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Abstract: This study analyses the effects of municipal ownership on auditor size and auditor-client distance in rural banks on Java Island, Indonesia. This study uses 575 rural banks in Java Island listed by the Financial Service Authority's website in 2019. The main data sources are *OJK*'s website and Indonesian Public Accountant Association's Directory. Our independent variables are municipal ownership (a dummy variable that equals one if a municipal government is the rural bank's majority owner and zero otherwise). The main dependent variables are auditor-client distance, measured by the driving distance (from Google Maps™) between rural bank's headquarter and its audit firm and auditor size (the number of audit firms' *OJK*-certified partners). Municipally-owned rural banks hire smaller and less distant auditors. Particularly, municipal ownership is negatively associated with auditor size and auditor-client distance. The associations are stronger when rural banks are located in municipalities with at least one audit firm.

Keywords: auditor size; auditor-client distance; municipal ownership; rural banks.

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1 Introduction

State ownership in profit-seeking firms remains pervasive worldwide, especially in developing countries. Various agency and socio-political factors cause firms with (significant) state ownership to exhibit distinctive behaviours and outcomes (Tihanyi et al., 2019), including auditor choice. Prior studies largely rely on auditor size as the proxy of auditor choice and operationalise auditor size with big-N/non-big-N (Guedhami et al., 2009), total assets audited (He et al., 2017; Wang et al., 2008) or total revenues (Liu and Subramaniam, 2013). They find that state ownership is negatively associated with auditor size (Guedhami et al., 2009; He et al., 2017; Wang et al., 2008). State-owned enterprises (SOEs) are likely more subject to political interventions that serve politicians' interests at the expense of firms' performance (Shleifer and Vishny, 1994). Hence, SOEs are motivated to have lower financial reporting quality to conceal politicians' expropriation of their assets, including by hiring smaller audit firms that are arguably less qualified (Guedhami et al., 2009).

Meanwhile, another stream in the auditing literature has begun investigating the role of auditor-client geographic distance in explaining firms' reporting quality. These studies highlight that local or less spatially distant auditors have greater informational advantages that enable them to restrict clients' opportunistic behaviour (Choi et al., 2012; Dong et al., 2017; Jensen et al., 2015; Li et al., 2019).

However, less distant auditors (especially small ones) are also more prone to clients' pressures that may compromise their audit quality. Local auditors have lower reputational concerns than their national or international counterparts. Besides, they are more financially dependent on large clients, which motivates them to issue more lenient audit reports for their clients (Chan et al., 2010).

In this respect, SOEs may hire less distant auditors for both opportunistic and reputational reasons. These firms have better access to governments' capital backups and

are more subject to interventions and expropriation from bureaucrats and politicians. Accordingly, they are less concerned with financial reporting quality and are likely to hire local auditors to save on audit costs and collude more easily with the auditors (Chan et al., 2010; Guedhami et al., 2009; Wang et al., 2008). Conversely, SOEs are arguably subject to more intense public monitoring and pressure, motivating them to hire less distant auditors who can offer better auditing quality due to their informational advantages quality to help them interfere with auditors' engagement more easily and conceal their lower governance and reporting quality (Aharony et al., 2000; Chan et al., 2010).

Despite the pervasiveness of SOEs in emerging countries and the importance of auditor choice in explaining SOEs' financial reporting quality, relatively few studies use alternatives to dichotomous measures (big-N/non-big-N) as proxies for auditor size. Moreover, despite the importance of auditor-client distance in explaining SOEs' auditor choice decisions, this issue remains understudied, likely due to a lack of data availability and the tendency of SOEs and audit firms in emerging countries to be located only in large cities, resulting in less variation in auditor-client distance.

Accordingly, this paper combines these two research streams to ask whether municipally-owned firms (local SOEs) are more likely to hire smaller audit firms and less distant than private firms. To answer these questions, we empirically exploit the unique Indonesian rural bank (BPR – *Bank Perkreditan Rakyat*) setting. Many Indonesian municipal governments are the sole or significant shareholders of rural banks. Further, Indonesian rural banks tend to hire small audit firms due to their limited financial resources, and audit firms (even the small ones) cluster in large cities or municipals.

Since the 2019 financial year, the Indonesian Financial Service Authority's website (*OJK – Otoritas Jasa Keuangan*) has published rural banks' ownership structure, managing and supervisory directors, audit firms, and in-charge auditors on its websites. Further, the Indonesian Institute of Public Accountants directory (*IAPI – Institut Akuntan Publik Indonesia*) has also published the auditor and audit firm directory that contains detailed data on audit firms' partners and addresses. The data enables us to operationalise auditor-client distance and auditor size as the proxy of auditor choice in investigating the impact of municipal ownership on auditor choice. Specifically, we measure auditor-client proximity with their driving distance from Google Maps™ (López and Rich, 2017)and auditor size with the number of audit partners owned by audit firms.

Our results empirically support our hypotheses. In particular, municipal ownership is positively associated with auditor size and negatively associated with auditor-client distance. The associations are stronger when rural banks are located in municipalities with at least one audit firm. The findings are robust to a battery of alternative tests.

Our contribution is three-fold. First, we expand prior studies on the effect of state ownership on auditor choice that mostly use auditor size as the proxy for auditor choice. Some studies have employed auditor locality in their analysis but only focus on whether audit firms are in the same region as their clients (Chan et al., 2010, 2012; Wang et al., 2008) and do not measure actual auditor-client distance. We believe that using actual distance offers a more nuanced analysis of this issue, especially in the Indonesian setting, because Indonesian audit firms tend to cluster in large cities or municipalities. Furthermore, we only focus on rural banks on Java Island, which only has a few provinces. Hence, simply identifying whether audit firms are located in the same municipalities/provinces as their rural bank clients cannot capture the unique characteristics of our research setting.

Second, studies on auditor-client distance focus on the effects of auditor-client distance or auditor spatial proximity on various reporting outcomes, such as accrual and audit quality (Choi et al., 2012; Jensen et al., 2015), real earnings management (Li et al., 2019), audit report timeliness (Dong et al., 2017), and internal control reporting (López and Rich, 2017). However, the determinants of auditor-client distance remain relatively understudied. This issue is important because firms do not choose auditors randomly, and thus studies on this issue will contribute to the recent discussion on what motivates firms to hire spatially distant or proximate auditors (Choi et al., 2012; Dong et al., 2017; Firth et al., 2012).

Third, the Indonesian economy is geographically centralised in greater Jakarta as the national capital. Most large firms (publicly listed and state-owned ones) and audit firms are also located in Jakarta. Consequently, the auditor choice literature using the Indonesian setting mostly relies on auditor size (big N vs. non-big N) as its proxy in the analysis (Darmadi, 2016), including when investigating the effect of political factors like state ownership or political connections on auditor choice (Habib et al., 2017; Harymawan, 2020). However, Indonesian rural banks' and small audit firms' locations are much more geographically dispersed, enabling us to investigate auditor-client spatial proximity as a novel measure of auditor choice in the Indonesian setting. We also extend the auditor choice literature that largely operationalises auditor size with big-N vs. non-big-N, total assets audited, or total revenues. In this respect, the number of audit firms' audit partners is arguably a more refined proxy to measure auditor size than the dichotomous ones (e.g., big-N vs. non-big-N). Simultaneously, this measure is more relevant in research setting with no information about auditors' clients or total revenues, like the Indonesian audit firms.

This paper is structured as follows. Following the introduction, Section 2 reviews the literature and develops the hypotheses, followed by the research methods. Section 4 presents and analyses the findings. The concluding section summarises the research and discusses its limitations and implications.

2 Literature review and hypothesis development

2.1 The Indonesian rural bank industry

The Indonesian regulation classifies banks into two major categories: commercial and rural banks. Rural banks operate much more limited banking activities. For instance, they cannot provide checking account services, participate in inter-bank financial transactions, and facilitate foreign-exchange transactions like commercial banks. They also have more restricted operational areas than commercial banks (Act of the Republic of Indonesia Number 7 of 1992, 1998). Despite operational restrictions, rural banks are vital to the Indonesian economy. In 2020, Indonesian rural banks distributed around Rp 150 trillion in loans and received Rp 130 trillion in deposits (approximately $10 billion and $8.7 billion, respectively). These amounts are arguably significant for Indonesia's economy. There are also around 1,500 rural banks with over 5,800 offices in Indonesia; most are on Java, Indonesia's most densely populated and economically developed island (Financial Services Authority, 2022). Due to its significant economic role in the local economy, many local governments own majority or sole ownership of rural banks.

As a part of the national financial service industry, Indonesian rural banks' annual financial statements are subject to audit by OJK-certified audit firms. Only audit firms with OJK-certified audit partners are entitled to audit rural banks and sign audit reports for rural banks. Rural banks are free to select auditors or audit firms to audit their financial statements, given that these auditors or audit firms are registered and certified by OJK (FSA Regulation No. 13/POJK.03/2017 Concerning Audit Firms and Audit Partners for Financial Services, 2017).

2.2 State ownership in banks

State ownership in profit-seeking firms enables bureaucrats and politicians to pursue interests that differ from, even conflict with, SOEs' financial objectives (Shleifer and Vishny, 1997). Consequently, SOEs likely make suboptimal decisions (Morck et al., 1988). Further, bureaucrats' and politicians' expropriation of SOE's assets causes these firms to have lower corporate governance quality (Borisova et al., 2012).

As a strategic industry, banks (financial institutions) are arguably more subject to state interventions, including state ownership, than firms in more competitive industries (Boubakri et al., 2009). There are two perspectives on state participation in banks: development and political views. On the one hand, the development view argues that governments must intervene in the financial sector, including bank ownership, because the private sector cannot establish a sound banking system that effectively contributes to economic development. On the other hand, the political view establishes that politicians exploit state ownership of banks for their political interests. For example, politicians may instruct state-owned banks to provide low-interest loans to their supporters, channel loans to unprofitable or populist projects, or hire excessive employment to win political support (la Porta et al., 2002).

However, prior studies mostly support the political perspective (Carvalho, 2014; Dinç, 2005; la Porta et al., 2002). In other words, politicians likely expropriate state-owned banks' assets for their sociopolitical interests. Politicians may 'instruct state-owned banks to have lower financial reporting quality to conceal their opportunistic behaviours (Guedhami et al., 2009).

2.3 Auditor choice

Firms hire auditors to verify their financial statements to mitigate agency conflicts between shareholders and managers. Managers' better access to firm-specific information motivates them to expropriate firms' assets and conceal their actions in their financial statements. Consequently, shareholders likely demand that independent auditors audit firms' financial statements to ensure that managers' actions are carefully monitored and financial statements are presented fairly (Watts and Zimmerman, 1983).

However, agency problems between owners also explain firms' auditor choices (Habib et al., 2019), especially in emerging countries where agency conflicts between majority and minority shareholders are more pervasive. In countries where minority owners' rights are less protected, majority shareholders have greater freedom to exploit their ownership at the expense of minority shareholders' wealth. Hence, these firms are more motivated to hire better-quality auditors to attract outside investors by resolving these horizontal agency conflicts (Aburisheh et al., 2023).

In this respect, large audit firms arguably have better audit quality than smaller ones because they have more resources to ensure the quality of their audit works, such as by providing extensive training to their auditors. Furthermore, they have more clients and broader audit service scope, so they are motivated to protect their reputational assets. Conversely, small audit firms are more financially dependent on their clients and have more limited resources to maintain or improve their audit quality (Francis and Yu, 2009; Lawrence et al., 2011). Prior studies on this issue operationalise auditor size with various measures, such as big-N (Copley and Douthett, 2002; Fan and Wong, 2005), total assets audited (He et al., 2017; Wang et al., 2008), office size (Francis et al., 2013; Francis and Yu, 2009), or total revenues (Liu and Subramaniam, 2013).

Certain economic incentives motivate firms to hire larger audit firms. For instance, firms hiring larger audit firms incur lower cost of debt (Karjalainen, 2011) or greater market valuation (Lai and Liu, 2018). Larger audit firms can also mitigate agency problems. Firms with more complex group structure are more likely to hire larger audit firms to mitigate horizontal agency problems (Fang et al., 2017). Further, politically connected firms are more likely to hire big-4 audit firms to signal their financial reporting quality (Guedhami et al., 2014).

However, firms may also hire smaller audit firms for various reasons. Smaller audit firms charge lower audit fees (Liu and Subramaniam, 2013) that motivate firms with lower agency problems to hire smaller audit firms (Zhang et al., 2019). Additionally, smaller audit firms may rely their revenues from certain clients, thus enabling clients to negotiate their reporting interests to their auditors (Chi et al., 2012), such as when firms engage in greater earnings management or have special connections with those in power (Harymawan, 2020).

Meanwhile, a new stream in the auditor choice literature has analysed auditor-client distance as another proxy of auditor choice. Local or spatially proximate auditors arguably have better information about their clients because they can generate firm-specific information more easily and efficiently. Consequently, they can better restrict their clients' opportunistic behaviour (Choi et al., 2012). For example, firms audited by local or more proximate auditors exhibit higher accrual and audit quality (Choi et al., 2012; Jensen et al., 2015) and lower real earnings management (Li et al., 2019) and submit their audit reports more timely (Dong et al., 2017).

However, less distant auditors, especially small ones, are arguably less independent of their (large) clients. Consequently, they likely perform more lenient audit engagements with their clients than national or international audit firms (Chan et al., 2010; López and Rich, 2017). Firms with certain characteristics may hire proximate auditors because they expect these auditors' quality to be negotiated more easily. For example, firms wholly owned by certain shareholders consider audited financial statements less important, and they hire external auditors likely only to respond to external pressures (Prabowo et al., 2022).

2.4 Municipal ownership and auditor size

Many Indonesian municipals fully own rural banks that ideally stimulate local financial sectors, support local development, and provide financial assistance for small and medium enterprises (SMEs) (Minister of Home Affair Regulation, 2017). However, municipally-owned firms or local SOEs are arguably more susceptible to opportunistic political interventions from (local) politicians than central SOEs because central

governments are more subject to public control (Aharony et al., 2000). Consequently, local SOEs are more motivated to hire low-quality auditors with more lenient reporting behaviour to conceal politicians' opportunistic behaviour (Guedhami et al., 2009).

The empirical literature on state ownership and auditor size indicates that SOEs hire smaller auditors than private firms. For example, Chinese SOEs, especially more politically connected ones (He et al., 2017), tend to hire small local auditors because they can exploit their political influences to force small local auditors to collude in producing more lenient audit reports (Wang et al., 2008). In this respect, small auditors are arguably willing to collude with (local) governments to produce lenient audit reports because they are financially dependent on local governments as large clients (Chan et al., 2010). In the context of the Indonesian rural bank industry, we propose the following hypothesis:

H1 Municipally-owned rural banks hire smaller audit firms.

2.5 Municipal ownership and auditor-client distance

Our hypothesis predicts that municipally-owned rural banks will likely hire less distant auditors for reputational and opportunistic reasons. The literature argues that more spatially proximate or local auditors have several advantages over spatially distant ones. First, local auditors better understand their clients because they can more easily generate client-specific information, including those not represented in financial statements. Second, less spatially distant auditors perform their audit engagements more efficiently than more spatially distant ones. Hence, these auditors can devote their resources to audit engagements more effectively and better restrict clients' opportunistic behaviour s (Choi et al., 2012; Jensen et al., 2015; Li et al., 2019). For example, firms audited by less spatially distant auditors prepare their financial reports more timely (Dong et al., 2017), exhibit better accrual and audit quality (Choi et al., 2012; Jensen et al., 2015) and engage in lower real earnings management (Li et al., 2019). These findings suggest that less geographically distant auditors likely exhibit better audit quality.

In this respect, municipally-owned rural banks are arguably under more intense public monitoring and pressure for better financial accountability. They are then motivated to hire more proximate auditors with better knowledge of their firm-specific information and are more efficient in audit engagements to signal their financial accountability (Aharony et al., 2000; Chan et al., 2010).

However, more proximate auditors are more susceptible to their clients' pressures, especially large ones. In this respect, local government or local government-related entities (like local SOEs) are arguably larger than other local auditors' clients. Thus, less distant auditors are more likely to collude with these clients because of these clients' financial importance to the auditors and socio-political influences. In a similar vein, local SOEs are more motivated to hire more proximate auditors to help them interfere with auditors' engagement more easily and conceal their lower governance and reporting quality (Aharony et al., 2000; Chan et al., 2010). Based on the above arguments, we propose our second hypothesis:

H2 Municipally-owned rural banks hire more spatially proximate audit firms.

3 Research methods

We generate data from the OJK website and the IAPI 2020 directory. The OJK website presents general and rural banks' summarised quarterly data. The quarterly financial figures for each year are the sum of the current and previous quarters' financial figures in the same year. Besides financial data, the data includes the addresses of rural banks' head offices, shareholders, managing and supervising directors, and, beginning in 2019, audit firms and auditors (only for the fourth quarter data). We then match the rural banks' audit firm and auditor data with the audit firm and auditor data from the IAPI Directory. The directory includes detailed information about audit firms and their audit partners.

We only use data from rural banks on Java Island, Indonesia's most densely populated and economically developed island. Despite covering only approximately 7% of Indonesia's land area, Java is home to about 55% of the country's population. Consequently, Java contributed roughly 60% of Indonesia's GDP in 2018 (Diningrat, 2019), and most rural banks and audit firms are in Java. Furthermore, prior studies employ continental country settings (the USA and China) that simplify calculating auditor-client driving distance. Meanwhile, Indonesia is an archipelago country that causes measuring driving distance arguably much more problematic and less interpretable when rural banks and their audit firms are located on different islands.[1]

Our independent variable is municipal ownership in rural banks (MUNOWN – municipal ownership), which is measured with a dummy variable that equals one if a municipal government is the majority shareholder of the rural bank and zero otherwise. We identify the variable from the rural banks' December 2019 published report, which is available on the OJK website. Next, we have two dependent variables in this study: audit firm size (AUDITSIZE), measured by the number of *OJK*-certified partners owned by an audit firm, and the distance between a rural bank and its audit firm (DISTANCE). More specifically, DISTANCE is operationalised with the driving distance between the addresses of a rural bank's head office and its audit firm measured with Google Map™ for car travel (López and Rich, 2017).

Following prior studies, we also include several control variables in the analysis. Larger rural banks arguably have more complex activities and reputational resources, which motivate these banks to hire large audit firms. We then use the natural logarithmic value of banks' beginning-of-year total assets to represent bank size (SIZE). We also operationalise profitability (PROFIT) by deflating net income with total assets and rural banks' risks (RISK) with their non-performing loans (NPL). The last firm-specific control variable is a dummy one that equals one if the rural bank operates on Sharia-based and zero otherwise (SHARIA). We also include a municipal-specific dummy variable that equals one if at least one audit firm is located in the municipal and zero otherwise (AUDITPRESENCE).

Larger firms have more complex operational characteristics and tend to hire large audit firms to ensure their financial statements' reliability and preserve their reputations (Aslan and Aslanertik, 2017; Habib et al., 2017; Ngo et al., 2020). Profitability negatively affects auditor size (Ngo et al., 2020) because more profitable firms have greater incentives to hide proprietary information, which motivates them to hire small audit firms (Revier and Schroe, 2009). On the other hand, more profitable banks are generally more reputable than less profitable (Hall and Lee, 2014) and motivated to hire larger auditors. Higher NPLs imply greater risks that motivate auditors to charge higher bank audit fees. Hence, banks with higher NPLs are more likely to select small audit firms for cost

efficiency (Broye and Weill, 2008). Further, Indonesian banks can be classified into sharia and conventional ones. Sharia banks operate based on Islamic principles (sharia). They tend to have lower audit risks than conventional banks because they are supervised by their Sharia Supervisory Boards (SSB). Besides, Sharia banks incur higher audit fees because auditors need specific competence to audit these banks (Sharia audit certification) (Pappas and Perotti, 2022). Thus, Sharia banks arguably select smaller audit firms due to lower audit risks and audit fee efficiency.

Liberti and Mian (2009) reveal that non-local auditors rely more on clients' objective than subjective information. Non-local auditors are considered more objective and independent (Liberti and Mian, 2009) and less subject to clients' pressures than local auditors (Chan et al., 2010). More profitable and larger banks are generally more reputable than smaller and less profitable ones (Hall and Lee, 2014). They likely hire non-local (more distant) auditors to protect their reputations. Similarly, Sharia banks may exhibit better governance practices thanks to many supervising institutions (SSB, Sharia review units, Islamic International Rating Agency or IIRA, and Islamic Financial Services Board or IFSB) (Bouheni and Ammi, 2015). Consequently, they will select non-local auditors that are considered more objective. Conversely, banks with greater risks tend to hire local auditors because geographical proximity allows for more intense client-auditor communication, enabling banks to demand auditors conceal their risks (Thammasiri, 2014).

We run the following equation in the analysis:

$$\text{AUDITSIZE / DISTANCE}_{i,t} = a + \beta 1.\text{MUNOWN}_{i,t} + \beta 2.\text{SIZE}_{i,t} + \beta 3.\text{PROFIT}_{i,t} + \beta 4.\text{RISK}_{i,t} + \beta 5.\text{SHARIA}_{i,t} + \beta 6.\text{AUDITPRESENCE}_{i,t} + e$$

where

AUDITSIZE	Audit firm size (number of *OJK*-certified partners)
DISTANCE	Client-audit firm distance, measured with km distance for car travel (Google Map™)
MUNOWN	Municipally-owned rural bank (a dummy variable, 1 = municipally-owned rural bank, 0 = otherwise)
SIZE	Size, measured with the natural logarithmic value of total assets
PROFIT	Profitability, measured by deflating net income with total assets
RISK	Risk, measured with non-performing loan or fund ratio, generated directly from rural banks' summarised financial statements at *OJK*'s website.

4 Results and discussion

4.1 Descriptive statistics

Table 1 presents the descriptive statistics of our research variables. Specifically, the average driving distance between rural banks and their audit firms is about 130 km, with 42% of the observations having a driving distance of more than 100 kilometres

(untabulated). Further, rural banks' audit firms are relatively small and only have fewer than two *OJK*-certified partners (mean = 1.79). Over 51% of rural bank observations hire audit firms with only one *OJK*-certified audit partner (untabulated). This figure indicates that they tend to hire very small audit firms, likely due to limited financial resources. Municipal governments are the majority shareholders of about 11% of rural banks. Rural banks also have a relatively high average NPL (6.8%) and varying levels of profitability and total assets. Their total assets range from just above Rp 2 billion to almost Rp 3 trillion (from only about $ 127,000 to about $ 190 million), indicating that rural banks' size varies widely. Further, only 40 out of 575 sample rural banks incur a loss. About one-fifth of rural banks on Java Island operate based on Sharia principles. Lastly, most rural banks (57%) are located in municipalities that do not have audit firms residing in these municipalities. Because most audit firms in Indonesia are located in larger municipalities, the figure implies that most rural banks on Java are headquartered in smaller municipalities.

Table 1 Descriptive statistics

Variable	*N*	*Mean*	*Std. dev.*	*Min*	*Max*
DISTANCE	575	129.61	161.49	2.2	814
AUDITSIZE	571	1.79	1.17	1	12
MUNOWN	575	0.11	0.31	0	1
PROFIT	575	0.03	0.05	–0.29	1
SIZE	575	24.64	1.14	21.47	28.68
RISK	575	6.80	7.14	0	70
SHARIA	575	0.05	0.22	0	1
AUDITPRESENCE	575	0.43	0.50	0	1

4.2 Correlation test

We also run the Spearman and correlation tests between the independent variables to ensure that our independent variables are not strongly correlated. Table 2 demonstrates the results of both correlation tests, suggesting no strong correlation between the independent variables.

4.3 Hypothesis testing

We use municipal-level clustered standard errors to control for intra-municipal error correlation (Petersen, 2009). Table 3 displays the results of our hypothesis testing. In the first column, municipally-rural banks tend to hire smaller audit firms, as indicated by the significantly negative regression coefficient of MUNOWN –0.291, t = –2.70). The finding empirically supports the first hypothesis.

Turning to the second hypothesis, column 2, Table 3 informs that municipally-owned rural banks also tend to hire less distant auditors to their headquarters. The regression coefficient of MUNOWN is significantly negative (–38.253, t = –3.21), implying that municipally-owned audit firms tend to hire audit firms 38 km closer to their headquarters than their private counterparts. Thus, the second hypothesis is also empirically supported.

Table 2 Correlation tests

	MUNOWN	*PROFIT*	*SIZE*	*RISK*	*SHARIA*	*AUDITPRESENCE*
MUNOWN		–0.046	0.286***	–0.100**	0.076*	–0.157***
PROFIT	–0.023		–0.027	–0.237***	–0.036	–0.050
SIZE	0.308***	–0.071*		–0.145***	0.061	0.000
RISK	–0.042	–0.11***	–0.14***		0.022	0.075*
SHARIA	0.076*	–0.018	0.042	–0.016		0.017
AUDITPRESENCE	–0.157***	–0.066	–0.009	0.099***	0.017	

Notes: The numbers below the diagonal represent the Pearson correlation coefficients; the numbers above the diagonal are the Spearman correlation coefficients.
*Significance at the 10% level. **Significance at the 5% level. ***Significance at the 1% level.

Table 3 Results of regression analysis

	(1) *AUDITSIZE*	*(2)* *DISTANCE*	*(3)* *AUDITSIZE*	*(4)* *DISTANCE*
MUNOWN	–0.291	–38.253	–0.227	–47.802
	[0.107]***	[15.037]**	[0.112]**	[14.219]***
PROFIT	–0.308	46.543	–0.190	28.554
	[0.635]	[105.063]	[0.675]	[105.308]
SIZE	0.092	3.384	0.087	4.183
	[0.045]**	[5.775]	[0.045]*	[5.624]
RISK	–0.009	–1.132	–0.010	–0.905
	[0.005]*	[0.708]	[0.005]*	[0.721]
SHARIA	–0.222	10.893	–0.237	13.142
	[0.178]	[31.952]	[0.192]	[31.235]
AUDITPRESENCE			0.230	–34.903
			[0.139]	[14.716]**
cons	0.270	79.843	0.266	78.776
	[0.804]	[103.612]	[0.796]	[102.316]
R^2	0.02	0.01	0.02	0.02
N	575	575	575	575

Notes: The table presents the regression analysis results to investigate the effects of municipal ownership on auditor-client distance and auditor size. In the first column, the dependent variable is auditor size (the number of *OJK*-certified partners an audit firm has). Meanwhile, the dependent variable in the second column is auditor-client distance (measured by the driving distance using GoogleMapTM. We rerun both analyses in columns 3 and 4 by including AUDITPRESENCE (whether the municipality where the rural bank's headquarters also hosts at least an audit firm). The figures in brackets are standard errors clustered at the municipal level.
***, **, and * indicate significance at 1%, 5%, and 10% (two-tail), respectively.

Indonesian audit firms tend to cluster in large cities/ municipalities. Therefore, the audit choice decisions of rural banks in municipalities with audit firms may differ from their peers in municipalities without audit firms. Accordingly, we add a dummy variable (AUDITPRESENCE) as the control variable that equals one if the rural bank's municipality hosts at least one audit firm and zero otherwise. The results for the hypothesis testing are qualitatively similar (see columns 3 and 4 of Table 3).

4.4 Robustness test

We run four alternative tests to ensure the robustness of our findings. In our first two robustness tests, we exclude observations located in Jakarta Special Region Province. Most audit firms in Java are located in this province. Thus, rural banks in this province are arguably more motivated to hire less distant auditors because of the abundant availability of audit firms nearby. Third, we collapse the DISTANCE variable into a new dummy variable (DDISTANCE) that equals one if the driving distance between the rural bank and its audit firm is more than 100 km (Choi et al., 2012) and zero otherwise. Fourth, we develop a new dummy variable (LOCALSMALL) that equals one if DDISTANCE = 0 and the audit firm only has at most one *OJK*-certified partner and zero otherwise. Using these two alternative dependent variables confirms our main findings.

Five, although using the driving distance is arguably more meaningful to measure the distance between a rural bank and its audit firm because it is travelled by rural banks and their auditors (López and Rich, 2017), we use an alternative proxy of auditor-client distance by using the geographical distance between the addresses of a rural bank's head office and its audit firm that is measured with Google Earth™. We use the Hervine formula to measure the geographical distance between rural banks and their audit firms (Jensen et al., 2015). Our robustness tests confirm our main findings that municipally-owned audit firms hire smaller and less distant audit firms. Even the fourth robustness test suggests that municipally controlled rural banks tend to hire small auditors located less distantly from their headquarters.

Table 4 Results of the robustness test

	AUDITSIZE	*DISTANCE*	*DDISTANCE*	*LOCALSMALL*	*DISTANCE*
MUNOWN	–0.214	–47.194	–0.924	0.605	–38.129
	[0.112]*	[14.395]***	[0.320]***	[0.305]**	[10.816}***
PROFIT	–0.200	–41.691	0.596	–0.101	22.793
	[0.695]	[95.249]	[1.625]	[1.397]	[85.368]
SIZE	0.076	3.509	0.121	–0.151	4.727
	[0.046]	[5.777]	[0.088]	[0.095]	[4.513]
RISK	–0.011	–1.322	0.003	–0.001	–0.490
	[0.006]*	[0.733]*	[0.013]	[0.012]	[0.580]
SHARIA	–0.234	13.790	0.499	–0.429	3.880
	[0.195]	[31.217]	[0.487]	[0.563]	[21.052]
AUDITPRESENCE	0.227	–37.030	–1.297	0.230	–22.288
	[0.147]	[15.041]**	[0.264]***	[0.273]	[10.763]**
_cons	0.463	95.395	–1.909	1.592	21.619
	[0.811]	[104.699]	[1.610]	[1.708]	[81.322]
R^2	0.02	0.02	0.07	0.01	0.02
N	558	558	575	575	575

Notes: The table presents the results of the alternative tests to ensure the robustness of our main findings. We rerun the first two main regression analyses in the first two columns by excluding rural banks in Jakarta Special Region Province. The third column displays the logit regression results with the dependent variable *DDISTANCE* (a dummy variable that equals one if the auditor-client distance is more than 100 km and zero otherwise). In the fourth column, the dependent variable of the logit analysis is *LOCALSMALL* (a dummy variable that equals one if the audit firm only has at most one *OJK-certified* partner and is located no more than 100 km from its rural bank client and zero otherwise). The last column presents the regression analysis with the dependent variable (*AUDITDISTANCE*) measured with GoogleEarthTM. The figures in brackets are standard errors clustered at the municipal level. ***, **, and * indicate significance at 1%, 5%, and 10% (two-tail), respectively

4.5 Discussion

Our results empirically demonstrate that municipally-owned rural banks are more likely to hire smaller, more proximate audit firms than private rural banks. Hence, we document that firms do not randomly choose auditors, and political interests in municipal ownership

may motivate rural banks to select smaller and less distant audit firms to avoid more stringent monitoring (Habib et al., 2017). Municipally-owned rural banks are more prone to politicians' opportunistic political interventions (Aharony et al., 2000) and more motivated to hire low-quality auditors with more lenient reporting behaviour to conceal politicians' opportunistic behaviours (Guedhami et al., 2009) Besides, municipally-owned rural banks may also consider lower audit fees (Axén et al., 2019) and opaque information to conceal their inefficiency and expropriation in selecting smaller audit firms (Johnson and Mitton, 2003). Our findings support prior studies (He et al., 2017; Wang et al., 2008) that observe that state or government-owned firms tend to hire non-big-4 audit firms.

This research also documents that municipally-owned audit firms tend to hire less distant audit firms. Local audit firms better understand their clients and perform their audit engagements more efficiently than more distant auditors. However, local auditors are more subject to clients' pressures, including municipally-owned rural banks. Hence, local auditors are more likely to collude with their clients to produce more lenient audit and financial reporting. In this respect, municipally-owned rural banks are more motivated to hire local auditors for both reputational and opportunistic reasons (Aharony et al., 2000; Chan et al., 2010). SOEs are subject to more intense public monitoring and pressure demanding greater financial accountability. They are then motivated to signal their financial accountability by hiring more proximate auditors who have better knowledge of their firm-specific information and are more efficient in audit engagements. Conversely, their large size and socio-political influences enable them to promote their interests to local auditors. For example, governments may threaten small local auditors not to hire them anymore. In response, local auditors may compromise their independence under government pressure (Wang et al., 2008). The findings are in line with prior studies (Brooks and Yu, 2016; Choi et al., 2012) that demonstrate that SOEs tend to hire local auditors.

Small audit firms and rural banks are geographically dispersed in Indonesia, especially Java Island, which likely affects rural banks' decisions to hire auditors. The significantly negative regression coefficient empirically supports this argument for AUDITFIRMPRESENCE in Table 2, column 4, and Table 3, columns 2 and 3. Audit firm presence in the municipals of rural banks' headquarters also affects auditor choice decisions. Table 3 column 4 informs that municipally-owned rural banks hire local small audit firms (with at most only one *OJK*-certified partner). Our findings confirm our hypotheses that predict that municipally-owned rural banks tend to select small and less geographically distant audit firms.

5 Conclusions and limitations

This study seeks to analyse the effect of municipal ownership on auditor size and auditor-client distance in rural banks on Java Island, Indonesia. The findings indicate that municipally-owned rural banks are more likely to hire smaller, less distant audit firms than private rural banks. Overall, our study contributes to the growing body of literature on auditor-client distance by highlighting that firms do not randomly choose auditors, and

certain firm-specific characteristics (in this study: ownership type) may explain such behaviour. Besides, we also expand prior studies on the effect of state ownership on firms' behaviour by utilising novel proxies of auditor choice.

The results confirm the findings in other countries. For instance, Chinese firms owned by local and central governments, especially those located in less developed regions, tend to hire local and smaller audit firms likely due to political collusion incentives (Wang et al., 2008). More specifically, local and central SOEs in regions with better greater private economic activities, lower government economic intervention, and more effective legal infrastructure are less likely to hire smaller and local auditors. However, economic considerations like lower audit costs significantly affect municipally-owned firms' decisions to hire auditors in a country with more effective institutions such as Sweden (Axén et al., 2019). Similarly, Liu (2021) documents that improved physical infrastructure increases the probability of firms hiring larger audit firms, even when there is a significant distance between the firms and their audit firms. This is due to the fact that audit engagements involve extensive travel. Thus, our findings underscore the needs to develop more effective socio-political institutions and better physical infrastructure to attenuate SOEs' opportunistic incentives to hire smaller and local auditors.

We do not have information on audit firms' revenues or number of clients. Further, we do not have information about the importance of municipally-owned rural banks as their audit firms' clients. Such information will enable one to analyse further municipally-owned rural banks' ability to exert pressure on their auditors due to their economic importance. We advise future studies to investigate this issue.

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Notes

1 Our analysis of 418 rural banks located on islands other than Java reveals that 199 of them (about 47%) hire auditors from Java. This study uses auditor-client driving distance as an indicator of firms' decision to hire auditors that are more subject to their influence likely due to relative ease of communication and travel. However, that may not be the case when rural banks and auditors are located on different islands. Say a rural bank in Denpasar, Bali Island hires an audit firm from Malang, East Java. The driving distance between these two cities is only 380 km, lower than the distance data of our 55 observations on Java. However, it is more costly to travel between these two cities because they are located on two different islands and there is no direct flight between these cities. Consequently, it is arguably more difficult, for the rural bank to influence its' audit firm's decisions despite lower distance.