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Social Cohesion and Firms' Access to Finance in Africa

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Abstract

Social cohesion has recently gained increasing attention in academic and policy circles. Apart from being a necessary feature of stable societies per se, social cohesion is also a key factor for sustainable economic development. One potential means through which social cohesion could foster economic development is by enhancing financial development. In this paper, we examine whether social cohesion is significantly associated with firms' access to finance in Africa. To this end, we use a recently constructed dataset on social cohesion in Africa, which is based on the Afrobarometer survey and the Varieties of Democracy database. The dataset contains indices for the three pillars of social cohesion – trust, inclusive identity and cooperation for the common good. Combining this dataset with that of the World Bank Enterprise Surveys, we build a sample which covers more than 12,500 firms and 27 African countries. Our results show that all three components of social cohesion are positively associated with at least one measure of firms' access to external finance. In particular, trust – but not inclusive identity and cooperation for the common good – is significantly associated with the likelihood that firms have a checking or savings account, or are financially constrained. When we measure access to finance with respect to having a line of credit or a loan from a financial institution, all the three pillars of social cohesion, including inclusive identity and cooperation for the common good, are related to access to finance. The results are robust to addressing endogeneity concerns using a heteroskedasticity-based identification strategy. Overall, our results suggest that improving social cohesion (e.g. through social protection, education, strengthening civil society organisations) could do more than hold society together; it could also promote access to finance, growth of firms, and thus economic development and job creation.

Keywords: Access to finance, social cohesion, trust, cooperation for the common good, identity, Africa

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Bonn, August 2022 Yabibal M. Walle

Contents

Figures

Tables

Tables in Appendix

Abbreviations

CSO	Civil society organisation
DIE	German Development Institute / Deutsches Institut für Entwicklungspolitik
IDOS	German Institute of Development and Sustainability / Deutsches Institut für Entwicklung und Nachhaltigkeit
OECD	Organisation for Economic Co-operation and Development
UNDP	United Nations Development Programme
V-Dem	Varieties of Democracy
WBES	World Bank Enterprise Surveys

1 Introduction

Access to finance remains one of the most pressing challenges facing micro, small and medium enterprises in the developing world (e.g. Ayyagari, Demirgüç-Kunt, & Maksimovic, 2008; Beck & Demirgüç-Kunt, 2006). Firms surveyed by the World Bank Enterprise Surveys (WBES) mentioned (lack of) access to finance as the second biggest obstacle to conducting business activities, next only to access to electricity (Pierce & Snyder, 2018). While the importance of access to finance for firm performance is relatively well understood, we still lack a comprehensive understanding of mechanisms that determine financial development in general, and firms' access to finance in particular.[1] A growing body of empirical literature has so far identified a few determinants of a country's level of financial development. These include legal origin (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1997, 1998), culture (Stulz & Williamson, 2003), trust (Guiso, Sapienza, & Zingales, 2004), openness to trade and financial liberalisation (Rajan & Zingales, 2003; Herwartz & Walle, 2014a, 2014b), and the degree of intensity of pre-colonial slave trade (Pierce & Snyder, 2018; Levine, Lin, & Xie, 2020). In this paper, we show, in the case of Africa, that the level of social cohesion in a country is positively associated with firms' access to finance.

Social cohesion, often metaphorically defined as "the glue that holds society together" or "the fabric of society", is a broad concept with a wide range of definitions.[2] Nevertheless, most authors agree that it comprises at least trust (among individuals and between them and the state), cooperation for the common good, and a sense of belonging to a society (inclusive identity) (e.g. Chan, To, & Chan, 2006; Leininger et al., 2021). Applying this narrow definition, it becomes apparent that the existing literature has identified the trust component of social cohesion as having a direct, positive impact on financial development and access to finance (Guiso et al., 2004; An, Hou, & Lin, 2021). Yet, none of these studies has considered either the broader social cohesion concept or its specific components, such as cooperation for the common good and inclusive identity, as potential determinants of financial development. The goal of this paper is therefore to estimate the effects of the three integral components of social cohesion – trust, cooperation and identity – on firms' access to finance in Africa.

There are several reasons to believe that social cohesion (beyond trust) might affect firms' access to external finance. First, social cohesion is an important factor in the development of strong institutions (e.g. Easterly, Ritzen, & Woolcock, 2006), such as a functioning legal system, which in turn is a critical prerequisite of any developed financial system (La Porta et al., 1997, 1998; Levine, 2005). Since access to finance generally increases with the overall development of the financial system, we expect social cohesion to have a positive effect on the likelihood that firms have access to external finance. Second, in a society with a higher degree of cooperation for the common good, public goods are provided more effectively, and free riders are punished more easily by community members through a complex set of sanctions (Ostrom, 1990). This could facilitate financial exchanges, thereby promoting the development of strong financial institutions and, in turn, firms' access to finance. Third, given that discrimination against minorities (Aseidu, Freeman, & Nti-Addae, 2012) or socially disadvantaged groups (Raj & Sasidharan, 2018) is a

1 Since providing financial services involves significant costs arising from information asymmetries, financial sector development (in short, financial development) can be generally defined as "a process of reducing the costs of acquiring information, enforcing contracts, and making transactions" (World Bank, 2012). As such, financial development is a broad concept, encompassing developments in the access, depth, efficiency, and stability dimensions of financial systems. It is noteworthy, therefore, that while improvements in access to finance for firms and households often go hand in hand with a country's overall financial development, they do not necessarily reflect developments in the depth, stability, and efficiency of the financial sector.

2 For an extensive review of the theoretical and empirical literature on social cohesion, see, among others, Chan et al. (2006), Schiefer & Van der Noll (2017), and Leininger et al. (2021).

widespread phenomenon in the credit market, we expect firms' access to finance to be better in countries where diverse identities are tolerated and minorities are not discriminated against (i.e., where there is a higher level of inclusive identity).

For our empirical analysis, we combine two main data sources. First, we obtain country-specific measures of trust, cooperation for the common good, and identity levels from Leininger et al. (2021). These data are in turn constructed based on the fourth (2008), fifth (2012–2013) and sixth (2014–2015) rounds of the Afrobarometer survey and the Varieties of Democracy (V-Dem) expert-based data of the corresponding years. Next, we combine the country-level data with the firm-level data from the World Bank Enterprise Surveys (WBES), which results in a final sample of about 12,500 firms that were surveyed between 2009 and 2020 across 27 African countries. As an empirical measure of firms' access to finance, we rely on three WBES questions that ask firms whether they (1) have a checking or savings account; (2) have a bank loan or a line of credit; (3) have faced financial constraint in the last fiscal year before the survey.

To minimise the risk that our estimation results pick up the effects of confounding factors that drive both a country's level of social cohesion and firms' access to finance, we follow a number of strategies. First, we take a country's social cohesion index measured at least one year prior to the year in which the WBES was conducted. Second, we include several country-specific control variables, period dummies, and sector-specific fixed effects. Third, we check the robustness of our probit estimates using the heteroskedasticity-based identification strategy proposed in Lewbel (2012). Apart from a few changes in terms of statistical significance of the estimated coefficients for social cohesion, our probit-based results remain qualitatively unchanged by the heteroskedasticity-based instrumental variable estimation.

Our results show that all three components of social cohesion are positively associated with at least one measure of firms' access to external finance. In particular, trust – but not inclusive identity and cooperation for the common good – is significantly associated with the likelihood that firms have a checking or savings account, or are financially constrained. Measuring access to finance in terms of having a line of credit or a loan from a financial institution, we find that in addition to trust, inclusive identity and cooperation for the common good are also significantly related to firms' access to finance in Africa. Hence, while previous studies have shown that trust plays an important role in promoting access to finance, the results documented in this paper suggest that other components of social cohesion, such as cooperation for the common good and inclusive identity, are also important determinants of firms' access to finance in Africa, and the estimated effects are economically large.

This paper endeavours to contribute to three strands of research that use cultural and societal factors to explain differences in levels of access to finance. First, to our knowledge, this paper is the first attempt to link the broader concept of social cohesion to firms' access to finance. While some studies have already examined the impact of trust on financial development and access to finance (e.g. Guiso et al., 2004; An et al., 2021), they have not conducted a similar analysis for inclusive identity and cooperation for the common good. We fill this gap in the literature by investigating the roles of each of the three main components of social cohesion – trust, cooperation and inclusive identity – in firms' access to finance. Second, although the role of trust in promoting financial development has received considerable attention since the seminal work of Guiso et al. (2004), few studies have examined the trust–finance nexus in the context of Africa (a recent exception being An et al., 2021). In this regard, particularities of the African region deserve separate examination, as theories that build on empirical evidence from other world regions, in particular high-income countries, may not apply in the African context. As such, one contribution of the paper is to provide empirical evidence for further theory-building in a field where theories and evidence are lacking. Hence, this paper also contributes to the research on the role of social and institutional trust in financial development in African economies. Third, our paper also relates to recent works on the historical foundations of financial development in Africa. For instance, the intensity of the slave trade in pre-colonial Africa has

been shown to negatively affect current levels of access to finance for African firms (Pierce & Snyder, 2018) and households (Levine et al., 2020).[3] While these two studies conjecture that (ruined) social cohesion may be a potential transmission channel, they do not empirically test this claim.[4] A similar work by An et al. (2021) shows that the prevalence of epidemic diseases such as those transmitted to humans and domesticated cattle by the tsetse fly in pre-colonial Africa is associated with present-day levels of access to external finance in those countries.[5] An et al. (2021) have explicitly tested and empirically demonstrated that lack of trust is a key channel through which epidemic disease prevalence in pre-colonial Africa influences current levels of access to external finance. Yet, the authors focus on the trust component of social cohesion only, so it is not clear whether their results would carry over to the dimensions of cooperation for the common good and inclusive identity. This paper therefore contributes to this line of research by examining the effects of all three components of social cohesion on firms' access to external finance in Africa.

The remainder of this paper proceeds as follows. Section 2 defines social cohesion and provides a theoretical background to the ways in which trust, cooperation for the common good and inclusive identity components of social cohesion could affect firms' access to finance. Section 3 describes the data and outlines the empirical strategy employed in this paper. Section 4 discusses the main results along with selected sensitivity analyses. Section 5 concludes.

2 Social cohesion and financial development: theoretical background

2.1 Defining social cohesion

Despite its increasing popularity among both scholars and policy makers, social cohesion remains a largely vague concept with a wide range of definitions. Its constituent elements substantially vary from author to author, depending mainly on, among other things, the authors' discipline (sociology, social psychology, political science, economics etc.), affiliation (academia, government agency or development cooperation), and focus of research (theoretical or empirical).[6] While some authors emphasise issues related to trust and solidarity, others consider

3 Slave trade raids often occurred between African villages, thereby ruining social cohesion, perpetrating a high degree of mistrust, and hindering important social and economic interactions among members of different ethnic groups. Accordingly, both studies (Pierce & Snyder, 2018 and Levine et al., 2020) conjecture that (ruined) social cohesion is a key channel through which pre-colonial slave trade affects current levels of access to finance in Africa.

4 Specifically, within the broader concept of social cohesion, "trust in financial institutions" was the only component that Levine and Xie (2020) could examine as to whether it is an important transmission channel between the intensity of the pre-colonial slave trade and current access to finance in Africa.

5 Using the context of the epidemic diseases spread by the tsetse fly, An et al. (2021) discussed three ways in which epidemic disease may have influenced modern financial development in Africa: trust, willingness to share, and propensity to adopt new technologies. These are all related to the fact that the parasite transmitted by the tsetse fly killed domestic animals and made intensive agriculture impossible, thereby forcing people to adopt a subsistence strategy based on hunting and gathering. Given the scarcity of resources for this subsistence way of living, frequent clashes and lack of interaction among the fragmented groups of the population were commonplace. These, in turn, led to persistent mistrust between people of different ethnic groups, cemented the habit of keeping information only among one's clan members, and resulted in a general reluctance to adopt new technologies. An et al. (2021) empirically demonstrate that all three of these long-term consequences of a tsetse fly infestation are associated with current levels of access to finance in Africa.

6 For an extensive review of the historical development of the concept up to 2006, see Chan et al. (2006).

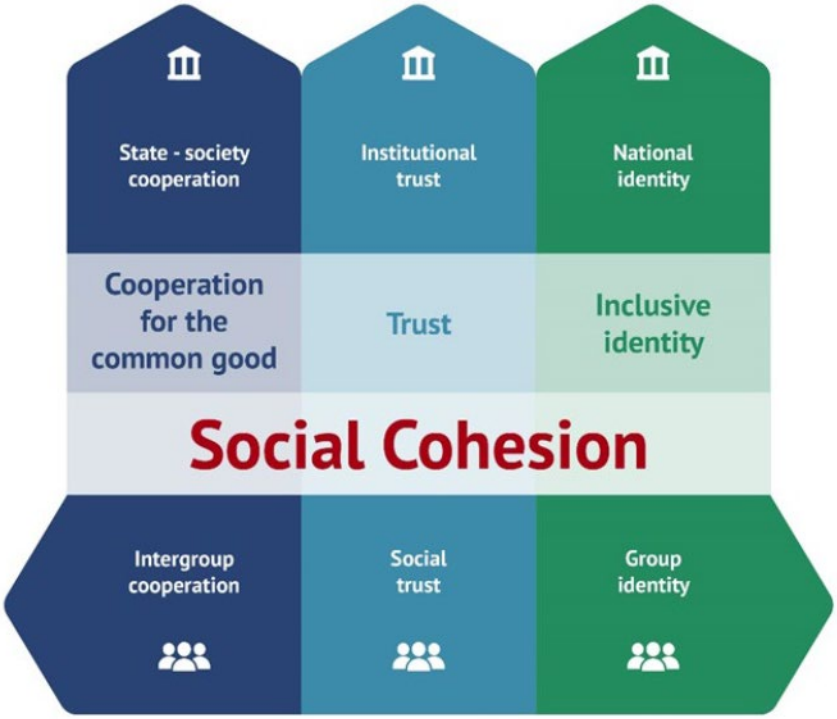
broader issues such as poverty and inequality as integral components of social cohesion (e.g. OECD, 2011; Langer, Stewart, Smedts, & Demarest, 2017). Against this background, several authors and institutions have attempted to provide clearer, more rigorous and practical definitions (e.g. Chan et al., 2006; Schiefer & Van der Noll, 2017; Langer et al., 2017; UNDP, 2020).[7] Since the main objective of the present study is to examine the relationship between social cohesion and access to finance in Africa, we refrain from discussing the complexities of defining and measuring social cohesion and instead move directly to elaborating the definition adopted in this paper.

We endorse the definition of social cohesion recently proposed by researchers at the German Institute of Development and Sustainability (IDOS) on refer to it as IDOS's definition (Leininger et al., 2021). With an explicit preference for a definition that is "broad enough to cover the essentials holding societies together while at the same time lean enough to analyse the causes and consequences of social cohesion", the authors build largely on Chan et al. (2006) and define social cohesion as

> the vertical and the horizontal relations among members of society and the state, which hold society together. Social cohesion is characterized by a set of attitudes and manifestations that includes trust, an inclusive identity, and cooperation for the common good. It is the glue that holds society together.

Figure 1 succinctly visualises this definition, with a particular emphasis on the three constitutive elements of social cohesion as well as on the horizontal and vertical relations within each component.

Figure 1: Constitutive elements of social cohesion



Source: Leininger et al. (2021, p.4)

7 A comprehensive and up-to-date overview of these definitions can be found on the website of the Social Cohesion Hub: https://www.socialcohesion.info/concepts.

In the following, we provide more details on the three pillars of social cohesion according to IDOS's definition.

Trust: IDOS's definition of trust incorporates both social and institutional trust. Social trust is the "ability to trust people outside one's familiar or kinship circles". Hence, social trust measures the horizontal dimension of trust. Institutional trust, on the other hand, captures the vertical dimension of trust and measures trust towards formal, legal organisations of government and state, irrespective of who is currently heading the organisations.

Cooperation for the common good: This component relates to the extent to which people and groups cooperate for "interests that transcend those of the individuals involved". Again, this definition incorporates both horizontal cooperation among people and vertical cooperation with the state through participation in public life and consultation processes.

Inclusive identity: This component encompasses the fact that peaceful co-existence among individuals with different identities is a crucial manifestation of a socially cohesive society. It can apply, on the horizontal dimension, to the degree to which different group identities are tolerated, recognised and protected. On the vertical dimension, inclusive identity means that people identify with a broader entity (e.g. the nation) that is more than the sum of individuals and that bridges different identities of a society.

2.2 Social cohesion and financial development

The level of social cohesion prevailing in a society can shape the development of financial systems in a number of ways. First, to the extent that social cohesion is a crucial determinant of sustainable economic development (Easterly et al., 2006) and that financial development responds to the demand arising from a growing real sector (Robinson, 1952; Greenwood & Jovanovic, 1990; Levine, 2005), it is plausible that social cohesion has an indirect effect on financial development through its role on economic development. Second, social cohesion enables societies to negotiate and define common goods and determine who should benefit from these goods in society. As such, it is crucial for the development of strong institutions, such as functioning legal systems, which in turn are decisive building blocks of a developed financial system (La Porta et al., 1997, 1998; Levine, 2005). In what follows, we attempt to exhaustively identify mechanisms through which social cohesion might affect financial development directly. To this end, we examine possible links between the individual components of social cohesion on the one hand and financial development and, in particular, firms' access to external finance on the other.

2.2.1 Trust and access to finance

Of the three components of social cohesion, trust is by far the most studied, whether in terms of its impact on the aggregate economy or its role in financial sector development. In fact, Guiso, Sapienza and Zingales (2006, p. 29) maintain that trust is "the opening through which culture entered the economic discourse". The preponderance of empirical evidence documented in several studies suggests that trust promotes economic growth.[8]

In addition to its impact on aggregate economic performance, the role of trust on the development of financial markets and institutions has also received considerable attention, especially since the work of Guiso et al. (2004). While focusing on the effect of social capital on financial development, these authors document that the key mechanism through which social

8 For a review of this literature, see, for instance, Guiso et al. (2006) and Bjørnskov (2018).

capital affects financial development is by fostering a level of trust in society. The significance of trust for financial development in turn emanates from the fact that financial contracts are inherently trust-intensive. Since financing is mainly about exchanging an amount of money today for a promise to give back more money in the future, the probability of occurrence of such an exchange hinges not only on the legal enforceability of such contracts, but also on the extent to which the financier trusts the one being financed (Guiso et al., 2004). Exploiting the variations in trust levels between regions in southern and northern Italy, Guiso et al. (2004) find that households in localities with higher trust levels tend to use more checks and less cash, participate in stock markets, have better access to formal credit, and rely less on informal credit.

Having considered the relationship between trust and the broader concept of financial development, we now narrow down the discussion to the relevance of trust for access to finance, a topic that is the primary focus of this paper. This topic has also been extensively studied in the literature. For instance, Konte and Ndubuisi (2021) mention four main mechanisms in which trust can increase firms' and households' access to finance. First, a society with a high level of trust penalises opportunistic behaviour through social sanctions and stigma, thereby reducing moral hazard and associated monitoring costs. Second, trust decreases the level of financial fraud, which in turn reduces the probability of adverse selection, and hence increases the financier's willingness to extend credit to the applicant. Third, high levels of trust often lead to a strong social network that allows the financer to easily obtain valuable information about the borrower, potentially mitigating the problems of adverse selection and moral hazard for the lender. However, it is noteworthy that if social networks are strong but exclusive, this may lead to unequal access to finance. Fourth, high levels of trust reduce agency problems and provide borrowers with an incentive to disclose soft information about their business activities that they would not otherwise reveal for fear of expropriation. All of these mechanisms, in one way or another, help mitigate information asymmetry and reduce the screening and monitoring costs that funders often have to bear to deal with the associated problems of adverse selection and moral hazard. Hence, other factors being constant, an average borrower is more likely to get external finance in a locality with a high level of trust than otherwise. Moreover, the price of borrowing is likely to be much lower in a society where trust prevails. These theoretical predictions are largely confirmed by existing empirical evidence on Africa. For example, recent studies on the historical roots of access to finance in Africa have documented that (broken) trust is one of the main mechanisms through which other, deeper, factors such as the intensity of the slave trade (Levine et al., 2020) and the prevalence of the tsetse fly (An et al., 2021), influence current levels of access to finance. Similarly, Konte and Ndubuisi (2021) find that the negative impact of financial constraints on the export activities of African firms is less severe when they are located in countries with high levels of trust.

In sum, both theoretical and empirical studies have consistently shown that trust plays an important role in the degree of firms and households' access to external finance. However, these studies generally treat trust either as a stand-alone cultural factor or as a manifestation of social capital (but not of social cohesion). Moreover, existing evidence on the context of the low-income African country context is limited. Against this background, this paper aims to examine the extent to which trust as an important component of social cohesion contributes to improving firms' access to finance in Africa.

2.2.2 Cooperation for the common good and access to finance

Unlike in the case of trust, the literature on the impact of a society's level of cooperation for the common good on a country's level of financial development in general and access to finance in particular is relatively sparse. It should be noted, however, that in the existing literature on social capital, the concepts of social capital and even trust have been operationalised using measures that we might consider as indicators of cooperation for the common good. For instance, Guiso

et al. (2004) use electoral participation and blood donation as two important measures of social capital because both actions are driven only by social pressure and internal norms, and not by other legal or economic incentives. In the social cohesion literature, these two indicators would likely fall under the category of “cooperation for the common good”. Thus, we might interpret the findings of Guiso et al. (2004) as evidence not only of the effects of trust but also of cooperation for the common good on financial development.

Indeed, Knack and Keefer (1997) argue that “norms of civic cooperation can be linked with economic outcomes in the same ways as trust”. These authors contend that cooperative norms act as constraints on narrow self-interest, leading individuals to contribute to the provision of public goods of various kinds. Internal sanctions (e.g. guilt) and external sanctions (e.g. shame and ostracism) associated with norms alter the costs and benefits of cooperation. It is noteworthy, however, that the social capital literature on cooperation tends to emphasise social pressure, expected (individual and social) benefits and internal norms as main motivations for cooperation. On the contrary, the “cooperation for the common good” component of social cohesion stresses the fact that people cooperate “for the common good” beyond their individual interests and “despite incentives for non-cooperation” (King, Samii, & Snilstveit, 2010, p. 337). Thus, while cooperative norms may facilitate or provide incentives for cooperation for the common good, they are not themselves a sign or measure of cooperation for the common good.

In general, in a society with a higher degree of cooperation for the common good, public goods are provided more effectively, and free riders are more likely to be punished by community members through a complex set of sanctions (Ostrom, 1990). This could facilitate financial exchanges and thus promote the development of strong financial markets and institutions. Therefore, we expect that firms in countries with higher levels of cooperation for the common good are, on average, more likely to have access to finance.

2.2.3 Identity and access to finance

Of the three social cohesion components, inclusive identity is by far the least studied in terms of its connection to a country’s level of financial development. However, there are several indications that inclusive identity could potentially affect financial development. The first one relates to the fact that the prevalence of discrimination is a key manifestation of a lower degree of inclusive identity. Several studies have shown that discrimination (e.g. against black workers in the United States (US), low caste people in India, or Jews in Nazi Germany) can lead to substantial economic losses, be it in terms of inefficient allocation of talent (Thorat & Newman, 2007; Hsieh, Hurst, Jones, & Klenow, 2019), or the loss of qualified business leaders (Huber, Lindenthal, & Waldinger, 2021).

There is also ample evidence that discrimination in other areas of the economy extends to access to finance. For example, using the 1998 and 2003 US Small Business Finance Survey, Aseidu et al. (2012) find that, after controlling for a variety of factors that influence loan decisions, Black-owned firms have a 36.9 percentage points higher probability of loan denial than White male-owned firms. Similarly, Raj and Sasidharan (2018) document for the period 2006 to 2007 that Indian firms owned by socially disadvantaged groups (so-called Scheduled Castes and Scheduled Tribes) have a significantly lower probability of receiving formal credit, all other factors remaining equal. Hence, it is plausible to think that access to finance for both firms and households will be higher in countries where different identities are tolerated and minorities are not discriminated against.

A second mechanism through which inclusive identity might influence access to finance is related to individuals’ sense of belonging to the nation state. In a socially cohesive society, people place a higher value on their national identities over their group identities, or at least the latter do not take strong precedence over the former (Langer et al., 2017). As a result, people

in such societies view themselves as participants in a shared national project (Langer et al., 2017), and this could have important implications for the stability of the state, the efficient provision of key public goods – including financial infrastructure – and the strength of institutions. These effects could, in turn, influence the development of financial institutions and, thus, firms' access to external finance.

3 Data and empirical strategy

3.1 Data

We combine two main data sources for this study. To measure firms' access to external finance, we utilise firm-level data from the World Bank Enterprise Surveys (WBES) collected between 2009 and 2020. All of these surveys were conducted using the so-called "global methodology", which is designed to enable cross-country comparisons.[9] The firm-level data are combined with country-specific measures of trust, cooperation for the common good and identity levels, which are computed based on the fourth (2008), fifth (2012–2013) and sixth (2014–2015) rounds of the Afrobarometer survey and the V-Dem expert-based data of the corresponding years. It is noteworthy that, to minimise endogeneity concerns, and noting that it may take some time for social cohesion to have a significant impact on access to finance, we have deliberately taken the social cohesion data measured one to five years prior to the access to finance measures. This restriction ultimately leaves only 27 countries and 12,101 to 12,523 firms, depending on the estimated regression model. The Afrobarometer surveys and waves of WBES covered by the study are presented in Table 1. Finally, data on country-level controls are taken from Nunn (2008).

9 Specifically, our data are from the 26 October 2021 version of the WBES indicators database, downloaded from www.enterprisesurveys.org. Details on the survey methodology can be found on the website.

Table 1: Afrobarometer and WBES surveys

	Afrobarometer	World Bank Enterprise Surveys		
Country	Year	Year	Number of firms	%
Benin	2014	2016	142	1.13
Botswana	2008	2010	262	2.09
Burundi	2012	2014	156	1.25
Cameroon	2015	2016	301	2.40
Cape Verde	2008	2009	135	1.08
Côte d'Ivoire	2014	2016	322	2.57
Eswatini	2015	2016	117	0.93
Ghana	2012	2013	690	5.51
Guinea	2015	2016	136	1.09
Kenya	2014	2018	962	7.68
Lesotho	2014	2016	125	1.00
Liberia	2015	2017	146	1.17
Madagascar	2008	2013	362	2.89
Malawi	2012	2014	409	3.27
Mali	2014	2016	167	1.33
Morocco	2015	2019	785	6.27
Mozambique	2015	2018	589	4.70
Namibia	2012	2014	473	3.78
Niger	2015	2017	128	1.02
Nigeria	2012	2014	1,999	15.96
Senegal	2013	2014	537	4.29
South Africa	2015	2020	1,046	8.35
Tanzania	2012	2013	598	4.77
Togo	2014	2016	147	1.17
Uganda	2012	2013	658	5.25
Zambia	2014	2019	578	4.62
Zimbabwe	2014	2016	554	4.42
Total			12,524	100.00

Source: Author, based on Afrobarometer surveys, WBES and Nunn (2008).

3.1.1 Social cohesion indicators and other country-level controls

To measure social cohesion and its components, we rely on the definitions and measurements suggested by Leininger et al. (2021). We chose this dataset primarily because, to our knowledge, it is the only dataset on social cohesion in Africa that contains estimates for each of the three pillars of social cohesion as well as for its sub-components, allowing us to examine the relationship between each of the components and sub-components and firms' access to finance in Africa. In addition, this dataset is also unique in that it covers a large number of African

countries, which is crucial for conducting the meaningful empirical analysis envisaged in this study. Furthermore, some of the existing objective proxies for social cohesion are either its drivers or its consequences, e.g. the degree of ethnic fractionalisation or the share of the middle class (Easterly et al., 2006), and thus they may not always exhibit a robust correlation with the "true" level of social cohesion in a country (Van der Meer & Tolsma, 2014). In contrast, and as a third major advantage, the IDOS dataset provides a direct measure of social cohesion that – apart from cooperation for the common good, which is partly built on V-Dem expert data – is entirely based on representative surveys of individuals' perceptions of various aspects of social cohesion. Works already using this dataset include those by Burchi et al. (in press), who analyse the relationship between social cohesion and human development, and Burchi and Zapata-Román (in press), who examine the relationship between inequality and social cohesion.

While referring interested readers to Leininger et al. (2021) for more details, we provide here a brief description of how the three indices and the four sub-indices are constructed in the IDOS dataset.

Trust: This index is constructed from two sub-indices: social trust and institutional trust. Social trust, in turn, is built on the positive responses of survey respondents to the popular survey question to measure social trust: "Generally speaking, would you say that most people can be trusted or that you must be very careful in dealing with people?" Institutional trust, on the other hand, is calculated as the arithmetic mean of trust in parliament, trust in the courts and trust in the police. The geometric mean of the two sub-indices is used to arrive at IDOS's overall trust indicator. All data for the trust measure are taken from the Afrobarometer surveys.

Cooperation for the common good: This indicator also consists of two sub-indices: horizontal cooperation and vertical cooperation. Horizontal cooperation, in turn, is measured using three indicators. The first indicator, from the Afrobarometer, concerns membership of voluntary, non-religious associations or organisations. Because membership of some associations that focus on a particular ethnic group may not reflect cooperation for the common good of society as a whole, a number of adjustments and weightings were made to arrive at the final indicator of membership of organisations. The second indicator, taken from the V-Dem database, is an expert evaluation of the degree of participation of citizens in civil society organisations (CSOs). The third indicator of horizontal cooperation is again derived from Afrobarometer and measures whether respondents have joined others to raise an issue with the government in the past year. As with membership of organisations, this indicator is also adjusted to account for the fact that teaming up with people from other ethnic groups represents a higher level of cooperation for the common good than raising an issue together with members of one's own ethnic group.

Vertical cooperation measures the strength of state–society cooperation. Two groups of indicators are used to build the vertical cooperation sub-index. The first group includes perception data from the Afrobarometer regarding the frequency of attending meetings and contacting local government councillors, members of parliament, officials of a government agency and traditional leaders. The second group of indicators involves expert data from V-Dem regarding the level of state repression toward CSOs and the degree to which CSOs are consulted by policy-makers.

Inclusive identity: Due to lack of appropriate data to measure inclusive identity in Africa, IDOS's measure of inclusive identity relies on a single question from the Afrobarometer surveys that compares the respondents' feelings towards their superordinate national identity vis-à-vis their ethnic identity. Accordingly, a country with more respondents either with strong feelings only for their national identity or stronger feelings for their national identity than for their ethnic identity receives a better ranking of inclusive identity.

Finally, for reasons of comparability among the various components of social cohesion, and as we do not know their "true" scales, all the indices and sub-indices were rescaled to take values

between 0 and 100.[10] Table 2 documents summary statistics for the seven IDOS measures of various aspects of social cohesion and the four country-level controls: absolute latitude, the percentage of adherence to Islam, a dummy for French legal origins, and the intensity of slave trade (e,g. Pierce & Snyder, 2018; Levine et al., 2020).

Table 2: Summary statistics: country-level indicators

Indicator	Obs	Mean	SD	Min	Max
Trust	27	33.35	25.3	0	100
Trust: social	27	27.55	23.6	0	100
Trust: institutions	27	48.04	25.6	0	100
Cooperation	27	35.67	25.5	0	100
Cooperation: vertical	27	43.86	26.5	0	100
Cooperation: horizontal	27	39.08	26.3	0	100
Identity	27	53.19	25.4	0	100
Absolute latitude	27	14.60	9.26	.2	33
French	27	0.48	.509	0	1
% Islamic	27	24.86	33.5	0	99
Slave trade	27	3.64	3.87	-2.3	8.8

Author, based on Leininger et al. (2021) (social cohesion indicators) and Nunn (2008) (country controls).

Table 3 documents the Pearson's correlation coefficient between each of the social cohesion indicators and four country-level controls. These correlations reveal several noteworthy relationships. First, the correlation between the two sub-indices for trust (social and institutional) is low at 0.36, highlighting the importance of using each sub-index in the regression analysis we will perform in the next section. Moreover, the index for overall trust seems to be dominated by social trust, as both are correlated with a coefficient of 0.93, while the correlation coefficient between institutional trust and the overall trust is relatively low at 0.571. Second, unlike the case of trust, the correlation between the sub-indices for the cooperation for the common good is relatively high at 0.592. Moreover, with correlation coefficients of 0.856 (with vertical cooperation) and 0.891 (with horizontal cooperation), the comprehensive indicator of cooperation for the common good is highly correlated with its sub-components, allowing it to adequately represent both its sub-components in the upcoming regression analyses. Third, while trust and identity have a significant and positive correlation (0.446), cooperation for the common good is not significantly correlated with either trust (0.131) or identity (-0.050). This underscores the risk of using any of the three components as the sole indicator of social cohesion in Africa.

As for the correlations between social cohesion indicators and country controls, it is interesting to see that former French colonies have a higher level of social (but not institutional) trust and national identity. Moreover, the percentage of Islamic population has also a significant (albeit at the 10%) and positive correlation with the level of social trust. The remaining country controls are not significantly correlated with the country's level of social cohesion. In particular, contrary to the assumption made in Pierce and Snyder (2018) and Levine et al. (2020), the intensity of pre-colonial slave trade is not significantly correlated with any of the components or sub-components of social cohesion. This may reflect the fact that social cohesion, while very

10 For re-scaling, we use the so-called min-max normalisation. In particular, the new re-scaled value is obtained as New value= ((value – min) / (max – min))*100, where min and max represent the observed minimum and maximum values within each index and sub-index.

persistent, is not immutable. The various social, economic, and political changes that countries have experienced over the past 500 years seem to be more important to social cohesion in Africa today than the slave trade that took place between 1400 and 1900.

Table 3: Pearson's correlation coefficient among country-level indicators

	Trust	Trust: social	Trust: instit.	Coop.	Coop.: vertical	Coop.: horiz.	Identity	Latitude	French	% Islamic
Trust: Social	0.963***									
Trust: inst.	0.571***	0.360*								
Coop.	0.131	0.144	0.097							
Coop.: vertical	0.008	0.012	0.111	0.856***						
Coop.: horizontal	0.215	0.233	0.072	0.891***	0.529***					
Identity	0.446**	0.432**	0.346*	-0.050	-0.065	-0.015				
Latitude	-0.042	-0.073	0.172	-0.213	-0.169	-0.199	0.144			
French	0.401**	0.483**	-0.078	0.027	-0.072	0.112	0.504***	-0.088		
% Islamic	0.348*	0.330*	0.057	0.185	0.069	0.234	0.160	-0.036	0.474**	
Slave trade	0.157	0.182	-0.206	0.270	0.211	0.254	-0.037	-0.674***	0.239	0.259

Note: Correlations are computed based on 27 observations (countries).

Author, based on Leininger et al. (2021) (social cohesion indicators) and Nunn (2008) (country controls).

3.1.2 Access to finance and other firm characteristics

We measure the degree of firms' access to external finance by means of three alternative indicators. First, we consider an indicator of whether or not a firm has a checking or savings account (*fin15*). Similarly, our second indicator is a dummy variable which takes on the value 100 when the firm has a line of credit or a loan from a financial institution (*fin14*) and zero otherwise. Accordingly, both *fin14* and *fin15* will be our "direct" measures of the actual level of firms' access to formal finance. As a third and "indirect" measure of access to finance, we generate an indicator that shows if a firm was financially constrained in the fiscal year prior to the survey (*finConstr*). Based on the WBES dataset, we consider a firm to be financially constrained (*finConstr* =100) if its loan application was rejected in the last fiscal year (*fin21*=100) or if it reports needing a loan (*fin20*=0) but has not applied for it (*fin21 is missing)*. Hence, constrained firms are those that need finance but were denied it ("formally constrained") or those that did not apply for it because they were discouraged from applying for fear of rejection ("informally constrained").[11]

Summary statistics for all access to finance indicators along with other firm-level characteristics are provided in Table 4. In particular, 84.91% of the firms have a checking or savings account. This relatively high figure for *fin15* mirrors recent progress in expanding account ownership to firms and households in Africa (Demirgüç-Kunt & Klapper, 2012). However, this figure drops to just 20.21% when we consider the number of firms with a bank loan or a line of credit (*fin14*). This could be attributable to several factors, such as the high cost of credit, the high collateral

11 This operationalisation of financial constraint by considering both formally and informally constrained borrowers was first proposed by Jappeli (1990) and has been widely used in the literature (e,g. Guiso et al., 2006; Léon, 2015; Popov & Udell, 2012; Ferrando, Popov, & Udell, 2019).

requirements imposed by banks, the unavailability of enough savings on the part of the banks, or lack of viable investment projects by the firms. In line with the low *fin14*, the average number of firms that are financially constrained, i.e. firms whose loan applications were denied or firms who were discouraged from applying (*finConstr)*, is high at 44.27%.

Table 4: Summary statistics: access to finance and other firm-level indicators

Indicator	Obs	Mean	SD	Min	Max
% firms with a checking or savings account (fin15)	12,523	84.91	35.8	0	100
% firms with a bank loan/line of credit (fin14)	12,101	20.21	40.2	0	100
% firms that are financially constrained (finConstr)	12,626	44.27	49.7	0	100
Log(age)	12,523	2.63	.781	0	5.0
Small firm	12,523	56.99	49.5	0	100
Exporter	12,523	12.81	33.4	0	100
Foreign ownership	12,523	15.70	36.4	0	100
Female in the top management	12,523	16.46	37.1	0	100
Log(manager's experience)	12,523	2.54	.74	0	4.1

Source: Author, based on self-reported responses of managers of firms surveyed by WBES.

With regard to the correlation between our access-to-finance indicators and firm-level characteristics, Table 5 shows that the two direct measures of access to finance (*fin15* and *fin14*) are positively correlated with each other, as expected. Moreover, the index of financial constraint *(finConstr)* shows the expected negative and significant correlation with the two direct measures of access to finance (*fin15* and *fin14*). Furthermore, most correlations between all three indicators of access to finance and firm-level characteristics have the expected signs. In particular, older, larger, and exporting firms, as well as firms led by experienced managers, have a higher unconditional probability of better access to finance (and a lower probability of facing financial constraint). However, the relationship between having a female manager and access to finance depends on the specific access to finance indicator being considered. In particular, while female-owned firms are more likely to have a checking or savings account than male-owned firms, the former are less likely to have a line of credit or a loan from a financial institution and are more likely to be financially constrained.

Table 5: Pearson's correlation coefficient among access to finance indicators and firm-level characteristics

	fin15	fin14	finConstr	age	small	exporter	foreign	female
fin14	0.143***							
finConstr	-0.079***	-0.141***						
Age	0.069***	0.048***	-0.076***					
Small	-0.148***	-0.174***	0.153***	-0.225***				
exporter	0.001	0.083***	-0.067***	0.058***	-0.179***			
Foreign	0.073***	0.085***	-0.038***	0.019**	-0.199***	0.259***		
Female manager	0.017*	-0.028***	-0.028***	-0.022**	0.084***	-0.040***	-0.080***	
Manager's experience	0.056***	0.057***	-0.019**	0.440***	-0.122***	0.020**	0.023**	-0.090***

Note: Correlations are computed based on 12,523 observations (firms).

Source: Author.

3.2 Model specification

Our goal is to estimate the effect of a country's level of social cohesion on firms' access to finance in Africa. As our access to finance indicators are dichotomous, we estimate a series of probit models with the following empirical specification:

$$\mathrm{FD_{isc}} = \beta_0 + \beta_1 \mathrm{Trust_c} + \beta_2 \mathrm{Cooperation_c} + \beta_3 \mathrm{Identity_c} + \beta_4 \mathrm{X_{isc}} + \beta_5 \mathrm{C_c} + \beta_6 \mathrm{d_s} + \beta_7 \mathrm{dPeriod_t} + \varepsilon_{\mathrm{isc}}, (1)$$

where $\mathrm{FD_{isc}}$ stands for one of the three measures of access to finance for firm i, which belongs to sector s and is located in country c. The three main variables of interest are country-levels of trust ($\mathrm{Trust_c}$), cooperation for the common good ($\mathrm{Cooperation_c}$), and identity ($\mathrm{Identity_c}$). The firm-level characteristics we control for ($\mathrm{X_{isc}}$) include firm size, a dummy variable for the gender of the manager, the number of years of experience of the manager in logarithms and the age of the firm in logarithms. Moreover, we include two dummy variables indicating whether the firm generates at least 10% of its annual sales from direct exports, and whether foreigners hold at least 10% of the firm's shares. To account for industry-specific differences among firms, our estimation model in (1) also includes sector dummies ($\mathrm{d_s}$). Because the WBES surveys were conducted in different years spanning 2009 to 2020, we include time dummies for the periods 2009–2013, 2014–2015, 2016–2017 and 2018–2020 to account for global trends over time.[12] The final term in the regression ($\varepsilon_{\mathrm{isc}}$) is the white noise error term. Noting that firms that are located in the same country may have similar characteristics as they operate in similar business environments, we also cluster the standard errors at the country level.

The vector $\mathrm{C_c}$ stacks four country controls: absolute latitude, the percentage of adherence to Islam, a dummy for French legal origins, and the intensity of slave trade (see, for example, Pierce and Snyder, 2018; Levine et al., 2020). Since the inclusion of country fixed effects is not possible because the model already contains country-level measures of social cohesion, the country controls are supposed to minimise the risk that our social cohesion indicators might pick up other country-level differences. However, the fact that we have only 27 countries and thus

12 The use of year dummies was not possible because some years are represented by single countries, leading to multicollinearity problems.

limited degrees of freedom makes it difficult to include other country controls, as they would cause the problem of multicollinearity among the explanatory variables. The four country controls used in this paper are those that are known to determine a country's institutional, economic, and financial development and have been checked to ensure that they do not cause multicollinearity in our model. Moreover, it is noteworthy that social cohesion itself could be affected by other, deeper, factors, such as geography and culture, and hence controlling for such variables could attenuate the strength of the association between social cohesion and firms' access to finance.

3.3 Estimation strategy

Our baseline estimation method is to perform a probit regression on the model in (1). The possibility of reverse causality from firms' access to finance to the degree of social cohesion in a country could be expected to be minimal on two grounds. First, social cohesion is measured at the country level while access to finance is measured at the firm level. Second, the surveys used to create the social cohesion indicators are conducted one to five years before the Afrobarometer surveys, which we use to measure firms' access to finance. Still, our probit estimation could suffer from endogeneity biases arising from an omitted variable that affects both a country's level of social cohesion and firms' access to finance. To address this concern, one strategy we follow is to include in our regression model (1) as many country-specific controls as the multicollinearity problem allows, along with industry and time fixed effects.

As a second strategy, we test the robustness of our probit estimates by means of an instrumental variable estimation. However, finding a suitable external instrument that affects firms' access to finance only through its effect on social cohesion is difficult. As an alternative to this, we employ the heteroskedasticity-based identification strategy proposed in Lewbel (2012). This approach allows identification by means of internal instruments without imposing any exclusion restrictions. In what follows, we provide a brief intuitive explanation of this approach and refer interested readers to Lewbel (2012) and Baum and Schaffer (2012).

We begin by grouping the variables into three: the dependent variable (Y_1), the endogenous variables (Y_2) and the exogenous variables (X). To construct the instruments, we first regress each endogenous variable in Y_2 (social cohesion in our case) on the exogenous variables X and obtain the vector of residuals $\hat{V}$. Then, we obtain the instruments as the product of the de-meaned exogenous variables and the residuals from the regression of the endogenous variable as $(\mathrm{X} - \bar{X})\hat{V}$, where $\bar{X}$ is the mean of X. For the instruments to be valid, the residuals $\hat{V}$ have to be heteroskedastic. Recent applications of this identification strategy to address endogeneity problems can be found in Mallick (2012), Arcand, Berkes and Panizza (2015) and Tran, Walle and Herwatz (2020).

4 Results and discussion

4.1 Baseline results

We proceed in several steps to examine the relationship between social cohesion and firms' access to finance in Africa. Tables 6, 7 and 8 show the marginal effects from the estimated probit models. The three tables differ in terms of the particular access to finance measure used: dummy variables for having a checking or savings account *fin15* (Table 6), having a bank loan or a line of credit *fin14* (Table 7), and having been financially constrained in the fiscal year prior to the survey *finConstr* (Table 8). In all the three tables, the first specification includes all the three core social cohesion components simultaneously while each of the remaining seven

specifications contains only one of the main or sub-components of social cohesion. Robustness check results obtained by applying the heteroskedasticity-based identification strategy are provided in Tables A.1, A.2 and A.3 of the Appendix. Unless otherwise stated, our discussion of statistical significance refers to the 5% level.

Table 6 presents probit estimates for the likelihood of a firm having a checking or savings account (*fin15*). In the specification with all the three main social cohesion indicators (column (1)), we see that trust enters positively and significantly at the 1% level of significance. On the contrary, coefficient estimates for cooperation and identity are not statistically significant. This leads us to tentatively conclude that trust is the most important, if not the only important, component of social cohesion that is positively associated with firms' access to finance in Africa. Since there is some correlation between the three components (at least between trust and identity), one could argue that the components may share common information and therefore our regression analysis may face difficulty in disentangling separate effects, given the limited degrees of freedom (27 countries). In the next columns, we use each main and sub-component as a sole indicator of social cohesion. Columns (2) to (8) show that while all the social cohesion indicators are positively related to *fin15*, statistical significance of coefficients differs across the indicators. Consistent with the results in column (1), all trust indicators (overall, social and institutional) enter positively at the 1% level, while the coefficient estimates for inclusive identity are significant at the 10%. On the contrary, both the overall index of cooperation for the common good and its sub-indices do not show any significant association with firms' access to finance in Africa. Hence, while these results clearly corroborate existing literature on the role of trust in financial development and access to finance (e.g. Guiso et al., 2004, An et al., 2021), they do not yet provide strong evidence of whether the broader social cohesion prevailing in a country (including cooperation and inclusive identity) is related to firms' access to finance in Africa. For trust, the estimated coefficient is also large in economic terms. For example, given that our social cohesion indicators are scaled to take values between 0 and 100, the estimated coefficient in row (1) and column (2) of Table 6 imply that firms in the country with the highest trust level are 21.9 percentage points more likely to have a checking or savings account than firms in the country with the lowest trust level, other things constant.

Turning to other firm controls, we obtain results that align well with those in the existing literature. In particular, small firms (i.e., firms with less than 20 workers) are more likely to be financially constrained and, in this particular case, less likely to have a checking or savings account – a finding that has been documented in several studies (Beck & Demirgüç-Kunt, 2006; Beck, Demirgüç-Kunt, & Maksimovic, 2005). The other feature of firms that is significantly linked to access to finance is their ownership. As expected, firms that are at least partly foreign-owned have a significantly higher probability of owning a checking or savings account (Beck & Demirgüç-Kunt, 2006; Beck et al., 2005). Moreover, firms managed by experienced managers are, as expected, more likely to have a checking or savings account. Coefficient estimates for other firm-level characteristics are not statistically significant, and hence we refrain from discussing them.

Table 6: Social cohesion and access to finance: likelihood of having a checking or savings account

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
					Trust: social	Trust: institutions	Coop.: vertical	Coop.: horizontal
Trust	0.196***	0.207***						
	(0.060)	(0.050)						
Cooperation	-0.045		0.036					
	(0.055)		(0.061)					
Identity	0.052			0.110*				
	(0.065)			(0.063)				
Sub index					0.201***	0.125***	0.053	0.016
					(0.078)	(0.032)	(0.070)	(0.058)
Log(age)	1.259	1.248	1.091	1.169	1.120	1.347	1.115	1.077
	(0.955)	(0.955)	(0.982)	(0.981)	(0.979)	(0.933)	(0.982)	(0.980)
Small firm	-0.088***	-0.088***	-0.087***	-0.087***	-0.088***	-0.087***	-0.087***	-0.088***
	(0.016)	(0.016)	(0.018)	(0.017)	(0.017)	(0.016)	(0.018)	(0.018)
Exporter	0.000	0.002	-0.004	-0.002	-0.004	0.005	-0.003	-0.005
	(0.015)	(0.016)	(0.015)	(0.015)	(0.016)	(0.016)	(0.015)	(0.014)
Foreign ownership	0.049***	0.047***	0.045***	0.047***	0.048***	0.044***	0.045***	0.045***
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Female top manager	-0.004	-0.005	-0.001	-0.000	-0.003	-0.003	-0.001	-0.000
	(0.009)	(0.009)	(0.010)	(0.009)	(0.009)	(0.009)	(0.010)	(0.010)
Log(manager's experience)	1.979***	1.901**	2.118***	2.161***	2.141***	1.701**	2.113***	2.150***
	(0.758)	(0.759)	(0.768)	(0.797)	(0.762)	(0.783)	(0.766)	(0.767)
Observations	12,470	12,470	12,470	12,470	12,470	12,470	12,470	12,470
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Period FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.126	0.125	0.116	0.120	0.121	0.126	0.117	0.116
Clusters	27	27	27	27	27	27	27	27

Notes: The dependent variable is an indicator variable that takes on the value 100 if the firm has a checking or savings account and 0 otherwise. Reported coefficients are marginal effects from a probit model computed at the sample mean of the explanatory variables. The country controls included are absolute latitude, a dummy variable for French legal origin, the percentage of adherence to Islam, and the log of pre-colonial slave exports per land area. The four periods considered are pre-2014, 2014–2015, 2016–2017, and post-2017. Clustered (by country) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Source: Author.

Table 7 documents the corresponding evidence for the probability of a firm having a bank loan or a line of credit (*fin14*). Unlike in Table 6, cooperation for the common good (at the 1% level of significance) and inclusive identity (at the 10%), but not trust, enter significantly in the regression containing all the three social cohesion components (column (1)). Introducing each component one by one, however, reveals that most social cohesion indicators – except social trust and overall trust – have a positive and significant association with the probability of a firm having a bank loan or a line of credit, and hence access to finance. Given that only 20% of the firms have a bank loan or line of credit, the estimated coefficients for the social cohesion indicators are also large in economic terms. For example, results in column (3) imply that, on average, firms in the country with the highest level of cooperation for the common good (inclusive identity) are 21.4 (19.6) percentage points more likely to have a bank loan or line of

credit than firms in the country with the lowest level of cooperation (inclusive identity). As we are not aware of any study that has examined the effects of cooperation for the common good and inclusive identity on financial development, these results in Table 7 are a remarkable finding that underscore the crucial role of the broader concept of social cohesion – and not just trust – in firms' access to finance in Africa.

In terms of firm-level characteristics, being a small firm is still negatively associated with firms' access to finance. However, unlike in the case of having a checking or savings account (Table 6), participating in export activities tends to significantly increase firms' access to finance in terms of obtaining a loan from financial institutions. Top managers experience is, however, not significantly linked to access to finance that is measured by the likelihood of having a bank loan or a line of credit.

Table 7: Social cohesion and access to finance: likelihood that a firm has a bank loan/line of credit

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
					Trust: social	Trust: institutions	Coop.: vertical	Coop.: horizontal
Trust	-0.021	0.116						
	(0.077)	(0.083)						
Cooperation	0.174***		0.214***					
	(0.047)		(0.053)					
Identity	0.130*			0.184***				
	(0.074)			(0.065)				
Sub index					0.051	0.174***	0.202***	0.210***
					(0.105)	(0.031)	(0.062)	(0.047)
Log(age)	1.021	0.873	1.081	0.843	0.827	1.158	1.109	0.985
	(0.989)	(0.950)	(1.012)	(0.918)	(0.928)	(0.941)	(0.982)	(1.019)
Small firm	-0.108***	-0.112***	-0.108***	-0.111***	-0.112***	-0.111***	-0.109***	-0.108***
	(0.013)	(0.015)	(0.013)	(0.014)	(0.015)	(0.013)	(0.014)	(0.014)
Exporter	0.067***	0.058***	0.066***	0.060***	0.056***	0.068***	0.064***	0.065***
	(0.013)	(0.015)	(0.014)	(0.014)	(0.016)	(0.013)	(0.014)	(0.014)
Foreign ownership	0.028	0.033*	0.024	0.035*	0.032*	0.028	0.025	0.025
	(0.019)	(0.019)	(0.020)	(0.019)	(0.019)	(0.019)	(0.020)	(0.020)
Female top manager	-0.007	-0.008	-0.009	-0.005	-0.007	-0.008	-0.010	-0.008
	(0.013)	(0.014)	(0.013)	(0.014)	(0.014)	(0.014)	(0.013)	(0.014)
Log(manager's experience)	1.380	1.488	1.270	1.618	1.597	0.912	1.381	1.247
	(0.988)	(1.055)	(0.970)	(1.063)	(1.079)	(0.965)	(0.981)	(0.992)
Observations	12,093	12,093	12,093	12,093	12,093	12,093	12,093	12,093
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Period FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.0973	0.0844	0.0940	0.0906	0.0827	0.0931	0.0924	0.0928
Clusters	27	27	27	27	27	27	27	27

Notes: Clustered (by country) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The dependent variable takes on the value 100 if the firm has a bank loan/line of credit and 0 otherwise. For further notes, see Table 6.

Source: Author.

Table 8 documents empirical evidence on the determinants of the probability of firms experiencing financial constraint (*finConstr*). In the comprehensive specification (1) of Table 8, only trust enters significantly, but negatively. Moreover, in the columns where each social cohesion index and sub-index is considered separately, only overall trust and social trust are significantly associated with financial constraint in terms of being denied credit or being discouraged from applying for credit in the first place. Thus, these results documented in Table 8 are largely in line with the evidence presented in Table 6: trust, but not inclusive identity and cooperation for the common good, is significantly associated with firms' access to finance. Noting that 44.27% of the firms have faced financial constraint (see Table 4), the estimated coefficients are large in economic terms. For example, results in column (5) of Table 8 imply that, on average, firms in the country with the highest level of social trust are 31.6 percentage points less likely to have experienced financial constraint than are firms in the country with the lowest social trust.

Table 8: Social cohesion and access to finance: likelihood of experiencing financial constraint

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
					Trust: social	Trust: institutions	Coop.: vertical	Coop.: horizontal
Trust	-0.310**	-0.215**						
	(0.128)	(0.102)						
Cooperation	-0.067		-0.071					
	(0.132)		(0.097)					
Identity	0.188			0.045				
	(0.144)			(0.088)				
Sub index					-0.337**	-0.002	-0.135	-0.010
					(0.160)	(0.055)	(0.089)	(0.101)
Log(age)	-2.397	-2.378	-2.302	-2.217	-2.225	-2.245	-2.387	-2.246
	(1.475)	(1.497)	(1.484)	(1.509)	(1.463)	(1.434)	(1.471)	(1.492)
Small firm	0.120***	0.119***	0.118***	0.119***	0.120***	0.119***	0.117***	0.119***
	(0.011)	(0.011)	(0.012)	(0.012)	(0.011)	(0.012)	(0.012)	(0.012)
Exporter	-0.073***	-0.072***	-0.070***	-0.064***	-0.068***	-0.066***	-0.072***	-0.066***
	(0.016)	(0.016)	(0.015)	(0.014)	(0.015)	(0.014)	(0.015)	(0.015)
Foreign ownership	-0.010	-0.014	-0.009	-0.010	-0.017	-0.011	-0.008	-0.011
	(0.021)	(0.022)	(0.023)	(0.024)	(0.020)	(0.023)	(0.023)	(0.024)
Female top manager	-0.029*	-0.033**	-0.036**	-0.037**	-0.032**	-0.037**	-0.035**	-0.037**
	(0.015)	(0.016)	(0.015)	(0.015)	(0.015)	(0.016)	(0.015)	(0.015)
Log(manager's experience)	1.176	0.940	0.831	0.716	0.651	0.717	0.860	0.730
	(1.206)	(1.266)	(1.212)	(1.268)	(1.288)	(1.213)	(1.210)	(1.227)
Observations	12,620	12,620	12,620	12,620	12,620	12,620	12,620	12,620
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Period FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.0440	0.0414	0.0391	0.0388	0.0429	0.0386	0.0404	0.0386
Clusters	27	27	27	27	27	27	27	27

Notes: Clustered (by country) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The dependent variable, *finConstr,* takes on the value 100 if the firm faced financial constraint in the year prior to the survey and 0 otherwise. For further notes, see Table 3.

Source: Author

In summary, our results documented in Tables 6, 7, and 8 show that every component and sub-component of social cohesion is significantly associated with at least one of the three alternative measures of access to finance. Moreover, the results confirm the particularly robust effect of trust on firms' access to finance documented in the literature (e.g. Guiso et al., 2004, An et al., 2021).

4.2 Sensitivity analysis

As a sensitivity analysis, we re-estimate the probit model in (1) using the heteroskedasticity-based instrumental variable estimation method proposed in Lewbel (2012). These results are documented in Tables A.1, A.2 and A.3 of the Appendix. The fact that only three of the 30 estimated coefficients on social cohesion documented in the three tables (Tables 3, 4 and 5) changed their statistical significance (at the 5% level) is strong evidence that our probit-based results remain qualitatively unchanged by the heteroskedasticity-based instrumental variable estimation. In particular, as in Tables 3 and 5, Tables A.1 and A.3 also show that trust is still the only social cohesion component that is significantly associated with the probability of firms' having a checking or savings account or being financially constrained. Results are slightly less robust when we consider the estimated models for the percentage of firms with a bank loan or a line of credit. In particular, while all social cohesion coefficients, except for overall trust and social trust, are statistically significant in Table 4, it is the coefficients for overall cooperation and institutional trust that are not statistically significant when we use the heteroskedasticity-based identification strategy in Table A.2. In other words, unlike in Table 4, results documented in Table A.2 show that both overall trust and social trust are significantly associated with the likelihood that a firm has a bank loan or line of credit. Consequently, trust becomes significantly associated with all three indicators of access to finance that we consider. In addition, the fact that the parameter estimates for both inclusive identity and the two sub-components of cooperation (though not overall cooperation) are still significantly positive implies that the results in Table A.2 leave our main conclusion from Table 4 unchanged: broader social cohesion – and not just trust – is significantly associated with firms' access to finance.

In summary, the sensitivity analyses bolster our confidence in the baseline results that social cohesion is positively and significantly associated with firms' access to finance in Africa, and that this association is unlikely to have been caused by estimation biases due to endogeneity. It is worth noting, however, that the results of our heteroskedasticity-based identification strategy do not rule out the possibility that firms' access to finance could affect social cohesion. Indeed, they are silent on this issue of reverse causality. Rather, they suggest that the strong relationship between social cohesion and firms' access to finance is explained, at least in part, by the effect of the exogenous component of social cohesion on firms' access to finance.[13]

5 Conclusions

In this paper, we examined the role of social cohesion in promoting access to finance for firms in Africa. To this end, we employ a recently constructed social cohesion dataset by Leininger et al. (2021). These authors define social cohesion by its three pillars – trust, cooperation for the common good and inclusive identity – and operationalise their definition using data from the Afrobarometer surveys and Varieties of Democracy database. Firm-level data on access to finance and other characteristics of firms are taken from World Bank Enterprise Surveys and our final sample covers more than 12,500 firms in 27 African countries.

13 See Levine, Loayza and Beck (2000) for a similar reasoning.

Our results show that all three components of social cohesion are positively associated with at least one measure of firms' access to external finance. In particular, trust is significantly associated with all three indicators of access to finance that we consider: the likelihood that firms have a checking or savings account, have a line of credit or a bank loan, or are financially constrained. This confirms that existing evidence on the importance of trust for access to finance, which is widely reported for high-income economies (e.g. Guiso et al., 2004), also holds for Africa. Our results also show that inclusive identity and cooperation for the common good are also significantly related to access to finance, but only when we measure access to finance with respect to having a line of credit or a loan from a financial institution. Hence, while previous studies have shown that trust plays an important role in promoting access to finance, the results documented in this paper suggest that other components of social cohesion, such as cooperation for the common good and inclusive identity, are also important determinants of firms' access to finance in Africa, and the estimated effects are economically large. These results are robust to using a heteroskedasticity-based identification strategy to account for potential endogeneity biases due to, for example, reverse causality from access to finance to social cohesion.

Given that lack of access to finance is one of the most pressing constraints on the growth of firms in Africa, the paper provides strong evidence that facilitating firms' access to finance is an important economic benefit of social cohesion. Hence, improving social cohesion, for example through social protection, education, strengthening civil society organisations, increasing political and social participation, and reducing the risk of conflict, could do more than hold society together; it could also promote financial development, growth of firms and thus economic development and job creation.

Noting that this study looked at access to finance for firms only, it is of immediate importance to examine in a future study the role that social cohesion could play in determining access to finance for African households. Moreover, as this study covers African countries only, the results presented in this paper may reflect African peculiarities or patterns that are specific to low- and middle-income economies. Therefore, it is also worthwhile to extend the current study to other world regions, including high-income economies, in a future study. Finally, while we have attempted to estimate the relationship between social cohesion and access to finance in such a way that possible causality from access to finance to social cohesion does not bias our estimates, we have not directly estimated whether firms' access to finance might also affect a country's level of social cohesion. Therefore, investigating the role of access to finance and financial development in shaping social cohesion is also an important research topic for the future.

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Appendix: Results using the heteroskedasticity-based identification strategy

Table A1: Social cohesion and access to finance: likelihood of having a checking or savings account (heteroskedasticity)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
					Trust: social	Trust: institutions	Coop.: vertical	Coop.: horizontal
Trust	0.252***	0.281***						
	(0.069)	(0.072)						
Cooperation	-0.010		-0.150					
	(0.052)		(0.107)					
Identity	-0.012			0.100				
	(0.061)			(0.078)				
Sub-index					0.256***	0.138***	-0.038	-0.086
					(0.072)	(0.050)	(0.092)	(0.146)
Log(age)	1.164	1.192	0.937	1.099	1.012	1.370	1.011	1.019
	(1.013)	(1.021)	(1.003)	(1.015)	(1.021)	(1.036)	(1.015)	(0.984)
Small firm	-0.087***	-0.087***	-0.089***	-0.086***	-0.087***	-0.086***	-0.087***	-0.088***
	(0.023)	(0.023)	(0.022)	(0.023)	(0.023)	(0.023)	(0.023)	(0.022)
Exporter	-0.000	0.002	-0.015	-0.004	-0.005	0.004	-0.009	-0.011
	(0.015)	(0.016)	(0.015)	(0.015)	(0.016)	(0.016)	(0.017)	(0.017)
Foreign ownership	0.039***	0.039***	0.039***	0.036***	0.040***	0.031***	0.035***	0.037***
	(0.011)	(0.011)	(0.011)	(0.010)	(0.011)	(0.010)	(0.010)	(0.011)
Female top manager	-0.001	-0.001	0.006	0.005	0.000	0.003	0.005	0.005
	(0.010)	(0.009)	(0.011)	(0.010)	(0.010)	(0.010)	(0.010)	(0.011)
Log(manager's experience)	1.901***	1.857***	2.380***	2.145***	2.197***	1.598**	2.176***	2.293***
	(0.673)	(0.683)	(0.776)	(0.726)	(0.726)	(0.739)	(0.727)	(0.868)
Observations	12,523	12,523	12,523	12,523	12,523	12,523	12,523	12,523
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Period FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.102	0.102	0.0846	0.0980	0.0977	0.103	0.0929	0.0916
Clusters	27	27	27	27	27	27	27	27

Notes: Standard errors are clustered (by country) and robust to heteroskedasticity. *** p<0.01, ** p<0.05, * p<0.1. The dependent variable takes on the value 100 if the firm has a checking or savings account and 0 otherwise. The models are estimated using the heteroscedasticity-based identification strategy of Lewbel (2012). For further notes, see Table 3.

Source: Author.

Table A2: Social cohesion and access to finance: likelihood that a firm has a bank loan/line of credit (heteroskedasticity)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
					Trust: social	Trust: institutions	Coop.: vertical	Coop.: horizontal
Trust	-0.041	0.226**						
	(0.099)	(0.095)						
Cooperation	0.174***		0.130					
	(0.049)		(0.102)					
Identity	0.122			0.300**				
	(0.088)			(0.117)				
Sub-index					0.271***	0.038	0.300**	0.209**
					(0.090)	(0.082)	(0.145)	(0.089)
Log(age)	1.043	0.942	0.990	0.945	0.819	0.953	1.173	0.992
	(0.897)	(0.937)	(0.883)	(0.863)	(0.932)	(0.938)	(0.924)	(0.934)
Small firm	-0.110***	-0.113***	-0.111***	-0.112***	-0.113***	-0.113***	-0.109***	-0.110***
	(0.017)	(0.017)	(0.018)	(0.017)	(0.017)	(0.017)	(0.016)	(0.018)
Exporter	0.074***	0.069***	0.070***	0.072***	0.065***	0.066***	0.077***	0.073***
	(0.019)	(0.019)	(0.019)	(0.019)	(0.020)	(0.020)	(0.019)	(0.019)
Foreign ownership	0.030	0.037	0.029	0.039*	0.039*	0.032	0.025	0.028
	(0.022)	(0.023)	(0.021)	(0.021)	(0.023)	(0.022)	(0.023)	(0.022)
Female top manager	-0.009	-0.012	-0.010	-0.005	-0.012	-0.008	-0.013	-0.010
	(0.012)	(0.013)	(0.012)	(0.013)	(0.013)	(0.012)	(0.012)	(0.012)
Log(manager's experience)	1.306	1.337	1.323	1.589	1.621	1.394	1.228	1.144
	(0.919)	(0.981)	(0.898)	(0.972)	(1.005)	(1.013)	(0.885)	(0.914)
Observations	12,101	12,101	12,101	12,101	12,101	12,101	12,101	12,101
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Period FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.0952	0.0813	0.0901	0.0870	0.0774	0.0848	0.0888	0.0903
Clusters	27	27	27	27	27	27	27	27

Notes: Standard errors are clustered (by country) and robust to heteroskedasticity. *** p<0.01, ** p<0.05, * p<0.1. The dependent variable takes on the value 100 if the firm has a bank loan/line of credit and 0 otherwise. The models are estimated using the heteroscedasticity-based identification strategy of Lewbel (2012). For further notes, see Table 3.

Source: Author.

Table A3: Social cohesion and access to finance: likelihood of experiencing financial constraint (heteroskedasticity)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
					Trust: social	Trust: institutions	Coop.: vertical	Coop.: horizontal
Trust	-0.302**	-0.299**						
	(0.144)	(0.128)						
Cooperation	-0.081		0.199					
	(0.119)		(0.211)					
Identity	0.258			-0.034				
	(0.163)			(0.089)				
Sub-index					-0.249*	-0.126	-0.042	0.246
					(0.130)	(0.142)	(0.144)	(0.240)
Log(age)	-2.186*	-2.251*	-1.954	-2.117	-2.063	-2.394	-2.140	-2.015
	(1.311)	(1.304)	(1.307)	(1.331)	(1.309)	(1.480)	(1.345)	(1.314)
Small firm	0.115***	0.116***	0.119***	0.115***	0.115***	0.115***	0.115***	0.119***
	(0.011)	(0.012)	(0.012)	(0.012)	(0.012)	(0.013)	(0.012)	(0.012)
Exporter	-0.068***	-0.071***	-0.052***	-0.063***	-0.064***	-0.072***	-0.064***	-0.050***
	(0.014)	(0.015)	(0.014)	(0.012)	(0.013)	(0.018)	(0.014)	(0.014)
Foreign ownership	-0.010	-0.017	-0.017	-0.013	-0.017	-0.009	-0.011	-0.018
	(0.018)	(0.018)	(0.018)	(0.021)	(0.018)	(0.023)	(0.020)	(0.020)
Female top manager	-0.027*	-0.030**	-0.038**	-0.035**	-0.032**	-0.034**	-0.034**	-0.037**
	(0.015)	(0.015)	(0.015)	(0.014)	(0.014)	(0.015)	(0.013)	(0.015)
Log(manager's experience)	1.129	0.963	0.340	0.657	0.605	1.155	0.704	0.213
	(1.109)	(1.176)	(1.278)	(1.184)	(1.198)	(1.248)	(1.155)	(1.288)
Observations	12,626	12,626	12,626	12,626	12,626	12,626	12,626	12,626
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Period FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.0543	0.0509	0.0380	0.0475	0.0534	0.0446	0.0495	0.0387
Clusters	27	27	27	27	27	27	27	27

Notes: Standard errors are clustered (by country) and robust to heteroskedasticity. *** p<0.01, ** p<0.05, * p<0.1. The dependent variable, *finConstr,* takes on the value 100 if the firm faced financial constraint in the year prior to the survey and 0 otherwise. The models are estimated using the heteroscedasticity-based identification strategy of Lewbel (2012). For further notes, see Table 3.

Source: Author.