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Becker, Bastian; Schmitt, Carina

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License to educate: The role of national networks in colonial empires

Bastian Becker [a,*], Carina Schmitt [b]

[a] Humboldt University of Berlin, Department of Social Sciences, Universitätsstraße 3b, 10117 Berlin, Germany
[b] University of Bamberg, Department of Social Sciences, Economics and Business Administration, Feldkirchenstraße 21, 96045 Bamberg, Germany

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ABSTRACT

Colonial Africa was shaped by a variety of European actors. Of foremost importance in the educational sector were both colonial governments and Christian mission societies. While their activities and long-term implications are often analyzed in isolation, few systematic studies investigate relationships between them. However, it is well-known that underfunded colonial governments supported mission societies, who used schools to attract new converts, as low-cost educational providers. In this paper, we argue that mission societies that shared national ties with colonial governments benefitted from increased support and engaged in more extensive educational activities. Using new historical data on Protestant mission societies from the interwar period in Africa, we demonstrate that national alignment between mission societies and colonizer's identity in British Africa was associated with more primary schools and higher enrolment. We discuss and explore potential channels underlying this dynamic, including financial support for missionary activities as well as the granting of access to more favourable locations. Our findings show that national networks are an important but understudied aspect of colonial empires. Furthermore, analyzing the early expansion of education provides insights on the causal links often assumed by studies focused exclusively on long-term effects.

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1. Introduction

British colonial rule is often credited with better economic and political outcomes than that of other European powers, even beyond the colonial era. One key factor was the quick and extensive expansion of formal education in British colonies through Christian mission societies. In this paper, we examine the relationship between colonial governments and mission societies and how it contributed to educational expansion in British colonies.

Mission societies were an integral part of the European colonial project in Africa and other regions of the world (Abernethy, 2000; Conklin, 2000; Meier zu Selhausen, 2019).[1] Especially in the educational sector, these societies played a major role from early on. They were "important agents in the development of educational systems in former colonies" (Gallego & Woodberry, 2010, p. 301) and often among the first actors that provided formal primary education to Africans (Becker, 2022b). Mission societies became especially important for the colonial project, when, after World War I, colonial development and education moved high up on the political agenda of colonial governments. On the one hand, colonial governments considered mission societies to be important advocates of the colonial project with the potential to indoctrinate colonized societies and to contribute to a "linguistic unification and standardization of African languages" (Crowder, 1968, p. 369). On the other, mission societies had the organizational and personnel capacity to run schools and, therefore, provided cost-efficient ways to promote the development of colonies.

This paper explores how educational performance varied across mission societies. Understanding the historical roots of societies' varying contribution to education is highly important as these differences have been shown to persist, shaping the performance of educational systems and educational outcomes until today (Becker, 2022a; Lankina & Getachew, 2012, p. 167; Wantchekon et al., 2015; Wietzke, 2014). Christian missions have also been demonstrated to affect many other phenomena, such as health outcomes (Cagé & Rueda, 2020; Calvi & Mantovanelli, 2018), social norms and culture (Fenske, 2015; Nunn, 2010; Okoye, 2021), as well as democratic institutions (Lankina & Getachew, 2012; Rink, 2018; Woodberry, 2012), in the long-run.

While the importance of Christian mission societies, and Protestants in particular, for colonial education is uncontroversial, the mechanisms behind the educational expansion have been subject to considerable debate (Jedwab et al., 2022). Whereas some argue that a liberal policy supportive of private education underpins the

* Corresponding author.
E-mail address: bastian.becker@hu-berlin.de (B. Becker).

[1] We use the term colonialism to refer to the control and subjugation of overseas territories by European powers.

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British effect, others emphasize that the effect merely reflects enabling local conditions in territories Britain happened to colonize.

In this paper, we argue that it is neither the colonizer's identity nor local conditions alone that are decisive for the varying performance of mission societies in the education sector. We provide a more nuanced account that highlights missions' relationship with colonial governments; whereby we focus on the British empire where the reliance on missions as education providers was higher than elsewhere. From our perspective, institutional and personal linkages between compatriots—or national networks for short—were decisive for levels of cooperation between mission societies and colonizers, specifically in the area of education, where they shared common interests.

Cooperation between governments and societies was essential for the expansion of education: Colonial governments authorized mission stations and schools, were often involved in the assignment of locations, provided transportation, offered protection, and last but not least, supported mission societies financially through so-called grants-in-aid (Frankema, 2012, p. 336; Lankina & Getachew, 2012, p. 476). Close relationships with colonial governments could improve the chances that societies were treated preferentially.[2] At the same time, governments depended on missions' educational infrastructure and relations to the local population.[3]

Our argumentation is in line with recent research arguing that a simple reliance on either the colonizers' identity or the characteristics of the colonies omits important dynamics that result from the entanglements of different political, economic, and religious actors. Understanding them is also necessary to elucidate colonial legacies in more detail than previously possible (Frankema, 2012; Lankina & Getachew, 2012). Our paper also speaks to a growing literature that emphasizes the contribution of religious actors to state-building (Dulay, 2021; Grzymala-Busse, 2020).

We test our argument by analyzing novel data on more than 100 mission societies in 25 colonies in the interwar period (1919–1939), and thus, at a time when education was put on the political agenda of colonial governments. We also use newly collected data on almost 2,000 mission stations to territorially disaggregate the society-level data and to complement it with precise socio-geographic information on the environments in which societies operated. The data provides a snapshot of conditions in the interwar period, when Protestant mission societies in Africa already ran more than 15,000 primary schools with almost 900,000 enrolled students.[4]

Our results confirm that mission societies expanded primary education most effectively where their national identity aligned with that of the colonizer. In British colonies, British mission societies built almost 50% more schools per mission station than in other colonies.[5] This effect is even more pronounced when it comes to enrolment. By contrast, non-British societies built fewer schools and enrolled fewer students in British colonies than their British counterparts. In line with our expectations, this effect does not extend to secondary education, which was not a priority that colonial governments and mission societies shared. We also show that our results are not simply driven by a common language between missionaries and colonial officials.

Our study makes at least two important contributions. First, we show that national networks are an important but understudied aspect of colonial empires.[6] While our investigation focuses on the education sector, it stands to reason that national networks penetrated colonial empires in several other ways that are yet to be explored. As such, national networks might, amongst others, have affected the provision of health services by missionaries or economic activities by merchants and settlers. Second, analyzing the early expansion of education sheds new light on a part of the causal chain that has received little attention by the large number of recent studies primarily interested in long-term effects. Our findings encourage and inform more nuanced investigations of colonialism and its legacy, in particular the long-term consequences of national networks.

The paper is structured as follows. In the following section, we briefly summarize the historical background of missionary activities in the educational sector and the respective state of the art. In the subsequent section, we derive our main hypotheses which are then empirically tested in the next section. A final section concludes.

1.1. Historical Background: Mission education in colonial Africa

In this section, we briefly summarize the historical context in which Christian missions from Europe contributed to the expansion of education in colonial Africa. We begin with the timing and geographic distribution of missionary activity, then situate mission education in the colonial framework, discuss differences between colonial education models, and finally consider the role of national networks in the colonial education sector.

The following elaborations, though they provide a broad overview of mission education in colonial Africa, are tilted towards the British empire. Britain, more than other colonial powers, relied on missions to expand education. As such, national networks should also be most consequential in British colonies and they thus offer an ideal testing case for our argument. In the many instances where it is useful for an understanding of the historical context, we draw out differences to other colonial empires.

Christian missions in colonial Africa. The missionary movement was closely entangled with the expansion of colonialism. Even though some missions entered territories before they were colonized, the establishment of formal colonial rule increased the number of missions decisively. In particular, after the Berlin conference in 1884/5, when European powers scrambled for Africa, the number of missions grew exponentially (Becker, 2022b; Etherington, 2005).

Fig. 1 illustrates the geographic spread of Protestant mission stations in the interwar period. The vast majority of mission stations were located close to the coast and in Sub-Saharan Africa. The pattern can be explained by a variety of factors. Missions preferred territories with advantageous geographical conditions, such as access to water or lower disease burdens. Moreover, some colonies encompassed vast, sparsely populated territories, which complicated the access to, and therefore the conversion of the native population (Binder Johnson, 1967).

Local communities also had an active role in determining mission locations. In the pre-colonial era, but also beyond, missionaries relied on the approval of local chiefs to safeguard their presence. They also had to preserve the communities' sympathy in order to avoid ostracization. One important factor in the rela-

[2] See, for example, Government of the Gold Coast, 1925, *Report on the Education Department for the Period April 1923-March 1924*. Accra: Government Printer at the Government Printing Department, p.10.

[3] See Bolt and Gardner (2020) on the role of native councils in British colonies.

[4] Note that the high school to station ratio results from the fact that our data contains information on all schools but not all mission stations. In particular, our mission count refers to residence stations, which were occupied by European missionaries, and does not include the many out-stations, which often operated in the vicinity of residence stations and also housed schools.

[5] Concretely, this means 14 schools per mission station in British colonies and 10 elsewhere.

[6] Our findings complement earlier work on patronage within the colonial administration (Xu, 2018).

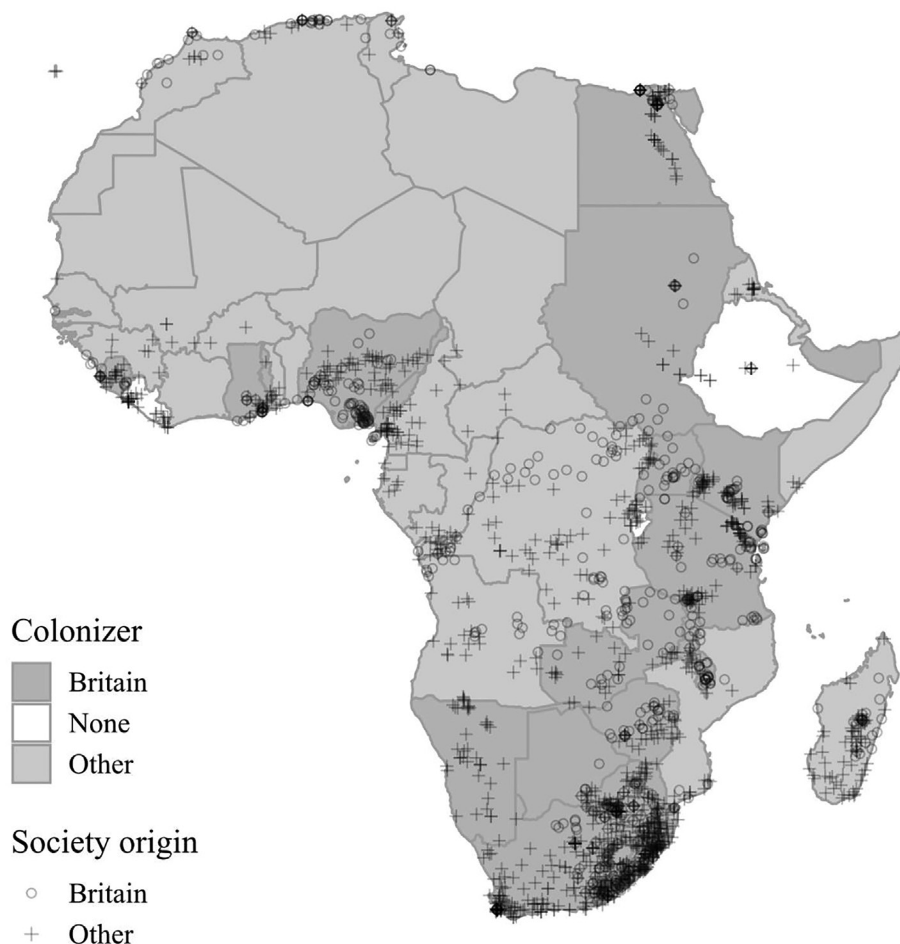

Fig. 1. Protestant mission stations in colonial Africa (ca. 1924). Note: Based on Beach and Fahs (1925); digitized by Becker (2022b).

tionship with local communities was the prior presence of Islam, also because it received special consideration by colonial officials.

The presence of Islamic communities, predominantly in Northern Africa, was also negatively related with the number of Christian missions. The access of Christian missionaries to Islamic territories was sometimes even denied by colonial governments. Colonial officials argued that the entrance of a "Christian mission into a non-Christian community creates a division within the community which did not exist before, and therefore complicates colonial administration" (Buell 1928, 736) and that this would "arouse the hostility and awaken the latent spirit of religious fanatics" (Buell 1928, 734). In other areas, Christian missions needed the permission of Islamic leaders to build stations, which was difficult to attain. For example, in northern Nigeria, Christian missionaries needed the permission of the Emir before being able to establish a mission in the respective territory (Buell 1928, 484). Also "[m]ission work in Tanganyika was difficult because of the strength of Islam, which has been a heritage from the Arab days" (Buell 1928, 484).

There was also considerable variation in the destinations of missionaries from different European metropoles (Etherington, 2005). British societies were active both in British colonies and colonies controlled by other European powers. We can substantiate this with our own data from the World Missionary Atlas of 1925, which we use for the empirical analyses in this paper. The data shows, for example, in British South Africa only about a quarter of all Protestant mission stations were run by British societies, whereas in Morocco, which was colonized by the French, over three quarters of all Protestant mission stations were British. The same was true for other societies from other colonial metropoles as well as societies whose governments had no African colonies of their own.

Mission education under colonial rule. From early on, missions were active in the educational sector (White, 1996). Education facilitated the communication of the Christian message. Over time, education in mission schools became a central tenant of mission work (Lankina & Getachew, 2012, p. 475). Especially in British colonies, mission schools prospered as colonial governments relied on them to spread literacy and Western values (Crowder, 1968, p. 363).

After World War I, colonial governments began to recognize that basic educational services to the native population were necessary to develop colonies in economic and social terms. Education was seen as "indispensable to the functioning of (...) [colonial] administration and of the commercial houses, for they could not afford to employ whites in subaltern posts" (Crowder 1968, 369; Buell 1928, 478).[7] However, establishing a purely state-run education system was not possible within the budgetary constraints of colonial governments. Against this background, colonial officials, especially in the British empire, realized that close cooperation with mission societies was essential for the development of an educa-

[7] We have to emphasize that our analysis does not evaluate the quality of educational services that were provided, which in the interwar period was generally low.

tional infrastructure and the provision of basic educational services to the native population.[8] This process was accelerated by US-based, philanthropic organisations, which became engaged in colonial education after World War I.

Of particular relevance have been the commission tours on African education funded by the Phelps Stokes Fund, the Church Missionary Society (CMS), the Colonial Office and the American Baptist Foreign Missions Society in the beginning of the 1920s (Steiner-Khamsi & Quist, 2000). The reports of the Phelps Stokes commission underscored the necessity and importance of formal education for the colonial project. The commission came to the conclusion that subsidies in the form of grants-in-aid to missions "should be regarded as an investment in colonial development that will soon be reflected in better health, increased productivity and a more contended people" (Phelps-Stokes Fund et al., 1922, 305; see also Brown 1964, 366).

The rising importance of education in colonies is also reflected in the formation of advisory committees throughout African colonies, especially in British Africa. One committee stands out, namely the Advisory Committee on Native Education in the British Tropical African Dependencies, which was established in 1923. The committee, in 1925, produced one important memorandum, namely the Memorandum on Education Policy in British Tropical Africa (see also White, 1996, p. 13). This memorandum emphasized that primary education is key to the economic and social development in the colonies and explicitly stated that all educational efforts have to be supported. Moreover, it emphasized that the cooperation with other educational providers, such as mission societies, had to be promoted whenever possible and that grants-in-aid system should be established.[9] In consequence, the mission societies strongly increased the number of schools in the first decades of the 20th century (see Beck, 1966, p. 119).

Mission societies were often short of financial resources and welcomed governmental support to expand educational services. The shortage of funds is well-captured in the Ugandan Protectorate Education Report of 1929. It firstly acknowledges the importance of missionary societies in the educational sector, stating that they "must be given the sole credit for educational development in the country."[10] Later it underlines the societies' dependency on the government: "But the missions had neither the staff nor the money needed, nor could they wield the necessary authority. Without the ordered government, the communications, the friendly support of the administration, the missions could never have developed their work as they did."[11].

Last but not least, the success of mission schooling also depended on the cooperation of local communities. On the one hand, mission schooling was not popular everywhere. Although it often provided valuable skills and opportunities, local populations were frequently opposed to indoctrination efforts, which they deemed incompatible with their own lifestyle, such as the promotion of monogamy. As a result, many abstained from mission schools or would outright oppose their presence (Ekechi, 1976; Kenyatta, 1938). On the other hand, Africans contributed considerably to the success of the missionary enterprise. Already, by the beginning of the nineteenth century, Africans constituted the large majority of mission staff, initially as helpers and catechists, but increasingly as teachers and priests (Meier zu Selhausen, 2019). It is widely accepted that local populations decisively contributed to the spread of Christianity as well as modern education, and shaped it in many ways (Boahen, 1994; Isichei, 1995).

Colonial education models. Historical works on the early provision of education services and their long-term consequences emphasize the uniqueness of the British Empire. For example, studies show that enrolment rates in British colonies were considerably higher than in other colonies (Benavot & Riddle, 1988; Brown, 1964).

Colonial governments were willing "to leave the bulk of the primary education to the missionary bodies" (Buell 1928, 728) and aimed at expanding the reach of mission education through grants-in-aid and land allocations (Beck, 1966, p. 136; Sheffield, 1973).[12] Grants-in-aid were used to build schools, to pay teacher salaries, and to buy equipment and furniture.[13] British governments relied almost entirely on the work of missionaries, whereas other colonizers, and in particular French governments, also invested substantive amounts into publicly provided education.

Government support did not come without any strings. Although Britain applied a liberal approach in the educational sector, only mission schools that conformed to the British standards and were approved by the government received grants-in-aid and gained the status of so-called "assisted schools" (Buell 1928, 728). The Advisory Committee on Education in the Colonies stated in one if its memoranda that grants should be given "only to institutions that are managed and taught by the right kind of person and that the utmost possible freedom should then be given to such teachers and managers."[14] All teachers and schools had to be registered and governments have the right to close the school if they violated the terms of registration. Exams were often held according to British standards and the use of English was encouraged (Hailey, 1938, p. 1238). Naturally, such demands were easier to comply with for societies from Britain.

Still, mission education in the French Empire was regulated more strictly. For example, a French decree passed in 1922/23 required that all missionary teachers hold a degree from a French institution and teach in French. This effectively "kept Anglo-American Protestantism out of FWA [French West Africa]" (Crowder, 1968, p. 364).

National networks. National networks often became relevant in subtle but highly consequential ways. For governments and mission societies to successfully cooperate in colonized territories, trust played an important role. Trust was by no means guaranteed as both actors were well aware of their incongruent objectives in providing education to native populations. Mission societies were primarily interested in the advancement of Christianity via education, while colonial governments aimed at accumulating human capital to economically and socially develop the colonies. However, colonial governments had good reasons to believe that aligned societies also shared their imperial interests: "Essentially [missionaries] shared in the expansionist imperialism of the age, an easy belief that within the providence of history Africa had now to be conquered for its own good. Their immediate concern was that it should be conquered in a humane way and by the *right power* [emphasis added]" (Hastings, 1994, p. 413). As a result, missionaries were often more critical of colonizers who they perceived as foreign powers (Isichei, 1995, p. 92).

[8] See, for example, Government of the Gold Coast, 1932, *Report on the Education Department for the Year 1931–32,* Accra: Government Printer at the Government Printing Office, p.52.

[9] Advisory Committee on Native Education in the British Tropical African Dependencies [Anecta]. 1925. *Educational Policy in British Tropical Africa*, London: His Majesty Stationery Office.

[10] Government of Ugandan Protectorate. 1930. *Annual Report of the Education Department for the Year Ended 31st December 1929*, Entebbe: Government Printer, p.5.

[11] Ibid, p.2.

[12] See also, Government of Kenya Colony and Protectorate, 1937, *Annual Report of the Education Department for the Year 1936*. Nairobi: Government Printer.

[13] See, for example, Government of the Gold Coast, 1917, *Report on the Education Department for the Year 1916,* Accra: Government Press, or Colony of the Gambia, 1930, *Education Report for the Year 1929,* Bathurst: Government Printer.

[14] Advisory Committee on Education in the Colonies, 1933, *Memorandum on Educational Grants-in-aid. Colonial No. 84*. London: His Majesty Stationery Office, p.5.

Trust between colonial governments and mission societies was often decisive for access to government grants. The concrete decision as to whether or not a school should be given a grant was based upon reports of a government inspector (Buell 1928, 728). Even though there have been some criteria such as ratio of instructors to pupil, exam performances, student hygiene, and others, the inspectors had considerable freedom in interpreting these criteria. In consequence, they "have been frequently criticized as being unfair" (Buell 1928, 728).

In contrast, not sharing national ties could carry considerable disadvantages. One example is Tanganyika where until World War I most missions had been run by German societies. Following British occupation, more than 400 German missionaries were removed from the territory. The first governor after World War I, Sir Horace Byatt, refused to cooperate with the remaining mission schools through the usual system of grants-in-aid. In consequence, the presence and number of missionaries declined, which created a gap that was only partially filled by British and allied societies (Phelps-Stokes Fund et al., 1922, 178; Buell 1928, 478). This form of punishment and mistrust was more likely to be present when the missions were sent from societies located in metropoles from other colonial powers especially from rival or non-allied nations. In this case, colonial governments feared subversive activities. In some cases, rivalling missions eagerly played into these suspicions. In an effort to oust another station, a Protestant missionary in Nigeria complained: "I saw at Lokoja the French tricolour flag flying above the Mission which is still called the *French Mission* and not the *Catholic Mission*." (cited in Ekechi, 1972, p. 86).

The likelihood of receiving grants also depended on the location of mission schools. Government inspectors often did not have the possibility to visit the schools in remote regions far away from urban areas and political centers (Hailey, 1938, p. 1237). Not being inspected did imply that these missions did not get funds. In some instances where resources were particularly scarce, such as in Northern Rhodesia, the colonial officials were advised to concentrate the allocation of grants to mission schools of "geographical and denominational importance" (Phelps-Stokes Fund et al., 1922, 265). As aligned mission societies were usually active in less remote regions closer to colonial centers, they also had better chances of being inspected and receiving grants.

National networks were not limited to colonies but had an important transnational component. British societies also benefitted from their close relationships to the colonial government in the colonies but also to the Colonial office in London (Whitehead, 2007, p. 167). This cooperation in form of frequent consultations, official and unofficial, and especially collaborations in committees was "most heartily appreciated and highly valued" by both sides.[15]

Similarly, the role of national networks also manifested in government committees that were established as education move up the colonial agenda. These committees typically included representatives from colonial governments and mission societies as well as the commercial sector (Buell 1928, 479). British mission societies were also represented on the Advisory Committee on Colonial Education in Tropical Africa, a de facto executive body under the Colonial Secretary that was imperative for controlling education in British Africa (D'Souza, 1975, p. 36). The committee published and adopted reports, memoranda and directives, which underscored the importance of collaboration between missions and governments in the provision of educational services.[16]

2. Contribution

In this section we first introduce the state of the art and then elaborate our own contribution to the literature. In short, we argue that cooperation between colonial governments and mission societies was essential for the expansion of education. Governments supported missions to extend educational opportunities to local populations. At the same time, they needed to make sure that missions provided the kind of education governments wanted and did not use government support for other means. We argue that national networks made such cooperation easier and thus accelerated the educational activities of aligned mission societies.

State of the art Christian missionaries extensively documented their activities in colonial Africa. Historical archives hold vast arrays of individual testimonies, but also reports and comparative statistics of missionary societies and international conferences. Researchers increasingly tap into these resources to improve our understanding of missionary activity in colonial Africa through large-scale data collection and statistical analyses.

Numerous studies attest the positive impact of Christian missions on educational development in Africa (Becker, 2022a; Cagé & Rueda, 2016; Gallego & Woodberry, 2010; Hedde-von Westernhagen & Becker, 2022; Nunn, 2014; Wantchekon et al., 2015; Wietzke, 2014) and beyond (Calvi et al., 2020; Castelló-Climent et al., 2018; Lankina & Getachew, 2012; Valencia Caicedo, 2019; Waldinger, 2017). Many of these studies rely on geo-coded data on the exact location of historical mission locations in combination with contemporary social surveys, others exploit exogenous variation to provide causal evidence. Mission education had important consequences for social stratification, in particular social mobility (Meier zu Selhausen et al., 2018) and gender inequality (Becker & Meier zu Selhausen, 2023; Haas & Frankema, 2018; Lankina & Getachew, 2013; Meier zu Selhausen & Weisdorf, 2016; Nunn, 2014).

Furthermore, Christian missions have been shown to affect a variety of other contemporary outcomes, often—but not always—assumed to be the result of their educational activities. As such, missionary presence is associated with reduced interpersonal trust (Okoye, 2021), increased gender equality (Becker & Meier zu Selhausen, 2023; Calvi et al., 2020; Nunn, 2014), lower levels of polygamy (Becker, 2022a; Fenske, 2015), anti-gay sentiments (Ananyev & Poyker, 2021), greater political participation (Cagé & Rueda, 2016; Dahlum & Wig, 2019), better health outcomes (Calvi & Mantovanelli, 2018), more private schools (Wietzke, 2014), increased state capacity (Dulay, 2021), and more democratic institutions (Lankina & Getachew, 2012; Woodberry, 2012). However, the view that Christian missions also contributed to economic development has recently been challenged by Jedwab, Meier zu Selhausen, and Moradi (2022). As such, mission education might not always have transmitted skills that were economically valuable, or the positive effect of human capital might have been undermined by other growth-hampering effects of missions (Jedwab et al., 2021).

An important distinction between Christian missions is their denomination. As such, Protestants emphasized literacy among their followers, whereas Catholics embraced education at a later stage. Studies have shown that Protestants prioritization of literacy has led to higher educational outcomes in the long-run, especially where Catholic competitors were present (Gallego & Woodberry, 2010). Furthermore, Catholic education mostly benefitted men, with negative effects for gender equality today (Montgomery, 2017; Nunn, 2014).

Other studies have investigated differences in colonial education models, in particular whether Britain's more liberal stance

[15] Government of the Gold Coast, 1932, *Report on the Education Department for the Year 1931–32*, Accra: Government Printer at the Government Printing Office, p52.

[16] ACNETA, 1925, *Educational Policy in British Tropical Africa*, London: His Majesty Stationery Office.

on mission education made a difference (Frankema, 2012; Lankina & Getachew, 2012). Dupraz (2019) exploits border discontinuities in Cameroon to causally identify the differing impacts of British and French colonization on long-run educational developments. Using a similar design and applying it to the partitioning of Togo, Cogneau and Moradi (2014) demonstrate that the British legacy works through mission education.

Other scholars argue that local context plays an important role in the expansion of missionary work and education. For example, Frankema (2012) argues that mission education prospered in British colonies as demand for education was high and Africans pushed and worked to expand mission schooling. In a similar vein, Becker (2022a) argues that conflict over local norms can lower demand for education and shows that Christian missions contributed less to the long-term expansion of education in locations that traditionally practiced polygamy. Furthermore, missionaries preferred certain locations over others. Jedwab, Meier zu Selhausen, and Moradi (2022) show that missions were primarily set up in areas that were either more developed or more conducive to development, and that this preference accounts for a major share of their educational legacy.

Contribution. Historical research has long relied on qualitative methods and in-depth case studies. However, comparative and quantitative studies have become more common and they systematize, scrutinize, and extend the existing body of knowledge. As the preceding paragraphs showed, the prevailing arguments in the emerging field of comparative-quantitative historical research relate to the denomination of missions, the identity of the colonial power, and the local context of missionary activity. Based on our discussion of the historical background, we propose a new argument that highlights the relationship and cooperation between colonial governments and missionary societies.

In expanding educational opportunities to African populations, colonial governments and mission societies were mutually dependent. Governments regulated the educational activities of missions and provided them with financial support. However, colonial governments often had only limited capacities to monitor the activities of mission societies.

We argue that cooperation was facilitated by shared national ties that increased the ability to communicate, came with higher levels of trust, and complemented existing networks that could be used to coordinate and discipline. In the educational sector this meant that societies from the colonizer's metropole were seen as preferred partners and had easier access to government support. This greatly enhanced their ability to expand educational activities. Our argument partly echoes Xu (2018) who shows that social connections of colonial governors to state secretaries in London improved their career prospects, thus attesting to the importance of patronage in the British empire.

The following hypothesis can be derived and guides the remainder of this paper: Aligned mission societies—from the colonizer's metropole—contributed more to educational expansion, building more schools and reaching larger number of students, than mission societies from other metropoles. As British colonial governments relied more extensively on mission schools than other colonial powers, we expect alignment to be most consequential in British Africa and focus our empirical analyses accordingly.

It is important to note that the alignment hypothesis applies only to primary education. While some mission societies also provided secondary education, it was not regarded to be equally important for reaching potential converts. Furthermore, colonial governments were concerned that secondary education could emancipate Africans and spur social unrest. In consequence, they were more interested in cooperation with mission societies to expand primary education.

3. Research design and data

For the empirical analysis we collected new data from the World Missionary Atlas (WMA) of 1925 (Beach & Fahs, 1925). The Atlas constitutes the most comprehensive picture of Protestant missionary activity at the height of European colonial empires. It features a range of maps and statistics, providing information about missionary societies as well as the location of their stations. Most missionary societies were active in several colonies and had multiple stations.

We extracted data on all Protestant missionary societies that were active in colonial Africa. Based on the society directory included in the WMA, we determined the national origin of each society and complemented it with information from the accompanying statistical tables.

Most tables in the WMA provide figures for specific colonies. However, in some cases the tables correspond to territories that span multiple colonies. Fortunately, we are able to disaggregate these tables based on the geographic distribution of each society' mission stations. Accompanying maps of mission stations allow us to determine how many stations of each society are situated in each colony. We use this information to proportionately split the figures in tables that cover more than one colony. Overall, our sample consists of a total of 262 colony-society observations, covering 25 colonies in total.[17]

The key dependent variables we extract from the WMA statistical tables are the number of schools and students, whereby we distinguish between primary and secondary education. Note that our argument only concerns primary education, which has been the primary activity of mission societies and was also preferred by colonial governments over secondary education. Furthermore, we need to account for the different sizes of societies, which are indicated by the number of residence stations they had. To make educational performance comparable we transformed all educational statistics to per-station measures, for example, by dividing the number of schools by the number of stations a society had in a colony.[18]

Our main explanatory variables are two binary variables that indicate whether a society is from Britain (British society) and whether it is active in a British colony. First evidence with regards to our hypothesis can be glimpsed from descriptive statistics on the educational performance along these explanatory variables. As Fig. 2 shows, British societies performed much better in British colonies, especially when it comes to enrolment (right figure). Student numbers are three times higher than in other colonies. In contrast, non-British societies performed worse in British colonies. This is most marked with regards to schools (left figure), with only half the number in British colonies. As such, descriptive figures are supportive of our alignment hypothesis.

In the following statistical tests, we also account for several geographic factors that have been shown to affect location choices as well as the performance of missions (Binder Johnson, 1967). This allows us to remove the potentially confounding effects of these variables. However, it also removes one channel of support that

[17] We limit the sample to colonies in which at least one British and one non-British society is present. Thus, our analysis covers Algeria, Angola, Basutoland, Bechuanaland, Belgian Congo, Egypt, Equatorial Guinea, Gold Coast, Guinea, Kenya, Madagascar, Morocco, Nigeria, Northern Rhodesia, Nyasaland, Portuguese East Africa, Sierra Leone, South Africa, South West Africa, Southern Rhodesia, Sudan, Swaziland, Tanganyika, Tunisia, and Uganda.

[18] A particularity of the Atlas is that there are barely any reports of no educational activities. We assumed that the lack of reporting indicates that there were no educational activities, such that the corresponding missing values can be replaced with zeros. To show that our results are not driven by this assumption, we conduct robustness checks that drop the observations for which values are not explicitly reported (see Appendix, Tables A5&A6).

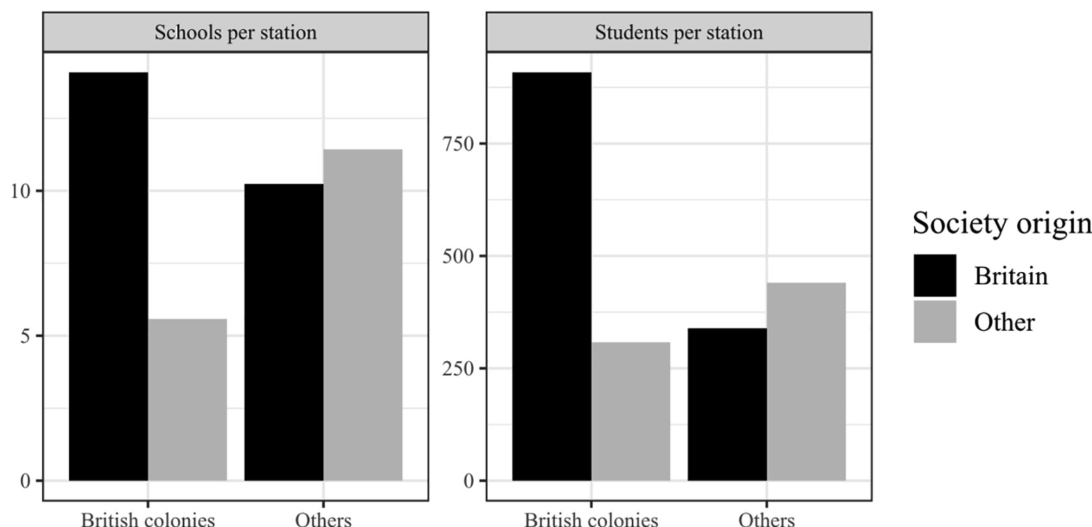

Fig. 2. Primary schooling in colonial Africa (ca. 1922). Note: Averages across all Protestant residence stations. Own computation based on Beach and Fahs (1925).

colonial governments have: access to preferential locations. Our analysis can therefore be regarded as a conservative test of our argument.

The geographic variables are computed by averaging over the conditions at the exact location of all mission stations associated with a given society.[19] The variables include distance measures for the nearest urban center,[20] coast, river or lake,[21] and Muslim center.[22] Indicators of terrain ruggedness,[23] exposure to the transatlantic slave trade,[24] and malaria endemicity[25] are also included. These variables are well-known locational determinants that reflect both the preferences of missionaries and governments as well as local resistance. Finally, in order to account for the timing of mission entry and growth effects, we also extract information on the years since a society established their first station in the respective colony. Descriptive statistics of all variables are included in the Appendix (Table A1).

We test our hypotheses using hierarchical linear models with observations (colony-societies) nested in colonies as well as their country of origin.[26] Observations are weighted according to the number of mission stations they have in a colony. This is necessary to estimate the average effects for mission stations. Without weighting, estimates are biased towards small mission societies. That being said, weighting implies that a few large societies have disproportionate influence on the results, i.e. the largest quarter of societies encompasses over 60% of all stations. In robustness checks we remove large societies with 10 or more stations from the samples. The results show that findings are not driven by these large societies (see Appendix, Tables A7&A8).

4. Results

Primary Education. Table 1 presents our first set of regression models, exploring the determinants of primary schools. In addition to the two random intercepts for colony and origin, the first model includes only the effect of being situated in a British colony. The positive and statistically significant effect indicates that mission stations have higher numbers of schools in British colonies. This is in line with what much of the literature suggests.

However, when adding the variable for British societies and the variable capturing shared nationality of mission societies and colonial governments (i.e. the interaction between British society and British colony), we see that the effect of British colonies primarily benefits British societies. This is exactly in line with our alignment hypothesis. Only British societies located in British colonies built more schools. In contrast, the performance of non-British missions was not affected by whether they operated inside or outside of the British empire.

Models 3 and 4 then add geographic controls. The results for the main independent variables reveal a similar picture. In particular, it is alignment that entails a larger number of primary schools. Finally, models 5 and 6 control also for the time since a society entered a territory. This turns out to be a highly significant predictor. However, the interaction term is unaffected, thus corroborating the alignment hypothesis.

Table 2 reproduces the same set of models with the number of primary students (per station) as dependent variable. The results closely mirror the findings for primary schools. Societies in British colonies had higher levels of enrolment and this effect is driven by British societies. As such, the educational expansion that resulted from alignment was not limited to greater school construction but also led to higher enrolment rates among Africans.

Secondary education. We also conjectured that the alignment effect would be limited to primary education as colonial governments and mission societies shared worries that advanced education might lead to social unrest. In the Appendix we show that alignment has no effect on secondary education, neither on the number of schools nor on enrolment (Tables A3&Table A4).

[19] Note that for a small number of societies the Atlas contains no information on the location of stations and cannot be included in the corresponding models.

[20] Based on data from Jedwab and Moradi (2016) and Becker (2022b) on towns with more than 10,000 inhabitants at the beginning of the twentieth century.

[21] Basic geographic features are drawn from the Natural Earth project (https://www.naturalearthdata.com).

[22] Based on data from Jedwab et al. (2022).

[23] Based on data from Shaver, Carter, and Shawa (2016).

[24] Based on data from Nunn (2008), adjusted for population size in 1800 (Klein Goldewijk et al., 2010).

[25] We digitize the map by Lysenko and Semashko (1968), which indicates different levels of malaria endemicity in Africa around 1900.

[26] This modeling approach allows us to estimate the main of effect of British colonialism as well as its interaction with British societies. This would not be possible with a fixed effects specification, which would absorb all differences between colonies of different empires. Furthermore, observations would ideally be nested in their society. However, this is not feasible as many societies are small and only active in one colony. In the Appendix we also present results using linear models with cluster-robust standard errors as an alternative specification; the results are virtually the same (see Table A2).

Table 1
Main HLM Results for Primary Schools.

	Dependent variable: Primary Schools (log)					
	(1)	(2)	(3)	(4)	(5)	(6)
British colony	0.741*	0.343	0.535	0.191	0.537	0.103
	(0.381)	(0.396)	(0.436)	(0.431)	(0.427)	(0.412)
British society		−0.161		−0.189		−0.457
		(0.315)		(0.318)		(0.331)
Br. colony * Br. society		0.834**		0.775**		1.043***
		(0.354)		(0.357)		(0.370)
Years since entry					0.277***	0.281***
					(0.078)	(0.076)
Constant	0.967***	1.133***	1.176***	1.302***	1.211***	1.417***
	(0.340)	(0.332)	(0.372)	(0.355)	(0.364)	(0.339)
Geographic controls	No	No	Yes	Yes	Yes	Yes
Observations	262	262	260	260	234	234
Log Likelihood	−495.940	−491.742	−488.732	−485.395	−431.815	−427.604
Akaike Inf. Crit.	1,001.880	997.485	1,001.464	998.789	889.630	885.208
Bayesian Inf. Crit.	1,019.721	1,022.463	1,044.192	1,048.639	934.549	937.038

Note: Random effects for colony and society origin included; observations weighted by number of stations (*p < 0.1; **p < 0.05; ***p < 0.01).

Table 2
Main HLM Results for Primary Students.

	Dependent variable: Primary Students (log)					
	(1)	(2)	(3)	(4)	(5)	(6)
British colony	1.461**	0.589	0.873	0.179	0.961	0.252
	(0.624)	(0.667)	(0.639)	(0.654)	(0.637)	(0.659)
British society		−0.477		−0.508		−0.907
		(1.265)		(1.206)		(0.725)
Br. colony * Br. society		1.707**		1.558**		1.737**
		(0.755)		(0.770)		(0.780)
Years since entry					0.681***	0.706***
					(0.162)	(0.161)
Constant	3.210***	3.642***	3.706***	4.014***	3.707***	4.054***
	(0.627)	(0.741)	(0.597)	(0.699)	(0.530)	(0.548)
Geographic controls	No	No	Yes	Yes	Yes	Yes
Observations	262	262	260	260	234	234
Log Likelihood	−686.185	−681.891	−673.917	−670.342	−593.845	−590.024
Akaike Inf. Crit.	1,382.370	1,377.782	1,371.834	1,368.683	1,213.690	1,210.048
Bayesian Inf. Crit.	1,400.212	1,402.761	1,414.562	1,418.533	1,258.609	1,261.878

Note: Random effects for colony and society origin included; observations weighted by number of stations (*p < 0.1; **p < 0.05; ***p < 0.01).

Extensive margin. By looking at how alignment conditions the educational performance of established mission societies (Table A5), our analysis so far has focused on the intensive margin of the alignment effect. In this section we consider how alignment affects the presence of mission societies and their involvement in educational activities, i.e. the extensive margin (Table A6).

We therefore generate a new dataset that includes all possible colony-society combinations as units of analysis. Two new binary variables then constitute the outcomes of interest. First, *mission field* assumes the value 1 if the society is active in a given colony, and 0 otherwise. Second, *primary schools* assumes the 1 if the society operates any primary school in the colony, and 0 otherwise. We again estimate hierarchical models, with and without geographic controls.

Results are summarized in Table A9. They show that alignment neither affects where mission societies become active nor where they operate primary schools. This finding lines up with Becker (2022b) who uses detailed panel data on mission stations that were set up on the African continent between 1792 and 1924 to show that alignment in the British empire does not affect the establishment of new stations. This suggests that British colonial rule advances the educational operations of British missions (see analysis above), but it does not affect in which colonies they choose to operate.

Catholic societies. Next to Protestant missionaries, there were also a considerable albeit smaller number of Catholic missionaries. Although the two often competed for converts locally, their considerations of where to set up stations and thus their geographic spread was similar. Catholics also built schools and contributed to the establishment of Western-style educational systems, although it was less of a priority than for Protestants (Gallego & Woodberry, 2010). To test the generalizability and robustness of the provided empirical evidence for Protestant societies in the previous chapter, this section explores whether Catholics benefitted from national networks in the same way Protestants did.

Our investigation of Catholic societies and their networks faces three limitations. First, the Catholic mission to colonial Africa was more centrally organized. This implies that there was a smaller

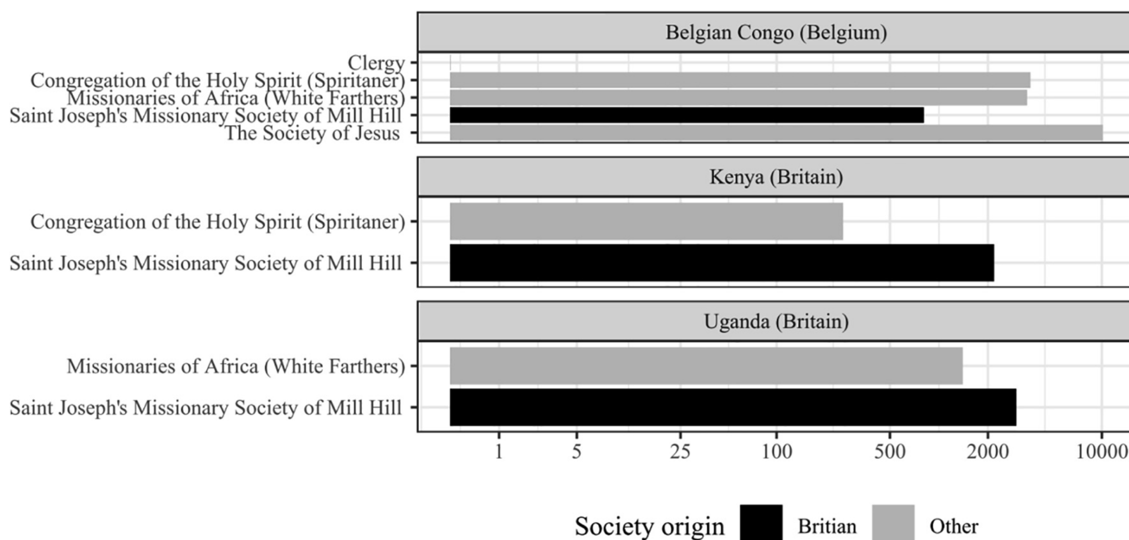

Fig. 3. Catholic Education in Colonial Africa (ca. 1927). Note: Number of students per residence station, logarithmic scale. Own computation based on Streit (1929).

number of societies and their "fields" were sanctioned by the Catholic Church. These fields often closely aligned with colonial borders, i.e. fewer societies were active within each colony. Second, only few Catholic societies originated from Britain. And third, education statistics from Catholic atlases are less detailed and less complete than they are for Protestant societies. As a consequence, we cannot perform the same detailed statistical analysis as in the previous chapter. However, we can provide some basic descriptive figures that provide initial evidence on the importance of national networks for Catholic missions.

Comparative education statistics for Catholic societies are contained in Streit's (1929) *Atlas Hierarchicus*. We could identify three colonies in which both British and non-British societies were active: the Belgian Congo, Kenya, and Uganda. While the figures on schools are incomplete, figures on enrolment are available (see Fig. 3).

It can be seen that in the two British colonies, Kenya and Uganda, the British societies outperformed their non-British counterparts. This is not the case in the Belgian Congo, where societies from France and the United States had higher enrolment rates. The figure provides first evidence that in the British empire, British Catholic societies also benefited from closer ties with the colonial government than in cases where the Catholic societies' origin did not match with the colonizer's identity.

Language. An alternative explanation for the results presented here is a common language. British mission societies might have derived comparative advantages due to their use of the English language as it facilitated communication with colonial officials and made it easier to comply with intensifying demands by colonial powers to promote their language, for example, through school curricula.

To probe this alternative explanation, we exploit the fact that British mission societies were not the only English-speaking mission societies. North American mission societies also played an important role in colonial Africa. British mission societies should have no language advantage over North-American societies and thus we should find no differences between the performances of both types of societies. Therefore, we reestimate our main models but limit the sample to British and North-American mission societies. The results show that British societies engage in more extensive educational activities in British colonies compared to other colonies, but this is not the case for North American societies, for whom no significant effects can be observed (see Appendix, Table A10&Table A11).

5. Discussion

Our findings show that national networks are an important factor in explaining the educational performance of Protestant missions. In particular, British societies performed better in British colonies even after a range of other variables has been accounted for. We find that this alignment effect applies to school construction and enrolment. It is limited to primary education and does—as expected—not apply to secondary education.

The absence of an effect for secondary education is not surprising. Missionaries as well as colonial administrators preferred primary education over secondary education, which was often regarded as not suitable for Africans, unnecessary for most jobs in the colonial economy, and a potential trigger of social unrest. Furthermore, our data also documents fewer activities in secondary education, which attest to substantive differences in how missionaries and administrators approached so-called native education. Methodologically, secondary education constitutes a placebo outcome and the null findings add to the validity of our main result.

Our findings reveal that the effect of alignment on enrolment was larger for enrolment than for school construction. While school constructions of British societies are about 1.5 times higher in British colonies than elsewhere, enrolment is almost five times higher.[27] This suggests that the additional schools alone cannot fully account for the increase in student numbers. Instead, it appears that schools also accommodated higher numbers of students. There might be various reasons for this pattern. Aligned societies might have built larger schools, hired more teachers, or enjoyed greater popularity among Africans. While the construction of new schools was an important consequence of alignment, the disproportionate effect on enrolment suggests that it also altered how schools functioned.

The cross-sectional nature of our data limits us to analyzing associations between key variables. However, our theory suggests a plausible causal mechanism that might underpin these associa-

[27] Effect sizes, i.e. exp(British colony + Br. colony * Br. society)-1, computed based on model 4 in Tables 1 and 2.

tions. While collecting new data is inherently challenging for historical work, future studies might be able to further explore and better identify the assumed causal link. We take some comfort in the study by Becker (2022b) who exploits the formal colonization of territories as an exogenous shock to the establishment of new mission stations and demonstrates the existence of an alignment effect.

6. Conclusion

Colonial governments and mission societies shared many interests in the colonial project. They cooperated in various areas but first and foremost in the educational sector. We, therefore, argued that the network consisting of mission societies and colonial governments is crucial for explaining how effective societies were in expanding educational services.

Our quantitative analyses were based on information on more than 100 mission societies in 25 African colonies in the interwar period. One important novelty of our study is the newly collected historical education data that allows us to examine the early expansion of education at the subnational level, i.e. mission societies, and to take geographic covariates into account. In contrast to previous studies which use more readily available data and focus on how colonial and missionary legacies manifest in present outcomes, our historical data allowed us to look at the immediate expansion of education in the colonial period.

The presented findings show that the expansion of education was enabled by national alignment between colonial governments and mission societies. This alignment captures ties in networks within colonies, and in the metropole, where important decisions over colonial education were made. As differences in educational outcomes have been shown to affect the performance of educational systems and educational outcomes until today (Lankina & Getachew, 2012, p. 167; Wantchekon et al., 2015; Wietzke, 2014), our account of analyzing national networks in colonial empires might inform further studies on historical processes and their persistence. National networks complement prominent explanations on the early expansion of formal education in Africa that have focused on Britain's liberal education policy and contextual factors. We expect—and future studies should set out to verify—that national networks shape sub-national differences in access to education and thus educational outcomes until today.

Furthermore, education has been shown to shape many other economic and political outcomes, such as state-building. In the context of colonial Africa, education was used to subjugate local populations and to develop a labour force that catered to the colonial economy and state. Later, education spurred calls for independence and democratization, leaving a lasting imprint on nation-building even beyond the colonial era. Our argument suggests that missionaries through their ties with colonial governments were decisively involved in this process.

It is also important for future work to explore whether the alignment effects were limited to the colonial period or whether they carry forward to the present day. As other studies have shown that colonial legacies in the educational sector but also beyond have long-term consequences persisting up to today, there are good reasons to expect this to be the case. Such long-term analyses can also be helpful in disentangling mechanisms, in particular the contribution of denominations and national origins to economic and political legacy of missions.

Finally, national networks were not unique to the educational sector. In fact, they were pervasive to colonial empires. Apart from missionaries, settlers and merchants were crucial to the operation of colonies and cooperated with colonial governments in many areas. Whether they were part of the same national network is likely to have influenced what activities they could engage in and what influence they had on governments in turn. Future research should thus further explore the implications of national networks in colonial empires.

Data availability

Replication data is available through the Harvard Dataverse https://doi.org/10.7910/DVN/JG0F76.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.worlddev.2023.106286.

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