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The cousin marriage tradition, colonial shocks, and the performance of informal firms in sub-Saharan Africa

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Abstract

Research Summary: The paper explores how the deep historical roots of informal institutions influence current informal businesses. It proposes that both pre-colonial institutions—the tradition of cousin marriage—and the subsequent shocks of colonization still impact the performance of informal firms. We theorize on how the effects of historical family systems are moderated by the traumatic and spatially heterogeneous shocks of colonialism, in particular the cultural values of the colonizers (individualism) and their religious (missionary) activities. Our hypotheses are tested by regression analysis based on surveys of informal businesses in multiple regions of eight African countries. We find that the cousin marriage tradition is negatively associated with the performance of current informal businesses though this relationship is attenuated in places where colonizers were more individualistic.

Managerial Summary: This paper explores how the pre-colonial family institutions—the tradition of cousin marriage—and the subsequent shocks of colonization jointly

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impact the performance of contemporary informal firms in sub-Saharan Africa. We propose that the historical tradition of cousin marriage has persistent and negative effects on the revenue and labor productivity of contemporary informal businesses. This is because informal entrepreneurs in ethnic areas with the cousin marriage tradition may prioritize social obligations over economic incentives. However, these relationships are attenuated in ethnic areas colonized by European countries with more individualistic cultural values. Our findings highlight the importance for business owners and managers to understand the deep historical roots of the social norms of the communities and groups with which they interact.

KEYWORDS
Africa, colonialism, cousin marriage, informal institutions, informal owner-manager ventures, religion

*[O]*ur species' oldest and most fundamental institutions—those related to kinship and religion.

Joseph Henrich (2020: 470)

1 | INTRODUCTION

Institutional theory has become one of the key perspectives in business research, viewing institutions as generating consistent behavioral expectations (De Castro et al., 2014) which allow for economic cooperation. Institutions can be classified according to the dominant mechanism of enforcement (Coleman, 1990), with formal institutions being supported by the state mechanism of coercion. In contrast, informal institutions represent the shared norms of behavior, values, beliefs, and traditions,[1] and are supported by social sanctions such as exclusion from future transactions. Informal institutions are especially important in understanding of the performance of informal entrepreneurs (Assenova & Sorenson, 2017; De Castro et al., 2014; Ketchen et al., 2014; La Porta & Shleifer, 2011), whose business activities are for the most part not covered by formal institutions (De Soto, 2000; Godfrey, 2011). The informal sector is "intrinsically bounded to norms, shared cultural understandings and collective identities" (Salvi et al., 2023: 284).

We propose a new theoretical framework to understand how the historical deep roots of informal institutions affect the contemporary performance of informal entrepreneurs. We integrate two theoretical perspectives concerning cultural anthropology and the traumatic societal shocks, respectively. Using the former, we conceptualize the deep historical roots of informal institutions as operating through the family system (Todd, 2019). We focus on marriage practices, specifically on *cousin marriage* (in-marriage)—acceptance and practice of marriage between close cousins (example: uncle and niece) within a specific social group or local community—in contrast to prohibiting cousin marriage (Henrich, 2020). Cousin marriage creates dense networks of family connections and strong kinship ties, reinforcing obligations toward *ingroups* (Enke, 2019; Schulz et al., 2019), while its prohibition, by facilitating relationships with the *outgroup*, provides a supportive cultural basis for a wider range of market transactions, more open

employment strategies, and larger firm sizes (Bertrand & Schoar, 2006; Greif, 2006). We propose that the historical practice of cousin marriage has an enduring effect on the contemporary performance of informal businesses. Even when cousin marriage is no longer practiced, the cultural anthropology perspective suggests that a set of informal norms originating from it may persist. We therefore raise the first research question: what are the effects of historical/pre-colonial informal institutions (the cousin marriage practice) on contemporary informal business performance?

We connect the above insights with the literature on how traumatic historical shocks affect contemporary business behavior. It is often assumed that informal institutions are robust to external disruptions and change only slowly (North, 1990; Williamson, 2000). However, large institutional upheavals do occur (Hall & Taylor, 1996), especially in emerging economies (Decker et al., 2020), and they include shocks to informal institutions (Gelfand et al., 2024). As observed by Klüppel et al. (2018), these historical shocks can be either beneficial (e.g., disruptive technological change enhancing productivity) or traumatic (e.g., colonization). In the latter case, they are more likely to "negatively and considerably disrupt broader society through culture and institutions" (Klüppel et al., 2018: 704). These shocks may interact with the characteristics of pre-existing informal institutions leading the impact of the historical informal institutions on contemporary business performance to be moderated. Specifically, we theorize about the large-scale European colonization in Africa, perhaps one of the most important external interventions in modern history (Michalopoulos & Papaioannou, 2013, 2016), and discuss how this may have interacted with pre-colonial informal institutions to influence contemporary informal firms. Our second research question is therefore: how has the impact of pre-colonial cousin marriage practice on contemporary business performance been moderated by colonial shocks?

Our research context is sub-Saharan Africa, which provides a rich setting to examine both the historical legacy of family systems and of heterogeneous colonial shocks (Acemoglu et al., 2001; Nunn, 2010). Moreover, local (meso-level) informal institutions (De Castro et al., 2014) have long been understood to play a significant role alongside country-level institutions in affecting business performance in Africa (Schulz et al., 2019; Todd, 2019). In particular, local informal institutions in Africa can be identified at the ethnic-area level—that is, territories/homelands of traditional ethnic groups (Alexander & Honig, 2016; Easterly & Levine, 1997; Herbst, 2000; Michalopoulos & Papaioannou, 2013). These ethnic areas in Africa are not aligned with country borders, as European colonizers partitioned the same ethnic groups into different countries and included different ethnic groups in the same country (Alesina et al., 2016).

In this paper, we consider jointly the cousin marriage tradition effects at the ethnic-area level and the geographically heterogeneous impacts of colonization. To test our research questions, we combine information from two datasets: the Ethnographic Atlas (Murdock, 1967) that documents local historical ethnographic information including family systems, and World Bank enterprise survey data from localities across the eight sub-Saharan African countries covered. We find that informal firms located in an ethnic area with the cousin marriage tradition in the precolonial era have lower revenue and labor productivity contemporarily. However, the impact of this deep tradition is attenuated where the colonizers brought with them more individualistic cultural values.

We make two theoretical contributions to the understanding of informal institutions in entrepreneurship literature. First, we use the cultural anthropology perspective to explain how the lasting impact of historical informal institutions, in particular family systems, is modified by traumatic institutional shocks. By this, we engage with the wider question of how informal institutions evolve (Gelfand et al., 2024). Traumatic shocks are often utilized in empirical analyses because they are exogenous and therefore help to alleviate reverse causality problems (Klüppel et al., 2018). However, the literature on how historical traumatic shocks affect contemporary business performance remains sparse. We integrate traumatic shocks into our theoretical framework by considering the interplay between colonial institutional influences and pre-colonial institutional traditions, and how the interplay leaves a lasting effect on contemporary informal business performance. Our findings provide support for the view that while informal institutions are deeply rooted in historical family systems, they may also experience significant changes when affected by traumatic shocks.

Our third contribution is both theoretical and empirical. We exploit the misalignment between local ethnic-area-level informal institutions and national borders in Africa (Alexander & Honig, 2016; Michalopoulos &

Papaioannou, 2014) to analyze the impact of informal institutions at the local level. While much of the comparative entrepreneurship literature is based on heterogeneity between countries (Su et al., 2017), our empirical results highlight the importance of ethnic-level analysis, in line with the cultural anthropology perspective. This adds to the few studies, such as Alexander and Honig (2016), that focus on cultural attributes at the ethnic level. While the effects we discuss are akin to those analyzed by the family firm literature (Bertrand & Schoar, 2006; Peng et al., 2018), in our case they originate at the meso or local rather than the individual level.

This paper also answers three recent calls in entrepreneurship literature related to informal institutions and informal businesses. First, entrepreneurship scholars have called for more research on the institutional context of informal entrepreneurship (De Castro et al., 2014) and especially for more progress in understanding how informal institutions shape the behaviors of informal entrepreneurs (Ketchen et al., 2014). We advance the discussions of informal institutions by incorporating insights from cultural anthropology into entrepreneurship research, highlighting the family system as a deep root of informal institutions, especially in sub-Saharan Africa. Empirically, we add a cross-ethnic-area layer to the cross-country layer in order to identify informal institutions at an appropriate geographic level. Second, we answer the call to bring history into entrepreneurship literature (Decker et al., 2020). This enables us to study the persistent effects of a historical informal institution—the cousin marriage tradition in the precolonial era—on contemporary informal business performance, as well as the moderating effect of the major institutional upheavals of colonization. Finally, we also respond to calls for a greater consideration of Africa in business research (e.g., George et al., 2016; Honig, 2016). Despite its considerable economic potential, Africa remains underexplored in business literature (Walsh, 2015; Zoogah et al., 2015). At the same time, we also answer recent calls for more emphasis on the roots of family ties and local communities in advancing theories on institutions in Africa (Kamoche & Wood, 2023; Nachum et al., 2022).

2 | THEORY: MOTIVATING THE HYPOTHESES

2.1 | Theoretical framework: Informal institutions, institutional shocks, and institutional legacy

Informal institutions relate to socially shared values, norms and customs that generate consistent expectations of social behavior, facilitating cooperation. They are supported by social sanctions. Within informal institutions, cultural values are typically unwritten and are less specific than norms: they represent "broad tendencies to prefer certain states of affairs over others" (Hofstede et al., 2010: 9). In contrast, formal institutions are rules codified as law and supported by coercion delivered by political structures, most often the state (Coleman, 1990; North, 1990). These elements form institutional systems (Dau et al., 2022).

We integrate the perspectives of cultural anthropology with the analysis of traumatic shocks to provide a framework to discuss the persistence and evolution of informal institutions and their impacts on informal businesses. A cultural anthropology perspective suggests that informal institutions are persistent and can be transferred both within families and by social, location-based mechanisms of imitation (Todd, 2019) potentially to influence modern-day informal business practices (Greif, 2006; Greif & Tabellini, 2017). However, shocks, especially traumatic ones (Klüppel et al., 2018), can bring changes in informal institutions and may drive the institutional system away from congruency (Mahoney & Thelen, 2009), producing cultural mismatches (Gelfand et al., 2024). For informal institutions, the effectiveness of norms is primarily driven by stable patterns of social- and self-enforcement (Coleman, 1990; Gelfand et al., 2024). In this approach, a person adheres to social enforcement of conjoint norms and accepts the legitimacy of others' rights to control their actions because at some point in the future, they may wish to affirm their own rights. Social norms will then provide them too with the legitimate right to control others' actions that will affect them. The effectiveness of these social norms is also guaranteed by self-enforcement that is internalized by individuals (Coleman, 1990).

However, informal institutions can also experience radical changes if the mechanism of social- and self-enforcement is disrupted by traumatic shocks that are antipathetical to the legitimacy of original social norms. As we have seen, people accept the legitimacy of social norms because to reject them can impose large costs: in particular, they may lose the right to sanction others in the future when in turn others' actions have negative impacts upon them. Being exposed to another institutional context may reduce the costs of deviating from the original social norm because individuals can now identify alternative ways to mitigate the negative impacts from others. Moreover, "once people begin to observe norm violation, they may imitate such behavior, contributing to norm erosion" (Gelfand et al., 2024: 359). This may lead some individuals to reject the legitimacy of the original social norm. Moreover, when individuals' interests are aligned with the new informal institution, they may be able to access new benefits that were not available to them under the incumbent social norms. As a consequence, the original informal institutions will be weakened.

Informal firms operate largely outside the domain of formal institutions because they are not legal entities able to sign formal contracts (Batjargal et al., 2013). They are therefore organizations which must rely on informal institutions, notably shared norms of behavior, as the basis for their business relationships. De Soto (1989) documented how informal businesses build their own set of informal rules and norms that facilitate their business transactions. However, De Soto's perspective narrows down the character of informal institutions to a functional substitute for the ineffective or counterproductive formal business rules while abstracting from the role of persistent, deeply rooted informal institutions. At the same time, he correctly identified that informal institutions have a critically important impact on informal firms because the latter are not fully part of the formal market system and are therefore not beholden to government-supported formal institutions (Batjargal et al., 2013; De Castro et al., 2014; Godfrey, 2011). Instead, informal firms operate largely or entirely within the boundaries of informal institutions (Webb et al., 2014) and especially rely on social identity (Haarman et al., 2022). Hence, while formal businesses rely both on formal and informal institutions in their transactions (Estrin et al., 2013), informal institutions and social norms play an especially important role for informal businesses as the main mechanism for the enforcement of financial and commercial agreements (Batjargal et al., 2013; Webb et al., 2014). Therefore, while the formal sector will also be impacted by informal institutions, the informal sector is where the impact of both changes and persistence in informal institutions would be easier to detect.

2.2 | A cultural anthropology perspective: The cousin marriage tradition and its persistent effects on the performance of contemporary informal businesses

We follow cultural anthropologists in proposing that variation in longstanding family marriage traditions underlies key differences in informal institutions, and heterogeneity in family systems leads to differences in reliance on market-driven incentives and hence underlies variation in the performance of informal firms. According to Goody (1976), Todd (2019), and Henrich (2020), family systems represent the fundamental building block of societies, generating the principal mechanism for endowing individuals with norms and structuring social interactions through patterns of marriage, residence, and social behaviors (Bau & Fernandez, 2021; Rijpma & Carmichael, 2016; Schulz et al., 2019). Seen from the anthropological perspective (Henrich, 2020), informal institutions first crystallized around family systems that define kinship structures and mutual obligations that result from the related social identities. Family systems represent a building block for most other social structures, sustaining patterns of mutual support and cooperation that derive from the most fundamental social link between a mother and her child (Rijpma & Carmichael, 2016; Schulz et al., 2019). Family systems then extend to broader social groupings, underpinning kinship ties (Khavul et al., 2009; Khayesi & George, 2011), social capital (Busch & Barkema, 2022; Davidsson & Honig, 2003; Putnam, 2000), trust (Peng, 2003) and social organizations including clan and tribal systems (Greif & Tabellini, 2017; Hearn & Filatotchev, 2019). Family systems therefore provide a foundational explanation as to why kinship ties, social capital, and trust are stronger in some locations than in others, as well as helping to explain how these

dimensions are interrelated (Peredo, 2003; Stewart, 2003). The historical tradition of cousin marriage is viewed as one of the key elements of the family system (Murdock, 1959; Schulz et al., 2019; Todd, 2019). It refers to the practice of strengthening the in-group by keeping marriage almost entirely internal to the family or clan, and it focuses on acceptance of—or even support for—marriages between close cousins (Henrich, 2020). In contrast, prohibiting cousin marriage encourages marriage to outsiders and therefore acts to weaken in-group relationships (Enke, 2019; Goody, 1983; Henrich, 2020).

Critically, these marriage practices may have both functional and dysfunctional effects vis-à-vis economic performance. Strong kinship relations create trust within the ingroups and therefore offer access to the ingroup-specific bonding social capital that may be used by those who engage in business activities, for example providing social insurance from family members in the face of unexpected negative events (Estrin et al., 2025). However, such support often brings with it obligations and the expectation of sharing, which may contradict business objectives related to economic performance outcomes (Banerjee & Duflo, 2011; Busch & Barkema, 2022; Light & Dana, 2013). An analogous example is family employment within the family business. This can have positive effects, facilitating trust and making hiring easier where labor markets are imperfect (Cruz et al., 2012), which is particularly relevant to the informal sector. However, the expectation to offer jobs to kinship-related individuals may also limit labor market options and lead to suboptimal choices in hiring because it distorts incentives and may hamper investment in human capital, leading to lower labor productivity (Perez-Alvarez & Strulik, 2021).

Furthermore, while kinship structures may facilitate ingroup transactions, they can also create problems in dealing with the outgroup and can therefore hamper the development of beneficial business connections with those seen as "aliens" (Rodríguez-García, 2006)—members of the outgroup. Correspondingly, higher trust in the family goes hand in hand with lower generalized trust that is needed to deal with strangers (Bertrand & Schoar, 2006; Fukuyama, 1995). This implies that, from the business performance perspective, we may order family systems along a dimension that is associated with the strength of their ingroup orientation. The tradition of cousin marriage plays a critical role because it creates a "group of families exchanging spouses within a territory" (Todd, 2019: 68). Such kinship ties result in a dense social network which facilitates the effectiveness of social sanctions that support norms of social obligations and knowledge-sharing (Coleman, 1990). However, at the same time, these ties may result in the sharing of knowledge which is redundant, while making access to more valuable knowledge and resources embedded in outgroups harder to achieve.

The aspects of informal business performance upon which we focus are (i) revenue, and (ii) labor productivity. The amount of revenue earned is associated with the scale of the operation, which depends in part on whether the firm sells on wider versus narrower markets. We propose that cousin marriage tradition leads to limits on scaling, as the firm's potential market is largely restricted to the ingroup; reliance on social interdependence within the broader family or clan restricts the possibilities for diversification via arms-length trading on open markets (Greif, 1993). This is because wider markets will contain agents from outgroups as well as ingroups, and as we have argued, cousin marriage tradition increases mistrust of people alien to the clan. There are social barriers for developing those aspects of exchange and trade that are not reliant on kinship relationships. Put another way, while cousin marriage implies stronger bonding trust, it simultaneously makes it harder to establish bridging trust (Ermisch & Gambetta, 2010). Moreover, it limits revenue because the dominance of kinship links based on the norm of cousin marriage can hamper the development of larger firms, which require different models of governance (Greif, 2006; Greif & Tabellini, 2017).

At the same time, the tradition of cousin marriage may also affect informal business productivity because of the trade-off between optimizing the use of human capital in the organization and prioritizing kinship obligations. Productivity in informal businesses is limited because of ingroup hiring and preference for insiders in all aspects of operational practice. Informal businesses may hire cousins rather than the best person for the job, at a cost in terms of productivity. This lack of competitive pressure and the limits placed on organizational development and learning lead to suboptimal organizational structures and lower productivity (Akbari et al., 2019; Bertrand & Schoar, 2006; Enke, 2019; Tonoyan et al., 2010).

The cultural anthropology literature suggests that the effects of historical cousin marriage practices can be persistent even if such practises are no longer practiced contemporarily (Henrich, 2020; Todd, 2019). Family systems are stable over time (Todd, 1985) and attachment to kin is persistent over generations (Giuliano & Nunn, 2021). Gelfand et al. (2024) offers a systematic discussion of the mechanism and contextual features that support persistence of norms, including social influence models. Norms are likely to remain stronger under conditions of ecological threats (Gelfand et al., 2024), which have characterized and continue to characterize the sub-Saharan Africa. Even when the actual practice of cousin marriage diminishes in a given ethnic region, the outlook and cultural norms associated with it may persist. Empirical studies combining contemporary survey data with historical ethnographic data confirm that traditional family systems, including but not limited to the cousin marriage practice, are strongly associated with contemporary measures of family ties and family arrangements (Alesina & Giuliano, 2014; Galasso & Profeta, 2018). Path-dependence in family systems results from the intergenerational transmission of social beliefs (Bau & Fernandez, 2021), specific to ethnic areas. Indeed, Michalopoulos and Papaioannou (2014) compare the economic performance of the same ethnic areas partitioned into different African countries and found it to be more affected by ethnic-specific traits than by national institutions. Thus, these beliefs are persistent in space, and even migrants tend to adopt the practices and beliefs of the local population (Todd, 2019). This suggests a second channel of path-dependence in family systems—cultural learning and reproduction, based on "conformist transmission—a tendency to learn from people who are engaging in behaviours that are more common compared with others" (Heine, 2020: 42).

As a result, we argue that the historical practice of cousin marriage will result in lower revenue and labor productivity (more workers for a given level of output) contemporarily. These effects will be especially pronounced in informal firms in those areas of sub-Saharan Africa where these marriage practices were prominent features of pre-colonial social structures. We therefore posit the following:

> **Hypothesis 1.** The tradition of cousin marriage in a given ethnic area will be associated with contemporary informal businesses that have (a) lower revenue and (b) lower labor productivity.

2.3 | The traumatic colonial shock and its heterogeneous impact

Institutions, both formal and informal, can change (Gelfand et al., 2024; Mahoney & Thelen, 2009). In particular, especially in emerging markets, societies may be subject to exogenous traumatic shocks that lead to major institutional changes (Bau & Fernandez, 2021; Klüppel et al., 2018). When comparing formal and informal institutions in this situation, it has been argued that informal institutions may be more resistant to external shocks (Williamson, 2000) and that informal institutions could smooth out the transition and help formal institutions to subsequently evolve (Zhang, 2022). However, traumatic shocks can disrupt all institutions. In particular, combining the cultural anthropology perspective and the insights on traumatic shocks, we propose that even deep informal institutions such as family systems will be subject to radical change if the exogenous interventions are accompanied by disruptive shocks in informal institutions which put their evolution onto new paths.

A prominent example of a large-scale and long-standing traumatic exogenous shock that changed the institutional system in Africa is colonization (Klüppel et al., 2018). It involved a cultural intervention which may have reduced the cohesiveness of ethnic networks (Kamoche & Wood, 2023; Michalopoulos & Papaioannou, 2013, 2016; Nunn, 2010). The impact of a traumatic shock on preexisting institutional arrangements is affected by the magnitude and durability of the shock (Klüppel et al., 2018). Because of both the strength and the duration of colonization shock, the colonizers' informal institutions left imprints on their colonies and modified the original informal institutions. We follow Zhang's (2022) approach to investigate the impacts of historical shocks in proposing that the colonial shock could moderate the relationship between historical informal institutions and contemporary outcomes. If colonization changed the original informal institutions, we would expect the link between the cousin marriage tradition in precolonial Africa and modern business outcomes to be attenuated.[2]

However, different parts of Africa with different historical traditions were colonized by different European countries, themselves each with different systems of informal institutions. Thus, the colonization shock was heterogeneous across different informal institutions in Africa (Klüppel et al., 2018), and we propose that the degree of attenuation of the historical informal institutions will itself depend on specific characteristics of the colonizers' institutions. The impact of the cousin marriage tradition on informal firm performance will be attenuated according to the degree of incongruence between the cousin marriage tradition and the values and norms brought by the colonizers.

In particular, we consider two related aspects of heterogeneity among colonizers: (a) heterogeneity in their cultural values that might undermine the legitimacy of social obligations under the cousin marriage tradition; and (b) heterogeneity in religious norms indicated by the density of Christian missionary activities, as Christian teachings specifically reject cousin marriage and endogamy (Goody, 1983; Henrich, 2020). Starting with (a), we propose that individualism as a cultural value (informal institution) of the colonizers attenuates the impact of the cousin marriage tradition of precolonial Africa. This is because stressing the autonomy of the individual, which is central to individualism (O'Brien, 2015), undermines both the legitimacy of social kinship obligations and the notion of reliance on an ingroup. Individualism as a cultural value emphasizes autonomy and independent decision-making, plus agency and personal achievement (Gorodnichenko & Roland, 2017; O'Brien, 2015). It leads an individual to prioritize their personal objectives over the collective goals of the ingroup (Heine, 2020) and is therefore fundamentally alien to the cousin marriage tradition.

O'Brien (2015) explores components of individualism that individuals utilize in their decision-making and behavior. These categories may help us to understand how cousin marriage can be undermined by the cultural influences of individualism. Firstly, cousin marriage implies a stronger role of the family in marriage decisions, which is inconsistent with the autonomy and voluntarism at the heart of individualist culture. In turn, the independence of marriage decisions is associated with 'privatization' that is weakening the linkages with the ingroup. Finally, under individualism, these independent decisions require a stronger element of reflexivity and are likely to be driven by self-actualization objectives (like fulfillment of romantic love) in place of family obligations. The role of individual agency is amplified, consistent with individualism (O'Brien, 2015).

Theories in cultural anthropology suggest that highly individualistic cultures are associated with family systems based on the nuclear family, a structure located at the opposite end of the spectrum from cousin marriage (Todd, 2019). In the nuclear family tradition, the position of the ingroup is weaker, and both the position of the individual self and that of the outgroup are stronger (Heine, 2020). When we consider the effects on business behavior, a greater emphasis on the individual implies greater freedom for individual choices. It also creates more space for entrepreneurial ambition and for focus on individual entrepreneurial performance, including self-enhancement (Liñán et al., 2016). At the same time, the ingroup plays a smaller role in modifying individual entrepreneurial objectives and choices.

Individualism therefore implies a stronger fault line between the self and the ingroup, but a weaker one between the ingroup and the outgroup (Heine, 2020). The blurred boundary between the ingroup and the outgroup facilitates a richer and more complex variety of relationships with the outgroup, including trading on markets without being constricted to ingroups, and therefore potentially the availability of a greater variety of resources. By contrast, the cousin marriage tradition typically grants individuals the least freedom among family systems by subjecting marriage choices to strict customary rules and reinforcing obligations toward ingroups (Todd, 1985). Indeed, the rules for partner selection in general are much less strict in individualistic societies (Hofstede et al., 2010). This implies that individualism represents a social norm that directly undermines the impact of the cousin marriage tradition.[3] Once again, these anti-individualistic traits of the cousin marriage tradition may be inconsistent with an entrepreneurial mindset, which is based on individual agency and implies a strong focus on the performance of one's own business with limited reference to the needs of the ingroup, for example for employment or income. Importantly, there is considerable heterogeneity in measures of individualistic values among the European colonizers in Africa.[4] For example, Portugal scores below the mean in terms of individualistic values while Britain is a positive outlier (Hofstede et al., 2010; Taras

et al., 2012). This suggests that the impact of the cultural shock of colonialism on the cousin marriage tradition may vary according to the home culture of colonizers and therefore the regions that they colonized.

In terms of process, the relatively small scale of colonial administration in Africa does not imply its impact on local informal institutions was insignificant (Morrock, 1973). One reason is that the colonizers often chose new local leaders with attitudes closely compliant with their own in order to stamp their authority on ethnic areas (Faloyin, 2022). Qualitative evidence suggests that these new local leaders were likely to modify the pre-colonial institutions (Bolt & Gardner, 2020). The local administrators were less accountable to local people than had been precolonial clan leaders: Heldring and Robinson (2012: 9) describe the process as "removing the power of clan heads and replacing them with the king's men". Local people were therefore incentivized to invest in new relationships with new local leaders (Acemoglu et al., 2014). As a result, pre-existing kinship-based or ingroup-based networks became eroded by these new networks, weakening kinship ties and ingroup, especially when the pre-existing social norms were inconsistent with new cultural values.

We therefore propose that the heterogeneity in the cultural values of the colonizing powers in Africa led to different effects of the traumatic shock of colonization on historical cousin marriage practices, according to the informal institutions of the colonizer. In particular, if the cultural values of the relevant colonial power were more individualistic, this undermined to a greater extent the legitimacy of social kinship obligations based on historical cousin marriage. This leads us to posit:

> **Hypothesis 2.** The effect of the cousin marriage tradition in a given ethnic area on informal businesses' (a) revenue and (b) labor productivity is more attenuated in those former colonies that were exposed to more individualistic cultural values as a result of colonial shocks.

Religion is another category of informal institutions (Klüppel et al., 2018), which cultural anthropologists emphasize alongside family systems (Goody, 1983; Henrich, 2020; Todd, 2019). As argued by Todd (2019: 10), religions and family systems co-evolve because "[r]eligion generally has something to say about sexuality and marriage, the status of women, the authority of parents, and the equality and inequality of brothers." Thus, the spread of the colonizers' religion represents another mechanism through which the traumatic shock of colonization might have affected local informal institutions. In particular, colonization brought in its train the spread of Christianity through the activities of missionaries (Carey, 2011). We propose that such activities in each ethnic area might also have eroded the cousin marriage tradition. The Western Christian churches represented by colonizers were all equally hostile to cousin marriage tradition (Goody, 1983; Henrich, 2020). Indeed, Western Christianity went to extremes in its bans and proscriptions against cousin marriage in Europe,[5] a process which led to a serious weakening of traditional kinship structures.[6] With colonization, this cultural program was extended to Africa, where in the late nineteenth and early twentieth centuries there were large-scale European missionary activities (Nunn, 2010).

In addition, the new social networks brought by the missionaries that centered around churches acted to reduce the importance of social obligations within the kinship group. Coleman (1990) showed how religious actors seek to strengthen the new identity of converts by engaging them in social activities which could substitute for their previous engagement in kinship networks. As documented by Okoye (2021), Christian missions eroded traditional norms and beliefs by bringing in social activities that were alternatives to "village" life. As a consequence, the benefits of deviating from precolonial social norms had increased, and some individuals relied relatively less on social obligations related to kinship ties.

We therefore propose that Christian missionary activities acted to weaken local informal institutions based on the cousin marriage tradition. We suggest that this impact of missionary activities will be associated with their physical presence because the effectiveness of the missionaries' cultural program depended on their ability to meet, discuss, and proselytize local inhabitants on an individual or small group basis. The density of missionary activities in Africa varied greatly across regions, often for geographic or climatic reasons. This leads us to propose that the historical geographic density of Christian missions in different ethnic regions of Africa will be positively associated with the weakening of the informal institutions derived from the cousin marriage tradition in these ethnic areas. Thus:

Hypothesis 3. The effect of the cousin marriage tradition in a given ethnic area on informal businesses' (a) revenue and (b) labor productivity is more attenuated where Christian missions were denser during the colonial shock.

Figure 1 summarizes our theoretical framework, illustrating the cousin marriage tradition as a deep root of historical informal institutions, and how historical informal institutions persist and are affected by large-scale traumatic shocks of colonization, and in turn influence the contemporary performance of informal firms.

3 | DATA AND METHODS

The data on informal firms are taken from the geo-located World Bank Informal Sector Business Surveys (ISBS). These surveys were implemented between 2011 and 2020 in eight countries in sub-Saharan Africa: Democratic Republic of the Congo (DRC), Ghana, Kenya, Mozambique, Rwanda, Somalia, Zambia, and Zimbabwe. We matched ISBS with a unique dataset that contains historical/pre-colonial ethnographic information, including family systems, on ethnic areas in Africa. The African continent is characterized by considerable ethnic heterogeneity within and across national boundaries (Nachum et al., 2022). While such patterns can be found elsewhere, the incompatibility of administrative (national) borders with ethnic areas is particularly pronounced in Africa: colonizers partitioned more than 200 ethnic areas across countries (Michalopoulos & Papaioannou, 2014). This resulted in highly fragmented ethnic space within most African countries (Alesina et al., 2016; Easterly & Levine, 1997). We argue that, even if the spatial identification of ethnic groups weakens over time, the corresponding ethnic areas still preserve the informal institutional traits associated with the traditional ethnic groups, including the traits that crystallized from family systems: as Todd (2019) puts it, places have memories.

The historical ethnographic data were matched with the ISBS sample of contemporary firms using Global Positioning System (GPS) coordinates. The firms are all informal and are not registered with the local ministry of commerce or the respective municipality. The ISBS are the counterparts of the well-recognized World Bank Enterprise Surveys (WBES) but exclusively focus on the informal sector. The sampling methods and questionnaires are consistent across countries and years in the ISBS project, making data from different countries in different years

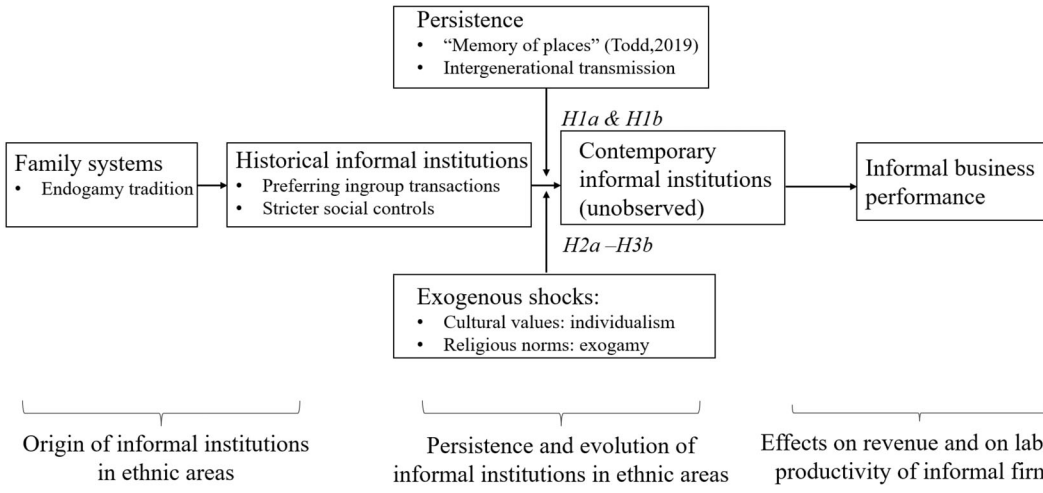

FIGURE 1 A theoretical framework on the persistence and evolution of informal institutions and how they affect informal business performance.

comparable. ISBS exclusively surveys owners/managers of informal firms in urban areas because rural business activities in Africa operate intermittently, being greatly affected by seasonal agricultural labor requirements (Weber et al., 2023). The ISBS data have already been explored in the business and economics literature (Assenova & Sorenson, 2017; La Porta & Shleifer, 2011, 2014).

Sampling informal firms is challenging as it is hard to identify suitable lists of the underlying populations of informal firms in any geographical unit (Khayesi et al., 2014). In order to ensure representativeness, each city was segmented into small geographic grids as primary sampling units, and grids were then stratified using the Adaptive Cluster Sampling method to account for potential clustering of informal firms. Surveyors then screened and interviewed all informal firms in randomly selected (stratified) grids (Amin & Islam, 2015; Assenova & Sorenson, 2017).[7] Surveys were administered in the local language where necessary. Amin and Islam (2015) suggest that sample biases, if any, are unlikely to systematically affect results.

We focus on business owners who started their business, alone or with partners. This is consistent with standard operationalizations of the concept of the entrepreneur (Parker, 2018). We therefore exclude those who purchased an existing business, joined an existing family business, or joined an existing non-family business, as the performance of these businesses might be affected by the previous owners. The number of observations in our sample is 4112.[8] Figure 2 maps the distribution of informal firms in our sample, showing that the majority of firms are clustered in a few urban centers, yet across a variety of ethnic areas. A more detailed description of our sample by country and ethnic area is reported in the Supporting Information, Table S1.[9]

3.1 | Individual level control variables

The ISBS contain a wide range of variables at the individual level. Drawing on existing research on entrepreneurs' performance (Parker, 2018), including in sub-Saharan Africa (Saka-Helmhout et al., 2020), we use gender, age, education, business experience, sole ownership, and sectoral affiliation as control variables. Next, we control for the length of time spent in a given city, as migration is another factor that may relate to cousin marriage: moving away from home is more costly in societies with strong kinship ties (Alesina et al., 2015; Greif & Tabellini, 2017). We further include two variables related to finance: first, a dummy variable which corresponds to financial resources for day-to-day operations obtained from friends or relatives (= 1 if a firm has financial support only from friends or relatives), and second, a dummy which corresponds to financial resources for day-to-day operations that come from external sources (= 1 if a firm has access to formal finance).[10] As we focus on informal firms, we extend this definition of "formal finance" to include professional moneylenders and microfinance agents. We do not include observations where there is no data on financial source; however, only 1.07% of the sample belongs to this category. Table 1 below provides a complete list of variables, as well as the summary statistics, for the sample employed in the regression. It shows that 50% of the owner-managers are female, and their average age is 37, consistent with the demographic structure in sub-Saharan Africa (Decker et al., 2020). Twenty-three percent of owner-managers draw on informal finance and 14% on formal finance. Eighty-six percent of the informal businesses in our sample have sole ownership, similar to findings in other studies on sub-Saharan African firms (Pierce & Snyder, 2020).

3.2 | Ethnic-area and country level independent variables

Our analysis requires data on the key independent variable: pre-colonial cousin marriage practices. The measure draws upon the Ethnographic Atlas, a database by George Murdock, which compiles ethnographic data on pre-industrial societies (Murdock, 1967). The Atlas provides information on the pre-industrial (mostly nineteenth and early twentieth centuries) characteristics and traditions in 1265 ethnic areas worldwide (Bau & Fernandez, 2021). Information is coded for the earliest period for which satisfactory ethnographic data (i.e., early written evidence) has

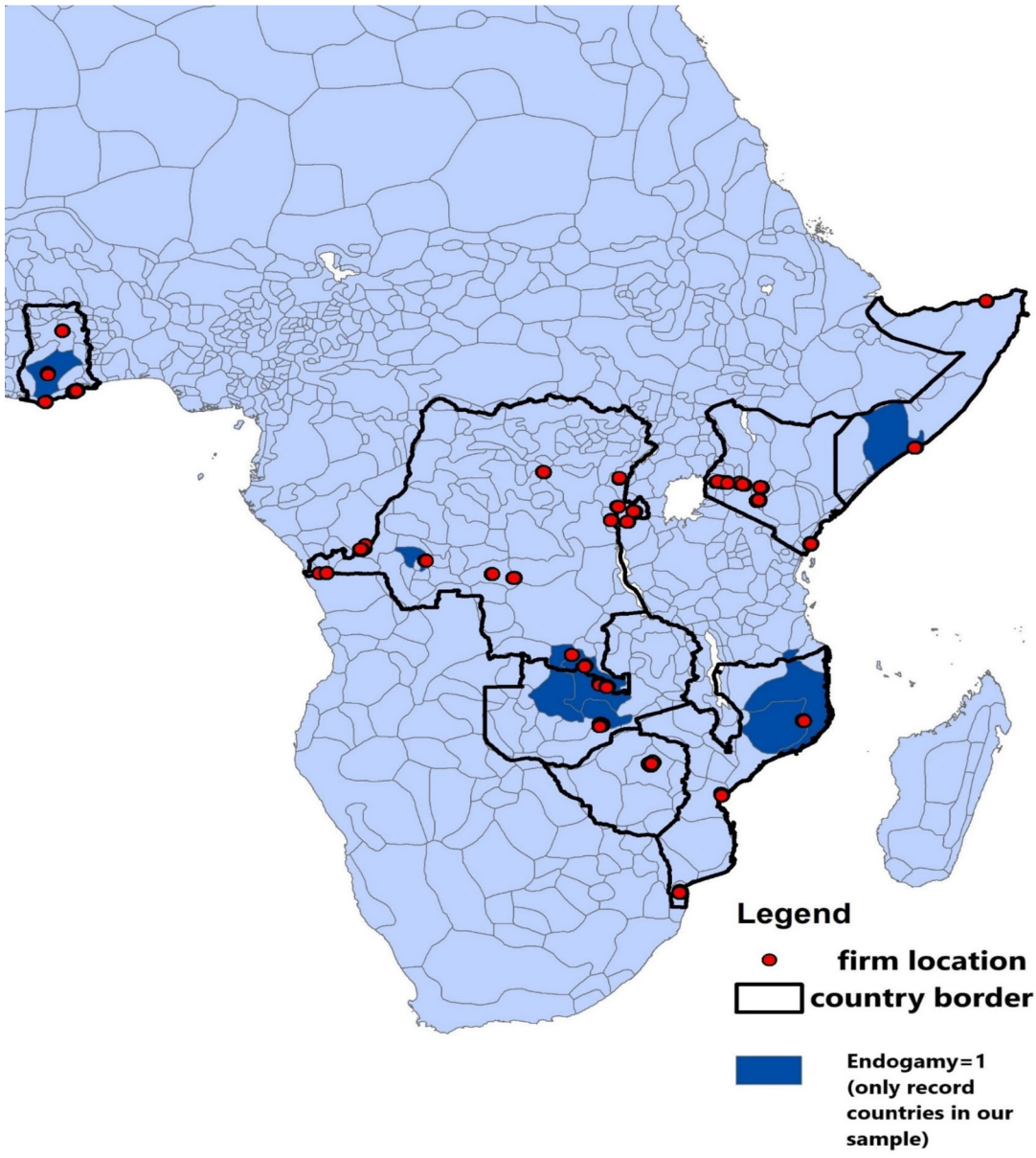

FIGURE 2 Map of the World Bank surveys and ethnic areas with cousin marriage tradition.

been available or reconstructed (Giuliano & Nunn, 2018). For countries without written histories, the information relies on the earliest observations. Records in the Ethnographic Atlas therefore capture the social, cultural, and economic traits in ethnic areas mostly prior to industrialization and/or European contact (Giuliano & Nunn, 2018). This source is extensively used in research in African economic history, especially on the persistent effect of traditional/pre-colonial family systems and cultural traits (Alesina et al., 2013; Michalopoulos & Papaioannou, 2013, 2014; Nunn & Wantchekon, 2011). Rijpma and Carmichael (2016) conducted an in-depth analysis on the reliability of the Ethnographic Atlas in capturing family systems and found that the record for Africa is exactly where this database excels because most ethnographic studies were conducted in Africa. Unsurprisingly, this source offers the most comprehensive and comparable ethnographic data on Africa for the pre-colonial period.

TABLE 1 Variables and descriptive statistics.

Variable	Definition	Reference	Mean	Std. dev.	Min	Median	Max
Dependent variables							
Revenue	Monthly sales (raw numbers here but scaled by sector-country average in regression analysis)	La Porta & Shleifer, 2011	118255.5	998949.6	0	1500	40,625,000
Average productivity of labor (APL)	Monthly sales/employment size (raw numbers here but scaled by sector-country average in regression analysis); Employment size is defined as paid + unpaid employment	Thébaud, 2015; La Porta & Shleifer, 2011	43671.9	230840.6	0	850	7,000,500
Independent variables							
(a) Demographics							
Female	Dummy, = 1 if largest owner is female	Parker, 2018	0.50	0.50	0	0	1
Age	Age of largest owner	Parker, 2018	37.32	10.65	14	36	90
≥ Secondary education	Largest owner: highest edu = secondary school or above	Parker, 2018	0.63	0.48	0	1	1
Entrepreneurial experience	Dummy, = 1 if previous occupation is self-employed	Parker, 2018	0.23	0.42	0	0	1
City experience	Years live in this city/age		0.75	0.34	0	1	1
Has children	Dummy, = 1 if no. of children >0	Thébaud, 2015	0.62	0.49	0	1	1
(b) Informal business characteristics							
Formal finance	Dummy, = 1 if financial sources for day-to-day operations are moneylender, microfinance, banks	Similar to Straub, 2005	0.14	0.35	0	0	1
Informal finance	Dummy, = 1 if financial sources for day-to-day operations are friends or relatives	Inspired by Davidsson & Honig, 2003	0.23	0.42	0	0	1
Sole owner	Dummy, = 1 if there is a single owner, = 0 if multiple owners	Thébaud, 2015	0.86	0.35	0	1	1
Business age	Years since the business was established	Thébaud, 2015	5.64	6.83	0	3	131
Permanent premises	Dummy, = 1 if has a permanent premise (including own household)	Similar to Kushnir & Amin, 2013	0.57	0.50	0	1	1

(Continues)

TABLE 1 (Continued)

Variable	Definition	Reference	Mean	Std. dev.	Min	Median	Max
Another contract job	Dummy, = 1 if the largest owner currently has another job in a registered business, in addition to the informal firm surveyed	Estrin et al., 2013	0.12	0.32	0	0	1
Operating hours	Hours of operation per week	Amin, 2010	61.22	24.83	1	61	168
(c) Family institution							
Cousin marriage tradition	Dummy, = 1 if cousin marriage preferred	Rijpma & Carmichael, 2016	0.51	0.50	0	1	1
Murdock year	The year to which information on family institutions dates back for each ethnic area	Rijpma & Carmichael, 2016	1907	28.44	1830	1920	1950
(d) Colonization related							
Hofstede score	Hofstede score on individualism	Taras et al. (2012)	1.21	0.81	−0.88	1.66	1.66
Mission stations	Number of mission stations per 1000 km^2 on each ethnic homeland during colonial period	Nunn, 2010	41.1	66.65	0	9.92	238.71
Sector FE	Manufacture = 1; Service = 2; Trade = 3; Street vendor = 4						
Country-survey year FE	Countries where the surveys had a span of two consecutive years: Rwanda, Somalia, Zambia. Other countries: DRC, Ghana, Kenya, Mozambique, Zimbabwe						

Our measure relates to the cousin marriage practice in the precolonial era in each ethnic area as documented in the Ethnographic Atlas, where parallel-cousin marriage implies lineage endogamy (Schulz, 2021). Following the literature (Giuliano & Nunn, 2018; Rijpma & Carmichael, 2016; Schulz, 2021), we use *Variable 25* (cousin marriage preferred rather than just permitted) to construct the dummy which equals 1 (0) if cousin marriage is preferred (otherwise). In defining cousin marriage, the empirical literature focuses on preferring cousin marriage rather than simply permitting it because many societies may nominally allow cousin marriage but rarely practice it (Goody, 1983).

We combined the information from the Ethnographic Atlas with the ISBS using the Ethnolinguistic Map that has information on the spatial distribution of ethnic areas in sub-Saharan Africa (Murdock, 1959; Nunn, 2008). We link a business location with an ethnic area using the GPS coordinate data available from the ISBS. Thus, if an informal firm's GPS coordinates locate it inside the territory of an ethnic area on the Ethnolinguistic Map, we link the information on the cousin marriage practice in the corresponding ethnic area to this informal business. Empirical evidence suggests that contemporary ethnic groups still tend to live in their historical homelands in Africa despite population movements, and the location of historical ethnic homelands is strongly correlated with respondents' ethnicities in modern surveys[11] (Michalopoulos & Papaioannou, 2013; Nunn & Wantchekon, 2011). As different ethnic areas were recorded at different years in the Ethnographic Atlas (Giuliano & Nunn, 2018), we include the year the information relates to for each ethnic area. This helps to control for measurement errors in the Ethnographic Atlas data that may increase over time. The mean value of this variable is 1907 (Table 1).

Table 1 indicates that we have a balanced sample in terms of the cousin marriage practice: 51% of owner-managers are exposed to this tradition. Figure 2 presents the countries and localities within countries where the ISBS were implemented, and the ethnic areas characterized by the cousin marriage tradition. Each small polygon with a light-gray borderline refers to an ethnic area (the homeland of an ethnic group). Dark (light) blue polygons refer to ethnic areas with (without) the cousin marriage tradition. The figure verifies that within-country fragmentation of ethnic areas is a prominent feature in sub-Saharan Africa. Most importantly, even geographically proximate ethnic areas within the same country can have different patterns of marriage practice. Thus, our comparisons are largely among informal businesses in otherwise matched areas that vary on family systems.

To test H2a (about revenue) and H2b (about labor productivity), we use a continuous Hofstede score (Hofstede, 1980) to measure the degree of individualism for colonizers. Hofstede's work on cultural differences has been widely used in the entrepreneurship literature (Bennett & Nikolaev, 2021). Because theory suggests that we should aim to capture the colonizers' degree of individualism during the colonial period (or at least not far from the end of the colonial era), we use Hofstede's original score which was recorded in the 1960s. In a robustness check, we show that results remain consistent if we use more updated versions of the Hofstede score, but these contemporary measures also reflect cultural changes in those European countries in recent years (Taras et al., 2012). Hofstede et al. (2010) argue that while there are historical shifts in cultural values, the relative positions of countries change less, and it is the latter that matter for us. Higher Hofstede's scores indicate that the culture is more individualistic. Hofstede scores range widely among the former colonizers in our sample: 1.66 for the UK (former colonizer of Zambia, Ghana, Kenya and Zimbabwe); 1.13 for Italy (former colonizer of Somalia); 1.09 for Belgium (former colonizer of DRC and Rwanda); and − 0.88 for Portugal (former colonizer of Mozambique).[12]

For H3a (about revenue) and H3b (about labor productivity), the information on the number of Christian missions during the colonial period originates with a map created by William Roome in 1924, which was reproduced and used by Nunn (2010, 2014). The map documents the precise location of all foreign mission stations in colonial Africa. Following Nunn (2010), we calculate the number of mission stations per 1000 square kilometers during the colonial period in each ethnic area in our sample, with the land area calculated directly from the Ethnolinguistic Map. We follow Nunn (2010) in taking the natural logarithm of one plus this measure of the density of mission stations in each ethnic area as our measure of exposure to missionary activities. The findings remain robust if we do not take the logarithm.

3.3 | Dependent variables: Measures of performance

Our hypotheses follow McKenzie and Woodruff (2017) in focusing on two measures of business performance in the empirical analysis: (a) revenue and (b) labor productivity. To test Hypotheses 1a, 2a, and 3a, we follow Khayesi et al. (2014) and use revenue (sales) as the dependent variable. We focus on revenue rather than accounting measures such as profitability because this indicator of the scale of the informal firm is well aligned with our theoretical argument on the impact of dense kinship structure, and because many informal firms do not keep profit and loss accounts, as documented by Haarman et al. (2022).[13]

Average labor productivity (APL) is the performance measure for Hypotheses 1b, 2b, and 3b, proxied by monthly sales revenue divided by employment. Conceptually, this indicator is important to informal sector firms, implying, for example, its ability to cover its labor costs (Nguyen & Nordman, 2018). Both performance measures are defined relative to the appropriate comparator group to ensure comparability: that is, in each case, we divide the measure by the respective sector-country average.

All dependent variables and individual-level independent variables come from ISBS. Around 3330 observations (the exact number varies with the dependent variable) have non-missing values in all variables obtained from the ISBS. Among these 3330 observations, 94% (around 3100) can be matched to the Ethnographic Atlas. Our sample spans the period from 2011 to 2020. Table 2 presents correlation coefficients for the variables used in our models. In particular, both dependent variables (logarithm of revenue and logarithm of APL) are negatively correlated with the cousin marriage tradition, the correlations being −0.12 and − 0.15, respectively. We also calculated variance inflation factors (VIF) based on the full model including all independent variables (including the cousin marriage tradition, the Hofstede score, and the density of mission stations) and all the control variables. These VIF values were all below 5, which indicates no strong multicollinearity.

3.4 | Model specification

To test Hypothesis 1a,b, we use the following model, where y denotes firm performance (revenue or labor productivity), and i denotes informal business represented by the owner-manager, which operates in industrial sector p, is located in country j, and in ethnic area s, surveyed in year t. $COUSIN_s$ represents the cousin marriage tradition in ethnic area s. X corresponds to n individual-level control variables, Z relates to m ethnic area-level control variables, u_p are sectoral dummies (manufacturing, service, trade, and street vendors), and v_{jt} are country-year dummies (data in all countries are cross-sectional, but the surveys in Rwanda, Somalia and Zambia had a span of two consecutive years).

$$y_{ijspt} = \alpha + \beta * COUSIN_s + \delta 1 * X1_i + \cdots + \delta n * Xn_i + \eta 1 * Z1_s + \cdots + \eta m * Zm_s + u_p + v_{jt} + \epsilon_{ijspt}. \quad (1)$$

Country dummies control for several confounding factors that can affect business performance. The most important one relates to the formal institutions. Formal institutions such as the rule of law, property rights, regulation of labor markets, alongside the economic development in each country, can affect the economic opportunities of informal firms. Since ethnic territories and country borders do not overlap in our analysis (Figure 2), we are able to use country dummies to control for formal institutions, while explicitly modeling variation of informal institutions at the ethnic area level. In addition, country dummies also control for time-invariant geographic characteristics such as natural endowments that may affect business prospects.

For Hypotheses 2a–3b, Equation (1) is augmented with the interactions between the *COUSIN* variable and the relevant variables corresponding to the hypotheses (Hofstede's individualism score of colonizers in the 1960s for Hypothesis 2a,b, density of mission stations in each ethnic area in colonial Africa for Hypothesis 3a,b). All models are estimated by ordinary least squares with robust standard errors.

TABLE 2 Correlation table.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
DV1	Ln(revenue)	−0.17	0.05	0.10	0.06	0.10	−0.09	−0.01	0.00	−0.05	0.11	0.01	0.02	0.11	−0.12	−0.03	−0.07	0.09
DV2	Ln(APL)	−0.14	0.00	0.06	0.05	0.03	−0.09	−0.02	−0.01	0.03	0.09	−0.02	−0.05	0.08	−0.15	−0.03	−0.07	0.11
1	Female	1.00																
2	Age	0.05	1.00															
3	≥ Secondary education	−0.15	−0.10	1.00														
4	Entrepreneurial experience	0.06	0.09	−0.01	1.00													
5	Formal finance	−0.02	0.03	0.02	0.00	1.00												
6	Informal finance	0.01	−0.07	0.01	0.01	−0.20	1.00											
7	City experience	−0.01	0.04	0.06	−0.05	−0.03	0.02	1.00										
8	Has children	0.00	−0.13	0.04	−0.05	0.05	0.02	0.06	1.00									
9	Sole owner	0.12	0.01	−0.06	0.01	−0.04	−0.02	−0.02	−0.05	1.00								
10	Business age	−0.09	0.40	−0.07	0.03	0.02	−0.10	0.03	−0.06	0.01	1.00							
11	Permanent premise	0.04	0.06	0.00	−0.07	0.05	0.02	0.16	0.08	−0.08	−0.04	1.00						
12	Another contract job	−0.05	0.01	0.15	0.00	0.06	0.03	0.08	0.07	−0.12	−0.07	0.08	1.00					
13	Operating hours	0.01	0.01	0.03	−0.02	0.02	−0.01	0.04	0.01	0.02	0.03	0.07	0.01	1.00				
14	Cousin marriage tradition	0.04	0.02	−0.09	0.00	0.04	0.04	0.08	0.01	−0.04	0.00	0.17	0.08	0.00	1.00			
15	Murdock year	−0.08	−0.11	−0.08	−0.05	0.09	0.01	−0.03	0.05	−0.06	−0.06	0.15	0.03	0.06	0.53	1.00		
16	Hofstede score	−0.01	0.04	0.13	0.12	0.06	−0.03	−0.10	−0.03	−0.09	0.05	−0.02	0.02	0.00	0.23	0.37	1.00	
17	Mission stations	0.06	0.04	−0.07	0.12	0.02	−0.12	−0.20	−0.17	0.06	0.11	−0.12	−0.11	0.05	0.12	0.32	0.28	1.00
Variance inflation factor		1.17	1.28	1.16	1.06	1.07	1.09	1.11	1.08	1.06	1.27	1.28	1.08	1.05	1.57	2.09	4.23	1.62

4 | RESULTS

Models 1–2 in Table 3 contain two benchmark models with individual-level control variables and the dummies discussed above. Revenue is the performance measure in Model 1 and labor productivity in Model 2. In Models 3–4, we include the cousin marriage tradition indicator to test Hypothesis 1a (in Model 3) and 1b (in Model 4). In Table 4, we interact the cousin marriage tradition with a continuous measure of Hofstede's individualism score to test Hypotheses 2a (Model 1) and 2b (Model 2). Models 3 and 4 include the interaction between the cousin marriage tradition and the density of mission stations to test Hypotheses 3a (Model 3) and 3b (Model 4).[14]

4.1 | Results on hypotheses

We obtain strong support for Hypothesis 1a: the cousin marriage tradition has a significant negative association with firm performance as measured by revenue ($b = -0.111$, $p < 0.001$ in Model 3 in Table 3). Next, consistent with the results in Model 4 in Table 3, Hypothesis 1b is also supported: the cousin marriage tradition is negatively and significantly associated with average productivity ($b = -0.103$, $p < 0.001$). The size of the effect is not small. Other things being equal, location within an ethnic area with the cousin marriage tradition is associated with a decrease in revenue of 11.1% of the country-sector mean effect, and a decrease in productivity of 10.3% of the country-sector mean effect.

Hypothesis 2a,b is concerned with how the impact of the cousin marriage tradition on informal firm performance (revenue for Hypothesis 2a and labor productivity for Hypothesis 2b) is moderated by the degree of individualism of colonizers. Consistent with Hypothesis 2a, the negative impact of the cousin marriage tradition on revenue is mitigated when the colonizer had an individualistic culture ($b = 0.165$, $p < 0.001$). Taking into account both the direct effect of the cousin marriage tradition and the interaction effect in Table 4, we see that the effect of cousin marriage is largely alleviated in Model 1: the cousin marriage tradition is associated with a decrease in revenue by 22.9% of the country-sector mean effect ($b = -0.229$, $p < 0.001$), but a one-standard-deviation increase in the colonizer's Hofstede score mitigates this effect by 13.4% ($0.81 * 0.165 = 0.134$), suggesting that 58.5% of the adverse effect of the cousin marriage tradition on revenue could be attenuated by individualistic culture. In other words, the imprint of individualistic culture weakened the impact of the cousin marriage tradition on revenue by more than half. The results for Hypothesis 2b for labor productivity in Model 2 are very similar to the results for revenue, highly significant and following the same pattern. The cousin marriage tradition is associated with a decrease in labor productivity by 23.2% of the country-sector mean effect ($b = -0.232$, $p < 0.001$), but a one-standard-deviation increase in the colonizer's Hofstede score mitigates this effect by 14.5% ($0.81 * 0.179 = 0.145$). This suggests that 62.5% of the adverse effect of the cousin marriage tradition on labor productivity in informal firms could be attenuated if the colonial power had a more individualistic culture.

Hypothesis 3a,b is concerned with how the impact of the cousin marriage tradition on informal firm performance is affected by the density of colonists' missions (H3a for revenue and H3b for labor productivity). In Table 4, we use a continuous variable, the density of mission stations, to proxy for the colonial period religious influence. For revenue as the dependent variable in Model 3, the interaction term between the density of mission stations and the cousin marriage tradition is insignificant ($b = 0.046$, $p = 0.521$), which does not provide support for Hypothesis 3a. We visualize the results of mission density in Figure 3 to see if the average effect masks any heterogeneous impacts along the spectrum of the density of mission stations. Given that the cousin marriage tradition reduces revenue, if the religion attenuated this impact by weakening the informal institution associated with strong kinship ties, we should observe that revenue increases with the density of mission activities, and that a larger increase occurs in ethnic areas with the cousin marriage tradition. This is what Figure 3 suggests, though the difference between ethnic areas with and without the cousin marriage tradition is not large.

TABLE 3 Models related to control variables, Hypothesis 1a,b.

	[1]		[2]		[3]		[4]	
	Control variables only				H1a		H1b	
Variables	Ln (revenue)	*p* value	Ln (APL)	*p* value	Ln (revenue)	*p* value	Ln (APL)	*p* value
Cousin marriage tradition					−0.111	*0.001*	−0.103	*0.001*
					(0.032)		(0.032)	
Female	−0.112	*0.000*	−0.082	*0.000*	−0.123	*0.000*	−0.093	*0.000*
	(0.016)		(0.017)		(0.018)		(0.018)	
Age	0.017	*0.000*	0.008	*0.052*	0.015	*0.001*	0.006	*0.203*
	(0.004)		(0.004)		(0.004)		(0.004)	
Age squared	−0.000	*0.000*	−0.000	*0.041*	−0.000	*0.002*	−0.000	*0.148*
	(0.000)		(0.000)		(0.000)		(0.000)	
≥ Secondary education	0.137	*0.000*	0.095	*0.000*	0.141	*0.000*	0.093	*0.000*
	(0.018)		(0.018)		(0.018)		(0.018)	
Entrepreneurial experience	0.061	*0.004*	0.065	*0.002*	0.083	*0.000*	0.085	*0.000*
	(0.021)		(0.021)		(0.023)		(0.023)	
Formal finance	0.094	*0.001*	0.026	*0.308*	0.112	*0.000*	0.030	*0.279*
	(0.029)		(0.026)		(0.031)		(0.028)	
Informal finance	−0.030	*0.093*	−0.043	*0.015*	−0.025	*0.187*	−0.036	*0.055*
	(0.018)		(0.018)		(0.019)		(0.019)	
City experience	−0.011	*0.657*	−0.011	*0.653*	−0.016	*0.528*	−0.008	*0.751*
	(0.025)		(0.024)		(0.026)		(0.025)	
Has children	0.002	*0.901*	−0.016	*0.331*	−0.004	*0.835*	−0.016	*0.366*
	(0.017)		(0.016)		(0.018)		(0.017)	
Sole owner	−0.069	*0.015*	0.043	*0.081*	−0.057	*0.052*	0.053	*0.035*
	(0.028)		(0.024)		(0.029)		(0.025)	
Business age	0.003	*0.051*	0.003	*0.063*	0.004	*0.022*	0.004	*0.033*
	(0.002)		(0.002)		(0.002)		(0.002)	
Permanent premises	0.029	*0.097*	0.020	*0.241*	0.046	*0.014*	0.031	*0.086*
	(0.017)		(0.017)		(0.019)		(0.018)	
Another contract job	0.025	*0.426*	−0.034	*0.185*	0.028	*0.376*	−0.038	*0.148*
	(0.031)		(0.026)		(0.032)		(0.026)	
Operating hours	0.002	*0.000*	0.002	*0.000*	0.002	*0.000*	0.002	*0.000*
	(0.000)		(0.000)		(0.000)		(0.000)	
Murdock year					0.001	*0.124*	0.001	*0.037*
					(0.000)		(0.000)	
Four sector FE	Yes		Yes		Yes		Yes	
Country-year FE	Yes		Yes		Yes		Yes	
Constant	−0.033	*0.717*	0.205	*0.031*	−1.317	*0.143*	−1.562	*0.079*
	(0.092)		(0.095)		(0.899)		(0.890)	
Observations	3335		3322		3092		3079	
R-squared	0.144		0.137		0.160		0.152	

Note: Robust standard errors in parentheses. *p* values in italics.

However, for labor productivity in Model 4 of Table 4, we see somewhat more convincing results: the negative effect of cousin marriage tradition is reversed where the density of Christian missions is high ($b = 0.138$, $p = 0.052$), consistent with Hypothesis 3b. The magnitude of the effect, however, is modest. In this equation, the cousin marriage tradition is associated with a decrease in average productivity of 10.6% of the country-sector mean effect ($b = -0.106$, $p = 0.002$). Increasing the density of mission stations by 1% mitigates this effect by 0.138% and the significance level is relatively low ($p = 0.052$ for the interaction term).

Taken together, we do not find unambiguous support for Hypothesis 3a,b. There is some evidence that the counteracting effect of the colonizers' religious culture did work against the impact of the cousin marriage tradition on informal firm performance when business performance is measured by labor productivity, but less so in terms of revenue.

4.2 | Results on controls

The results for the control variables in Models 1–2 in Table 3 are mostly in line with our expectations. The female variable has a significant negative sign ($p < 0.001$ in both models), suggesting some social constraints based on gender. The effect of the age of the owner-manager is nonlinear, with performance increasing initially with age and then declining, a finding that is consistent with the literature (Parker, 2018). The pattern for human capital is again as expected. A higher level of education (at the secondary school level) is associated with both larger revenue and higher productivity. The impact of prior entrepreneurial experience is similar: more prior entrepreneurial experience is associated with larger revenue and higher labor productivity. The age of the business has a marginally significant positive impact on revenue as well as on labor productivity ($p = 0.051$ and $p = 0.063$, respectively). Likewise, longer hours of operations have the expected positive and significant impact on revenue and productivity ($p < 0.001$ in both models). Interestingly, being a sole owner has a marginally significant positive effect on productivity ($p = 0.081$), while, as we would expect, it has a negative significant effect on revenue ($p = 0.015$). The use of formal finance has a positive significant direct effect on revenue ($p < 0.001$), though the positive relationship with productivity is not significant ($p = 0.308$). For other control variables, the results are mostly not significant.

4.3 | Robustness checks

4.3.1 | Identification of the effect of individualism

We conducted a series of robustness checks to verify the validity of our results. We first consider the measure of colonizers' individualism. Here, we may note that the European colonization was a strongly exogenous traumatic shock that was imposed in Africa without consent or impact from local ethnic groups. However, one possible concern is that choosing colonies by different types of colonizers could be non-random: colonizers with a more individualistic culture could have stronger incentives to focus on areas with some cultural affinity. That effect could be indirect: they might have chosen the colonies with the highest market potentials, which in turn could be associated with a more individualistic culture. Hence any observed difference between places colonized by European countries with highly individualistic cultures and other places may reflect pre-existing differences across Africa. We address this potential bias in three ways. First, we already used country dummies to control for time-invariant geographic endowments based on which colonies were chosen. These endowments include climate, terrain ruggedness, and natural resource endowments (see Alesina et al., 2015; Decker et al., 2020).

Second, we explored a strong indicator of market potential: whether the colony has a coastal line (Moore et al., 2021). In Table S2.1 (Supporting Information), we replicate the main regression model but add an interaction term between the cousin marriage tradition and a dummy variable on whether the colony has a coastal line. If our

TABLE 4 Models related to Hypotheses 2a,b and 3a,b.

	[1]		[2]		[3]		[4]	
	H2a		H2b		H3a		H3b	
Variables	Ln (revenue)	*p* value	Ln (APL)	*p* value	Ln (revenue)	*p* value	Ln (APL)	*p* value
Cousin * Hofstede	0.165	*0.000*	0.179	*0.000*				
	(0.022)		(0.024)					
Cousin * Mission stations					0.046	*0.521*	0.138	*0.052*
					(0.072)		(0.071)	
Mission stations					0.057	*0.385*	0.011	*0.864*
					(0.066)		(0.065)	
Cousin tradition	−0.229	*0.000*	−0.232	*0.000*	−0.106	*0.001*	−0.106	*0.002*
	(0.030)		(0.031)		(0.033)		(0.033)	
Female	−0.128	*0.000*	−0.099	*0.000*	−0.126	*0.000*	−0.098	*0.000*
	(0.018)		(0.018)		(0.018)		(0.018)	
Age	0.012	*0.005*	0.003	*0.563*	0.014	*0.001*	0.005	*0.244*
	(0.004)		(0.004)		(0.004)		(0.004)	
Age squared	−0.000	*0.013*	−0.000	*0.460*	−0.000	*0.002*	−0.000	*0.170*
	(0.000)		(0.000)		(0.000)		(0.000)	
≥ Secondary education	0.133	*0.000*	0.085	*0.000*	0.141	*0.000*	0.095	*0.000*
	(0.018)		(0.018)		(0.018)		(0.018)	
Entrepreneurial experience	0.087	*0.000*	0.089	*0.000*	0.082	*0.000*	0.084	*0.000*
	(0.023)		(0.023)		(0.023)		(0.023)	
Formal finance	0.105	*0.001*	0.023	*0.415*	0.114	*0.000*	0.034	*0.219*
	(0.031)		(0.028)		(0.031)		(0.028)	
Informal finance	−0.027	*0.152*	−0.038	*0.042*	−0.024	*0.194*	−0.035	*0.063*
	(0.019)		(0.019)		(0.019)		(0.019)	
City experience	−0.015	*0.562*	−0.006	*0.809*	−0.011	*0.657*	0.000	*0.988*
	(0.026)		(0.025)		(0.026)		(0.025)	
Has children	0.003	*0.885*	−0.009	*0.616*	−0.000	*0.996*	−0.011	*0.543*
	(0.018)		(0.017)		(0.018)		(0.018)	
Sole owner	−0.058	*0.045*	0.052	*0.041*	−0.058	*0.047*	0.051	*0.041*
	(0.029)		(0.025)		(0.029)		(0.025)	
Business age	0.004	*0.032*	0.003	*0.048*	0.004	*0.022*	0.004	*0.033*
	(0.002)		(0.002)		(0.002)		(0.002)	
Permanent premises	0.043	*0.021*	0.028	*0.123*	0.047	*0.012*	0.032	*0.076*
	(0.019)		(0.018)		(0.019)		(0.018)	
Another contract job	0.026	*0.411*	−0.040	*0.122*	0.030	*0.346*	−0.035	*0.176*
	(0.032)		(0.026)		(0.032)		(0.026)	
Operating hours	0.002	*0.000*	0.002	*0.000*	0.002	*0.000*	0.002	*0.000*
	(0.000)		(0.000)		(0.000)		(0.000)	
Murdock year	0.001	*0.128*	0.001	*0.037*	0.000	*0.640*	0.000	*0.430*

(Continues)

TABLE 4 (Continued)

Variables	[1] H2a Ln (revenue)	p value	[2] H2b Ln (APL)	p value	[3] H3a Ln (revenue)	p value	[4] H3b Ln (APL)	p value
	(0.000)		(0.000)		(0.001)		(0.001)	
Four sector FE	Yes		Yes		Yes		Yes	
Country-year FE	Yes		Yes		Yes		Yes	
Constant	−1.268	*0.155*	−1.506	*0.086*	−0.412	*0.677*	−0.492	*0.616*
	(0.890)		(0.878)		(0.988)		(0.982)	
Observations	3092		3079		3092		3079	
R-squared	0.169		0.164		0.162		0.158	

Note: Robust standard errors in parentheses. *p* values in italics.

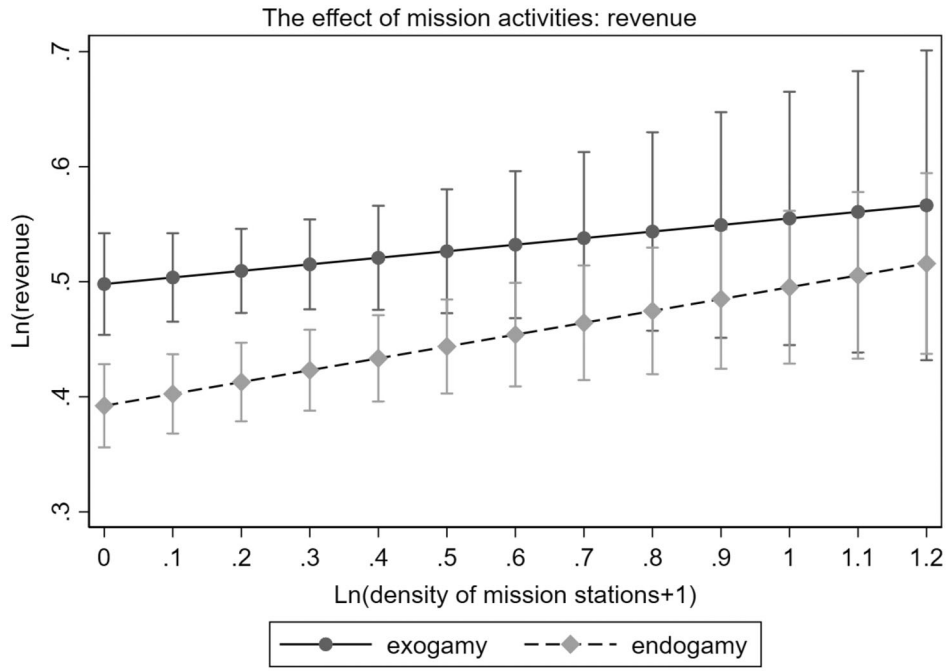

FIGURE 3 The impact of missionary activities on the relationship between the cousin marriage tradition and business performance. Revenue is scaled by country-sector average.

results in Table 4 were not driven by the choice of colonies based on market potentials, we would expect the colony's endowment did not moderate the relationship between the cousin marriage tradition and market-based outcomes such as revenue and labor productivity. Indeed, this is supported by the regression results in Models 1 and 2 of Table S2.1.

However, the colonizer's cultural individualism may proxy for some other omitted variable in our interactive effect. We therefore explored a two-stage least squares (2SLS) instrumental variable regression (Wooldridge, 2018)

where we identified two instrumental variables that are unlikely to directly determine contemporary performance and can exogenously predict the identity and therefore the culture of colonizers (Curtin et al., 1995). First, following Ricart-Huguet (2021), we use the number of harbors in each African country as an instrumental variable for the Hofstede individualism score of colonizers. The motivation for this instrument relies on the market potential argument discussed in the previous paragraph. Historical information on harbors comes from Deasy (1942). Second, European influence in colonial Africa was also determined by the mortality rate of European settlers as a result of malaria. Settlers prioritizing their life and health may be more likely to avoid colonies with greater risks of malaria. However, individualistic cultures may be less responsive to the threat of diseases (Bian et al., 2022). Based on Acemoglu et al. (2001), we use the Malaria Ecology Index (Kiszewski et al., 2004) as an alternative instrumental variable for the Hofstede individualism score of colonizers associated with a given colony. Both instrumental variables satisfy the exclusion restriction as they are either historical measures or ecological conditions that do not directly affect the contemporary performance of individual informal firms. The instrumental variables also satisfy the relevance criterion (Greene, 2012). More generally, Angrist and Pischke (2009) emphasize the importance of avoiding the problem of "forbidden regressions" when the endogenous variable is involved, including in interaction terms. Following their approach, we treat the Hofstede score of colonizers and its interaction with the cousin marriage measure as two endogenous variables and estimate two first-stage equations: one uses the Hofstede score as the dependent variable, and the other uses its interaction with cousin marriage as the dependent variable. For each first-stage regression, we use the instrumental variable and its interaction with cousin marriage to predict the two endogenous variables that feature in the second-stage regression. Country dummies are not included in these regressions as the Hofstede score has to enter each regression explicitly.

Tables S2.2 and S2.3 in the Supporting Information present results for models where the number of harbors and Malaria Ecology Index are instrumental variables, respectively, and report both first stage and second stage regression results. The Cragg–Donald Wald *F*-statistics and the Kleibergen–Paap Wald *F*-statistics in all first-stage regressions are close to or larger than 10, suggesting that our instrumental variables are strong and relevant (Greene, 2012). The coefficients of the interaction between Hofstede scores and cousin marriage remain positive and significant in all second-stage regressions, consistent with the main results.

4.3.2 | Identification of the effect of cousin marriage tradition

Cousin marriage practice in ethnic areas in precolonial Africa is measured more than a century ago, while our measures of business performance were recorded in 2011–2020. Thus, this measure of the historical informal institution is predetermined, and therefore immune to reverse causality problems. Nevertheless, there may be alternative explanations for our main findings for Hypothesis 1a,b. Perhaps the most important of these concerns the degree of economic complexity in different regions.[15] Family systems might be related to the type of agricultural practice (Alesina et al., 2013) and precolonial institutional strength (Michalopoulos & Papaioannou, 2013). One may argue that ancestral societies with the cousin marriage practice and strong kinship networks may be associated with lower levels of economic complexity, which may hinder business performance in the informal sector. As an additional check, we calculated the measure of precolonial economic complexity using variable *v30* in the Ethnographic Atlas (Giuliano & Nunn, 2018). The variable lists the precolonial settlement patterns for each ethnic area in ascending order of economic complexity, ranging from the least settled (nomadic or fully migratory) to the most settled (complex settlements). For our data, we found that the cousin marriage tradition is actually associated with a higher level of economic complexity (correlation = 0.4), rather than as expected with a lower level. In fact, in our data we observe the cousin marriage practice only in the areas representing the two most settled patterns (therefore the advanced pre-colonial economic conditions): ethnic areas with compact and relatively permanent settlements and ethnic areas with complex settlements. This indicates that, if anything, we have estimated the lower bound of the negative effects of the cousin marriage tradition on market-based outcomes. Another indication that we may be testing the lower

bound of the effect is that the sample is drawn from urban areas which are more heterogeneous than rural areas. The cousin marriage tradition and the colonial imprint may have longer-lasting impacts in rural areas.

However, to further verify that our results capture the direct effect of the cousin marriage tradition rather than the persistent effects of pre-colonial economic structures that might be associated with the cousin marriage, we conduct regression analyses only for ethnic areas with the above two most advanced pre-colonial economic conditions. Our robustness checks are conducted on all three hypotheses, although the confounding effect from pre-colonial economic conditions might be the strongest for Hypothesis 1. The results are in Tables S3.1–S3.3. Table S3.1 shows that the cousin marriage tradition still has negative and significant effects on contemporary revenue ($b = -0.133$, $p < 0.01$) and APL ($b = -0.097$, $p = 0.009$) in ethnic areas with similar pre-colonial historical economic conditions. The results in Tables S3.2 and S3.3 are also consistent with the main results for Hypotheses 2 and 3. All this suggests that the cousin marriage tradition is likely to be the primary driver of firm performance, rather than being a proxy for confounding factors such as pre-colonial economic conditions.

4.3.3 | Other robustness checks: Measures, models, estimators

With respect to individualism, we also consider two more recent updates on the Hofstede score. Table S4.1 presents the results that are corresponding to Table 4 using the Hofstede score modified by Taras et al. (2012). Compared with the original Hofstede score, the individualism score developed by Taras et al. (2012) is based on a larger and more representative sample using a meta-analysis approach. Next, Table S4.2 shows the corresponding results using the individualism score developed by Minkov and Kaasa (2022). The authors complemented the Hofstede score using a different approach and data from the World Values Survey. The results in Tables S4.1 and S4.2 are consistent with the main results in Table 4.

Similarly, we consider a modern measure of Christian activities. In Table S4.3, we replace the density of mission stations in colonial Africa with the proportion of Christians over all religious populations for each African country in 2010. Data are from the Pew Research Center: https://www.pewresearch.org/religion/interactives/religious-composition-by-country-2010-2050/ (precise data on the number of Christians in Somalia are missing). For both dependent variables, Table S4.3 shows positive and significant coefficients for the interaction between cousin marriage and the proportion of Christian population, alleviating the negative impact of cousin marriage. Thus, the results using this modern measure do not contradict the main results in testing Hypothesis 3b (using historical data on missions); if anything, they make them stronger.

We excluded individuals who purchased or joined existing businesses in the main results. As the next robustness check, we include them because the previous owners of these businesses may also have experienced the joint impact of the historical informal institutions and the colonial interventions. Tables S5.1–S5.3 indicate that our results still hold.

We run our regressions without country dummies. The results in Tables S6.1–S6.3 are consistent with our main results.

In addition, Table S1 suggests that the ethnic group Lamba has a dominating population included in our sample (856 observations in total). To show that our results are not driven by this single group, we drop Lamba from our sample and run the regressions based on the rest of our sample. Results in Tables S7.1–S7.3 are again consistent with our main results.

Finally, we show that our results are robust to alternative estimators. We use Ordinary Least Squares (OLS) for our main results. In Tables S8.1–S8.3, we report the regression results based on generalized estimating equations which allow for a more complicated structure of the correlation in error terms. Allowing error terms to be correlated within the same country, we find that these results are still consistent with the main results.

5 | DISCUSSION

In this paper, we have explored the association of historical family systems, and in particular the cousin marriage tradition, with the contemporary business performance of informal firms. We have also considered how this relationship may be moderated by aspects of traumatic colonial shocks. Our focus has been on sub-Saharan Africa, a context particularly well suited to this study because of the prevalence of informal sector firms, as well as high-quality data concerning the tradition of family systems. We propose that the historical tradition of cousin marriage has been associated with prioritizing social kinship obligations, weakening the market orientation and therefore the performance of informal firms in those ethnic areas. We explored three groups of hypotheses. First, we asked whether the contemporary performance of informal sector firms was negatively influenced by their location in ethnic areas with a tradition of cousin marriage in the pre-colonial period. We found strong and unambiguous support for the association of historical informal institutions with the current business performance.

The other two groups of hypotheses concern the attenuation of this effect, resulting from the heterogeneous traumatic shocks caused by colonization. Sub-Saharan Africa is a suitable location in which to explore the impact of traumatic shocks on business performance, as most of the continent was colonized within a relatively short period at the end of the nineteenth century by European powers that varied with respect to their own cultural norms. We formed two specific hypotheses: first, that the impact of cousin marriage tradition on contemporary informal business performance was attenuated when the colonial power had a strongly individualistic culture. We found this to be the case for both revenue and productivity. Second, the colonizers also brought religious missions, and their Christian norms were in strong conflict with the cousin marriage practice. We find partial support for the impact of Christian missions on contemporary informal business performance. Platteau (2019) provided several details on the religious conversion in colonial Africa, which might help explain why the effect of Christian missionary activities was in general weaker than the effect of the cultural identity of colonizers in attenuating the impact of the cousin marriage tradition. First, rapid and mass conversions taking place in colonial Africa made it difficult to impose new norms on every converted member. Thus, a convert might be recognized as a "Christian" when they declared themselves to be converted without fully understanding what that meant. Second, Christianity faced strong competition from Islam and indigenous animist religions, both of which tolerated cousin marriage. Before the European colonization in the nineteenth century, Islam already had significant impacts in Africa via trans-Saharan trading networks. In addition, Christian churches coexisted with animist practices in most countries. Third, individuals who chose to convert and follow norms strictly were perhaps those who wanted to emancipate from traditional kinship groups because they felt traditional marriage practices and strings attached to kinship ties limited their freedom. In other words, missionary activities did not attenuate the cousin marriage tradition fundamentally because people who endeavored to protect traditional family systems were less likely to be converted.

Our focus on historical family systems as deep roots of informal institutions is related but distinct from the literature on family businesses such as Cruz et al. (2012) and Khavul et al. (2009). First, we investigate local informal institutions rather than any specific practice of hiring family members for any individual business. Our key argument is that the cousin marriage tradition prioritizes social obligations over economic incentives. Hiring family members or establishing family and community ties can be considered as firm strategies motivated by this deep historical root of informal institution. In other words, our arguments include the motivations and limitations of family embeddedness but are not restricted to family businesses. Second, in family business literature, entrepreneurs face severe resource constraints in the labor and financial markets and have to rely on family ties as suboptimal choices. In our argument, however, informal entrepreneurs take the initiative to prioritize social obligations in order to comply with localized informal institutions.

6 | CONCLUSIONS

This paper advances the understanding of historical deep roots of informal institutions and their impacts on contemporary informal businesses. We propose a new theoretical framework for comparative entrepreneurship research by

bringing insights from cultural anthropology and discussions on traumatic shocks. In particular, we focus on family systems and the traumatic shocks that may trigger institutional changes. Our work extends research on informal institutions by tracing their roots to persistent but evolving influences anchored in the family systems. At a theoretical level, the cultural anthropology perspective provides coherent explanations of both the persistence of informal institutions as well as why and how they may evolve under major external traumatic shocks such as colonization. Empirically, we focus on pre-colonial institutions and traumatic shocks, both of which are predetermined and help avoid reverse causality problems that characterize most of the (cross-sectional) research. This way we answer the call for more research on the institutional context of informal entrepreneurship (De Castro et al., 2014; Ketchen et al., 2014). The finding that the cousin marriage tradition significantly affects informal business performance provides support for the view that family systems matter. Further, our empirical results highlight the importance of ethnic-area level analysis in line with the cultural anthropology perspective.

Our perspective also contributes to the understanding of the impact of colonization in economic and business research. There have been discussions on how European colonizers influenced formal institutions of their former colonies (Acemoglu et al., 2001; Banerjee & Iyer, 2005; Decker et al., 2020). Our research suggests that informal institutions were also influenced by the colonial power: the effect of the cousin marriage tradition on informal business was largely attenuated in countries whose former colonizers had displayed a more individualistic culture. This is consistent with the stream of entrepreneurship research that highlights the important element of cross-border differences related to cultural values (Bennett & Nikolaev, 2021). Our work opens the possibility for further analysis on this line, as our results suggest that ethnic-area level informal institutions (and family systems in particular) interact with cross-border cultural differences at times of historical institutional shocks. Our work calls for the broader application of the cultural anthropology perspective to comparative entrepreneurship research. For example, given that family businesses are ubiquitous around the world (Peng et al., 2018), it is surprising that only limited attention has been paid to family systems, which, as we argue, are important frameworks for individual decision-making in business. Given that our emphasis on the tradition of cousin marriage seems to be justified by both the theory and by our empirical results, it indicates the potential for further research.

6.1 | Implications for entrepreneurship practice

This paper also has implications for business practice. To enhance business performance, it is essential for informal business owners and managers to consider the deep roots of the informal institutions of the communities or groups with which they interact, such as the way families are organized. To enhance owners-managers' capability to utilize and mobilize limited but valuable resources, attention has to be given to the potential strings and constraints attached to these resources within the context of family systems.

Further, our analysis of sub-Saharan Africa can help address challenges faced by entrepreneurs in other developing countries with complex cultural and historical backgrounds. For example, India is an ethnically diverse country with a long-lasting caste system. The informal institutions in many countries in Asia and Latin America also interacted with the intervention of European colonizers.

6.2 | Limitations and future work

In terms of future work, building on Henrich (2020) we suggest that by placing the cousin marriage tradition at the core of the family systems that in turn are crucial for business activities, we are putting forward a new perspective that has considerable potential for further exploration. Let us highlight three possible directions.

First, we focus on the negative effects of strong ingroup ties associated with the cousin marriage tradition on informal firms' performance outcomes. However, we do not propose that strong ties or bonding capital have only

negative effects on business operation, nor that the cousin marriage tradition is detrimental to all aspects of business performance. The cousin marriage practice may be associated with positive social outcomes, as it creates dense networks where everybody is somehow a relative to somebody else within the ingroup (Henrich, 2020). This plays a critical role in diminishing the likelihood of ingroup conflict and facilitating conflict resolution, leading to stronger ingroup solidarity (Fincher et al., 2008). Strong family networks created by cousin marriage (Schulz et al., 2019) may also help in providing kin-based insurance (Estrin et al., 2025; Hotte & Marazyan, 2020), which may be important for the resilience and survival of informal businesses with limited access to formal insurance or bank finance. We cannot explore these outcomes with our data because the ISBS is a cross-sectional survey of informal businesses that were active at the time of the survey. Indeed, this is the most important limitation of our work. However, with longitudinal data, future researchers might wish to model the survival of informal businesses.

Second, we have argued that Africa is a particularly suitable context in which to explore our ideas about the persistence of and changes in historical informal institutions. The high degree of ethnic fragmentation and misalignment between the administrative and ethnic boundaries means that we can distinguish between the impacts of formal (at the national border) and informal institutions (at ethnic boundaries). Moreover, there is unusually rich information about historical family systems, as well as a relatively recent history of major exogenous shocks (within the past 150 years in most cases) caused by colonization. Even so, our arguments and analysis could be extended by future researchers to other contexts. More work is needed to understand the impact of family systems on the functioning of entrepreneurs at different labor markets, including other African countries and the developed countries, where family institutions continue to evolve (Aldrich & Cliff, 2003; Todd, 2019). For example, colonialism also occurred at a large scale in Latin America, though much earlier. Japan and India both had communitarian societies based on clans/castes, and Confucian ethic in China also distinguishes between close/distant bonds and insiders/outsiders (Landa, 1981, 1994). The link between the deep historical roots of informal institutions and firm performance is therefore of wider importance for comparative entrepreneurship research.

Third, although this paper consciously focuses on the informal sector where, as we argued, the impact of informal institutions is likely to be the strongest, it will be good to extend the analysis to formal firms to engage in a comparative study of both informal and formal sector firms, testing directly the proposition that the impact of informal institutions is stronger in the informal sector. Our analysis does not preclude the possibility that similar effects would apply to the formal sector, though we might expect them to be less pronounced. Such comparative analysis could also be combined with more focus on specific mechanisms linking the legacy of family systems to business performance, like characteristics of the management teams, entrepreneurship knowledge transfer, or managerial practices (McKenzie & Woodruff, 2017). In addition, for both informal and formal entrepreneurs, exposure to different informal institutions might affect other business purposes that are worthwhile to explore, for example socioeconomic wealth (Cruz et al., 2012). It is also likely that the impact of informal institutions on both sectors, formal and informal, will depend on the share of both in the economy (Estrin & Mickiewicz, 2012). An underdeveloped formal business sector will go hand in hand with weak formal institutions and enforcement, and the impact of informal institutions on both sectors will be dominant. All these could become fruitful lines of research.

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DATA AVAILABILITY STATEMENT

Data and codes used to generate the results will be made available.

ENDNOTES

[1] Thereby helping to "shape the notions of social acceptability" (North, 1990; Ketchen et al., 2014: 2).

[2] Therefore, in the empirical part we explore a moderating not mediating model. The cousin marriage tradition is a historical informal institution, and the measure was captured in precolonial Africa. So, the way to interpret this moderating model is that the interaction term between the tradition of precolonial cousin marriage and the variable representing colonial institutional impacts can be treated as affecting jointly the unobserved contemporary informal institutions, and in turn we link these contemporary informal institutions to contemporary business performance, similar to Zhang's (2022) model.

[3] We do not directly consider the degree to which the colonizers varied in terms of their acceptance/preference for cousin marriage itself. There is limited record on to what extent each European colonizer nations tolerated cousin marriage. However, since deep antipathy to cousin marriage was a common trait of Western European colonizers (Henrich, 2020), there was little heterogeneity there.

[4] Hofstede's data on values in colonial European countries were collected at the time African countries were gaining independence. It is plausible they did not yet change much from the late colonial period at that time.

[5] This cultural program of exogamy builds on the deeply rooted taboo on incest universally present among humans (Todd, 2019; see also Heine, 2020) but extends it much beyond the prohibition of sexual relations between parents and children and between siblings. Both Goody (1983) and Henrich (2020) attribute this cultural program less to the original intrinsic content of the Christian doctrine but more to the way the doctrine and practice developed over the centuries.

[6] Goody (1983), Greif (2006), and Henrich (2020) argue that this cultural program led to a gradual collapse of the traditional kinship structures in Western and Central Europe. By banning cousin marriage, the Western Church undermined the kinship structures in Europe during the Middle Ages: longer exposure to the medieval Western Church is associated with less intensive kin-based institutions (Greif, 2006; Schulz et al., 2019). A study of 356 anthropologically defined societies of Euro-Asia and Africa also identifies a significant relationship between the spread of Christianity and the decline of clans and lineages (Korotayev, 2003).

[7] For example, detailed sampling methods for Mozambique in 2018 are described at: https://microdata.worldbank.org/index.php/catalog/3589.

[8] If we include those who purchased an existing business, joined an existing family business, or joined an existing non-family business, there would be 4456 observations.

[9] The observations in the table only include owner-managers in locations where we have information on the cousin marriage tradition.

[10] One limitation is that ISBS ask whether an informal business owner received financial support from certain sources but not about the amount.

[11] This implies that even though some owner-managers in our sample are migrants in the city surveyed by the World Bank, their home city and the destination are likely to be in the same ethnic homeland.

[12] Ideally, we would like to get a more nuanced measure to capture more localized impacts of colonizers' individualistic culture, a measure such as the number or density of colonizers from each European country in each ethnic area during the colonial period. Unfortunately, as far as we know, there are no data available for such a measure. However, country-level Hofstede scores of colonizers can still largely capture the impact of exposure to different degrees of individualism, as most variations in the level of individualism during colonial Africa occurred between colonies occupied by different European colonizers, rather than between different ethnic areas colonized by the same European country.

[13] Revenue is a more relevant focus of strategic concern than profit for informal firms which have limited capital (often provided informally as we have seen). Also, much of their labor comes from family and friends, who may receive payment in cash, kind, or not at all, at the behest of the owner. The literature suggests that accounting measures are not appropriate in assessing the performance of informal firms, because these firms are unlikely to adopt standard bookkeeping practices, or distinguish owners' business assets from personal assets, or evaluate their profitability (Assenova & Sorenson, 2017).

[14] Given that we include country-year dummies, the Hofstede's individualism score of colonizers in the 1960s, as a time-invariant country-level variable, cannot be introduced directly in Table 4 because the two variables would be perfectly multicollinear. Hence, it only features in interactive effects. In contrast, as the density of mission stations is calculated at the ethnic area level, we can include this density measure directly alongside its interaction term with cousin marriage tradition in Table 4.

[15] The literature also suggests that informal sector performance might be associated with whether the firm is located in the rural or urban sector, as urbanization is an outcome that is linked to the strength of kinship networks. Strong family ties can increase attachment to a family home, making migration more costly and hindering rural-to-urban migration (Alesina

et al., 2015). One may argue that ethnic territories with the tradition of cousin marriage might have a lower rate of urbanization and therefore lower labor productivity. However, this explanation is not relevant for our dataset because the ISBS were conducted only in urban areas.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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