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

Luu Duc Toan Huynh[1] & Kiet Tuan Duong[2]

[1] Queen Mary University of London, United Kingdom
[2] University of York, United Kingdom

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Abstract

Using a unique dataset of 3,022 elites from the Ly to Nguyen dynasties (1075-1919) and 1,324 recent associate (and full) professors (2021-2023), we find that regions with more historical elites have more modern professors. Using the distance to the school exam venue and the distance to the coastal areas as instrumental variables, we establish such a causal relationship. In addition, social capital benefits those from areas dense with historical elites. We analyse data from temples, schools, and streets named after elites to identify cultural mechanisms linking historical elites to contemporary academic roles in Vietnam. This study demonstrates the lasting impact of historical traditions on human capital today in Confucian contexts.

Keywords: economic history; education; elites; tenured professorship; Vietnam academia

JEL Classification: I25; N35; O15; Z1

*Huynh is with the Queen Mary University of London (t.huynh@qmul.ac.uk) and Duong is with University of York (kiet.duong@york.ac.uk). We thank Alistair Cameron, Ting Cheng, Guido Friebel, Duc-Chinh Hoang, and Kevin Lang for their helpful comments. For constructive comments that substantially improved the paper, we also thank the participants from the Society for Institutional and Organizational Economics (SIOE) 2025, the 2025 World Congress of the Econometric Society (ESWC 2025), Asia Economic History Seminar (LSE UK), YSI-EHES Economic History Graduate Webinars, Nordic Conference in Development Economics 2024, QMUL/Warwick Workshop 'Culture, Institutions and Political Economy', UEH University Seminar, and Fulbright University Seminar. We are also grateful for Hieu Trung Bui, Thanh Thu Luu, Long Hoang, and Quang Minh Tran to provide excellent research assistance.

1 Introduction

Historical institutions can leave a profound imprint on modern economic and social outcomes, shaping the distribution of opportunities across generations. A central question in economic history and development is how the place of one's birth and upbringing, particularly in regions with a rich legacy of elite formation influences later-life achievements. In Vietnam, a country with a long Confucian tradition and over eight centuries of imperial examinations (1075–1919) to select its governing and scholarly elites, this question acquires special relevance. The imperial examination system, similar to that of China (Weber, 1915; Qian, 1982), was a cornerstone of state-building and cultural transmission, selecting high-ranking officials and fostering a larger gentry class. It helped shape local values around education, social mobility, and the role of intellectual elites. This paper investigates whether such a legacy continues to shape the highest rungs of the educational profession in Vietnam today.

Our research question is straightforward: *Do regions with greater historical exposure to imperial examination elites produce more contemporary university professors?* Professors, including associate professors, are a particularly relevant group to study. In Vietnam, these positions confer not only academic prestige but also political influence, offering access to networks and career pathways similar in exclusivity to those of the historical scholar–officials. Professors in state universities may also leverage their status to enter political positions, shape research agendas, and influence local educational policy. The process of appointment remains highly centralised, overseen by the State Council of Professorship, echoing the gatekeeping functions of the historical examinations (The State Coucil for Professorship, 2023; Ishizuka, 2020). Studying this linkage provides insight into the persistence of elite reproduction through human capital channels and the potential consequences for regional inequality. The imperial examination system in Vietnam operated for nearly 844 years, producing a distinct class of elites whose influence often extended beyond formal administrative duties. In many cases, successful candidates returned to their home provinces, where they invested in local schooling, promoted scholarly values, and acted as cultural exemplars. Their prestige was reinforced by Confucian ideals that celebrated academic achievement as a moral virtue. Over generations, such norms may have become embedded in local communities, encouraging sustained investment in education and the pursuit of elite academic careers. If such historical influences persist, we should expect to see

a higher prevalence of university professors today in regions with a greater historical concentration of imperial examination graduates.

To test this hypothesis, we assemble a novel dataset that links two distinct sources: (i) records of 3,022 individuals who passed the imperial examinations between 1075 and 1919, and (ii) data on 1,324 full and associate professors appointed in Vietnam between 2021 and 2023. We measure the density of historical elites at the district level and match it to modern professorship outcomes. Our baseline Ordinary Least Squares (OLS) estimates indicate that an additional 100 historical elites are associated with roughly one more contemporary professor per year. This relationship remains statistically and economically significant after controlling for a range of socioeconomic covariates, province and year fixed effects, and measures of wartime destruction during the Vietnam War, including bomb intensity and economic disruption.

We further address potential endogeneity concerns using two instrumental variables: (i) the distance to former imperial examination venues, and (ii) the distance to the nearest coast, a historical channel for accessing Chinese books and other educational resources. These variables capture exogenous variation in exposure to historical elites that is plausibly unrelated to unobserved modern determinants of professorship outcomes. The IV results not only confirm the OLS findings but suggest larger effects: provinces historically closer to examination venues and the coast tend to produce significantly more professors today, with the estimated effect rising to eight professors in high-exposure areas. Our analysis also explores the role of migration in mediating these effects. By manually matching professors' birthplaces to their current affiliations, we find that the historical advantage largely disappears for those who relocate. This suggests that the persistence of elite academic outcomes is tied to local social capital and institutional memory, rather than being a purely individual-level trait. In contrast, those who remain in regions historically dense with elites continue to benefit from this social capital, indicating that community-level cultural transmission is a key mechanism.

This paper contributes to several strands of literature. First, it extends the growing body of research on the long-run effects of historical institutions (Giuliano and Nunn, 2021; Dell et al., 2018; Voigtländer and Voth, 2012), focusing on elite human capital rather than mass schooling. Prior

studies, such as Chen et al. (2020) for China, Andersson and Berger (2019) for Sweden, and Valencia Caicedo (2019) for South America, document that historical elites and institutions foster educational persistence over centuries. We complement this work by shifting attention to elite academic positions, which may have greater influence on innovation, governance, and regional development. Second, we identify and quantify cultural mechanisms that may sustain these effects. In Vietnam, historical elites are often commemorated through the naming of schools, streets, and public buildings, as well as the construction of ancestor temples in their honour. These cultural markers not only signal prestige but may also reinforce community norms that valorise scholarly achievement. Our district-level data reveal that areas with higher concentrations of such commemorations exhibit a stronger correlation between past elite density and modern professorships. This finding adds a cultural transmission dimension to the economic persistence literature (Alesina and Fuchs-Schündeln, 2007; Guiso et al., 2016) and resonates with arguments about the role of symbolic capital in sustaining elite status. Third, we contribute to the literature on elite recruitment and mobility (Bai and Jia, 2016; Bai et al., 2023). While Vu and Yamada (2023) examine general education outcomes in Vietnam, they do not consider mechanisms such as proximity to the coast or historical examination venues, both of which we identify as key channels. Furthermore, by focusing on professors — a group directly involved in knowledge production and dissemination — we provide a measure that captures the qualitative dimension of human capital more effectively than general schooling rates. The results suggest that the geography of highly skilled individuals today is partly shaped by historical patterns of elite formation and the cultural norms they fostered. In sum, we find robust evidence that Vietnam's imperial examination legacy continues to influence the geography of elite academic achievement. This persistence operates both through direct human capital transmission and through cultural mechanisms embedded in local communities. The findings imply that elite-focused educational systems can generate benefits — and inequalities — that endure for centuries. They also suggest that policies aimed at reducing regional disparities in human capital may need to address deep-rooted historical and cultural factors, not just contemporary economic conditions.

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 on our

research design. In Section 4, we examine the persistent effect of former elites on the number of contemporary professors today, in which causal identification is used to explore the causal effect by using an instrumental variable approach. We also explain the mechanisms and robustness in this section before concluding the paper in Section 5.

2 Data

Our research draws on on a mix of significant historical and contemporary data sources. By integrating these with geographical information, we merge the historical data into 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 the compilation of Ngo et al. (2006) 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 are presented in the appendix A. We considered an individual who passed the written exam 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. Consequently, the number of elites in the Nguyen dynasty (1822–1919), the last imperial dynasty of Vietnam, can

be effectively explained by variations in the number of elites from the same home districts in earlier dynasties (see the Appendix A6 for details). We formulate our primary variable, *Total Elite*, by enumerating the imperial elites in our final list for each district. Furthermore, we consolidated these data to create the *Total Elite* variable at the provincial level. The total count of imperial elites in Vietnam from 1075 to 1919 is shown in Figure 1.

2.2 Data on the Vietnamese professorship

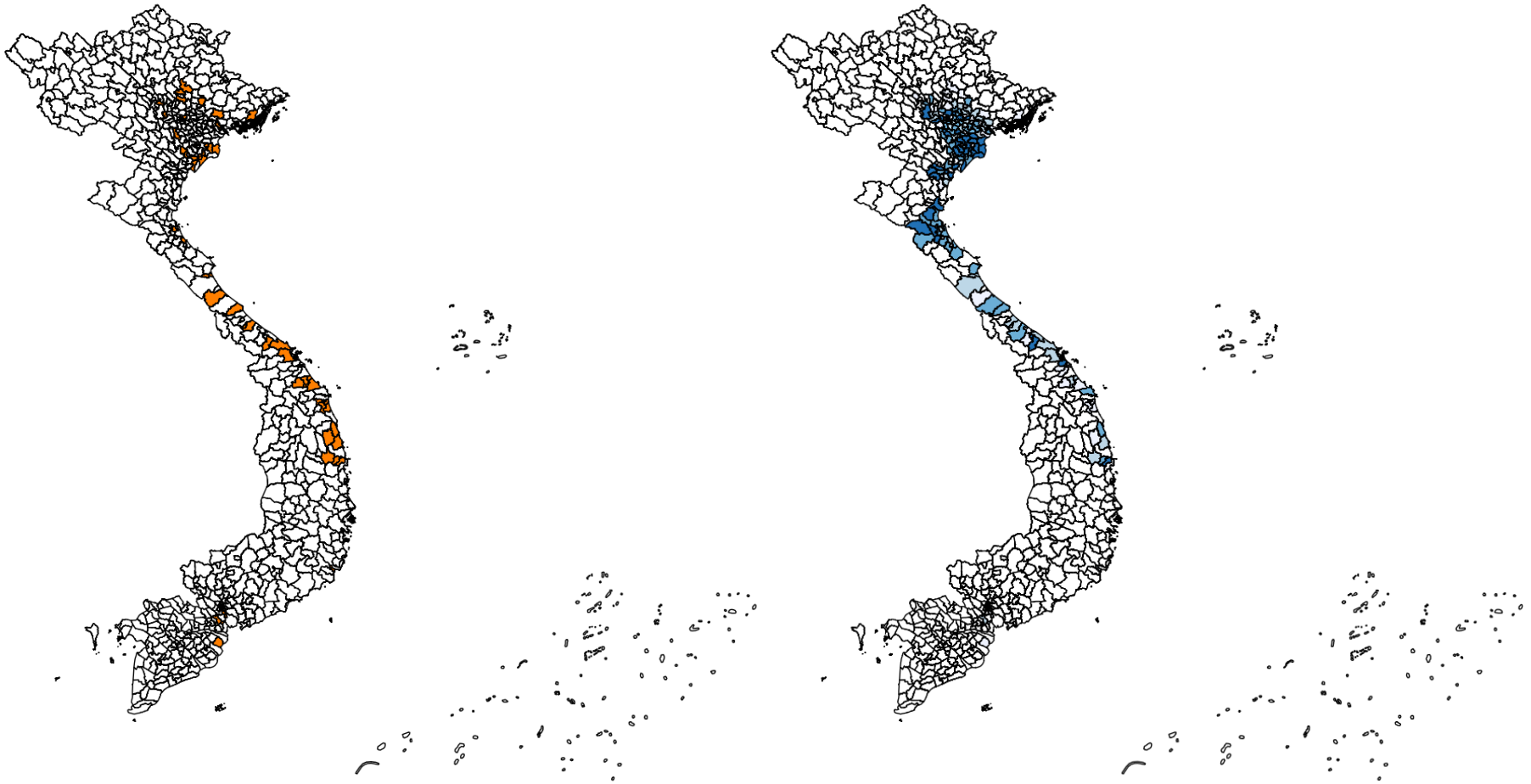
In Vietnam, educators (with a doctoral degree) applying for full or associate professorships undergo a rigorous evaluation at university, disciplinary and state levels, as described in Decision 37/2018/Q-TTg. This process involves the State Council of Professorships, which includes various vice-presidents 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/Q-TTg by the Prime Minister of Vietnam, which requires the publication of profiles for associate (and full) professorship candidates on the website https://hdgsnn.gov.vn/ (for the period 2021-2023), we manually gathered data on individuals who successfully passed the university council phase to participate in the disciplinary councils. These councils are convened in the Hoan Kiem District of Hanoi City (the capital). Due to limitations in data availability, our sample is restricted to the years 2021 through 2023. We manually handcoded the profiles, hometowns, affiliations, and areas of expertise of all academic candidates who had published profiles. The resulting data set 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 in the appendix B, while the geographical map of the distribution can be found in Figure 1.

Although a university campus is not present in every province of Vietnam, access to higher education is generally facilitated through regional academic hubs (An, 2022). The spatial distribution of universities is markedly uneven, with the densest concentration located in Hanoi (the capital) and Ho Chi Minh City. Regions such as the Mekong Delta and the Central Coast exhibit moderate institutional presence, whereas remote and mountainous areas remain comparatively underrepresented. Overall, Vietnam's higher education landscape is characterized by a centralized structure, with institutional resources and academic activities predominantly concentrated in major urban and economic centers. Therefore, in our robustness checks, we excluded the mega-cities (in Appendix I).

2.3 Data description

We integrated three data sets: imperial elites, professorship, and the Vietnam Household Living Standard Survey (VHLSS), as conducted by General Statistics Office (2019). This data set is widely recognised in economic research focused on Vietnam (McCaig and Pavcnik, 2018; Dell et al., 2018). Furthermore, we used 2019 district-level population data from Vietnam's official census, also by GSO (2023), as a control variable. This data set offers comprehensive household information, including variables such as income, age, level of education, Internet use, and life insurance. Detailed definitions and explanations of these variables are available in the appendix C. After merging the three data sets: imperial elites, professorship, and additional control variables, we compiled data on 3,022 imperial elites and 1,324 contemporary associates (including full professors), spanning 421 district-year observations and 90 province-year observations 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 20.215 and 165.646, respectively. Furthermore, the mean values of *Total Professors* (the number of full and associate professors at the district level) and *Total Professors* (the one at the provincial level) are 2.380 and 13.322, respectively. This suggests that on average there are about 2 professors per district and 13 per province.



Imperial elites in Vietnam from 1075–1919

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:

$$Total\ Professors_{i,t} = \alpha + \beta Total\ Elite_{i,1075-1919} + \mu X_{i,t} + \lambda_p + \theta_t + \epsilon_{i,t} \quad (1)$$

The model outlined in Equation (1) is designed to investigate the relationship between the number of imperial elites $Total\ Elite_{i,1075-1919}$ in district i during the historical period (from 1075 to 1919) and the total number of contemporary professors $Total\ Professors_{i,t}$ in district i over three years (2021, 2022, and 2023). A significant challenge in identification arises from the potential endogeneity bias caused by unobserved confounder characteristics and / or measurement errors in $Total\ Elite_{i,1075-1919}$. In particular, numerous district- or province-level factors are difficult to identify and include in regression analyses. If $Total\ Elite_{i,1075-1919}$ correlates with these unobserved confounders, which are crucial in 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 that influence 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 imperial capital of the early Ming dynasty. Furthermore, the literature on economic history recognises 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). Importantly, it is noted that up to the seventeenth century, Vietnamese still used Chinese characters and were more inclined to read imported Chinese books via sea routes (Tana, 2011; Huey, 2006; Baldanza, 2018). Consequently, the advantage of being close to coastal areas might be demonstrated in passing imperial examinations.

For these reasons, our two instrumental variables are the distance to the old capital and the distance to coast 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 today. The instrumental variables purge the direct influence of the endogenous location of the capital, as it does not depend directly on our outcomes of interest.

It can be argued that in the past, longer distances would have increased examination costs for candidates. Candidates had to travel long distances from their hometowns to examination venues, which were usually located in the ancient capital. Previous studies have considered the nearest distance to pine and bamboo forests (Chen et al., 2020), as these areas provided raw materials to produce textbooks and exam aids. However, Vietnamese candidates did not produce their own books; instead, they used Chinese books, which were imported into Vietnam by sea. To account for endogenous and confounding factors, we also included the distance to the nearest coast, which reflects the advantage of earlier access to Chinese books for those living near coastal regions compared to those in inland areas.

The first stage of our analysis examines the relationship between the number of imperial elites, the district's average distance from the old capital (*Distance to Ancient Capital*), and the district's distance to coast (*Distance to Coast*) in Equation (2):

$$Total\ Elite_{i,1075\text{–}1919} = \alpha_i + \delta Distance\ to\ AncientCapital_i + \xi Distance\ to\ Coast_i + \gamma X_i + \epsilon_i \quad (2)$$

In which $Total\ Elite_{i,1075\text{–}1919}$ is the aggregated number of elites from 1075 to 1919 in district i. X_i is a vector of control variables. The instrumental variable, $Distance\ to\ Ancient\ Capital_i$, is calculated as 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 centre 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 different examination locations were used, as detailed in the Appendix Table A2. The instrumental variable, *Distance to Ancient Capital*, is calculated as follows:

$$Distance\ to\ Ancient\ Capital_i = \frac{\left(\sum_{k=1}^{K} Eligiblity_{i,k} \times Distance\ to\ Exam\ Venue_{i-j,k}\right)}{\sum_{k=1}^{K} Eligiblity_{i,k}} \quad (3)$$

We create a dummy variable $Eligiblity_{i,k}$, assigning it a value of 1 if the following specific criteria are fulfilled. First, we assess whether the district of the hometown i of each elite is linked to the designated examination venues j during the imperial elite period k. Next, we make sure that the district i is within Vietnamese territory and is associated with the imperial examinations held during that particular emperor's reign. $Distance\ to\ Exam\ Venue_{i-j,k}$ represents the distance on the road between district i and examination venues j in the emperor k. The symbol K represents the total number of elites in our sample in all dynasties. It is noted that there was one examination venue per emperor (see details in Appendix Table A2).

Our instrumental variables are different to Bai and Jia (2016), which uses the number of small rivers (given the length of rivers) in a prefecture. Their study argues that the prosperity of the land area can create more elites based on the success of agricultural industry. As instruments of the number of elites, we use the distance to the ancient capital and the distance to the coast[1] because they serve as indicators 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 expenditures for each participant. In addition, the costs of transporting books across the coast were common in the past in Vietnam. After the first stage estimation in Equation (2), we examine the link between the number of former elites and the number of professors using the following specification:

$$Total\ Professors_{i,t} = \alpha + \beta \widehat{Total\ Elite}_i + \mu X_{i,t} + \lambda_p + \theta_t + \epsilon_{i,t} \tag{4}$$

The dependent variable $Total\ Professors_{i,t}$ represents the total number of associate and full professors in district i for the years t (specifically, $t = 2021$, 2022, and 2023). Since the number 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, no additional regression adjustments are necessary, in accordance with Elbers et al. (2005). The variable $\widehat{Total\ Elite}_i$ is derived from Equation (2). We expect a negative correlation between the number of elites and the distance to the former capital, as well as the distance to the coast, which implies an expectation of negative coefficients for δ and ξ in

[1]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).

the estimation presented in Equation (2). In Equation (4), the vector X includes fixed district characteristics such as average income, age, education level, Internet use, and life insurance purchases, which are recovered from the most recent data from the Vietnam Household Living Standard Survey available before the surge in professorship applications. We also include the recorded population size, the recorded squared population size, and the percentage of female population from 2019, based on the Vietnamese Census data, as control variables. Also in Equation (4), our variables λ_p and θ_t represent fixed effects by province and year, respectively, to account for all time-invariant differences between provinces and changes over time that similarly affect all provinces. We incorporated fixed effects by year to account for the variation in the total number of associate and full professors in district i over three years.

4 Results

Recent studies highlight the role of cultural transmission in literati families, deeply embedded in a long-standing tradition of learning (Chen et al., 2020). Similarly, in Vietnam, the 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). Before analysing 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 in all dynasties as our main independent variable in Table 1. For a baseline comparison, we first do not consider any socioeconomic factors at the district level, as shown in column (1). Subsequently, we incorporate full control for the 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 100 individuals who passed the imperial exams, there is an average yearly increase of around one contemporary professor. Similarly,

columns (4) to (6) present the results for full professors, while columns (7) to (9) report the results for associate professors. Overall, the Ordinary Least Squares results indicate that the former elites have a statistically and economically significant impact on the number of professors.

Various geographical factors included in Equation 1 might argue that they serve as incomplete proxyes for the true range of geographic characteristics between these districts. To determine whether the observed long-term persistence effect is primarily due to spatial 'noise, we controlled for fixed province effects. Subsequently, we found no spatial autocorrelation in the residuals, as evidenced by Kelly (2019) with the importance of Moran's I statistics, which is insignificant. In addition, we proceed with 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 the bias of omitted variables by integrating observed controls into regression analysis may not lead to a reliable interpretation, particularly when these observed confounding factors are inadequate proxyes for actual omitted covariates. This method uses the coefficient stability and empirical significance of the 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 calculated 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. 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

	Total Professors			Full Professors			Associate Professors		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Total Elite	0.016***	0.014***	0.014***	0.004*	0.004*	0.004**	0.012**	0.011**	0.010**
	(0.005)	(0.005)	(0.005)	(0.002)	(0.002)	(0.002)	(0.005)	(0.005)	(0.005)
Average Income		-0.387	-0.747**		-0.102	-0.190*		-0.285	-0.557
		(0.351)	(0.349)		(0.110)	(0.110)		(0.341)	(0.345)
Average Age		0.050**	0.048*		-0.006	-0.010		0.056**	0.057**
		(0.025)	(0.026)		(0.008)	(0.010)		(0.024)	(0.025)
Average College Education		-1.673	-2.680**		0.595	0.273		-2.269**	-2.953**
		(1.225)	(1.322)		(0.429)	(0.461)		(1.154)	(1.290)
Average Life Insurance		-1.576*	-1.529*		-0.204	-0.075		-1.373	-1.454
		(0.875)	(0.829)		(0.296)	(0.282)		(0.883)	(0.882)
Average Internet Use		-0.297	-0.022		-0.069	-0.121		-0.228	0.099
		(0.827)	(0.815)		(0.245)	(0.280)		(0.814)	(0.818)
Female Population Percent			1.407			8.581			-7.175
			(13.110)			(5.487)			(12.431)
Log Total Population			3.871			-1.639			5.510
			(5.753)			(2.316)			(6.036)
Log Total Population Squared			-0.121			0.079			-0.200
			(0.242)			(0.098)			(0.253)
Constant	1.660***	4.498	-20.655	0.204**	1.775	7.007	1.456***	2.723	-27.661
	(0.271)	(4.768)	(34.923)	(0.089)	(1.496)	(14.168)	(0.265)	(4.635)	(37.695)
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	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	421	421	421	421	421	421	421	421	421
R^2	0.25	0.27	0.38	0.06	0.07	0.17	0.23	0.26	0.37
Oster (2019) δ for $\beta = 0$			7.283			3.988			9.749
Oster (2019) bound (β, β^*)			(0.010, 0.0142)			(0.003, 0.004)			(0.006, 0.010)

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 and year levels, 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 two instrumental variables (the distance to the ancient capital and the distance to the coast) 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 findings of the first stage presented in Table 2 show that the distance to the old capital and the distance to the coast negatively and significantly affect the number of imperial elites. This implies that a greater distance from a candidate's hometown to the examination venue and to the coast correlates with fewer candidates passing the imperial examination. Geographic distances act as relevant instrumental variables for the former elites. More importantly, geographic size is significant because the transmission of information across long distances entails considerable costs, particularly in the premodern era (Sng, 2014). Therefore, distance from the capital could also proxy for state capacity, which means that regions located farther away are likely to reflect weaker governmental control and administrative effectiveness, since the state struggles to project its authority over long distances.

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

	1st Stage	2nd Stage	1st Stage	2nd Stage
	Total Elite	Total Professors	Total Elite	Total Professors
	(1)	(2)	(3)	(4)
Distance to Ancient Capital	-0.023***		-0.021***	
	(0.006)		(0.006)	
Distance to Coast			-0.092**	
			(0.039)	
Total Elite		0.110***		0.082**
		(0.041)		(0.033)
Baseline controls		Yes		Yes
Year FE		Yes		Yes
Province FE		Yes		Yes
Year × Province FE		Yes		Yes
Obs.	421	421	421	421
Kleibergen-Paap LM stat	15.12		19.83	
Kleibergen-Paap LM p-value	0.000		0.000	
Anderson-Rubin Wald test	6.71		3.40	
Anderson-Rubin Wald test p-value	0.010		0.034	
Hansen J			1.37	
Hansen J p-value			0.242	

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 and year levels, are presented in parentheses. The significance levels are denoted as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010$.

Although the existing literature often refers to the distance to the sites of the two main resources for reading books in China (Chen et al., 2020), it is noted that up to the seventeenth century, Vietnamese were more inclined to read imported Chinese books via sea routes (Tana, 2011). Consequently, we investigated whether coastal areas had any advantages in passing the examination. Our negative coefficients of *Distance to Coast* are in line with this section of the literature. Also, by using the distance to the imperial 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 coefficients on the number of elites is significantly larger in most Instrumental Variables (IVs) specifications.

4.3 Additional analyses

This subsection discusses the geographical factors that contribute to the sustained influence of distance on exam revenue and the number of successful candidates. Although existing studies, such as Campante et al. (2019), suggest that the distance to a capital city could 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, even after accounting for fixed effects of the baseline and time variation. 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.

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

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

	Total Professors			
	(1)	(2)	(3)	(4)
Total Elite	0.0165***	0.0059	0.0142***	0.0029
	(0.005)	(0.006)	(0.005)	(0.006)
Distance to Hanoi	-0.0001	-0.0028**	-0.0002	-0.0029**
	(0.001)	(0.001)	(0.001)	(0.001)
Total Elite × Distance to Hanoi		0.0001***		0.0001***
		(0.000)		(0.000)
Basline controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes
Year × Province FE	Yes	Yes	Yes	Yes
Obs.	421	421	421	421
R^2	0.33	0.35	0.38	0.40

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 and year levels, are presented in parentheses. The significance levels are denoted as follows: * p < 0.10, ** p < 0.05, *** p < 0.010.

One of our key challenges relates to immigration, where individuals born and raised in one area relocate to other 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 the same provinces with a greater diversity of former elites may have higher motivation and greater chances of success in contemporary professorship outcomes. We test this hypothesis and present the results in Table 4. Our findings show that the estimated coefficients of *Total Elite* in the columns for the "same province" group are statistically significant, whereas the coefficients for the "not same province" group are not. Moreover, t-tests indicate no statistically significant differences between the two groups: Columns (1) and (2) ($\chi^2(1) = 0.03$, $p = 0.86$), Columns (3) and (4) ($\chi^2(1) = 0.17$, $p = 0.68$), and Columns (5) and (6) ($\chi^2(1) = 0.00$, $p = 0.98$). This suggests that the estimated impact of former elites is consistently positive across both sub-samples, but the evidence is more precise and robust for individuals who remain in the same province.

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

	Total Professors Same Province	Total Professors Not Same Province	Full Professors Same Province	Full Professors Not Same Province	Associate Professors Same Province	Associate Professors Not Same Province
	(1)	(2)	(3)	(4)	(5)	(6)
Total Elite	0.007***	0.007	0.002*	0.003	0.005**	0.005
	(0.003)	(0.005)	(0.001)	(0.002)	(0.003)	(0.005)
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
Obs.	421	421	421	421	421	421
R^2	0.61	0.49	0.25	0.18	0.57	0.47

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 district and year levels, 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. The significance levels are denoted as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010$.

4.4 Mechanisms

Using the distinctive culture of the Confucian nation, we further utilised our manually collected data to explore the potential influences of historical elites on current professors 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:

$$\widehat{Mechanism}_i = \alpha + \beta Total\ Elite_{i,1075-1919} + \mu X_{i,t} + \lambda_p + \theta_t + \epsilon_{i,t} \tag{5}$$

In which, $TotalElite_{i,1075\text{–}1919}$ 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 $Ancestral\ Temples\ Count_i$; for robustness checks, we also employ a dummy variable to indicate the presence or absence of such temples in district i, denoted as $Ancestral\ Temples\ Dummy_i$. Second, the variable $Schools\ Named\ After\ Elites\ Count_i$ indicates the number of schools (primary, secondary, high school) in district i that are named after any former elite born in the same district. Furthermore, the dummy variable $Schools\ Named\ After\ Elites\ Dummy_i$ is used to capture binary results, determining whether a district has any school names derived from the names of former elites. Lastly, the variable $Streets\ Named\ After\ Elites\ Count_i$ quantifies the number of streets in district i that are named after former elites born within the same district. Similarly, the dummy variable $Streets\ Named\ After\ Elites\ Dummy_i$ is designed to assess whether there are street names within the district i that correspond to the names of elites of 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 Equation (6):

$$Total\ Professors_{i,t} = \alpha + \beta \widehat{Mechanism}_i + \mu X_{i,t} + \lambda_p + \theta_t + \epsilon_{i,t} \tag{6}$$

The significant coefficient β in Equation (5) indicates that the historical elites possess considerable predictive power over the identified mechanisms. Consequently, these mechanisms can demonstrate the link between themselves and the number of contemporary professors, since the coefficient β in Equation (6) is precisely estimated. Our estimated results are presented in Table 5.

Our findings reveal that two mechanisms—the construction of ancestral temples and the naming of schools after elites—prove 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 professors and full professors. Although 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 (5)-(6)), these findings do not persist in continuous settings (Columns (11)-(12)).

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

	Ancestral Temples Dummy	Total Professors	Schools Named After Elites Dummy	Total Professors	Streets Named After Elites Dummy	Total Professors
	(1)	(2)	(3)	(4)	(5)	(6)
Total Elite	0.085***		0.049***		0.034**	
	(0.025)		(0.012)		(0.013)	
$\widehat{AncestralTemples}$		1.098***				
		(0.385)				
$\widehat{SchoolsNamedAfterElites}$				1.850***		
				(0.620)		
$\widehat{StreetsNamedAfterElites}$						2.319***
						(0.788)
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
Obs.	374	374	325	325	301	301
R^2		0.38		0.37		0.36
Pseudo R^2	0.36		0.15		0.20	
	Ancestral Temples Count	Total Professors	Schools Named After Elites Count	Total Professors	Streets Named After Elites Count	Total Professors
	(7)	(8)	(9)	(10)	(11)	(12)
Total Elite	0.035***		0.013***		0.012	
	(0.011)		(0.003)		(0.008)	
$\widehat{AncestralTemples}$		0.412***				
		(0.141)				
$\widehat{SchoolsNamedAfterElites}$				1.137***		
				(0.389)		
$\widehat{StreetsNamedAfterElites}$						1.150***
						(0.394)
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
Obs.	421	421	421	421	421	421
R^2	0.37	0.38	0.21	0.38	0.42	0.38

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

4.5 Robustness

4.5.1 Accounting for areas having no elites and professors and aggregated data

In the baseline regressions, our sample includes only districts with non-zero numbers of elites. The rationale is that our research focuses on the impact of the presence of historical elites on the number of university professors. Our objective is to estimate the intensity of the relationship, conditional on the existence of historical elites in a district, rather than to study the extensive margin (i.e., whether elites exist or not). Nonetheless, in this section, we include all districts to capture both intensity and extensive margins of the impact of historical elites on current university professorship. We reconduct our OLS estimations and also employ Poisson regressions as the number of professors is a count variable. We present the results in Table 6, where there are 2,025 district-year observations (equivalent to 675 unique districts) between 2021 and 2023. Our results are consistent with the baseline results. In terms of economic magnitude, for every 100 individuals who passed the imperial exams, there is an average yearly increase of roughly three contemporary professors[2].

In addition, one might argue that separating the three-year data of professors and associate professors could lead to biased estimations, despite the use of time fixed effects. Given the overlap in personnel across the three years, collapsing the data into a single cross-section is more appropriate, as the increased sample size does not provide substantial new information[3]. Table 7 presents our regressions after aggregating the three-year data into one observation. The results remain robust, and the magnitude of the estimated coefficients is also consistent with our baseline results in Table 1.

4.5.2 Additional robustness tests

One could argue that various other geographical factors, such as bomb intensity (from the Vietnam war), precipitation, temperature, soil characteristics, and whether the area is rural or urban, might have a persistent influence on the number of (associate) full professors. To account for these potential influences, we utilize data from Miguel and Roland (2011, 2024) and include these characteristics as

[2]Our results remain robust for instrumental variables. The results are available upon requests.

[3]We are grateful for the editor's constructive comments suggesting additional robustness checks for our baseline results.

additional control variables [4]. Our robustness results are reported in Appendix G. In our study, the primary focus was on the disaggregated district level, encompassing 421 district-year observations. 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 province-year observations. We obtain strikingly consistent results when being analyzed with this aggregated provincial data, as detailed in Appendix H. 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 the district and province levels. Furthermore, we exclude districts and provinces that used to be the former capitals (presented in Table A2), considering their potential as a primary driver of the results. Despite these exclusions, our results remain consistent. All relevant findings are thoroughly detailed in the Appendix I.

4.5.3 Placebo test

Figure 2 presents the results of placebo tests examining whether the study's findings are influenced by random variation in the variables "Total Professors" and "Total Elite." Both tests are conducted with 2,000 replications, and the true estimates using the actual variables are overlaid as red vertical lines. In both panels, the true estimates fall well outside the bulk of the placebo distributions, indicating that the study's results are not driven by randomness in these variables. This reinforces the robustness of the findings and supports the validity of the relationships involving "Total Professors" and "Total Elite."

[4]Vietnam experienced the most intense aerial bombing campaign in history during the Vietnam War, with some districts receiving exceptionally high levels of destruction. While large-scale reconstruction efforts after 1975 appear to have mitigated long-run poverty impacts at the macro level Miguel and Roland (2011, 2024), micro-level evidence shows persistent localized harm through damaged infrastructure, reduced agricultural yields, and altered demographic patterns. To account for this potential confounding, we include total U.S. bombs per squared km as a district-level control, capturing the physical destruction channel and its long-term economic effects. The fact that our baseline results remain robust to this control suggests that our findings are not driven by historical shocks of extraordinary magnitude, but rather reflect the underlying relationship of interest.

Table 6: Robustness Tests - Including All Districts

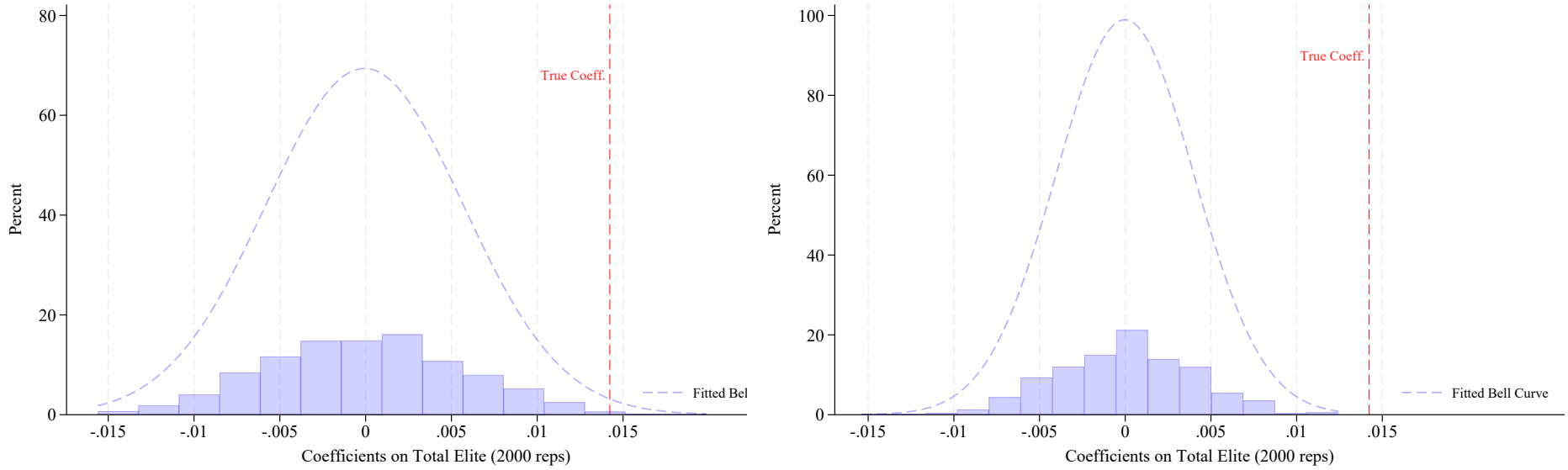
	OLS			Poisson		
	Total Professors	Full Professors	Associate Professors	Total Professors	Full Professors	Associate Professors
	(1)	(2)	(3)	(4)	(5)	(6)
Total Elite	0.028***	0.004***	0.024***	0.013***	0.018***	0.012***
	(0.005)	(0.001)	(0.005)	(0.002)	(0.006)	(0.002)
Average Income	-0.045	-0.009	-0.036	-0.136	-0.512	-0.094
	(0.059)	(0.014)	(0.057)	(0.134)	(0.359)	(0.145)
Average Age	0.009**	-0.000	0.010**	0.023**	-0.008	0.026**
	(0.004)	(0.001)	(0.004)	(0.010)	(0.029)	(0.010)
Average College Education	-0.762***	0.002	-0.763***	-1.753***	0.074	-1.960***
	(0.246)	(0.069)	(0.229)	(0.611)	(1.750)	(0.633)
Average Life Insurance	-0.026	0.019	-0.046	0.072	0.561	0.013
	(0.198)	(0.050)	(0.191)	(0.350)	(0.893)	(0.383)
Average Internet Use	-0.053	-0.035	-0.018	-0.128	-1.180	-0.020
	(0.106)	(0.026)	(0.099)	(0.273)	(0.767)	(0.283)
Female Population Percent	8.707***	1.982*	6.725**	13.982***	32.773***	11.770**
	(3.185)	(1.027)	(2.842)	(4.518)	(12.718)	(4.673)
Log Total Population	-0.716	-0.204	-0.512	14.434***	15.218**	14.546***
	(0.777)	(0.230)	(0.698)	(3.277)	(6.916)	(3.489)
Log Total Population Squared	0.051	0.011	0.040	-0.556***	-0.582**	-0.561***
	(0.034)	(0.010)	(0.031)	(0.137)	(0.291)	(0.146)
Constant	-2.376	0.124	-2.501	-99.711***	-110.245***	-100.019***
	(4.210)	(1.154)	(3.858)	(19.190)	(40.899)	(20.431)
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
Obs.	2,025	2,025	2,025	2,025	2025	2,025
R^2	0.49	0.16	0.47			
Pseudo R^2				0.42	0.33	0.41

Notes: In this table, we reconduct the baseline regressions by using the sample for all districts with and without historical elites. Robust standard errors, adjusted for clustering at the province and year levels, are presented in parentheses. Columns (1) and (4) present estimates for the combined total of associate and full professors after being aggregated (*Total Professors*). Columns (2) and (5) detail the estimations with the number of full professors (*Full Professors*) as the sole dependent variable. Meanwhile, Columns (3) to (6) present the results focusing on the number of associate professors (*Associate Professors*) as the dependent variable. We employ the OLS regressions in Columns (1) to (3), and Poisson regressions in Columns (4) to (6). The significance levels are denoted as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010$.

Table 7: Impact of the former elites on the contemporary professorship: Cross-sectional Analysis

	Total Professors			Full Professors			Associate Professors		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Total Elite	0.016***	0.015***	0.014***	0.004***	0.004**	0.004***	0.012**	0.011*	0.009*
	(0.006)	(0.006)	(0.005)	(0.001)	(0.002)	(0.002)	(0.006)	(0.006)	(0.005)
Average Income		-0.725*	-0.953***		-0.136	-0.202**		-0.589	-0.751**
		(0.380)	(0.346)		(0.116)	(0.101)		(0.359)	(0.337)
Average Age		0.038	0.040*		-0.004	-0.010		0.041*	0.050**
		(0.023)	(0.022)		(0.008)	(0.007)		(0.023)	(0.023)
Average College Education		-1.716	-2.419**		0.413	0.091		-2.128*	-2.510**
		(1.192)	(1.164)		(0.389)	(0.376)		(1.083)	(1.091)
Average Life Insurance		-0.866	-0.981		0.005	0.052		-0.871	-1.033
		(0.914)	(0.854)		(0.343)	(0.332)		(0.907)	(0.865)
Average Internet Use		0.310	0.605		0.047	-0.067		0.263	0.672
		(0.877)	(0.833)		(0.239)	(0.230)		(0.841)	(0.832)
Female Population Percent			-2.252			8.973**			-11.225
			(11.450)			(4.222)			(11.082)
Log Total Population			5.408			-1.503			6.911*
			(4.059)			(1.399)			(4.079)
Log Total Population Squared			-0.188			0.072			-0.260
			(0.172)			(0.060)			(0.171)
Constant	1.830***	8.962*	-25.447	0.193**	2.000	6.231	1.637***	6.962	-31.678
	(0.241)	(5.068)	(24.926)	(0.077)	(1.485)	(8.462)	(0.240)	(4.769)	(26.030)
Province FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	181	181	181	181	181	181	181	181	181
R^2	0.36	0.40	0.46	0.15	0.17	0.26	0.34	0.39	0.43

Notes: We aggregate our sample into a cross-sectional data, and reconduct the estimations. 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 and year levels, 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 significance levels are denoted as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010$.



(a) Randomized 'Total Professors' (b) Randomized 'Total Elite'

Notes: Panel A displays a placebo test, using using a placebo measurement *Total Elite Placebo* instead of *Total Elite*, which is a random variable from the same mean and standard deviation distribution. Panel B displays a placebo test, using using a randomized *Total Professors Placebo*, instead of *Total Professors*. Across the two panels, we repeat the exercise 2,000 replications and report the distribution of the estimated coefficients on the number of elites. The true estimates using actual number of elites and number of professors from our baseline results are overlaid as a red vertical line in the figure.

Figure 2: Estimates using Randomized 'Total Elite' and 'Total Professors'

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 scenarios 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 was 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, so 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 summarize 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 emperors, 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 the 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*, which started from 1802 to 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. The last exam organized by the *'Nguyen' Dynasty* was in 1919.

A.2 Data collection

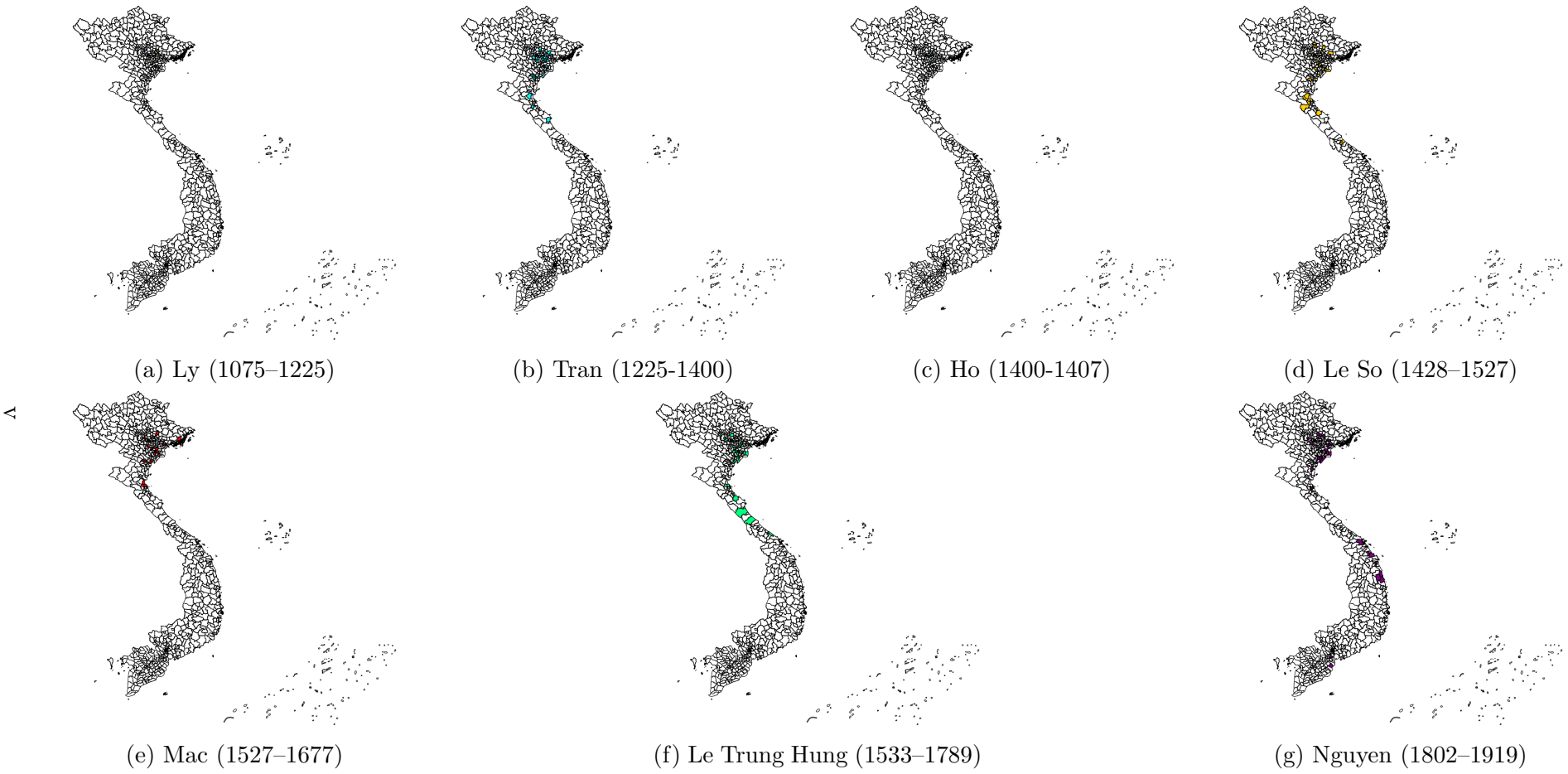
We manually extracted information about imperial elites from the work by Ngo et al. (2006), who compiled the most extensive list of imperial elites known to have passed the national-level imperial examinations between 1075 and 1919. Due to historical gaps, we further validated this data by cross-referencing 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 examinations 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 initial 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 hometown. In addition, Table A2 demonstrates the list of dynasties, 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 (associate) professors	Discipline	Number of full (associate) professors
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), to construct population-related control variables. 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 (*Total Population* and *Total Population Squared*) of the natural logarithm of population in our analysis at district and province level (Bai and Jia, 2016). The female population percentage *Female Population Percent* is also another population-related control variable in our model. Regarding socio-economic factors, we include *Average Income*, *Average Age*, *Average College Education*, *Average Life Insurance*, and *Average Internet Use* at both district and province levels. Three geographical proximity factors are included, namely *Distance to Ancient Capital*, *Distance to Coast*, and *Distance to Hanoi*, and these are considered at two district and province levels. The variable *Distance to Ancient 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 Hanoi* 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 to 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 1,324 associates (including full professors) across 421 district-year and 90 province-year observations 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 20.215 and 165.646, respectively. Additionally, the mean values of *Total Professors* at district and province levels 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								
Total Elite	421	18.017	20.215	3.000	12.000	23.000	1.000	116.000
Full Professors	421	0.230	0.475	0.000	0.000	0.000	0.000	3.000
Associate Professors	421	2.150	1.597	1.000	2.000	3.000	0.000	10.000
Total Professors	421	2.380	1.671	1.000	2.000	3.000	1.000	11.000
Average Income	421	12.259	0.292	12.065	12.277	12.446	11.333	12.965
Average Age	421	49.637	3.470	47.429	49.286	52.011	41.000	60.467
Average College Education	421	0.053	0.062	0.000	0.040	0.091	0.000	0.341
Average Life Insurance	421	0.091	0.099	0.000	0.069	0.133	0.000	0.600
Average Internet Use	421	0.745	0.138	0.667	0.760	0.839	0.211	1.000
Female Population Percent	421	0.505	0.007	0.500	0.503	0.509	0.483	0.538
Log Total Population	421	12.045	0.408	11.768	12.077	12.288	10.059	13.425
Log Total Population Squared	421	145.240	9.812	138.494	145.844	150.986	101.176	180.238
Distance to Ancient Capital	421	189.434	160.881	80.000	138.333	265.000	0.000	1000.000
Distance to Coast	421	73.815	43.794	40.000	75.000	105.000	0.000	205.000
Distance to Hanoi	421	248.221	349.968	49.930	95.240	290.640	0.000	1874.170
Ancestral Temples Dummy	421	0.356	0.479	0.000	0.000	1.000	0.000	1.000
Schools Named After Elites Dummy	421	0.230	0.422	0.000	0.000	0.000	0.000	1.000
Streets Named After Elites Dummy	421	0.456	0.499	0.000	0.000	1.000	0.000	1.000
Ancestral Temples Count	421	0.876	1.721	0.000	0.000	1.000	0.000	13.000
Schools Named After Elites Count	421	0.366	0.813	0.000	0.000	0.000	0.000	4.000
Streets Named After Elites Count	421	0.995	1.546	0.000	0.000	1.000	0.000	8.000
Panel B: Province level								
Total Elite	90	103.767	165.646	5.000	44.000	106.000	1.000	721.000
Full Professors	90	1.333	1.529	0.000	1.000	2.000	0.000	9.000
Associate Professors	90	11.989	10.971	4.000	9.000	17.000	0.000	62.000
Total Professors	90	13.322	12.160	5.000	11.000	18.000	1.000	71.000
Average Income	90	12.263	0.174	12.107	12.270	12.384	11.934	12.650
Average Age	90	50.013	1.350	48.837	49.892	50.857	47.896	52.795
Average College Education	90	0.062	0.026	0.045	0.056	0.076	0.000	0.138
Average Life Insurance	90	0.094	0.044	0.054	0.092	0.134	0.023	0.185
Average Internet Use	90	0.724	0.094	0.688	0.716	0.786	0.497	0.893
Female Population Percent	90	0.504	0.005	0.501	0.503	0.508	0.491	0.513
Log Total Population	90	14.270	0.589	13.956	14.163	14.405	13.289	16.012
Log Total Population Squared	90	203.987	17.313	194.778	200.591	207.518	176.589	256.383
Distance to Ancient Capital	90	329.641	356.439	100.000	180.000	390.000	10.159	1500.000
Distance to Coast	90	70.444	62.816	0.000	70.000	110.000	0.000	295.000
Distance to Hanoi	90	565.489	615.125	78.040	239.580	912.120	0.000	1794.690
Ancestral Temples Dummy	90	0.200	0.402	0.000	0.000	0.000	0.000	1.000
Schools Named After Elites Dummy	90	0.233	0.425	0.000	0.000	0.000	0.000	1.000
Streets Named After Elites Dummy	90	0.600	0.493	0.000	1.000	1.000	0.000	1.000
Ancestral Temples Count	90	0.200	0.402	0.000	0.000	0.000	0.000	1.000
Schools Named After Elites Count	90	0.333	0.653	0.000	0.000	0.000	0.000	2.000
Streets Named After Elites Count	90	1.067	1.188	0.000	1.000	2.000	0.000	4.000

Notes: This table presents summary statistics for our variables, categorized by district and province levels.

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 (1802-1919). This relationship should hold true at the district- or province level with the following model specifications:

$$TotalElite\_Nguyen_i = \alpha + \beta_1 TotalElite\_OtherDynasties_i + \epsilon \tag{7}$$

In which, $TotalElite\_Nguyen_i$ 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 ($TotalElite\_Ly_i$), Tran ($TotalElite\_Tran_i$), Ho ($TotalElite\_Ho_i$), Le So ($TotalElite\_LeSo_i$), Mac ($TotalElite\_Mac_i$), and Le Trung Hung ($TotalElite\_LeTrungHung_i$). Our analysis in Table A6 shows a significant correlation in the numbers of elites from identical home districts (or provinces) 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:

$$\begin{aligned} TotalElite\_Dynasty_i^{k+1} &= \alpha_1 + \beta_2 \widehat{TotalElite\_Dynasty_i^k} + \epsilon \\ TotalElite\_Dynasty_i^k &= \alpha_2 + \beta_3 TotalElite\_Dynasty\_i^{k-1} + \epsilon \end{aligned} \tag{8}$$

$TotalElite\_Dynasty_i^{k+1}$ represents the number of elites in the $(k+1)^{th}$ dynasty (the subsequent dynasty) at a specific geographical level (district or province). In addition, $\widehat{TotalElite\_Dynasty_i^k}$ represents the estimated coefficient from the prior analysis, where the dependent variable is $TotalElite\_Dynasty_i^k$, denoting the number of elites in the k^{th} dynasty. This variable is predicted by $TotalElite\_Dynasty_i^{k-1}$, 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) Total Elite_Nguyen	(2) Total Elite_Nguyen	(3) Total Elite_Nguyen	(4) Total Elite_Nguyen	(5) Total Elite_Nguyen	(6) Total Elite_Nguyen
Total Elite_Ly	6.588***					
	(2.480)					
Total Elite_Tran		4.813***				
		(1.082)				
Total Elite_Ho			5.893***			
			(1.402)			
Total Elite_Le So				0.461***		
				(0.063)		
Total Elite_Mac					0.759***	
					(0.124)	
Total Elite_Le Trung Hung						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)
Obs.	705	705	705	705	705	705
Pseudo-R2	0.005	0.024	0.006	0.049	0.035	0.076
Province level	(7) Total Elite_Nguyen	(8) Total Elite_Nguyen	(9) Total Elite_Nguyen	(10) Total Elite_Nguyen	(11) Total Elite_Nguyen	(12) Total Elite_Nguyen
Total Elite_Ly	39.665**					
	(18.459)					
Total Elite_Tran		10.201***				
		(3.307)				
Total Elite_Ho			31.338***			
			(11.025)			
Total Elite_Le So				0.439***		
				(0.092)		
Total Elite_Mac					0.859***	
					(0.262)	
Total Elite_Le Trung Hung						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)
Obs.	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 *Total Elite_Nguyen* (the number of elites in Nguyen Dynasty at the district level) for estimations (1)-(6), and *Total Elite_Nguyen* (the number of elites in Nguyen Dynasty 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 (1802–1919)

District level	(1) Total Elite_Tran	(2) Total Elite_Ho	(3) Total Elite_Le So	(4) Total Elite_Mac	(5) Total Elite_Le Trung Hung	(6) Total Elite_Nguyen
Total Elite_Ly	4.091***					
	(0.945)					
$\widehat{TotalElite\_Tran}$		0.921*				
		(0.470)				
$\widehat{TotalElite\_Ho}$			6.815***			
			(1.313)			
$\widehat{TotalElite\_LeSo}$				0.585***		
				(0.140)		
$\widehat{TotalElite\_Mac}$					1.188***	
					(0.253)	
$\widehat{TotalElite\_LeTrungHung}$						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)
Obs.	705	705	705	705	705	705
Pseudo-R2	0.057	0.035	0.019	0.022	0.013	0.005
Province level	(7) Total Elite_Tran	(8) Total Elite_Ho	(9) Total Elite_Le So	(10) Total Elite_Mac	(11) Total Elite_Le Trung Hung	(12) Total Elite_Nguyen
Total Elite_Ly	6.877***					
	(1.523)					
$\widehat{TotalElite\_Tran}$		0.423**				
		(0.208)				
$\widehat{TotalElite\_Ho}$			44.568***			
			(13.053)			
$\widehat{TotalElite\_LeSo}$				0.480***		
				(0.132)		
$\widehat{TotalElite\_Mac}$					1.645**	
					(0.713)	
$\widehat{TotalElite\_LeTrungHung}$						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)
Obs.	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 after considering the district heterogeneity.

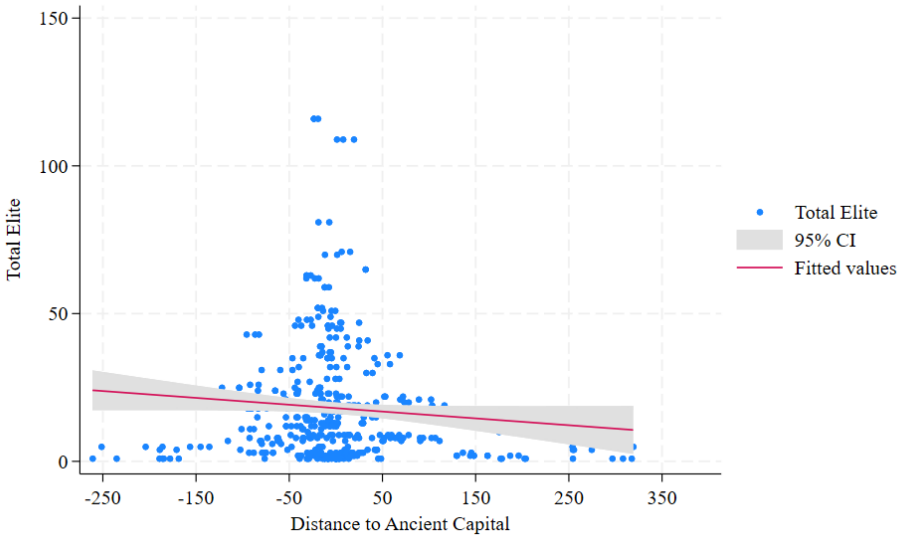


Figure A.3: The number of elites and distance to the old capital

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

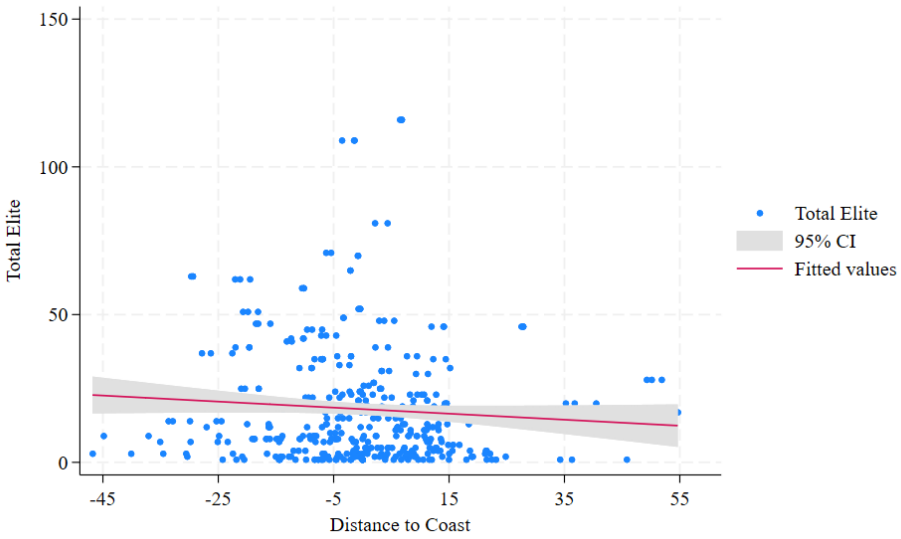


Figure A.4: The number of elites and distance to the nearest coast

Appendix F Exclusion restriction

One might argue that proximity to the exam venue could correlate with current economic outcomes, reflecting the persistence of favorable economic conditions around the old capital cities. It is also arguable that proximity may influence current outcomes through other channels. In Figure A.5, we present the imprecisely estimated coefficients between proximity to the exam venue and current economic outcomes, suggesting that areas closer to the former exam venues (or old capitals) may enjoy advantages in terms of income, education, population density, and age heterogeneity. This finding confirms that proximity to the exam venue is correlated only with the number of former elites in the first stage, thereby supporting our arguments regarding the validity of the instrumental variable selection.

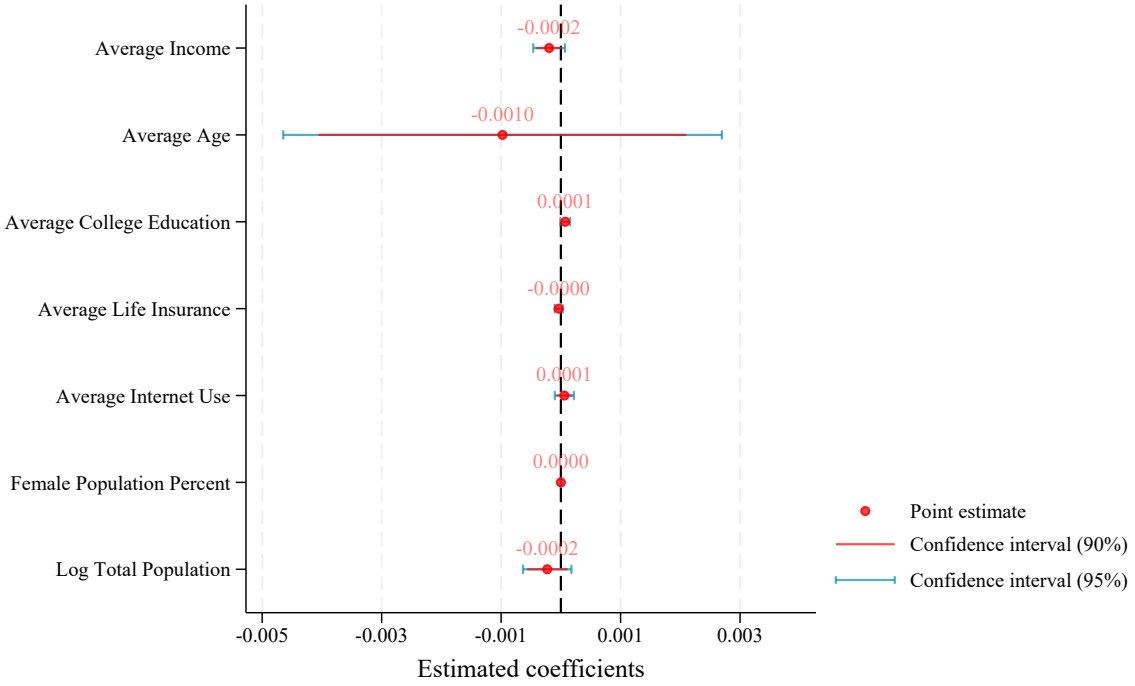


Figure A.5: Coefficient plots between the distance to the exam venue and current economic outcomes

In addition, we also employed instrumental variables (proximity to the old exam venue and coastal area) to examine whether the number of elites influenced current economic outcomes. The results show that the coefficients of "Total Elites" became insignificant after instrumentation[5].

[5]The results are available upon request.

Appendix G Robustness controlling more characteristics at district level

To deal with the endogeneity issue due to omitted variables from Vietnam war, we employ data from Miguel and Roland (2024) by including more control variables at district level. Specifically, our additional control variables are the 1999 population density, average precipitation in centimeter, average temperature in Celsius, rural area (i.e., whether the district is a rural area), the dominant soil type (i.e., the maximum percentage of area among the eighteen soil types, Miguel and Roland (2024)), total district land area (km^2), and the squared total district land area. In particular, Vietnam suffered from the largest bombing in the history during the Vietnam War Miguel and Roland (2011), we control for total US bombs per km^2. Table A8 presents our results with additional control variables, where our baseline results hold. The Vietnam War's aerial bombing campaign was the most intense in human history, yet its long-run macroeconomic effects remain contested. Studies such as Miguel and Roland (2011) find no persistent negative impact on poverty, likely due to large-scale post-war reconstruction. However, micro-level evidence points to persistent localized harm—particularly in agricultural productivity, household income, health, and education—especially when combined with chemical exposure such as Agent Orange (Le et al., 2022; Yamada and Yamada, 2021). Because post-war rebuilding may have offset some direct bombing effects, the persistence of our baseline results even after controlling for bombing intensity suggests that they are not artifacts of war damage patterns. Consistent with Miguel and Roland (2011), bomb intensity appears not to have significantly hindered long-term human capital accumulation at the national level. Nonetheless, reconstruction was uneven: while the Vietnamese government invested heavily in restoring infrastructure and rehabilitating natural landscapes, rural areas and high-intensity bombing zones often lagged in human capital and productivity recovery. Including bombing intensity (measured as total U.S. bombs per square kilometer) allows us to capture the physical destruction channel, which may influence outcomes through (i) reduced pre- and post-war infrastructure, (ii) altered migration patterns and demographic structures, and (iii) long-term agricultural damage, particularly in provinces such as Quang Tri. By controlling for these variables, we account for these sources of spatial heterogeneity.

Table A8: Additional control variables

	Total Professors		Full Professors		Associate Professors	
	(1)	(2)	(3)	(4)	(5)	(6)
Total Elite	0.016**	0.017***	0.004**	0.005**	0.012*	0.012*
	(0.007)	(0.006)	(0.002)	(0.002)	(0.007)	(0.007)
Average Income		-0.569		-0.177		-0.392
		(0.409)		(0.123)		(0.401)
Average Age		0.050*		-0.010		0.060**
		(0.030)		(0.011)		(0.029)
Average College Education		-1.840		0.200		-2.040
		(1.686)		(0.547)		(1.604)
Average Life Insurance		-2.005*		-0.209		-1.795
		(1.111)		(0.373)		(1.123)
Average Internet Use		0.085		-0.098		0.182
		(0.962)		(0.329)		(0.961)
Female Population Percent		19.240		11.787*		7.453
		(19.617)		(7.044)		(18.381)
Log Total Population		5.311		-1.126		6.436
		(12.691)		(4.384)		(12.193)
Log Total Population Squared		-0.176		0.058		-0.233
		(0.530)		(0.184)		(0.509)
Total US bombs per km^2	-0.002	-0.003	-0.000	-0.001	-0.002	-0.003
	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
1999 Population Density	-0.000	-0.000	0.000	0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Average Precipitation	-0.010	-0.005	0.003	0.005	-0.013	-0.010
	(0.014)	(0.013)	(0.003)	(0.003)	(0.014)	(0.013)
Average Temperature	-0.267	-0.165	-0.014	0.123	-0.252	-0.288
	(0.920)	(0.931)	(0.320)	(0.298)	(0.858)	(0.897)
Rural Area	0.861	0.956*	0.007	0.096	0.854	0.860
	(0.546)	(0.564)	(0.250)	(0.254)	(0.524)	(0.535)
Total District Land Area	0.001	0.000	-0.000	-0.000	0.001	0.001
	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)
Total District Land Area Squared	-0.000	-0.000	0.000	0.000	-0.000*	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Dominant Soil Type	-0.007	-0.007	-0.001	-0.001	-0.006	-0.006
	(0.006)	(0.006)	(0.002)	(0.002)	(0.006)	(0.006)
Constant	9.760	-37.107	0.353	-1.333	9.407	-35.775
	(21.224)	(78.386)	(7.487)	(27.822)	(19.602)	(75.382)
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
Obs.	375	375	375	375	375	375
R^2	0.34	0.40	0.17	0.21	0.34	0.38

Notes: All baseline results with control variables in Table A8 were estimated using the Ordinary Least Squares (OLS) method at district level. Robust standard errors, adjusted for clustering at the province and year levels, are presented in parentheses. Columns (1) to (2) present estimates for the combined total of associate and full professors after being aggregated (*Total Professors*). Columns (3) to (4) detail the estimations with the number of full professors (*Full Professors*) as the sole dependent variable. Meanwhile, Columns (5) to (6) summarize the results of the Ordinary Least Squares (OLS) regression analysis, focusing on the number of associate professors (*Associate Professors*) as the dependent variable. The significance levels are denoted as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010$.

Appendix H 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 district-year observations 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 province-year observations across 3 years. Table A9 represents the predictive power of former elites on the contemporary professorship at the province level by using OLS. In addition, Table A10 shows the instrumented results by using the average distance to the former capital and distance to coast at province level.

Table A9: Impact of the former elites on the contemporary professorship at the province level

	Total Professors			Full Professors			Associate Professors		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Total Elite	0.049***	0.054***	0.049***	0.006***	0.007***	0.007***	0.043***	0.047***	0.042***
	(0.008)	(0.008)	(0.009)	(0.001)	(0.001)	(0.001)	(0.007)	(0.007)	(0.008)
Average Income		7.221	-2.028		1.505	0.874		5.716	-2.903
		(8.761)	(9.667)		(1.003)	(1.019)		(8.261)	(9.194)
Average Age		1.372*	0.700		0.310***	0.289**		1.062	0.412
		(0.815)	(0.899)		(0.106)	(0.113)		(0.758)	(0.836)
Average College Education		-9.973	15.066		-5.448	-5.120		-4.525	20.186
		(47.631)	(46.290)		(5.457)	(5.815)		(43.714)	(42.528)
Average Life Insurance		11.096	11.455		2.680	2.533		8.416	8.921
		(25.613)	(24.730)		(3.594)	(3.700)		(23.736)	(22.913)
Average Internet Use		-19.001	-12.640		-1.443	-0.673		-17.558	-11.967
		(14.706)	(15.994)		(2.012)	(1.955)		(13.557)	(14.961)
Female Population Percent			294.721			30.882			263.839
			(205.201)			(25.876)			(190.451)
Log Total Population			88.823*			2.697			86.127*
			(52.700)			(7.567)			(47.794)
Log Total Population Squared			-2.881			-0.084			-2.797*
			(1.800)			(0.258)			(1.630)
Constant	6.316***	-137.949	-825.118**	0.708***	-32.159**	-60.838	5.608***	-105.790	-764.280**
	(1.354)	(120.977)	(363.448)	(0.227)	(13.692)	(54.146)	(1.208)	(113.975)	(329.357)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	90	90	90	90	90	90	90	90	90
R^2	0.52	0.55	0.61	0.49	0.55	0.57	0.50	0.52	0.59
Oster (2019) δ for $\beta = 0$			1.103			0.899			1.151
Oster (2019) bound (β, β^*)			(0.0490, 0.0491)			(0.0063, 0.0065)			(0.0427, 0.0425)

Notes: This table presents the impact of former elites on contemporary professors at the province level, using the Ordinary Least Squares (OLS) method. Robust standard errors, adjusted for clustering at the province and year levels, 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 A10: Impact of the former elites on the contemporary professorship: IV (Province)

	1st Stage	2nd Stage	1st Stage	2nd Stage
	Total Elite	Total Professors	Total Elite	Total Professors
	(1)	(2)	(3)	(4)
Distance to Ancient Capital	-0.258***		-0.261***	
	(0.073)		(0.074)	
Distance to Coast			-0.338**	
			(0.159)	
Total Elite		0.104***		0.104***
		(0.020)		(0.020)
Baseline controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Obs.	90	90	90	90
Kleibergen-Paap LM stat	8.68		16.57	
Kleibergen-Paap LM p-value	0.003		0.000	
Anderson-Rubin Wald test	30.63		16.79	
Anderson-Rubin Wald test p-value	0.000		0.000	
Hansen J			0.23	
Hansen J p-value			0.629	

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 province and year levels, are presented in parentheses. The significance levels are denoted as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010$.

Appendix I Robustness excluding the districts and provinces

The tables labeled A11 and A12 present the results of our robustness tests when we exclude the municipalities (Hanoi City, Ho Chi Minh City, Da Nang City, Hai Phong City, and Can Tho City) at the district level (Table A11)) and province level (Table A12). Additionally, we exclude former capital districts and provinces (Ba Dinh, Vinh Loc, Hue) and presents the results in Table A13 and Table A14.

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

	Total Professors		Full Professors		Associate Professors	
	(1)	(2)	(3)	(4)	(5)	(6)
Total Elite	0.016**	0.015**	0.003	0.004*	0.012*	0.011*
	(0.007)	(0.006)	(0.002)	(0.002)	(0.007)	(0.006)
Baseline controls	No	Yes	No	Yes	No	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
Obs.	335	335	335	335	335	335
R^2	0.34	0.39	0.14	0.20	0.33	0.38

Notes: All robustness results, including control variables as shown in Table A11, were calculated using the Ordinary Least Squares (OLS) method. 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 and year levels, are provided in parentheses. The results of the OLS regression estimates are presented in Columns (1) and (2) for the total number of professors, Columns (3) and (4) for full professors only, and Columns (5) and (6) for associate professors only. The significance levels are denoted as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010$.

Table A12: The impact of former elites on the contemporary professorship by excluding state cities: province level

	Total Professors		Full Professors		Associate Professors	
	(1)	(2)	(3)	(4)	(5)	(6)
Total Elite	0.038***	0.028***	0.004***	0.004***	0.034***	0.025***
	(0.008)	(0.006)	(0.001)	(0.001)	(0.007)	(0.006)
Baseline controls	No	Yes	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	78	78	78	78	78	78
R^2	0.32	0.59	0.23	0.36	0.30	0.57

Notes: Notes: All robustness results, including control variables as shown in Table A12, were calculated using the Ordinary Least Squares (OLS) method. The table reports the results at province 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 province and year levels, are provided in parentheses. The results of the OLS regression estimates are presented in Columns (1) and (2) for the total number of professors, Columns (3) and (4) for full professors only, and Columns (5) and (6) for associate professors only. The significance levels are denoted as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010$.

Table A13: The impact of former elites on the contemporary professorship by excluding former capital districts: district level

	Total Professors		Full Professors		Associate Professors	
	(1)	(2)	(3)	(4)	(5)	(6)
Total Elite	0.016***	0.014***	0.004**	0.004**	0.012**	0.010*
	(0.005)	(0.005)	(0.002)	(0.002)	(0.005)	(0.005)
Baseline controls	No	Yes	No	Yes	No	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
Obs.	415	415	415	415	415	415
R^2	0.34	0.39	0.14	0.16	0.32	0.37

Notes: All robustness results, including control variables as shown in Table A13, were calculated using the Ordinary Least Squares (OLS) method. 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 and year levels, are provided in parentheses. The results of the OLS regression estimates are presented in Columns (1) and (2) for the total number of professors, Columns (3) and (4) for full professors only, and Columns (5) and (6) for associate professors only. The significance levels are denoted as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010$.

Table A14: The impact of former elites on the contemporary professorship by excluding former capital provinces: province level

	Total Professors		Full Professors		Associate Professors	
	(1)	(2)	(3)	(4)	(5)	(6)
Total Elite	0.035***	0.031***	0.005***	0.004***	0.031***	0.027***
	(0.006)	(0.006)	(0.001)	(0.001)	(0.006)	(0.006)
Baseline controls	No	Yes	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	81	81	81	81	81	81
R^2	0.30	0.41	0.25	0.33	0.28	0.39

Notes: All robustness results, including control variables as shown in Table A14, were calculated using the Ordinary Least Squares (OLS) method. The table reports the results at province 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 province and year levels, are provided in parentheses. The results of the OLS regression estimates are presented in Columns (1) and (2) for the total number of professors, Columns (3) and (4) for full professors only, and Columns (5) and (6) for associate professors only. The significance levels are denoted as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010$.

Appendix J Robustness with one instrument variable

In this section A15, we reported the instrumental results with one variable "distance to ancient capital" while the other variable will be the control variable. We re-conduct the 2SLS estimation, and the results show that the effect of *Distance to Coast* is only significant in the first stage, not in the second stage, indicating that there is no direct impact of *Distance to Coast* on the current university professors. Therefore, we believe that *Distance to Coast* is another good instrumental variable. First, in Table 2, the reported Hansen J test statistic shows that our specification, which includes both *Distance to Ancient Capital* and *Distance to Coast* as the two instrumental variables, does not suffer from the over-identification issue. Second, *Distance to Coast* is indeed a very important indicator in Vietnamese history and culture. It reflects the disadvantage or cost that Vietnamese candidates in the past had to bear to access Chinese books (i.e., as the Vietnamese imperial examinations included Confucianism, Taoism, and Buddhism, which were affected by Chinese culture) (Tana, 2011; Huey, 2006; Baldanza, 2018)

Table A15: Instrumented results: The distance to the exam venue as the main one

	1st Stage: Total Elite	2nd Stage: Total Professors
	(1)	(2)
Distance to Ancient Capital	-0.021***	
	(0.006)	
Distance to Coast	-0.092**	0.007
	(0.039)	(0.007)
Total Elite		0.116***
		(0.045)
Other baseline controls	Yes	Yes
Year FE	Yes	Yes
Province FE	Yes	Yes
Year × Province FE	Yes	Yes
Obs.	421	421
Kleibergen-Paap LM stat	14.07	
Kleibergen-Paap LM p-value	0.000	
Anderson-Rubin Wald test	6.44	
Anderson-Rubin Wald test p-value	0.012	

Notes: This table reports IV-2SLS estimates of the effect of former elites on the contemporary professors, using *Distance to Ancient Capital* as the only one instrumental variable, while *Distance to Coast* as an additional variable. Robust standard errors, adjusted for clustering at the district and year levels, are presented in parentheses. The significance levels are denoted as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010$.

Appendix K Baseline results with mechanisms as control variables

In this section K, we re-estimate our baseline results from Table 1 by including all mechanism variables as additional controls. Table A16 reports the association between the number of elites and the number of associate (full) professors after accounting for these variables. Although this analysis is primarily descriptive, it is worth noting that the coefficients for total professors remain precisely estimated, whereas those for associate professors become insignificant. The mechanism variables themselves are statistically insignificant, suggesting that they do not directly correlate with the number of contemporary professors. Instead, these channels operate indirectly through the number of elites.

This exercise highlights that the inclusion of mechanism variables does not substantially change the baseline findings. The persistence of the elite–professor link, particularly for full professors, suggests that the pathways we considered—such as average income, education levels, or demographic composition—do not independently explain the variation in contemporary academic outcomes. Rather, the historical presence of elites appears to exert a direct and robust influence, which operates above and beyond these plausible mechanisms. At the same time, the insignificance of coefficients for associate professors implies that the influence of elites may be more strongly felt in higher academic ranks, where prestige and long-term institutional advantages accumulate. This pattern is consistent with an interpretation in which elites shape not only the availability of educational opportunities but also the institutional structures that favor the advancement of scholars to the highest levels.

Table A16: Baseline with mechanisms as control variables

	Total Professors		Full Professors		Associate Professors	
	(1)	(2)	(3)	(4)	(5)	(6)
Total Elite	0.014***	0.009*	0.004**	0.004*	0.010**	0.004
	(0.005)	(0.005)	(0.002)	(0.002)	(0.005)	(0.005)
Average Income	-0.747**	-0.668*	-0.190*	-0.186*	-0.557	-0.482
	(0.349)	(0.359)	(0.110)	(0.113)	(0.345)	(0.355)
Average Age	0.048*	0.043	-0.010	-0.011	0.057**	0.054**
	(0.026)	(0.027)	(0.010)	(0.010)	(0.025)	(0.026)
Average College Education	-2.680**	-2.515*	0.273	0.217	-2.953**	-2.733**
	(1.322)	(1.378)	(0.461)	(0.495)	(1.290)	(1.335)
Average Life Insurance	-1.529*	-1.659**	-0.075	-0.104	-1.454	-1.555*
	(0.829)	(0.814)	(0.282)	(0.287)	(0.882)	(0.858)
Average Internet Use	-0.022	-0.026	-0.121	-0.082	0.099	0.057
	(0.815)	(0.828)	(0.280)	(0.289)	(0.818)	(0.831)
Female Population Percent	1.407	-0.014	8.581	8.352	-7.175	-8.367
	(13.110)	(12.966)	(5.487)	(5.545)	(12.431)	(12.151)
Log Total Population	3.871	2.942	-1.639	-1.845	5.510	4.787
	(5.753)	(5.674)	(2.316)	(2.345)	(6.036)	(5.960)
Log Total Population Squared	-0.121	-0.085	0.079	0.088	-0.200	-0.173
	(0.242)	(0.240)	(0.098)	(0.099)	(0.253)	(0.250)
Ancestral Temples Dummy		0.188		0.002		0.186
		(0.198)		(0.068)		(0.196)
Schools Named After Elites Dummy		0.258		-0.027		0.285
		(0.238)		(0.072)		(0.224)
Streets Named After Elites Dummy		0.314		0.068		0.246
		(0.212)		(0.067)		(0.207)
Constant	-20.655	-14.771	7.007	8.305	-27.661	-23.076
	(34.923)	(34.437)	(14.168)	(14.370)	(37.695)	(37.264)
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
Obs.	421	421	421	421	421	421
R^2	0.38	0.40	0.17	0.17	0.37	0.38

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 and year levels, 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.

Appendix L Instrumented Results for mechanisms

In this section, we estimate the impact of historical elites on three mechanisms using distance to the exam venue as an instrumental variable. Specifically, we employ two-stage least squares (2SLS) regressions with three dependent variables: the number of ancestral temples, the number of schools named after elites, and the number of streets named after elites. Each outcome is measured in two alternative ways either as a discrete count or as a binary indicator allowing us to distinguish between the intensive margin (how many exist) and the extensive margin (whether at least one exists). The results, reported in Tables Table A17 and Table A18 in Appendix Section L, provide a comprehensive assessment of the persistence of elite influence across both cultural and symbolic institutions.

The 2SLS estimates show that former elites exert a statistically significant influence on schools and streets named after them. The coefficients are positive and remain significant in both the count and dummy specifications, suggesting that the presence of historical elites increased not only the probability of these institutions emerging but also their intensity when established. Instrument validity is supported by the Kleibergen–Paap LM and Wald F-statistics, which confirm strong instruments, and Hansen's J-tests, which indicate that the over-identifying restrictions are not rejected. Together, these diagnostics strengthen the causal interpretation of the estimates and reduce concerns about weak instruments or violations of the exclusion restriction.

The only deviation from this general pattern occurs with ancestral temples. When measured as a count, the coefficient on former elites is statistically insignificant, but when recast as a dummy variable, the coefficient becomes significant. This result implies that elite influence on temples operates primarily on the extensive margin: elites increased the likelihood that a district hosts at least one ancestral temple, but did not affect the number of temples conditional on their existence. From an econometric perspective, this finding highlights the importance of functional form and dependent variable specification, as results may differ depending on whether persistence is measured in terms of presence or intensity.

Table A17: Former elites and ancestral temples, schools named, and streets named (Count variables): Instrumented Results

	1st: Total Elite	2nd: Ancestral Temples	1st: Total Elite	2nd: Schools Named	1st: Total Elite	2nd: Streets Named
	(1)	(2)	(3)	(4)	(5)	(6)
Distance to Ancient Capital	-0.021***		-0.021***		-0.021***	
	(0.006)		(0.006)		(0.006)	
Distance to Coast	-0.092**		-0.092**		-0.092**	
	(0.039)		(0.039)		(0.039)	
Total Elite		0.026		0.045***		0.045**
		(0.021)		(0.014)		(0.019)
Baseline controls		Yes		Yes		Yes
Year FE		Yes		Yes		Yes
Province FE		Yes		Yes		Yes
Year × Province FE		Yes		Yes		Yes
Obs.	421	421	421	421	421	421
Kleibergen-Paap LM stat	19.83		19.83		19.83	
Kleibergen-Paap LM p-value	0.000		0.000		0.000	
Anderson-Rubin Wald test	0.79		4.04		1.84	
Anderson-Rubin Wald test p-value	0.455		0.018		0.160	
Hansen J	0.02		0.00		0.25	
Hansen J p-value	0.893		0.967		0.617	

Notes: This table reports IV-2SLS estimates of the effect of former elites on the number of ancestral temples, schools named after elites, and streets named after elite. Robust standard errors, adjusted for clustering at the district and year levels, are presented in parentheses. The significance levels are denoted as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010$.

Table A18: Former elites and ancestral temples, schools named, and street named (Dummy variables): Instrumented Results

	1st: Total Elite	2nd: Ancestral Temples	1st: Total Elite	2nd: Schools Named	1st: Total Elite	2nd Stage: Streets Named
	(1)	(2)	(3)	(4)	(5)	(6)
Distance to Ancient Capital	-0.021***		-0.021***		-0.021***	
	(0.006)		(0.006)		(0.006)	
Distance to Coast	-0.092**		-0.092**		-0.092**	
	(0.039)		(0.039)		(0.039)	
Total Elite		0.011*		0.017**		-0.001
		(0.006)		(0.007)		(0.009)
Baseline controls		Yes		Yes		Yes
Year FE		Yes		Yes		Yes
Province FE		Yes		Yes		Yes
Year × Province FE		Yes		Yes		Yes
Obs.	421	421	421	421	421	421
Kleibergen-Paap LM stat	19.83		19.83		19.83	
Kleibergen-Paap LM p-value	0.000		0.000		0.000	
Anderson-Rubin Wald test	1.04		2.55		1.12	
Anderson-Rubin Wald test p-value	0.355		0.080		0.326	
Hansen J	0.85		0.36		2.56	
Hansen J p-value	0.357		0.549		0.109	

Notes: This table reports IV-2SLS estimates of the effect of former elites on the number of ancestral temples, schools named after elites, and streets named after elite. Robust standard errors, adjusted for clustering at the district and year levels, are presented in parentheses. The significance levels are denoted as follows: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.010$.