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Socioeconomic effects of collectivist and individualist education: A comparison between North and South Vietnam

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Socioeconomic effects of collectivist and individualist education: A comparison between North and South Vietnam

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Abstract

This working paper analyses the socioeconomic effects of education in two different political systems by investigating whether individuals educated in a collectivist education system are less likely to become entrepreneurs than individuals educated in an individualist system. It exploits the separation of Vietnam into a communist northern and a capitalist southern part between 1954 and 1975 to identify education in the respective systems, keeping factors such as national culture or historical background fixed. A Probit regression using survey data on 1,164 individuals suggests that being educated in the North makes it 8.6 percent less likely to become an entrepreneur than being educated in the South. This demonstrates that education in different systems may have an effect on entrepreneurial activity, although challenges such as necessity-driven entrepreneurship remain unresolved.

Keywords: Entrepreneurship, Education, Vietnam, Survey data, Probit regression

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1 Introduction

This paper empirically analyses the effect of education in a communist system versus in a capitalist system on entrepreneurship. It assesses the following research question: Are people in rural Vietnam who were educated in North Vietnam during the separation (1954-1975) less likely to become entrepreneurs than people who were educated in South Vietnam?

I expect a negative effect of being educated in North Vietnam on the likelihood of opening a business compared to being educated in South Vietnam. This is due to the fact that education systems are shaped by their surrounding cultural and political systems, in the case of Vietnam by the communist system in the North and a more liberal system in the South. As such, both education systems transmitted different values to those educated. With socialist values and a sense for collectivism and community taught in the North, people might be more committed to standard employment. On the other hand, capitalist values, a sense for individualism, and importance of own achievement were taught in the South, which may foster the pursuit of own economic achievement and entrepreneurial activity.

Different studies have shown that culture has an effect on economic outcomes (see Guiso, Sapienza, and Zingales (2006), Fernández (2011) and Gershman (2016) for an overview¹). Hofstede (1980) developed different dimensions of culture, among which individualism and its counterpart collectivism has often been used to contrast Western and Asian cultures (e.g. Hofstede and Bond (1988)). Individualism measures an individual's self-reliance and focus on personal achievement and freedom, whereas collectivism values harmony and conformity with a group (Hofstede (1980)). Among all dimensions of culture, only individualism appears to have strong economic effects (see, e.g., Gorodnichenko and Roland (2011, 2017)). Individualist cultures tend to foster entrepreneurship, which relies heavily on self-fulfilment and -achievement, more than collectivist cultures (cf. Ralston, Nguyen, and Napier (1999)). This analysis applies these findings to education systems, classifying education to be more collectivist in North Vietnam and more individualist in the South. The concept of regional culture having an effect on business creation and the existence of a "regional entrepreneurship culture" is suggested by Fritsch, Bublitz, Sorgner, and Wyrwich (2014) as well as Fritsch and Wyrwich (2014). Analysing the transition of East Germany from a socialist system to a market economy, they show that regional differences in the level of entrepreneurship persist for long periods, even after changes in the socioeconomic environment. Vuong and Tran (2009) support this idea for the case of Vietnam and stress that the Vietnamese culture has an essential impact on entrepreneurship. Nguyen

¹In line with Gershman (2016), culture can be defined as people's preferences, values, attitudes, beliefs, and social norms. A narrower definition is not required for this analysis.

and Mort (2016) point out that traditional Vietnamese values, including collectivism, “adversely affect entrepreneurial spirit” (p. 117). The fact that cultural factors affecting entrepreneurship are transferred through the education system, as hypothesised in this analysis, is suggested by Banović (2016).

The remainder of the paper proceeds as follows. The following section outlines the historical background of the two education systems in Vietnam. Sections 3 and 4 introduce the data, provide descriptive statistics, and present the empirical method. In section 5, results are presented and discussed. The final section concludes the analysis.

2 Historical Background

Vietnam was under French colonial rule from 1887 to 1945 (Lien and Sharrock (2015)). After the country gained independence from France, it was separated in 1954 into a communist northern part, the Democratic Republic of Vietnam (DRV), and an anti-communist southern part, the Republic of Vietnam (RVN). During the Vietnam War, which escalated in 1955, the North and South fought each other on either side of the two camps in the Cold War, the communist side headed largely by the Soviet Union and the anti-communist side led by the United States (Lien and Sharrock (2015)). This war ended in 1975 when the North defeated the South and integrated the RVN into the communist system, forming today’s Socialist Republic of Vietnam. However, the hardship for South Vietnamese people continued under harsh communist re-education (Ralston, Nguyen, and Napier (1999)). In 1986, the communist government launched the so-called Doi Moi reform, opening the economy to foreign trade and allowing the creation of private firms (Nguyen and Mort (2016), Revilla Diez (2016)). Since then, all Vietnamese people have had the opportunity to open up their own businesses. As suggested in the introduction, however, people educated in the North and South may have taken different advantage of this opportunity, due to the values transmitted by their education.

Since this paper analyses the socioeconomic effect of the different education systems in North and South Vietnam, these systems are presented in the following, based on Dror (2018). Traditionally, education was of high importance in Vietnam. The French colonial education system formed the basis from which the DRV and RVN both developed their own education systems after independence. Both regimes increased school enrolment significantly, partly due to the fact that education was an essential element to make younger generations loyal citizens to their regime. Whereas in the North, uniform education aimed at fostering socialism, the education system in the South was less indoctrinated and more pluralistic. The DRV undertook major education reforms creating uniform curricula to form loyal communist citizens and indoctrinating socialist

ideology. It received assistance and guidance from the Soviet Union. Schools were public, open for all and there was no tuition fee. The curriculum was highly politicised and little room was given to creativity and individual ideas. Many schools imposed a concept in which pupils studied half-time and worked half-time, acquainting pupils with standard work in the socialist planned production economy. During the Vietnam War, pupils were trained to be ready to serve in the military, if necessary. In contrast, the RVN's education was less uniform and fostered ethnic, religious, and political diversity. Some schools maintained the French educational system and curricula differed, depending on the type and place of the schools. Some schools were private and thus required tuition fees. The philosophy behind the education system consisted in respecting the personality of the child and not using it to achieve some goal, standing in contrast to the politicisation in the North. A declared educational principle was liberalism, fostering the freedom of the individual. Schools aimed at preparing specialised ability and partly included business education. The RVN's education system received support from the United States and other Western countries. The liberal and pluralistic education in the South, facilitating diversity and individual self-achievement, contrasts with the uniform socialist education in the North, showing a difference between the systems along the individualism-collectivism dimension of culture by Hofstede (1980), introduced above. This gives rise to the expectation that from 1986 onwards, when private entrepreneurship was allowed for all, the people with northern collectivist education were still less likely to become entrepreneurs and rather engaged in standard employment-based work, whereas people with southern individualist education may have been more likely to become entrepreneurs. I test this hypothesis in the following.

3 Data and Descriptive Statistics

To analyse the relationship between education in two different systems and entrepreneurship, I track whether individuals who were educated during the separation of Vietnam have opened up their own businesses. Data is taken from the Thailand Vietnam Socio Economic Panel (TVSEP).² The TVSEP consists of seven household survey waves, collected between 2007 and 2017 and has been used to analyse entrepreneurship and vulnerability in Vietnam (Sohns and Revilla Diez (2017, 2018)), risk attitudes (Gloede, Menkhoff, and Waibel (2015)), rural poverty (Do, Nguyen, and Grote (2019)), and other topics, such as agriculture (Nguyen, Nguyen, Lippe, and Grote (2017)), finance, and migration. For Vietnam, the survey comprises responses of individuals from three rural provinces to questionnaires on a range of socioeconomic topics. The

²The research project is funded by the German Research Foundation (DFG). More information can be found at <https://www.tvsep.de/overview-tvsep.html>.

provinces are (i) Ha Tinh, which is in the north of today’s Vietnam and used to belong to the communist North, (ii) Thua Thien Thua Thien Hue, which is in central Vietnam and used to belong to the South while being close to the Demarcation zone, and (iii) Dak Lak, which is in the south of today’s Vietnam and used to belong to South Vietnam. I merge two datasets from each survey wave to combine household data – including information on individuals’ age, gender, marital status, and education – with self-employment data, providing information on whether the individuals are running a business. More precisely, the answers to the questions of interest make it possible to identify whether an individual was educated during the separation of Vietnam, whether education took place in the North or South, and whether the individual is an entrepreneur at the moment of the survey. Pooling the data over the survey waves to use the information on entrepreneurship from all years is not straightforward. Therefore, the survey wave with the highest number of observations on individuals who were educated during the separation is selected for the analysis. However, the sample of individuals who qualify as being educated during separation should not include individuals who completed only a small fraction of their education during separation and merely during times of transition, when reforms were not yet achieved (see Dror (2018)), biasing their overall education towards a pre- or post-separation education. Therefore, only individuals who had at least three years of education during the separation are kept in the sample. The threshold of three years is based on the average duration of education of all individuals in the survey (9 years), such that the analysis requires an average individual to have completed at least one third of her education during the separation. All other individuals, especially those who did not pursue any formal education, are dropped to limit the effect to actual implications of schooling and not mere upbringing in the respective systems. Survey wave 3 from 2010 includes the most observations (1,164) after dropping all individuals who do not qualify as educated during separation and is therefore chosen for the analysis. Although the survey was only undertaken in three out of 63 provinces and municipalities of Vietnam, they are representative for rural Vietnam, as argued by Hardeweg, Klasen, and Waibel (2013), lessening concerns about representativeness. Nevertheless, the role of the regions for entrepreneurship is thematised in the discussion of regression results below. The available data is used to create a dummy variable $ENTREPREN_i$, taking the value 1 if an individual is an entrepreneur and 0 else, a dummy variable EDU_NORTH_i , indicating whether an individual was educated in the North (1) or South (0), as well as variables on age (captured by AGE_i in years), years of education ($YEARS EDUC_i$), marital status (captured by the dummy $MARRIED_i$, taking the value 1 if an individual is married and 0 else), gender (captured by the dummy $MALE_i$, taking the value 1 if the individual is male and 0 else) and the region

of residence (dummies $HATINH_i$, HUE_i , $DAKLAK_i$, taking the value 1 for the respective regions). Table 1 provides descriptive statistics. In the sample, the majority of individuals lives in Ha Tinh (663), followed by Thua Thien Hue (371) and Dak Lak (130). About 15 percent of all individuals are entrepreneurs and about 57 percent were educated in the North.

Table 1: Descriptive Statistics

	(1)	(2)	(3)	(4)	(5)
VARIABLES	N	mean	sd	min	max
AGE	1,164	54.42	7.049	44	79
ENTREPREN	1,164	0.153	0.360	0	1
YEARS EDUC	1,164	8.089	3.547	1	25
EDU_NORTH	1,164	0.572	0.495	0	1
MARRIED	1,164	0.911	0.285	0	1
MALE	1,164	0.516	0.500	0	1
HATINH	1,164	0.570	0.495	0	1
HUE	1,164	0.319	0.466	0	1
DAKLAK	1,164	0.112	0.315	0	1

4 Empirical Method

The analysis aims at identifying the effect of collectivist versus individualist education on entrepreneurship. Hence, the dependent variable is $ENTREPREN$ and the main explanatory variable of interest is EDU_NORTH . Given that the dependent variable is binary, the appropriate specification is a binary response model. The analysis focuses on the conditional probability of an individual being an entrepreneur, which is bounded within the interval $[0, 1]$. In order to account for boundedness, assuming that the conditional probability is nonlinear and that the error term is continuous and normally distributed, the individual conditional probability of being an entrepreneur, given the regressors \mathbf{X}_i , can be estimated by a Probit model, specified by

$$Pr(ENTREPREN_i = 1 | \mathbf{X}_i) = \Phi(\mathbf{X}_i^T \beta),$$

where $\Phi(\cdot)$ is the cumulative distribution function of the standard normal distribution. To estimate the probability of becoming an entrepreneur given that the individual was educated in

the North of Vietnam and controlling for other factors, the regression equation is given by

$$Pr(ENTREPREN_i = 1) = \Phi(\beta_0 + \beta_1 EDU_NORTH_i + \beta_2 AGE_i + \beta_3 YEARS EDUC_i + \beta_4 MARRIED_i + \beta_5 MALE_i + \epsilon). \quad (1)$$

The Probit model is estimated by maximum likelihood estimation, where the log-likelihood function is maximised. This analysis uses Stata for estimation. Challenges arising from a binary main explanatory variable and from deriving marginal effects are taken into account by appropriately adjusting the code.

In order to identify a potential causal effect of collectivist education on entrepreneurship, I exploit the separation of Vietnam, which can be regarded a natural experiment (see Angrist and Pischke (2009, pp. 12-16))), dividing the individuals from the survey sample into a treatment group of the individuals, who underwent collectivist education in the North, and a control group of the individuals, who pursued individualist education in the South. The random group assignment and exclusion of those who did not pursue any formal education make it credible that these two groups only differ in terms of their education treatment and not systematically regarding other characteristics. Especially, both groups have the same cultural and historical background and colonial experience (Dror (2018)). In this case, a causal effect of treatment with collectivist education on the probability of becoming an entrepreneur can be observed by comparing the marginal effects of the treatment and control group (see Schlotter, Schwerdt, and Woessmann (2011)). However, an issue of concern for causal inference from the model is an omitted variable bias, since the probability of becoming an entrepreneur is influenced by unobservable factors, such as talent or ambition, which are not included in the regression. If the unobservables are correlated with the explanatory variables, this could give rise to endogeneity, making causal interpretation impossible. Given that the main explanatory variable is education in the North, which is clearly exogenous due to the natural experiment setting, and unaffected by such unobservables, causal interpretation of the coefficient of *EDU_NORTH* should remain possible despite this valid concern. I discuss this issue in more detail below.

5 Results and Discussion

The first column of table 2 shows the regression results and robust standard errors for equation (1). Given the Probit specification, the coefficients can only be interpreted by their signs and not by their magnitude. Education in the North is highly significant and negatively related with the probability of becoming an entrepreneur, meeting the introduced expectations. Also age

and being male have significantly negative effects on the likelihood of becoming an entrepreneur. The age effect may reflect the fact that older people could have retired from their work and thus do not report themselves as being an entrepreneur anymore, a credible claim considering the presence of up to 79 year-old individuals in the sample (see table 1). The gender effect may reflect the fact that Vietnam has one of the highest rates of Women Business Ownership (Mastercard Inc. (2018)) and that businesses in rural regions often involve selling homemade products, which are usually produced by women. The years of education have a positive but less significant effect. This could reflect the fact that years of education are positively correlated with other factors making it more likely to become an entrepreneur, an issue picked up in the following. The marital status is insignificant, making an effect of the marital status unlikely for entrepreneurship. Given that more than 90 percent of the individuals in the sample are married (see table 1), this may be due to missing variation in the explanatory variables.

Table 2: Regression Results

VARIABLES	(1) baseline reg	(2) av marg effect	(3) control 1	(4) control 2
1.EDU_NORTH	-0.377*** (0.099)	0.116*** (0.013)	-0.459** (0.216)	-3.401*** (0.283)
AGE	-0.032*** (0.007)		-0.032*** (0.007)	-0.033*** (0.007)
YEARSEduc	0.026** (0.012)		0.022 (0.016)	0.030** (0.012)
1.MARRIED	0.139 (0.172)		0.138 (0.172)	0.149 (0.173)
1.MALE	-0.379*** (0.098)		-0.378*** (0.098)	-0.371*** (0.099)
0.EDU_NORTH		0.202*** (0.018)		
1.EDU_NORTH#YEARSEduc			0.010 (0.024)	
1.HATINH				3.541*** (0.246)
1.HUE				0.658*** (0.175)
Constant	0.732* (0.433)		0.761* (0.447)	0.214 (0.441)
Observations	1,164	1,164	1,164	1,164

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Marginal effects can be calculated from the Probit coefficients (Angrist and Pischke (2009), pp. 69-80). The average marginal effects for the variable of interest, *EDU_NORTH*, are reported in column (2) of table 2.³ They show that having pursued one's education in the North of Vietnam during the separation gives an 11.6 percent probability of becoming an entrepreneur whereas having pursued education in the South gives a 20.2 percent probability of becoming an entrepreneur. Individuals educated in the North are thus 8.6 percent less likely to become entrepreneurs than people who were educated in the South. This supports the theory that collectivist education decreases the probability of opening one's business relative to individualist education. The reported marginal effect of education in the North on entrepreneurship can only be interpreted as a causal effect if there is no reason to assume that endogeneity may arise. Especially, a causal claim requires that the specification does not omit any variables which affect both the probability of becoming an entrepreneur and the explanatory variables. For this reason, two types of controls are included into the regression to test whether the addition of these controls affects the estimates.

The first included control is an interaction term between *EDU_NORTH_i* and *YEARS_i*. The intuition behind this is that duration of education in the respective system might reinforce the expected effect of collectivist or individualist education. On the other hand, it may be correlated with unobserved factors, such as talent or ambition, which positively affect entrepreneurship. In the latter case, an omitted variable bias would arise, yielding a biased estimate of the coefficients involving *YEARS_i*. Results of this regression are reported in column (3) of table 2. The coefficient of *EDU_NORTH* becomes slightly less significant, whilst keeping its sign and roughly its magnitude, and the years of education become insignificant. This may be due to collinearity between *YEARS_i* and the interaction term or due to the distribution of the years of education. Therefore, figure 1 reports marginal effects and 95 percent confidence intervals taking into accounting the distribution of the years of education. The plot supports the general theory that education in the North makes it less likely to become an entrepreneur relative to education in the South, with the average marginal effect being similar in size to the original marginal effects⁴. Regarding the impact of education duration, the plot shows that, with increasing years of education, the probability of becoming an entrepreneur increases for both education systems. The confidence intervals increase with increasing years of education, possibly due to lower numbers of observations for individuals with 16 or more years of education. The evidence that increasing years of education increases the probability of entrepreneurship, even in

³The reported marginal effects are the average marginal effect calculated over all individual marginal effects. They are similar in size to the marginal effect at the mean, reporting the marginal effect for an average individual from the sample regarding the given variables. An overview over the different marginal effects is given in table 3.

⁴All marginal effects are reported in table 3.

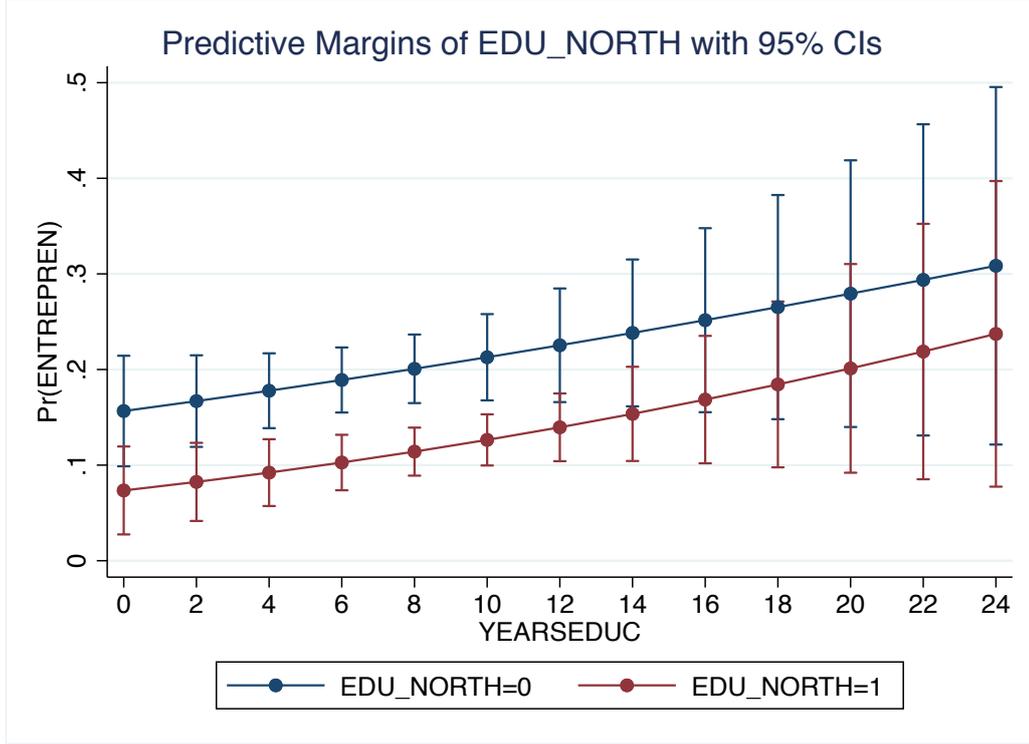


Figure 1: Plot of the probability of becoming an entrepreneur and 95 percent confidence intervals, for different levels of years of education in the respective region.

the North, may be explained in two ways. On the one hand, longer education may increase the academic skills or self-confidence necessary for running a business. On the other hand, longer education may be correlated with the mentioned unobservables, yielding a biased estimate of the coefficient involving *YEARS EDUC*, such that causal interpretation of this coefficient is no longer possible. Since these unobservables are unlikely to be correlated with the main variable of interest, *EDU_NORTH*, this issue is not dealt with in more detail⁵.

Another factor which may influence the probability of becoming an entrepreneur, while being correlated with the main variable of interest *EDU_NORTH*, is the region of residence. The North of Vietnam is still known to be more bureaucratic and less business fostering than the South (Ralston, Nguyen, and Napier (1999)), suggesting a persisting entrepreneurship environment. Likewise, Sohns and Revilla Diez (2018) suggest that the regions play an important role for entrepreneurship. Two of the three regions are included as controls into the regression⁶, yielding the results reported in column (4) of table 2. Both regional coefficients are positive and significant. The original coefficients keep their signs and significance from the baseline specifica-

⁵The concern of omitted variables may be resolved by taking into account the quality of included control variables, considering not only the effect on the coefficient after inclusion but also movements in the R-squared, as suggested by Oster (2019). An application to the non-linear Probit model, however, is not straightforward (Geweke (2005)) and remains an issue for further investigation.

⁶The reason for omitting one of the regions from the inclusion in the regression is avoiding perfect multicollinearity among the regressors.

tion and β_1 increases in size.⁷ The change in the results may be due to correlation between the region of residence and *EDU_NORTH*, possibly revealing an omitted variable bias. Since the control inclusion only reinforces and not reverts the effect, the conclusion that collectivist education decreases the probability of becoming an entrepreneur relative to individualist education is upheld.

A final issue which may challenge the results and their conclusion is the fact that entrepreneurship may be opportunity- or necessity-driven (Brünjes and Revilla Diez (2016)). Sohns and Revilla Diez (2018) show that these different motivations for opening a business are influenced by different explanatory factors. Poverty, for instance could necessitate a household head wanting to feed his family to open a business. In this case, it seems plausible that the system he was educated in has a minor effect on his decision to become an entrepreneur. Thus, poverty might foster necessity-driven entrepreneurship independently of an individual's education. This could be controlled for in the regression by including a variable indicating the household's income. The data available to me does not provide a straightforward measure of household income and calculation from given data⁸ is tedious and subject to imprecision. Another possibility to control for poverty is including the households' self-assessment of wellbeing, inquired in wave 7 from the TVSEP surveys. Unfortunately, results on this survey section are not reported in the available datasets. Due to scope, controlling for poverty is omitted here and left for future investigation. To lessen the issue, one may argue that necessity-driven entrepreneurship is only an issue if its origin is correlated with the explanatory variable of interest. There is no straightforward reason to believe that poverty is correlated with *EDU_NORTH*. However, necessity-driven entrepreneurship might not only arise from poverty but also from the dire situation the South Vietnamese people found themselves in after reunification (Ralston, Nguyen, and Napier (1999)). In the course of re-education, the South Vietnamese might have been excluded from working in certain positions, possibly forcing them into self-employment. This may bias the effect of being educated in the South upwards. A way to control for this might be to compare the likelihood of becoming an entrepreneur between South Vietnamese people who went to school and who did not pursue any formal education. This is left for future research.

⁷This increase in size reinforces the marginal effects, as reported in table 3. Accordingly, people educated in the North have a 6.7 percent probability of being an entrepreneur, whereas the probability is 64.4 percent for people educated in the South.

⁸Data is available, for instance, on earnings, expenditure and value of stocks in agriculture, livestock product's value, employment income and other benefits, debts, and credit financing etc.

6 Conclusion

Exploiting the separation of Vietnam into a communist North and an anti-communist South between 1954 and 1975, this analysis has shown that collectivist education decreases the likelihood of becoming an entrepreneur relative to individualist education. I test the hypothesis that North Vietnamese education is more collectivist than South Vietnamese education and adversely affects the likelihood of entrepreneurship, which may be derived from the literature on culture, entrepreneurship, and education in Vietnam, by using survey data from the TVSEP. A Probit regression of entrepreneurship on education in the North and other variables supports the hypothesis, suggesting that people educated in the North are 8.6 percent less likely to become an entrepreneur than people educated in the South. Inclusion of controls roughly upholds this main result. Although possibly not dire in the present specification due to missing correlation with the explanatory variable of interest, the issue of omitted variables remains unresolved. Additionally, future research may reconsider a potential bias through necessity-driven entrepreneurship of South Vietnamese people, who were discriminated after reunification of the country. Another issue to consider is the Vietnam War and account for education during wartime, which has not been thematised in this analysis due to scope.

Table 3: Coefficients and Marginal Effects for all Specifications

VARIABLES	(1) baseline reg	(2) av marg effect	(3) marg effect at mean	(4) control 1	(5) av marg effect	(6) control 2	(7) av marg effect
1.EDU_NORTH	-0.377*** (0.099)	0.116*** (0.013)	0.106*** (0.012)	-0.459** (0.216)	0.115*** (0.013)	-3.401*** (0.283)	0.067*** (0.007)
AGE	-0.032*** (0.007)			-0.032*** (0.007)		-0.033*** (0.007)	
YEARESDUC	0.026** (0.012)			0.022 (0.016)		0.030** (0.012)	
1.MARRIED	0.139 (0.172)			0.138 (0.172)		0.149 (0.173)	
1.MALE	-0.379*** (0.098)			-0.378*** (0.098)		-0.371*** (0.099)	
0.EDU_NORTH		0.202*** (0.018)	0.192*** (0.019)		0.201*** (0.019)		0.644*** (0.012)
1.EDU_NORTH#YEARESDUC				0.010 (0.024)			
1.HATINH						3.541*** (0.246)	
1.HUE						0.658*** (0.175)	
Constant	0.732* (0.433)			0.761* (0.447)		0.214 (0.441)	
Observations	1,164	1,164	1,164	1,164	1,164	1,164	1,164

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: The dependent variable is the probability of being an entrepreneur. Column (1) reports estimation coefficients of the baseline regression specification, column (2) reports corresponding average marginal effects, and column (3) reports corresponding marginal effects at the mean. Column (4) reports estimation coefficients from the regression with including the interaction term of education in the North with years of education, column (5) reports corresponding average marginal effects. Column (6) reports estimation coefficients from the regression with including regional controls, column (7) reports corresponding average marginal effects.

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