

Rationalism and “Modernity” in the State Examination System of Chosŏn Korea: an Analysis of *Munkwa* Examination Rosters, 1545-1720*

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The Chosŏn period in Korean history (1392-1910) fits uncomfortably into emerging narratives of world history. While its culture has been granted esteem, its political, social, and economic institutions are generally termed "pre-modern", "traditional" or perhaps, "early modern". Alexander Woodside, among others, challenges such characterizations, positing the notion of "lost modernities" to understand the governmental systems of Vietnam, Korea, and China before the twentieth century, finding in their bureaucratic systems patterns of rational selection and organization comprehensible as "modern". This study examines statistically the rosters of 3,857 candidates successful in High State Civil Examination (*munkwa*) examination between 1545-1720. Using survival analysis and logistic regression, it finds that: (1) the most powerful lineages of the period did not gain privilege through early examination passing; (2) examination rank and age are predictive of future career advancement to *tangsang* or ministerial position, indicative of a rationally predictive system of selection and promotion; and (3) there was a center-periphery difference in patterns of career advancement, but not one that favored the lineages of the top three quartiles of examination passers. The data thus buttress an interpretation viewing the Chosŏn bureaucratic system as substantially rational and in accord with "modern" techniques of selection and promotion to high position.

Key Words: Korean history, Choson period, examination system, modernity

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I . Introduction

The place of the Korean past and its institutions of governance in historical scholarship has been an unsettled one. On the one hand, Korea has shared the fate of other polities in Asia in being consigned to the category of “backward”, whether explicitly by Japanese imperialist historians seeking validation for its seizure in 1910 or implicitly by a range of economic theories stretching from Marx’s Asiatic model of production in the nineteenth century to modernization theory more recently. A familiar litany of supposed short-comings—ranging broadly from a general lack of progress toward industrial capitalism, to the absence of a banking system, to presumed failure to develop broadly the necessary scientific and technological base—is adduced to explain Korea’s plight. (Lee, 1994, Palais, 1998) Accompanying such scholarship has been a parallel development of a scholarship, epitomized by Eric Jones’ *The European Miracle* that seeks to identify the very sources of success in Western Europe that allowed it to soar, finding them in diverse cultural, institutional, and environmental factors largely absent or unexploited in Asia. (Pomeranz, 2000)

On the other hand, beginning in the 1980s, understandings of the Korean past have also been swept along with counter-narratives to Euro-centrism. These have included a fresh appreciation of the role that Confucian thought and tradition can play in economic development (Tu, et al. 1992) and a re-examination of the comparative economic histories of China and Western Europe, asserting that before around 1750 the general situations of Europe and China were roughly comparable across many standards of measurement. (Pomerantz, 2000; Rosenthal and Wong, 2011). Perhaps the most striking of these attempts at revising macro-history has been a searching examination of the notion of “modernity” itself, with the aim of asking whether commonplace understandings of it as “the modern, industrial, and urban way of life” (Appleby et al., 1995) is not highly

oversimplified. Emblematic of such approaches has been S. N. Eisenstadt, who adduces the development of “multiple modernities” as various groups around the world seek to reassert their own identities by challenging Western-centered notions of the discourse of modernity. (Eisenstadt, 2000).

At this point the situation concerning the definition of modernity and its derivatives—pre-modern, post-modern, early modern, and the like—has grown sufficiently muddled that it is tempting to eschew the whole attempt to categorize the past with such vague categories, that confuse as much as enlighten. Yet, the totalizing power of the concept of modernity, however defined; its continuing vitality across a wide range of disciplines; and most of all its ability to assign in a supposedly neutral manner vast stretches of time and history to the category of “pre-modern”, thereby rendering it by implication less advanced and thereby less worthy of concentrated attention mandate a reconsideration in the case of the Korean past.

II . Lost Modernity?

One scholar who joined in the task of re-evaluating Western approaches to modernity in process attempted to place the Korean Chosŏn period (1392-1910) in a larger comparative perspective is Alexander Woodside, who, in his 2006 work, *Lost Modernities* (Woodside, 2006) identifies what he understands to be an alternative modernity at work within East Asia generally and within in Vietnam, Korea, and China in particular. Pondering Korean state and society before the 20th century, he finds marked by Confucian bureaucratic rationality, part of what he identifies as the third project of modernity (beyond the first, which is the triumph of humankind over nature and the second triumph of humankind over oppressive forms of authority), namely the replacement of aristocracies by

professional elites. This echoes, earlier work by Naitō Konan in pre-World War II Japan, who saw in the transition from the Tang to Song periods in China a movement to a variety of modernity, and the somewhat parallel work of the historian of the Chosŏn period Miyajima Hiroshi, who holds forth the vibrant Korean genealogical tradition as well as examination system as hallmarks of a Confucian modernity (Miyajima, 1995). Woodside, too, makes the examination system the centerpiece of his reinterpretation of Korean history part of an international project of realizing the post-feudal mandarin ideal.

The Chosŏn period, lasting 518 years, was itself a period full of complex changes and violent interludes, but at its core lay a stable, centralized monarchy comprising twenty-six kings descended from the founder, Yi Sŏng-gye (1335-1408, temple name, T'aejo) the ruling Chŏnju Yi lineage reigning over a kingdom supervised by a bureaucracy of some 4000 officials selected on the basis of academic merit and the intellectual finesse in the explicating the intricacies of the ruling ideology of Confucianism. Invasions from Japan (1592-98) and the Manchus (1627, 1636-37) proved devastating, but the Chosŏn system of rule proved its mettle in sustaining the nation in such times of turmoil and subsequently restoring its vitality. The Chosŏn period has bequeathed a rich cultural legacy of philosophy, poetry, music, dance, painting, calligraphy, and architecture, widely recognized and greatly treasured. However, perhaps because of the tragic events surrounding the ending of the dynasty--forcible annexation in 1910 to the Japanese empire--the equally rich tradition and accomplishments of its system of governance have been less appreciated. With the death of ex-King Kojong in 1919 and the decision that year by the Provisional Government in Shanghai to create a new form of government without a monarch at its center, the political structure and governing principles of Chosŏn Korea were relegated to a past deemed by many to have failed the nation (Lee, 1984; Deuchler, 1995; Palais, 1996).

However, scholars of social and political history might well find much to mull over in thinking over the comparative histories of bureaucratic development if they chose to look more deeply into the Korean past. Certainly from a Chosŏn-era perspective, the British and French civil services, soon to rule over vast empires look surprisingly haphazard and brazenly corrupt in their open dependency on patronage and on occasion sales of position to determine appointments. It comes as a distinct shock to realize that ideal of open competition through examinations to enter the British civil service was effectively blocked until 1870, over nine centuries after the advent of such exams in Koryŏ Korea in 958 C.E. and almost five centuries after the advent of the more elaborate Chosŏn-era system in 1393. (Cohen, 1941; Yi, 1994; Hŏ, 2005; Song & Song, 2008; Han, 2013). The Korean bureaucratic sophistication for the period addressed in this study had no parallel in Europe and likely in the world was rivaled only by that in China and possibly Vietnam and the Ottoman Empire (Woodside, 2006; Pamuk, 2004). Apart from its complex and principled system of selection of talent, the bureaucracy oversaw the collection of a wide variety of data used to produce massive state historical records, such as the Chosŏn Annals, that are among the most impressive of their kind anywhere, and stand up to the scrutiny of contemporary statistical analysis for internal consistency (Hejtmanek, 2013).

Woodside's fresh perspective into this dynamic and the rich set of historical issues he introduces provide a welcome opportunity to re-examine complex relation in the Chosŏn period between access to the bureaucracy through aristocratic preferment and the exercise of state authority by men of talent. With few exceptions only members of the *yangban* class had effective access to the elaborate education required for success in the examination system. Yet among these it has been far from clear which of the surfeit of successful candidates were promoted to positions of authority. Hence Woodside's valorization of the

modern tendencies within the Korean bureaucracy relies on an assumption that needs closer examination. Fortunately, this is now possible to examine statistically in some depth. This study is a first attempt to explore the implications of Woodside's understanding of the Korean past using data from Chosŏn-era examination roster.

This study also highlights notion of “rationalism” to assess the extent to which the examination system embodied a principled approach to staffing and promoting the Chosŏn bureaucracy. To some extent there is a tautology here: one can always appeal to the inner rationality of a successful bureaucracy, which the Chosŏn one assuredly was, with its five centuries of durable oversight. However, beyond such implicit assumption to its manifest success in maintaining the state and people through a large number of challenges and desperate crises, bureaucratic rationalism is understood here within the intellectual territory staked out by Townley, drawing on both Weber and Foucault: “rational bureaucracy is formally rational because it provides the calculability of means and procedures” and its rational legal authority draws upon “official functions bound by rules” (Townley, 2008). As detailed below, the *munkwa* examination was a centerpiece of a rational system of testing that could help identify able candidates for future promotion to high office.

III. Chosŏn Civil Examinations (*Munkwa*)

The early Chosŏn rulers inherited from the preceding Koryŏ period (918-1392) a rich tradition of civil rule based a centralized monarchy superintending a nationwide bureaucracy, staffed with aristocratic literati, many who had proven their intellectual merit on the state examination system, inaugurated in 958 (Hŏ, 2005). The Chosŏn state elaborated and strengthened the examination system

into three distinct tracks: the civil (*munkwa*), the military (*mukwa*), and the specialists (*chapkwŏ*), of which the *munkwa* was the most prestigious. Given 741 times, with 14,607 known passers, between 1392 and 1894, it comprised a complex set of examinations beginning in each locale around the nation and ending for the successful aspirant in front of the king during a palace examination.

The examination content comprised a daunting mixture of explication of Confucian classical texts, poetic composition in a variety of forms, and policy essays on issues of the day. In addition to the formally proscribed triennial examinations, there were also numerous smaller-scale special examinations, given irregularly to celebrate felicitous events, provide for a measure of regional balance, or to honor older scholars with an enhanced opportunity to pass. Additionally there was a parallel set of lower exams, comprised by the *saengwŏn* exam (which tested knowledge of the classics) and *chinsa* (requiring literary composition), the passing of which granted prestige, although usually not an official position.

While by law the state examinations open to all aspirants who were not members of the *ch'ŏnmin* class, the years of demanding preparation necessary for success in practice meant that the vast majority of passers were members of the aristocratic *yangban* class. It is a remarkable fact that not only were all *yangban* in the Chosŏn period expected to be literate in the highly erudite use of classical *hanmun* (Korean-Chinese), they were also expected to spend many years of their life preparing for competitive examinations, even though the vast majority of them would never be successful (Lee, 1994; Park, 2007; Song & Song, 2008).

IV. Data

Thanks to the Herculean efforts of Edward Wagner and Song June-ho, whose

impressive scholarly efforts over three decades to compile a comprehensive roster of all *munkwa* passers has begun to bear fruit we can begin at last to attempt a preliminary answer to these questions (Wagner, 1976, Song 2008).

This study makes use of a subset of the Wagner-Song *munkwa* database to examine the issue of how the career patterns of 3857 *munkwa* passers of 215 High State examinations between 1545-1719 (i.e., the Myōngjong through Sukchong reigns) varied across the provinces of Chosŏn Korea. These data represent a rich slice of the Chosŏn period, stretching over 175 years and seven monarchs. Their use has the additional advantage of providing nearly complete information on residence, birth and death years, examination background, and career paths for the successful candidates.¹⁾ It should be noted that residence data as used in this study refer to the site where a candidate began the examination process that ended in success and not necessarily to his place of birth or place of local identification. Many successful candidates from the provinces were resident in Seoul when they passed, whether at the Sōnggyun'gwan or living with relatives. Accordingly, the group of passers residing in Seoul represents a much broader section of the Korean elite than those born and raised there.

Career patterns of Chosŏn period officials were complex, but the most successful all clustered in a small group of posts in the upper third rank and above, collectively known as the Ministerial (*tangsang*) officials. These ranged from officials at the lower end such as the Chief Censor (*Taesagan*) through Deputy

1) These 3857 cases with full information, comprise 78.0% of the 4943 total candidates of the period. In general I would anticipate that the missing data tend to reflect both the general social obscurity of the associated passers and likely either misfortune in their own lifetime or among their descendants. Accordingly, to the extent these missing values bias the current analysis, I believe they would act to under-represent the total ranks of minor and provincial social groups and hence over-represent the career successes among them, which tended to be faithfully recorded. That is, to a degree, the strength of the wealthy, metropolitan elite from large descent groups may have been somewhat stronger than the extant data indicates.

Directors (*Ch'amp'an*) to Board Heads (*P'ansŏ*) and upward into the State Council (*Ŭijŏngbi*). For provincial posts they comprised the thin stratum of high officials beginning with the Circuit Magistrates (*Moksa*) and included Provincial Governors (*Kwanb'alsa*). Collectively officials of ministerial rank superintended the nation, and a position at that exalted rank was a capstone to a highly successful career. It seems appropriate, therefore, to use a rank of minister as the criterion for examining the disparate career paths of those few who were successful in the *munkwa* examination. This approach has the added advantage that promotion to ministerial status was sufficiently prestigious as to mark its possessor clearly in the surviving records; these were as a group among the most visible of all men of the Chosŏn period. Hence, inclusion in this group was unlikely to have been overlooked or ignored in surviving records. While the data in the Wagner-Song database do not denote ministerial status directly, it was readily possible to classify the candidates from their official titles.

V. Analysis of the Data

Three major issues provided a focus for the analysis of the *munkwa* data. First, is there statistical evidence that the members of powerful lineages in the mid-Chosŏn period enjoyed disproportionate access to the examination system, thereby helping consolidate their power further? Second, is there statistical evidence sufficient to decide whether or not the examination results were indicative of subsequent career success and hence more than merely a formal process of granting a useful credential? Third, do the data provide statistical evidence that members of certain regions and less powerful lineages who were *munkwa* passers subsequently were discriminated against in advancing to high posts within the bureaucracy?

In order to address these fundamental issues, an array of statistical techniques was used: non-parametric (Kaplan-Meier survival estimation, log-rank tests, local lowess regression), and parametric (logistic regression). All results were estimated using Stata software (Stata Corp., 2013)

This study makes use of the following variables obtained from the database for analysis of promotion to ministerial rank.

1. Tangsang (or Minister): the response variable, coding as an indicator variable the 1538 cases (39.88%) among the successful examination candidates who later rose to gain a ministerial-level rank in the government.
2. Age of Passing: the age at time of examination success, ranging from 17-74 years of age (using the Western and not Korean calculation), with the median at 34 years and the mean at 35.56.
3. Rank: absolute hierarchical ranking on the examination, from 1 (highest) to 51 (lowest), although the number of successful passers varied from exam to exam, but generally number 33, the median in this group was 12.
4. Regional background: successful candidates came from locales across the nation, divided into eight provinces and the metropolitan area of Seoul, coded as nine regions, with Seoul taken as the default for comparative purposes. The distribution of passers varied strikingly, with over half (51.75%) taking their initial examination in the capital, although their ranks also included wealthy provincial candidates who were resident in Seoul. Geographical differences capture a wide range of social, political, and economic factors, prompting caution in their interpretation. The element of center-periphery was far stronger than differences among individual provinces. The provinces are coded through the variable “resprov”: Pyŏngan (1), Hamgyŏng (2), Hwanghae(3), Kangwŏn(4), Kyŏnggi(5), Ch’ungch’ŏng(6), Chŏlla(7), Kyŏngsang(8), and Hansŏng or Seoul (9). Seoul is the

reference level. Note that this variable is generally susceptible to misunderstanding, for it denotes the place where the candidates first registered for the examinations. Therefore, wealthy and prestigious men from the countryside residing in Seoul would register as from Seoul, not the locale of their birth and cultural identification.

5. Pon quartile: this variable is a surrogate for lineage prominence and may be deemed as highly correlated with wealth and educational opportunity. It codes the 421 *pon'guan* (patrilineal descent groups) found in this part of the *munkwa*, into four categories, ranked by lineage success in numbers of passing. The top quarter (893 candidate, 23.15%) comprises only nine lineages²⁾, the second quarter (942 candidates, 24.42%) belong to 23 lineages³⁾, the third quarter (988 candidates, 25.62%) involve 55 lineage, while the fourth quarter (1,034, 26.81%) fall into 334 lineage descent groups. In places in the analysis these quartiles are treated individually as well as jointly.

6. Top passer: the highest passer was given special celebrity (as the *changwŏn kŏlpyŏ*) and an immediate promotion of three grades. Hence it might be expected that the top passers enjoyed a heightened chance of career success.

7. Passed sama: Success on the lower or *sama* exams: normally candidates first obtained a pass on one or both of the lower civil examination, the *saengwŏn* or Classics exam or the *chinsa* or literary exam. However, many successful *munkwa* candidates passed with no background in either of the lower exams.

8. Exam year in half-centuries: the 50-year period in which the examination was

2) These include members of the Chŏnju Yi, Andong Kwŏn, P'apy'ŏng Yun, Namyang Hong, Andong Kim, Ch'ŏngju Han, Miryang Pak, Yŏnan Yi, and Kwangsang Kim lineages.

3) These include members of the Ch'angnyŏng Sŏng, Ch'ŏngsong Sim, Chŏnŭi Yi, Chinju Kang, Chinju Ryu, Hansan Yi, Kimhae Kim, Kwangju Yi, Kyŏngjukim, Kyŏngju Yi, Munhwa Ryu, P'Ungch'Ŏn Im, P'Ungsan Hong, P'Ungyang Cho, P'Yŏngsan Sin, Pallam Pak, Sunhŭng An, Taegu Sŏ, Tongnae Chŏng, Ŭiryŏng Nam, Yŏhŭng Min, Yŏnan Kim, and Yŏnil Chŏng lineages.

passed, ranging from the Myōngjong through Sukchong reigns (1545-1720), comprising exams given from 1546-1719.

VI. Results

1. Did powerful lineages in the mid-Chosŏn period enjoy disproportionate access to the examination system?

If passing the examination system was indeed routinely and differentially available to the most powerful members of Chosŏn society, then a clear pattern of higher passing at earlier ages would be visible. However, the data for this period do not appear to display such a pattern. As Figure 1 indicates, passing the examination was a formidable task, and the median age rose slightly from 33 years at the start of the period to 35 years at the end with an overall media of 34 years. If the examination was the plaything of the powerful, then it was one that proved costly in years lived.

However, perhaps among the younger passers the system allowed differential access to the powerful? Figure 2, which draws upon survival analysis to display a Kaplan-Meier curve for age of examination success and the corresponding smoothed hazard rate chart display a very regular relation of age to success, giving no hints irregular access to examination success by groups at a younger age. Moreover, as shown in Table 1, log-rank and Cox statistical tests of whether the top 50% of the lineages producing *munkw*passers jointly had younger ages of passing than the bottom 50% finding no convincing evidence ($p=0.1173, 0.134$) to reject the null hypothesis of equal distributions of age passing. Similarly and perhaps more tellingly, as shown in Table 2, a log-rank and Wilcoxon tests of whether the top nine national lineages, that collectively comprised 23.15% of all passers in the period, had a younger age of passing again garners no convincing

Figure 1: Age of Pass by Examination Year, with Lowess Estimation

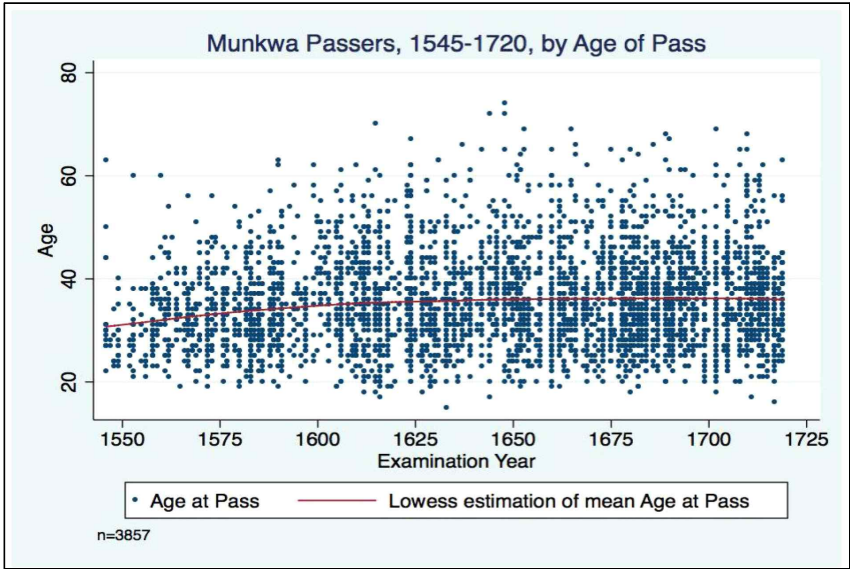
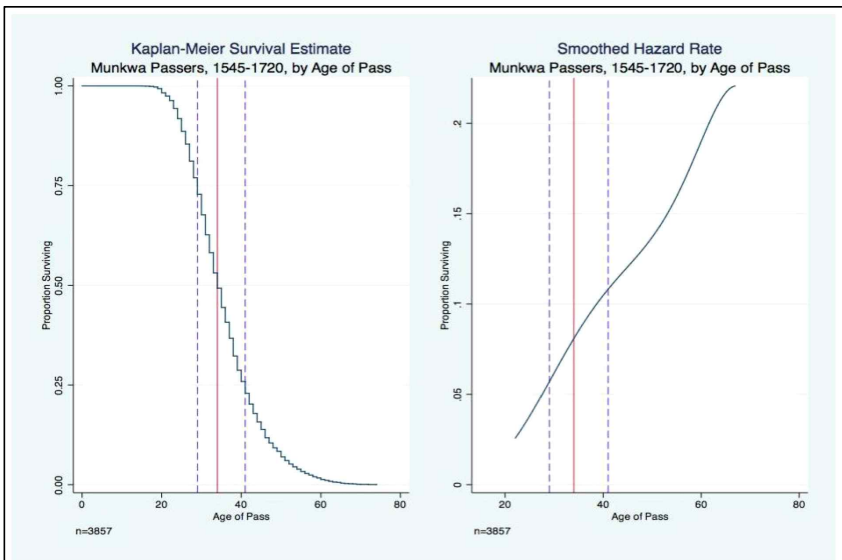


Figure 2: Kaplan–Meier Survival Estimate of Examination Success and Smoothed Hazard Rate



evidence that they did so ($p=0.1986, 0.2167$).

In sum, for this period it is difficult to find any statistical indication that the most powerful *jangban* officials could somehow ensure that members of their lineages passed at a younger age. If they were somehow gaining access to the system for their members, they did so in ways and in numbers in full accord with the members of more obscure lineages.

Table 1: Log-rank and Cox tests between the Two Top Quartile Lineages and the Two Bottom Quartile Lineages

Tests of Equality of Survivor Functions		
Variable	Log-rank test	Cox test
Top Two Pon	Pr>chi2 =0.1173	Pr>chi2=0.1340

Table 2: Log-rank and Cox tests between the Top Quartile Lineages and the Lower Three Quartile Lineages

Test of Equality of Survivor Functions		
Variable	Log-rank test	Cox test
Top clans	Pr>chi2=0.1986	Pr>chi2=0.2167

2. Was performance on the examination at all related to future career success or was it largely a credential-granting institution?

Even though access to the *munkwa* may have been broadly representative across lineages, it has been an open question as to whether one's performance on the examination was in any way indicative of future promotion to higher offices, culminating in ministerial or *tangsang* status. Through use of logistic regression it is possible to provide statistical indications of an answer to this question.

Table 3 shows the estimated results of a logistic regression using the relevant variables introduced above, with *tangsang* as the dependent variable. In essence this model is attempting to predict career success quite distant in the future among successful *munkwa* candidates, based on a handful of information concerning their performance on the exams, social background, age, year of the

exam. It does so with a success rate of 68.81% vs. a rate of 39.88% if merely chosen at random. Hence, it may be said that in spite of the inevitable contingencies of life after examination success, the life-course of these men to a large degree had a routinized, predictable arc.

Among the notable implications of the results (expressed in odd ratios) was that the odds of gaining *tangsang* status were higher, indeed far higher, for passers from Seoul than from any other process, even controlling for age, lineage background, and examination performance.

Table 3: Results of Logistic Regression on the Dataset

Estimated Results of Logistic Regression Model		
	Attainment of Ministerial Rank	
Variables	Odds Ratios	95% Confidence Interval
Age at Pass	-0.0352***	[-0.0437,-0.0267]
P'yŏngan residence	-1.347***	[-1.845,-0.848]
Hamgyŏng residence	-1.999***	[-2.806,-1.192]
Hwanghae residence	-0.965**	[-1.576,-0.355]
Kangwŏn residence	-0.844***	[-1.302,-0.386]
Kyŏnggi residence	-1.101***	[-1.457,-0.746]
Ch'ungch'ŏng residence	-0.759***	[-1.004,-0.513]
Ch'olla residence	-1.360***	[-1.657,-1.064]
Kyŏngsang residence	-1.179***	[-1.419,-0.938]
Seoul residence (ref.)	0	[0,0]
Rank on the exam	-0.0214***	[-0.0291,-0.0138]
Top passer in exam	0.481**	[0.160,0.801]
Passed lower exam	0.405***	[0.215,0.594]
Exam yr. 1500-1549 (ref.)	0	[0,0]
Exam yr. 1550-1599	-0.704	[-1.472,0.0643]
Exam yr. 1600-1649	-0.947*	[-1.711,-0.183]
Exam yr. 1650-1699	-0.713	[-1.476,0.0489]
Exam yr. 1700-1750	-0.791*	[-1.569,-0.0124]
Lineage quartile 1 (ref.)	0	[0,0]
Lineage quartile 2	0.0173	[-0.180,0.215]
Lineage quartile 3	-0.0156	[-0.214,0.183]
Lineage quartile 4	-0.521***	[-0.738,-0.304]
Constant	2.189***	[1.359,3.020]
Observations	3857	

95% confidence intervals in brackets

* p < 0.05, ** p < 0.01, *** p < 0.001

It is intriguing, though not unexpected, to see that the odds of the top passer obtaining ministerial rank were over 60% higher than the rest of his cohort with an otherwise similar background.

Similarly, a pass on one of the lower, *sama*, exams enhanced the odds of future career success by about 50%.

Rank on the examination, with the highest at 1, stretching to 51 in this dataset, was statistically related to future career success, with each notch lower diminishing one's odd of success by about 2%.

Finally, among the lineages, it was the bottom 25% that were at a disadvantage, having about a 40% decrease in their odds of future ministerial success.

These results can be understood more fully when displayed as adjusted marginal probabilities of attaining *tangsang* rank.

Figure 3 displays the predicted, marginal probability of successful *munkwa* candidates attaining *tangsang* status based on their age at time of pass. As indicated a young man of 20 has about a 50% chance over his life-time of attaining high office, while an older man passing at the age of 60 has less than a 25% chance. This smooth progression of career opportunity speaks to a regularized system of promotion based on experiences as well as talent.

Figure 4 presents the intriguing results that one's rank on the *munkwa* examination, whether high or low, is statistically well related to future career success. For the candidates in this study, passing in one of the higher ranks over the lower ones could enhance one's career opportunities by about 20%.

This relationship and its connection to age at passing is displayed in Figure 5, where the combination of youth and high marks was associated with a probability of about 55% of attaining *tangsang* status vs. the roughly 15% chance of a 50-year-old with lower marks.

This statistical connection between examination rank and bureaucratic success among members of one's cohort, when controlling for age and social background is a surprising finding of this study, and one that argues for an understanding of the *munkwa* more than just a credentialing institution.

Figure 3: Predictive Margins of Tangsang Rank, by Age of Pass, with Confidence Intervals

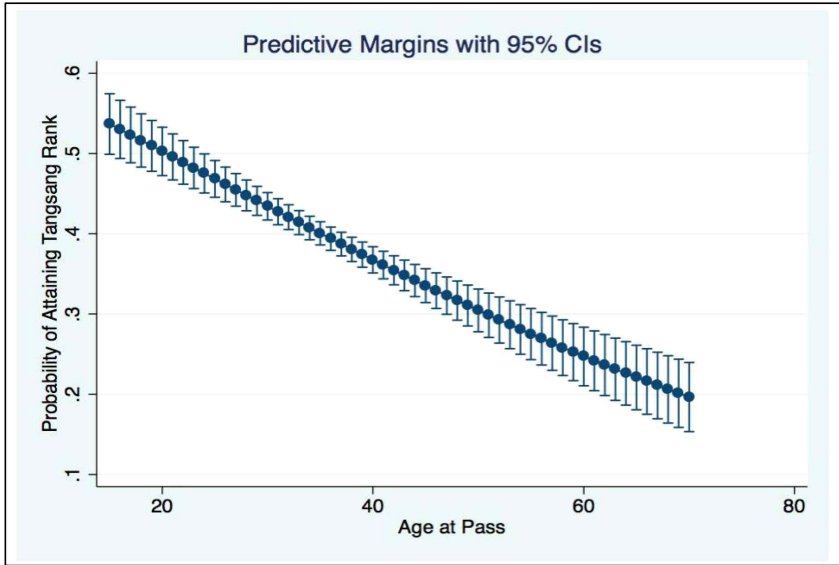


Figure 4: Predictive Margins of *Tangsang* Rank, by Rank on the *Munkwa*, with Confidence Intervals

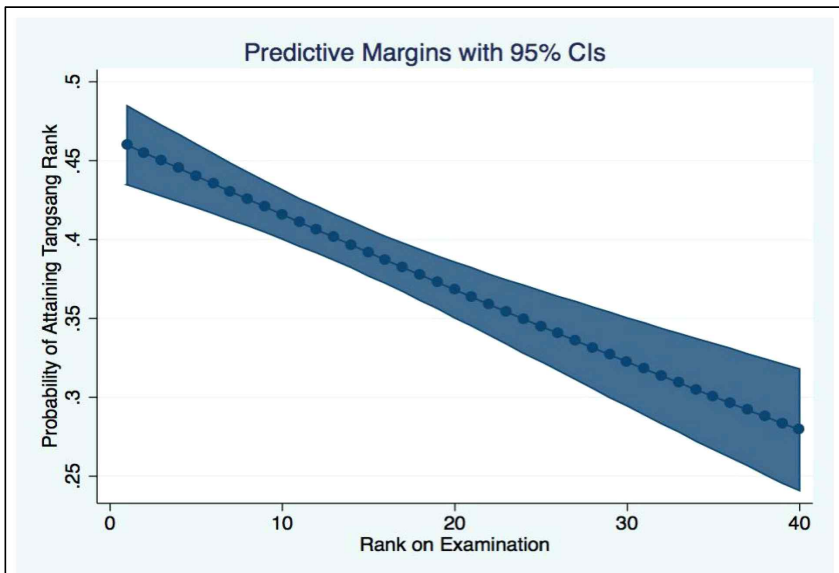


Figure 5: Predictive Margins of *Tangsang* Rank, by Rank on the *Munkwa* and Age at Pass

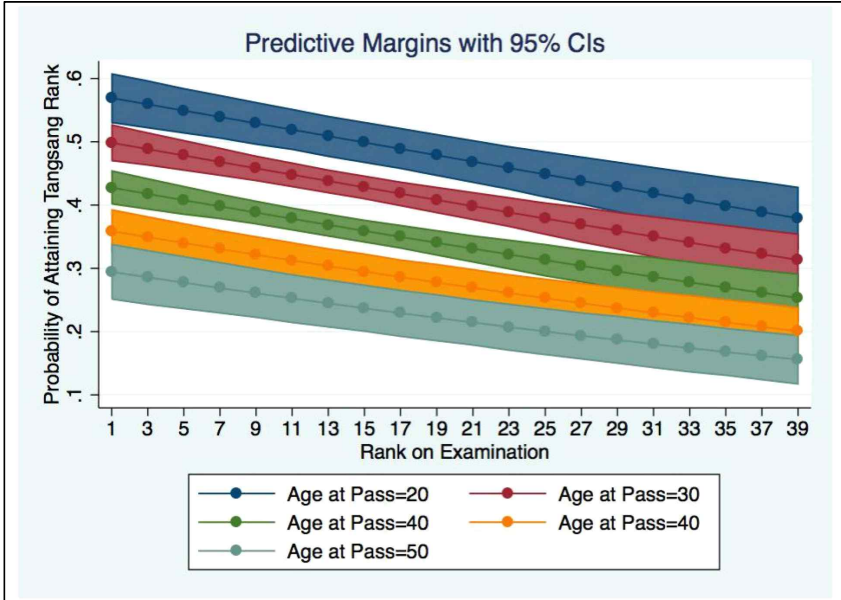


Figure 6 displays the statistical contrast between those candidates who passed examination as the top passer and those who did not. As indicated, by the wide confidence intervals, there could be significant variations, but on the average passing at the top decisively boosted one’s chances of becoming a *tangsang* official, by an additional 10% over those with an otherwise similar background.

Figure 7 illustrates the statistical advantage conferred on *munkwa* exam passers who had already been successful in the lower *saengwŏn* or *chinsa* exams. On the average they gain about 8% advantage over their peers without such a credential, indicating that the investment in time and effort of successful candidates resulted in enhanced chances for subsequent promotion.

Figure 6: Contrasts of Predicted Margins of Top Passers, by Age at Pass

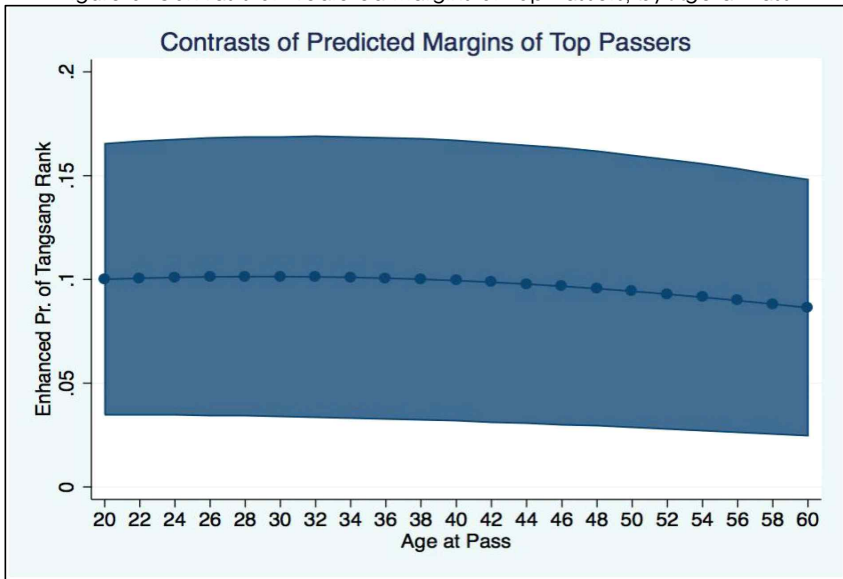
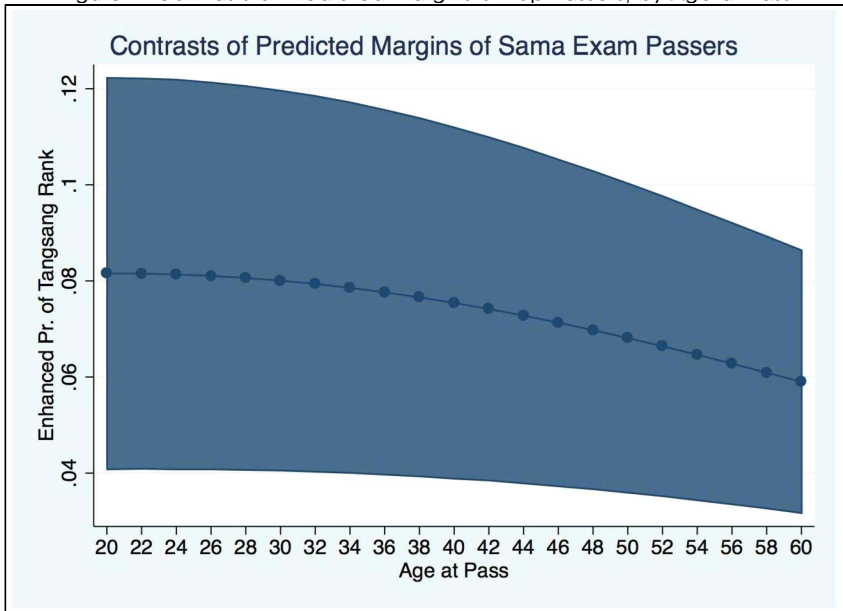


Figure 7: Contrasts of Predicted Margins of Sama Exam Passers, by Age at Pass



In sum, the results of the logistic regression analysis presented above provide substantial evidence that in order to advance one’s chances for high position, family background alone was not sufficient, but rather that being relatively more youthful, obtaining a higher score on the exam, and having already proven one’s ability through success in the lower exams were important contributors to future success in the bureaucracy. This argues as well for an understanding of the examination system and its connection to official success as predictable and rational.

3. Do the data provide statistical evidence of favoritism for successful *munkwa* passers in their attempts at career advancement?

The data present strong statistical evidence that career success was linked to Seoul residence, as defined in this study, namely beginning the examination process in Seoul. As Figures 8 and 9 display graphically, both numerically and proportionately Seoul passers were predominant in obtaining *tangsang* status.

Figure 8: *Munkwa* Passers by Province, and Minister (*Tangsang*) Status

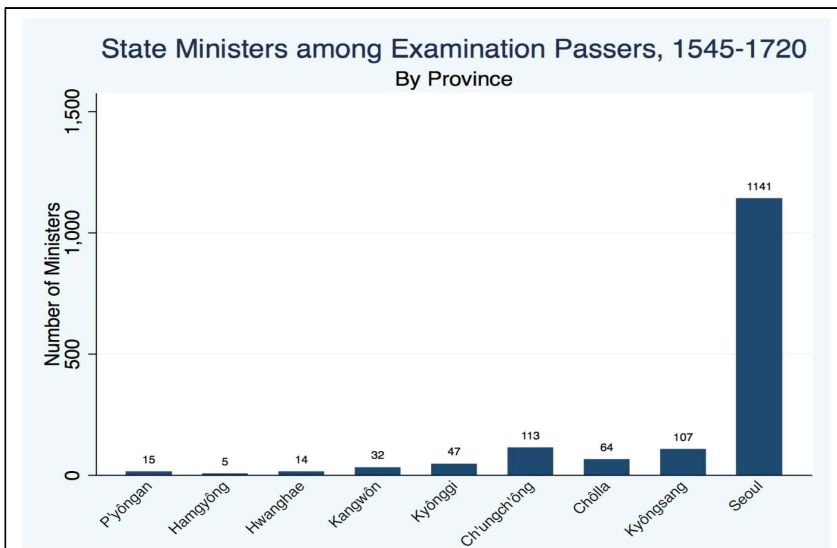
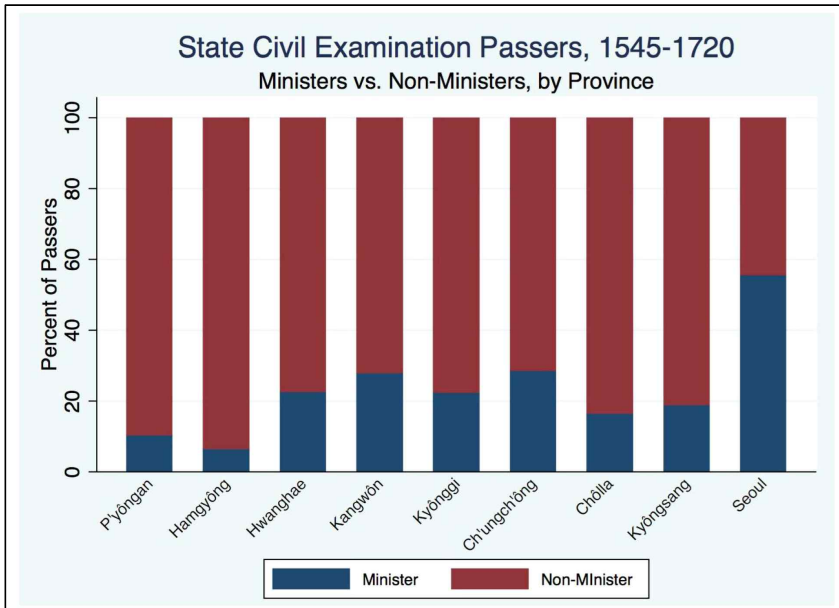


Figure 9: *Munkwa* Passers by Province, and Minister (*Tangsang*) Status

Moreover, the results of the logistic regression presented above allow the calculation of the statistical advantage Seoul residence possessed in career advancement. This could vary depending on their age and exam rank, but ranged as high as around 35% and was never a statistical disadvantage. Considering as shown above that even a top pass conferred an added advantage of around 10%, this margin for Seoul was quite large and indicates the considerable burdens provincial candidates had to overcome in their attempt at advancement.

Among the provinces outside Seoul, as show by Figure 10, statistical changes of eventually gaining ministerial office varying from around 10% in Pyŏngan to about 23% in Kangwŏn and Ch'ungch'ŏng Provinces, with considerable margin of error.

For passers whose residence was registered as Seoul, the heightened prospects of gain ministerial office are shown in Figure 11. There were not inconsiderable, ranging from around 38% for young men with high exam rank to around 5% for older candidates scoring near the bottom. The overlapping curves indicate wide confidence intervals, but in all cases residence in Seoul was strongly associated with higher probability of promotion to the upper levels of government.

Turning to the question of whether the great lineages enjoyed a higher rate of access to *tangsang* posts and thereby discriminated against the lesser one, in a pattern perhaps linked to the regional discrimination presented above, Figure 12 presents the individual patterns of enhanced success enjoyed by lineages in each lineage quartile. The statistical advantages are significant, but quite small for the top three quartiles (i.e. 75% of the passer population), but strikingly different for

Figure 12: Contrasts of Predicted Margins of Munkwa Passers, by Lineage Quartiles

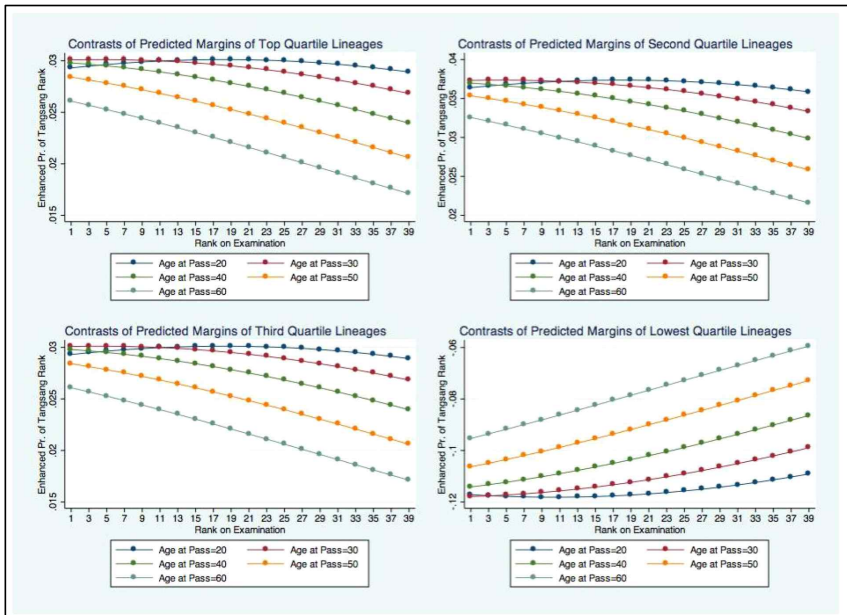
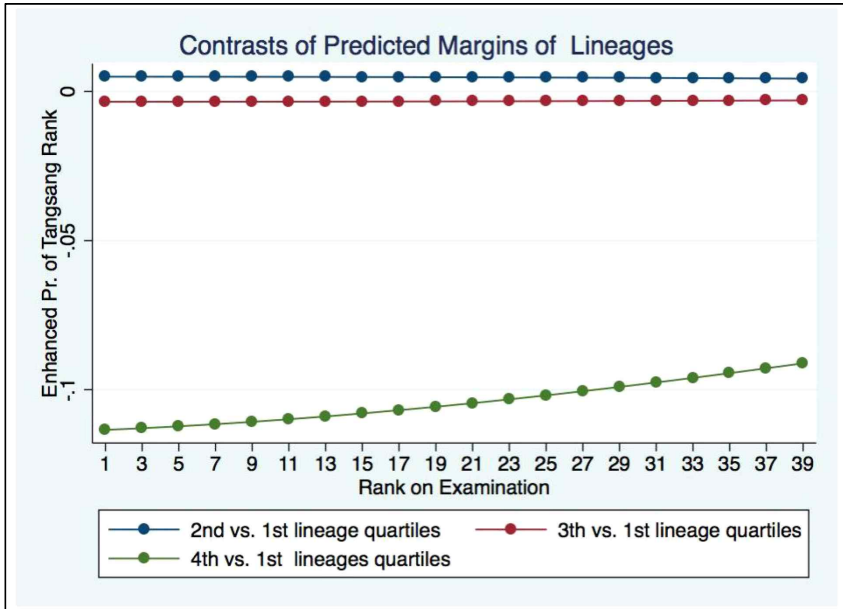


Figure 13: Contrasts vs. the Top Quartiles of Predicted Margins, by Lineage Quartiles



the bottom quartile, who was at a small, but significant disadvantage of between -0.12 to 0.06. A similar patterning is shown in Figure 13 of the varying contrasts shown among the four lineage quartiles against the reference level of the top nine lineages comprising the first quartile. Clearly the members of this bottom lineage quartile were at a disadvantage compared to the other three-quarters of the *munkwa* passer population.

Interestingly, though, these two types of statistical discrimination, regional and lineage, do not appear to be linked. A logistic regression model examining chances of success at *tangsang* find that an interaction term between Seoul passers on the one hand and bottom-quartile passers on the other is not significant (Wald test $p=0.76$).

In sum, this study finds an apparently entrenched pattern of statistical

favoritism of Seoul vs. non-Seoul candidates gaining access to high posts and a statistical disadvantage faced by the bottom one-quarter of examination passers from the obscure lineages, pattern consistent with a center-periphery construction of the bureaucratic elite and advancement within it.

VII. Conclusion

For the period examined, 1545-1719, the pattern of successful attainment of ministerial, *tangsang*, status was not randomly spread among all passers, and nor were such powerful bureaucratic positions strategically allocated solely to men of large and influential lineages. The results clearly indicate that vital to career success was the age at which they entered the bureaucratic fray, and their rank on the examination. The strong statistical linkage between a high score on the examination and career success decades later is in accord with an interpretation of the examination system as a mechanism for locating and advancing the talented, and not merely a means of confirming existing social status.

This analysis is consistent with an understanding of the Chosŏn bureaucratic system as substantially rational in that it was able to identify men of talent from across the nation, foster their careers, and put them to use in systematic ways reflected by their ability demonstrated in the examination. It is a remarkable fact that the examination rank was so clearly and linearly associated with chances for eventual promotion to high position during this this period from 1545-1719.

Yet, the system clearly incorporated systematic preferences for metropolitan elites (including men from the provinces who were living in the capital) of the top one hundred or so lineage groups and provided them with consistently heightened opportunities to advance. While neutral in terms of age and rank, the bureaucratic system offered distinct challenges to advancement the social and

geographical periphery. Their way to the heights of power, however, was never blocked, and worthy men of all regions and diverse social backgrounds attained elite official status after examination success. In sum, the administrative system of the Chosŏn period merits reconsideration for its rationality and employment of “modern” techniques for the selection and promotion of its highest officials.

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