Social Capital and Human Capital in the Colonies: A Study of Cocoa Farmers in Western Nigeria

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Abstract

I examine the relationship between social and human capital in colonial Western Nigeria. Using data on expenditure of cocoa farmers in 1952, I show that farmers in townships with higher social spending individually spend more on education. The relationship holds after controlling for various characteristics of the farmers and the townships. Thus I show that there is a relationship between social and human capital and that this relationship was already present during the colonial era.

Keywords: Human Capital, Social Capital, Africa
JEL Classification Numbers: J24, D71, N37

1 Introduction

The relationship between social and human capital is a topic which has garnered some attention recently. Several authors have produced empirical studies of the contribution of educational attainment to cross-country differences in either per capita real GDP or in growth rates (Mankiw et al., 1992; Benhabib and Spiegel, 1994). Similarly, several authors have also written on the role of "social capital" in generating economic growth and development. Knack and Keefer (1997) analyze the role played by social trust specifically, and by broader measures of social capital generally, in explaining cross country differences in economic growth rates. They argue that social capital contributes positively to economic growth. Zak and Knack (2001) extend the earlier work of Knack and Keefer (1997) by including a theoretical model to help identify the particular channels through which higher levels of social capital generate higher rates of

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economic growth. La Porta et al. (1997) tests the hypothesis that trust affects the performance of many social institutions and social norms, such as tax compliance, corruption levels, and the quality of the judiciary. Importantly, the percent of the population that has completed high school, a measure of human capital, is one of the dependent variables employed. The authors find significant relationship between trust and this measure of human capital. Papagapitos and Riley (2009) also examine the relations between social trust and human capital formation measured by secondary enrollment rates. They find that social trust positively contributes to enrollment rates in a cross section of countries.

From an African development perspective, Nunn (2008) finds that countries with higher slave exports during the precolonial era had lower per capita GDP in 2000. Obikili (2013) shows that across small geographical areas, ethnic groups with higher slave exports relative to their size had lower literacy during the colonial era and beyond. They argue that the effect of human capital is perhaps one channel through which the slave trades affect modern development. It is however not clear exactly how the slave trade would affect the development of human capital. Perhaps it works through the effect on social capital. The slave trade was a socially destructive process which reduced the level of social capital for ethnic groups involved. Social capital is important for the development of human capital. This idea is somewhat backed up by Nunn and Wantchekon (2011) who show that ethnic groups who exported more slaves have less trust today, with trust regarded as a measure of social capital. The argument that the slave trade affected the development of human capital through its effect on social capital however requires there to be a relationship between social capital and human capital during the colonial era.

My purpose in this paper is to examine the existence of a relationship between social and human capital during the colonial era. I help explain how the slave trade affect modern development. I expand upon Obikili (2013) on the effects of the slave trade on literacy in Africa and the work of La Porta et al (1997) on the effects of social capital on literacy.

In this paper I provide evidence of the relationship between social capital and human capital in colonial Western Nigeria. I show that farmers in townships with a higher level of social capital, measured by spending on social clubs and churches, also spent more on education. The relationship remains after controlling for the earnings of famers, the size of the families of farmers and the hourly wages paid by farmers. Thus I provide evidence of the relationship between social capital and human capital development in colonial Nigeria.

2 Data

The data is taken from a survey of 187 cocoa farmers across 16 townships in Western Nigeria in 1952. The survey was organized by the Nigeria Cocoa Marketing Board to assist in the development of the cocoa industry in Nigeria. Amongst other things, the survey reports the incomes and expenses of the farmers for a year. In this paper I am particular interested in spending on education,

social clubs and churches. Spending on education is an investment by farmers in the development of human capital. The survey reports expenses on kindergarten schools, primary schools, secondary schools, teacher training centers, and trade and apprenticeship centers.

The survey also reports total spending by the farmers surveyed in the townships on social clubs and churches. Spending on social clubs could be thought of as a proxy for the level of social capital. Brehm & Rahn (1997), Evans (1996), Ostrom (1994), and Putnam (1993) argue that a key source of social capital is the informal, face-to- face interaction or membership in civic associations or social clubs. Townships with higher spending on social clubs relative to their incomes can therefore be thought of as having more social interaction and a higher level of social capital than townships with less spending on social clubs. It indicates more willingness on the part of the farmers to participate in social activities. These activities may not have a direct impact on the farmer, but increase the social capital of the community as a whole. The church may also be an important source of social interaction. Coleman (1998) and Brown and Brown (2003) argue that the church is an important source of social capital. I therefore include spending on churches as part of my measure of social spending.

The survey reports various other statistics on the condition of farmers. It reports the size of the farmers' families, the wages paid to workers, the incomes of the farmers and the number of families surveyed in each township. It also reports various other expenses of farmers, such as spending on food, drinks and medicine. These allow me to control for other variables which may also influence spending on education. Summary statistics for the variables used are reported in Table 1.

3 Results

I examine the relationship between social capital and farmers' spending on education by running an OLS regression of the form:

$$E_{i,t} = a + bS_t + cX_i + dY_t + Z_{i,t} \tag{1}$$

where $E_{i,t}$ represents the total spending by each farmer, i, in township, t, on education. S_t represents total social spending by farmers in township t. The coefficient b is my major variable of interest in this regression. X_i represents other variables which may plausibly affect spending on educations by each farmer and Y_t represents other variables for township, t, which may plausibly affect the spending on education by farmers. $Z_{i,t}$ is the error component.

The measure of social capital does not vary by farmers but across townships. This results in multiple farmers with the same level of social spending. In essence some of the factors causing variation in spending on education vary by farmer while others vary by township. I therefore make a clustering correction to the standard errors to account for this.

The main regression results are reported in Table 2. Column one reports results from a regression including only the social spending in the township. There is a positive correlation between social spending in the township and each individual farmer's expenditure on education. The result is significant at the 1% level.

There are other factors which may influence farmers' expenditure on education and may be driving the correlations in column (1). Farmers who earn more relative to other farmers may spend more on education. They may also spend more on social activities as well. This would give the impression of a positive correlation between spending on education and social activities. To account for this I include the total income of each farmer for the year in which the survey was taken as a control variable. I also include the size of the family of each farmer. Farmers with a large family size may have higher expenditure on education because of the size of the family and not for any other reason. I include the total size of land under the control of each farmer. This includes land that was cultivated during the survey period and land that was not cultivated. The size of land controlled by the farmer can be thought of as a proxy for the wealth of the farmer. Wealthy farmers may spend more on education in spite of their earnings for the year in which the survey was taken. They may also spend more on social activities.

There are some characteristics of the townships where the farmers are located which may influence social spending in the township as well as individual farmers spending on education. The level of development of the township for example could imply that farmers in those townships have more incentive to invest in education as opposed to farmers in less developed townships. Social capital has also been linked to the economic development. To account for this I include the average wage paid for farm labor in each township as a proxy for the average income of the township. I also include the fraction of people in the townships listed as employed in agriculture. Various studies have shown a negative correlation between employment in agriculture and economic development. Townships with a higher concentration of employment in agriculture could be thought of as less developed than townships with a lower concentration of workers in agriculture. Although the farmers surveyed are primarily cocoa farmers, the survey lists the employment of everyone in the farmers' household. The results including these control variables are reported in column 2. The relationship between social spending and expenditure on education remains positive and significant.

The farmers are located in areas occupied by different ethnic groups. There may be some unrecorded factors unique to each ethnic group other than the level of social capital that might influence the spending on education. Based on the reported locations of the towns, the farmers fall into areas occupied by the Yoruba, Ekiti, Ife, Ijebu and Egba ethnic groups. I include ethnic dummy variables to account differences across ethnic groups. The results are reported in column (3). The relationship between social spending and expenditure on education remains positive and significant.

The results in Table 2 suggest that social capital is correlated with invest-

ment in human capital. It is also possible that social capital is correlated with other spending habits of the famers. Some of these habits may provide some more information about the relationship between social capital and human capital. The survey reports farmers' expenses on food, alcoholic drinks, tobacco and kola, medicines, buildings, clothes, lighting and fuel. In Table 3 I regress these various expenses on social capital using the full set of control variables in Table 2. Only expenditure on buildings, lighting and alcoholic drinks are significantly correlated with social spending after controlling for various characteristics of the farmers and townships. These three expenditure groups can be thought of as measuring the prosperity of farmers. Galletti, Baldwin and Dina (1956) report that more prosperous farmers tend to spend more on buildings and clothes. The results in table 3 suggest that townships with more prosperous farmers also spend more on social activities. Spending on buildings, lighting and alcohol could perhaps serve as an alternative measure of prosperity of farmers.

In table 4 I include spending on buildings, lighting and alcohol as extra control variables to control for the prosperity of farmers. Even after controlling for prosperity, the relationship between social spending and spending on education by each farmer is still positive and significant.

4 Causality

The direction of causality between human capital and social capital is theoretically ambiguous. In this paper, I argue that townships with more social capital, measured by social spending, are associated with higher expenditure on education. This implicit assumption is that the direction of causality flows from social capital to human capital. It is possible that the reverse is the case. Townships with farmers who spend more education may learn more about the advantages of social capital, inducing them to increase their social activities. In this paper I am however only keen on showing the association between social capital and human capital in colonial Western Nigeria. I do this to show that it is possible that social capital is a channel through which the slave trades affect modern African development.

Nunn and Wantchekon (2011) show that the slave trade affected trust, an alternative measure of social capital. Other research also shows that the slave trades affected literacy both during the colonial era and in contemporary times. Literacy is a measure of human capital which is argued has a causal effect on growth and Development (Lucas, 1988; Mankiw et. Al, 1992; Hall and Jones, 1999). Showing early association between social capital and human capital thus offers evidence in support of the idea that the slave trades destroyed social capital which inhibited the development of human capital which slowed economic development for groups involved.

5 Conclusion

I examine the relationship between social and human capital in colonial Western Nigeria. Examining the spending habits of cocoa farmers, I show that there was indeed a relationship between social and human capital. Townships with higher social spending had farmers who individually spend more on education. The relationship persists after controlling for a range of factors characterizing both the conditions of farmers and townships. The results provide evidence on the effect of the slave trade on human capital working through its effect on social capital.

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TABLE 1: SUMMARY STATISTICS

	Mean	Min	Max	S.D	Obs
Expenditure on Education	5.79	0	128.05	16.00	187
Expenditure on Food	46.25	9.15	182.7	34.27	187
Expenditure on Kola	1.58	0	18.55	2.24	187
Expenditure on Alcoholic Drinks	6.23	0	95.3	11.88	187
Medical Expenses	1.58	0	20.7	3.34	187
Expenditure on Buildings	7.17	0	142.3	22.26	187
Expenditure on Clothes	11.15	0	100.15	14.01	187
Expenditure on Lighting	0.66	0	10.75	0.97	187
Expenditure on Fuel	0.10	0	4.3	0.45	187
Social Spending	21.93	0	90.2	24.29	16
Farm Income	109.28	3	674.15	98.21	187
Income from Trade	45.72	-18.6	1765.35	196.45	187
Other Income	3.60	-1.1	100.85	11.10	187
Size of Family	4.37	0.94	13.69	2.23	187
Average Size of Land Holdings[+]	10.83	1.47	29.25	6.97	15
Wages Paid per Hour for Weeding	142.78	12.1	623.1	174.92	16
Fraction Employed in Agriculture	0.28	0.13	0.65	0.15	16

[+] Average size of land holdings not reported for Ikerre Township.

Note: Income and expenditure measured in pound sterling.

TABLE 2: HUMAN CAPITAL AND SOCIAL CAPITAL

	(1)	(2)	(3)
Social Spending	0.20***	0.26**	0.27**
	(0.06)	(0.11)	(0.10)
Total Income		0.04***	0.04***
		(0.01)	(0.01)
Size of Family		0.44	0.51
		(0.78)	(0.81)
Size of Land Holdings		-0.31*	-0.33
		(0.15)	(0.32)
Wages Paid per Hour for Weeding		-0.03*	-0.03*
		(0.01)	(0.02)
Fraction Employed in Agriculture		11.58	20.19*
		(0.27)	(10.47)
Ethnic Dummies	No	No	Yes
R^2	0.10	0.47	0.48
OBS	187	174	174
Clusters	16	15	15

[+] Average size of land holdings not reported for Ikerre Township however excluding this variable does not change the results.

Notes: The dependent variable is expenditure on education. Coefficients are reported with clustered standard errors in brackets. ***,**, and * indicate significance at the 1%, 5% and 10% levels.

TABLE 3: SOCIAL CAPITAL AND OTHER EXPENDITRUE

			R^2	OBS	Clusters
Expenditure on Food	-0.19	(0.29)	0.54	174	15
Expenditure on Kola	0.01	(0.01)	0.35	174	15
Expenditure on Alcoholic Drinks	0.25***	(0.06)	0.26	174	15
Medical Expenses	-0.01	(0.07)	0.08	174	15
Expenditure on Buildings	0.29**	(0.11)	0.08	174	15
Expenditure on Clothes	0.10	(0.06)	0.56	174	15
Expenditure on Lighting	0.01**	(0.00)	0.35	174	15
Expenditure on Fuel	0.00	(0.00)	0.03	174	15

Notes: Coefficients are reported with clustered standard errors in brackets. ***,**, and * indicate significance at the 1%, 5% and 10% levels.

TABLE 4: ROBUSTNESS CHECKS

				R^2	OBS	Clusters
1.	Controlling for Building/Lighting/Drink	0.22**	(0.11)	0.52	174	15

Notes: The dependent variable is expenditure on education. Coefficients are reported with clustered standard errors in brackets. ***,**, and * indicate significance at the 1%, 5% and 10% levels.