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Female Empowerment and Male Backlash

Abstract

Do policies and institutions that promote women's economic empowerment have a long-term impact on intimate partner violence? We address this question by exploiting a natural experiment of history in Cameroon. From the end of WWI until 1961, the western territories of today's Cameroon were arbitrarily divided between France and the United Kingdom, whose colonial regimes opened up divergent economic opportunities for women in an otherwise culturally and geographically homogeneous setting. Women in British territories benefited from a universal education system and gained opportunities for paid employment. The French colonial practice in these domains centered around educating a small administrative elite and investing in the male employment-dominated infrastructure sector. Using a geographical regression discontinuity design, we show that women in former British territories are 36% more likely to be victims of domestic violence than those in former French territories. Among a broad set of possible channels of persistence, only one turns out statistically significant and quantitatively important: women in former British territories are 37% more likely to be in paid employment than their counterparts in former French areas. We demonstrate that the incidence of domestic violence in former British areas is not uniformly higher for reasons unrelated to this channel: the discontinuity for domestic violence is almost entirely explained by women who hold paid jobs and have partners who object spousal employment. These results are incompatible with household bargaining models that incorporate domestic violence but they are accommodated by theories of male backlash.

JEL-Codes: J120, J160, N370, Z130.

Keywords: colonization, female economic empowerment, intimate partner violence.

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1. Introduction

The advocacy for the economic empowerment of women, recognized as prerequisite for poverty reduction, economic growth, and the achievement of all the *Millennium Development Goals*, has gained significant momentum in recent years (United Nations [2005]; World Bank [2012]). However, what is often overlooked is that female economic empowerment is at its core about upending power relations between genders, which can have subtle and sometimes unanticipated effects on women, especially at the micro-level of the family.

A particular dimension of concern is intimate partner violence against women (henceforth, IPV), one of the most pervasive human rights violation of our time.[1] Theory offers two conflicting views. Household bargaining models predict that increased economic opportunities for women (e.g., better employment prospects, higher wages) reduce IPV by leveling the balance of power between partners (Aizer [2010]). However, it could also be, as suggested by theories of male backlash, that women's economic empowerment makes things worse—that when gender roles and power relations are redefined, men resort to violence to reinstate a culturally prescribed norm of male dominance and female dependence (Macmillan and Gartner [1999]).

For today's developed countries, the existing evidence compellingly supports the predictions of household bargaining models. At a descriptive level, there is a negative correlation between female employment, one proxy measure of women's economic participation, and IPV both across US states and European countries (see Figure 1, panels (a) and (b)). Several well-identified studies confirm this picture. For example, Aizer's [2010] research using Californian data shows that decreases in the gender wage gap reduce IPV. In a similar vein, Anderberg *et al.* [2016] provide evidence for the UK that a fall in female unemployment, relative to male unemployment, reduces IPV in much the same way as a decrease in the gender wage gap. Taken together, this suggests that, in developed countries, improving women's economic opportunities can be a catalyst for domestic violence to change for the better.

Intuitively appealing as this conclusion may be, it is far from clear whether it carries

[1] Worldwide, 30% of all ever-partnered women are estimated to have experienced IPV during their lifetime (Devries *et al.* [2013]), and as many as 38% of all murders of women are committed by intimate partners (World Health Organization [2013]). At the victim level, IPV often has severe negative impacts on women's physical and mental health in the short- and long-term. At the societal level, the costs of IPV include, *inter alia*, direct medical costs, lost productivity, and lost earnings over women's lifetimes. For 2010, the total global cost of IPV against women has been estimated at $4.4 trillion, corresponding to 5.2% of the world's GDP (Fearon and Hoeffler [2014]).

over to less- and least-developed countries. The situation in sub-Saharan Africa, inhabited by over 10% of the world's population, is a particular case in point. Panel (c) of Figure 1, based on data from the Demographic and Health Surveys, shows a strong positive correlation between female employment and IPV across all surveyed countries in sub-Saharan Africa. Although nothing causal can be read into this correlation pattern, it his hard to reconcile with the notion that female economic empowerment, here access to jobs, translates into less violence against women, as it does in developed countries; it moreover suggests the need to develop a thorough understanding, in the context of low-income countries, of how policies and institutions that promote women's economic empowerment affect IPV in the long-term.

In this paper, we take a first step in this direction by exploiting a natural experiment of history in Cameroon. At the end of World War I, after three decades as a German colony, the western territories of today's Cameroon were divided between France and the United Kingdom under a League of Nations mandate. The French and British territories were delimited by an arbitrary border, drawn up in Europe, that cut across politically, economically, demographically and geographically homogeneous regions. For more than four decades, Britain and France governed their respective territories as colonies. Historical records provide evidence that French and British colonial practices affected women on the two sides of the border in significantly different ways. Several British colonial policies opened up new educational and occupational opportunities for women. For example, girls benefited from a universal education system, and women gained opportunities to earn cash wages in the export-oriented agriculture sector, under the same conditions as their male counterparts. In contrast, the French colonial practice in these domains centered around educating a small administrative elite and investing in the male employment-dominated infrastructure sector, to build railways and roads. In 1961, the political evolution of Cameroon culminated in the reunification of its divided colonies into an independent state.

Based on this setting, our aim is to explore a two-part hypothesis. First, we conjecture that the divergent opportunities that opened up for women when Cameroon was split into a French and a British colony had a long-term impact on female participation in activities outside the household, especially in the labor market, that persists until today. Second, if the first part of the hypothesis is answered in the positive, Cameroon's colonial past should continue to influence women's treatment within the household today, with the direction of any such potential effect shedding light on competing theories of domestic violence.

We address this hypothesis recursively. In a first analytical step, we use the historical Anglo-French border in today's Cameroon in a spatial regression discontinuity (RD) design to identify the long-term effect of British versus French colonization on contemporary levels of IPV. Our analysis draws upon two repeated cross-sections (2004, 2011) of the Cameroon Demographic and Health Survey (DHS), which contains geo-located household survey data and a domestic violence module, completed by one randomly selected woman per surveyed household. Because validity of our spatial RD design rests on continuity of all factors besides treatment at the historical Anglo-French border, we match ethnic groups in the DHS with information on ancestral anthropological and cultural group characteristics from Murdock's Ethnographic Atlas. Specification checks show that these ancestral characteristics, some of which have been shown to correlate with current levels of IPV (Alesina *et al.* [2016]), do not vary across the historical Anglo-French border. We also provide evidence suggesting that selective migration across the treatment threshold poses no threat to identification.

Using the RD design on the IPV data, we estimate that women on the British side of the historical border face a 10 percentage points higher risk of (past year) spousal violence than their counterparts on the French side. This effect is not only precisely estimated but also large in magnitude; it compares with a mean prevalence of IPV of 28% throughout the region examined. When we use as dependent variable a measure that counts the number of violent episodes to which a woman has been subjected in the past year, we find that women on the British side of the border report 0.30 more violent episodes than those on French side. This compares with a region-wide average of 0.58 violent episodes per woman. The magnitude and precision of these estimates are robust to several alternative specifications.

In a second analytical step, we examine channels of persistence. Specifically, we ask whether there remains a persistent impact of the historical Anglo-French border on known determinants of domestic violence today. To that end, we consider a broad set of individual- and household-level factors that the literature highlights as potentially important drivers of IPV: male employment, female employment, women's control over household resources, education, household wealth, practice of polygamy, number of children, male alcohol consumption, and exposure to conflict. Our RD results show that all of these factors vary smoothly at the historical Anglo-French border, with one stark exception: female employment. In particular, we find that women on the British side of the border have a 24 percentage points higher propensity to be in paid employment than their counterparts on the French side. Just as the border effect on IPV, this is a large effect

considering that the mean female paid employment rate throughout the region examined is 62%.

Although among various competing channels of persistence a border discontinuity only exists for female (paid) employment, it is possible that it is unrelated to the corresponding discontinuity for IPV. In other words, arguing for a connection between the two discontinuities may suffer from an ecological fallacy problem: the partition of Cameroon and its later reunification induced a multiplicity of treatments; besides its impact on women's economic opportunities, the identity of the colonizer has likely affected many dimensions of life in Cameroon, some of which might be relevant for domestic violence independently of women' economic opportunities. For example, the colonizers may have brought with them different cultural norms about the acceptability of violence against women or institutional features more or less conducive for women's bargaining power.

Our main point is not to dispute this multiplicity of treatments, but to argue that female employment is the main channel through which the British colonizer effect on IPV persists. To rule out that this argument suffers from ecological fallacy, we exploit that our data allows us to observe women's IPV and employment outcomes jointly. Thus, we are able to use the RD design for a decomposition of the border discontinuity for IPV, one which centers around a categorical variable that captures four possible "states" a woman can be in: (i) domestic violence=1 $\wedge$ paid employment=1; (ii) domestic violence=1 $\wedge$ paid employment=0; (iii) domestic violence=0 $\wedge$ paid employment=1; and (iv) domestic violence=0 $\wedge$ paid employment=0. We find that the border discontinuity for IPV is entirely explained by women in paid employment: compared to women on the French side of the historical border, those on the British side are 14 percentage points more likely to hold a paid job and to be, at the same time, victims of IPV; by contrast, women on the French side of the border are more likely to be outside paid employment and to experience, at the same time, domestic violence. We consider this as evidence against the possibility that IPV is uniformly higher in British areas for reasons unrelated to women's employment.

Last, we recognize that the findings from our decomposition analysis do not necessarily warrant an interpretation based on male backlash. Indeed, the results would also be consistent with the possibility that the partners of women who hold paid jobs use violence instrumentally to extract resources from them (Anderberg and Rainer [2013]). In order to provide direct evidence on the notion of male backlash in our context, we examine women's exposure to IPV in connection with coercive and controlling behavior on the part of their partners. Rich information in the DHS allows to consider two types of coercive control,

namely work-related (i.e., the husband opposes to his wife working) and non-work-related (e.g., accusations of infidelity, isolation from family members). Compared to women on the French side of the historical border, those on the British side are 11 percentage points more likely to experience IPV in connection with coercive behavior that involves the husband objecting to his wife working. Decomposing this discontinuity further, we find that 80% of it is explained by women who hold paid jobs. By contrast, IPV in connection with non-work-related coercive behavior occurs, if anything, more frequently in formerly French areas.

Taken together, the British colonizer effect on IPV, the results on potential channels, and the individual-level links between IPV, female paid employment and male controlling behavior shed light on competing theories of domestic violence. In particular, the results are incompatible with economic theories of household bargaining that explain better outcomes for women inside the household with better female opportunities in the outside labor market; they are, however, naturally accommodated by theories of male backlash, i.e., by the idea that men might resort to violence when their partners' outside options improve in order to reinstate a culture of male authority and control over women. From a policy perspective, one might read our results as a cautionary tale: in low-income country settings, it would be too quick to equate increased female opportunities in the labor market with universally better outcomes for women, especially inside households. For this to materialize, enforceable laws that offer women direct legal protection from IPV and/or the opportunity to divorce from abusive partners would seem a (so far often not existing) precondition.

To our knowledge, we are the first to exploit Africa's colonial past to examine the long-term impact of women's economic empowerment on domestic violence. As such, our work builds upon and connects three distinct areas of inquiry: a growing literature in economics on the causes of IPV, work on female empowerment and changes in family outcomes, and a large body of research on the legacy of colonialism. Let us first synthesize the domestic violence literature. For high-income countries, the risk of IPV has been linked to gender-specific labor market conditions (Aizer [2010], Anderberg *et al.* [2016], Tur-Prats [2017]), to laws regulating IPV and divorce (Stevenson and Wolfers [2006], Aizer and Dal Bó [2009], Iyengar [2009]), and to unexpected emotional cues (Card and Dahl [2011]). For middle- and low-income countries, the literature is more complex and highlights the following drivers of IPV: ancient economic and cultural factors in Africa (Alesina *et al.* [2016]); population sex ratios and property rights in India (Amaral and Bhalotra [2017], Amaral [2017]); cash-transfers targeted at women in Latin America (Bobonis *et al.* [2013], Hidrobo

et al. [2016]); and male alcohol consumption and divorce laws in Mexico (Angelucci [2008], García-Ramos [2017]).

A number of papers have studied the extent to which female empowerment translates into changes in family outcomes. Female empowerment, according to some definitions, encompasses economic, political, legal and social empowerment. Two important dimensions of women's economic empowerment are education and opportunities for paid employment. There is evidence for Indonesia that families have fewer children when differences in schooling between husbands and wives decrease (Breierova and Duflo [2004]). If women have a preference for fewer children than their male partners, as many surveys suggest they do, this could be interpreted as reflecting an improved intra-household bargaining position of women. A small set of papers provides well-identified evidence that increased opportunities for women in the labor market improve women's outcomes in the long-term: it has decreased the number of "missing girls" in rural China (Qian [2008]) and improved girls' access to education in India (Munshi and Rosenzweig [2006]). An excellent survey of these and related studies is contained in Duflo [2012].

There is now a body of research, too large to review here but synthesized by Nunn [2014b], examining how critical events in history, and subsequent institutional paths, matter for current economic development. Our paper relates to a subset of this literature that explores the long-term impact of Europe's colonization of Africa, including the role of investments in education and religious missions (Bertocchi and Canova [2002], Huillery [2009], Nunn [2010], Cogneau and Moradi [2014]). A study that is close in spirit to ours is Anderson [2018], who examines differences in female HIV rates between common law sub-Saharan African countries and civil law ones. Two papers in the literature exploit, as we do, the Anglo-French division of Cameroon after WWI. Lee and Schultz [2012] study its impact on household wealth, while Dupraz [2017] focuses on education. Although these authors exploit the same setting as we do, their empirical approach and the questions they address differ markedly from ours. Most importantly, what is missing in these studies is the recognition that French and British colonial practices affected mainly women in significantly different ways, especially their education and employment opportunities. Indeed, as a by-product of our main findings, we will show that the effects uncovered by Lee and Schultz [2012] and Dupraz [2017]—a positive long-run British colonizer effect on household wealth and education—is largely explained by female educational and labor market outcomes. As such, we believe that the historical partition of Cameroon offers a fairly unique setting to study the long-term impact of female economic empowerment on intra-household outcomes. An important methodological antecedent to our setup is

Dell's [2010] study of Peru's mining *mita*, which set the standard for the use of border discontinuity designs in historical settings.

In the next section, we provide background on the history of Cameroon. Section III describes the data sources we use. Section IV explains our estimation strategy and provides specification checks. Section V tests the long-term effect of British versus French colonization on contemporary levels of IPV and probes the robustness of the findings. Section VI examines channels of persistence. Section VII concludes.

2. Historical Background

The boundaries of today's Cameroon are the result of a sequence of historical events that originated in 1884, when Germany established the protectorate of Kamerun. In addition to the lands of today's Cameroon, German dominations included also portions of Nigeria and Chad. In 1911, these territories were enlarged to the East and to the South, to incorporate the regions of Neukamerun (Figure 2). The German presence in Cameroon saw the construction of roads and railway lines, and the introduction of a system of forced labor to recruit the necessary manpower for these projects (Le Vine [1964], p. 104).

With the outbreak of World War I, the Allies invaded German territories in Africa. Cameroon was first provisionally partitioned into two parts by the so-called Picot line, which was decided upon when the British representative Lancelot Oliphant asked the French representative George Picot to draw a line on the map of Kamerun during a meeting in London in February 1916 (Yearwood [1993], p. 225). This provisional arrangement was then ratified at the end of the war in 1919, during the Paris Peace Conference. As part of the Treaty of Versailles, the League of Nations assigned to Britain and France a mandate to govern the newly divided territories. The provisional Picot line—with only minor changes—became the international boundary between the French dominated Cameroun in the East and the British Cameroons in the West, the latter divided into Southern and Northern Cameroons respectively (Figure 2, top right map). In addition to the fortuitous historical circumstance that saw the territories of former Kamerun partitioned, it was also apparent to many officials at the time that the boundary that cut through Cameroon was arbitrary in nature; one particularly poignant comment read:

> *"The boundaries of the zones [...] are haphazard and, as a permanent arrangement, would be quite intolerable. They cut across tribal and administrative divisions, take no account of economic conditions, and are in any way objectionable."*—Lord Alfred Milner, British Colonial Secretary, 1918-1919 (cited

in Louis [1967] and Lee and Schultz [2012])

Figure 4 further supports this view: the colonial border cut through both agro-ecological zones and pre-colonial ethnic settlements. A post-independence glance at the partition of Cameroon well summarizes the subsequent four decades of history:

> *"Arbitrarily sundered into three parts, the territory lost whatever unity it had achieved during the [German] protectorate. The two Cameroons under separate administrations moved off in different directions, propelled by the force of colonial policy often diametrically opposed to one another. The artificial bisection of the territory created the reality of two distinctly different Cameroons, with different social, economic, and political traditions."*— (Le Vine [1964], p. 35)

Cameroun gained independence from France in January 1960, and became the Cameroun Republic under President Ahidjo. In 1961, a plebiscite took place in North and South British Cameroons in order to establish whether the areas would join Nigeria or the newly-created Cameroonian Republic. While voters in Northern Cameroons opted for being annexed to Nigeria, Southern Cameroons joined the French part with a majority of around 70% of votes (Le Vine [1964] p. 212). In 1972, the federal system characterizing the new republic was abolished in favor of the United Republic of Cameroon.

We now describe a spectrum of colonial policies that characterized the British and the French Cameroons in the almost 42 years of colonial partition. There are various dimensions along which these two colonial administrations differed. We focus on three important ones: the institutional and legal setting, the education system, and the labor market. Our focus lies on how Anglo-French differences in these spheres affected the position of women in society.

2.1. Institutional Setting

From the institutional viewpoint, the British administration was characterized by the practice of indirect colonial rule, which allowed the incorporation of native chiefs into the local political system. As highlighted in Fonchingong and Fonjong [2003], this practice encouraged general activism of natives in public life, and boosted development also via an increased active cooperation of women in local initiatives. Female participation in political life, already observed during the 1955 United Nations Visiting Mission (United Nations Trusteeship Council [1956], p.139), was formalized by the Southern Cameroons Electoral

Regulations in 1957, which stated that "*[women] may vote and stand as candidates for election under the same conditions as men.*" (Government of the United Kingdom [1958b], par. 635 and 991). In addition to this, women were regarded as men in front of the law and were entitled to acquire and hold their own property, as prescribed in the Married Women's Property Acts introduced in the United Kingdom in 1882. More specifically, the colonial report to the league of Nations reads:

> *"A woman may sue and be sued in the courts as though she were a man, and a married woman is in this respect in the same position as a single woman. The status of single women has never been essentially different from that of men in any branch of the law of property. A married woman is capable of acquiring, holding, and disposing of by will or otherwise and real or personal property as if she were a single woman and any earnings and property acquired by her are her separate property."*—(Government of the United Kingdom [1958b], par. 643)

Finally, as it was the case already in their other colonies, the British implemented a legal system based on common law, which is still applied in the Anglophone regions of today's Cameroon and—compared to the civil law system of the French—has been linked to better government performance, higher public good provision, and more secure property rights (La Porta *et al.* [1999]). Despite this evidence, recent work of Anderson [2018] has highlighted how the British legal system has been unfavorable to women in sub-Saharan Africa, due to its weak marital property laws that continue to negatively affect female bargaining power within the household. In Section 6., we will show that this hypothesis is not supported in the specific context of Cameroon.

On the other side of the border, the French applied a system of direct rule based on the policy of assimilation, in turn guided by the mission to civilize Africans according to Western principles and institutions (Le Vine [1964], p. 91). This practice led to the gradual abolition of the traditional power of the chiefs, who were substituted with regional figures (*chef de region*) appointed by the French administrators based on their willingness to be subservient to the French authority. The 1922 French colonial report to the League of Nations (cited in Le Vine [1964], p. 95) reads: "*The regional chiefs, a creation of the French administration, have only the authority which is delegated to them; they have no power of their own*". As a consequence, the French areas were characterized by far less vigorous local institutions than the British ones: according to Lee and Schultz's [2012] contribution, this is one of the crucial factors underlying the wealth differential between

former British and French areas today.

The French implemented a civil law system, but combined with a practice of legal differentiation, which applied different policies and standards to Africans according to their advancement in the "evolution" towards the French ideal: until 1946, separate legal systems were assigned to *citoyens*, assimilated to European law, and to the so-called *sujets*, subject instead to native customary rules. Only *sujets* upgrading to Gallic standards via education or employment of European character could become *citoyens* (Le Vine [1964], p. 99).[2] As will be clear, the evolution to the privileged *citoyens* status was precluded to women, who faced restricted opportunities for formal employment and education. As such, women remained subject to local custom, which, despite allowing women to own their own property, granted them few rights and did not accord them an independent legal status (United Nations Trusteeship Council [1949], United Nations Trusteeship Council [1956]).

The limited regard towards female public and social participation persisted throughout the colonial period, and culminated in a recommendation from the Trustee Council of the League of Nations to the French administration to *"make efforts to improve the social status of women in the Territories*" (United Nations Trusteeship Council [1950a]).

2.2. Education

The two colonial powers markedly differed in the education systems they promoted. The British allowed English speaking Protestant missions to monopolize the supply of education. The French, parallel to predominantly Catholic mission schools, instituted a public system aimed merely at the education of a restricted elite of native young men, who would become functional to the colonial administration. In the early years, the primary concern is stressed in the 1923 French colonial report: "*The first official organization of formal education, aimed at meeting the urgent needs of teachers and local administrative staff, has reserved the greatest place for boys' instruction*" (Gouvernement Francais [1923], p.24). As the installation period elapsed, the French authorities acknowledged the necessity to engage in the education of women and established the so-called *écoles ménagères* (housekeeping schools). Education for girls took the restricted form of training within the boundaries of the domestic sphere:

> *"The practical purpose of teaching girls is to teach the pupil what, after mar-*

[2] According to Le Vine [1964], such practice was actually in place until 1952, when the forced labor system was officially abolished (see Section 2.3.).

riage, will be her duty as a mother [...]. We want to train housewives [...]. In a word, we propose to create the sense of a new home where the woman holds the place assigned to her by her family and social functions"—(Gouvernement Francais [1923], pp. 24-25)

This attitude towards female education—expressed by the French administration in the early years of domination—translated into low school attendance of girls throughout the colonial period. The United Nations Mission report after the visit to French Cameroon in 1952 highlights the following:

"The Mission [...] observed that the number of girls attending school was about 20 per cent of the total number of pupils in the Territory. The Mission [...] frequently took the occasion to stress the importance to the advancement of the Territory of educating girls. It hopes that the Administration will increase its efforts in this field as far as possible."—(United Nations Trusteeship Council [1954], par. 269-271)

Despite documented investments in the construction of schools in the four-year development plan between 1953-1956, and consequent increases in overall enrollment rates, the 1958 United Nations Visiting Mission fails to report a remarkable positive impact on girls' education. After independence, Le Vine [1964] stresses how the lag in the education of women—in addition to low completion rates and the inadequacy of most teachers—are to be acknowledged as the limitations of the French education system in former East Cameroon.

A different picture emerges when turning to the Cameroonian regions colonized by the British. The task of educating the natives was assigned to missionary schools based on Protestant principles. Across sub-Saharan Africa, Nunn [2014a] has shown that Protestant missionary activities had a long-lasting impact on the education of girls, as opposed to Catholic schools, which exerted a greater impact on male education in the long run. Protestantism encouraged the establishment of universal education with respect to gender, based on Luther's idea that women had to be able to read the Bible in order to go to heaven. Increasing enrollment rates of girls in the British areas of Southern Cameroon are documented as follows:

"Enrollment figures indicate that the prejudice against the education of girls is being rapidly overcome. One Mission has reported the significant fact that

enrollment of girls in the highest primary class has increased by 66 percent during the past 3 years, which points to the fact that parents are now prepared to keep girls at school for at least the full primary course [...]. One Voluntary Agency reports that in some classes in mixed schools the girls outnumbered the boys."—(Government of the United Kingdom [1958b], par. 641)

Similarly to the French case, the domestic aspect of education for girls was also present in British schools, but more in the form of a specialization within a unique curriculum:

"*There are no differences between the education of girls and that of boys, except that the girls often take Domestic Science instead of Rural Science [...]. In nearly all schools boys and girls are taught together in all classes*"—(Government of the United Kingdom [1958b], par. 641)

2.3. Employment Opportunities

Finally, let us consider the divergent labor policies in place under the two colonial administrations. After the partition of Cameroon at the end of World War I, the British abolished the German practice of forced labor, and introduced cash wages. Plantation labor opened up unprecedented employment opportunities for the local population, and in particular for women. The British imported their expertise in tea cultivation from their Asian colonies, along with the respective employment customs:

"The then expatriate managers were hardly familiar with gender roles and relations in Africa. However, they were often acquainted with, and had been employed on, tea estates in India and Sri Lanka, where plucking was done mainly by women. If women in Assam were plucking tea, why could women in Cameroon not do so? Due to the high employment rate of women on tea estates in Asian countries and elsewhere, tea plucking had to a large extent come to be identified as women's work"—(Konings [2012])

The increased participation of women in the labor market is documented in the British colonial report of 1958, which highlights the newly gained opportunities for women to earn cash wages under the same conditions as their male counterparts (Government of the United Kingdom [1958b], par. 637). This fact, together with women's ability to hold their earned income separately from their husbands, led the British colonial administration

to diagnose a trend towards an increasing independence of women in Southern Cameroon (Government of the United Kingdom [1958b], par. 637).

In order to efficiently manage plantation labor, the British administration established the Cameroon Development Corporation in 1947. During colonial times, the Corporation employed more than half of wage earners in Southern Cameroons (Government of the United Kingdom [1958b], par. 650). It continued to exist also after independence, specializing in the production of tea, palm products, bananas, cocoa and rubber for export purposes. Nowadays, it constitutes the second largest employer after the state of Cameroon. A section on the employment of women in the 1958 report confirms the attractiveness of the new salaried employment opportunities:

> *"For some time the Corporation has been encouraging the employment of women in all grades, and following the higher rates paid to women labor during October, 1957, an increasing number of women have come forward for field duties, some as casual labor, others accepting full-time employment."* — (Government of the United Kingdom [1958a], p. 14)

Finally, the colonial report documents the engagement of women in professional activities also in the public sector and in commercial firms (Government of the United Kingdom [1958b], par. 638).

On the other hand, the French administration kept the extractive labor system introduced by the Germans. Under the form of a *prestation*, it consisted in the obligation to supply ten days of free labor a year for Cameroonian men of *sujet* status. The main goal of the French administration in the first decade of domination was to recruit the necessary workforce to implement large scale infrastructure projects. Workers were recruited by the local administration, and had to endure harsh conditions (Le Vine [1964], pp. 104-110). Despite the exemption of women and children from the *prestation* (Gouvernement Francais [1927], p. 86), instances were reported of coercive use of women for porterage and of children for roadwork (Le Vine [1964], p. 110). The forced labor system did not completely disappear from French Cameroon until 1952.[3] As documented by a strand of the economics literature for a variety of contexts, such extractive labor practices are likely to have persistent effects in the long run, not only on labor market-related outcomes, but also on economic development in general (Dell [2010], Lowes and Montero [2017]).

[3]However, according to Le Vine [1964], even after the official abolition of forced labor and of legal differentiation between *cytoyens* and *sujets* at the beginning of the Fifties, *"the old system continued to color relations between the indigenous elites in areas where former extractions had been heaviest"*.

As far as women's participation in the labor market is concerned, the early colonial reports document that "*le travail féminin n'existe pas*" (Gouvernement Francais [1922], p. 25), i.e. female labor does not exist. Even in the export-oriented agricultural sector, among the salaried labor force, no employment of women was taking place.[4] For the subsequent decades of the colonization period, historical records do not document any effort of the French administration towards the creation of opportunities for paid employment comparable to those experienced by Cameroonian women on the British side of the boundary. This is consistent with the aforementioned purpose of the education policy of the French administration, i.e. the relegation of women to the domestic sphere.

When tackling the issue of low productivity of indigenous labor in French territories—reported by the United Nations Visiting Mission in 1952—the administration adopted measures aimed at increasing workers' technical abilities, but mainly in male-dominated sectors. Vocational training, instituted by the French colonial government, by Catholic missions and private enterprises, was centered around the activities of masonry, carpentry, joinery and brick work (United Nations Trusteeship Council [1954], par. 227-228). Moreover, during the decade between 1946 and 1957, French Cameroon benefited from large investment flows from the metropole, financed via the FIDES investment fund (*Fonds d'Investissements pour le Développement Économique et Social des territoires d'Outre-Mer*) and structured into two development plans. The main purpose of the latter was to expand and improve the existing infrastructure put into force in the early colonial period. The recruitment of the necessary (male) labor force partly occurred, at least until 1952, under the coercive means described above. The plan materialized with the construction of new roads, bridges and dams, and the improvement of the railway network and port facilities (United Nations Trusteeship Council [1958]).

There are no official statistics on female employment during colonial times. However, post-independence data show how a large gap in female employment in former British and French dominated zones existed when first official statistics became available in the 1970s. Figure 3 displays male and female employment rates in the former British and French territories respectively, using data from the 1976 Cameroonian census.[5] As can be seen in Panel (a), male employment rates did not differ across the two regions. However,

[4] "*Il est apparu que dans toutes les régions exportatrices de produits où l'on constate un emploi de main-d'oeuvre salariée, l'emploi des femmes pour un travail agricole ou industriel était nul.*"—"*It appeared that in all regions exporting products with a hired labor force there was no employment of women for agricultural or industrial work.*" (Gouvernement Francais [1923], p.14)

[5] For consistency with the rest of the analysis, we restrict the sample to individuals aged 15-49 residing in an *arrondissement* (the lowest administrative unit in Cameroon) whose capital lies within 40 km of the Anglo-French border.

when turning to female employment, the picture changes significantly: women in former British areas were 7 percentage points (or 18%) more likely to be employed, compared to women in the neighboring territories subjected to French domination. This is in line with the just-described historical evidence that women under the British colonial rule faced better employment opportunities than those under French rule. Panels (b) and (c) of Figure 3 further split the sample into two age cohorts: (i) individuals aged 31-49, i.e. those who were 15 or older before independence and thus entered the labor market during colonial times; (ii) individuals aged 15-30, a younger generation that entered the labor force after Cameroon's reunification. An interesting pattern emerges: while no large differences in male employment arise when observing the two age groups separately, the employment gap favoring women in former British areas amplifies (i.e. almost doubles) when moving from one age cohort (31-49) to the next (15-30). This already suggests that the divergent colonial practices could have produced persistent labor market effects for women that are passed down through generations. We will verify this conjecture by showing that the cross-border difference in female employment still persists today, in almost the same magnitude as in the 1970s.

3. Data

Our empirical analysis of domestic violence in Cameroon builds upon two recent waves of the Cameroon Demographic and Health Survey (CDHS 2004 and CDHS 2011). These two waves not only contain rich socio-economic individual- and household-level information, but also a domestic violence module which was administered to one randomly selected woman per surveyed household. Measuring a sensitive issue like domestic violence poses important challenges. Administrative records (i.e. from the police, health centers or social services) are likely to underestimate the phenomenon, given the exposure costs imposed by reporting spousal abuse to the authorities (Agüero and Frisancho [2017]). Palermo *et al.* [2013] show that, in 12 sub-Saharan African countries where the DHS survey was implemented, only 6.2% of women who experienced violence reported it to formal services. This evidence points to the need to rely on self-reported measures of IPV such as those provided by the Demographic and Health Survey.

The advantage of DHS data is at least twofold. First, the domestic violence module meets the requirements set out by the World Health Organization to (i) guarantee confidentiality and (ii) attenuate the phenomenon of underreporting (World Health Organization [2001]). Rigorous privacy and ethical protocols are applied during the interview:

fieldworkers are required to guarantee a safe environment, making sure that women are alone when asked questions about IPV. Second, and equally importantly, its design restricts the room for discretion of the respondent to a minimum by avoiding generic and subjective questions such as "Have you ever experienced domestic violence?" and rather asking about specific acts of violence. These questions include: *Did your husband/partner: (i) push you, shake you, or throw something at you? (ii) slap you or twist your arm? (iii) punch you with his fist or with something that could hurt you? (iv) kick you or drag you? (v) try to strangle you or burn you? (vi) physically force you into unwanted sexual intercourse?*. This procedure reflects a revised version of the Conflict Tactics Scales as first advocated by sociologists (Straus [1979], Straus *et al.* [1996]), and is considered by many social scientists as the gold standard for survey data collection on domestic violence.

We construct two measures of IPV. The first is a dummy variable indicating whether the respondent experienced any of the just listed forms of physical or sexual violence by her partner during the 12 months leading up to the interview. The second is an index ranging between 0 and 6 and counting the different types of physical and/or sexual aggression to which the respondent was exposed in the past year. To investigate potential channels of persistence, we exploit a rich set of individual- and household-level information, including female and male employment, a household wealth index, years of education, fertility, female bargaining power, ownership of assets, male alcohol consumption and polygamy.

For our estimation strategy, which rests on a geographic regression discontinuity design, it is of paramount importance to geo-locate all surveyed households. In the DHS, the location of households from the same enumeration area (henceforth, cluster)—typically villages in rural areas or neighborhoods in cities—are aggregated to a single point coordinate. To ensure respondent confidentiality, this coordinate is then randomly displaced through use of the Global Positioning System (GPS) coordinate displacement process: urban clusters are displaced a distance up to two kilometers (0-2 km) and rural clusters are displaced a distance up to five kilometers (0-5 km), with a further, randomly-selected 1% (every 100th) of rural clusters displaced a distance up to 10 kilometers (0-10 km).[6]

For identification checks—in particular, to probe the the randomness of the historical Anglo-French border—we exploit the Ethnographic Atlas (EA) coded by George Peter Murdock [1967] and updated by Nunn and Wantchekon [2011]. The EA provides rich

[6]Since this displacement procedure is random, it induces classical measurement error which would bias our estimates towards zero. Moreover, since our treatment variable—a dummy variable indicating whether a cluster was formerly subject to the British or French colonial regime—is constructed based on the cluster's province and not its coordinate, we do not run into the problem of assigning the "'wrong" colonial regime to it. We will be more specific about this below.

ethnographic information for 1,265 societies around the world as of the end of the 19th century. For Africa, the EA sheds light on socio-economic conditions, settlement patterns and family arrangements prior to European colonization. In our setting, this information provides a unique opportunity to examine the extent to which ethnic groups inhabiting areas located very close to the colonial boundary are similar in terms of ancestral characteristics (e.g., use of the plough, endogamy, marriage payments, polygamy) that have been shown to correlate with contemporary levels of violence (Alesina *et al.* [2013]). We also check for geographic similarities on the two sides of the historical border by exploiting information on agro-ecological zones as classified by the Food and Agriculture Organization (FAO) and collected in a finely spaced grid by the International Food Policy Research Institute (IFPRI) [2015]. Last, we exploit Nunn and Wantchekon's [2011] ethnicity-level data on trans-Atlantic slave shipments in the 19th century, which have been shown to be a historical determinant of long-run development, trust, and female participation in the labor market (Nunn [2008], Nunn and Wantchekon [2011], Teso [2018]).

Finally, we will investigate the role of conflict in explaining differences in IPV across the historical border by using the UCDP Georeferenced Event Dataset (UCDP GED), which collects events related to organized violence (state-based conflict, non-state conflict and one-sided violence) and locates them in both time and space, between 1989 and 2016 (Sundberg and Melander [2013]).[7]

4. Estimation Strategy and Specification Checks

4.1. Estimation

We exploit the former Anglo-French border as a discontinuity to identify the reduced-form effect of British versus French colonial rule on contemporaneous levels of IPV. Specifically, we compare outcomes for Cameroonian women located close to the British side of the boundary to their counterparts on the French side in a spatial regression discontinuity framework. Our basic regression follows Dell [2010] and Dell *et al.* [2018] and takes the form:

$$\text{DV}_{icbt} = \alpha + \gamma \text{British}_c + f(\text{geographic location}_c) + X'_{ic}\beta + \Phi_b + \tau_t + \epsilon_{icbt} \qquad (1)$$

where DV_{icbt} is the outcome variable of interest for woman i in cluster (village) c along segment b of the boundary in survey year t. British_c is an indicator equal to one if the observation i belongs to a village which was subject to the British rule until 1961

[7]Dataset available at: http://ucdp.uu.se/downloads/.

and equal to zero if subject to French colonization;[8] $f(\text{geographic location}_c)$ is the RD polynomial, which controls for smooth functions of geographic location of village c; it can be specified in two ways: either multi-dimensionally, with latitude and longitude; or with distance to the boundary, a more parsimonious mono-dimensional measure. We present results for distance to the boundary, latitude and longitude, or both as running variables. Following a recent contribution by Gelman and Imbens [2017], we use a local linear polynomial for our baseline specification, and show robustness for polynomials of higher orders (quadratic and cubic). X'_{ic} is a vector of geographic covariates containing distance to the capital and distance to Douala, the two largest urban areas. We control for Φ_b, a vector of border segment fixed effects, obtained by splitting the boundary in four segments of equal length. This rules out the possibility that treated units located at the extreme north are compared to counterparts at the extreme south. Finally, τ_t includes survey year fixed effects. Standard errors are clustered at the DHS survey cluster level.

We run Equation (1) for a restricted sample of individuals located close to the historical Anglo-French colonial boundary. As pointed out in Dell *et al.* [2018], the literature has not yet proposed an optimal bandwidth algorithm for regression discontinuity designs in setting like ours, where the running variable is multidimensional. In this paper, we do exactly that—we calculate the data-driven optimal bandwidth as proposed by Calonico *et al.* [2017] using distance to the boundary as running variable and including the above-described covariates. The optimal bandwidth varies according to the outcome considered and the options specified. We choose a window of 40 km around the boundary for our preferred specification.[9] Reassuringly, our main results are robust to numerous alternative bandwidth choices.

4.2. Specification Checks

The coefficient γ can be given a causal interpretation if two identifying assumptions are satisfied. The first assumption (i.e., continuity) requires that all factors besides exposure to different colonial regimes vary smoothly at the historical border. In other words, our estimates would be biased if there were pre-existing cross-border differences in dimensions relevant to our outcome before Cameroon was split into a British and a French part. More specifically, a major concern would be if areas on the two sides of the border differed sys-

[8] As mentioned above, to construct this indicator, we refrain from using latitude and longitude, as they are characterized by measurement error due to random displacement. Instead, we construct based on a variable indicating the province. This ensures that no cluster is erroneously located on either side of the border.

[9] Figure 5 provides an illustration of DHS clusters within 40km of the colonial border.

tematically in geographical features and ethnic characteristics that influence the incidence of IPV in the long-term.

Clearly, the continuity assumption is not entirely testable, but we are able to assess balance in baseline characteristics along two arguably important dimensions: geography and ethnicity.[10] Regarding geography, we first of all test whether areas around the colonial boundary are comparable in terms of climate and altitude. For a measure of climate, we match the DHS clusters to the FAO agro-ecological zones classification shown in Figure 4, and then construct a binary variable indicating whether a cluster is located in a grid cell classified as cool/humid. Our elevation measure, which is included in the DHS, captures each cluster's altitude in meters. Columns (1) and (2) in Table 1 report coefficients obtained by running Equation 1 with climate and altitude—all measured at the DHS cluster level—as outcome variables. The small magnitude and insignificance of the estimates suggest no discontinuity of geographic features at the colonial border. We also explore an additional dimension potentially relevant for our outcome, namely the degree of urbanization in regions very close to the boundary. Column (4) displays $\hat{\gamma}$ for a binary variable taking the value one if the cluster is located in an area classified as urban in the DHS, and zero if in a rural area. There is no discontinuity in urbanization at the border.

A large body of literature has investigated the role of ancestral ethnic features in shaping contemporary outcomes, in particular related to development (Michalopoulos *et al.* [2016], Michalopoulos and Papaioannou [2013]). A recent contribution to this literature has brought to light how some of these dimensions matter also for contemporary domestic violence. In particular, Alesina *et al.* [2016] show that part of the variation in IPV across sub-Saharan Africa can be explained by differential pre-colonial ethnic practices such as dependence on female- versus male-dominated economic activities (gathering versus fishing), marriage practices (endogamy versus exogamy, brideprice versus dowry, polygamy), and the use of the plough. If ethnic groups in areas close to the boundary already differed across these dimensions before the arrival of Europeans, the coefficient γ would be biased: it would capture the effect of pre-colonial ethnic characteristics rather than the impact of colonialism. As part of our test for the continuity assumption, we investigate balance of the just-described covariates in regions close to the colonial border using Murdock's Ethnographic Atlas. Figure 6 shows that, throughout the region examined (and therefore across the colonial border), ethnic groups share the same ancestral characteristics in domains such as dependence on gathering, the use of the plough, the prevalence of

[10] Nunn [2014b] well summarizes the literature highlighting the role of geography in shaping long-term outcomes, especially economic development.

brideprices, and the practice of polygamy. However, in terms of ethnic groups' reliance on fishing and the practice of endogamy, there is some variation across the region we examine. If this variation was systematically related to the colonial border, this would pose a threat to identification. In order to check this possibility, we match individuals with the Ethnographic Atlas via their clusters' latitude and longitude.[11] Columns (5) and (6) in Table 1 show that ethnic groups' dependence on fishing and practice of endogamy varies smoothly at the colonial boundary, i.e., that ethnic groups on the two sides of the border had balanced pre-colonial characteristics in these two domains.

The historical exposure to slave trade is an important pre-colonial predictor of long-run development (Nunn [2008]) and contemporary trust levels (Nunn and Wantchekon [2011]). Moreover, Teso [2018] highlights how African women belonging to ethnic groups which were more affected by the trans-Atlantic slave trade are more likely to participate in the labor market today. The demographic shock—which generated a shortage of men and consequently a skewed sex ratio favoring women—altered the division of labor in society and shaped more equal gender-roles attitudes. We exploit ethnicity-level data on the number of slaves exported between 1400 and 1900 (i.e. before the Anglo-French division of Cameroon) to assess whether ethnicities located on the British side of the border were differently affected by the slave trade compared to groups on the French side. If this was the case, part of our results could be explained by such pre-colonial difference. We construct a measure of exposure to the trans-Atlantic slave trade following Nunn and Wantchekon [2011], and we merge it to our sample via latitude and longitude. Column (6) of Table 1 reports the coefficient obtained by estimating Equation 1 with the following outcome variable: the natural logarithm of one plus slave exports normalized by ethnic land area. We do not find evidence of a significant discontinuity in exposure to the trans-Atlantic slave trade for the two regions around the Anglo-French border.

The second identifying assumption is no selective sorting around the treatment threshold. This would be violated if, for example, the Anglo-French division of Cameroon induced violence-prone individuals or ethnic groups to migrate from the French to the British part or *vice versa*. In this case, Cameroon's colonial past might still influence contemporary levels of IPV, but migration would be a main channel of persistence. That said, there is little evidence for selective migration from French to British Cameroon or *vice versa*. First, historical accounts suggest that the Anglo-French border acted as physical barrier to migration. In a letter about the first United Nations visit to British and

[11] Moscona *et al.* [2018] show how Murdock's ethnic settlements are still reliable in describing ethnic affiliations today.

French Cameroon in 1950, this was described as follows:

> *"A certain number of complaints were submitted to the Mission concerning the difficulties caused to the populations by the existence of a frontier and customs barriers between the two Cameroons. [...] The Mission heard more specific complaints regarding [...] the impossibility, for certain families, clans and tribes, of maintaining normal relations between their members settled on both sides of the frontier. [...] Some say that the partition of the Cameroons into two zones is an arbitrary measure taken without the consent of the people and which denies them the relations they should have with the inhabitants of the neighboring territories."*— United Nations Trusteeship Council [1950b]

Second, in Figure 7, we provide some evidence on the extent of selective migration by ethnic groups from and to areas close to the historical colonial border. To that end, we merge ethnic groups in the Ethnographic Atlas with self-reported ethnic affiliations in the DHS (following the procedure suggested in Alesina *et al.* [2016]), and aggregate the data at the cluster level by assigning the ethnicity of the majority group to each cluster.[12] Based on this, we compare contemporaneous ethnic settlement patterns to pre-colonial ones by projecting the location of ethnic clusters in the DHS onto the Ethnographic Atlas. This descriptive exercise reveals that ethnic settlements have remained fairly stable over time and that there has been no systematic movement of entire ethnic groups across the border, in neither direction.

5. Long-Run Effects on Intimate Partner Violence

This section examines the long-run impact of British versus French colonization on contemporary levels of IPV. Table 2 reports estimates of Equation 1, for women located within 40 kilometers of the former Anglo-French colonial boundary. In Panel A, we use as dependent variable a dummy indicating whether a woman has been exposed to physical and/or sexual violence in the year preceding the survey. In Panel B, the dependent variable is the sum of different types of physical and/or sexual aggression to which a woman has been exposed. We display results using a naive OLS regression without the RD polynomial in Column (1), a local linear polynomial in distance to border in Column (2), a local linear polynomial in latitude and longitude in Column (3), and local linear polynomials in both in Column (4). All specifications control for survey year fixed effects, border segment fixed effects, distance to the capital, and distance to Douala.

[12] We are successful for 41% of the 40km-sample clusters, and for 9 ethnic groups in the Atlas.

Across all four specifications in Panel A, we find that women on the British side of the historical border face a 10-11 percentage points higher risk of (past year) spousal violence than their counterparts on the French side. This is effect is not only precisely estimated but also large in magnitude; it compares with a mean prevalence of IPV of 28% throughout the region examined. The findings in Panel B show that women on the British side of the border are also exposed to higher-intensity IPV than those of on the French side: throughout the region examined, women report, on average, 0.58 different types of physical and/or sexual aggression by their partner; for those located on the British side of the border, this intensity index is more than 50% higher. Appendix Figure A-1 provides the graphical analogue to these results; it shows standard two-dimensional RD plots using distance to the border as the running variable. Taken together, the results suggest that the two colonial regimes in Cameroon continue to exert an influence on intra-household outcomes decades after their disappearance.

Appendix Table A-1 shows the results of several robustness checks. Columns (1) to (5) allow for different specifications of the RD polynomial. For both dependent variables in Panels A and B, the estimated coefficient remains stable and significant for an interacted local linear polynomial in distance [Column (1)], and for the following higher orders of the RD polynomial: quadratic in distance [Column (2)] and latitude-longitude [Column (4)], and cubic in distance [Column (3)] and latitude-longitude [Column (5)].[13] As can be seen, more flexible specifications of the RD polynomial lead to an amplification of the effect on IPV: being on the British side of the historical border raises the probability of being victim of spousal abuse by up to 15 percentage points, and leads to an increase in the number of different violent acts by up to 0.35.

Column (6) shows estimates based on the data-driven bandwidth algorithm proposed by Calonico *et al.* [2017]; it uses distance to the boundary as the running variable, and includes all controls used in our main specifications. The estimated optimal bandwidth is 37.1 kilometers for the binary violence indicator and 43.7 kilometers for the violence index. This specification weights the observations using a triangular kernel—assigning higher weight to individuals located very close to the boundary—and adopts an interacted linear polynomial in distance to the boundary. For both outcomes of interest, coefficients are significant and similar in magnitude compared that those from our baseline specification.

Column (7) shows the results of a Donut exercise, which excludes observations within 5 kilometers to the boundary. This robustness check is important to verify that the results

[13] When denoting latitude by y and longitude by x, a quadratic RD polynomial takes the form: $x+y+x^2+y^2+xy$. A cubic polynomial in latitude and longitude equals: $x+y+x^2+y^2+x^3+y^3+x^2y+xy^2$.

are not driven by systematic differences between border populations and populations residing further away from it. We find that all results remain robust. The coefficients remain significant and stable also when excluding clusters located in Douala, the economic capital of Cameroon [Column (8)].

Although we have shown that regions on the two sides of the border display balanced geographic and ethnic baseline characteristics (see Table 1), we nevertheless control for these characteristics in an alternative specification. Controlling for altitude, climate, a dummy for urban clusters, ancestral dependence on fishing, endogamous practices, and exposure to slave trade increases the magnitude of our estimates, as Column (9) shows. We reach the same conclusion by adding these controls one-by-one, or by controlling separately for geographic features and ancestral characteristics.

Finally, columns (10) to (13) show the results of falsification checks which shift the border by 40 kilometers, both west and east. Irrespective of whether we adopt distance to the border or latitude-longitude as the running variable, this exercise does not reveal any placebo-boundary effect for neither of the two IPV measures.

Appendix Figure A-2 probes the robustness of our estimates to different choices of bandwidth, controlling for linear and quadratic polynomials in latitude-longitude, distance to the boundary or both. The graphs depict coefficients and relative confidence intervals resulting from estimating Equation 1 for samples falling into various windows around the border, by 1-kilometer increments. Overall, coefficients remain relatively stable in magnitude and significance for bandwidths ranging between 10 and 100 kilometers.[14]

6. Channels

In this section we examine channels of persistence. More specifically, we explore a broad set of known determinants of IPV and ask whether the historical Anglo-French boundary still exerts an influence on them. To this end, we exploit rich information in the DHS on women interviewed for the domestic violence module, their partners, and their households. In addition, we use geo-referenced UCDP GED conflict data.

In Table 3, we re-estimate Equation 1 using as dependent variables the following: male employment, female employment, women working for cash, women's participation in household decisions over purchases, household wealth, female education, female ownership of property, number of children in the household, male alcohol consumption, practice of

[14]Former British regions extend up to approximately 100 kilometers from the colonial boundary. The latter window is thus the natural upper bound for this exercise.

polygamy, and exposure to regional conflict. In a nutshell, among this broad set of possible channels of persistence, only four intertwined factors turn out statistically significant and quantitatively important: female employment (in turn, paid in cash), control over household resources, female ownership of property and household wealth.

Let us consider the results one-by-one. First, a recent literature has linked the risk of IPV to gender-specific labor market conditions (Aizer [2010], Anderberg *et al.* [2016], Tur-Prats [2017]). This literature has mainly focused on rich country settings, and has shown that better opportunities for women in the labor market translate into a reduction of IPV. Motivated by this literature, we now assess whether there is a discontinuity in today's male and female employment at the historical Anglo-French border. We believe that this is informative for two reasons. On the one hand, it sheds light on one possible mechanism for the positive British colonizer effect on contemporary spousal abuse. On the other hand, it directly tells us whether the different colonial regimes had long-lasting impacts on gender-specific labor market outcomes, as conjectured at the outset. Panel A shows that male employment varies smoothly at the historical Anglo-French border.[15] However, a strikingly different picture emerges when looking at female employment in Panel B: there is a statistically significant and quantitatively important long-run colonizer effect on the probability that partnered women engage in economic activities. Specifically, women in former British territories are 16 percentage points more likely to be employed than their counterparts in former French territories. This estimate, which remains stable across different specifications of the RD polynomial, is large in magnitude: it compares with a mean female employment rate of 73%.

In the context of sub-Saharan Africa, it is important to distinguish whether individuals work for cash, are being paid in kind or not paid at all. The results in Panel C show that women in former British territories are over 38% more likely than their formerly French counterparts to be paid in cash. Access to paid employment—and therefore to financial resources—translates also into higher control of women over household assets: as displayed in Panel D, women on the British side of the border are 15-19 percentage points more likely to have a say when it comes to taking decisions over household purchases (at a region-wide mean of 71%).

In Panel E, we examine the British colonizer effect on household wealth, using a composite measure of a household's ownership of selected assets. Households in former British

[15]This measure of male employment naturally refers to a specific subset of the male population, i.e. male partners of eligible women interviewed for the domestic violence module: this explains the large percentage of employed men in the sample.

areas display, on average, a 0.4 higher wealth index (at a region-wide mean of 3.49) as compared to their formerly French counterparts. This result is consistent with the findings of Lee and Schultz [2012] and suggests that areas colonized by the British enjoy higher standards of living today.[16] Despite the limitations of our wealth index as a measure of economic development, it is interesting to relate this finding to the significantly higher female employment rate in former British areas: better labor market opportunities for women seem to go hand in hand with higher living standards, measured at the household level. This finding directly speaks to the close relationship between female empowerment and economic development highlighted in Duflo [2012].

Another potential determinant of IPV is women's education (Erten and Keskin [2018]), which determines their earnings potential. This, in turn, has possible implications for who's got the say in household decisions and, therefore, for domestic violence (Hidrobo *et al.* [2016]). As mentioned above, education is one of the spheres in which British and French colonial practices had very different implications for women: those in British territories benefited from a universal education system, while French policies centered around educating a small administrative elite. Are the legacies of the two colonial education systems still visible today? Our point estimates in Panel F suggests that this question can be answered in the positive: throughout the region examined, women report on average 7.2 years of schooling; for those on the British side of the historical border, years of schooling are between five to seven months higher. Note, however, that the estimates are not entirely robust across the three specifications, and therefore have to be interpreted with some caution. No remarkable discontinuities arise when considering men's education: the sign of $\hat{\gamma}$, though positive, is statistically insignificant.[17]

The higher prevalence of IPV in former British territories could be explained by the hypothesis formulated in Anderson [2018]. In sub-Saharan Africa, British common law has been associated with weaker female marital property rights, which in turn decrease women's bargaining power and ability to negotiate safe sex practices, generating higher vulnerability to HIV. As explained in Section 2.1., today's Cameroon preserves elements of the colonial common law system in former British territories, while French civil law applies in the rest of the country.[18] In our context, if these persisting legal differences

[16] As shown in Figure A-3, right column, coefficients for the wealth index are less robust to the choice of bandwidth and RD polynomial compared to the female employment coefficients. However, a positive and significant effect is identifiable for various windows around the boundary.

[17] Two points are worth stressing here. Our results on education confirm Dupraz's [2017] finding of a positive long-run British colonizer effect on education. Additionally, they indicate that this effect is largely driven by female educational outcomes.

[18] However, it is worth stressing how customary (uncodified) law—already in place in pre-colonial

were the main channel underlying our IPV results through the mechanisms proposed by Anderson [2018], we would observe less property ownership—and, as a consequence, lower bargaining power—among women in former British areas. This evidence would change the interpretation of our results and favor the view of household bargaining models. We show that this is not the case. Consistently with larger employment opportunities and access to financial resources for women on the British side of the border, the latter are more likely to participate in household's decisions over purchases[19] [Panel D] and to own assets such as land or a house[20] [Panel (G)], when compared to their formerly French counterparts. These results show that existing differences in the legal system between former British and French Cameroon are not to be considered the main channel through which the colonizer effect on IPV persists.

In Panel H, we examine fertility as a potential channel of persistence. The reproductive role of women is crucial in traditional African societies.[21] Therefore, this dimension has to be taken into account in any attempt to explain IPV on the African continent. In particular, if women have a preference for fewer children than their male partners, and an improved intra-household bargaining position causes this preference to be more strongly reflected in couples' actual fertility choices, then this may lead to a male backlash effect. The coefficients in Panel G indicate that fertility is unlikely to be a main channel for the IPV effects we have uncovered: the estimates are relatively small in magnitude and far from being statistically significant.[22]

Many studies across different disciplines have acknowledged a close association between male alcohol abuse and violent behavior.[23] Using Mexican data, Angelucci [2008] has shown that a cash transfer increasing women's income led to a reduction in their partners' alcohol abuse and to lower levels of IPV. Thus, we now ask whether former French and

Cameroon—still exerts non-negligible influence on matters related to marriage. Moreover, customary tribunals, which are usually more accessible than statutory courts, are today legally recognized in both Anglophone and Francophone regions (Hallward-Driemeier and Hasan [2012], p. 105).

[19]The same holds for a more general measure of bargaining power, which incorporates, besides household purchases, also decisions on own health care, visits to family or relatives, and food to be cooked each day.

[20]The variable in Table 3 refers to ownership of either an unbuilt piece of land or a house with title. The same results hold when considering also property ownership without title. As in Anderson [2018], we also restrict the sample to women that are divorced or widowed. The resulting sample is small and the coefficients are imprecisely estimated, but the sign remains unchanged.

[21]It has been widely explored in the work of Lesthaeghe [1989], according to whom "The reproductive function itself is so crucial [...] that the status of adulthood for women is almost completely contingent on motherhood and the last installments of bridewealth payments are often transferred upon the birth of the first child only."

[22]The outcome variable referred to in Table 3 is the number of living children. However, the same conclusion holds when considering the number of children ever born.

[23]A review of the evidence from psychiatry and criminology can be found in Leonard [2005].

British areas differ in the extent to which men abusively consume alcohol. Panel I shows that husbands in former British areas do not display a higher propensity of alcohol abuse than their formerly French counterparts.[24]

The position and the role of women within households is inextricably linked to marriage structure, which may therefore also determine the risk of IPV (Tur-Prats [2017], Koenig *et al.* [2003]). One particular case in point is polygamy, which is widespread in sub-Saharan Africa and in Cameroon, and has been shown to affect important economic outcomes (Tertilt [2005]). Moreover, the prevalence of polygamy was reduced by colonial practices in general and by missionary education in particular (Fenske [2015]). In light of this evidence, we examine whether British versus French colonization had a long-lasting impact on the prevalence of polygamy, which according to Murdock's Ethnographic Atlas was customary among the groups inhabiting the geographical area we study (Figure 6). The results displayed in Panel J show that 16.5% of all interviewed women are in a polygamous union, and that the prevalence of polygamy is somewhat higher on the British side of the boundary. However, the estimated border discontinuities are not statistically significant at conventional levels.

Exposure to armed conflict in the early years of life has important consequences in adulthood. As far as domestic violence is concerned, La Mattina and Shemyakina [2017] show how sub-Saharan African women who experienced conflicts in their childhood are more likely to report and accept abuse perpetrated by their partners, due to reduced educational attainment. On the other hand, civil conflict lowers women's decision making via a change in the marriage market's sex ratio, leading to increased spousal abuse in post-genocide Rwanda (La Mattina [2017]). Thus, we now probe whether women on the British side of the historical border have witnessed more conflict events as compared to their French counterparts. This exercise draws upon geo-referenced UCDP GED conflict data. We construct a binary measure of conflict exposure, which assesses whether there was any conflict event in the woman's *arrondissement*[25] of residence since 1980. Panel K shows that the regions on the two sides of the former Anglo-French boundary were relatively peaceful, with an average of only 0.15 conflict events. Moreover, we do not detect a border discontinuity in this variable.[26] We conclude that the colonial division

[24]Note that he outcome variable in Table 3 takes the value one when women report their husband getting drunk often. We also obtain insignificant estimates when allowing the dependent variable to mirror the frequency of drinking episodes, taking either value 0 (never), 1 (only sometimes) or 2 (often).

[25]*Arrondissements* are the lowest administrative units in Cameroon.

[26]In non-reported regression, we also used a fatality count measure as dependent variable, and found no evidence of a border discontinuity. For this specification, we cluster our standard errors at the district level, but we obtain similarly insignificant results when clustering at the *arrondissement* level. Moreover,

did not have a long-lasting impact on conflict, and that the latter is an unlikely driver of the British colonizer effect on IPV.

7. Linking the Border Discontinuities for IPV and Female (Paid) Employment and Testing for Male Backlash

Among the potential channels of persistence we were able to assess empirically, we found a strong British colonizer effect on female (paid) employment. Our estimates for female employment are highly robust to the choice of bandwidth (see Appendix Figure A-3, left column). Moreover, they pass all the robustness and placebo checks that we have conducted for our domestic violence outcomes (see Appendix Table A-2). To us, this suggests that the British colonial regime had a long-lasting impact on female economic empowerment.

However, whether the British colonizer effects on IPV and female (paid) employment are related is *a priori* unclear. In particular, arguing for a connection between the two discontinuities may suffer from an ecology fallacy problem since the partition of Cameroon and its later reunification induced a multiplicity of treatments. As a consequence, although women in formerly British areas face better employment opportunities than those in French areas, the incidence of IPV may be uniformly higher in British areas irrespective of whether women hold paid jobs or not. One underlying reason for this could be that, beyond its impact on women's economic empowerment, the British rule also saw the introduction of a cultural norm that violence against women is acceptable.

To be clear, we are not disputing the multiplicity of treatments, but the argument we aim to make is that female paid employment is the key channel through which the British colonizer effect on IPV persists. To rule out that this argument suffers from ecological fallacy, we exploit that our data allows us to observe women's IPV and employment outcomes jointly. Thus, we are able to provide a decomposition of the border discontinuity for IPV. For this decomposition, we use the RD design on a joint outcome variable which interacts the dummies for any violence in the past year (IPV) and paid employment (PE)

we conducted the same exercise using DHS clusters as units of observation rather than individuals. Again, no significant effect is recorded.

and therefore captures four possible "states" a woman can be in:

$$\text{Joint Outcome} = \begin{cases} 1 & \text{if IPV=1} \wedge \text{PE=1;} \\ 2 & \text{if IPV=1} \wedge \text{PE=0;} \\ 3 & \text{if IPV=0} \wedge \text{PE=1;} \\ 4 & \text{if IPV=0} \wedge \text{PE=0.} \end{cases}$$

Figure 8 shows predicted probabilities (henceforth, Pr) from a multinomial logit estimation of Equation 1. The results in panels (a) and (b) decompose the border discontinuity for IPV into two components:

$$\begin{aligned} [Pr_{British}(IPV = 1) - Pr_{French}(IPV = 1)] = \\ \underbrace{[Pr_{British}(IPV = 1 \wedge PE = 1) - Pr_{French}(IPV = 1 \wedge PE = 1)]}_{\text{IPV discontinuity among women in paid employment}} \\ + \underbrace{[Pr_{British}(IPV = 1 \wedge PE = 0) - Pr_{French}(IPV = 1 \wedge PE = 0)]}_{\text{IPV discontinuity among women outside paid employment}} \end{aligned}$$

We find that the border discontinuity for IPV (=10 to 11 percentage points, see Table 2) is entirely explained by women in paid employment. In fact, compared to women on the French side of the historical border, those on the British side are 14 percentage points more likely to hold a paid job and to be, at the same time, victims of IPV; by contrast, women on the French side of the border are 3 percentage points more likely to be outside paid employment and to experience, at the same time, domestic violence. We consider this as evidence against the possibility that IPV is uniformly higher in British areas for reasons unrelated to women's employment.

Notwithstanding these results, it is important to point out that they cannot (straightforwardly) be interpreted as evidence of male backlash. Such an explanation is based on the idea that: better employment opportunities ⇒ women work more ⇒ intra-household power relations are upend ⇒ male backlash. However, the results are also consistent with the possibility that the partners of women who hold paid jobs use violence instrumentally to extract resources from them (Anderberg and Rainer [2013]). In this case: better employment opportunities ⇒ women work more ⇒ incomes available to them increase ⇒ instrumental violence to extract resources. Finally, it is also possible that husbands use violence to "force" their partners to work more. In this case: better employment opportunities ⇒ instrumental violence to force female labor ⇒ women work more.

In order to provide direct evidence on the notion of male backlash in our context, we

exploit the fact that domestic violence is often accompanied by controlling and coercive behavior on the part of a partner. Crucially for our purpose, rich information in the DHS allows to consider two types of coercive control, namely work-related and non-work-related. Our idea is this: if male backlash is the explanation for the border discontinuity for IPV, we would expect it to be explained by domestic violence that occurs in connection with work-related coercive behavior on the part of a partner. By contrast, since domestic violence among women outside paid employment occurs, if anything, more frequently in formerly French areas, we would expect no pronounced border discontinuity for IPV that arises in connection with non-work-related coercive behavior.

To explore this idea, we first create a dummy variable for controlling behavior (CB) which equals one if a woman reports at least one of the following seven types of partner behavior: (i) husband is jealous if she talks to other men; (ii) husband accuses her of infidelity; (iii) husband does not permit her to meet her girl friends; (iv) husband tries to limit her contact with family; (v) husband insists on knowing where she is; (vi) husband doesn't trust her with money; and (vii) husband does not want her to work/to have a job. Second, we create a dummy for work-related coercive control (WRC) which equals one if a woman answers item (vii) in the positive, i.e., reports that her husband does not want her to work or to have job. Finally, we use the RD design on a the categorical variable *IPV-Control* (IPVC), which is defined as follows:

$$\text{IPVC} = \begin{cases} 1 & \text{if IPV=1} \wedge \text{CB=1} \wedge \text{WRC=1;} \\ 2 & \text{if IPV=1} \wedge \text{CB=1} \wedge \text{WRC=0;} \\ 3 & \text{if IPV=1} \wedge \text{CB=0;} \\ 4 & \text{if IPV=0} \wedge \text{CB=1} \wedge \text{WRC=1;} \\ 5 & \text{if IPV=0} \wedge \text{CB=1} \wedge \text{WRC=0;} \\ 6 & \text{if IPV=0} \wedge \text{CB=0.} \end{cases}$$

Figure 9 shows predicted probabilities from a multinomial logit estimation of Equation 1. The results in panels (a) to (c) decompose the border discontinuity for IPV into three components: one for IPV occuring in connection with coercive behavior that involves that husband objecting to his wife working, one for IPV in connection with non-work-related coercive partner behavior, and one for IPV in connection with no coercive behavior on the part of a partner. Consider first the results in panel (a). Compared to women on the French side of the historical border, those on the British side are 11 percentage points more likely to experience IPV in connection with coercive behavior that involves the husband objecting to his wife working. In Appendix Figure A-4, we decompose this discontinuity

further by women's employment status, and we find that more than 70% of it is explained by women who hold paid jobs. In stark contrast to panel (a), the results in panel (b) show that IPV in connection with non-work-related coercive behavior occurs, if anything, more frequently in formerly French areas. In panel (c), we see that on both sides of the historical border, the incidence of IPV among women whose partners show no coercive behavior is close to zero.

Squaring the results in panels (a) and (d) with those in (b) and (e) also yields interesting insights. Comparing panels (a) and (d), we observe that work-related coercive behavior on the part of a partner is associated with a high risk of IPV. For example, on the British side of the historical border, 27% of women are predicted to have partners who object to spousal employment, and roughly 60% of those are victims of domestic violence. In contrast, comparing panels (b) and (e), we find that the association between IPV and non-work-related coercive behavior is far less pronounced. For example, on the British side of the historical border, 63% of women are predicted to have partners who show some form of non-work-related coercive behavior, and 28% of those are victims of IPV.

Taken together, the decomposition analyses in this section indicate that the 10-11 percentage points border discontinuity for IPV is almost entirely explained by women who hold paid jobs and have partners who object to spousal employment. In contrast, we have found no significant IPV discontinuity among women outside paid employment nor one for domestic violence that arises in connection with non-work-related coercive partner behavior.

A final concern might be that the self-reporting of IPV is affected by women's empowerment and therefore by different colonial practices in the past. We believe this not to be a caveat in the interpretation of our results. As mentioned at the outset, the DHS uses rigorous ethical and privacy protocols which avoid generic and subjective questions such as "Have you ever experienced domestic violence?" and instead employs questions about specific episodes of violence. This ameliorates the concern that less-empowered (e.g., low-educated) women may not identify what they are subject to as violence since they consider it as the norm. Despite this, respondents may still perceive an exposure risk when asked directly about IPV episodes. Since the disutility costs associated with this are likely heterogeneous, truthful reporting of IPV may differ across more and less empowerment women. However, the direction of such reporting bias, if any, is far from clear. On one side, it could be argued that empowering women changes their attitudes to gender equality and, hence, increases the likelihood of reporting IPV in their daily lives. However, it is equally possible that empowered women—i.e., those who do not

fit the typical victim stereotype—face larger disutility of being exposed as victims and therefore underreport IPV. Agüero and Frisancho [2017] use an experimental approach based on indirect questioning techniques to assess the extent of truthful IPV-reporting in the DHS. They find no evidence of IPV-misreporting for low-educated women, but high-educated women appear to underreport IPV victimization. This suggests that, if anything, empowered women underreport IPV rather than being more daring to report it.[27]

8. Conclusion

It has been widely recognized for some time that women's economic empowerment and development are closely related. Some striking examples of the positives of empowerment are highlighted in the World Bank's 2012 World Development Report: equalizing access to productive resources between female and male farmers could increase agricultural output in developing countries by 2.5-4%, and eliminating barriers that prevent women from working in certain sectors or occupations could increase labor productivity by as much as 25% in some countries.

What has been much less emphasized is that women's economic empowerment is unlikely to come without unintended consequences. In particular, increased control over assets and/or access to financial resources can upend intra-household power relations and instigate backlash in the form of IPV. Descriptive evidence from many parts of the developing world shows that there is indeed a strong positive correlation between women's employment and domestic violence.

In this paper, we have made an attempt to unravel this correlation by exploiting a natural experiment of history: the partition of Cameroon into a British and a French colony. The two colonial regimes opened up divergent economic opportunities for women in an otherwise culturally and geographically homogeneous setting. In particular, women in British territories benefited from a universal education system and gained opportunities to earn cash wages under the same conditions as their male counterparts. In contrast, the French colonial practice in these domains centered around educating a small administra-

[27]Building on this finding, if IPV-reporting of empowered women is a threat to our interpretation of the results, we would expect a positive individual-level correlation between IPV and different measures of female empowerment. Multivariate regressions based on our estimation sample show this not to be the case. As could be expected given the results in this section, we find a positive correlation between a woman's experience of IPV and paid employment. However, there is a negative correlation between domestic violence and a woman's education. The latter correlation is inconsistent with the notion that IPV-reporting increases with a woman's empowerment.

tive elite and investing in the male employment-dominated infrastructure sector.

Our main finding shows that the British colonial rule has two legacies that are still visible today. On the one hand, it empowered women economically in terms of access to employment, being paid in cash wages, and control of household resources. On the other hand, it made women highly vulnerable to IPV. This result is incompatible with household bargaining models that incorporate domestic violence but is accommodated by theories of male backlash.

From a policy perspective, our results should not be read as challenging the much-discussed and well-justified case for women's economic empowerment. But there is a cautionary tale here. In our context, institutions that offered women new opportunities in the labor market brought with them substantial risk in the form of increased IPV. Thus, paradoxically, empowerment in the labor market and disempowerment at the micro-level of the family appear to be two sides of the same coin. To reduce male backlash as a by-product of economic empowerment, enforceable laws that offer women direct legal protection from domestic violence and the opportunity to divorce from abusive partners would seem of paramount importance.

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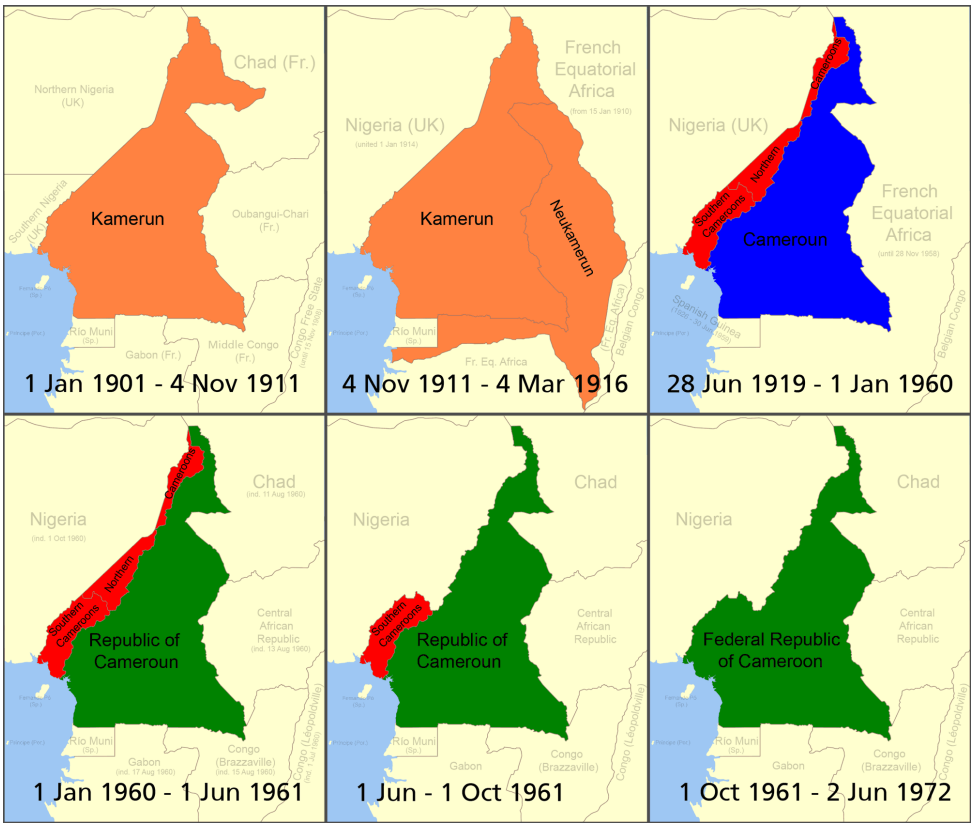
Figures and Tables

FIGURE 1: *Female Employment and IPV in the United States, Europe and sub-Saharan Africa*

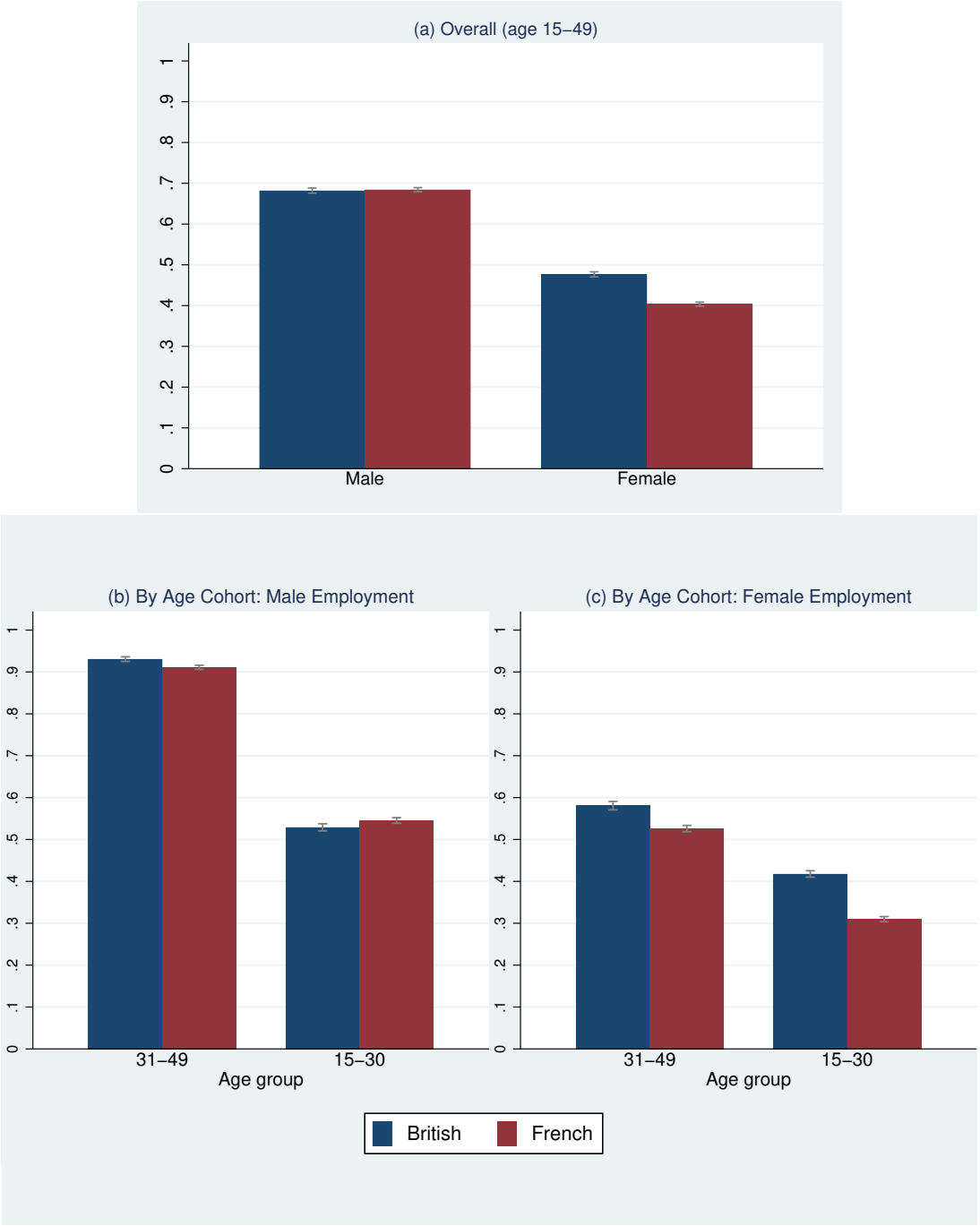
NOTES: Panel (a) combines prevalence estimates of domestic violence (including stalking) for selected US states between 2010 and 2012 for women aged 18 years and older (reported in Smith *et al.* [2017]) with official state-level employment rates from the US Bureau of Labor Statistics, averaged over the period 2010-2012. Panel (b) combines information from the FRA gender-based violence against women dataset, collected in 2012 for women aged 18 years and older, with official country-level employment rates from Eurostat for 2012. Panel (c) collapses individual-level data on IPV and employment for a sample of women aged 15-49 from all sub-Saharan countries surveyed by DHS.

FIGURE 2: *Evolution of Boundaries in Cameroon*



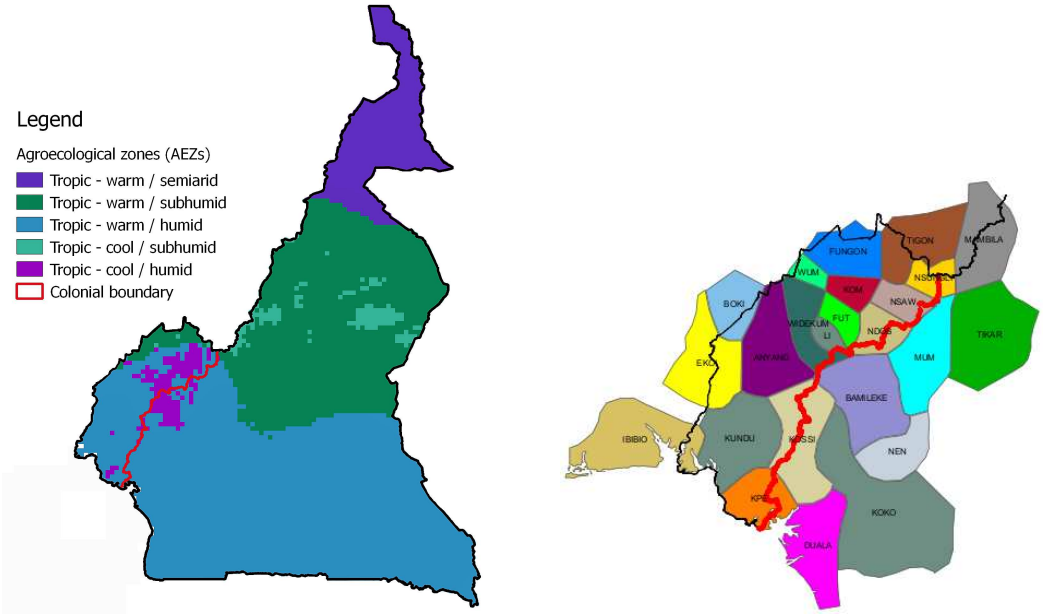
SOURCE: https://commons.wikimedia.org/wiki/File:Cameroon_boundary_changes.PNG

FIGURE 3: *Female and Male Employment in the 1976 Census*



NOTES: The graphs compare female and male employment rates in former British and French areas, using data from the 1976 Cameroonian census (the IPUMS-I 10% extract: https://international.ipums.org/international/). The sample includes individuals between 15 and 49 years of age, resident in an *arrondissement* (the lowest administrative unit in Cameroon) whose capital lies within 40 km of the Anglo-French border. Panel (a) reports overall employment rates by gender and by region of residence. The sample includes 63,090 women (39.8% on the British side) and 54,876 men (38.9% on the British side). Panels (b) and (c) report female and male employment rates separately for two age groups: between 31-49 years, i.e. comprising individuals that were 15 or older (and therefore entered the labor market) before independence; 15-30, i.e. comprising individuals that entered the labor market after independence. Sample sizes are as follows. Women 31-49: 25,539 (35.5% British); women 15-30: 37,551 (42.7% British); men 31-49: 20,860 (39.0% British); men 15-30: 34,016 (38.9 % British). The vertical light-gray lines represent 95% confidence intervals.

FIGURE 4: *Randomness of the Border with Respect to Agro-Ecological Zones and Existing Ethnic Settlements*



NOTES: The map on the left overlays the colonial border to the agro-ecological zones (AEZs) as classified by FAO and developed by the International Food Policy Institute (International Food Policy Research Institute (IFPRI) [2015]) for sub-Saharan Africa. Geographical locations falling under the same AEZ category are characterized by similar climatic characteristics in terms of rainfall and temperature, and therefore provide the same agricultural potential. The map on the right superimposes the colonial boundary with the ethnic pre-colonial settlements in Murdock [1967] using the dataset provided by Nunn and Wantchekon [2011].

FIGURE 5: *Study Region, DHS Clusters and Colonial Boundary*

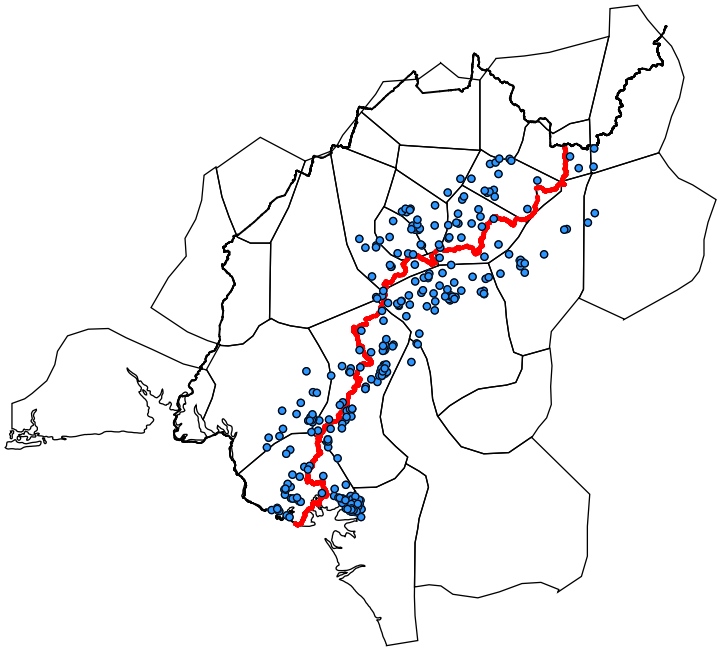
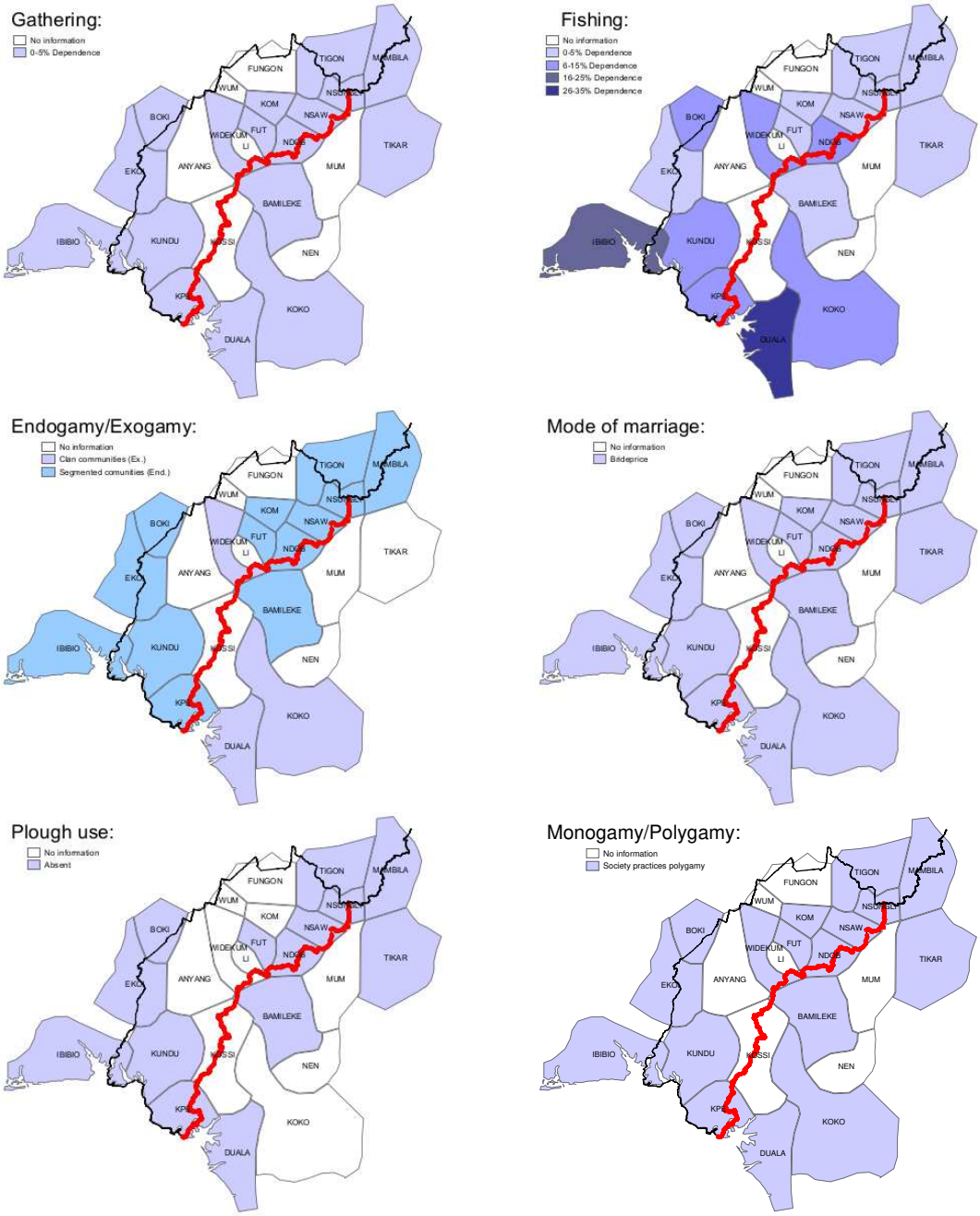
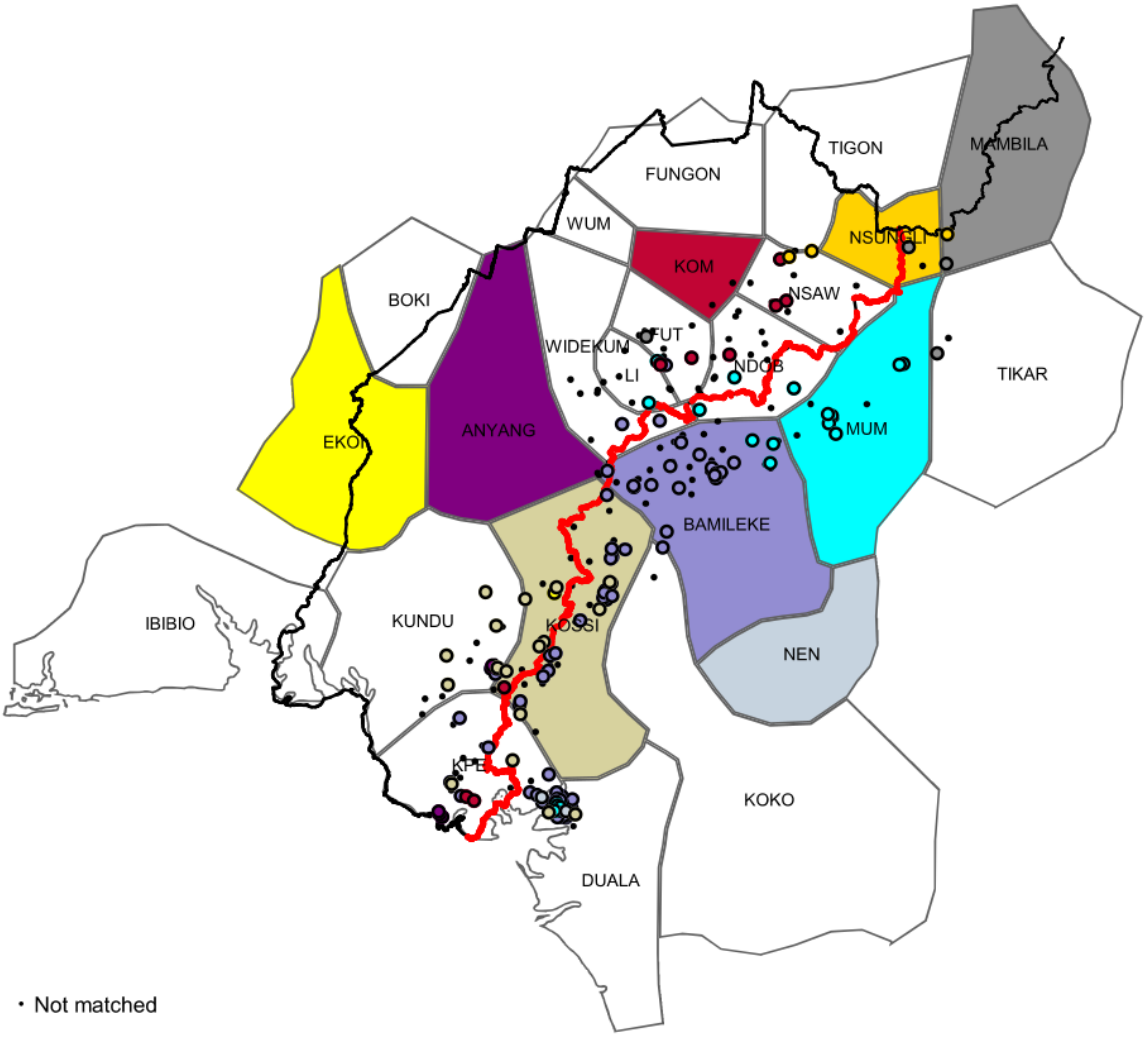


FIGURE 6: *Pre-Colonial Ethnic Characteristics*



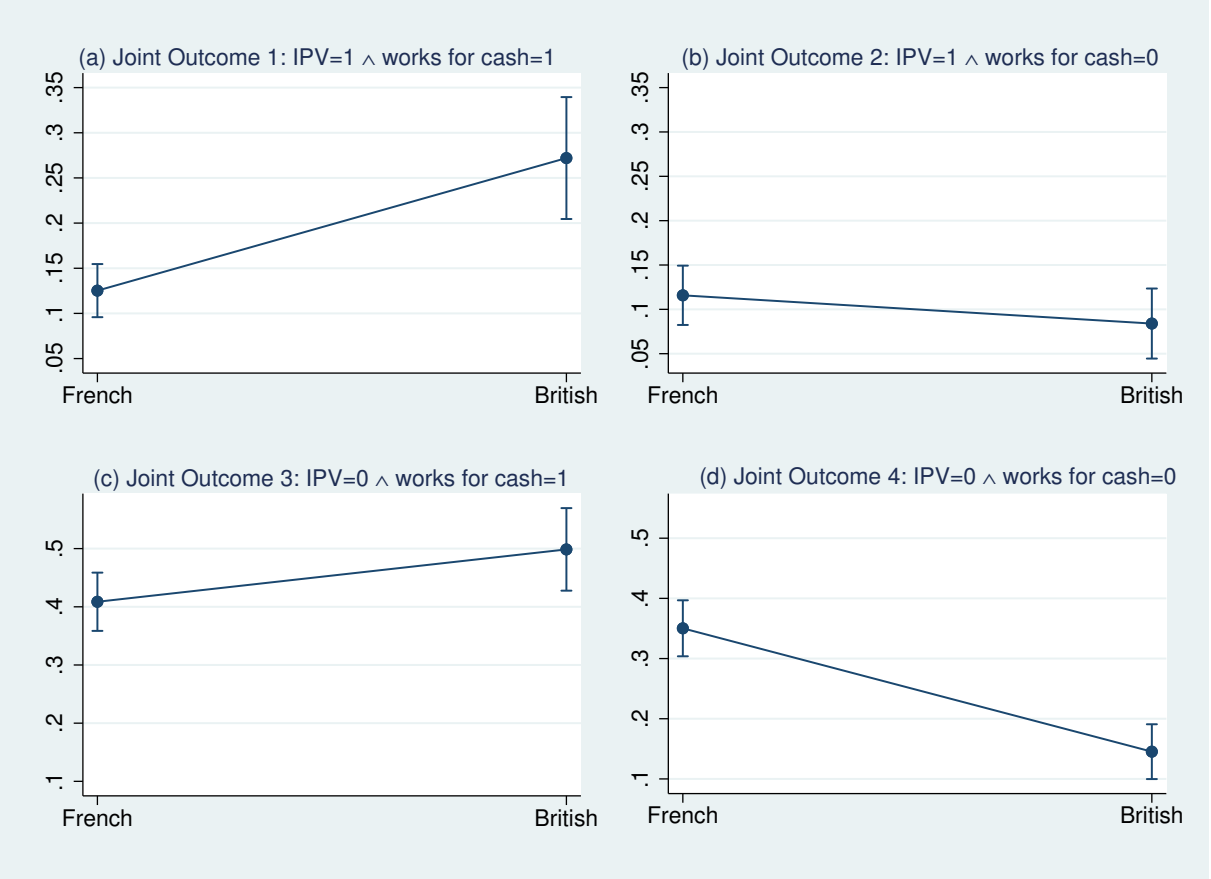
NOTES: The maps superimpose the colonial boundary (in red), nowadays borders (in black) with ethnic settlements in Murdock's Ethnographic Atlas (Murdock [1967]), in the version provided by (Nunn and Wantchekon [2011]). Each panel represents pre-colonial characteristics related to: dependence on gathering, dependence on fishing, the practice of endogamy, mode of marriage, the use of the plough and polygamy. Different colors denote different categories for every variable, described in legends specific to each panel. White-filled areas denote lack of information.

FIGURE 7: *Contemporaneous and Pre-colonial Settlements*



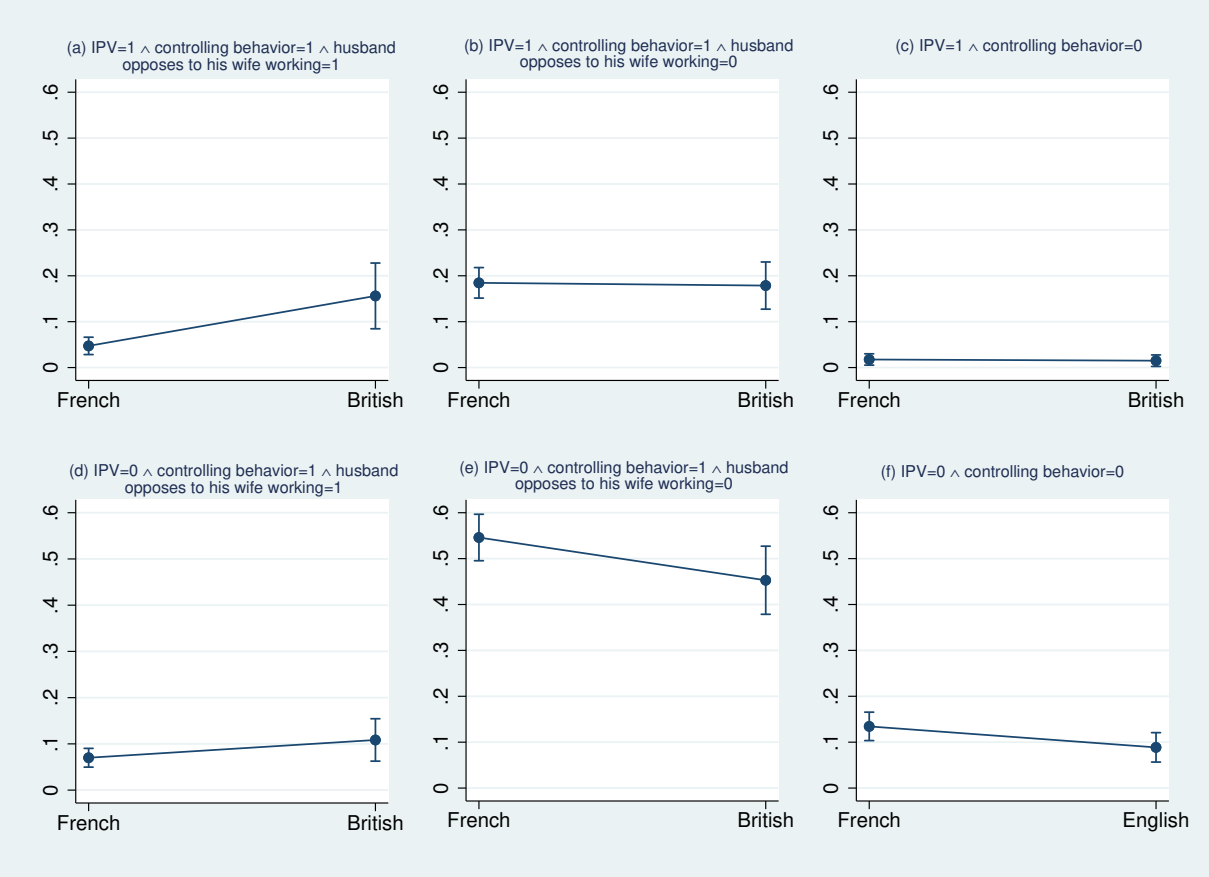
NOTES: The map superimposes DHS clusters with the Ethnographic Atlas, assigning to each cluster a different color according to the prevalent ethnicity inhabiting it. 41% of clusters were successfully assigned to a group in the Ethnographic Atlas: not merged clusters are depicted in black.

FIGURE 8: *Connecting Women's Experience of IPV to their Employment Outcomes: RD Analysis*



NOTES: Predicted probabilities from multinomial logit estimation of Equation (1). Sample restricted to a window of 40 kilometers around the boundary. Local linear polynomial in both distance to border and latitude and longitude. Controls for survey year fixed effects, border segment fixed effects, distance to the capital, and distance to Douala. Standard errors clustered by DHS survey cluster are reported in parentheses. *** (**) (*) indicates significance at the 1% (5%) (10%) level.

FIGURE 9: *Connecting Women's Experience of IPV to Coercive Behavior of their Partners: RD Analysis*



NOTES: Predicted probabilities from multinomial logit estimation of Equation (1). Sample restricted to a window of 40 kilometers around the boundary. Local linear polynomial in both distance to border and latitude and longitude. Controls for survey year fixed effects, border segment fixed effects, distance to the capital, and distance to Douala. Standard errors clustered by DHS survey cluster are reported in parentheses. *** (**) (*) indicates significance at the 1% (5%) (10%) level.

TABLE 1: *Balance Checks*

	Cool/ Humid (1)	Elevation (2)	Urban (3)	Dependence on Fishing (4)	Practice of Endogamy (5)	ln(1 + Slave Exports/Area) (6)
British ($\hat{\gamma}$)	-0.029	64.007	-0.067	0.051	0.121	-0.091
	(0.089)	(88.677)	(0.105)	(0.425)	(0.117)	(0.115)
Observations	2,030	2,030	2,030	1,539	1,526	2,030
Clusters	358	358	358	13	12	17
Mean	0.287	705.888	0.596	2.259	0.645	0.266

NOTES: The unit of analysis is the survey respondent. The sample includes individuals in villages located within 40 kilometers from the border. Cool/Humid denotes whether the respondent belongs to a cluster located in an AEZ classified as tropic - cool/humid in the International Food Policy Research Institute (IFPRI) [2015] classification. Elevation and urban are variables provided by DHS and measured at a cluster level. Dependence on fishing takes values between 1 and 10 and practice of endogamy is a binary variable. Both are taken from Murdock [1967] and are measured at the Murdock-ethnicity level. ln(1+Slave Exports/Area) is an ethnicity-level measure of the impact of the Atlantic slave trade in the 19th century, taken from Nunn and Wantchekon [2011]. Boundary segment fixed effects, distance to Douala and distance to the capital are present in all regressions. The estimated regressions use a linear polynomial in distance to the boundary as RD polynomial. Standard errors reported in parenthesis are clustered at the DHS-cluster level in columns (1) - (3) and at the ethnic-group level in columns (4) - (6). *** (**) (*) indicates significance at the 1% (5%) (10%) level.

TABLE 2: *Reduced-Form Effects of British Colonization versus French Colonization on Contemporaneous Levels of IPV*

		Linear polynomial in:		
	OLS	Distance to the boundary	Latitude and longitude	Dist., lat. and long.
	(1)	(2)	(3)	(4)
Panel A: Any physical violence last year				
British ($\hat{\gamma}$)	0.113***	0.116***	0.101**	0.102**
	(0.043)	(0.043)	(0.044)	(0.043)
Mean Dependent Variable	0.283	0.283	0.283	0.283
Panel B: Number of different violent acts				
British ($\hat{\gamma}$)	0.319***	0.326***	0.290**	0.295***
	(0.109)	(0.107)	(0.112)	(0.111)
Mean Dependent Variable	0.576	0.576	0.576	0.576
Observations	2,030	2,030	2,030	2,030
Clusters	358	358	358	358
Year fixed effect	Yes	Yes	Yes	Yes
Border fixed effects	Yes	Yes	Yes	Yes
Geographic controls	Yes	Yes	Yes	Yes

NOTES: OLS estimates of Equation (1) for a window of 40 kilometers around the boundary. Standard errors clustered by DHS survey cluster are reported in parentheses. Panel A reports coefficients for the binary variable; Panel B reports coefficients for a violence index ranging between 0 and 6. 38.08% of observations are located on the British side in all columns. Geographic controls include distance to the capital and distance to Douala. *** (**) (*) indicates significance at the 1% (5%) (10%) level.

TABLE 3: *Potential Channels of Persistence*

	A. Male Employment			B. Female Employment			C. Woman Works for Cash			D. Decision over Purchases			E. Household Wealth		
	Lat-Lon	Dist	Dist Lat-Lon	Lat-Lon	Dist	Dist Lat-Lon	Lat-Lon	Dist	Dist Lat-Lon	Lat-Lon	Dist	Dist Lat-Lon	Lat-Lon	Dist	Dist Lat-Lon
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
British ($\hat{\gamma}$)	-0.002	0.002	-0.003	0.161***	0.170***	0.161***	0.240***	0.232***	0.240***	0.148***	0.185***	0.185***	0.428**	0.365*	0.434**
	(0.013)	(0.007)	(0.013)	(0.054)	(0.053)	(0.055)	(0.059)	(0.059)	(0.059)	(0.053)	(0.057)	(0.055)	(0.215)	(0.188)	(0.205)
Mean	0.976	0.976	0.976	0.730	0.730	0.730	0.622	0.622	0.622	0.710	0.710	0.710	3.491	3.491	3.491
Obs	2,016	2,016	2,016	2,030	2,030	2,030	2,030	2,030	2,030	1,880	1,880	1,880	2,030	2,030	2,030
Clusters	358	358	358	358	358	358	358	358	358	358	358	358	358	358	358

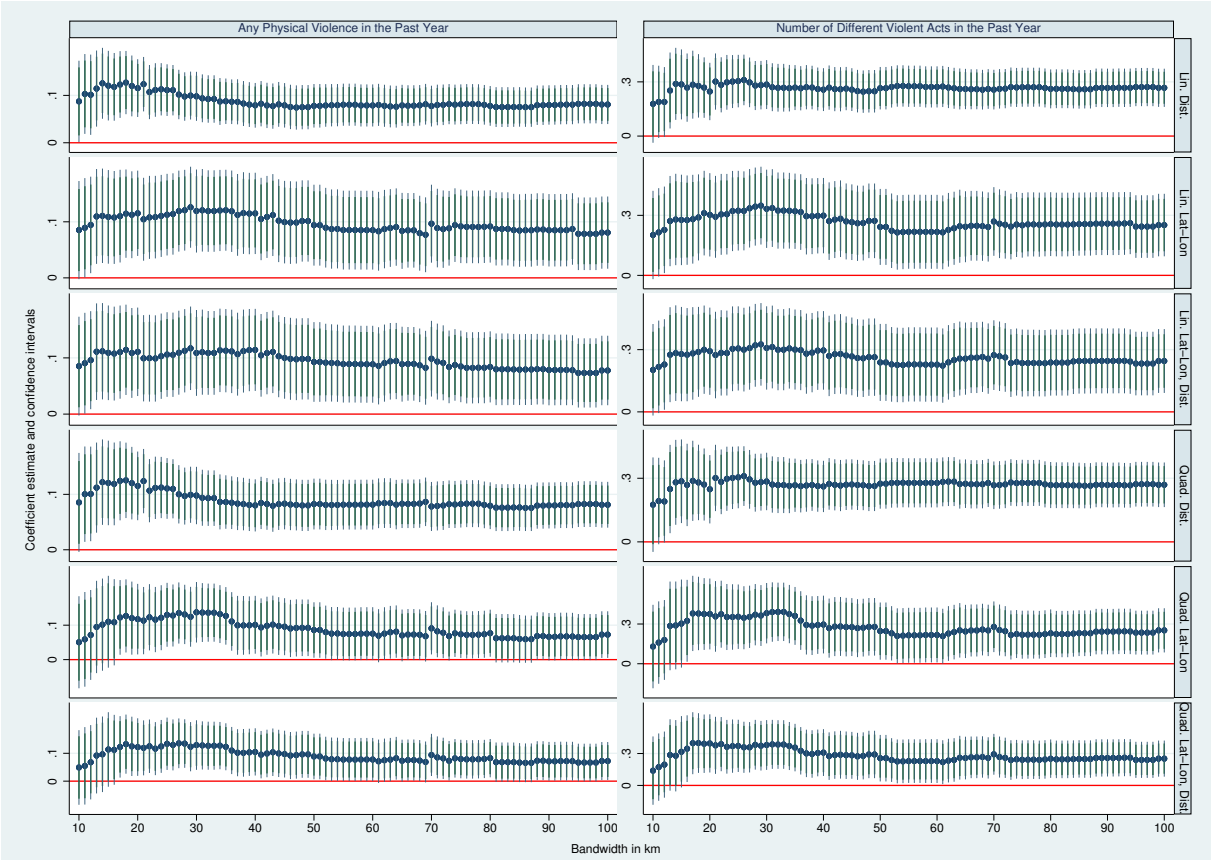
	F. Women's Education			G. Own Property			H. Number of Children			I. Male Alcohol Consumption			J. Polygamy			K. Exposure to Conflict		
	Lat-Lon	Dist	Dist Lat-Lon	Lat-Lon	Dist	Dist	Lat-Lon	Dist	Dist Lat-Lon	Lat-Lon	Dist	Dist Lat-Lon	Lat-Lon	Dist	Dist Lat-Lon	Lat-Lon	Dist	Dist Lat-Lon
	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)
British ($\hat{\gamma}$)	0.611	0.398	0.623*	0.068**	0.070**	0.074**	0.044	0.138	0.044	-0.036	-0.044	-0.034	0.035	0.050	0.034	0.061	-0.023	0.064
	(0.383)	(0.361)	(0.372)	(0.032)	(0.030)	(0.031)	(0.211)	(0.200)	(0.211)	(0.045)	(0.046)	(0.045)	(0.039)	(0.036)	(0.038)	(0.113)	(0.104)	(0.103)
Mean	7.220	7.220	7.220	0.080	0.080	0.080	2.934	2.934	2.934	0.167	0.167	0.167	0.165	0.165	0.165	0.145	0.145	0.145
Obs.	2,030	2,030	2,030	1,592	1,592	1,592	2,030	2,030	2,030	1,417	1,417	1,417	1,749	1,749	1,749	2,030	2,030	2,030
Clusters	358	358	358	196	196	196	358	358	358	348	348	348	356	356	356	81	81	81

NOTES: OLS estimates of Equation (1) for different individual and household outcomes within 40 kilometers from the boundary. Each column controls for a different specification of the RD polynomial. All regressions include geographic controls (distance to the capital and distance to Douala), together with border segment and year fixed effects. Standard errors clustered by DHS survey cluster are reported in parentheses. Columns (31) to (33) report standard errors clustered at the *arrondissement* level. *** (**) (*) indicates significance at the 1% (5%) (10%) level.

Appendix: Additional Figures and Tables

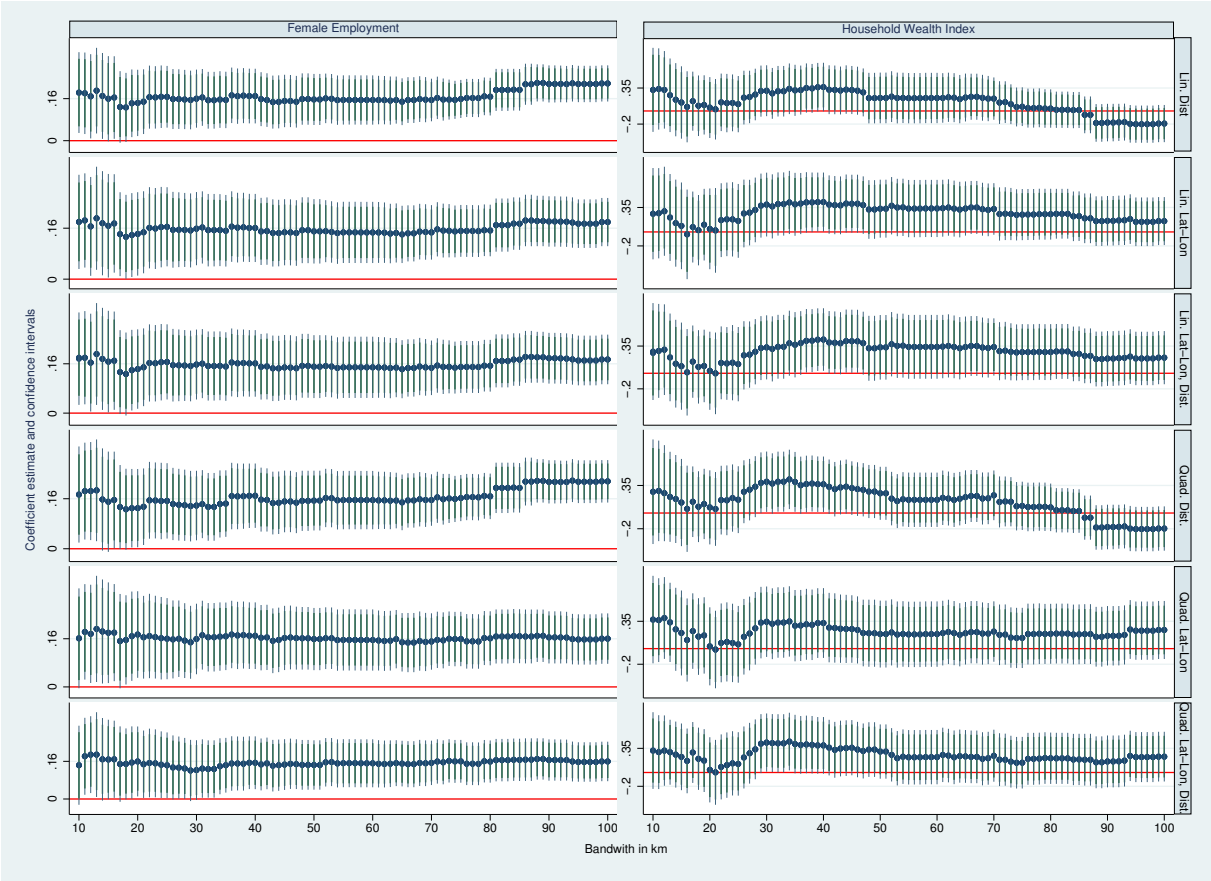
Figure A-1: IPV: RD Plots

FIGURE A-2: *Robustness of IPV Estimates*



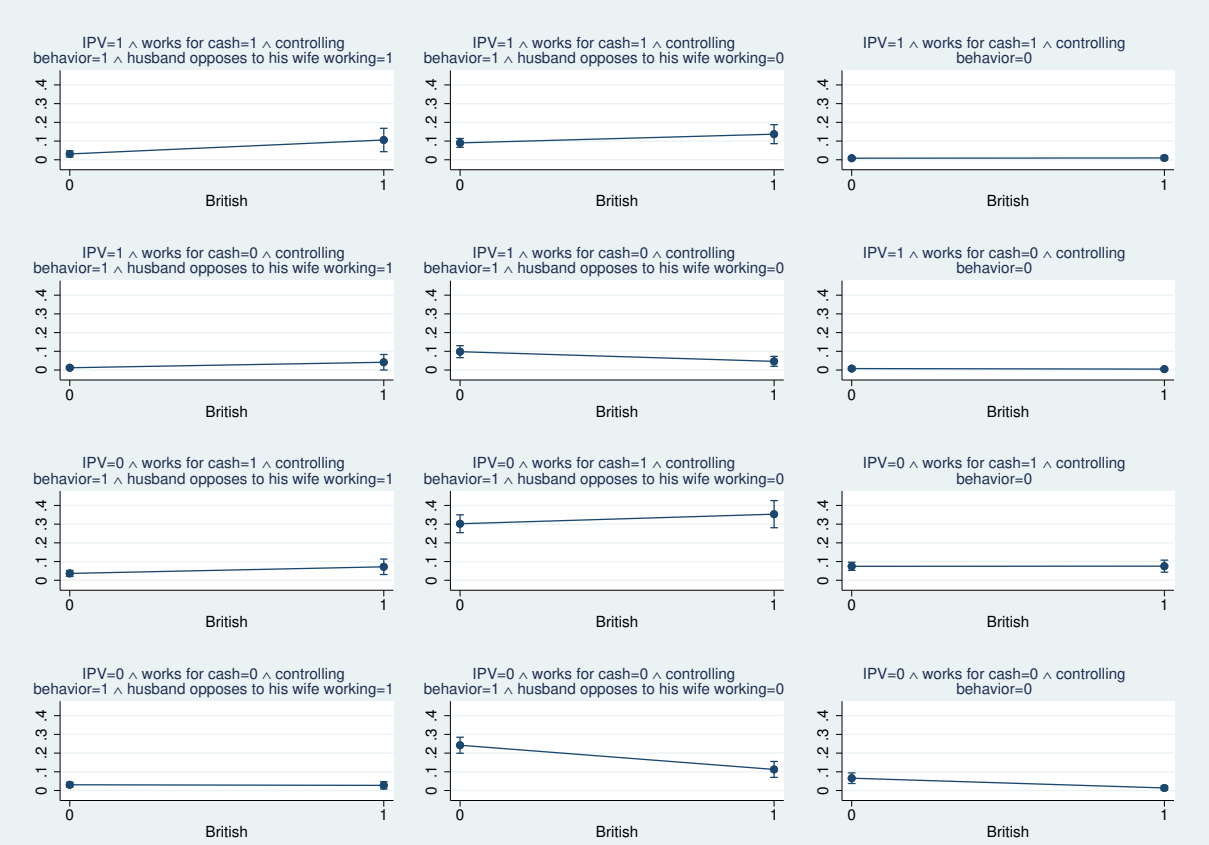
NOTES: Each sub-graph reports coefficient estimates and confidence intervals of Equation 1 (vertical axis) for different bandwidth levels ranging from 10 to 100 kilometers (horizontal axis). Figures on the left column refer to the violence dummy outcome variable, while figures on the right column refer to the violence index. Each row corresponds to alternative specifications of the RD polynomial, and alternative choices of the running variable. Thin gray bars represent 95% confidence intervals, while thicker green bars represent 90% confidence intervals, both arising from clustering standard errors at the DHS-cluster level. Calonico *et al.* [2017] optimal bandwidth using distance as running variable ranges between 25 and 40 kilometers depending on the outcome considered and the covariates specified. 40 kilometers best reflects the spatial setting, because it arises from including border and year fixed effects as covariates.

FIGURE A-3: *Robustness of Employment and Household Wealth Estimates*



NOTES: Each sub-graph reports coefficient estimates and confidence intervals of Equation 1 (vertical axis) for different bandwidth levels ranging from 10 to 100 kilometers (horizontal axis). Figures on the left column refer to female employment as outcome variable, while figures on the right column refer to the household wealth index. Each row corresponds to alternative specifications of the RD polynomial, and alternative choices of the running variable. Thin gray bars represent 95% confidence intervals, while thicker green bars represent 90% confidence intervals, both arising from clustering standard errors at the DHS-cluster level. Calonico *et al.* [2017] optimal bandwidth using distance as running variable ranges between 25 and 40 kilometers depending on the outcome considered and the covariates specified. 40 kilometers best reflects the spatial setting, because it arises from including border and year fixed effects as covariates.

FIGURE A-4: *Connecting Women's Experience of IPV to Employment Outcomes and Coercive Behavior of their Partners: RD Analysis*



NOTES: Predicted probabilities from multinomial logit estimation of Equation (1). Sample restricted to a window of 40 kilometers around the boundary. Local linear polynomial in both distance to border and latitude and longitude. Controls for survey year fixed effects, border segment fixed effects, distance to the capital, and distance to Douala. Standard errors clustered by DHS survey cluster are reported in parentheses. *** (**) (*) indicates significance at the 1% (5%) (10%) level.

TABLE A-1: *Robustness of IPV Estimates and Placebo Tests*

	Robustness Checks									Placebo Tests			
	Interact. Lin. Dist.	Quadr. Dist.	Cubic Dist.	Quadr. Lat-Lon	Cubic Lat-Lon.	Tri. Kernel	Donut 5 km	No Douala	Add. Contr.	Shift West Dist	Shift West Lat-Lon	Shift East Dist	Shift East Lat-Lon
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Panel A: Any physical violence last year													
British ($\hat{\gamma}$)	0.135***	0.116***	0.105**	0.124***	0.148***	0.114**	0.137**	0.102**	0.172***	-0.000	-0.004	0.024	0.064
	(0.046)	(0.043)	(0.043)	(0.046)	(0.051)	(0.045)	(0.055)	(0.043)	(0.062)	(0.088)	(0.078)	(0.048)	(0.051)
Mean Dep. Var.	0.283	0.283	0.283	0.283	0.283	0.285	0.285	0.281	0.294	0.335	0.335	0.266	0.266
Observations	2,030	2,030	2,030	2,030	2,030	1,985	1,824	1,507	1,526	971	971	1,502	1,502
Clusters	358	358	358	358	358	351	325	261	269	168	168	265	265
Panel B: Number of different violent acts													
British ($\hat{\gamma}$)	0.306***	0.326***	0.313***	0.352***	0.351***	0.266**	0.404***	0.302***	0.411***	0.054	-0.006	0.061	0.091
	(0.114)	(0.108)	(0.110)	(0.116)	(0.125)	(0.109)	(0.143)	(0.111)	(0.147)	(0.261)	(0.226)	(0.107)	(0.119)
Mean Dep. Var.	0.576	0.576	0.576	0.576	0.576	0.580	0.591	0.579	0.608	0.745	0.745	0.507	0.507
Observations	2,030	2,030	2,030	2,030	2,030	2,097	1,824	1,507	1,526	971	971	1,502	1,502
Clusters	358	358	358	358	358	369	325	261	269	168	168	265	265
Year and Border Seg. FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Geographic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Baseline controls									Yes				

NOTES: OLS coefficient estimates for various robustness and placebo tests. Columns (1)-(5) control for different RD polynomials. Column (6) reports and estimate for Calonico *et al.* [2017] data-driven bandwidth (37.1 km for the violence dummy and 43.7 km for the violence index) using an interacted linear polynomial in distance and a triangular kernel. Column (7) displays coefficients for a donut specification that excludes observations within 5 km of the boundary. Column (8) excludes observations located in Douala, the economic capital. Column (9) controls for altitude, climate, ancestral dependence on fishing, practice of endogamy, urban, and exposure to slave trade (ln(1+slave exports/land area)). Columns (10)-(13) conduct placebo tests and shift the border by 40 kilometers. Standard errors clustered by DHS cluster are reported in parenthesis. *** (**) (*) indicates significance at the 1% (5%) (10%) level.

TABLE A-2: *Robustness of Female Employment Estimates and Placebo Tests*

	Robustness Checks									Placebo Tests			
	Interact. Lin. Dist.	Quadr. Dist.	Cubic Dist.	Quadr. Lat-Lon	Cubic Lat-Lon.	Tri. Kernel	Donut 5 km	No Douala	Add. Contr.	Shift West Dist	Shift West Lat-Lon	Shift East Dist	Shift East Lat-Lon
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
British ($\hat{\gamma}$)	0.166***	0.170***	0.153***	0.170***	0.147***	0.157***	0.203***	0.159***	0.141**	0.039	0.013	0.035	0.058
	(0.054)	(0.052)	(0.052)	(0.056)	(0.057)	(0.058)	(0.065)	(0.056)	(0.068)	(0.046)	(0.042)	(0.061)	(0.070)
Mean Dependent Variable	0.730	0.730	0.730	0.730	0.730	0.720	0.719	0.777	0.725	0.867	0.867	0.658	0.658
Observations	2,030	2,030	2,030	2,030	2,030	1,894	1,824	1,507	1,526	971	971	1,502	1,502
Clusters	358	358	358	358	358	337	325	261	269	168	168	265	265
Year and Border Seg. FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Geographic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Baseline Controls									Yes				

NOTES: OLS coefficient estimates for various robustness and placebo tests. Columns (1)-(5) control for different RD polynomials. Column (6) reports and estimate for Calonico *et al.* [2017] data-driven bandwidth (33.9 km) using an interacted linear polynomial in distance and a triangular kernel. Column (7) displays coefficients for a donut specification that excludes observations within 5 km of the boundary. Column (8) excludes observations located in Douala, the economic capital. Column (9) includes controls for altitude, climate, ancestral dependence on fishing, ancestral practice of endogamy, a dummy for urban, and a measure of exposure to slave trade (ln(1+slave exports/land area)). Columns (10)-(13) conduct placebo tests and shift the border by 40 kilometers. Robust standard errors, clustered by DHS survey cluster, are reported in parenthesis. *** (**) (*) indicates significance at the 1% (5%) (10%) level.