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A land of sages: A legacy of former elites and university professors in Vietnam

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Abstract

Using a unique manually collected dataset of 3,131 former elites, who successfully passed the imperial examination from 1075 to 1919 (*Ly Dynasty to Nguyen Dynasty*), and 1,324 successful professorship candidates from the Vietnam State Council of Professorship between 2021 and 2023, we consistently obtain precise estimates that a higher number of former elites is associated with a greater number of appointed contemporary professors (both associate and full). We also document that such modern human capital is influenced by the distance to the Hoan Kiem District, where the professorship examination venue is located. Additionally, we find that the social capital of these former elites primarily benefits those who were born, raised, and currently work in areas with a higher density of former elites. Using manually gathered geographical data on ancestral temples, names of schools associated with elites, and street names attributed to elites, we identified three cultural mechanisms that elucidate the influence of historical elites on contemporary university professorship in Vietnam. Our findings highlight the influence of historical tradition on current human capital in a Confucian country.

Keywords: education; elites; tenured professorship; Vietnam academia

JEL Classification: I25; N35; O15; Z1

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1 Introduction

One of the fundamental inquiries that comes to mind when considering the impact of one's birthplace and upbringing on their life choices revolves around family and career decisions. These encompass critical choices such as marriage timing and partners, family size determination, pursuit of higher education, and the selection of specific occupational and career paths. Yet, it is important to acknowledge that individuals have no control over their place of birth or upbringing. This raises a pertinent question: How does one's place of birth and upbringing, especially if it has historically been a center for former elites and has emphasized educational outcomes through the imperial examination system, influence their life choices and opportunities?

Increasing evidence indicates that historical institutions can have enduring impacts on contemporary economic development, either directly persistent (Giuliano and Nunn, 2021) or through the cultural traits they cultivate (Dell et al., 2018; Voigtländer and Voth, 2012). For nearly 844 years, from 1075 to 1919, Vietnam employed an imperial examination system to select its elites, encompassing high-level state bureaucrats and a considerably larger group of non-official gentry. Similarly to China (Weber, 1915; Qian, 1982), the imperial examination system, a crucial institution in history, significantly impacted various aspects of society. It influenced the circulation of elites (Bai et al., 2023), the allocation of talent, and the perception of social mobility among the general population (Bai and Jia, 2016). Their findings suggest that similar dynamics may be applicable to other contexts, including Vietnam. These studies shed light on how birthplace and upbringing can influence the circulation of elites, the allocation of talent, and the perception of social mobility among the general population, offering valuable insights that may resonate with the Vietnamese context.

Also, the existing body of research indicates that elite status holds a significant role in education (Chen et al., 2020), highlighting that investment in human capital has been a practice spanning centuries (Mincer, 1958; Nunn, 2020). This emphasizes that the study of human capital is fundamentally historical in nature.

Empirical research on how historical human capital influences contemporary human capital is limited. In the Guarani region, now encompassing parts of Argentina, Brazil, and Paraguay, the Jesuits'

presence from 1609 to 1767, as documented in (Valencia Caicedo, 2019), is linked to higher educational levels, an impact still evident in today's educational outcomes. Similarly, (Chen et al., 2020) demonstrates that in 278 Chinese prefectures, a higher density of Chinese imperial elites from 1368 to 1905 correlates with increased modern educational attainment. This indicates the spread of social capital and educational values beyond the realm of elite families, facilitated by various social organizations. Examining educational systems across various nations, it is evident that the role of local elites in supporting education has been a common theme. In nineteenth-century Sweden, for instance, the local landed elite played a crucial role in promoting mass schooling in their study of historical Swedish data (Andersson and Berger, 2019). Similarly, in China, there existed a system akin to Sweden's, with the prestigious *jinshi* examination serving as the highest qualification in the civil service. This position not only carried substantial prestige but also came with significant monetary rewards. Russell (1922) confirms that millions of scholars aspired to achieve this distinction, regardless of their initial social status. Over time, this process nurtured a distinct group of local elites in China who were renowned for their deep appreciation of learning and academic achievements.

By using a unique dataset of 3,131 former elites from 1075 to 1919 as a metric for imperial examination success, and comparing it with 1,324 current full and associate professors from 2021 to 2023, the baseline Ordinary Least Squares (OLS) analysis reveals that for every one hundred individuals who passed the imperial exams, there is an average annual increase of approximately one contemporary university professor. This finding is significant considering the extensive geographic variations in imperial examination success across historical Vietnam. This result remains consistent even when adjusting for various socio-economic factors, alongside province and year fixed effects. Furthermore, by analyzing the proximity to the former capital, our study establishes a causal relationship, adjusting the impact to an estimated ten professors (associate or full) in areas with high social capital exposure. Using the same dataset, we investigate two potential mechanisms. First, we consider the influence of the distance to past examination venues and current professorship oral examination sites on success rates. Our findings suggest that longer distances might reduce motivation to participate in examinations, although a higher historical concentration of elites appears to mitigate this effect. Second, we manually correlate candidates' hometowns with their current affiliations to determine the

impact of immigration or relocation. We observe that the advantageous effects of social capital disappear for individuals who relocate from their birthplaces to urban areas. Conversely, those residing and working in regions historically dense with elites continue to benefit from this social capital.

In this study, we explore the long lasting influence of the imperial examination system, a critical institution in Vietnamese history, on contemporary human capital outcomes. Contrary to existing literature that primarily focuses on the quantity of schooling or educational participation (Andersson and Berger, 2019; Chen et al., 2020; Valencia Caicedo, 2019), our research aims to investigate the legacy of former elites who, having passed the imperial examination, attained the highest educational titles in Vietnam, such as professor and associate professor, as the potential another elites class in Vietnam. We have chosen to focus on these specific educational outcomes rather than other general schooling indicators. Firstly, achieving the rank of professor (full or associate) in Vietnam brings significant privileges, including the opportunity to establish connections and advance political careers (Ishizuka, 2020). Secondly, holding such a title can secure an early position within the political system, particularly in state universities, paving the way for advancement to higher positions. Third, the process of being promoted to the rank of the (associate) full professors in Vietnam is centrally controlled by the state government, which is similar to the previous imperial examination. The Vietnamese State Council of Professorship, established in 1989 (The State Coucil for Professorship, 2023), adopts a model akin to France's longstanding tradition of recruiting university professors through a centralized examination (in French, concours).[1]

Our research extends the long lasting influence of a major Vietnamese institution on contemporary human capital outcomes, particularly at the highest educational levels. In doing so, it not only complements but also enhances the existing literature that highlights the lasting cultural patterns arising from historical institutional variations (Alesina and Fuchs-Schündeln, 2007; Chen et al., 2020; Andersson and Berger, 2019; Guiso et al., 2016). Our methodology diverges by not just focusing on the educational channel, as thoroughly investigated by Chen et al. (2020); Andersson and Berger

[1]Since its inception in 1897, the French concours, conducted almost biennially, involves candidates delivering academic lectures to a jury for evaluation and ranking. Subsequently, the French Ministry of Education, which administers the concours, presents the successful candidates with a list of universities with available professorship positions. Candidates then choose their preferred university in accordance with their ranking (Combes et al., 2008).

(2019) in differing historical contexts. We explain the persistent mechanisms, such as proximity to examination venues and the prolonged influence of this culture in the region, which may explain the continuity we observe. In our study, we identified two types of mechanisms—endogenous and exogenous—that help unravel the causal relationship between historical elites and the current number of university professors in Vietnam. Endogenous mechanisms include factors such as proximity to examination venues and exposure to cultural practices. On the other hand, our interest in Confucian culture led us to examine exogenous mechanisms, such as the number of ancestral temples, and the practice of naming streets and schools after elite figures, as means of cultural transmission. These factors collectively elucidate how Vietnam's rich history fosters a motivation among its people to pursue careers as university professors.

The remainder of this article proceeds as follows. The next section (Section 2) provides a historical background on the imperial exam in Vietnam from 1075 to 1919. Section 3 elaborates our research design. In Section 4 we examine the persistent effect of former elites on the number of contemporary professors today, in which the causal identification to explore causal effect by using an instrumental variable approach. We also explained the mechanisms and robustness in this section before concluding the paper in Section 5.

2 Data

Our research draws a mix of significant historical and contemporary data sources. By integrating these with geographical information, we merge the historical data onto the contemporary data, employing consistent district names for concordance, thereby creating a dataset encompassing 421 observations for three years (2021-2023).

2.1 Data on the imperial elites

We manually compiled and refined data on former elites from two sources: (i) the book by Ngo et al. (2006) and (ii) the 82 steles as documented in Trinh (2023). Our approach involved recording and encoding information about each imperial elite from both sources for every dynasty. We then

cross-checked unique identifiers such as name, dynasty, and hometown to remove duplicates. It is important to note that Ngo et al. (2006)'s compilation is partly derived from earlier studies by the French School of the Far East and the Sino-Vietnamese Institute (Trinh, 2023), which focused on ancient records, including stele stones and imperial examination archives. Relying solely on one source would not yield a comprehensive dataset. Our detailed data was represented in the Appendix A. We considered anyone who passed the written exam is regarded as an imperial elite. Finally, we ended up with 3,115 imperial elites in the period from 1075 to 1919 across seven dynasties (Ly, Tran, Ho, Le So, Mac, Le Trung Hung, and Nguyen) for our formal analysis.

We aggregated the 3,115 former elite to district level with up-to-date concordance geographical locations, covering 205 districts. The feasibility of tallying district-level elites by summing them is attributable to the persistent correlation observed across imperial elites by dynasty. Accordingly, the number of elites in the Nguyen dynasty (1822–1919), the last imperial dynasty of Vietnam, can be effectively explained by the variations in the number of elites from the same home districts in earlier dynasties (See Appendix A6 for details). We formulated our primary variable, *elite_total_d*, by enumerating the imperial elites in our final list for each district. Furthermore, we consolidated this data at the provincial level, introducing another variable, *elite_total_p*. The total count of imperial elites in Vietnam from 1075 to 1919 is depicted in Figure 1a.

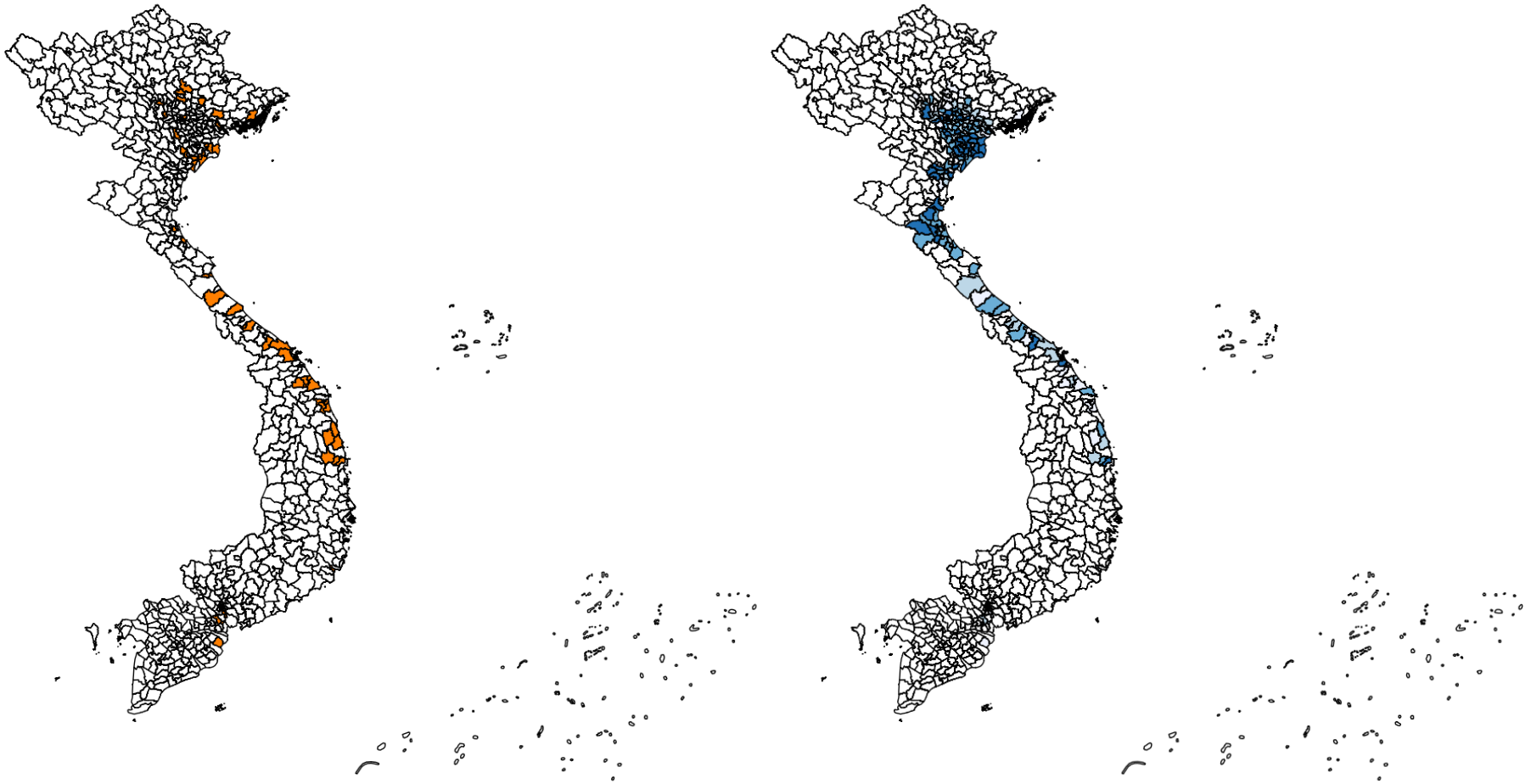
2.2 Data on the Vietnamese professorship

In Vietnam, educators (having a doctoral degree) applying for full or associate professorships undergo a rigorous evaluation across university, disciplinary, and state levels, as outlined in Decision 37/2018/QĐ-TTg. This process involves the State Council of Professorship, which includes various vice-presidents and commissioners. Candidates are assessed based on research, teaching, experience, and student supervision. The four-step appointment process starts with applications to university councils, followed by evaluations and presentations at the university level. The State Council then receives recommendations and conducts further assessments, including an oral examination (discipline councils) in Hoan Kiem District, Hanoi City. Successful candidates receive a certificate from the state council for official promotion.

Due to Decision 37/2018/QĐ-TTg by the Prime Minister of Vietnam, which mandates the publication of profiles for associate (and full) professorship candidates on the website https://hdgsnn.gov.vn/ (for the 2019-2023 period), we manually gathered data on individuals who successfully passed the university council phase to participate in the disciplinary councils. These councils are convened in Hoan Kiem District, Hanoi City (the capital). Because of limitations in data availability, our sample is restricted to the years 2021 through 2023. We manually hand-coded the profiles, hometowns, affiliations, and areas of expertise of all academic candidates who had published profiles. The resulting dataset includes the profiles of 1,324 successful candidates who were selected for university councils and participated in one of the 41 national oral examinations conducted by the discipline council. Our detailed data can be found at Appendix B while the geographical map of distribution can be found in Figure 1b.

2.3 Data description

We integrated three datasets: imperial elites, professorship, and the Vietnam Household Living Standard Survey (VHLSS), as conducted by General Statistics Office (2019). This dataset is widely recognized in economic research focused on Vietnam (McCaig and Pavcnik, 2018; Dell et al., 2018). Additionally, we used 2019 district-level population data from Vietnam's official census, also by GSO (2023), as a control variable. This dataset offers comprehensive household-level information, including variables such as income, age, education level, and participation in vocational training. Detailed definitions and explanations of these variables are available in Appendix C. After merging the three datasets—imperial elites, professorship, and additional controls—we compiled data on 3,022 imperial elites and 1,002 contemporary associates (including full professors), spanning 421 districts and 90 provinces over the 2021-2023 period. As indicated in Table Appendix A5, the average number of elites per district is 18.017, and per province, it is 103.767, with standard deviations of 20.21 and 165.646, respectively. Moreover, the mean values of *ascfull_d* (the number of full and associate professors at the district level) and *ascfull_p* (the one at the province level) are 2.380 and 13.322, respectively. This suggests that, on average, there are about 2 professors per district and 13 per province.



(a) Imperial elites in Vietnam from 1075–1919

(b) Associate and full professors in 2021-2023

Figure 1: Distribution of former elites (1075–1919) and current professors (2021-2023)

3 Identification strategy

We begin with a baseline model specification:

$$ascfull\_d_{i,t} = \alpha + \beta elite\_total\_d_{i,1075-1919} + \mu X_{i,t} + \lambda_p + \theta_t + \epsilon_{i,t} \tag{1}$$

The model outlined in (1) is designed to investigate the relationship between the number of imperial elites $elite\_total\_d_{i,1075-1919}$ in district i during the historical period (from 1075 to 1919) and the total number of contemporary professors $ascfull\_d_{i,t}$ over three years (2021, 2022, and 2023). A significant challenge in identification arises from the potential endogeneity bias caused by unobserved confounding characteristics and/or measurement errors in *elite_total*. Notably, numerous district-specific or province-level factors are difficult to identify and include in regression analyses. If *elite_total* correlates with these unobserved confounders, which are crucial for explaining regional variations in professor numbers, it could lead to biased and inconsistent estimates. Crucially, a causal interpretation of these results demands consideration of factors influencing geographical clusters of former elites. Bai et al. (2023) argues that a key driver in the power dynamics of China's elite network is the distance from a county to Nanjing, the early Ming dynasty's imperial capital. Additionally, economic history literature recognizes the importance of proximity to the capital in influencing outcomes in education, public welfare, and healthcare, with negative impacts increasing with distance (Campante et al., 2019).

For this reason, we use the distance to the old capital as an instrumental variable to create a plausibly exogenous source of variation in the number of former elites. This approach is also justified by the possibility that the number of former elites could correlate with the capabilities of people, both historically and in the present day. The instrumental variable purges the direct influence of the endogenous location of the capital, as it does not depend directly on our outcomes of interest. The first stage of our analysis examines the relationship between the number of imperial elites and the district's average distance from the old capital (*average_distance_capital*) in Equation 2:

$$elite\_total\_d_{i,1075-1919} = \alpha_i + \delta average\_distance\_capital_i + \gamma X_i + \epsilon_i \tag{2}$$

In which, $elite\_total\_d_{i,1075–1919}$ is the aggregated number of elites from 1075 to 1919 at district i. X_i is a vector or control variables. The instrumental variable, *average_distance_capital*, calculates the average distance from each district to the district of each imperial examination test venue between 1075 and 1919. This is determined by identifying the hometown of each imperial elite and measuring the distance by road from the center of each district to the location of the imperial examinations. The sites for these examinations were invariably chosen based on the residing location of the contemporary emperor, who had the ultimate say in selecting successful candidates and conducted personal interviews with top-ranked aspirants (Ngo et al., 2006). In this era, eight distinct examination locations were used, as detailed in Appendix Table A2. The instrumental variable, *average_distance_capital*, can be calculated as follows:

$$average\_distance\_capital_i = \frac{\left(\sum_{k=1}^{3,131} eligiblity_{i,k} \times distance\_to\_exam\_venue_{i-j,k}\right)}{\sum_{k=1}^{3,131} eligiblity_{i,k}} \tag{3}$$

We create a dummy variable $eligiblity_{i,k}$, assigning it a value of 1 if specific criteria are fulfilled. First, we assess whether the hometown district i of each elite is linked to the designated examination venues j during the period of the imperial elite k. This involves confirming that the district i is within the Vietnamese territory and is associated with the imperial examinations held during that particular emperor's reign. Then, $distance\_to\_exam\_venue_{i-j,k}$ represents the road distance between district i and examination venues j in the emperor k. It is noted that there was one examination venue per emperor (See details in Appendix Table A2).

Our instrumental variable is different to Bai and Jia (2016), which uses the number of small rivers (given the length of rivers) in a prefecture. This study argues the prosperity of the land area to create more elites based on the success of agricultural industry. As an instrument for the number of the elites, we use the distance to capital[2] because it serves as an indicator of the educational costs involved. Considering Vietnam's geography, the travel costs to these examination venues likely represented a significant portion of the total educational expenditure for each participant. After the first stage estimation 2, we examine the link between the number of former elites and the number of

[2]The use of distance as an instrumental variable is a common practice in economic studies, as evidenced by studies such as Dittmar (2011); Becker and Woessmann (2009); Akçomak et al. (2016).

professors using the following specification:

$$ascfull\_d_{i,t} = \alpha + \beta \widehat{elite\_total\_d_i} + \mu X_{i,t} + \lambda_p + \theta_t + \epsilon_{i,t} \tag{4}$$

The dependent variable $ascfull\_d_{i,t}$ represents the total number of associate and full professors in district i for the years t (specifically, t = 2021, 2022, and 2023). Since the quantity of professors is used as the dependent variable, it is not calculated using local area regression techniques or local aggregation at the district level. Thus, additional regression adjustments are not necessary, in accordance with Elbers et al. (2005). The variable $\widehat{elite\_total\_d_i}$ is derived from Equation 2. Furthermore, Appendix A.3 demonstrates a negative correlation between the number of elites and their distance from the former capital. This leads to an expectation of a negative coefficient for δ in the estimation presented in 2. The vector X includes fixed district characteristics such as average income, age, education level, and vocational training as of 2020, which is the most recent data from the Vietnam Household Living Standard Survey available prior to the surge in professorship applications. We also include the logged population size from 2019, based on the Vietnamese Census Data, as a control variable. Our variables λ_p and θ_t represent province and year fixed effects, respectively, to account for all time-invariant differences between provinces and changes over time that similarly affect all provinces. We incorporated year fixed effects to account for the variation in the total number of associate and full professors in district i over the course of three years.

4 Results

Recent studies highlight the role of cultural transmission in literati families, deeply embedded in a longstanding tradition of learning (Chen et al., 2020). Similarly, in Vietnam, enduring norms of cooperation within communities are often reflected in the practices of local government and civil society, transmitted across generations (Dell et al., 2018). Prior to analyzing the influence of former elites on the contemporary number of professors, we established that the prevalence of former elites in earlier dynasties could predict outcomes in subsequent ones (Appendix A6).

4.1 Baseline Results

We start our analysis with the number of imperial elites across all dynasties as our primary independent variable in Table 1. For a baseline comparison, we first consider socio-economic factors at the district level, as shown in Column (1). Subsequently, we incorporate full control for baseline covariates in Columns (2) and (3). In Column (3), a one-standard-deviation increase in the number of former elites is associated with an approximate 0.175 standard deviation increase in the total number of professors. Additionally, the results suggest that for every one hundred individuals who passed the imperial exams, there is an average yearly increase of around one contemporary professor. Overall, the Ordinary Least Squares results indicate that the former elites has a statistically and economically significant impact on the number of professors.

One might argue that various geographical factors included in Equation 1 serve as incomplete proxies for the true range of geographic characteristics across these districts. To determine if the observed long-term persistence effect is primarily due to spatial 'noise', we controlled for province fixed effects. Subsequently, we found no spatial auto-correlation in the residuals, as evidenced by Kelly (2019) with the insignificance of Moran's I-statistic (p-value = 0.205, which is greater than 0.10). In addition, we proceed the coefficient stability test created by Oster (2019) to evaluate the magnitude of selection bias arising from unobservable variables. Oster (2019) shows that the standard practice of mitigating omitted variable bias by integrating observed controls into regression analysis may not lead to reliable interpretation, particularly when these observed confounding factors are inadequate proxies for the actual omitted covariates. This method uses the coefficient stability and the empirical significance of control variables to evaluate the extent of bias resulting from unobservable factors. In accordance with Oster (2019)'s suggestion, a δ value greater than 1 indicates that findings are not highly susceptible to misinterpretation due to selection on unobservables, except in the instances detailed in Columns (3), (6), and (9). The bias-adjusted coefficient (β^*) is computed to represent the influence of former elites on contemporary professors, under the assumption that all unobserved confounders are included in the regression. Importantly, none of the intervals between β^* and the baseline coefficient include zero, with Column (5) being the only exception. These results support that my findings are not mainly driven by unobserved confounding characteristics.

Table 1: Impact of the former elites on the contemporary professorship: OLS Estimates

	(1) ascfull_d	(2) ascfull_d	(3) ascfull_d	(4) fullprof_d	(5) fullprof_d	(6) fullprof_d	(7) ascprof_d	(8) ascprof_d	(9) ascprof_d
elite_total_d	0.014**	0.014***	0.01454***	0.003***	0.003**	0.0036**	0.011*	0.010**	0.01091**
	(0.006)	(0.005)	(0.005)	(0.001)	(0.001)	(0.001)	(0.006)	(0.005)	(0.005)
distance_coast_d	-0.004	-0.004	-0.003	-0.001	-0.001	-0.000	-0.003	-0.003	-0.003
	(0.005)	(0.005)	(0.005)	(0.001)	(0.001)	(0.001)	(0.005)	(0.005)	(0.005)
log_average_income_d	-0.465	-0.788***	-0.811**	-0.153	-0.224**	-0.217**	-0.312	-0.565*	-0.595*
	(0.338)	(0.302)	(0.336)	(0.101)	(0.100)	(0.107)	(0.321)	(0.294)	(0.322)
average_age_d	-0.048	-0.461	-0.464	0.209	0.134	0.150	-0.256	-0.596**	-0.614**
	(0.351)	(0.286)	(0.298)	(0.142)	(0.128)	(0.136)	(0.300)	(0.282)	(0.299)
average_age_d_2	0.001	0.005*	0.005*	-0.002	-0.001	-0.002	0.003	0.006**	0.007**
	(0.004)	(0.003)	(0.003)	(0.001)	(0.001)	(0.001)	(0.003)	(0.003)	(0.003)
average_educollege_d	-2.538**	-2.651**	-3.001**	0.334	0.094	0.076	-2.872***	-2.744**	-3.077**
	(1.154)	(1.102)	(1.285)	(0.359)	(0.384)	(0.472)	(1.097)	(1.065)	(1.267)
average_vocational_d	0.139	-0.174	0.047	0.651***	0.594***	0.641***	-0.512	-0.768	-0.595
	(0.755)	(0.696)	(0.769)	(0.225)	(0.216)	(0.246)	(0.731)	(0.689)	(0.774)
log_totalpop_d		-72.446	-47.172		9.251	23.994		-81.697	-71.166
		(54.934)	(80.546)		(23.966)	(32.596)		(52.963)	(82.126)
log_totalpop_d_2		6.592	4.291		-0.848	-2.119		7.440	6.410
		(4.751)	(6.986)		(2.047)	(2.802)		(4.569)	(7.081)
log_totalpop_d_3		-0.196	-0.127		0.026	0.063		-0.222*	-0.189
		(0.137)	(0.201)		(0.058)	(0.080)		(0.131)	(0.203)
Constant	8.025	280.628	189.953	-3.104	-34.572	-91.968	11.128	315.200	281.921
	(9.851)	(212.336)	(310.036)	(3.595)	(93.502)	(126.559)	(8.762)	(205.619)	(318.296)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year × Province FE	No	No	Yes	No	No	Yes	No	No	Yes
Observation	421	421	421	421	421	421	421	421	421
R^2	0.268	0.300	0.381	0.090	0.107	0.177	0.255	0.280	0.366
Oster (2019) δ for $\beta = 0$			8.583			3.188			17.346
Oster (2019) bound (β, β^*)			(0.009, 0.01455)			(0.0032, 0.0036)			(0.006, 0.01092)

Notes: All baseline results with control variables in Table A5 were estimated using the Ordinary Least Squares (OLS) method. Robust standard errors, adjusted for clustering at the district level, are presented in parentheses. Columns (1) to (3) present estimates for the combined total of associate and full professors. Columns (4) to (6) detail the estimations with the number of full professors as the sole dependent variable. Meanwhile, Columns (7) to (9) summarize the results of the Ordinary Least Squares (OLS) regression analysis, focusing on the number of associate professors as the dependent variable. The δ statistic in Oster (2019) indicates the significance of unmeasured confounders compared to measured control variables in negating the primary findings. The bias-corrected coefficient, β^*, assumes δ equals 1 and R_{max} is $1.3R$, suggesting that the R-squared value of a theoretical model including both measured and unmeasured control variables is 30% greater than that of a model with only measured controls. The significance levels are denoted as follows: * p < 0.10, ** p < 0.05, *** p < 0.010.

4.2 Causal inference

To establish causality, we employ an instrumental variable (the distance to the ancient capital) to identify a potentially exogenous source of variation in the number of former elites that helps explain the divergence in the number of professors across Vietnamese districts. The first-stage findings presented in Table 2 show that the distance to the old capital negatively and significantly affects the number of imperial elites. This implies that a greater distance from a candidate's hometown to the examination venue correlates with fewer candidates passing the imperial examination. Geographical distance acts as a relevant instrumental variable for former elites.

Table 2: Impact of the former elites on the contemporary professorship: Instrumented Results

	(1) elite_total_d	(2) ascfull_d	(3) elite_total_d	(4) ascfull_d
average_distance_capital_d	-0.024**		-0.022**	
	(0.010)		(0.010)	
elite_total_d		0.115**		0.112**
		(0.046)		(0.053)
Baseline controls	No	No	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes
Year x Province FE	Yes	Yes	Yes	Yes
Observation	421	421	421	421
R^2		0.534		0.567
Kleibergen-Paap F-stat	6.053		4.666	
F-test of excluded instruments	6.050		4.670	
Anderson-Rubin Wald test	9.15		6.810	

Notes: This table reports IV-2SLS estimates of the effect of former elites on the contemporary professors. Robust standard errors, adjusted for clustering at the district level, are presented in parentheses. The significance levels are denoted as follows: * p < 0.10, ** p < 0.05, *** p < 0.010.

While existing literature often references the distance to the sites of the two primary resources for reading books in China (Chen et al., 2020), it is noted that in the seventeenth century, Vietnamese people were more inclined to read imported Chinese books via sea routes (Tana, 2011). Consequently, we investigate whether coastal areas had any advantages in passing the examination. Nevertheless, our analysis reveals no significant correlation between the distance to the coast and the number of elites, although the coefficient is positive once we control for fixed provincial effects. By using the distance to the examination venue as an instrument to address the endogeneity in the number of

elites, we demonstrate a causal relationship wherein the legacies of former elites in a specific district contribute to a higher number of professors in contemporary society. Relative to the Ordinary Least Squares (OLS) outcomes, the point estimate of the coefficient on the number of elites is significantly larger in most Instrumental Variable (IV) specifications.

4.3 Endogenous Mechanisms

This subsection discusses geographical factors contributing to the sustained influence of distance on exam revenue and the number of successful candidates. While existing studies, such as Campante et al. (2019), suggest that the distance to a capital city might lead to conflicts, we propose that the extended travel required to participate in examinations could impede candidates' abilities and motivation to sit for national exams. Column (4) of Table 3 reveals that the distance to Ha Noi City, the present examination location, is negatively associated with the number of successful professorship candidates (β = -0.003, p < 0.05), even after accounting for baseline and time-varying fixed effects. This finding corroborates our earlier hypothesis that greater distances from the former capital city could have increased educational costs for previous elites attending the imperial examination.

Table 3: The impact of distance to Hanoi (today examination venue) on the number of professors

	(1) ascfull_d	(2) ascfull_d	(3) ascfull_d	(4) ascfull_d
elite_total_d	0.016**	0.006	0.015***	0.004
	(0.006)	(0.007)	(0.005)	(0.005)
distance_to_hn_d	-0.0001	-0.003*	0.0001	-0.003**
	(0.001)	(0.002)	(0.001)	(0.001)
elite_total_d × distance_to_hn_d		0.0001**		0.0001***
		(0.000)		(0.000)
Baseline controls	No	No	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes
Year x Province FE	Yes	Yes	Yes	Yes
Observation	421.000	421.000	421.000	421.000
R^2	0.330	0.347	0.381	0.398

All mechanism results with/without control variables in Table A5 were estimated using the Ordinary Least Squares (OLS) method. Robust standard errors, adjusted for clustering at the district level, are presented in parentheses. The significance levels are denoted as follows: * p < 0.10, ** p < 0.05, *** p < 0.010.

Although the distance to Hanoi is seen as a hindrance for participating in the examination, this obstacle is lessened in districts with a higher number of former elites. This indicates that an increase in social capital transmission can be a significant motivator for individuals to participate in the national professorship exam. Our research contributes to the current body of knowledge by demonstrating that former elites, representing the highest level of educational attainment and thus a greater accumulation of human capital, tend to promote specialization in areas requiring intensive human capital skills within the education system (Ciccone and Papaioannou, 2009).

One of our key challenges relates to immigration, where individuals born and raised in one area relocate to larger cities for work and residence. Consequently, we also investigate alternative transmission channels that focus on the characteristics of different areas, setting aside immigration factors. To achieve this, we manually match the hometowns of successful candidates from contemporary professorship nominations with their affiliated addresses at the provincial level, thereby ensuring sufficient variation for our analysis. We propose the hypothesis that individuals born, raised, and possibly still working in districts with a greater diversity of former elites may have higher motivation and chances of success in current professorship outcomes (Columns (1), (3), and (5) in Table 4).

Table 4: The impact of former elites on the contemporary professorship: Sub-sample analysis

	(1)	(2)	(3)	(4)	(5)	(6)
	ascfull_samep_d	ascfull_notsamep_d	ascprof_samep_d	ascprof_notsamep_d	fullprof_samep_d	fullprof_notsamep_d
elite_total_d	0.007***	0.008	0.005**	0.006	0.001*	0.002
	(0.002)	(0.005)	(0.002)	(0.005)	(0.001)	(0.001)
distance_coast_d	-0.001	-0.002	-0.001	-0.002	-0.0003	0.0002
	(0.002)	(0.005)	(0.002)	(0.005)	(0.000)	(0.001)
Baseline controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes	Yes
Year × Province FE	Yes	Yes	Yes	Yes	Yes	Yes
Observation	421.000	421.000	421.000	421.000	421.000	421.000
R^2	0.606	0.490	0.571	0.467	0.246	0.190
Oster (2019) δ for $\beta = 0$	2.298		2.111		3.497	
Oster (2019) bound (β, β^*)	(0.006, 0.0079)		(0.005, 0.0066)		(0.001, 0.00141)	

All sub-sample results with control variables in Table A5 were estimated using the Ordinary Least Squares (OLS) method. Robust standard errors, adjusted for clustering at the province level, are presented in parentheses. Columns (1) and (2) provide estimates for the combined total of associate and full professors, columns (3) and (4) detail the number of associate professors, and columns (5) and (6) specifically present data for full professors only. We counted how many successful candidates who have the perfect match between birth place province and affiliation province as the *samep*. The δ statistic in Oster (2019) indicates the significance of unmeasured confounders compared to measured control variables in negating the primary findings. The bias-corrected coefficient, β^*, assumes δ equals 1 and R_{max} is $1.3R$, suggesting that the R-squared value of a theoretical model including both measured and unmeasured control variables is 30% greater than that of a model with only measured controls. The significance levels are denoted as follows: * p $<$ 0.10, ** p $<$ 0.05, *** p $<$ 0.010.

4.4 Exogenous Mechanisms

Leveraging the distinctive culture of the Confucian nation, we further utilized our manually collected data to explore the potential influences of historical elites on the current professoriate in Vietnam. Our initial data point is street names, which reflect the collective commemorative decisions of local governments and serve as proxies for their social and cultural attributes. This is especially valuable in light of the limited availability of cultural data at the local level (Oto-Peralías, 2018). We manually examined each district known to have historical elites to identify any streets named after these former notables. The second data point focuses on the names of educational institutions, encompassing primary, secondary, and high schools in the region. The literature underscores the significance of school identities, or alternatively, the names of schools, in this context (Akerlof and Kranton, 2002; Eble and Hu, 2022; Alderman, 2002). Additionally, the final data point involves the ancestral temples at the district level. These temples are particularly noteworthy as they are the most well-preserved and quintessential embodiment's of familial success. Significantly, individuals who excelled in the imperial examinations frequently saw their names enshrined on the walls of temples, acting as an enduring symbol for subsequent generations to maintain venerable traditions. The practice of building temples is a prominent aspect of clan culture, emphasizing the deep connections among people within the same district or local area (Herrmann-Pillath et al., 2019; Zhang, 2019). The detailed descriptive statistics for these variables can be found in Appendix A5.

Our strategy involves analyzing the relationship between our hypothesized mechanisms and the prevalence of elites at the district level. This relationship will be precisely estimated within districts using the model specification outlined in Equation 5:

$$\widehat{mechanism\_d_i} = \alpha + \beta elite\_total\_d_{i,1075-1919} + \mu X_{i,t} + \lambda_p + \theta_t + \epsilon_{i,t} \tag{5}$$

In which, $elite\_total\_d_{i,1075-1919}$ represents the total number of elites from 1075 to 1919 in district i. The term X_i denotes a vector of control variables. The variables λ_p and θ_t are included to represent fixed effects for provinces and years, respectively, thereby controlling for all time-invariant differences across provinces and capturing changes over time that affect all provinces similarly. The variable

$mechanism_i$ refers to three potential variables: First, the number of ancestral temples named after elites in district i, represented as $count\_ancestraltemple\_d_i$; for robustness checks, we also employ a dummy variable to indicate the presence or absence of such temples in district i, denoted as $dummy\_ancestraltemple_i$. Second, the variable $count\_eliteschoolname\_d_i$ indicates the number of schools (primary, secondary, high school) in district i that are named after any former elite born in the same district. Additionally, the dummy variable $dummy\_eliteschoolname\_d_i$ is used to capture binary outcomes, determining whether a district possesses any school names derived from the names of former elites. Lastly, the variable $count\_elitenamestreet\_d_i$ quantifies the number of streets in district i that are named after former elites born within the same district. Similarly, the dummy variable $dummy\_elitenamestreet\_d_i$ is designed to assess whether there are any street names within district i that correspond to the names of elites from the period 1075-1919. The predicted values of three mechanisms could be used to predict the number of associate (and full) professors in the second specification in the equation 6:

$$ascfull\_d_{i,t} = \alpha + \beta \widehat{mechanism}\_d_i + \mu X_{i,t} + \lambda_p + \theta_t + \epsilon_{i,t} \tag{6}$$

The significant coefficient β in equation 5 indicates that the historical elites possess considerable predictive power over the identified mechanisms. Consequently, these mechanisms may demonstrate the linkage between themselves and the number of contemporary professors, as the coefficient β in equation 6 is precisely estimated. Our estimated results are presented in Table 5.

Our findings reveal that two mechanisms—constructing ancestral temples and naming schools after elites—demonstrate robust and consistent results in both continuous (Columns (1)-(4)) and dummy variables (Columns (7)-(10)). These methods effectively transmit cultural persistence, contributing to the success of contemporary associate and full professors. While there is some weak evidence suggesting that naming streets after elites could contribute to the success of achieving professorship in these areas, as indicated by the use of a dummy variable (Columns (11)-(12)), these findings do not persist in continuous settings (Columns (5)-(6)).

Table 5: Exogenous mechanisms to explain the impact of former elites on the contemporary professorship

	(1)	(2)	(3)	(4)	(5)	(6)
	count_ancestraltemple_d	ascfull_d	count_eliteschoolname_d	ascfull_d	count_elitenamestreet_d	ascfull_d
elite_total_d	0.034*		0.013**		0.013	
	(0.017)		(0.005)		(0.013)	
$\widehat{ancestraltemple\_d}$		0.431***				
		(0.146)				
$\widehat{eliteschoolname\_d}$				1.132***		
				(0.384)		
$\widehat{elitenamestreet\_d}$						1.134***
						(0.384)
Baseline controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes	Yes
Year × Province FE	Yes	Yes	Yes	Yes	Yes	Yes
Observation	421	421	421	421	421	421
R^2	0.356	0.381	0.225	0.381	0.422	0.381
	(7)	(8)	(9)	(10)	(11)	(12)
	dummy_ancestraltemple_d	ascfull_d	dummy_eliteschoolname_d	ascfull_d	dummy_elitenamestreet_d	ascfull_d
elite_total_d	0.080**		0.053**		0.043*	
	(0.039)		(0.024)		(0.022)	
$\widehat{ancestraltemple\_d}$		1.061***				
		(0.403)				
$\widehat{eliteschoolname\_d}$				1.941***		
				(0.627)		
$\widehat{elitenamestreet\_d}$						1.819***
						(0.628)
Baseline controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes	Yes
Year × Province FE	Yes	Yes	Yes	Yes	Yes	Yes
Observation	360	360	325	325	301	301
R^2		0.378		0.365		0.362
Pseudo R^2	0.355		0.195		0.213	

All results with control variables in Table A5 were estimated using the Ordinary Least Squares (OLS) method (Column (1)-(6), (8), (10), and (12)) and Logistic Regression (Column (7), (9), and (11)). Robust standard errors, adjusted for clustering at the district level, are presented in parentheses. The significance levels are denoted as follows: * p < 0.10, ** p < 0.05, *** p < 0.010.

4.5 Robustness

In our study, the primary focus was on the disaggregated district level, encompassing 421 districts. Nevertheless, to ensure the robustness of our findings and particularly to ascertain cross-district externalities, we extended our analysis to a more aggregated level, examining data across 90 provinces. We obtain strikingly consistent results when being analyzed with this aggregated provincial data, as detailed in Appendix F. Furthermore, our findings continue to be robust, even after the exclusion of state cities (municipalities) that are centrally-controlled and possess a status on par with provinces. This robustness is confirmed through checks conducted at both the district and province levels. Simultaneously, we have omitted the former capital in Table A2, considering its potential as a primary influencer of results. Despite these exclusions, our results remain consistent. All relevant findings are comprehensively detailed in Appendix G.

5 Conclusion

Through demonstrating a strong, positive relationship between regions with a historical tradition of imperial exam success and the current numbers of full and associate professors, we have illustrated the long impact of a notably long-standing institution—the Vietnamese exam system—on human capital outcomes, particularly in terms of educational attainment. Our findings suggest that proximity to the examination venue plays a significant role in exam outcomes, a factor that is relevant both in historical contexts and in our contemporary setting. Our study highlights two culturally ingrained practices—erecting ancestral temples and naming educational institutions after elites —that have shown to consistently support the transmission of cultural values and contribute significantly to the academic achievements of contemporary professorship in Vietnam.

Our study has identified the pivotal role played by exposure to regions with a longstanding tradition of imperial exam success. However, our primary aim is to delineate that the advantages of such social capital do not persist when individuals relocate. This observation is crucial in understanding the dynamics of cultural transmission within the academic profession. Nonetheless, our analysis reveals that the localized success of exam cultures might academic inequalities over time, especially in sce-

narios where professorship applications are disproportionately affected by centralized examinations, typically held in the capital. In light of these findings, we advocate for a reformation in the process of conferring the highest academic titles. We suggest that this responsibility should be decentralized and reassigned to universities, which are more broadly dispersed throughout Vietnam. This proposed shift aims to foster a more equitable and accessible framework for all aspirants, thereby ensuring a level playing field across different generations. This recommendation is premised on the principle of promoting equal opportunities in academic advancements, irrespective of geographic or cultural backgrounds. While honoring cultural traditions, policies should also ensure that the criteria for academic advancement remain relevant to contemporary educational goals and societal needs. This balance is crucial for fostering an academic environment that both respects heritage and promotes forward-looking scholarship.

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Appendix A The Vietnamese imperial examinations

A.1 An Introduction of imperial examinations

Beginning in 1075 with the Ly Dynasty, Vietnamese emperors initiated the use of imperial examinations to select state bureaucrats from the general population. This examination system is a key aspect of Vietnam's historical narrative, affecting not only the skillset of government personnel but also influencing the distribution of the elite, the allocation of talent, and the perception of social advancement among the general populace. Similar to the Chinese model, those in Vietnam who passed these exams but did not enter official government roles were regarded as part of the gentry, enjoying a status of privilege. The French suspended the examinations in 1913, and the final local exams took place between 1915 and 1919. This made Vietnam the last country to conduct Confucian civil service examinations. The imperial examinations in Vietnam came to an end in 1919 during the reign of Emperor Khai Dinh.

The examination system was introduced to Vietnam during the extended period of Chinese occupation and was later adopted by the succeeding independent Vietnamese dynasties. The Vietnamese exams initially covered the teachings of Confucianism, Taoism, and Buddhism, collectively known as 'three teachings' ('tam giao' in Vietnamese, 三教 in Chinese). In 1075, the Ly Dynasty promulgated a decree inviting individuals well-versed in scriptures and with extensive knowledge to participate in the Confucian examination covering three subjects, often referred to as the 'three teachings' exam. This examination resulted in the selection of 10 successful candidates. However, starting in 1232, they shifted to concentrate exclusively on Confucianism and its literature. Beginning in 1396, the imperial examinations in Vietnam were divided into two levels: the provincial level (thi *'Huong'* in Vietnamese) and the national level (thi *'Hoi'* in Vietnamese). Candidates had to first pass the provincial examination to qualify for the national examination. In the following parts, we will summarise the nature of these examinations by each dynasty based on the Ngo et al. (2006)'s book.

During the *Ly Dynasty*, the initiation of the examination system marked the beginning of a more structured approach to Confucian and Chinese education, which previously lacked systematic organization. The Vietnamese emperor, recognizing the significance of learning Chinese, particularly

through Buddhist texts, played a pivotal role in this educational reform. A notable event of this era was the construction of 'Van Mieu Quoc Tu Giam' ('The Temple of Literature') in 1070, which later evolved into the Imperial Academy. Five years after its establishment, in March 1075, the first examination under the Vietnamese emperors was held, signifying a major milestone in the country's academic history. During this period, the intervals between each examination were notably long, often spanning approximately 15 to 20 years. This extended duration between exams reflects the evolving nature of the academic and administrative systems of the time, possibly due to the complexities involved in organizing and conducting these examinations, or perhaps as a result of the evolving political and social landscapes.

In the subsequent *Tran Dynasty*, the inaugural 'three learnings' examination was introduced, encompassing three tests on Confucianism, Taoism, and Buddhism. Initially, these examinations were held approximately every seven years. In 1256, the examination rules were revised to award two principal graduates ('Trang Nguyen' in Vietnamese, 省試 in Chinese), a change aimed at encouraging participation from candidates residing distant from the capital. This allowed one principal graduate from the capital and another from 'Thanh Hoa' and 'Nghe An' provinces. After 1266, the frequency of the exams was reduced to once every ten years, a change attributed to wartime disruptions and the country's restructuring. This era also saw the inception of provincial-level and national-level examinations. Notably, this period featured an interview session conducted by the King to determine the candidates' higher level.

In 1404, during the *Ho Dynasty*, the last king, Ho Han Thuong, issued an edict for the national-level exam, known as 'thi Hoi', to be held every three years. Candidates who passed the provincial-level exam, 'thi Huong', were allowed to proceed to the capital. They were given an eight-month period to prepare for the 'thi Hoi'. During this preparatory time, they could reside and study in the 'Van Mieu Quoc Tu Giam' (The Temple of Literature).

Next, in the *'Le Dynasty'*, the examination process was standardized. The council prepared exam materials, supervised, and appointed examiners. To prevent recognition of relatives by examiners, candidates' papers were rewritten. Each examination required at least two graders before submission

to the chief examiner. The *'thi Hoi'* (national-level exam) comprised four stages. Candidates had to pass each stage sequentially. Those who succeeded in all four could participate in the *'thi Dinh'*, triennial palace examination to determine the relative ranking of the capital examination graduates (Taylor, 1987). This included an oral interview by the King, who, after discussion with state bureaucrats, ranked the candidates. Finally, the King made the final decision. Notably, successful candidates were honored by the King, who provided them with horses, uniforms, and servants for a triumphant return to their hometown, a tradition known as 'returning in glory'. During this era, the interval between the provincial-level examination, 'thi Huong,' and the national-level examination, 'thi Hoi,' was three years. Historical records also highlight the immense esteem the King bestowed upon those who successfully passed these exams, as evidenced by the proclamation ceremony held at the palace and the inscription of their names on the stele at the Temple of Literature (Van Mieu Quoc Tu Giam) (Hodgkin, 1976).

The following dynasty (*'Mac' dynasty*), the imperial examination was organised although there were civil wars between Mac dynasty and Le Trung Hung dynasty. After that, *'Le Trung Hung' dynasty* also organised the imperial exams as usual. In this period, the reward of successfully passing the exam was documented to become state bureaucrat (Le, 1962). During the *'Tay Son' dynasty*, there was one examination school due to the current civil rebellion.

In the last dynasty, the *'Nguyen' Dynasty* (1802–1945), the first examination school was established by 1807. During this period, *'thi Huong'* (provincial-level exams) were conducted, while *'thi Hoi'* (national-level exams) were suspended until 1822. A notable aspect of the Nguyen Dynasty, particularly under Emperor *'Minh Mang'*, was the decision not to award the title of *'Trang Nguyen'* (principal graduates) to successful candidates. The interval between each exam remained at three years, with the addition of *'An khoa'* (Granted exam school) conducted by the King. These were special exams held alongside the regular *'thi Huong'* and *'thi Hoi'* examinations. The imperial examination school was organised in Hue City, the capital of the *'Nguyen' Dynasty*. As the dynasty neared its end, the imperial examination system came under increasing criticism due to its outdated ideology and content.

A.2 Data collection

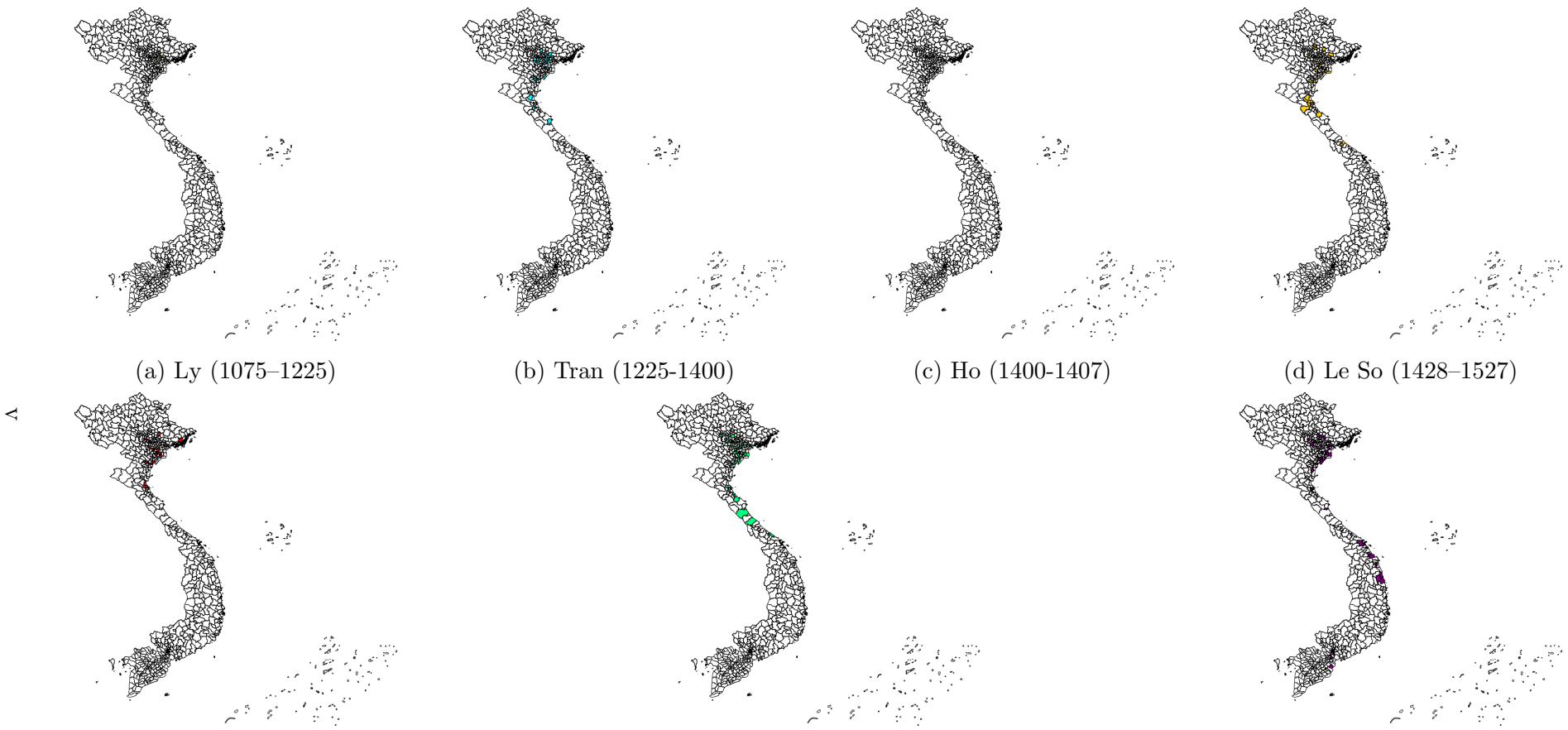
We manually extracted information about imperial elites from the work by Ngo et al. (2006), who compiled the most extensive list of imperial elites known to have passed the national-level imperial examinations between 1075 and 1919. Due to historical gaps, we further validated this data by cross-referencing it with information from 82 stele stones, researched by the Institute of Sino-Nom Studies, a part of the Vietnam Academy of Social Sciences (Trinh, 2023). This additional data spans from 1442 to 1779. In summary, our dataset was derived from two primary sources: (1) the list of successful candidates from Ngo et al. (2006)'s book, and (2) detailed information about successful candidates on stele stones as documented by Trinh (2023). We eliminated duplicates, considering factors like name, hometown, and dynasty, to construct a comprehensive and unified dataset for each imperial elite.

In Table A1, we summarize the count of elites from various sources across dynasties. While Ngo et al. (2006) initially lists 2,894 names of imperial elites, some duplications are present due to certain individuals taking the examination multiple times to enhance their scores and achieve the highest rank. For the purposes of our analysis, anyone who passed the written exam is regarded as an imperial elite. Additionally, we reconciled our data with the information from the steles as documented by Trinh (2023) to ensure no duplication in the elite data. Finally, we systematically coded details such as hometown, examination school, and dynasty, facilitating the creation of a complete and comprehensive dataset.

Table A1: Distribution of imperial elites across dynasties, as informed by our sources

Sources	Ly	Tran	Ho	Le So	Mac	Le Trung Hung	Nguyen	Total
Bac Ninh stele	1	9	4	166	157	15	27	379
Ha Noi stele				533	27	743		1,303
Hue stele							245	245
Hung Yen stele		3	1	55	23	2	4	88
Ngo et al. (2006)'s book	10	44	7	362	285	88	320	1,116
Total	11	56	12	1,116	492	848	596	3,131

Notes: This table presents the count of imperial elites, drawn from two sources (82 stele stones and one book), distributed across various dynasties: Ly (1075–1225), Tran (1225-1400), Ho (1400-1407), Le So (1428–1527), Mac (1527–1677), Le Trung Hung (1533–1789), and Nguyen (1802–1919). Our dataset comprises 3,131 unique individuals who passed the national-level examinations.



(a) Ly (1075–1225) (b) Tran (1225-1400) (c) Ho (1400-1407) (d) Le So (1428–1527)

(e) Mac (1527–1677) (f) Le Trung Hung (1533–1789) (g) Nguyen (1802–1919)

Figure A.1: Distribution of former elites (1075–1919) by geography (hometown) across dynasties

Upon manually matching 3,131 former elites with their respective hometowns and dynasties, we discovered that 16 former elites (comprising 14 candidates from Ngo et al. (2006)'s book, one candidate from a Bac Ninh stele, and one from a Hue stele) lacked hometown information, although their dynastic affiliations were identifiable. Consequently, we excluded these observations from our dataset. This led to a final count of 3,115 elites, each with a unique hometown, spanning various dynasties. Figure A.1 depicts the distribution of former elites across various dynasties by their hometown. In addition, Table A2 demonstrates the list of dynasty, the school exams by district and province, the number of imperial elites based on our constructed dataset.

Table A2: School exams and number of former elites across dynasties

Year	Dynasty	School exams		Number of elites	Number of exams
		District	Province		
1075–1225	Ly	Ba Dinh	Hanoi	10	4
1225-1400	Tran	Ba Dinh	Hanoi	51	16
1400-1407	Ho	Vinh Loc	Thanh Hoa	9	3
1428–1527	Le So	Ba Dinh	Hanoi	1,113	32
1527–1677	Mac	Ba Dinh	Hanoi	492	22
1533–1789	Le Trung Hung	Ba Dinh	Hanoi	848	72
1802–1919	Nguyen	Hue	Thua Thien Hue	592	39

Notes: This table displays the locations of school exams across different dynasties, highlighting that these exams typically took place in the former capitals, under the emperor's dominion. Additionally, we extracted data on the number of exams from Ngo et al. (2006)'s book to analyze the frequency with which these former imperial examinations were organized. The discrepancies in the number of former elites compared to those in Table A.1 arise from our exclusion of individuals lacking hometown information.

Appendix B The state council for professorship

B.1 An introduction of a procedure for professorship nomination

In Vietnam, the appointment of educators as full (associate) professors necessitates their records undergoing a thorough evaluation and recognition process across multiple levels, including the university and disciplinary (or interdisciplinary) councils, and finally, the state level. This process is governed by the legal framework established in Decision 37/2018/QĐ-TTg, signed by the Prime Minister on

August 31, 2018 (The State Coucil for Professorship, 2023). This decision stipulates the eligibility criteria for both associate and full professorships. The State Council of Professorship, established by the Prime Minister upon the Minister of Education and Training's request, is tasked with appraising and promoting or revoking the recognition of qualifications for professor and associate professor titles in the entire country. The council's composition includes a Chairman, a Vice-President and Secretary-General, a Vice-President for natural sciences, engineering, and technology, a Vice-President for the health sciences sector, a Vice-President for social sciences, humanities, arts, and sports, and other Commissioners. The Minister of Education and Training serves as the Chairman of the Council. The State Council of Professorship has a five-year term. It possesses a seal reflecting the national emblem, operates with its own account, and has a designated working location.

Candidates must also meet qualifications related to research (publications), teaching, their years of experience in the education sector, and the number of undergraduate and graduate students they have supervised, among other factors. The process of applying for professorship in Vietnam comprises four main steps. First, Candidates initiate the professorship application process in Vietnam by submitting their applications to the university council of professorship. Notably, not all universities in Vietnam have the authority to convene this initial council. Universities wishing to organize such a council must first demonstrate their capabilities and submit relevant documentation to the state council of professorship for approval. The number of university councils authorized to conduct this process can vary annually. For instance, there were 103 university councils in 2023, compared to 102 in 2022. Next, the university council of professorship evaluates the submitted documents, listens to the candidates present their general scientific reports, and assesses their foreign language proficiency. After determining the list of qualified candidates, the council publishes it on the university website of the relevant higher education institution. Finally, the results are reported to the State Council of Professorship. In the third stage, the State Council of Professorship receives candidate recommendations from the university council of Professorship and then sends these to the Discipline-specific or Interdisciplinary Councils of Professors for additional assessment. At this stage, all candidates are required to travel to the office of the State Council of Professorship, located in Hoan Kiem District, Hanoi City, to participate in an oral examination. This step is crucial and represents the most signifi-

cant phase in the appointment process for an associate professor (or professor). Finally, following the assessments and recommendations from these councils, the state council of professorship conducts a review and finalizes the list of qualifying candidates. However, to be fully promoted, candidates must obtain a certificate from the state council, which they then submit to their employing institution.

B.2 Data collection

According to Decision 37/2018/QĐ-TTg, there are several new aspects regarding professorship policies. First, the candidate profiles must be publicly listed on the website https://hdgsnn.gov.vn/ during the nomination period. Second, applicants must receive approval from at least 2/3 of the council members (interdisciplinary councils range from 12 to 14 members). Third, all candidates are required to travel to Hanoi to attend the disciplinary council examination, while the university council may convene at a more convenient location. The State Council of Professorship typically publishes the list of successful candidates from disciplinary (or interdisciplinary) councils and keeps it posted for 15 days to gather feedback from the public. We manually collected data from the State Council of Professorship website for each year, utilizing the publicly available information. Table A3 illustrates the distribution of full and associate professors over a three-year period (2021-2023). We omitted the data for 2020 due to the implementation of flexible policies, including virtual examinations, in response to the COVID-19 pandemic. In addition, there was no data for successful candidates in 2020 but the website only appears the full list of applicants. Our professorship dataset enables us to trace each candidate's hometown, current affiliation, and area of expertise. Table A4 summarizes the number of full and associate professors across various disciplinary (or interdisciplinary) councils. Notably, the field of economics has the highest number of both full and associate professors compared to other disciplines. There are two disciplines, police and defense, for which candidate information is not disclosed due to national security reasons. Figure A.2 maps the spatial distribution of number of full (and associate) professors in three recent years (2021-2023).

Table A3: Number of professors and associate professors by year

Year	Number of full professors	Number of associate professors	Total
2021	43	330	373
2022	33	313	346
2023	58	547	605
Total	134	1,190	1,324

Notes: This table displays the number of associate professors and full professors who successfully passed through the disciplinary (or interdisciplinary) councils, held in Hoan Kiem District, Hanoi City.

Table A4: The distribution of Vietnamese full and associate professors by disciplines in 2021-2023

Discipline	Number of full (asc.) professor	Discipline	Number of full (asc.) professor
Animal Husbandry	18	Mining	10
Politics	12	Arts	6
Mechanics	12	Linguistics	8
Mechanical Engineering	72	Anthropology	1
Information Technology	33	Agriculture	46
Food Technology	11	Biology	71
Ethnology	1	History	6
Electrical Engineering	13	Psychology	15
Electronic engineering	22	Sports	10
Dynamics	13	Veterinary Medicine	9
Pharmaceutical sciences	22	Irrigation	19
Education and pedagogy	42	Fisheries	20
Transportation	50	Mathematics	50
Chemistry	131	Philosophy	7
Earth sciences	26	Automation	22
Architecture	5	Cultural Studies	13
Economics	190	Literature	7
Forestry	13	Physics	74
Law	27	Sociology	7
Metal Fabrication	7	Construction	41
Medicine	162		

Notes: The total full professors and associate professors for the period from 2021-2023 is 1,324.

(a) In 2021 (b) In 2022 (c) In 2023

Figure A.2: The number of associate and full professors by district from 2021 to 2023

Appendix C Variables definition

Table Appendix A5 displays descriptive statistics at both district and province levels, integrating data from two datasets—imperial elites and Vietnamese professorship—with the 2020 Vietnam Household Living Standard Survey (VHLSS), conducted by General Statistics Office (2019). This dataset provides detailed household-level data, including income, age, education level, and vocational training participation. The dataset mentioned has been widely used in economic research specific to Vietnam data (McCaig and Pavcnik, 2018; Dell et al., 2018). Additionally, we used 2019 district-level population figures from Vietnam, sourced from the official census by General Statistics Office (2019), as a control variable. Variable naming follows a specific convention: suffixes *'_d'* and *'_p'* signify district and province levels, respectively. Concomitantly, we applied logarithmic scaling to two variables, average income and total population, for both district and province levels (Do et al., 2017). In addition, to account for potential nonlinear impacts of population size, we also incorporate the square (log_totalpop_d_2 and log_totalpop_p_2) and cube (log_totalpop_d_3 and log_totalpop_p_3) of the natural logarithm of population in our analysis at district and province level (Bai and Jia, 2016). Three geographical proximity factors are included, namely *average_distance_capital*, *distance_coast*, and *distance_to_hn*, and these are considered at two different levels. The variable *average_distance_capital* represents the distance between a specific district or province and the examination venue for school exams in each dynasty, given the variations in test venues and the expansion of Vietnamese territory. Meanwhile, the variable *distance_to_hn* quantifies the distance from a particular district or province to Hanoi City, where the national oral examination conducted by the State Council of Professorship is held. The variable *distance_coast* measures the distance from a specific location to the nearest coastal district or province. Nunn and Puga (2012) illustrates that coastal regions in Africa were likely among the first to benefit from Western technology, knowledge, and trade. Similarly, it is plausible that Vietnamese scholars in coastal areas may have earlier gained advantages from Confucian ideology and Chinese cultural influences in their scholarly pursuits.

After merging three datasets—imperial elites, professorship, and other controls—we obtained a total of 3,022 elites and 1,002 associates (including full professors) across 421 districts and 90 provinces in the period of 2021-2023. As shown in Table Appendix A5, the average number of elites is 18.017 at

the district level and 103.767 at the province level, with standard deviations of 20.21 and 165.646, respectively. Additionally, the mean values of *ascfull_d* and *ascfull_p* are 2.380 and 13.322, respectively, indicating that, on average, there are about 2 professors in one district and 13 professors at the province level.

Table A5: Summary statistics of main variables

Variables	N	Mean	S.D.	Q1	Median	Q3	Min	Max
Panel A: District level								
elite_total_d	421	18.017	20.215	3.000	12.000	23.000	1.000	116.000
fullprof_d	421	0.230	0.475	0.000	0.000	0.000	0.000	3.000
ascprof_d	421	2.150	1.597	1.000	2.000	3.000	0.000	10.000
ascfull_d	421	2.380	1.671	1.000	2.000	3.000	1.000	11.000
log_average_income_d	421	12.259	0.292	12.065	12.277	12.446	11.333	12.965
average_age_d	421	49.637	3.470	47.429	49.286	52.011	41.000	60.467
average_age_d_2	421	2475.794	347.598	2249.469	2429.082	2705.196	1681.000	3656.218
average_educollege_d	421	0.053	0.062	0.000	0.040	0.091	0.000	0.341
average_vocational_d	421	0.207	0.122	0.120	0.200	0.273	0.000	0.625
log_totalpop_d	421	12.045	0.408	11.768	12.077	12.288	10.059	13.425
log_totalpop_d_2	421	145.240	9.812	138.494	145.844	150.986	101.176	180.238
log_totalpop_d_3	421	1753.351	177.354	1629.837	1761.296	1855.260	1017.686	2419.746
average_distance_capital_d	421	189.434	160.881	80.000	138.333	265.000	0.000	1000.000
distance_coast_d	421	73.791	43.853	40.000	75.000	105.000	0.000	205.000
distance_to_hn_d	421	248.221	349.968	49.930	95.240	290.640	0.000	1874.170
dummy_ancestraltemple_d	421	0.356	0.479	0.000	0.000	1.000	0.000	1.000
dummy_eliteschoolname_d	421	0.230	0.422	0.000	0.000	0.000	0.000	1.000
dummy_elitenamestreet_d	421	0.456	0.499	0.000	0.000	1.000	0.000	1.000
count_ancestraltemple_d	421	0.876	1.721	0.000	0.000	1.000	0.000	13.000
count_eliteschoolname_d	421	0.366	0.813	0.000	0.000	0.000	0.000	4.000
count_elitenamestreet_d	421	0.995	1.546	0.000	0.000	1.000	0.000	8.000
Panel B: Province level								
elite_total_p	90	103.767	165.646	5.000	44.000	106.000	1.000	721.000
fullprof_p	90	1.333	1.529	0.000	1.000	2.000	0.000	9.000
ascprof_p	90	11.989	10.971	4.000	9.000	17.000	0.000	62.000
ascfull_p	90	13.322	12.160	5.000	11.000	18.000	1.000	71.000
log_average_income_p	90	12.263	0.174	12.107	12.270	12.384	11.934	12.650
average_age_p	90	50.013	1.350	48.837	49.892	50.857	47.896	52.795
average_age_p_2	90	2503.116	135.468	2385.060	2489.163	2586.449	2294.031	2787.346
average_educollege_p	90	0.062	0.026	0.045	0.056	0.076	0.000	0.138
average_vocational_p	90	0.189	0.077	0.137	0.191	0.243	0.037	0.356
log_totalpop_p	90	14.270	0.589	13.956	14.163	14.405	13.289	16.012
log_totalpop_p_2	90	203.987	17.313	194.778	200.591	207.518	176.589	256.383
log_totalpop_p_3	90	2921.064	382.578	2718.370	2841.003	2989.400	2346.629	4105.197
average_distance_capital_p	90	329.641	356.439	100.000	180.000	390.000	10.159	1500.000
distance_coast_p	90	70.444	62.816	0.000	70.000	110.000	0.000	295.000
distance_to_hn_p	90	565.489	615.125	78.040	239.580	912.120	0.000	1794.690
dummy_ancestraltemple_p	90	0.200	0.402	0.000	0.000	0.000	0.000	1.000
dummy_eliteschoolname_p	90	0.233	0.425	0.000	0.000	0.000	0.000	1.000
dummy_elitenamestreet_p	90	0.600	0.493	0.000	1.000	1.000	0.000	1.000
count_ancestraltemple_p	90	0.200	0.402	0.000	0.000	0.000	0.000	1.000
count_eliteschoolname_p	90	0.333	0.653	0.000	0.000	0.000	0.000	2.000
count_elitenamestreet_p	90	1.067	1.188	0.000	1.000	2.000	0.000	4.000

Notes: This table summarizes the correlation between the data on imperial elites and the number of full (and associate) professors, categorized by district and province. It excludes the island districts of Hoang Sa and Truong Sa due to data availability.

Appendix D Persistent transmission of imperial elites

The number of elites participating in imperial examinations during previous emperors in the same hometown (district-level) could significantly predict the number of elites in Nguyen Dynasty (1822-1919). This relationship should hold true at the district- or province level with the following model specifications:

$$elite\_nguyen_i = \alpha + \beta_1 elite\_other\_dynasties_i + \epsilon \tag{7}$$

In which, $elite\_nguyen_i$ represents the number of elites from the Nguyen dynasty at the i level (district or province). The key independent variable is the number of elites from other dynasties, such as ($elite\_ly_i$), Tran ($elite\_tran_i$), Ho ($elite\_ho_i$), Le So ($elite\_leso_i$), Mac ($elite\_mac_i$), and Le Trung Hung ($elite\_letrunghung_i$). Our analysis in Table A6 shows a significant correlation in the numbers of elites from identical home districts across different dynasties. However, our strategy is also to estimate the persistent transmission of elite numbers from the earliest dynasty through to the Nguyen dynasty. Model 7 solely evaluates the predictive power of the number of elites in a specific dynasty on the Nguyen dynasty, without taking into account historical transmissions. To achieve this, we have constructed the following specification models:

$$\begin{aligned} elite\_dynasty_i^{k+1} &= \alpha_1 + \beta_2 \widehat{elite\_dynasty_i^k} + \epsilon \\ elite\_dynasty_i^k &= \alpha_2 + \beta_3 elite\_dynasty\_i^{k-1} + \epsilon \end{aligned} \tag{8}$$

$elite\_dynasty_i^{k+1}$ represents the number of elites in the $(k+1)^th$ dynasty (the subsequent dynasty) at a specific geographical level (district or province). In addition, $\widehat{elite\_dynasty_i^k}$ represents the estimated coefficient from the prior analysis, where the dependent variable is $elite\_dynasty_i^k$, denoting the number of elites in the k^{th} dynasty. This variable is predicted by $elite\_dynasty_i^{k-1}$, which indicates the number of elites in the preceding $(k-1)^{th}$ dynasty. Sequentially, the number of elites in the Ly dynasty is used to predict the number of elites in the Tran dynasty. Subsequently, the estimated number of elites from the Tran dynasty is used to predict the number of elites in the Ho dynasty.

This process is repeated in a loop until reaching the Nguyen dynasty. Table A7 displays significantly positive coefficients in the sequential regressions, indicating a transmission of elite numbers across imperial dynasties. The consistent results derived from Model 8 support our hypothesis that the numbers of elites originating from the same home district across different dynasties might represent a long-term persistence of social capital. This understanding enables us to aggregate the numbers of elites from each dynasty to calculate the total number of elites over the extensive historical period from 1075 to 1919.

Table A6: Predictive power of the number of elites in previous dynasties on Nguyen imperial exams

District level	(1)	(2)	(3)	(4)	(5)	(6)
elite_ly_d	6.588***					
	(2.480)					
elite_tran_d		4.813***				
		(1.082)				
elite_ho_d			5.893***			
			(1.402)			
elite_leso_d				0.461***		
				(0.063)		
elite_mac_d					0.759***	
					(0.124)	
elite_letrunghung_d						0.723***
						(0.101)
Constant	-6.574***	-6.692***	-6.528***	-7.102***	-6.981***	-6.869***
	(0.787)	(0.796)	(0.784)	(0.839)	(0.830)	(0.793)
Observation	705	705	705	705	705	705
Pseudo-R2	0.005	0.024	0.006	0.049	0.035	0.076
Province level	(7)	(8)	(9)	(10)	(11)	(12)
elite_ly_p	39.665**					
	(18.459)					
elite_tran_p		10.201***				
		(3.307)				
elite_ho_p			31.338***			
			(11.025)			
elite_leso_p				0.439***		
				(0.092)		
elite_mac_p					0.859***	
					(0.262)	
elite_letrunghung_p						0.546***
						(0.111)
Constant	-44.538***	-41.680***	-40.206***	-40.499***	-42.542***	-34.908***
	(13.714)	(12.072)	(12.836)	(11.696)	(12.422)	(10.558)
Observation	63	63	63	63	63	63
Pseudo-R2	0.036	0.063	0.031	0.061	0.049	0.080

Notes: This table presents the Tobit regression results with a left-censoring variable set at 0. The dependent variables are *elite_nguyen_d* (the number of elites in Nguyen at the district level) for estimations (1)-(6), and *elite_nguyen_p* (the number of elites in Nguyen at the province level) for estimations (7)-(12). Standard errors are shown in parentheses. Significance levels are denoted as follows: * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

Table A7: Persistent transmission to Nguyen Dynasty's imperial exams (1822–1919)

	(1) elite_tran_d	(2) elite_ho_d	(3) elite_leso_d	(4) elite_mac_d	(5) elite_letrunghung_d	(6) elite_nguyen_d
elite_ly_d	4.091***					
	(0.945)					
$\widehat{elite\_tran\_d}$		0.921*				
		(0.470)				
$\widehat{elite\_ho\_d}$			6.815***			
			(1.313)			
$\widehat{elite\_leso\_d}$				0.585***		
				(0.140)		
$\widehat{elite\_mac\_d}$					1.188***	
					(0.253)	
$\widehat{elite\_letrunghung\_d}$						0.369***
						(0.139)
Constant	-4.503***	-5.493**	50.518***	-2.645	-1.223	-1.070
	(0.538)	(2.485)	(11.948)	(1.897)	(2.873)	(2.076)
Observation	705	705	705	705	705	705
Pseudo-R2	0.057	0.035	0.019	0.022	0.013	0.005
	(7) elite_tran_p	(8) elite_ho_p	(9) elite_leso_p	(10) elite_mac_p	(11) elite_letrunghung_p	(12) elite_nguyen_p
elite_ly_p	6.877***					
	(1.523)					
$\widehat{elite\_tran\_p}$		0.423**				
		(0.208)				
$\widehat{elite\_ho\_p}$			44.568***			
			(13.053)			
$\widehat{elite\_leso\_p}$				0.480***		
				(0.132)		
$\widehat{elite\_mac\_p}$					1.645**	
					(0.713)	
$\widehat{elite\_letrunghung\_p}$						0.387**
						(0.180)
Constant	-5.035***	-3.833*	186.054***	3.675	-30.581	-10.652
	(1.654)	(2.151)	(59.823)	(7.613)	(20.986)	(13.985)
Observation	63	63	63	63	63	63
Pseudo-R2	0.240	0.124	0.116	0.146	0.075	0.036

Notes: This table displays the left-censoring at 0 Tobit regression, where the number of elites in the subsequent dynasty is the dependent variable and the closest preceding dynasty's number of elites is the independent variable. We iteratively predicted the number of elites in each dynasty, continuing this process up to the Nguyen dynasty. The estimations labeled (1)-(6) are conducted at the district level, whereas those labeled (7)-(12) are at the province level. Significance levels are denoted as follows: * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

Appendix E Source of Exogenous Variation

In the absence of a natural experiment to study the number of elites, we identify a source of exogenous variation that isolates this variable, specifically focusing on the distance to the old (former) capital. Figure A.3 illustrates this relationship.

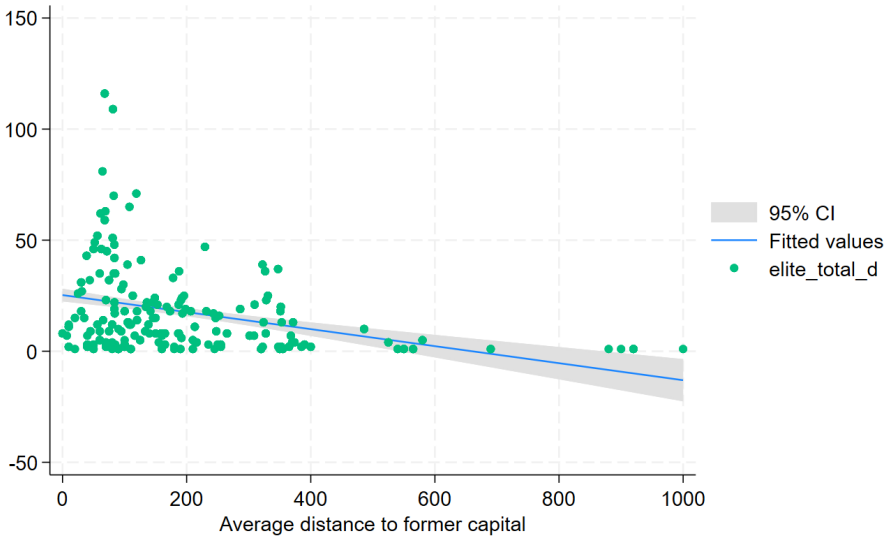


Figure A.3: The number of elites and distance to the old capital

Moreover, Figure A.4 illustrates the relationship between the number of elites and their proximity to the nearest coast at the district level.

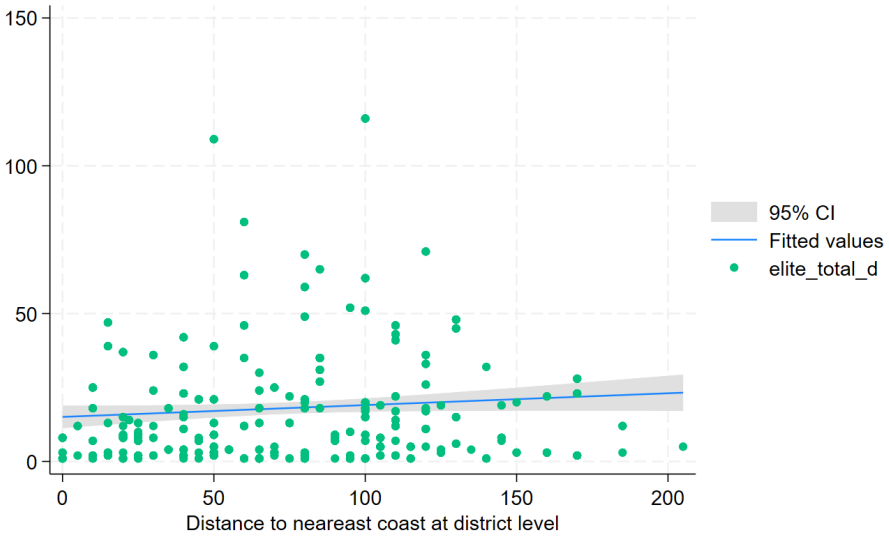


Figure A.4: The number of elites and distance to the nearest coast

Appendix F Robustness using province data

To ensure the robustness of our main findings, we consolidated district-level data into province-level aggregates. Our primary analysis was conducted at the more detailed district level, encompassing 421 districts across 3 years. However, for robustness checks and specifically to identify cross-district externalities, some parts of our analysis were carried out at the broader province level, which includes 90 provinces across 3 years. Table A8 represents the predictive power of former elites on the contemporary professorship at the province level by using OLS. In addition, Table A9 shows the instrumented results by using the average distance to the former capital at province level.

Table A8: Impact of the former elites on the contemporary professorship: Intrumented Results at the province level

	(1) ascfull_p	(2) ascfull_p	(3) ascfull_p	(4) fullprof_p	(5) fullprof_p	(6) fullprof_p	(7) ascprof_p	(8) ascprof_p	(9) ascprof_p
elite_total_p	0.054***	0.050***	0.050***	0.007***	0.007***	0.007***	0.047***	0.043***	0.043***
	(0.006)	(0.007)	(0.007)	(0.001)	(0.001)	(0.001)	(0.006)	(0.006)	(0.006)
distance_coast_p	-0.030	-0.023	-0.023	-0.002	-0.001	-0.001	-0.028	-0.022	-0.022
	(0.020)	(0.017)	(0.017)	(0.002)	(0.002)	(0.002)	(0.019)	(0.016)	(0.016)
log_average_income_p	4.350	2.437	2.437	1.084	1.268	1.268	3.267	1.169	1.169
	(8.181)	(10.621)	(10.621)	(0.916)	(0.938)	(0.938)	(7.562)	(10.005)	(10.005)
average_age_p	201.101***	137.006	137.006	15.546**	12.799*	12.799*	185.554**	124.207	124.207
	(71.651)	(90.203)	(90.203)	(5.823)	(7.215)	(7.215)	(67.703)	(85.216)	(85.216)
average_age_p_2	-1.986***	-1.347	-1.347	-0.152**	-0.124*	-0.124*	-1.834**	-1.223	-1.223
	(0.706)	(0.890)	(0.890)	(0.058)	(0.071)	(0.071)	(0.667)	(0.841)	(0.841)
average_educollege_p	-34.557	-29.375	-29.375	-5.706	-6.035	-6.035	-28.851	-23.340	-23.340
	(55.923)	(58.199)	(58.199)	(6.091)	(7.267)	(7.267)	(51.394)	(53.090)	(53.090)
average_vocational_p	20.803	15.750	15.750	1.001	0.608	0.608	19.801	15.142	15.142
	(14.668)	(15.885)	(15.885)	(1.688)	(2.066)	(2.066)	(13.951)	(14.944)	(14.944)
log_totalpop_p		-4050.699**	-4050.699**		-419.905**	-419.905**		-3630.794**	-3630.794**
		(1621.546)	(1621.546)		(196.792)	(196.792)		(1568.809)	(1568.810)
log_totalpop_p_2		279.219**	279.219**		28.815**	28.815**		250.404**	250.404**
		(110.237)	(110.237)		(13.393)	(13.393)		(106.801)	(106.801)
log_totalpop_p_3		-6.398**	-6.398**		-0.658**	-0.658**		-5.740**	-5.740**
		(2.495)	(2.495)		(0.303)	(0.303)		(2.421)	(2.421)
Constant	-5134.974***	16033.016**	16033.016**	-409.992**	1691.200*	1691.200*	-4724.982**	14341.816*	14341.816*
	(1836.279)	(7814.889)	(7814.889)	(149.602)	(988.477)	(988.477)	(1732.846)	(7625.838)	(7625.839)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observation	90	90	90	90	90	90	90	90	90
R^2	0.628	0.665	0.665	0.576	0.595	0.595	0.605	0.643	0.643
Oster (2019) δ for $\beta = 0$			1.098			0.867			1.143
Oster (2019) bound (β, β^*)			(0.05, 0.05)			(0.006, 0.006)			(0.042, 0.042)

Notes: All baseline results with control variables in Table A5 were estimated using the Ordinary Least Squares (OLS) method in province level. Robust standard errors, adjusted for clustering at the province level, are presented in parentheses. Columns (1) to (3) present estimates for the combined total of associate and full professors after being aggregated. Columns (4) to (6) detail the estimations with the number of full professors as the sole dependent variable. Meanwhile, Columns (7) to (9) summarize the results of the Ordinary Least Squares (OLS) regression analysis, focusing on the number of associate professors as the dependent variable. The δ statistic in Oster (2019) indicates the significance of unmeasured confounders compared to measured control variables in negating the primary findings. The bias-corrected coefficient, β^*, assumes δ equals 1 and R_{max} is $1.3R$, suggesting that the R-squared value of a theoretical model including both measured and unmeasured control variables is 30% greater than that of a model with only measured controls. The significance levels are denoted as follows: * p < 0.10, ** p < 0.05, *** p < 0.010.

Table A9: Impact of the former elites on the contemporary professorship: IV (Province)

	(1) elite_total_p	(2) ascfull_p	(3) elite_total_p	(4) ascfull_p
average_distance_capital_p	-0.160**		-0.185**	
	(0.061)		(0.093)	
elite_total_p		0.062***		0.111***
		(0.015)		(0.034)
Basline controls	No	No	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observation	90	90	90	90
R^2		0.770		0.680
Kleibergen-Paap F-stat	6.784		3.999	
F-test of excluded instruments	6.780		4.00	
Anderson-Rubin Wald test	8.48		12.56	

Notes: This table reports IV-2SLS estimates of the effect of former elites on the contemporary professors. Robust standard errors, adjusted for clustering at the district level, are presented in parentheses. The significance levels are denoted as follows: * p < 0.10, ** p < 0.05, *** p < 0.010.

Appendix G Robustness excluding the districts and provinces

The tables labeled A10, A11, and A12 present the baseline and instrumented results when excluding the municipalities (Hanoi City, Ho Chi Minh City, Da Nang City, Hai Phong City, and Can Tho City) at the district level, province level, and also when excluding former capital districts (Ba Dinh, Vinh Loc, Hue).

Table A10: The impact of former elites on the contemporary professorship by excluding state cities: district level

	(1) ascfull_d	(2) fullprof_d	(3) ascprof_d	(4) elite_total_d	(5) ascfull_d	(6) elite_total_d	(7) fullprof_d	(8) elite_total_d	(9) ascprof_d
average_distance_capital_d				-0.019*		-0.019*		-0.019*	
				(0.011)		(0.011)		(0.011)	
elite_total_d	0.015**	0.003**	0.011		0.151*		0.002		0.149*
	(0.007)	(0.002)	(0.008)		(0.078)		(0.013)		(0.078)
Basline controls	Yes	Yes	Yes		Yes		Yes		Yes
Year FE	Yes	Yes	Yes		Yes		Yes		Yes
Province FE	Yes	Yes	Yes		Yes		Yes		Yes
Year x Province FE	Yes	Yes	Yes		Yes		Yes		Yes
Observation	335	335	335	335	335	335	335	335	335
R^2					0.409		0.369		0.314
Kleibergen-Paap F-stat				3.081		3.081		3.081	
F-test of excluded instruments				3.080		3.080		3.080	
Anderson-Rubin Wald test				6.87		0.02		7.69	

Notes: All robustness results, including control variables as shown in Table A5, were calculated using the Ordinary Least Squares (OLS) method and 2SLS with the instrument variable. The table reports the results at district level after excluding state cities (Hanoi City, Ho Chi Minh City, Da Nang City, Hai Phong City). Robust standard errors, adjusted for clustering at the district level, are provided in parentheses. Columns (1) to (3) display OLS regression estimates for the total number of professors ($ascfull\_d$), full professors only ($fullprof\_d$), and associate professors only ($ascprof\_d$). Columns (4) to (9) detail the estimations with instrumented results for the aforementioned dependent variables. Specifically, Columns (4), (6), and (8) represent the first-stage estimations, while Columns (5), (7), and (9) present the second-stage estimations for total professors ($ascfull\_d$), full professors only ($fullprof\_d$), and associate professors only ($ascprof\_d$), respectively.

Table A11: The impact of former elites on the contemporary professorship by excluding state cities: province level

	(1) ascfull_p	(2) fullprof_p	(3) ascprof_p	(4) elite_total_p	(5) ascfull_p	(6) elite_total_p	(7) fullprof_p	(8) elite_total_p	(9) ascprof_p
average_distance_capital_p				-0.090*		-0.090*		-0.090*	
				(0.050)		(0.050)		(0.050)	
elite_total_p	0.042***	0.005***	0.037**		0.179**		0.021**		0.158**
	(0.015)	(0.001)	(0.014)		(0.080)		(0.009)		(0.072)
Basline controls	Yes	Yes	Yes		Yes		Yes		Yes
Year FE	Yes	Yes	Yes		Yes		Yes		Yes
Obs.	78	78	78	78	78	78	78	78	78
R^2					0.425		0.222		0.440
Kleibergen-Paap F-stat				3.289		3.289		3.289	
F-test of excluded instruments				3.290		3.290		3.290	
Anderson-Rubin Wald test				9.100		20.940		8.080	

Notes: Notes: All robustness results, including control variables as shown in Table A5, were calculated using the Ordinary Least Squares (OLS) method and 2SLS with the instrument variable. The table reports the results at province level after excluding state cities. Robust standard errors, adjusted for clustering at the province level, are provided in parentheses. Columns (1) to (3) display OLS regression estimates for the total number of professors ($ascfull\_p$), full professors only ($fullprof\_p$), and associate professors only ($ascprof\_p$). Columns (4) to (9) detail the estimations with instrumented results for the aforementioned dependent variables. Specifically, Columns (4), (6), and (8) represent the first-stage estimations, while Columns (5), (7), and (9) present the second-stage estimations for total professors ($ascfull\_p$), full professors only ($fullprof\_p$), and associate professors only ($ascprof\_p$), respectively.

Table A12: The impact of former elites on the contemporary professorship by excluding former capital districts

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	ascfull_p	fullprof_p	ascprof_p	elite_total_p	ascfull_p	elite_total_p	fullprof_p	elite_total_p	ascprof_p
average_distance_capital_p				-0.081		-0.081		-0.081	
				(0.054)		(0.054)		(0.054)	
elite_total_p	0.043**	0.005***	0.038**		0.211**		0.024*		0.187**
	(0.016)	(0.001)	(0.015)		(0.103)		(0.012)		(0.092)
Basline controls	Yes	Yes	Yes		Yes		Yes		Yes
Year FE	Yes	Yes	Yes		Yes		Yes		Yes
Observation	81	81	81	81	81	81	81	81	81
R^2					0.018		-0.121		0.039
Kleibergen-Paap F-stat				2.248		2.248		2.248	
F-test of excluded instruments				2.250		2.250		2.250	
Anderson-Rubin Wald test				8.640		16.130		7.850	

Notes: All robustness results, including control variables as shown in Table A5, were calculated using the Ordinary Least Squares (OLS) method and 2SLS with the instrument variable. The table reports the results at district level after excluding old capital districts (Ba Dinh District (Hanoi), Vinh Loc (Thanh Hoa), Hue City (Thua Thien Hue)). Robust standard errors, adjusted for clustering at the district level, are provided in parentheses. Columns (1) to (3) display OLS regression estimates for the total number of professors ($ascfull\_d$), full professors only ($fullprof\_d$), and associate professors only ($ascprof\_d$). Columns (4) to (9) detail the estimations with instrumented results for the aforementioned dependent variables. Specifically, Columns (4), (6), and (8) represent the first-stage estimations, while Columns (5), (7), and (9) present the second-stage estimations for total professors ($ascfull\_d$), full professors only ($fullprof\_d$), and associate professors only ($ascprof\_d$), respectively.