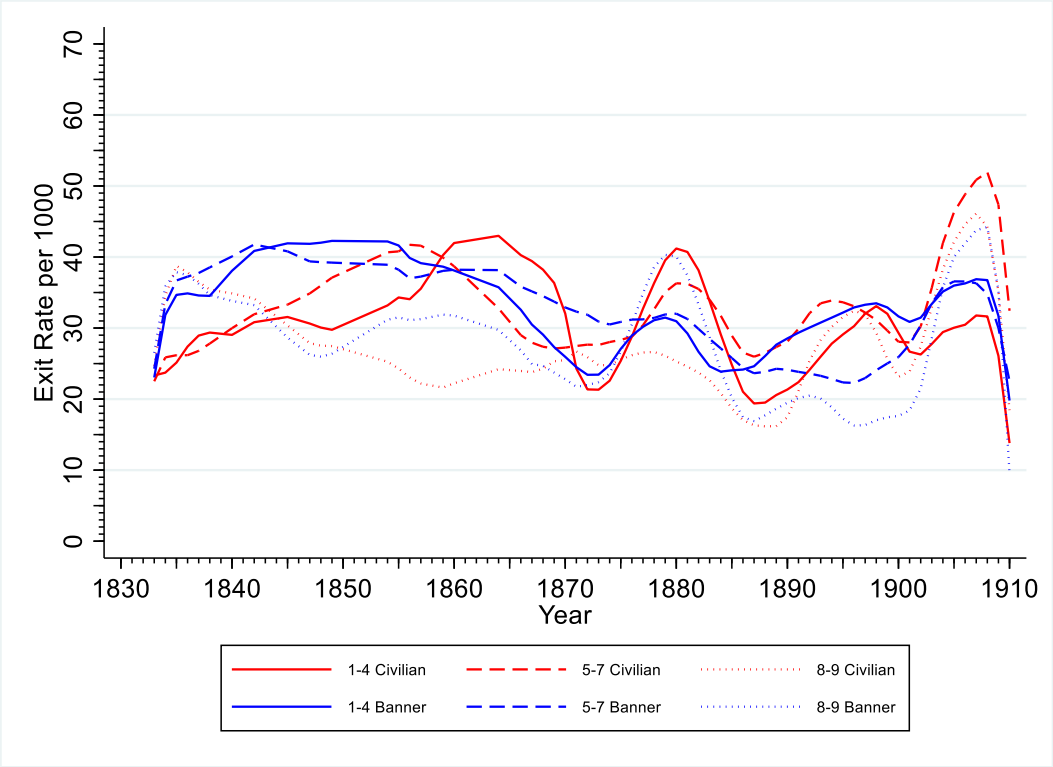

Figure 2 Exit Rates in the Next 3 Months for Central Government Officials, by Bannerman/Civilian and Bureaucratic Rank (Lowess with Bandwidth 0.2)

Trends for bannermen in the central government differed. Exit rates for 1-4 *pin* bannermen rose from the 1830s into the 1840s and then declined steadily until the 1870s. Afterwards, they began to rise again, though they were never as high as they had been in the 1840s. The decline in exit rates for 5-7 *pin* bannermen was even longer: it continued into the 1890s, when rates began to increase again. Exit rates for Bannermen did not spike around 1880 the way they did for civilians. As for 8-9 *pin* bannermen, their exit rates declined in the 1830s and 1840s, fluctuated until the 1880s, troughed in the 1880s and 1890s, and then began to rise again.

A long-term decline in rates in the last half of the 19th century was much clearer for officials outside the central government. Figure 3 presents trends in exit rates for officials outside the central government according to whether they were bannermen or civilians, and by rank. For nearly all these officials, exit rates rose from the 1830s into the 1860s, fell until the late 1870s, and then fluctuated. No peak was apparent in the 1880s. During the initial increase, exit rates rose much more for 1-4 *pin* officials than for 5-7 *pin* officials. Peak exit rates for 1-4 *pin* officials in the late 1850s and early 1860s were nearly double their rates in the early 1830s. Afterwards, they declined more as well. Rates for 1-4 *pin* officials also peaked much later than they did for 5-7 *pin* officials. Whereas exit rates of 5-7 *pin* officials began to decline soon after the beginning of the Taiping Rebellion, rates for 1-4 *pin* officials did not decline until the late 1850s.

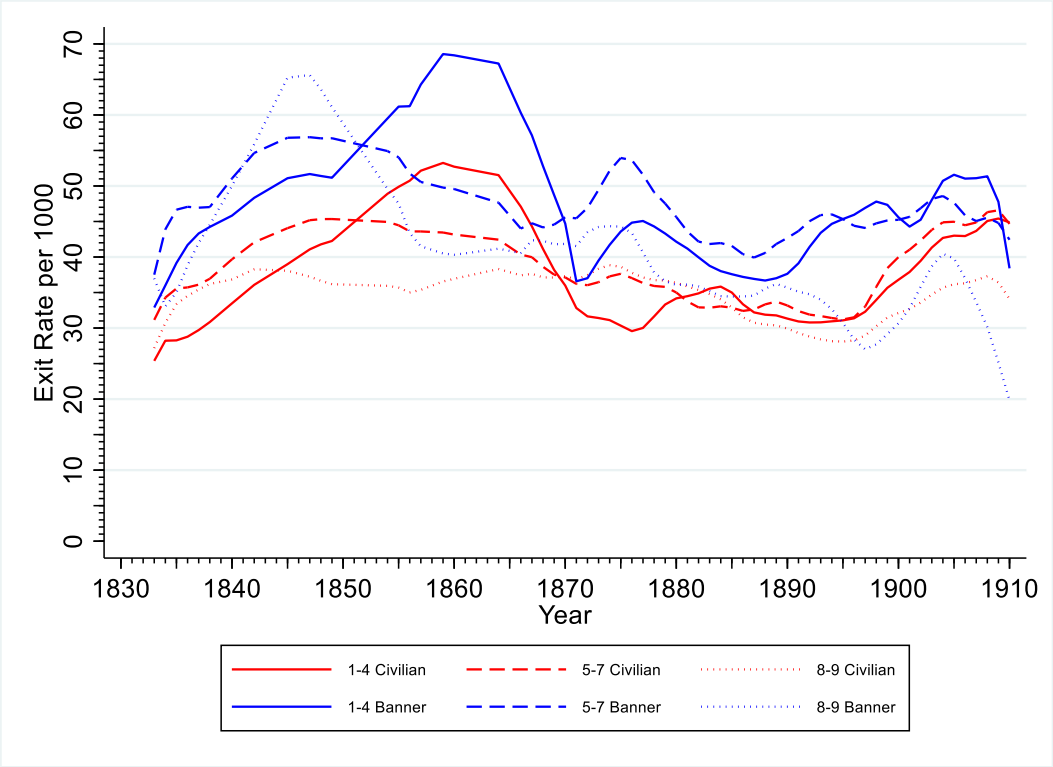

Figure 3 Smoothed Exit Rates in the Next 3 Months for Non-Central Government Officials, by Bannerman/Civilian and Bureaucratic Rank (Lowess with Bandwidth 0.2)

The total number of formal posts was steady, thus the decline over time in exit rates would have reduced the numbers of vacancies to which degree holders could be appointed for the first time or officials could be promoted. Wu (2013:264), Zhang (2022), and others already have drawn attention to the increased difficulty that degree holders seeking appointment and officials seeking promotion faced during the 19th century. While the sale of degrees increased the size of the pool of candidates competing for a first appointment, it would not by itself explain the increased difficulty of promotion for officials already in the system discussed by Wu (2013:264) and Zhang (2022). Wo (2013:264) highlighted the case of Wang Shufen, a native of Henan who served as a county magistrate in Jiangsu for more than two decades. He was recommended for promotion three times and his performance was repeatedly evaluated as outstanding, but he was never promoted. Since there was no increase in the number of mid-ranked or lower-ranked officials competing for promotion, only a reduction in the number of vacancies at higher ranks implied by the trends in Figures 2 and 3 could have led to situations like the one that Wang Shufen faced. As Bianchi et al. (2023) demonstrated in a study of contemporary Italian organizations following an increase in the retirement age, reductions in the exit rates of high-ranked officials would have had disproportionate impact on the prospects for promotion of lower-ranked officials.

Conclusion

We have clarified basic features of the organizational demography of Qing officialdom. The analysis of exit rates showed that the first year of service was especially precarious. As a result, many officials had

only short careers. Rates were lower and stable for officials who made it through their first year. As a result, the analysis of years since appointment of currently serving officials showed that most of them were relatively experienced. The holders of *gongsheng* examination degrees had especially short careers, so that serving officials with examination *gongsheng* tended to be the least experienced. Among currently serving civilian officials, the *jinshi* were the most experienced, while among Banner officials, members of the Imperial Lineage were the most experienced.

The overall picture that emerges is like that of a large contemporary organization that has high attrition for new hires, whether because employees are terminated or leave on their own, but where those who make it through the first year or two have more stability. This pattern held for all categories of Banner and civilian officials. The evidence here is consistent with earlier studies focused on appointments to specific posts and suggests that important selection processes operated after the degree was obtained to determine who was appointed and who would make it past their first year.

The findings on time trends, meanwhile, highlight the increased challenges faced by degree holders hoping for appointment and officials hoping for promotion. In a system where the number of regular positions with formal appointments was stable, the long-term decline in exit rates would have reduced the numbers of appointments available for aspiring officials. Declines in the exit rates of higher-ranked officials would also have further reduced the already limited opportunities for advancement for lower-ranked officials (Bianchi et al. 2023). This was on top of pressures already being generated by increases in the numbers of holders of purchased degrees who were competing for office. More speculatively, based on hypotheses from the literature on organization demography, reduced turnover may have made officialdom more sclerotic, increasingly dominated by officials with many years of service at a time when energy and fresh thinking were needed. In future work, we hope to apply formal methods from organizational sociology based on the ones introduced in White (1970) to better understand the implications of time trends.

This overview of the organizational demography of Qing officialdom suggests several directions for future research. First, the causes and consequences of the apparent decline in turnover needs further attention. Case studies of specific groups of officials would be informative. Second, we need to understand whether degree holders aspiring for office and officials aspiring for promotion were aware of the reduction in turnover and its role in limiting their opportunities. Third, we need to understand the causes of attrition in the first year of service. This appears to have been a general phenomenon, not limited to any specific category of official. Fourth, we need to understand the fluctuations in exit rates, including the rise in exit rates for most categories of officials in the 1830s and 1840s, the decline in the 1860s, and the peaks in the 1880s. While some of these questions may be addressed by more detailed research using the CGED-Q JSL, they are most amenable to research using more traditional historiographical approaches.

Funding

This research was supported by HK RGC General Research Fund 16602621 (Campbell PI) and HK RGC Areas of Excellence AoE/B-704/22-R (Chen Zhiwu PI). For part of the time that Campbell was working on this paper, he was a 2022-2023 Fellow at the Stanford Center for Advanced Studies in the Behavioral Sciences.

Acknowledgments

We are grateful to the members of the Lee-Campbell Group for their comments on versions of this manuscript, especially Wei Shengbin, Matt Noellert, James Lee, Hou Yueran, and Chen Jun.

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