THE WHITE MAN'S BURDEN: ON THE EFFECT OF AFRICAN RESISTANCE TO EUROPEAN DOMINATION[*]

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Are there contemporary development effects of African resistance to European domination? This question is the primary issue addressed by this study. We establish that African resistance has had adverse effects on post-colonial African development and discuss possible channels of such causality. This relationship is robust to alternative models and to controlling for the outliers. The empirical evidence is based on instrumental variable and treatment effect estimation techniques.

Keywords: African Resistance, Colonization, Development, European Domination, Slavery
JEL Classification: N17, P48, O43, O55, P16, P51

1. INTRODUCTION

"*I do not have any intention to remain an indifferent spectator, in case distant powers would dream of dividing Africa, as Ethiopia has been for fourteen centuries a Christian island in a pagan sea ...*"

Menelik, Emperor of Ethiopia in Victoria of Great Britain, 1891, Asmai (Archives del Ministerodegli Affari Esteri, Rome), Ethiopia Pos. 36/13 -109 Menelik to Queen Victoria, Addis Ababa, 14 Miazia 1883, added piece Tarnielli to MAE, London.

The low growth experienced by African countries in the post-independence era up to the recent period of growth resurgence that began in the mid-1990s has motivated a

substantial body of literature (Englebert, 2000a; Jerven, 2011; Kodila-Tedika and Agbor, 2014). There is also an interesting stream of literature on the consequences of slavery and colonization on institutional and economic developments in Africa (Englebert, 2000b; Bertocchi and Canova, 2002; Nunn, 2008; Richens, 2009; Nunn, 2010; Whatley and Gillezeau, 2011; Nunn and Wantchekon, 2011; Bezemer et al., 2014).

The present inquiry contributes to the literature by addressing the following question? Are there contemporary development effects of African resistance to European domination? To the best of our knowledge, this question has not been addressed in the literature. This is essentially because the available literature devoted to eliciting Africa's underdevelopment has for the most part been focused on the hypothesis of an African dummy of development on the one hand and on the other hand, technological change and social obstacles as causes of the continent's backwardness (Amavilah, 2015).

Adu Boahen (1987, p.23) wrote "*What is the attitude of Africans to the emergence of colonialism, resulting in a fundamental change in the nature of relations that had ceased to exist between them and the Europeans for three centuries? This is a question that historians, both Africans and Europeans, have not yet studied in depth, but yet it requires an answer which is unequivocal: an overwhelming majority, African governments and authorities are violently opposed to this change, express their determination to maintain the status quo, and above all to maintain their sovereignty and independence – for which practically none was willing to compromise anything*"[1]. As indicated by this historian, while understanding African development remains fundamental, the issue has generated little interest and research. Some qualitative attempts of the impact of African resistance on contemporary development have been noted (Huillery, 2009; Frankema, 2011, 2012) but not much empirical investigation has been conducted.

Using a cross-sectional sample of countries in sub-Saharan Africa, this study assesses the consequences of African resistance to European domination on contemporary development. We take advantage of an existing series of original data on African resistance by Frankema (2011, 2012). We employ an Ordinary Least Squares (OLS) regression that enables us to establish a negative relationship between contemporary African development and the level of resistance in the past. Our investigation also extends to verifying that the established linkage withstands further empirical scrutiny from the perspective of causality. This empirical evidence has also been documented theoretically, as apparent from the historical background we relate below.

The remainder of the paper is structured as follows. Section 2 presents a historical perspective of African resistance. In Section 3, we discuss the construction of data on native resistance. Findings on correlations and causality are reported in Section 4 and Section 5 respectively, while we lay out our conclusion in Section 6.

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[1] Translated; emphasis in original.

2.   HISTORICAL BACKGROUND

Between 1880 and 1935, the African continent experienced the onset of European colonialism resulting in the almost complete partition of the continent. According to Adu (1987a, 1987b), in 1880 only about 20% of Africa was occupied or controlled by the colonial powers or colonists. A glance at the map confirms this fact (Figure 1). However, by 1914, with the exceptions of Liberia and Ethiopia, the entire African continent was under colonial influence as colonial powers had artificially divided the continent without recourse to cultural considerations. This division led to cultural damage of immense proportions. However, the conquest of Africa was not without resistance.

Adu (1987a, 1987b) decomposes colonial domination and reactions (resistant initiatives) from Africans into several phases. The first phase between 1880 and 1919 is characterised by confrontation in the light of defending sovereignty and independence.
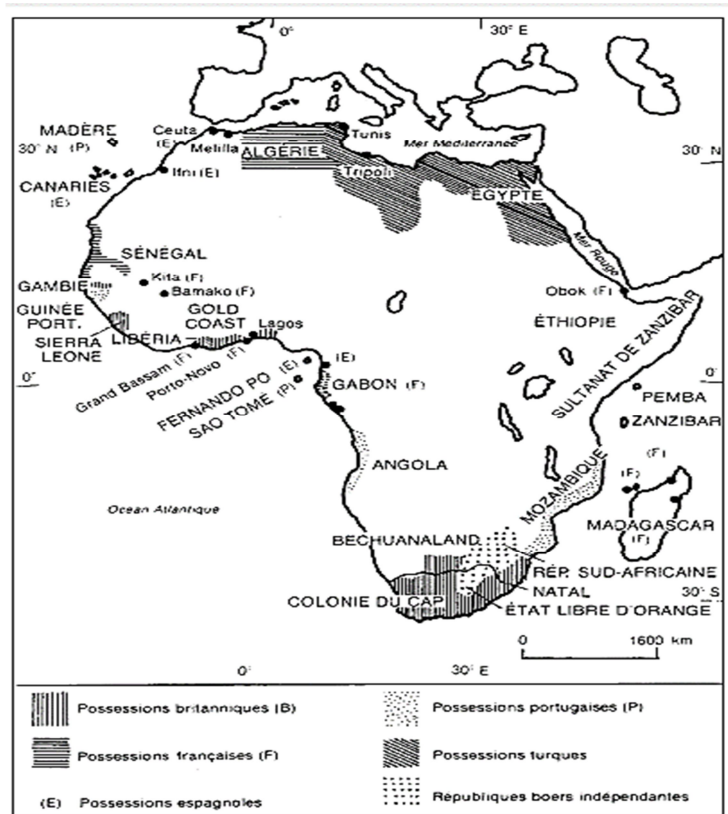
Source: Adu Boahen (1987a, 1987,b)

Figure 1.   Africa in 1880 on the Eve of the Partition

That phase in turn is divided into two sub-periods, namely: 1880-1890 and 1890-1919 corresponding respectively to conquest and occupation. The second phase for the period 1919-1935 is characterised by seeming adaptations by Africans which often disguised resistance and protesting strategies. The third phase starting roughly in 1935 is the period of colonial independence movements characterised by concrete strategies and increasingly active resistance.

In spite of the different phases outlined above, it is important to note that even before the first phase (Crowder, 1968, p.17-19), contact between Africa and the external world had already been established. In essence, slave trade was already present and the commercialisation of human beings was already creating substantial problems within Africa on the one hand and between Africans and Europeans on the other hand. Nonetheless, from the time of the first contacts in the mid-15th century through 1880, the interactions may have been characterised as mainly commercial, as opposed to political, in nature with Africans retaining at least a modicum of political input even in those areas most directly impacted by European contact.

All of this changed dramatically; however, at the beginning of the first phase, when as an outgrowth of the continuing struggle for dominance among the European powers, Africa was distributed among those same powers during the Berlin Conference, between November 15th 1884 and November 26th 1885. The Berlin Conference recognized and led to various types of arrangements for effectuating the partition; in some cases treaties concluded between Africans and Europeans (e.g. treaties signed between Imperial British East Africa Company and the Buganda) and in others, bilateral treaties concluded between Europeans (the Anglo-German treaty on the delimitation in 1886). According to the narrative at the time, the partition of Africa was an eloquent testimony of capitalism and a display of the superiority of the 'white race' with overtones drawn from then popular theories such as social Darwinism and social Atavism.

In the field, the conquest was bloody and spectacular.[2] In 1902, the conquest of

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[2] For example, France is the country that was most apparent in this military occupation policy. The French defeated the damel Kajoor, Latjor, quilutta until his death in 1886. They overcame Mamadou Lamine at the Touba – Kouta battle, in 1887, thus ending the Soninke Empire that was founded in Senegambia. They also managed to break the stubborn resistance of the great and famous Samori Toure, captured in 1898 and exiled to Gabon in 1900. A series of victories by the French characterised this époque: Koudian in 1889, Segou in 1890 and Yuri in 1891 in which Commander Louis Archinard destroyed the Tukuloor Empire of Segou, although its leader Ahmadu continued with fierce resistance until his death in Sokoto in 1898. Elsewhere in West Africa, the French conquered Côte d'Ivoire and the future French Guinea, where they established colonies in 1893. The conquest of the Kingdom of Dahomey began in 1890 and ended in 1894. By the late 1890s, the French had conquered the whole of Gabon, consolidated their positions in North Africa, completed the conquest of Madagascar (they exiled Queen Ranavalona III in 1897 to Algiers) and on the eastern border between the Sahara and the Sahel, ended the stubborn resistance of Rabah at Sennar, killed in action in 1900 (Uzoigwe, 1987, p.56). England also followed the same route as the French. Other powers experienced a difficult occupation, particularly Italy. Her defeat in Adowa in 1896 substantiates this position.

Africa was almost complete. It was a very bloody historical experience. The devastating firepower of the Maxim machine gun and the relative sophistication of European technology must have been a bitter experience for Africans. But though the conquest of Africa by Europe was relatively easy, occupation and the establishment of European administrations proved more delicate (Uzoigwe, 1987, p.65). The reason is simple: Africans did not easily accept this domination. There has never really been a *pax colonica* (Ranger, 1987).

Resistance was manifested practically in all regions of European penetration. But it had striking differences in intensity from one region to another. In Northern Rhodesia (now Zambia), there were armed resistance movements, but they did not offer anything comparable in magnitude to those that were held in Southern Rhodesia (now Zimbabwe), which furthermore from an organisational viewpoint cannot be compared to resistance movements against the Portuguese in the Zambezi valley (Ranger, 1987).

In the same vein, Isaacman (1976, p.343, 345, 370) argues that the revolt that was triggered in 1917 in the Zambezi valley was different from previous resistance movements, as it aimed at regaining independence of an important political system or a group of related people. The 1917 revolt was intended to release all Zambezi people under colonial oppression, particularly, oppressed peasants, whatever their ethnicity. *The evolution of primitive loyalty represented a new level of political consciousness, in which the Portuguese was seen for the first time as a common oppressor.* Beyond the content of these resistances, Ranger (1987) noted that the underlying resistance which was often driven by rational and innovative ideologies, with important consequences in their time still has significant contemporary resonance[3]. Authors sympathetic to the economic perspective allege that it is from the twentieth century that the real important movements of resistance to colonial rule were apparent (Ranger, 1987). As we have earlier emphasised, all African regions were affected. In North-East Africa, a major rebellion for instance was the Mahdist revolution of Sudan. In French West Africa, European conquest and occupation reached their peak during the period 1880-1900 (Gueye and Boahen, 1987, 137), strongly supported by military strategy. Resistance was also active. Samori Toure, Chief of Mandenopta Empire openly opted for confrontation rather than an alliance strategy. Although he also used diplomacy, much emphasises was placed on armed resistance. In British West Africa, whereas the British occasionally favoured peaceful negotiations, some violent incidences were also apparent.[4]

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[3] Authors such as Samir Amin see things from an economic perspective. Here he describes the resistance movements which, while being directed against African aristocracy, were also a defence against French economic aggression.

[4] In short, in this part of Africa, there were several uprisings or rebellions, inter alia: that of Mamadou Lamine in Senegal between 1885 and 1887 and those of Fode Kabba the wizard King of Kombo and Fode Kabba, the Muslim head of Niamina and district of Casamance in Gambia between 1898 and 1901; the rebellion caused in 1898 by taxes in Sierra Leone, led by Bai Bureh; that of Ashanti Gold Coast in 1900, under the direction of the Queen of Edweso Nana YaaAsantewaa; that of Ekumeku from 1898 to

In East Africa (Mwanzi, 1987) and Central Africa (Isaacman and Vansina, 1987), problems of this nature were also apparent. Rodney (1987) admits that for at least three decades between 1880 and 1910, African resistance substantially helped to slow-down the progress of economic colonization. But European dominance continued in the second phase (Adu Boahen, 1987).[5]

Between 1919 and 1935, the nationalist sentiment grew. The colonial configuration could only accelerate this process. Thus, the inequalities faced by educated Africans relative to their European peers of comparable education contributed to increasing the need for African emancipation. African elites were no longer satisfied with intermediary structures, especially for economic and efficiency reasons (Olatunji Oloruntimehin, 1987). In West Africa, this period of African resistance to colonialism was characterized with the 1919 riots in Sierra Leone due to *inter alia*: frustration of the educated classes and African traders and unemployment in major cities. These riots were in fact violent and spontaneous protests against what they saw as injustices arising from the management of the colonial economy. Looting and disorder spread to Freetown in Moyamba, Kangahun (25-26 July 1919), Mano, Boia, Makump, Bo, Bonthe, Eat and Port Lokko. The situation was so serious that some troops were called-in from the Gold Coast. The situation in Central Africa is aptly documented by Davidson et al. (1987, p.739).

3.   NATIVE RESISTANCE DATA

The data on African resistance to colonial domination is from Frankema (2011, 2012). Consistent with the author, the index is computed on a scale of 1 to 5 with high values representing a higher level of insecurity or resistance. Seen another way, insecurity is the result of the failure of the colonial powers to invest in suppressing resistance movements. The interval between the Berlin conferences (of 1884-1885) and the beginning of World War I is most important in determining this index.[6]

1900 and the uprising of the Aro of 1898-1902 in Eastern Nigeria; the rebellion of Bariba Borgou and Atakora Somba of Dahomey between 1913 and 1914; those of Mosi in Koudougou and Fada N'Gourma Upper Volta from 1908 to 1909; the uprising in Porto Novo in Dahomey and the revolts of Baulé of Akoussé, Sassandra and Guro in Ivory Coast between 1900 and 1914, and the plethora of uprisings that took place in several places of Guinea between 1908 and 1914. It is interesting to note that these rebellions redoubled intensity during the First World War.

[5] Crowder (1987) pointed out that even during World War I, resistance was still apparent, especially in regions such as Southern French West Africa, Côte d'Ivoire, and much of Libya or Karamoja Uganda were characterised with many armed uprisings and other forms of protests. Reasons for these uprisings are documented in Crowder (1987, p.322-323).

[6] As previously noted, the conference of Berlin marks the beginning of the conquest of the African

Accordingly, the index is constructed based on the following criteria for colonies: (i) under full European control before 1885; (ii) brought under control during the period 1885-1914 by treaties in the absence of notable armed struggles with the European colonial power(s); (iii) pacified between 1885 and 1914 by employment of force with consequences of demographic nature; (iv) pacified between 1885 and 1914 with the employment of armed forces against resistant movements to European rule; and (v) not entirely controlled prior to 1914 because of recurrent revolts and/or ongoing guerrilla warfare. Frankema's resulting data corresponding to these categories is represented in Table 1.

Table 1.   Resistance Index

Countries	Native resistance	Countries	Native resistance
Angola	5	Mali	3
Burundi	5	Mozambique	5
Benin	3	Mauritania	3
Burkina Faso	4	Mauritius	1
Botswana	2	Malawi	3
Central African Republic	5	Namibia	4
Côte d'Ivoire	3	Niger	5
Cameroon	3	Nigeria	3
Congo	3	Rwanda	5
Djibouti	2	Sudan	5
Ethiopia	5	Senegal	3
Gabon	3	Sierra Leone	3
Ghana	3	Somalia	5
Guinea	3	Sao Tome & Principe	1
Gambia	3	Swaziland	1
Guinea-Bissau	5	Chad	5
Equatorial Guinea	2	Togo	2
Kenya	3	Tanzania	4
Liberia	5	Democratic Republic of Congo	4
Lesotho	1	Zambia	2
Madagascar	3	Zimbabwe	3

continent on a massive scale.

4.   ECONOMETRIC FINDING

We begin by presenting a linear regression or a baseline relationship between native resistance to colonial domination and development. Following Nunn (2008), we improve the baseline results by accounting for other country characteristics though the regression equation given below:

$$\ln y_i = \beta_0 + \beta_1 Resistence + C_i'\delta + X_i'\gamma + \varepsilon_i, \tag{1}$$

where $\ln y_i$ is the natural logarithm of real GDP per capita in country for the year 2000. The data on GDP per capita for the year 2000 is obtained from Maddison (2003). C_i denotes the vector of dummy variables which show the origin of colonial powers before independence. These are included to account for the other relevant events during the continent's colonial rule. X_i is a vector of control variables that are meant to control for cross-country differences in history and context. We also included $\ln(exports_i / area_i)$ as an additional control to account for the total number of slaves exported during the period 1400-1900, after normalization with land area.

Other control variables used to capture the potential relevance of history in economic development in the long-run are included, namely: age of countries, slave export (ln export/area) and the identity of colonizer from Nunn (2008), legal origin from La Porta et al. (1999), Centralization-Stratification from Gennaioli and Rainer (2007). Table 2 provides the corresponding summary statistics of the variables.

Table 2.   Summary Statistics

	# Obs	Mean	Std. Dev.	Max	Min
Native resistance	42	3.357	1.285	5	1
Centralization-Stratification	47	0.580	0.329	1	0
GDP per capita (log)	52	7.134	0.825	9.274	5.385
Slave export	52	3.260	3.894	8.818	-2.302
Age of country	52	77.576	273.117	10	2004
UK legal origin	52	0.346	0.480	1	0

Notes: UK: United Kingdom. Obs.: Observations. Std. Dev.: Standard Deviation. Max.: Maximum, Min: Minimum.

Table 3 contains results of estimations that are consistent with Nunn (2008). In the first column, only variables based on colonial observations are reported. We consider the variable that captures resistance to colonialism. The variable of interest is negatively significant even after controlling for other indicators in the conditioning information set. The relationship is consistently negative and significant, though with decreased degrees

of significance and magnitude. Subsequently, the conditioning information set is expanded with more control variables in order to further control for variable omission bias. These additional historical variables do not influence the relationship of interest between resistance and economic development in Africa. At the sixth specification, fixed effects on the identity of the colonizer are introduced. This introduction does not significantly affect the investigated relationship in terms of sign and magnitude of the estimated relationship.

It is important to note that so far, outliers that are very likely to influence the robustness of OLS estimations have not been considered. In the seventh column, the procedure of Hadi (1992) is used to detect and control outliers. The corresponding results are consistent with those in the preceding columns.

Table 3.   Main Results

	I	II	III	IV	V	VI	Hadi
Native resistance	-0.302***	-0.217***	-0.219**	-0.208**	-0.210**	-0.191*	-0.257**
	(0.086)	(0.079)	(0.083)	(0.081)	(0.087)	(0.110)	(0.119)
Slave export		-0.080***	-0.080**	-0.080**	-0.080**	-0.095**	-0.112***
		(0.029)	(0.030)	(0.032)	(0.033)	(0.037)	(0.039)
Legor UK			-0.048	-0.012	-0.010	60.541	-1.604***
			(0.201)	(0.201)	(0.205)	(39.477)	(0.383)
Centralization-Stratification				-0.196	-0.205	0.214	0.052
				(0.338)	(0.362)	(0.400)	(0.483)
Age of country					0.000	0.033	0.072*
					(0.000)	(0.021)	(0.040)
Colonizer fixed effets	No	No	No	No	No	Yes	Yes
Constant	7.999***	8.039***	8.067***	8.106***	8.116***	7.560***	7.055***
	(0.350)	(0.333)	(0.391)	(0.525)	(0.551)	(0.613)	(1.194)
Obs.	42	42	42	40	40	40	32
R2	0.248	0.374	0.375	0.333	0.334	0.624	0.599
Joint signific. of resistence (p)		0.012	0.013	0.021	0.024	0.066	
Sqr. Partial Correlation		0.149	0.151	0.110	0.140	0.115	
Joint signific. of Slave (p)		0.007	0.008	0.010	0.011	0.010	
Sqr. Partial Correlation		0.167	0.168	0.140	0.174	0.209	

Notes: OLS estimates of (1) are reported. The colonizer fixed effects are indicators reflecting the identity of the colonizer at the time of independence. Coefficients are reported with standard errors in brackets. *, **, ***: significance levels of 10%, 5% and 1% respectively. Joint signific: Joint significance. Legor UK: United Kingdom legal origin.

When we compare the behavior of our independent variable of interest with that of Nunn (2008), two observations are apparent. First, our independent variable of interest affects contemporary development in Africa at a higher magnitude than the corresponding magnitude of estimated coefficient from Nunn, essentially because the magnitude of native resistance's coefficient is about thrice as high as the coefficient of slave exports. Second, while the coefficient of slave export decreases the explanatory power of our independent variable of interest, the overall explanatory power of the model increases correspondingly with a growing number of variables in the conditioning information set. This is apparent in the light of squared partial correlations.

In Table 4, we replicate the estimations of Column VI of Table 3. The purpose of this robustness process is to account for a critique on compressed history developed by Austin (2008) and Hopkins (2009). Bezemer et al. (2014) have incorporated this critique by proceeding as follows. On the one hand, by using decade averages when it concerns GDP per capita and on the other hand, when it concerns other indicators of developments, the average of the post-colonial period is considered.

In Table 4, the results are replicated for the 1970s in Columns 1 and 2 and in Columns 3 and 4 for the post-independence period. In Columns 2 and 4, two observations are lost because of the corresponding outliers identified with the procedure discussed in Table 3. While the independent variable of interest is no longer significant in the work of Nunn, the independent variable of interest in this study is still significant with almost the same magnitude.

Moreover, while the relationship between the two variables (i.e. resistance and economic development in Africa) is established, there is still another concern. In fact, the non-contemporary nature of the resistance variables can be used to argue for a possible causal effect between the two variables. However, it is important to note that, most of the control variables employed in the study have historical fundamentals (Spolaore and Wacziarg, 2009; Ashraf and Galor, 2013; Fedderke et al., 2014; Asongu and Kodila-Tedika, 2017), which could lead to concerns of variable omission bias given that the dependent variable is contemporary.

Another issue with the variable of interest is that it is based on where you were colonized, and in some instances on the concern of whether you were ever colonized. Hence it is not obvious to measure the resistance to colonialism. This observation does not negate the quality of the variable because resistance is not synonymous to the fact that colonization did not succeed. Hence, the value is denoted in terms of scale in order to articulate the intensity of resistance. In spite of the associated shortcoming, the variable has been used substantially in the literature (refer to Frankema, 2011, 2012; Kodila-Tedika and Tcheta-Bampa, 2015).

In order to account for the potential issues of endogeneity and causality raised earlier, we employ intstrumental variables. In the first column of Table 5, slave exports and the resistance variables are instrumented with the following instruments: latitude (La Porta et al., 1999), pre-colonial Islamic influence (Frankema, 2011, 2012), ruggedness (Nunn and Puga, 2012), geographical proximity (Ang, 2013) as well as the instruments from

Nunn (2008) such as Atlantic distance, Indian distance, Saharan distance and Red Sea distance.

The specification is maintained with the exception of the fact that, the number of colonial administrations has been omitted from the estimations because of issues of less degrees of freedom and concerns of multicollinearity, compared with other control variables. The instruments are valid because the null hypotheses of the Basmann and Sargan tests are not rejected. It is also apparent that by instrumenting our independent variable of interest and the slave export variable of Nunn, the conclusions of the previous table withstand empirical scrutiny based on instrumental variables. Moreover, the variable of Nunn is no longer significant, though with the expected sign.

Table 4. Robustness with Compressing History

	I	II	III	IV
	OLS	**OLS with Hadi**	**OLS**	**OLS with Hadi**
Native resistance	-0.180*	-0.264**	-0.211*	-0.297**
	(0.089)	(0.099)	(0.103)	(0.117)
Slave export	-0.048	-0.070**	-0.031	-0.054
	(0.028)	(0.030)	(0.033)	(0.035)
Legor UK	0.716**	-0.094	0.620*	0.298
	(0.303)	(0.337)	(0.304)	(0.424)
Centralization-Stratification	-0.398	-0.561	-0.597	-0.765
	(0.355)	(0.435)	(0.431)	(0.549)
Age of country	0.009	0.072*	-0.002	0.060
	(0.019)	(0.035)	(0.022)	(0.037)
Colonizer fixed effets	Yes	Yes	Yes	Yes
Constant	8.171***	5.663***	8.708***	5.931***
	(0.553)	(1.031)	(0.612)	(1.098)
Obs.	39	32	39	32
R2	0.412	0.375	0.350	0.306

Notes: OLS estimates of (1) are reported. The colonizer fixed effects are indicators reflecting the identity of the colonizer at the time of independence. Coefficients are reported with standard errors in brackets. *, **, ***: significance levels of 10%, 5% and 1% respectively. Joint signific: Joint significance. Legor UK: United Kingdom legal origin.

Table 5. Robustness with Instrumental Variables

	I	II	III
			Further IV Test - Lewbel (2012)
Native resistance	-0.325***	-0.300***	-0.187***
	(0.117)	(0.115)	(0.072)
Slave export	-0.051		
	(0.046)		
Indigenous slavery		-0.664*	
		(0.354)	
Age of country	0.024	0.007	-0.001***
	(0.025)	(0.019)	(0.000)
Legor UK	45.617	12.465	-1.939***
	(46.430)	(34.525)	(0.518)
Centralization-Stratification	0.154	0.186	
	(0.298)	(0.289)	
Colonizer fixed effets	YES	YES	YES
Constant	-36.499	-2.735	10.940***
	(46.640)	(34.540)	(0.711)
Obs.	40	40	42
R2	0.578	0.597	0.606
Sargan statistic (p-value)	0.194	0.357	0.209

Notes: OLS estimates of (1) are reported. The colonizer fixed effects are indicators reflecting the identity of the colonizer at the time of independence. Coefficients are reported with standard errors in brackets. *, **, ***: significance levels of 10%, 5% and 1% respectively. Legor UK: United Kingdom legal origin.

In Column 2, the specification in Column1 is replicated with the exception that the indigenous slavery variables of Bezemer et al. (2014) is used in placed of the salve export variable in the conditioning information set. The conclusion from the previous estimations on the sign and significance of the independent variable of interest still holds. In Column 3, the same specification is replicated without considering three variables in the previous two specifications, in order to further control for potential issues of mutlicollinearity. After the estimation, it is apparent that the instruments are valid and the conclusion on the signs and significance of the independent variable of interest (established in previous specifications), withstands empirical scrutiny.

In order to increase the robustness of the findings, we use a quasi-experimentation

technique in Table 6 where findings are based on propensity score matching (PSM). PSM can be employed to assess the average effect of the treatment (in our case population in less resistant countries) on a development outcome. In our study, the treatment is the country with less resistance given that the OLS results indicate higher levels of development for populations in more resistance areas.

In the first column, we employ our variable of interest in Table 3 to establish a significantly negative effect, which is consistent with prior estimations. In order to avoid compression of history, Column 2 considers the average of the post-independence period while Column 3 considers the 1970s for the purpose of robustness. The conclusions from the three estimations are consistent with those established earlier.

Table 6. Robustness with Propensity Score Matching

	2000	1960-2000	1970
Native resistance	-0.461***	-0.328*	-0.326**
	(0.146)	(0.185)	(0.150)
Obs.	28	28	28

Notes: Coefficients are reported with standard errors in brackets. *, **, ***: significance levels of 10%, 5% and 1% respectively.

5.   POSSIBLE CHANNELS

How is the relationship established in the preceding sections reflected in contemporary economic development in Africa? Following Nunn (2008), and without pretending to be exhaustive, we present a preliminary and exploratory analysis of possible mechanisms.

The first channel via which 'native resistance' affects contemporary development is what can be qualified as a cumulative effect. Accordingly, considering the critique on historic comparison, we have established that resistance to development is continuous in the perspective that the relationship existed from the very onset. The second channel is Gross Public Revenue per capita. For example, in 1898, chiefs associated with Mende in Sierra Leone, revolted under the leadership of one and unanimously decided not to pay the tax, Bai Bureh. The rebellion resulted from the promulgation by the British government of the 1896 Protectorate Ordinance which established direct British governance and imposed a taxation regime of 5 shillings for two-room houses and 10 shillings for larger houses annually. Figure 2 shows a negative relationship between the degree of resistance and public income[7]. This implies that the state apparatus did not

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[7] The data is obtained from Frankema and van Waijenburg (2014).

mobilise sufficient financial resources to offset the costs of administering the various colonies, seemingly because native resistance increased with the growth of colonial administrators and implicitly taxation (see Figure 2). In other words, the growth of native resistance is negatively linked to fiscal income as apparent in Figure 2.
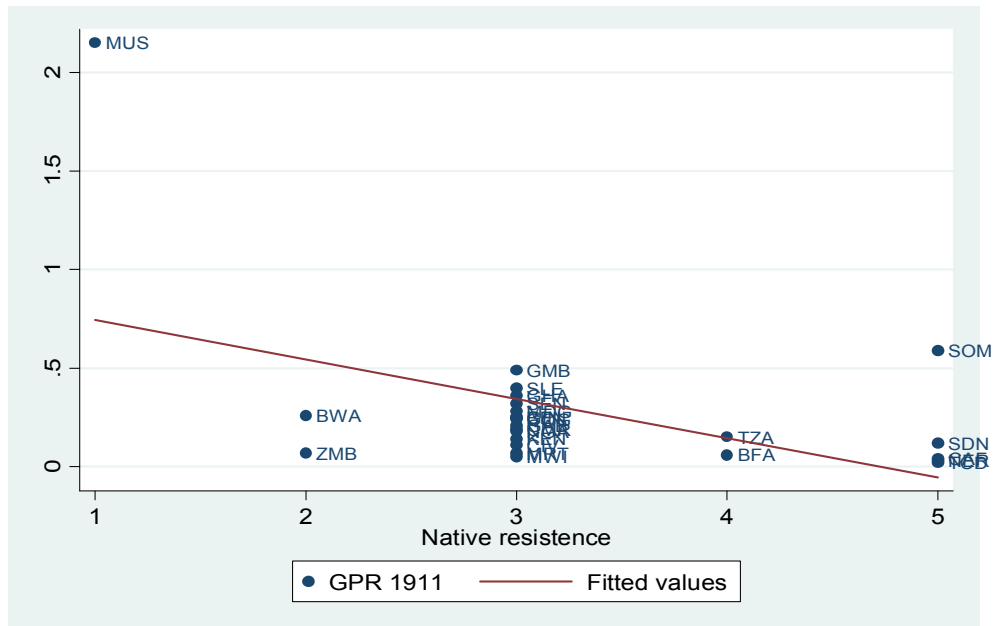

Figure 2:   Fiscal Income per Capita vs Native Resistance

According to Huillery (2014), the colonisation of Western Africa by France was not costly to the French tax payer. This elucidates why there was little public investment by France in the sub-region during the colonial era. In essence, public finance to run the French colonies came from taxation of the African inhabitants. In other words, it is reasonable to infer that greater mobilisation of financial resources would have led to more public investments, but active or passive resistance by African populations sapped the resources of colonial governments delaying or preventing increased investment in public infrastructure or services (Figure 2).[8] Conversely, regions where there was less

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[8] This conclusion elicits another link between native resistance and development. In essence, the provision of public services is a function of mobilised resources and when the allocation of resources is inefficient, inequality naturally results. At least one contemporary study has found that in turn inequality negatively affects development (Asongu and Nwachukwu, 2016a).

resistance to colonial rule benefited from more colonial public investment and enjoy high schooling rates, more household goods and better public services such as health care.

Another mechanism through which African resistance could impact contemporary development is in terms of human capital. Bolt and Bezemer (2009) have established that accumulated human capital during the colonial era is a robust predictor of contemporary African development. Meanwhile, Frankema (2011, 2012) find a highly negative nexus between the level's native resistance and human capital accumulation. By this mechanism, it can be reasonably inferred that there is a relationship between contemporary development and the degree of colonial resistance in the past.

As documented in recent literature, Tcheta-Bampa and Kodila-Tedika (2015) have established what type of transition toward decolonization has had an influence on the level of institutional development in Africa. According to the authors, colonies that experienced a smooth transition averagely have better institutions compared to colonies which experienced violent transitions. In the same vein, Wantchékon and Garcia-Ponce (2014) have concluded that anti colonial movements or insurrections which erupted in rural areas have generally led to authoritarian regimes and conflicts whereas insurrections that are nursed in urban areas are more associated with democratic regimes and less conflicts. By analogy, it can be hypothetically assumed that there was more resistance in rural areas, compared to urban areas given that it is easier to side from captivity in rural areas. Hence, as noted in the post-colonial period, most resistance movements have been based in rural areas. It is therefore logical to insinuate a correlation between resistance and rural areas.

Moreover, a high concentration of resistance could equally produce some types of violent transitions. This is more apparent in the light of Olatunji Oloruntimehin (1987): *"It is a mistake to consider, as has been done so far, African nationalism as an elitist and purely urban phenomenon. Recent work is increasingly revealing the importance of discontent and anticolonialist sentiments in rural areas.*" (p.613). Adu Boahen (1987) has emphasized that the social unrests in West Africa, for the most part, was led by communities in rural areas.

6.   CONCLUSION

Nunn (2009) posited history is important for development and/or influences the development of nations. This study has arrived at a similar conclusion by focusing on the relationship between African native resistance and European colonial domination. We have established that African resistance to colonial domination has had an impact on the continent's contemporary development. Generally speaking resistance has had negative repercussions in terms of contemporary economic development. This relationship is robust to the control of outliers and extreme values. We have also

discussed possible channels of causality between native resistance and contemporary African economic development.

REFERENCES

Adu Boahen, A. (1987a), "L'Afrique Face au Défi Colonial," in Adu Boahen, A. (Eds), *Histoire générale de L'Afrique: VII L'Afrique sous Domination Coloniale, 1880-1935*, UNESCO, 21-38.

_____ (1987b), "La Politique et le Nationalisme en Afrique Occidentale, 1919 -1935," in Adu Boahen, A. (Eds), *Histoire générale de L'Afrique: VII L'Afrique sous Domination Coloniale, 1880-1935*, UNESCO, 669-694.

Amavilah, V.H. (2015), "Social Obstacles to Technology, Technological Change, and the Economic Growth of African Countries: Some Anecdotal Evidence from Economic History," MPRA Paper No. 63273, Munich.

Ang, J.B. (2013), "Institutions and the Long-run Impact of Early Development," *Journal of Development Economics* 105, 1-18.

Ashraf, Q. and O. Galor (2013), "The Out of Africa Hypothesis, Human Genetic Diversity, and Comparative Economic Development," *American Economic Review*, 103, 1-46.

Asongu, S.A. and O. Kodila-Tedika (2017), "Is Poverty in the African DNA (Gene)?" *South African Journal of Economics*, 85(4), 533-552.

Austin, G. (2008), "The "Reversal of fortune" Thesis and the Compression of History: Perspectives from African and Comparative Economic History," *Journal of International Development*, 20, 996-1027.

Bertocchi, G. and F. Canova (2002), "Did Colonization Matter for Growth? An Empirical Exploration into the Historical Causes of Africa's Underdevelopment," *European Economic Review,* 46, 1851-1871.

Bezemer, D., J. Bolt and R. Lensink (2014), "Slavery, Statehood and Economic Development in Sub-Saharan Africa," *World Development,* 57, 148-163.

Bolt, J. and D. Bezemer (2009), "Understanding Long-Run African Growth: Colonial Institutions or Colonial Education?" *Journal of Development Studies*, 45(1), 24-54.

Crowder, M. (1968), *West Africa Under Colonial Rule*, Londres, Hutchinson.

Davidson, A.B., A.F. Isaacman and R. Pélissier (1987), "La politique et le Nationalisme en Afrique Centrale et Méridionale, 1919 -1935," in Adu Boahen, A. (Eds), *Histoire générale de l'Afrique: VII L'Afrique sous Domination Coloniale, 1880-1935*, UNESCO, 721-760.

Englebert, P. (2000a), "Solving the Mystery of the Africa Dummy," *World Development*, 28, 1821-1835.

_____ (2000b), "Pre-Colonial Institutions, Post-Colonial States, and Economic

Development in Tropical Africa," *Political Research Quarterly*, 53, 7-36.

Fedderke, J.W., R.E. Klitgaad, J.P. MacMurray and V. Napolioni (2014), "Diagnosing Deep Roots of Development: Genetic, Disease and Environmental Factors," ERSA Working Paper No.465, Cape Town.

Frankema, E. (2011), "The Origins of Formal Education in sub-Saharan Africa Was British Rule More Benign?" CGEH Working Paper Series Working Paper No.5.

_____ (2012), "The Origins of Formal Education in sub-Saharan Africa Was British Rule More Benign?", *European Review of Economic History*, 16(4), 335-355.

Frankema, E. and M. van Waijenburg (2014), "Metropolitan Blueprints of Colonial Taxation? Lessons from Fiscal Capacity Building in British and French Africa, c. 1880-1940", *Journal of African History*, 55(3), 371-400.

Gennaioli, N., and I. Rainer (2007), "The Modern Impact of Precolonial Centralization in Africa," *Journal of Economic Growth*, 12(3), 185-234.

Gueye, M. and A. Boahen (1987), "Initiatives et Résistances Africaines en Afrique Occidentale de 1880 à 1914," in Adu Boahen, A. (Eds), *Histoire Générale de l'Afrique: VII L'Afrique Sous Domination Coloniale, 1880-1935*, UNESCO, 137-170.

Hadi, A.S. (1992), "Identifying Multiple Outliers in Multivariate Data," *Journal of the Royal Statistical Society*, 54, 761-771.

Huillery, E. (2009), "History Matters: The Long-Term Impact of Colonial Public Investments in French West Africa," *Applied Economics*, 1(2), 176-215.

_____ (2014), "The Black Man's Burden - The Cost of Colonization of French West Africa," *Journal of Economic History*, 74(1), 1-38.

Hopkins, S.B. and Li, J. (2019), "How Hard is Robust Mean Estimation?" in *Conference on Learning Theory*, 1649-1682, PMLR.

Isaacman, A. (1972), "Mozambique: The Africanization of a European Institution; The Zambesi Prazos, 1750 1976," *Anti-colonial Activity in the Zambesi Valley, 1850 -1921,* Berkeley, University of California Press.

Isaacman, A. and J. Vansina (1987), "Initiatives et Résistances Africaines en Afrique Centrale de 1880 à 1914," in Adu Boahen, A. (Eds), *Histoire Générale de l'Afrique: VII L'Afrique Sous Domination Coloniale, 1880-1935*, UNESCO,191-216.

Isaacman, A. and J. Vansina (1985), "African Initiatives and Resistance in Central Africa, 1880-1914," in: Boahen, A.A. (Eds.), *General History of Africa VII. Africa under Colonial Domination 1880-1935*, University of California Press, Berkeley, p.169-193.

Jerven, M. (2011), "The Quest for the African Dummy: Explaining African Post-Colonial Economic Performance Revisited," *Journal of International Development*, 23(2), 288-307.

Kodila-Tedika, O. (2011), "Esclavagisme et Colonisation: Quelles Conséquences en Afrique? Résumé Critique des Travaux de l'économiste Nathan Nunn," *Revue Congolaise d'Economie,* 6(1), 41-61.

Kodila-Tedika, O. and A.J. Agbor (2014), "Religious Diversity and Economic Development in Sub-Saharan Africa: So Far So Good," *Journal of African Development,* 16(1), 99-117.

Kodila-Tedika, O. and A. Tcheta-Bampa (2015), *Conséquences Institutionnelles des Types de Transition à l'indépendance Pour les Pays Africains*, Mimeo.

Kodila-Tedika, O. and S. Asongu (2018), "The Long-Term Effects of African Resistance to European Domination: Institutional Mechanism," MPRA Paper. 85237, University Library of Munich, Germany.

La Porta, R., F. Lopez-di-Silanes, A. Shleifer and R. Vishny (1999), "The Quality of Government". *Journal of Law, Economics and Organization,* 15, 222-279.

Lewbel, A. (2012), "Using Heteroscedasticity to Identify and Estimate Mismeasured and Endogenous Regressor Models," *Journal of Business and Economic Statistics,* 30(1), 67-80.

Maddison, A. (2003), "The World Economy: Historical Statistics," Organisation for Economic Co-operation and Development, Paris.

Mwanzi, H.A. (1987), "Initiatives et Résistances Africaines en Afrique Orientale de 1880 à 1914," in Adu Boahen, A. (Eds), *Histoire générale de l'Afrique: VII L'Afrique Sous Domination Coloniale, 1880-1935*, UNESCO, p.361-380.

Nunn, N. (2008), "The Long-Term Effects of Africa's Slave Trades," *Quarterly Journal of Economics,* 123, 139-176.

_____ (2009), "The Importance of History for Economic Development," *Annual Review of Economi*cs, 1(1), 65-92.

_____ (2010), "Shackled to the Past: The Causes and Consequences of Africa's Slave," in Diamond, J. and Robinson, J.A. (Eds.), *Natural Experiments of History*, p.142-184, Harvard University Press.

Nunn, N. and L. Wantchekon (2011), "The Slave Trade and Origins of Mistrust in Africa," *American Economic Review*, 101(7), 3221-3252.

Nunn, N. and D. Puga (2012), "Ruggedness: The Blessing of Bad Geography in Africa," *Review of Economics and Statistic,* 94, 20-36.

Olatunji Oloruntimehin. (1987), "La Politique Africaine et le Nationalisme Africain 1919 -1935," in Adu Boahen, A. (Eds)*, Histoire générale de l'Afrique: VII L'Afrique sous domination coloniale, 1880-1935*, UNESCO, p.609-624.

Ranger, T.O. (1987), "Initiatives et Résistances Africaines Face au Partage et à la Conquête," in Adu Boahen, A. (Eds), *Histoire générale de l'Afrique: VII L'Afrique sous domination coloniale, 1880-1935*, UNESCO, p.67-86.

Richens, P. (2009), "The Economic Legacies of the Thin White Line: Indirect Rule and the Colonial Comparative Development of Sub-Saharan African," Economic History Working Paper No.131/09.

Rodney, W. (1987), "L'économie Coloniale," in Adu Boahen, A. (Eds), *Histoire Générale de l'Afrique : VII L'Afrique Sous Domination Coloniale, 1880-1935*, UNESCO, p.361-380.

Spolaore, E. and R. Wacziarg (2009), "The Diffusion of Development," *Quarterly Journal of Economics*, 124, 469-529.

Uzoigwe, G.N. (1987), "Partage Européen et Conquête de l'Afrique: Aperçu Général," in Adu Boahen, A. (Eds), *Histoire Générale de l'Afrique: VII L'Afrique sous*

Domination Coloniale, 1880-1935, UNESCO, p. 39-66.

Wantchékon, L. and O. García-Ponce (2013), "Critical Junctures: Independence Movements and Democracy in Africa," CAGE Online Working Paper Series, Competitive Advantage in the Global Economy (CAGE).

Whatley, W. and R. Gillezeau (2011), "The Impact of the Transatlantic Slave Trade on Ethnic Stratification in Africa," *American Economic Review Papers and Proceedings*, 1-9.

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