Local governance quality and law compliance: The case of Mozambican firms

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ARTICLE INFO

Article history:
Accepted 30 April 2022
Available online 16 May 2022

JEL Codes:
D22
D23
K22
O55
P16

Keywords:
Governance
Transparency
Compliance
Firm behaviour
Mozambique

ABSTRACT

In sub-Saharan Africa, many micro and small enterprises do not (or at least only partially) comply with official rules and regulations. Given that low compliance rates impede economic growth and human development, it is essential to identify mechanisms that can help improve abidance with laws. This paper investigates how the quality of governance (defined as comprising three dimensions: transparency, legal security and infrastructure quality) is related to firm-level compliance with business laws and regulations in the case of Mozambique. We utilise firms’ subjective perceptions of governance quality and their self-reported law compliance over time to study the governance–compliance nexus, taking into account unobserved firm-level heterogeneity. Furthermore, we examine whether political legitimacy acts as a mediator or a moderator between governance and compliance. Our results suggest that perceived improvements in transparency positively affect firms’ compliance with existing legislation. Requests from provincial government officials for firms to comment on local regulations seem to be especially important for law abidance. We find that legitimacy is independently associated with compliance, but does not seem to mediate or moderate the quality of governance. Overall, our results suggest that, even in one of the least developed and non-democratic parts of the world, active participation in political processes is positively associated with law compliance.

1. Introduction

In most developing countries, levels of compliance with laws and regulations are low (Bonnet, Vanek, & Chen, 2019). Given that low compliance rates impede economic growth and human development (Aalstadsæter, Johannesen, & Zucman, 2019; Chen, 2003), it becomes crucial to identify mechanisms that can help improve this reality. At the firm level, moreover, failures to adhere to the law have negative externalities (Malesky & Taussig, 2017). Coupled with institutionalised informal payment structures, this leads to significant inefficiencies in allocation (i.e. misallocation) (Warren, 2006). Consequently, improving law compliance is essential for the sustainable development of a country.

The literature has identified three main factors that improve firm-level compliance with business regulations. First, increased enforcement mechanisms, such as higher penalties, can strengthen compliance rates (De Giorgi, Ploenzke, & Rahman, 2018; De Andrade, Bbruun, & McKenzie, 2016); but, the advantages of stronger regulations have limitations, especially in weak institutional environments which many developing countries have (Berglöf & Claessens, 2006). Second, streamlining of bureaucratic rules and procedures arguably facilitates compliance (Bruhn & McKenzie, 2014). In this respect, the navigability of bureaucracy is a dimension of the government’s administrative capabilities (Levi & Sacks, 2009; Sacks & Levi, 2010). Third, cross-country differences in quality of governance, measured as the effectiveness and consistency with which governments implement public service provision, have been documented as a significant determinant of firm-level compliance (Chong & Gradstein, 2011; Dabla-Norris, Gradstein, & Inchauste, 2008). However, cross-country studies focusing on the governance-compliance link at an aggregate level have methodological weaknesses as considerable differences in governance quality often exist within countries. Thus, our paper address this by studying differences in governance quality within the chosen case study country.

Differences in provincial governments’ capacities to effectively formulate and implement sound policies can lead to unequal local development within counties (Banerjee & Iyer, 2005; Bruhn & Gallego, 2012; Chattopadhyay & Duflo, 2004). Although multiple studies have found that good governance influences local firm per-
formance (Goedhuys & Srholec, 2015; Nguyen, Le, & Bryant, 2013; Yasar, Paul, & Ward, 2011), research on how 'within-country' differences in quality of governance can lead to variation in firm behaviour – and, in particular, firms' willingness to obey the law – is scarce. In this paper, we add to this literature by investigating how firms' perceptions of local quality of governance may affect firm-level compliance with business laws and regulations in the case of Mozambique. We define the quality of governance as comprising three dimensions: transparency, legal security and infrastructure quality.

A government that delivers security, ensures property rights and provides well-functioning infrastructure can be considered effective (Levi & Sacks, 2009). If legislation, and its enforcement, are additionally perceived to be procedurally just and of high quality, overall willingness to obey the law increases (Tyler, 2006; Rothstein, 2009; Marien & Hooghe, 2011). This willingness translates into improved trust in the legitimate authority of the regulatory agencies that administer the law rather than evaluation of the law's substance (Nielsen & Parker, 2012). As such, when citizens perceive local governments to be politically legitimate, citizens' intrinsic motivation to abide by the rules voluntarily increases – which subsequently translates into actual compliance (Walters & Bolger, 2019; Dickson, Gordon, & Huber, 2017; Feldman, 2010). In sum, if the state improves its governance, citizens are more likely to view the state as legitimate and, as a result, are more willing to abide by the law. This reasoning has a potentially circular effect as improved compliance enhances the tax-dependent government's capacity to govern more effectively and elicit deference. In addition, studies have argued that there is a close relationship between quality of governance and trust (Levi & Sacks, 2009).

Hence, we posit that legitimacy may mediate the relationship between quality of governance and compliance, and consequently examine whether legitimacy acts as a potential mediator (as opposed to a moderator) between governance and compliance. This distinction has a practical implication: where a mediator explains how or why effects occur, a moderator specifies 'when certain effects will hold' (Baron & Kenny, 1986, p.1176).

This paper uses a unique dataset (IIM) with detailed information about 460 manufacturing firms in Mozambique over time, with data from 2012 and 2017. The longitudinal aspect allows us to control for unobserved firm-level heterogeneity. In so doing, we account for several potential systematic biases. For example, a manager with above-average ability may evaluate the quality of governance to be high in order to please the government, while at the same time being good at circumventing the law (low compliance). On the other hand, the manager may also be more willing to comply with the law as she may be more knowledgeable in terms of compliance benefits. As data on compliance with specific regulations – such as compliance reports from the Mozambican tax authorities – are not publicly available, this research is based upon self-reported firm-specific compliance indicators. If firms believe that compliance is socially desirable, this leads to over-reporting in compliance rates, which would pose a significant limitation to the analysis if using cross-sectional data (Grimm, 2010). Assuming that this potential bias is firm-specific and does not change systematically over time, we can utilise the panel element of our data to control for this precise type of firm-level heterogeneity. This paper is, to our knowledge, the first to account for unobserved time-invariants affecting the governance-compliance relationship.

Our results suggest that perceived improvements in transparency positively affect firm compliance with legislation. Requests from provincial government officials for firms to comment on provincial regulations appear to be especially important for firms' degree of law abidance. Hence, as previously illustrated by (Malesky & Taussig (2017)), political participation is instrumental in firm compliance behaviour, even in autocratic regimes. Two other components of transparency – namely access to information and predictability of changes in laws – are shown to matter most for the compliance of the smallest as well as informal enterprises. These findings are consistent with previous results showing that transparency is more effective for citizens with lesser prior knowledge about government regulations (Truex, 2017; Grimmelikhuijsen & Meijer, 2014). Lastly, we find no evidence for legitimacy to act as a moderator or a mediator in the interrelation between governance and compliance. Instead, firm perceptions of local political legitimacy are positively associated with their compliance behaviour, independent of governance quality. Thus, confidence in the state is relevant for firm behaviour, even in one of the least-developed countries in the world.

This paper provides four contributions to the literature. First, where existing studies often examine the relationship between a single aspect of governance and compliance, this paper disaggregates governance into multiple sub-components (Cucchiello, Povinelli, & Grimmelikhuijsen, 2017). This greater detail allows us to showcase which sub-components have stronger links to compliance. For instance, our transparency measure contains four sub-components: political participation, government officials soliciting comments from firms, predictability and accessibility of laws and regulations. Second, few studies investigate firms' perceptions of governance, which we argue is of higher importance than objective measures of firms' compliance behaviour (Ford & Ihrie, 2019). Third, we add to the research by examining whether political legitimacy acts as a mediator or moderator in the governance-compliance relationship. Lastly, most studies concerned with compliance, governance and legitimacy examine economically advanced democratic countries (Sakurai & Braithwaite, 2003; Braithwaite, 2007; Karceski & Kiser, 2021). We know less about the relationship in countries where state-building and democracy are still extremely fragile. We add to the within-country literature on governance by studying a non-democratic developing country.

The body of the paper is structured as follows. Section 2 outlines a conceptual framework that involves theoretical and empirical considerations about the governance-legitimacy-compliance relationship. Section 3 provides background information on Mozambique, explains the dataset employed, and describes the methodology. Section 4 discusses the main results. Lastly, Section 5 provides a number of conclusions.

2. Conceptual framework

Many different definitions of quality of governance exist (Kaufmann, Kraay, & Mastruzzi, 2010). We broadly understand “good” governance as “the performance of [a] government in delivering specific articulated political goods” (Rotberg, 2018, p.35). These political goods are diverse and include security and safety, rule of law, transparency, political participation and human development, among others (Rotberg, 2018). It is key to distinguish between subjective and objective governance measures when analysing governance. The difference is in the gap between de facto and de jure legal structures. While de jure legislation in Mozambique has been shown to meet international standard, its de facto implementation and enforcement is weak (Berkel, 2018). Objective measures of governance quality are therefore likely to score higher and have less local variation than subjective-based measures. On the other hand, the dynamics of subjective (as compared to objective) governance measures may be less volatile if firms do not perceive improvements in public service delivery to be beneficial to them (de Fine Licht, 2020). However, as firms’ subjective opinions about governance ultimately shape behavioural responses, two different entrepreneurs both facing the same de jure and de facto legal conditions may perceive the same legislative situation differently.
which could subsequently lead to differences in their compliance decisions (Ford & Ihrke, 2019). We therefore measure quality of governance from a subjective viewpoint by examining how firm owners perceive the quality of different elements of governance. Coupling our reasoning from the introduction together with our arguments that self-reported quality of governance and self-reported compliance measures are suitable for analysing governance-compliance relationships, we expect our statistical analysis to support the following hypothesis:

H1: Firms’ perception of quality of governance will be positively associated with self-reported compliance with business laws and regulations.

2.1. Disaggregation

Governance involves many facets, and empirical studies which attempt to understand how these different facets of governance influence firm behaviour are limited (Malesky, McCulloch, & Nhat, 2015). In this paper, we analyse the relationship between three specific aspects of governance and law compliance, thereby acknowledging that our conceptual understanding of governance is only partial. The three governance components in focus are (i) transparency, (ii) legal security, and (iii) infrastructure. Each of these components includes further sub-components, which help us understand what specific feature of each component influences firm compliance.1

The first feature of governance that we study is transparency or “the active disclosure of information by an organization in such a way as to allow the internal workings or performance of that organization to be monitored by external actors” (Grimmelikhuijsen, 2010, p.10). Due to the complex and multifaceted nature of transparency, we try to capture its features of transparency through four different sub-components (Schnell, 2018).

The most basic understanding of transparency is access to information (Schnell, 2018; Robertson, 2020). Firms may not comply with laws because they do not have sufficient information. In our IIM data, 40 per cent of informal firms say that one reason for operating informally is insufficient information about what is needed to register. If firms had better access to information, unintentional noncompliance might be reduced. However, empirical evidence on the information-compliance relationship is mixed. On the one hand, providing firms with information about tax laws can increase tax compliance (Doerrenberg & Schmitz, 2015; Kosonen & Ropponen, 2015). On the other hand, providing information on how to register does not improve formality rates (De Andrade et al., 2016; Benhassine, McKenzie, Pouliquen, & Santini, 2018). The effect of information provision may be insignificant because providing “raw” information has been criticised as being insufficient to affect behaviour (Schnell, 2018). The comprehensibility, completeness and accuracy of the provided documents are assumed to be at least as vital as the access itself. As a first sub-component of transparency, we ask firms about the accessibility of 13 different provincial documents as well as information essential for doing business.

Our second and third sub-components of transparency are indicators of political participation – direct and indirect questions related to commenting on government regulations. Theories of deliberative democracy and procedural justice strongly suggest that economic actors who are directly involved in formulating legislative initiatives are more supportive of the rulemaking authorities. For example, when political leaders consult citizens, individuals tend to accept constraints on their behaviour as being more legitimate. Higher legitimacy translates into higher willingness to comply with rules (Fishkin, 1991; Fung & Wright, 2001; Malesky & Taussig, 2017; Malesky & Taussig, 2019; Tyler, 2006). Even in authoritarian regimes, the possibility for citizens to provide comments can increase their satisfaction with the government. Thus, even small improvements in political participation might change the behaviour of micro and small enterprises (Truex, 2017; Malesky & Taussig, 2017; Malesky & Taussig, 2019). Another possibility is that political participation might improve the quality of regulations, which then makes it easier for them to be complied with (de Fine Licht, 2020). On the other hand, interactions between local governments and firms may, through bribes, be an opportunity for firms to influence regulations in their favour thereby capturing the regulatory process (Hellman & Kaufmann, 2001; Hellman & Schankerman, 2000). However, as our sample consists primarily of micro and small enterprises which have limited financial capacity and are often politically marginalised, we expect this latter mechanism to be an unlikely contributor in our data.

Our fourth sub-component of transparency assesses firms’ perceptions of the predictability of changes in laws, i.e. whether political decision-making occurs under clear and publicly known conditions and whether public officials themselves comply with existing legislation (Schnell, 2018). Predictability is the most complex transparency measure because it does not reflect pure rule or information but rather “a broader feature of a functioning rational-legal system of governance”, and research on transparency as predictability is therefore somewhat limited (Schnell, 2018, p.704). Malesky and Taussig (2017) argue that perceived predictability says something about the firms’ regulatory knowledge – their ability to predict the government’s regulatory behaviour successfully. Hence, they employ predictability as a mediator rather than an independent variable. On the contrary, we argue that predictability (and stability) is necessary for citizens to accept government regulation on personal liabilities. Therefore, predictability says more about how well the government communicates its intentions and future rules and less about firms’ ability to receive information. We hypothesise that predictability (and stability) might be necessary for firms to accept government regulation on personal liabilities, which ultimately increases compliance with the law.

The second aspect of governance is legal security, i.e. how secure a firm perceives its legal situation to be. Theoretically, robust property rights provide incentives for firms to pursue long-term plans, which subsequently creates a business environment that allows for improved firm growth potential (Soto, 1989; Asoni, 2008). When legal institutions work poorly, contract enforcement becomes difficult and bribe payments may become a necessary part of doing business (Yasar et al., 2011). Several empirical studies confirm that secure property rights are essential for development (Acemoglu, Johnson, & Robinson, 2001; Haggard & Tiede, 2011). Similarly, if we suppose that firms can rely on property rights and well-functioning legal institutions, then they may have higher incentives to comply with rules and regulations, as they know that these rules will ultimately benefit their business operations.

Perceived quality of infrastructure forms the third governance component. We expect to see higher compliance rates among firms which estimate that the government is meeting its obligations to its fiscal contract, which entails delivering a minimum level of soft and hard infrastructure. To our knowledge, the effect of this governance component on firm-level self-reported law compliance is

1 We acknowledge that our governance sub-components are not complete either, i.e. they do not capture the specific governance component in its entirety. Research on more developed countries includes more sophisticated governance aspects than our indicators (see for example Grimmelikhuijsen, Porumbescu, Hong, & Im (2013) and Grimmelikhuijsen (2010)). These sophisticated measures are far from being implemented in Mozambique and, it is, therefore, realistic to use our more simple governance measures.
understudied. From empirical work, we know that the objective quality of infrastructure influences firm productivity (Barzin, D’Costa, & Graham, 2018; Escribano, Guasch, & Pena, 2010), and results show that infrastructure impact works through numerous channels leading to indeterminate aggregate effects (Agénor & Moreno-Dodson, 2006). Better infrastructure may reduce the logistics costs that firms accrue and enable them to replace unproductive private investments such as electricity generators or boreholes with more productive fixed capital investments. Further, higher-quality roads and improved infrastructure networks may reduce workers’ transportation costs, positively affecting traffic-related stress, which improves concentration and thereby average labour productivity in the firm (Agénor & Moreno-Dodson, 2006; Ferreira, 1999). Yet, less is known about the subjective measures of infrastructure and how these are associated with compliance. If firms perceive infrastructure improvements positively, it may lead to higher willingness to comply with various laws and regulations, by observing and perceiving that the government is spending corporate tax income effectively and to their benefit.

H2: The quality of transparency, legal security and infrastructure as perceived by firms will be positively associated with self-reported compliance with business laws and regulations.

2.2. Legitimacy

Finally, we examine the relationship between the three governance components and political legitimacy. An institution is deemed legitimate when the public accepts its right to rule or accepts that it is “appropriate, proper and just”. The ruling institution promulgates laws and tries to ensure compliance by determining a non-compliance cost and/or a benefit from complying. In this broad interpretation of the ruling, the existence of legitimacy reduces the transaction costs of governing as the institution does not need to be backed by coercion (Buchanan & Keohane, 2006; Tyler, 2006).

When people observe that government authorities are acting more competently and fairly than before, their perceptions of the authorities’ legitimacy may improve. Viewing the authorities as more legitimate may increase people’s intrinsic motivation to abide by the rules voluntarily, which subsequently translates into actual compliance (Dickson et al., 2017; Feldman, 2010; Murphy, 2005; Tyler, 2006; Walters & Bolger, 2019). Phrased differently: “because of legitimacy, people feel that they ought to defer to decisions and rules, following them voluntarily out of obligation rather than out of fear of punishment or anticipation of reward” (Tyler, 2006, p.375). In the following analysis, we use Gilley (2006)’s definition of state legitimacy: “a state is more legitimate the more it is treated by its citizens as rightfully holding and exercising political power” (Gilley, 2006, p.2). In democratic countries, citizens differentiate between their beliefs about the state and their beliefs in the current occupants of administrative office (Muller, Jukam, & Seligson, 1982; Lillbacka, 2001). In a non-democratic country, the government has seized the state “…that is, where it has overstepped the bounds of holding office to actually define that office” (Gilley, 2006), p.3. In our context, we therefore argue that the best way of measuring legitimacy is as a dynamic process of interaction between states and their citizens in which performance and legitimacy respond to each other. Hence, our measure of legitimacy captures how the government acts towards the private sector and how well the government is perceived to implement specific laws.

Legitimacy may either moderate or mediate the relationship between perceived governance quality and law compliance (see path diagrams in Fig. 1). Empirically, the relationship between governance and legitimacy has been shown to be multifaceted (Grimmelikhuijsen & Meijer, 2014). For example, in areas in which human well-being is traded against money, such as the health sector, more transparency seems to decrease government legitimacy (de Fine Licht, 2014). Thus, if legitimacy impacts compliance, it is also possible that higher governance reduces legitimacy which may translate into lower compliance. In the policy area that we investigate, the private sector, there is little knowledge about the effects of transparency or other governance components on legitimacy. Malesky and Taussig (2017) provide suggestive evidence for legitimacy acting as a mediator between firm owners’ political participation and subsequent compliance behaviour.

On the other hand, pre-existing perceptions and knowledge influence how new information changes perceptions. According to Cognitive Dissonance Theory, people who have greater trust in the government will feel that their perceptions have been confirmed when the government provides information. Consequently, their trust and compliance increase even further. Higher transparency might increase public disappointment, resignation or confusion when trust is already low. The negative relationship between transparency and resignation results from the fact that citizens cannot utilise the information provided to hold government officials accountable and are consequently deterred from civic engagement, including their compliance with regulations (Bauhr & Grimes, 2014; de Fine Licht, 2014). Thus, the relationship between governance and compliance may depend on the pre-existing level of political legitimacy, i.e. legitimacy may act as a moderator in the governance-compliance relationship.

We acknowledge that political legitimacy is a complex concept to measure and does not only consist in the specific aspects of economic governance that we try to capture in this study. Overall, legitimacy is also a result of governance facets that are not included in our survey. Firm owners are citizens whose perceptions of legitimacy might also be affected by, for example, interactions with the police or the quality of treatment in public hospitals. Hence, while legitimacy might act as a channel between governance and compliance, it may also have an independent effect on compliance.

The reflections above lead to the following testable hypotheses:

H3: Political legitimacy acts as a mediator and/or a moderator between the quality of governance as perceived by firms and self-reported compliance with business laws and regulations.

3. Context, data and methodology

In the mid-1990s, the people of Mozambique enjoyed an era of peace after a long and devastating civil war. Since then, the country underwent a remarkable transformation with an annual economic growth rate of at least 7 per cent up until 2015 (Roe, 2018). New
legislation was passed to promote prosperity, and as part of a decentralisation process, the state has transferred power over to provinces, districts, and municipalities (Forquilha, 2015). Red tape and regulations were reduced and streamlined by, for example, establishing one-stop shops and simplified regimes for licences and taxes (GOM, 2007; GOM, 2009; GOM, 2012; GOM, 2017).

However, several occurrences over the past decade point towards a deteriorating political system in Mozambique. In 2013, political and military tensions unfolded as the opposition party, the Resistência Nacional Moçambicana (RENAMO), carried out violent attacks in the country’s centre. Armed violence worsened after the 2014 general election when RENAMO won in a number of the country’s provinces. Despite ceasefire agreements being in place, violent attacks continue today, threatening people’s safety and weakening business activities (Forquilha, 2020; Regalia, 2017). Furthermore, while decentralisation policies are far from finalised, instead of improving the democratic process, the resulting disputes and power struggles which have erupted between the ruling party, the Frente de Libertação de Moçambique (FRELIMO), and RENAMO are weakening government legitimacy (Forquilha, 2020). As a result of the weaker government, the Economist Intelligence Unit downgraded Mozambique’s democracy score from a ‘hybrid regime’ to an ‘authoritarian regime’ in 2018 (EIU, 2019). In addition, while perceived corruption was falling at the beginning of the decade, it rose to a record high in 2018 (TI, 2018). Lastly, a macroeconomic crisis hit Mozambique in 2015, when public debt exploded from just 40 per cent of GDP in 2012 to 135 per cent by 2016 (Cruz & Mafambisa, 2020; IMF, 2019). These political and economic developments are likely to have influenced firms’ perceptions of governance over time. Hence, Mozambique is a fascinating case when examining the relationship between firms changing perceptions of the government and law compliance.

3.1. Data

The dataset used in this paper is taken from the Survey of Mozambican Manufacturing Firms (IIM) and covers two evaluation periods: 2012 and 2017 (IIM, 2012; IIM, 2017). The data includes both formal enterprises (68 per cent), i.e. firms with a tax identification number (NUTI), and smaller informal firms (32 per cent) without a NUIT. Mozambique’s official enterprise census (CEMPRE) from 2002 (revised in 2004) formed the basis of the IIM stratified random sampling strategy of formal firms in 2012. Due to the tracer-survey design of IIM, the sample of formal firms is not representative of firms that were founded after 2012 (Fisker & Schou, 2018). However, the dataset represents about 10 per cent of the total number of formal manufacturing firms that were reported in Mozambique’s CEMPRE of 2002. Furthermore, the sample’s provincial distribution is consistent with the provincial distribution of all manufacturing enterprises (see Table 6, App.), and the data geographically cover the seven provinces with the highest industrial activity.

Informal firms were selected using an on-site identification strategy, which worked on the principle of enumerators asking respondents in the selected formal firms about nearby manufacturing firms. By comparing this information with the registry data, informal firms could be identified. This snowballing approach means that all of the informal firms included in the sample operate alongside officially registered enterprises. This could lead to bias if specific types of informal firms, for instance, relatively competitive ones, are more likely to be known by formal sector firms. Thus, our sample of informal firms is not representative of the entire informal sector in Mozambique, and therefore throughout the paper we compare all our results including and excluding informal sector firms from the analysis.

The balanced panel consists of 460 enterprises, but we restrict the analysis to those firms for which owners, persons in higher management or accountants were interviewed. Ultimately, we end up with a balanced panel of 361 firms (722 observations), and we believe that our results overall are representative of the (better informed) formal and informal manufacturing firms which have operated in the market for at least one decade.

The top section of Table 1 describes our dependent variables measuring self-reported adherence to mandatory regulations applicable to Mozambican firms. These are (1) provision of formal contracts to employees, (2) tax registration (NUIT), and (3) social security contributions for workers (INSS). We additionally look at corruption (whether firms pay bribes) as a robustness check. Ultimately, we combine these three (four) compliance indicators into an unweighted compliance index. While we found a slight increase in firms providing contracts and paying social insurance to their labour force, the share of firms operating with a NUIT decreased slightly. The incidence of bribe payments remained almost unchanged in the period studied.

In the spirit of Malesky (2018), our explanatory variables consist of firm evaluations of their security, infrastructure quality, transparency, and the government’s legitimacy. These explanatory variables include a series of standardised sub-indices related to the quality of governance. We aggregate transparency, security, and infrastructure to an overall local governance index (LGI). More details about the measurement of each of the three governance components can be found in Table 1 and the Appendix (Section 7, specifically).

We emulate Malesky and Taussig (2017) and measure legitimacy in three ways: (i) local government’s business friendliness (attitude towards the private sector); (ii) biased implementation (less regulatory in relation to firms who contribute to local development); and (iii) whether authorities refer to rules when extracting rents. In the IIM surveys, the firms were asked two additional questions that we link to legitimacy. The first relates to the implementation of rules by the local government; the second, to whether they had noticed any changes when working with state agencies over the past few years. We add these two questions with equal weight to cover more aspects of legitimacy as well as to test the three former measures’ robustness (see Table 1).

3.2. Methodology

We aim to estimate the effect of firm-level perceptions of local governance quality on their levels of law compliance. To ensure comparability with the previous literature relying on cross-sectional data only, we start by running simple ordinary least squares (OLS) regressions with time, province, and sector dummies. However, since statistical inference is most likely erroneous due to unobserved heterogeneity, we exploit our data’s panel nature and control for firm fixed effects as a second step. Let \( C_{it} \) be our outcome of interest, the compliance index or individual compliance indicator variables of firm \( i \) at time \( t \), while \( LGI \) denotes our aggregated local governance index based on the standardised sub-indices described above. Firm-level fixed effects are captured by \( \gamma_i \) and time fixed effects by \( \gamma_t \), while \( X \) represents a set of time-varying firm-specific controls:

\[
C_{it} = \alpha_i + \beta_1 LGI_{it} + \beta_2 X_{it} + \gamma_i + \epsilon_{it}
\]
Table 1
Descriptive statistics of dependent and independent variables.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Description</th>
<th>Mean of variables</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>2012</strong></td>
<td><strong>2017</strong></td>
<td><strong>Pooled</strong></td>
</tr>
<tr>
<td><strong>Dependent variables:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compliance index</td>
<td></td>
<td>1.407</td>
<td>1.457</td>
</tr>
<tr>
<td>Formal labour</td>
<td>Takes the value 1 if the firm’s entire workforce has a formal contract, and 0 otherwise.</td>
<td>0.283</td>
<td>0.316</td>
</tr>
<tr>
<td>Tax registered (NUIT)</td>
<td>Takes the value 1 if the firm has a tax identification number (NUIT) or if the firm is registered with an authority which requires a NUIT to be allowed to register, and 0 otherwise.</td>
<td>0.784</td>
<td>0.751</td>
</tr>
<tr>
<td>Social security</td>
<td>Takes the value 1 if the firm pays social insurance (INSS) for its employees, and 0 otherwise.</td>
<td>0.341</td>
<td>0.391</td>
</tr>
<tr>
<td>Do not pay bribes</td>
<td>Takes the value 1 if the firm replied zero to the following: ‘How much does a typical firm in your line of business and of similar size typically pay each year in informal payments to public officials?’ and 0 otherwise</td>
<td>0.548</td>
<td>0.560</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Independent variables:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legitimacy</td>
<td></td>
<td>1.323</td>
<td>1.316</td>
</tr>
<tr>
<td>Legitimacy (MT, 2017)</td>
<td>Attitude of the GoM (Government of Mozambique) towards the private sector; if the GoM is less regulatory towards firms who contribute to local development; and if officials refer to the rules when extracting rents, as formulated by Malesky and Taussig (2017).</td>
<td>1.880</td>
<td>1.993</td>
</tr>
<tr>
<td>Transparency index</td>
<td></td>
<td>0.874</td>
<td>1.135</td>
</tr>
<tr>
<td>Participation</td>
<td>Takes the value 1 if the firm has ever commented on GoM’s regulations or policies.</td>
<td>0.161</td>
<td>0.144</td>
</tr>
<tr>
<td>Solicit comments</td>
<td>On a scale from 0 (never) to 4 (always), how frequently does the provincial government meet with you and the private sector to solicit comments on the promulgation or amendments of provincial regulation?</td>
<td>0.319</td>
<td>0.645</td>
</tr>
<tr>
<td>Predictability</td>
<td>On a scale from 0 (never) to 4 (always), how predictable are changes in laws at central level affecting your business?</td>
<td>1.006</td>
<td>1.548</td>
</tr>
<tr>
<td>Accessibility</td>
<td>On a scale from 0 (Impossible) to 4 (Easy), rate the accessibility of 13 different types of provincial information and documents</td>
<td>1.321</td>
<td>1.499</td>
</tr>
<tr>
<td>Security index</td>
<td></td>
<td>2.627</td>
<td>2.753</td>
</tr>
<tr>
<td>Dispute</td>
<td>Firms’ evaluation of business dispute procedures</td>
<td>1.544</td>
<td>1.646</td>
</tr>
<tr>
<td>Stability</td>
<td>Firms’ evaluation of the stability of their premises and property rights</td>
<td>1.083</td>
<td>1.106</td>
</tr>
<tr>
<td>Infrastructure index</td>
<td></td>
<td>3.611</td>
<td>3.587</td>
</tr>
<tr>
<td>Hard infra.</td>
<td>On a scale from 0 (very bad) to 5 (very good), rate the quality of: roads, phone connection, electricity and water</td>
<td>2.434</td>
<td>2.322</td>
</tr>
<tr>
<td>Soft infra.</td>
<td>On a scale from 0 (very bad) to 5 (very good), rate the quality of: education and training possibilities</td>
<td>1.177</td>
<td>1.264</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confounders:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firm size</td>
<td>Total number of employees</td>
<td>16.83</td>
<td>15.24</td>
</tr>
</tbody>
</table>

Note: All variables are normalised before accumulated to the different indices, due to differences in scales. See appendix for full description and detailed summary statistics (Table 9 (Compliance variables) and Table 15 (Independent variables)). Source: Authors’ calculations based on IIM data.
Our aim is to assess which aspects of firms’ perceived quality of governance affect their compliance behaviour. Hence, we disaggregate the LGI into three components: T stands for transparency, S for security, and I for infrastructure. A detailed description of each index can be found in Table 1. For each, we test whether legitimacy is a mediator or a moderator. Suppose legitimacy acts as a mediator between governance and compliance: in this case, it must meet three criteria: (i) variations in the levels of governance quality significantly account for variations in legitimacy; (ii) variations in legitimacy significantly account for variations in compliance; and (iii) when governance and legitimacy are included in the regression at the same time, the association between governance and compliance becomes much weaker (Baron & Kenny, 1986). If legitimacy acts as a moderator, an interaction term between governance quality and legitimacy will turn out well-determined in compliance regressions. This implies that the relationship between perceived governance quality and law compliance differs at different values of legitimacy – in other words, legitimacy modifies the relationship between the independent and dependent variables. We test the legitimacy ‘mediator and/or moderator’ hypothesis by including the legitimacy index as a control (mediator—Eq. 2) and through including interaction terms between legitimacy and the low government indices (moderator—Eq. 3):}

\[ C_{it} = \alpha_i + \beta L_{it} + \beta_{1i} T_{it} + \beta_{10} S_{it} + \beta_{11} L_{it} + \beta_{2} X_{it} + \gamma_{it} + \epsilon_{it} \] (2)

\[ C_{it} = \alpha_i + (1 + \beta L_{it}) \times (\beta_{1i} T_{it} + \beta_{10} S_{it} + \beta_{11} L_{it}) + \beta_{2} X_{it} + \gamma_{it} + \epsilon_{it} \] (3)

We then disaggregate the three aspects of governance into more detailed components. In so doing, transparency is broken down into (i) participation, (ii) solicitation of comments, (iii) predictability, and (iv) accessibility of documents. Security consists of (i) dispute and (ii) stability, whereas infrastructure is composed of (i) hard and (ii) soft infrastructure. We express the detailed mediator (Eq. 4) and moderator (Eq. 5) models as follows:

\[ C_{it} = \alpha_i + \beta L_{it} + \sum_{k=1}^{4} \beta_{1k} T_{it} + \sum_{m=1}^{2} \beta_{1m} S_{it} + \sum_{n=1}^{2} \beta_{1n} L_{it} \]

\[ + \beta_{2} X_{it} + \gamma_{it} + \epsilon_{it} \] (4)

\[ C_{it} = \alpha_i + (1 + \beta L_{it}) \times \left[ \sum_{k=1}^{4} \beta_{1k} T_{it} + \sum_{m=1}^{2} \beta_{1m} S_{it} + \sum_{n=1}^{2} \beta_{1n} L_{it} \right] + \beta_{2} X_{it} \]

\[ + \gamma_{it} + \epsilon_{it} \] (5)

Lastly, we find that the distribution of predicted values and residuals from the models above may be Poisson distributed (see Fig. 7, App.). Wooldridge (2002) and Silva and Tenreyro (2006) suggest that residuals from the models above may be Poisson distributed (see Table 2). We therefore dig a level deeper, increasing the focus on the three individual governance components (transparency, security, infrastructure) and their possible association with compliance. Table 2 shows that aggregated transparency correlates strongly and significantly with firms’ compliance behaviour, a result independent of the chosen model specification. In line with our hypothesis, this correlation implies that the higher a firm’s perception of transparency is, the more likely it is to comply with the law. However, as expected, the coefficient estimate is substantially smaller when using PPML-FE in place of an OLS-FE specification. Specifically, a 1 SD increase in transparency is associated with a 0.09 SD increase in compliance, using our preferred specification.

Contrary to our expectations, the association between legal security and compliance is not well-determined in any of the model specifications. Thus, companies’ notion of the security or inviolability of their business premises (offices, warehouses etc.) does not appear to be correlated with firm compliance rates. We also find that the perceived quality of infrastructure is negatively associated with compliance. Although the point estimates of legal security and infrastructure are relatively small in the PPML-FE model, we subsequently proceed to provide reasons for the insignificant security-compliance and negative infrastructure-compliance associations.

4.2. Disaggregated model

4.2.1. Transparency, Security and Infrastructure

We disaggregate the transparency, security and infrastructure indices into their constituent components to better understand exactly which specific local governance aspects affect law compliance. Table 3 shows the regression results.

In the case of transparency, three out of four facets of transparency have significant associations with compliance. The first component of transparency relates to direct political participation, and whether firms have ever commented on government regulations. Direct political participation is not well-determined in the regressions and is even slightly negatively correlated with the provision of formal labour contracts, as depicted in Table 4. This finding opposes theoretical predictions (Fishkin, 1991; Fung & Wright, 2001; Tyler, 2006) but resonates with Malesky and Taussig (2017)’s empirical findings which show that firms simply participating in the design process of new regulatory initiatives does not necessarily affect compliance rates and the relationship may...

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4 When contrasting the “simple” plots with the FE specification, the security index becomes negatively associated with compliance, when accounting for time-invariant firm-fixed factors. The legitimacy and transparency indices maintain a positive correlation, whereas infrastructure remains negative. The plots also indicate that transparency and infrastructure indices are significantly correlated with compliance, as the grouped means are relatively close to the linear regression line. The security index coefficient, on the other hand, is not well-determined. Our subsequent regressions confirm these associations (see Table 2). Interestingly, when looking at legitimacy as constructed by Malesky and Taussig (2017), the direction of the association changes from negative to positive when accounting for firm fixed effects, whereas our alternative legitimacy measure indicates a more straightforward and expected positive relationship (see Fig. 9, App.)
even be negative if firms are given the impression that the government does not take their feedback seriously (See Table 5).

Second, firms which believe that the provincial government regularly meets with the private sector to solicit comments on the implementation or amendment of provincial regulations are significantly more compliant with the law. The positive association between indirect political participation and compliance is in line with previous studies, which have shown that by allowing for more citizen consultation, the government can increase compliance rates (Malesky & Taussig, 2017; Stromseth et al., 2017; Truex, 2017). In terms of importance, point estimates of the provincial government soliciting comments indicate that a 1 SD increase is associated with a rise in compliance of 0.08 SD. This is equivalent to stating that if the province where government officials are perceived as least likely to solicit comments from the private sector (Gaza) exchanged positions with officials from the province where the government is perceived as most likely to solicit comments from the private sector (Nampula), Gaza’s compliance rate would increase by 3 per cent.

Third, the perceived predictability of the government significantly and positively correlates with law adherence. Our estimates suggest that if the province of Tete caught up with its counterpart where predictability is the highest (Nampula), the country-wide compliance rate would increase by 2.5 per cent. The easier it is for enterprises to predict changes in the legal situation or the law’s implementation process, the more likely they will be to follow the rules (Schnell, 2018). To our knowledge, this is the first empirical evidence confirming a theoretical suggestion of a positive relationship between predictability as an element of transparency and compliance in a non-democratic setting.

Lastly, we find that better accessibility to state documents is a well-determined and positively correlated factor in businesses’ law abidance. The simple reason for this finding is that because Mozambican entrepreneurs have access to and understand the documents (Schnell, 2018), they can improve firm knowledge about the benefits of adhering to the law and respecting regulations, thereby facilitating their compliance. However, to better understand exactly why perceived access to information is correlated with firm compliance, more research is needed.

We disaggregate our security measure into firms’ perceptions of formal dispute settlement procedures and the perceived stability of their premises. Their notion of formal dispute settlement procedures is not statistically associated with their compliance behaviour. This finding may be explained by the fact that most enterprises do not use the formal legal system in Mozambique. In 2017, only 17 per cent of the sample reported settling business disputes through official institutions either by hiring a lawyer, going to court or testifying to police. Hence, formal settlement procedures may not be relevant for most enterprises in Mozambique and may therefore not affect their compliance behaviour.

Similarly, firm perceptions of the stability of and respect for their business premises is not significantly related to their law abidance. This finding is unexpected as many theoretical and empirical studies highlight that secure property rights are essential for doing business (Haggard & Tiede, 2011; Asoni, 2008). However, in the context of Mozambique one explanation for this result could be that firms may not expect the state to provide tenure security. As the state has often been involved in land investments and forced resettlement (Lia Solberg, 2012; Twomey, 2014), citizens do not expect the state to provide sufficient security. As firm owners do not perceive land security as a service provided by the state, it does not have a significant association with compliance levels or state regulations either.
Table 2
Aggregate model: OLS, OLS-FE and PMLE-FE.

<table>
<thead>
<tr>
<th></th>
<th>OLS</th>
<th>OLS-FE</th>
<th>PPML-FE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Transparency</td>
<td>0.18***</td>
<td>0.18***</td>
<td>0.18***</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>Security</td>
<td>-0.04</td>
<td>-0.05</td>
<td>-0.04</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>-0.12***</td>
<td>-0.14***</td>
<td>-0.12***</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>Legitimacy (alt.)</td>
<td>0.07**</td>
<td>0.09***</td>
<td>0.07*</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>LGI#Legit.</td>
<td>0.02</td>
<td>0.02</td>
<td>-0.02</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Log of size</td>
<td>0.52***</td>
<td>0.52***</td>
<td>0.52***</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>Year FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Province FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sector FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Firm FE</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Interaction terms</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Joint sgnt, int.</td>
<td>0.39</td>
<td>1.00</td>
<td>0.46</td>
</tr>
<tr>
<td>Observations</td>
<td>652</td>
<td>652</td>
<td>652</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.4</td>
<td>0.41</td>
<td>0.41</td>
</tr>
</tbody>
</table>

Note: standard errors are reported in parentheses (clustered SE for PPML-FE and FE, robust SE in Poisson). The compliance index is composed of three variables: formal contracts, registration (NUIT), and social insurance (INSS). See more information in Appendix A1. *** p < .01, ** p < .05, * p < .10. **Pseudo-R-squared in the case of PPML-FE. The alternative legitimacy index is applied here. Source: authors’ calculations based on IIM data.
The negative association between the perception of infrastructure and compliance is underpinned by the component of hard infrastructure – the higher firms rate the quality of roads, phone networks, electricity, and water provision systems, the less likely they are to comply. There are, however, several potential explanations for this result in the Mozambican context. First, if nonlinear firm size effects exist – if the relative utility gained from access to public infrastructure for small firms is lower than for larger firms – smaller firms may agree that the quality of infrastructure has improved, but will not be willing to pay/improve compliance with government rules, as infrastructure improvements worsen their perceived relative competitiveness. A large percentage of firms in Mozambique (and in our sample) have fewer than five employees, and smaller firms are less compliant with rules and regulations than bigger firms. Moreover, their compliance behaviour may also be more responsive to relative changes in the perceived benefits of infrastructure investments. Carolini (2017) shows that infrastructure improvements in Maputo disproportionately benefit larger firms, and although infrastructure has objectively and noticeably improved (and infrastructure perception scores therefore increase), the reactions of smaller firms may be to reduce law compliance as these hard infrastructure improvements are seen as preferential treatment of larger firms.

Third, the OECD Foreign Bribery Report shows that nearly 60 per cent of foreign bribery cases occur in four sectors closely linked to hard infrastructure improvements (OECD, 2014). Hence, when the government decides to invest in better hard infrastructure, the projects will likely involve corruption. Corruption scandals become public and can subsequently affect the willingness of firms to comply with the law and pay taxes. Third, all other things being equal, infrastructure improvements do attract new businesses. Increased competition may influence incumbent firms to be less compliant with the law in order to be competitive with new entrants, although there is a recognition that hard infrastructure has improved. Further research is needed to fully understand the mechanisms operating between perceived infrastructure quality and compliance.

4.2.2. Legitimacy

Turning to the mediating role of political legitimacy in the governance–compliance relationship, we expect that higher governance quality leads to higher political legitimacy, which, in turn, results in more compliance. Adding legitimacy to the regression, we find that it is significantly and positively related to compliance, and although the coefficients are small, the fact that it is positively and relatively related to compliance, but does not, however, reduce the association between governance and legitimacy (see columns 5, 11, and 17 in Table 2). Hence, legitimacy does not seem to function as a mediator between governance and compliance.

Although political legitimacy may not act as a mediator between aggregated governance and compliance, it may still play a significant mediating role in one or several of the governance components. Therefore, we again test whether legitimacy acts as a mediator by applying our legitimacy measure to the disaggregated models (see columns 5, 11, and 17 in Table 2).
### Table 4
OLS-FE regression results – individual compliance variables.

<table>
<thead>
<tr>
<th>Std. indices:</th>
<th>Formal labour</th>
<th>Tax registered (NUIT)</th>
<th>Social security</th>
<th>Do not pay bribes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Legitimacy (alt.)</strong></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>Participation</td>
<td>0.04**</td>
<td>0.03</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Solicit comments</td>
<td>0.04*</td>
<td>0.03*</td>
<td>0.04*</td>
<td>0.01</td>
</tr>
<tr>
<td>Predictability</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.05***</td>
</tr>
<tr>
<td>Accessibility</td>
<td>0.04**</td>
<td>0.04**</td>
<td>0.04*</td>
<td>0.05***</td>
</tr>
<tr>
<td>Dispute</td>
<td>−0.01</td>
<td>−0.01</td>
<td>−0.01</td>
<td>−0.03</td>
</tr>
<tr>
<td>Stability</td>
<td>−0.01</td>
<td>−0.01</td>
<td>−0.01</td>
<td>−0.03</td>
</tr>
<tr>
<td>Infrastructure:</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>Hard infra.</td>
<td>−0.04*</td>
<td>−0.05**</td>
<td>−0.05**</td>
<td>−0.02</td>
</tr>
<tr>
<td>Soft infra.</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.00</td>
</tr>
<tr>
<td>Log of size</td>
<td>0.07</td>
<td>0.06</td>
<td>0.07</td>
<td>0.04</td>
</tr>
<tr>
<td>Year FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Firm FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Interaction terms</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Joint sgnt, int.</td>
<td>0.37</td>
<td>0.38</td>
<td>0.38</td>
<td>0.25</td>
</tr>
<tr>
<td>Observations</td>
<td>652</td>
<td>652</td>
<td>652</td>
<td>652</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.06</td>
<td>0.07</td>
<td>0.08</td>
<td>0.02</td>
</tr>
</tbody>
</table>

Note: clustered (firm) standard errors are reported in parentheses, *** p<.01, ** p<.05, * p<.10. The alternative legitimacy index is applied here. See the results of the PPML-FE specification in Table 21 (App.). Source: authors’ calculations based on IIM data.
Table 5
Aggregate model: OLS, OLS-FE and PMLE-FE (w. smallest firms only)

<table>
<thead>
<tr>
<th>Compliance index</th>
<th>OLS</th>
<th>OLS-FE</th>
<th>PMLE-FE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Std. indices:</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>LGI</td>
<td>-0.06</td>
<td>-0.06</td>
<td>-0.06</td>
</tr>
<tr>
<td>Transparency</td>
<td>0.20***</td>
<td>0.20***</td>
<td>0.20***</td>
</tr>
<tr>
<td>Security</td>
<td>-0.03</td>
<td>-0.03</td>
<td>-0.03</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>-0.15***</td>
<td>-0.16***</td>
<td>-0.15***</td>
</tr>
<tr>
<td>Legitimacy (alt.)</td>
<td>0.08**</td>
<td>0.10**</td>
<td>0.07</td>
</tr>
<tr>
<td>LGI#Legit.</td>
<td>0.03</td>
<td>-0.01</td>
<td>0.00</td>
</tr>
<tr>
<td>Trans.#Legit.</td>
<td>-0.05</td>
<td>-0.13***</td>
<td>-0.12***</td>
</tr>
<tr>
<td>Security#Legit.</td>
<td>0.04</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Infra.#Legit.</td>
<td>-0.01</td>
<td>0.01</td>
<td>0.02</td>
</tr>
<tr>
<td>Small-dummy</td>
<td>0.29***</td>
<td>0.28***</td>
<td>0.29***</td>
</tr>
<tr>
<td>Year FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Province FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sector FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Firm FE</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Interaction terms</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Joint sgnt, int.</td>
<td>0.31</td>
<td>0.45</td>
<td>0.85</td>
</tr>
<tr>
<td>Observations</td>
<td>408</td>
<td>408</td>
<td>408</td>
</tr>
<tr>
<td>R-squared†</td>
<td>0.11</td>
<td>0.12</td>
<td>0.18</td>
</tr>
</tbody>
</table>

Note: standard errors are reported in parentheses (clustered SE for PMLE-FE and FE, robust SE in Poisson). *** p < .01, ** p < .05, * p < .10. †Pseudo-R-squared in the case of PMLE-FE. Small-dummy takes the value 1 if the firm has more than four employees, else 0. The smallest enterprises employ 1–9 workers. The alternative legitimacy index is applied here; see Table 19 for the legitimacy index by Malesky and Taussig (2017). Source: authors’ calculations based on IIM data.
5 and 6 in Table 3). The transparency-compliance relationship does not change precision or effect size when including legitimacy. The point estimate signals that transparency is only weakly correlated with legitimacy (see also the first stage relationship in Table 16) and that both legitimacy and transparency independently play a role in the compliance behaviour of Mozambican firms. Similarly, legitimacy does not appear to mediate the security-compliance or the infrastructure-compliance association either. Robustness checks which use two alternative compliance concepts confirm these results (see Table 10).

Malesky and Taussig (2017) found that firms participating in the regulatory process were more reliant in terms of compliance with the law. If enterprises have the impression that local governments take feedback from firms seriously and not merely as a formality, the government’s legitimacy may increase, and this improved legitimacy will in turn raise compliance rates. By adding legitimacy as a mediator, Malesky and Taussig (2017) show that the direct impact of receiving a response is of weak significance, while the indirect effect of a government response mediated through legitimacy is extremely significant. Unfortunately, we cannot replicate Malesky and Taussig (2017)’s study design as we do not know which firms received a government response when they commented on government regulations. Moreover, our variable is not as direct as the one used in the aforementioned study because it evaluates whether firms have ever commented on any government regulation(s). In contrast, Malesky and Taussig (2017) refer to commenting on one specific law and whether firms received a response to their comments from the government. However, assuming that Mozambican firms did not receive any feedback from the government, our results would remain in line with Malesky and Taussig (2017).6

While legitimacy does not seem to be a mediator, it may nevertheless moderate the governance-compliance relationship. According to Grimmelikhuijsen and Meijer (2014), initial levels of trust in a society determine the outcomes that transparency may have. Hence, we test whether legitimacy is a moderator, by interacting legitimacy with each of the three governance components in columns 6, 12, and 18 of Table 2 and column 7 in Table 3. None of the three interaction terms significantly correlates with compliance in any model specifications. Each governance component maintains the same relationship with compliance as in the model without the interactions. Hence, different levels of legitimacy do not change the relationship between perceived governance quality and firm compliance behaviour; and, contrary to our expectations, political legitimacy (as measured in this paper) does not appear to function as a moderator in the local governance-compliance nexus in the Mozambican context.

One reason why political legitimacy is not acting as a mediator or a moderator may be that legitimacy is very closely correlated with unobserved firm-level heterogeneity. Therefore, controlling for firm-level fixed effects in our regressions would eliminate any possible moderator and mediator effects. We specifically note that the direct impact of political participation is well-determined in our OLS specification, suggesting that the positive mediator effect of political legitimacy found by Malesky and Taussig (2017) can be caused by unobserved firm-level heterogeneity. Another reason for this is measurement error. Political legitimacy is a complex concept and nuances may be lost when trying to quantify it (Weatherford, 1992). Thus, we compare Malesky and Taussig (2017)’s legitimacy measure with our alternative one. While our alternative measure significantly correlates with compliance, the one constructed by Malesky and Taussig (2017) is insignificant when using our data (see columns 5 and 6 in Table 3). The reason for this finding may be that the three aspects of legitimacy—the government’s attitude towards the private sector, the government’s behaviour towards firms that contribute more to local development, and authorities referring to rules when extracting rents—are more relevant for enterprises in Vietnam (where their study was conducted) than in Mozambique. If political legitimacy, in general, is low or irrelevant for firms, it may not affect their compliance behaviour. However, the two aspects we add in this paper—firms’ attitude about the implementation of regulations and whether the firm has observed any notable, definite changes from contact with state agencies over the past years—can also be seen as legitimacy elements, and are perhaps more pertinent in Mozambique than the other three aspects of legitimacy.

Lastly, we find that legitimacy is significantly correlated with law abidance, independently of other governance components. Thus, in line with our expectations, legitimacy does play an important independent role in relation to compliance in Mozambique.

4.3. Individual compliance variables and robustness checks

As a robustness check, we also disaggregate our dependent variable—the compliance index. Table 4 shows the regression results of the individual compliance variables. In line with previous findings, transparency is crucial. The accessibility of documents appears to be essential for the provision of formal labour contracts and tax registration, and predictability is closely associated with having a tax number and contributing to social insurance. These results hold in the PPML specification as well (see Table 21, App.).

We examine an additional aspect of compliance—whether firms refrain from paying bribes (see a detailed description of the variable in appendix 6.1). In this case, the conclusion changes, as the association between not paying bribes and perceived transparency is negative. Specifically, it is the predictability of changes in and implementation of laws that have the significant correlation with increases in bribe payments. Firms that are more informed about their legal situation are perhaps better equipped to take advantage of the information. Subsequently, to lower costs, they find loopholes in the law and pay bribes instead of complying with regulations. On the other hand, perceived government legitimacy is highly correlated with reductions in bribe payments. Thus, political legitimacy seems to have a powerful impact on compliance with various laws in Mozambique.

As outlined in the data section, we only analysed those 361 firms at which owners or managers we interviewed, because the 99 remaining cases in which ‘other’ respondents were interviewed might be unreliable. These other respondents were, for example, a firm’s employee or an owner’s relative. As a robustness check, we run the same analysis with the fully balanced data set of 460 enterprises, as Table 23 (App.) showcases. The results are generally robust when including all firms. One exception is “security”, which becomes well-determined and negatively associated with compliance. We additionally find that the relationship between legitimacy and compliance decreases in magnitude and becomes insignificant in the aggregated models with fixed effects. This finding again confirms that legitimacy does not act as a mediator. We also find no changes in the OLS-FE model when adding interactions between governance and legitimacy. The results obtained for all 460 firms are in line with the findings for the smallest entities (see 4.4), suggesting that there may be some moderation effect. As such, the results only differ slightly because the ‘other’ respon-
dent reports significantly higher compliance than owners/managers. Yet, we believe that the replies from firm owners/managers are more reliable than those of employees. Furthermore, even if employees are aware of their employer’s non-compliance behaviour, they might be reluctant to convey this information completely and accurately. Consequently, excluding non-owners from the analysis remains our preferred choice.

Finally, additionally controlling for whether a firm owner or any board member is affiliated with a political party, does not change the results (see Table 11, App.). We do, however, find that if the firm has government institutions as a customer, the firm is more likely to comply with the law, yet the governance–compliance relationship stays unchanged. This indicates that our findings are not driven by firms with better political connections, which could have been the case because of the inclusion of the transparency component of regular meetings with the government to provide comments on regulations.

4.4. Heterogeneity

Micro-enterprises are different to bigger businesses in a number of their characteristics. For example, they are more likely to operate informally, which means that they are unlikely to interact much with formal (government) institutions (Aga, Campos, Conconi, Davies, & Geginat, 2019). As a result of their irregular interactions with the formal system, institutional changes such as more transparency might impact the smallest businesses to a lesser extent than bigger enterprises. Moreover, it might be more challenging for the smallest firms to directly benefit from improved institutions, as they are not necessarily aware of how to. Consequently, better governance may only weakly correlate with the smallest firms’ compliance. Legitimacy, for its part, may not work as a mediator between firms’ perceived governance quality and their compliance with regulations either, as a strong relationship between governance quality and legitimacy may not exist (see Table 16, App.).

We test whether improved governance is less relevant for the smallest enterprises by re-running the analysis including only the smallest businesses (those with fewer than ten employees in both analysis years). The sample was reduced from 361 to 236 firms when selecting those that employ from one to nine workers. Surprisingly, the association between transparency and compliance becomes stronger in all three aggregated model specifications. Accordingly, the higher a firm’s perception of transparency, the more likely it is to comply with the law, particularly for the smallest businesses. Specifically, a 1 SD increase in transparency is associated with a 0.17–0.24 SD increase in compliance from the smallest units (0.09–0.16 for the entire sample), depending on the specification. The stronger relationship among the smallest units confirms results from China, which show that improved transparency only increases perceived government legitimacy for politically marginalised and less educated individuals (Truex, 2017).

Regarding legitimacy, as with the entire sample, we obtain no evidence of its role as a mediator. Only when using Malesky and Taussig (2017)’s legitimacy measure do we find a statistically significant association between governance and legitimacy (Table 16, App.). When adding legitimacy to the regression, the relationship between transparency and compliance stays unaltered, implying that legitimacy does not act as a mediator either (see Table 19, App.). The association between transparency and legal compliance must therefore work through other vectors.

In terms of legitimacy’s moderating effects, we obtain results that are different from the findings for the whole sample. The association between the interaction term transparency#legitimacy and compliance is negative and statistically significant, while it is insignificant and close to zero when analysing the entire sample (even though we control for firm size). The fact that we obtain evidence of a moderator effect in the case of the smallest entities means that the bigger firms cancel out the negative moderating effect of legitimacy in the transparency–compliance relationship. If we were able to analyse a higher number of bigger enterprises, legitimacy would perhaps have a positive moderator effect. From the significant interaction term transparency#legitimacy, we can postulate that political legitimacy matters. Yet, in an African context, where there are relatively few medium-sized enterprises, legitimacy may not be as dominant in the relationship between governance and compliance. As Mozambique develops and the business environment improves, we may find legitimacy taking on a moderator effect.

When utilising the legitimacy definition put forward by Malesky and Taussig (2017), we similarly find that the interaction between transparency and legitimacy is negative, yet slightly less significant and smaller in magnitude (–8 vs. –13) (see Table 19, App.). We further disaggregate transparency and find that it is predictability and accessibility that negatively relate to compliance when legitimacy values are high (see Table 18, App.). Regarding the other two governance components, security and infrastructure, we obtain the same results for the smallest businesses as for the entire sample. Firm perceptions of security do not necessarily correlate with their compliance behaviour. The perceived quality of (hard) infrastructure is negatively associated with law abidance. Relative to the whole sample, the magnitude of this link is strongest among the smallest enterprises (–0.16 vs. –0.08 in OLS-FE regressions, including legitimacy). The negative infrastructure-compliance relationship confirms the previous argument from Section 4.2.

As outlined in the data Section 3.1, our sample includes both formal and informal enterprises. Whereas our sample is representative of formal enterprises, this cannot be stated for informal firms. To be sure of the robustness of our results, in the following section we focus solely on the representative formal sector firms. We find that the association between soliciting comments, i.e. firms’ belief that the provincial government regularly meets with the private sector to solicit comments on regulations, and compliance is as important for formal enterprises as it is for informal ones (see Table 17, App.). However, we find that the governance-compliance relationship is slightly weaker for formal enterprises (see Table 17, App.). Specifically, the point estimates for the transparency components “accessibility of government documents” and “predictability of changes in laws” are lower (although still statistically significant) for formal firms than for the entire sample (0.07 vs. 0.10 and 0.06 vs. 0.10, respectively). Similarly, the negative relationship between hard infrastructure and compliance is less well-determined for formal enterprises. These results align with our findings that firms that are more informed and less marginalised are less likely to change their compliance behaviour when they observe improvements in governance quality. Overall, our main messages hold up when only the representative formal sector sample is considered.

5. Conclusion

This paper examines the quality of governance as determinant of compliance with laws and regulations in Mozambique. We add to the sparse literature that systematically quantifies the association between governance quality, legitimacy and law compliance for firms. Examining the role of legitimacy and how it is related to governance quality and law compliance (mediator/moderator) is especially rare in the African context. Specifically, we investigate how firms’ subjective perceptions of the quality of governance
affect their self-reported compliance. Where the majority of studies focus on the relationship between a single aspect of governance and compliance, we disaggregate governance into multiple sub-components, i.e. transparency, legal security and infrastructure quality. In addition, we test whether political legitimacy acts as a mediator and/or a moderator between governance quality and law compliance.

Controlling for unobserved firm-level heterogeneity, our results show that an increase in government transparency is positively associated with firm compliance. Specifically, an increase in the frequency of regular meetings with provincial state officials who solicit comments on regulations from the private sector is positively associated with firms’ law abidance, confirming results from previous studies showing that a government’s openness to allowing for citizen consultation leads to higher compliance with regulations, even in non-democratic states (Malesky & Taussig, 2017; Stromseth et al., 2017; Truex, 2017).

Furthermore, we show that the predictability of changes in the law at the central level and accessibility of government documents are positively associated with firm law abidance. These two associations are strongest for both the smallest and informal enterprises, who are likely to have the least knowledge about government regulations, which confirms previous findings that the effects of transparency are strongest for those whose knowledge levels are the lowest (Truex, 2017).

Contrary to theoretical predictions about the importance of property rights for businesses (Asoni, 2008), perceived legal security does not seem to influence law compliance on the part of firms. One explanation in the current context could be that the formal judicial system is not used by many firms and thus seems to be of little relevance for most enterprises in Mozambique. Moreover, the perceived quality of infrastructure is negatively associated with compliance, i.e. the higher (hard) infrastructure quality is rated by firms, the less likely they are to comply with rules and regulations. We show that this result is underpinned by the small and informal firms, suggesting that the relative gain from hard infrastructure improvements is likely to favour larger enterprises, thereby decreasing the relative competitiveness of smaller informal firms in local markets, and reducing their (tax) compliance as a competitive response.

Finally, in the Mozambican context, legitimacy is neither a moderator nor a mediator in the association between governance quality and compliance. Nevertheless, firm perceptions of political legitimacy correlate positively with compliance behaviour, albeit independent of governance quality. However, among smaller businesses (1–9 employees), we find evidence of legitimacy working as a moderator between transparency and compliance. This suggests that firm-size composition matters and that the transparency–legitimacy correlation will be stronger with higher levels of legitimacy when more mid-sized companies emerge during the development process, which is consistent with the findings in Malesky and Taussig (2017).

In terms of external validity, our results may initially appear highly context-specific and non-generalisable. However, it is important to note that the mechanisms underlying the country’s institutional weaknesses may not be unique. Cruz, Ferreira, and Tarp (2020a) find some institutional similarities when comparing Mozambique with neighbouring countries (Tanzania, Malawi, and Zambia) or with its ‘developmental’ peers (Uganda, Ethiopia, Vietnam, and Laos). The authors, however, do conclude that Mozambique’s institutions and their historical development have set themselves apart from most African countries. For example, Mozambique became independent much later than almost all other African nations (Nunn, 2007; Cruz, Ferreira, & Tarp, 2020b). It is also interesting to note that Mozambique is one of the five African countries with colonial institutional inheritance from Portugal, but it has in recent decades made an ‘Anglophone drift’ by, for instance, joining the Commonwealth despite having no prior formal British connection (Power, 2009). This could indicate that some of the lessons learned about the governance quality–law compliance relationship in the context of Mozambique could be considered relevant in other comparable institutional settings.

CRediT authorship contribution statement

Hanna Berkel: Conceptualizing, Data curation, Formal analysis, Methodology, Validation, Visualization, Writing – original draft, Writing – review & editing. Christian Estmann: Conceptualizing, Data curation, Formal analysis, Methodology, Validation, Visualization, Writing – original draft, Writing – review & editing. John Rand: Conceptualizing, Data curation, Formal analysis, Methodology, Validation, Visualization, Writing – original draft, Writing – review & editing.

Declaration of Competing Interest

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

Acknowledgements

We thank two anonymous reviewers whose comments substantially improved the paper. We also acknowledge with gratitude comments made by Edmund Malesky and Markus Taussig on an earlier version of this paper. Lastly, we thank participants of both the 2021 American Political Science Association (APSA) Annual Meeting and the 2021 Nordic Conference on Development Economics for useful feedback. We also acknowledge support from the Inclusive Growth in Mozambique (IGM) project, a collaborative project between UNU-WIDER, MEF-DNPED, UEM-CEEG and DERG. All the usual caveats apply.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at https://doi.org/10.1016/j.worlddev.2022.105942.

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