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ORIGINAL ARTICLE

Unpacking the "political-institutional complex": The role of physical and institutional infrastructures in Indonesia's decentralization reform

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ABSTRACT

The study looks into how governance qualities of decentralized governments mediate the impacts of decentralization on development. Based on a set-oriented approach, the study analyzed data from a nation-wide survey conducted with business managers from all provinces in Indonesia, and found evidence that, despite the country's uniform decentralization reform, individual provinces exhibited great variation in the qualities of their various physical and institutional infrastructures. Notably, these qualities assumed nested relations, with *order and security* as well as *accountability and rule of law* seemingly being the preconditions of *basic infrastructure* provision as well as *local governments' coordination*. Moreover, business investment decisions (measured as staff expansion and product innovation) were found to vary with some specific combinations of these infrastructural conditions. The result provides evidence supporting the argument that both physical and institutional infrastructures are instrumental to realize the supposed benefits of decentralization and supports the recent call of the literature to look into the political-institutional complex in the process of decentralization reform.

Keywords: *decentralization; physical infrastructure; institutional infrastructure; governance; development; political-institutional complex*

1. Introduction

Decentralization has long been seen as conducive to development. If local citizens are allowed, the argument goes, they will choose to move to political jurisdictions (*e.g.*, districts, cities, provinces) that meet their preferences (*i.e.*, voting with one's feet). They will bring competition to the decentralized jurisdictions, and the competition, in turn, will pose strong pressure on the jurisdictions to improve their responsiveness to the citizens' demands, especially in terms of public service delivery, and eventually the overall efficiency of the government (Tiebout, 1956). Building on this logic, Qian and Weingast (1997) later, through their model of "market-preserving federalism", link decentralization and its effect on local business development. Essentially, proponents of decentralization believe that the decentralized government units will

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manage their resources and derive policies that better fit the needs and unique conditions of their jurisdictions, bringing better development than what could be achieved with only the central government (Azis, 2003; see also Hayek, 1948).

Empirically, however, mixed results were found on this supposed effect of decentralization, especially in the case of developing countries. Akai and Sakata (2002), using data from the United States of America's 50 states from the period 1992 to 1996, found that fiscal decentralization supports economic growth. Stansel (2005) obtained similar results from 314 U.S. metropolitan statistical areas. Yet when Davoodi and Zou (1998) analyzed data from 46 both developing and developed countries during the period from 1970 to 1985, they found no significant relation between fiscal decentralization and economic growth among developed countries, and notably a negative relation among developing countries. Evidence from analyzing panel data of 28 Chinese provinces from 1980 to 1992 showed that decentralization is negatively related to growth (Zhang and Zou, 1998), but when other concurrent reforms were taken into account, positive relations were observed from the same set of data (Lin and Liu, 2000). In another case, Neyapti (2005) found a positive economic effect of decentralization using provincial data from Turkey (1995–1998), but the analysis of Tosun and Yilmaz (2008) disagreed with the finding, showing a weak negative economic effect of decentralization as they analyzed both cross-sectional and panel data of the 67 provinces in Turkey from 1967 to 2001.

What explains these seemingly mixed results of decentralization? An earlier World Bank report (Litvack, Ahmad and Bird, 1998), written from a practitioner's perspective, has long pointed out that decentralization in itself is neither good nor bad. Its success as a reform measure depends on the careful design of institutional arrangements to encourage good governance and policy outcomes (see also Bahl, 1999). To improve political accountability and responsiveness, researchers should, as Bardhan (2002) suggests, look into the black box of "political-institutional complex" and examine the process of change in the reform. Yet most empirical researches have focused on the results of decentralization, *i.e.*, its "policy-relevant" outcomes (Faguet, 2014), and paid little attention to the governance qualities essential for achieving these outcomes. This study aimed to address this research gap through a comparative analysis of Indonesian provinces after the "big bang" decentralization reform introduced in 1999 and modified in 2004. Based on a set-oriented approach, the study analyzed survey data collected from a nationwide survey with Indonesian business entrepreneurs in 2013, and found that, despite the country's uniform decentralization initiative, individual provinces exhibited great variation in the quality of their various physical and institutional infrastructures. These qualities assumed "nested" relations, with *order and security* as well as *accountability and rule of law* seemingly being the preconditions of *basic infrastructure* provision as well as *local governments' coordination*. More importantly, short- to medium-term business investment decisions, a proxy for measuring development, were found to vary with some specific combinations of these infrastructural conditions. The result provides evidence supporting the argument that both physical and institutional infrastructures are instrumental to realize the supposed benefits of decentralization. These findings have major policy implications for developing countries which are to implement decentralization reforms but oftentimes suffer from critical infrastructural deficits. Below, we first review the literature and discuss the role of both hard and soft infrastructures in decentralization. We then introduce the empirical setting of Indonesia's decentralization reform in the last decade and present the results of our analysis. Finally, we elaborate on their implication for the decentralization literature.

2. The "political-institutional complex"

Ideally, through the utilization of local knowledge and the competitive pressure generated among local jurisdictions, decentralization reform reduces the costs of business transactions and eliminates rent-seeking activities at local jurisdictions, creating an attractive living and investment environment. However, in many developing countries, mechanisms which are supposed to complete the feedback loop in decentralization reforms are often not readily found. For example, local governmental units may remain opaque with regard to their political and policy decision-making process. Poorer citizens may stay in less attractive jurisdictions as their livelihood relies heavily on their informal and often localized social networks. The lower education level of the citizens may also hinder their awareness of public affairs, as well as socio-economic opportunities elsewhere (Bardhan, 2002). More structurally, decentralized sub-national governmental units such as provinces and municipalities may not be responsive to their citizens. They may fail to perform because of weak political, financial and/or infrastructural support from the central government. The common problem of "local capture" by interest groups, meanwhile, in sub-national jurisdictions with weak executive capability and a malfunctioning legislature may also greatly undermine the momentum of change (Blanchard and Shleifer, 2000).

Recent literature on state building and development helps shed some light on which and why certain governance qualities matter for development (Bardhan, 2016). As elaborated by North, Wallis and Weingast (2009) in their analysis on the rise of modern states, what is the most fundamental for the establishment of a viable social order, or simply *order and security* in these states is the establishment of the rule of law among contesting elite groups, complemented by the possible establishment of perpetual forms of organization, and the successful consolidation of political control of military forces (see also Haggard and Tiede, 2011; North, 1990). These, they propose, are the doorstep conditions for establishing a modern state with open-access order and long-term development. As doorstep conditions, their relationships with development are not linear ones. They are thresholds which states must achieve first before they may attempt to achieve sustained economic growth commonly observable in developed countries.

Notably, these doorstep conditions do not guarantee development; more is required. North's (1990) earlier study on long-term economic development argues that institutions play a fundamental role in limiting governmental powers and providing certainty for private investments and economic transactions (see also Shirley, 2005). Acemoglu and Robinson (2012), in answering the question of "why nations fail", argue further that the establishment of both *inclusive* economic institutions, which allow for mass participation in the economy, and *inclusive* political institutions, which are sufficiently centralized and pluralistic, are essential to sustainable economic growth and prosperity. Their argument echoes with the "developmental state" literature, which argues for a more proactive and positive role of government in regard to development. Evans (1995), in his seminal comparative study of the information technology industry in Brazil, South Korea and India, proposes that governments of developing countries should assume a husbandry mode, helping nurture but not over-protecting its infant industries (Evans, 1995). Such a role means that when a protected local industry is failing, the government will also have to make the tough decision to let it go (Bardhan, 2016). The same view is shared by Fukuyama (2013). Based on a thorough literature review on governance, Fukuyama criticizes the inadequacies of existing empirical literature in measuring the quality of states, suggesting that it is not enough for governments to possess the capacity to promote growth, but also the right level of autonomy to be immune from the excessive influence of local rent-seeking activities. In general, the state government shall possess *embedded autonomy*, one that is strong enough to provide such a husbandry role, but is also deeply embedded in society, making decisions and providing goods and services which are in accordance with the preferences of the general public at large.

2.1 Physical infrastructure: basic infrastructure and utilities

How do these findings inform our investigation on decentralization? What should decentralized governments do specifically in order to assume a more proactive and positive role for broad-based and inclusive development? One essential effort the state may contribute, following from the above discussion, concerns the construction of basic infrastructures and utilities. It involves, for example, the provision of a stable and quality supply of power and water, accessible and wide coverage of roads and the internet, and many other essential public facilities for the general public. Good-quality physical infrastructures support broad-based economic activities. They not only help reduce the production costs of economic agents, but also help connect economic agents physically and reduce the costs of transaction in economic exchanges (see Coase, 1992). For instance, a key benefit of transport infrastructure is the reduction of transport costs, which helps to create new markets and realize the returns to agglomeration; this in turn fosters competition, spurs innovation, lowers prices and raises productivity (see Henckel & McKibbin, 2017). The supply of these infrastructures, nevertheless, cannot be taken for granted. Even for those local governments which possess the required capacity, as suggested above, they may still not necessarily be attending to the needs of the general business communities. Satisfactory physical infrastructure, thus, may be seen as a major factor mediating the effect of decentralization. It constitutes a crucial link between decentralization and development.

2.2 Institutional infrastructure: administrative efficiency

Public goods and services, nonetheless, are not costless. One major difference between governments of developed and underdeveloped countries concerns the associated costs of their production and provision, which is often a function of the degree of professionalization of the government bureaucracy (Weber, 1946; Fukuyama, 2013). Although it has long been a research focus in public administration—ever since the politics-administration distinction was advocated in the late 19th century (Wilson, 1887; Rosenbloom, 1983, 2013)—governments of developing countries, especially local ones, are often prone to problems of operational inefficiency and ineffectiveness. Such administrative deficiency increases the costs for private investors to fulfill the regulatory requirements and receive public services, for example, the time and financial costs to apply for business-related licenses and permits, and sometimes the "need" to bribe those who are administratively in charge (Svensson, 2005). From a societal perspective, the lower the cost is to sustain the government machinery and public goods and service provision, the more efficient and effective the government is, and the more conducive it is to development. Satisfactory administrative efficiency, thus, may be seen as an important institutional infrastructure mediating the effect of decentralization.

2.3 Institutional infrastructure: local governments' coordination

While quality of governance may affect development, development also poses more and more demand on local bureaucracies (see also Wilson, 2016). The increasing volume and complexity of economic activities often renders the coordination among local governments and their subunits essential. Unlike in developed economies, local bureaucracies of developing countries may not have experienced waves of administrative reform to keep up to date with the demand of their growing economies. Recent public administration and management literature, against the background of the traditional hierarchical design of government and functional division of labor (Gulick, 1937), and in part the practices of devolution in the New Public Management reform since the 1990s (Pollitt and Bouckaert, 2011), has been looking at ways to facilitate inter-agency as well as cross-sector collaboration and coordination (O'Toole and Meier, 2004; Thomson and Perry, 2006; Ansell and Gash, 2008; Bouckaert *et al*., 2010; Lægreid *et al*., 2014). With particular regard to decentralization reform in developing countries, the literature speaks of the importance of creating a well-functioning, "joined-up", or "whole-of-government" (Bogdanor, 2005; Christensen and Lægreid, 2007), when potential business entrepreneurs, or those who are interested in further expansion across administrative units, have to fulfill various regulatory requirements such as environmental standards, occupation and health codes, as well as fire and food safety regulations. A well-coordinated governmental regulatory regime in which laws and regulations are harmonized across different agencies and jurisdictions is highly important to sustain entrepreneurial initiatives and get past the bottleneck of development. Satisfactory coordination among local governments, hence, represents yet another critical link between decentralization and development.

2.4 Institutional infrastructure: executive accountability and the rule of law

Finally, following from the above discussion, another institutional infrastructure essential for the increasing complexity of economic activities concerns the conflict resolution mechanisms in cases of disputes among the exchanged parties. In less developed economies, many exchanges are likely to be guarded by inter-personal means such as social norms and networks, which hold economic agents accountable to one another (Williamson, 1985). More impersonal means, however, such as legally enforceable contracts, are essential to encourage longer-distance and longer-term trade with less familiar parties, as the transaction cost involved otherwise would be much higher (Greif, 2006). One major implication of this argument is that it is important for local governments to maintain a strong but impartial role, for example, with a functional and independent judiciary, in order to ensure that contracts are honored, and to mitigate potential conflicts between trading parties. People's satisfaction about this important institutional infrastructure is thus likely to influence their incentive to expand their economic activities beyond familiar parties, mediating the effects of decentralization on development. To illustrate further how exactly the above infrastructural condition mediates the impacts of decentralization reform on development, we turn to the case of Indonesia below.

3. Decentralization reform in Indonesia

Indonesia had been under the threat of political instability since the fall of the Suharto regime in the aftermath of the Asian Financial Crisis. Against the backdrop of possible declarations of independence of individual regions and provinces and thus the potential division of the country, a "big bang" decentralization governmental reform was introduced (UNDP, 2009). The passage of two laws—Law 22/1999 on Regional Government and Law 25/1999 on Fiscal Balance between Central and Regional Governments—have often been cited as marking the beginning of the decentralization reform (see, *e.g.*, Holtzappel, 2009). As a result, all major government responsibilities are decentralized to the district level except for foreign affairs, defense, justice, finance, religion, management of natural resources, and state administration. Drafted in the midst of political and economic turmoil, the implementation of the two laws posed huge challenges for government operations, and eventually, they were replaced by Law 32/2004 and Law 33/2004 in 2004. The new laws maintain the "spirit" of decentralization as conceived in 1999, but with more measures to keep local governments in check.

The reform has changed much of the country's politics and its impact on Indonesia's governance is significant. As the country transforms from an authoritarian regime to a democratic one, the original laws underpinning the decentralization reform were designed mainly to ensure political unity and stable social order. Layers of governments were created to counter separatist impetus, resulting in what is described as "democracy first, good governance later" (Ramage, 2007). A highly fragmented system of governments, with local leaders answerable mainly to the local electorate and political forces, has undermined the power of the central government and the functioning of the state overall. Subsequently, adjustments have been introduced to make the system work. For example, with a majority of the local governments' financial resources originating from the central government, there were continuous proposals to control these governments through budget provision (see World Bank, 2003; UNDP, 2009); the discretionary disbursement of special allocation funds (DAK) by the Ministry of Finance for infrastructure development in decentralized regions may help coordinate and mobilize local governments. A high-level government unit, UKP4, or the President's Delivery Unit for Development Monitoring and Oversight, also worked with local governments to develop an online public complaints system (LAPOR, or *Layanan Aspirasi dan Pengaduan Online Rakyat*)[1], which allows people to better evaluate public services through SMS and some social media platforms, and their evaluations are forwarded directly to the heads of the office delivering the service. Moreover, governors of provinces, also locally elected, are now given a larger role, assisting the central government to coordinate various regional governments, including setting up minimum service standards for local governments and monitoring their implementation (UNDP, 2009).

A growing literature evaluates this major reform in Indonesia, and the observed outcomes thus far are mixed. Hadiz (2003), for example, argues that decentralization helps Indonesia balance competing political interests in policy making under its weak political-institutional setting. The "big bang" decentralization left institutional structures and government services in a weak state, and this period also saw overlapping jurisdictions and ineffective coordination between sub-national governments and the fragmentation of corruption at sub-national levels (Aspinall and Fealy, 2003; Abiad and Teipelke, 2017). Ray (2009) traced the change in local regulatory processes, and observed a dramatic increase in regulatory fees and heavy reliance on local levies in regional governments. A notable policy paper from the UNDP (2009) proposed that good governance at the provincial level is the "missing link" to Indonesia's decentralization. Provinces, it argues, should strengthen the role of supervising and coordinating regencies or cities, harmonizing the discharge of their responsibilities. Whether local governments within provinces were well coordinated was reported as a major issue in the reform (see also Abidin, 2009). While the literature generally agrees on the importance of looking to the governance aspect of the reform, many of the empirical investigations evaluated the reform through looking at some distinctive aspects, and derived their conclusions based on, and in part, Indonesia's sheer size and great

1. We thank Dr. Agung Wicaksono for this point.

ethnic and religious variety, limited evidence and smaller samples of regions. With a nation-wide survey conducted with Indonesian business managers in 2013, this study conducted a comparative analysis of all provinces to find out how businesses' investment decisions, a proxy for development, are related to their assessment of provincial infrastructural conditions. Below, we turn to the research design and methods of our study.

4. Research design and data

The business sector serves as a good empirical link between provincial qualities of governance and outcomes of development. For one thing, business managers' investment decisions directly affect local economic performance. With a real concern for return, businesses decide recurrently on various investments such as shorter-term staff expansion and production method renewal, as well as longer-term equipment upgrading and research and development. Their assessment of local governance quality could thus be relatively reliable, as the environment in which business operates immediately affects their return. Owners and managers, presumably, observe closely whether the local business environment is facilitative to business operations and conducive to economic activities, and act to maximize their interests accordingly. Of course, the business environment is not exactly the same as the governance qualities which affect important aspects of every citizen's life, but businesses' evaluation of their operational environment could serve as a good proxy to assess local governance situations.

Generally speaking, one may expect that the longer the period of return is on investment, the more likely a more conducive political-institutional environment is required for businesses to engage in decision-making. Unfortunately, conventional statistical methods of correlation and regression analysis may not readily capture the set-oriented logic (Ragin, 2008) underlying entrepreneurs' investment decisions. Firstly, business entrepreneurs do not always make decisions based on simply the existence or strength of one single condition, "holding all others constant". Some conditions are more foundational than others and the presence of these conditions is necessary, but not necessarily sufficient, for their investment decisions. If individual entrepreneurs, for example, feel that the local political condition is uncertain, even if other production function factors are independently favorable, they will probably withhold their investment, or make investment that yields a faster return. They are less likely to invest heavily in the future, restraining from, for example, expanding their business or engaging in long-term research and development. Meanwhile, there may also be alternative causal paths leading to such investments. Governments with more resources may invest more heavily in physical infrastructures and utilities, while those with less may seek to, for example, improve the quality of government services or better communicate with businesses. In any case, these considerations render the relations between governance conditions and development outcomes asymmetric, and multiple causal paths may be possible. Relying on methods based on correlations does not allow researchers to test these possible relationships (see Ragin, 2008).[2] A more cautious set-oriented approach is warranted to uncover the existence of necessary conditions and their combinatorial effects.

This study attempted to measure in all provinces of Indonesia the perceived quality of different physical and institutional infrastructures from the business perspective, and also the planned and actual

2. If a condition is necessary for an outcome, for example, a "higher level" of the condition does not need to be related significantly to a "higher level" of outcome. Instead, one shall expect that the absence of the condition is related to the absence of the outcome.

investment in various aspects of business operations. This study looked into the data collected from a survey conducted by the Asia Competitiveness Institute (ACI) of the National University of Singapore with Indonesian business managers in 2013. Respondents were invited through individual chapters of the Indonesian Employers' Association, or APINDO (*Asosiasi Pengusaha Indonesia*), in each of Indonesia's 33 provinces. The survey was conducted using an electronic response system. Questions were presented on a screen with a computer-linked projector, and respondents were expected to key in their respective answers using electronic keypads (or "clickers"). Facilitators were present in each interview to read out the questions and give clarifications when needed. In the rare case that an electronic survey could not be conducted, respondents were given paper-based survey forms to fill in. A total of 725 questionnaires were returned, equivalent to around 22 per province on average. The number of respondents from each province ranged from 10 to 43 (see Appendix D). Provinces with less than 15 respondents (5 in total) were excluded from the comparison to ensure the reliability of the data.

4.1 Measurements and analysis

A nine-point Likert scale was adopted for all questions unless otherwise specified, with "strongly disagree" and "strongly agree" at both ends, and "neutral" in the middle. For each questionnaire item, the mean values of all responses from a particular province were calculated to represent the score of the province on that item.

In addressing the concern over construct validity (Knoll and Zloczysti, 2011), principal component analysis was performed on 12 related items of governance conditions to uncover how business entrepreneurs in Indonesia categorize these items. Three dimensions were extracted, namely *administrative efficiency* (AE), *accountability and rule of law* (ARL), and *order and security* (OS) (more in the next section; see Appendix E for details). *Administrative efficiency* measures the cost businesses incurred in dealing with administrative processes, which includes the time needed to apply for public permits and documents, and the extent of associated corruption. *Accountability and rule of law* measures the perception whether there is a guarantee that major governmental powers are used non-arbitrarily. It involves assessment of the judiciary's independence, as well as whether government contracts are rewarded based on merit and whether the government is willing to listen to the voices of the citizens and businessmen. The last, *order and security,* measures general public security and political conditions in the province.

In addition, we asked the respondents whether laws and regulations across different local governments in the province are harmonized, and whether there is good collaboration and coordination among local governments within the province. We termed this condition *local governments' coordination* (LGC). Finally, we also measured how satisfied our respondents were with the quality of *basic infrastructure* (BI) in the province. Basic physical infrastructural facilities, *i.e.*, water and electricity supplies, quality of roads and access to the internet, were measured for this condition.

With the above dimensions developed from averaging the constituted items, we further identified a cut-off point of 4.5. If the value for the province was smaller than 4.5 (worse than the neutral point, 5, meaning "not-satisfactory"), we coded that condition as "0", indicating the quality of such conditions as dissatisfactory. Otherwise, they were coded as 1 to indicate its satisfactoriness (see Appendix F).

For the outcome variables, we asked whether the respondent's company would invest in various dimensions of business operations, and whether they had already made investments that would take a relatively longer time to materialize. These questions included: (1) "Your firm will invest in upgrading its equipment over the next five years"; (2) "Your firm has invested substantially in employee training programs in the past three years", (3) "Your firm has introduced many products or product features in the past three years", and (4) "Your firm spends substantially on research and development". A mean average was calculated for these items in each province. This time a cut-off point of 5.5 was used. If the averaged value was larger than the cut-off value, we coded it as "1" to indicate positive investment intention or decision. If the value was smaller than 5.5, we coded it as "0". We termed these investment outcomes as *equipment upgrading, staff training, new products,* and *R&D*, respectively. Lastly, the respondents were asked whether they would increase their growth of staff compared to the former year. A 5-point scale was adopted (1 = decrease by more than 10%; 2 = decrease by 0%–10%; 3 = increase by 0%–10%; 4 = increase by 10%–25%; 5 = increase by more than 25%). The mean values of all responses from a particular province in 2013 were compared to the same figure which recorded their anticipation for 2014. If the latter was larger than the former, we coded the outcome for such province as "1" to indicate an increase in staff growth. Otherwise, such outcome was coded as "0". This outcome was termed *staff hiring.*

4.2 Findings

A variety of combinations of governance conditions was found among the provinces. Individually speaking, we found that *order and security* is generally satisfactory among all but two provinces (26/28), whereas *administrative efficiency* is generally dissatisfactory among all but four provinces (24/28). Roughly 40% (12/28) of the provinces were found to have satisfactory *local governments' coordination*. A slightly higher percentage of provinces, 53% (15/28), recorded satisfactory *basic infrastructures*. About 3/4 of the provinces (20/28) were found to have satisfactory *accountability and rule of law* conditions.

Meanwhile, all provinces exhibited a positive intention of *equipment upgrading* (28/28), whereas almost all but four provinces exhibited a negative tendency of *research and development* investment (24/28). There were 21 provinces (out of 28) which reported that they would increase their staff in 2014 compared to 2013, and fewer provinces (17 out of 28) reported that they invested substantially in *staff training* in the past three years. Also, 17 out of 28 reported they had introduced *new products or product features* in the past three years.

Interesting patterns were found among the infrastructural conditions. It seemed to indicate that *order and security* (OS) is a precondition for *accountability and rule of law* (ARL), which is in turn a precondition for either *basic infrastructure* (BI) or *local governments' coordination* (LGC). All but one province reporting satisfactory ARL (19 in total) were in the set of provinces with satisfactory OS (26 in total), which seemed to suggest that OS is a precondition for ARL. Meanwhile, 13 out of 15 provinces (86.6%) with satisfactory BI were found within the set of provinces with satisfactory ARL, while 11 out of 12 provinces (91.7%) with satisfactory LGC were found within the set of satisfactory ARL. This again suggests very strongly that ARL is a precondition for BI and LGC. For *administrative efficiency* (AE), three out of the total four provinces with satisfactory conditions were found in the set of provinces with four other satisfactory governance conditions, and more importantly, satisfactions of AE were always found to coexist with LGC (though not the other way round), indicating LGC is very likely a precondition for AE. Within the set of satisfactory *accountability and rule of law*, there seemed to be two distinctive paths of development—one path (or subset) contained satisfactory *basic infrastructure* but dissatisfactory *local governments' coordination* (five in total), while the other contained satisfactory *local governments' coordination* but dissatisfactory *basic infrastructure* (3 in total). Another half of the provinces, eight in total, reported satisfaction with all of the above four conditions.

Concerning the relations between various infrastructural conditions and investment outcomes, only one significant Pearson's *r* correlation was found (between *basic infrastructure* and *new products*) (see Appendix B). Analyzing the data directly (see Appendix F), however, we found that the combinatory presence of satisfactory governance conditions was related to higher likelihoods of positive investment intention and decisions. With regard to *staff hiring*, among provinces with four or more satisfactory governance conditions, eight out of nine (88.9%) reported a higher rate of expected staff growth than the past year. Yet only 68.4% of the remaining provinces (13 out of 19) reported a higher rate. Among provinces with three satisfactory governance conditions, six out of eight exhibited an increase (75.0%); for those with only two or less satisfactory governing conditions, only seven out of 11 did (63.6%). Such a decreasing percentage suggests the importance of satisfactory governance conditions in staff expansion. Note, however, that there was a rebound in *staff hiring* in five of the seven provinces with *one or less* satisfactory governance condition (71.4%). Alternative causal paths may be in place for staff growth (more discussion below).

A similar pattern was found with investment in *staff training* and *new products*. For provinces with four or more satisfactory governance conditions, seven out of nine (77.8%) reported positive investment in staff training, and the same for *new products.* Conversely, only 34.5% of the remaining provinces (10 out of 29) reported positive investment in both items. Among provinces with three satisfactory governance conditions, four out of eight exhibited positive investment in *staff training* (50.0%), and, again, the same was found for *new products.* For provinces with two or less satisfactory governance conditions, six out of 11 indicated positive investment (54.5%). As above, the overall decreasing percentage suggests the importance of satisfactory governance conditions in inducing staff training and product innovation. Note that among the seven provinces with *one or less* satisfactory governance conditions, three and four (out of 7) still recorded positive investments in *staff training* (57.1%) and *new products* (42.9%), respectively. Together with the above findings in *staff hiring*, this group of provinces warrants further investigation.

An even clearer picture can be found if one considers the above three short- to medium-term investments together. For provinces with four or more satisfactory governing conditions, five out of nine (55.6%) reported positive outcomes in all three categories of investment, yet only four out of 19 (21.1%) of the remaining observed the same outcomes. Interestingly, there were three provinces with positive outcomes in all three investments but they were considered satisfactory in only *one or less* governing condition. We look into their economic activities in further detail in the next section.

Finally, our results found that satisfaction of governance conditions was not necessary for investment in *equipment upgrading*—all provinces exhibited positive intention in *equipment upgrading* irrespective of governing conditions. For *research and development*, although three out of four provinces recording positive investment possessed three or more satisfactory governance conditions, it is difficult to draw an inference from the limited amount of positive outcomes. Overall, 24 out of 28 provinces did not report a positive investment outcome in *research and development.* Satisfactory governance conditions did not seem to relate to businesses' longer-term investments.

5. Discussion and conclusion

Our analysis found some interesting patterns from looking into the uniform decentralization reform introduced in Indonesia in the last decade. The results of this "natural experiment" match the observation of the empirical literature that the main goal of the reform was to maintain a viable socio-political order in Indonesia. Almost all provinces showed satisfactory *order and security* after the decentralization. Also, perhaps with the change of regime, the satisfactoriness regarding *accountability and rule of law* was considered satisfactory generally across the provinces. Satisfactory *basic infrastructure* was found in only about half of the provinces, which possibly paved the way for a recent decision of the Ministry of Finance to revise the disbursement of the special allocation fund (DAK) so as to ensure that it is spent on infrastructure development by the decentralized regions.[3] The general failure in fostering satisfactorily coordinated and efficient local governments echoes the theme of "government (democracy) before governance", and is in line with observers' call for a stronger coordinating role of the provinces in making decentralization work.

Theoretically, resonating with some latest developments of the governance literature, our analysis identified five distinguished dimensions of governance, which we termed conveniently *order and security*, *accountability and rule of law*, *administrative efficiency, basic infrastructure*, and *local governments' coordination*. We conducted principal component analysis on questions related to the first three dimensions, and found that by and large the questions loaded on these dimensions as expected. Nevertheless, it was interesting to observe that the questions on corruption fell under *administrative efficiency* instead of *accountability and rule of law*. It seemed that to businesses, corruption is more an issue of specific administrative process than a general governance one. The question on property rights, meanwhile, was loaded with items on political condition and public safety. This suggests that businesses may consider property rights more as a security issue than a transactional one. Whether these findings can be generalized beyond Indonesian business managers requires further study, but in any case, they agree with Knoll and Zloczysti's (2011) concern about the construct validity of some widely used aggregate governance indices (*e.g.*, the World Bank).

The identified pattern of governance satisfactoriness also suggested possible nested relations among the above dimensions: *order and security* are preconditions for the institutional infrastructures of *accountability and the rule of law*, which are in turn preconditions for *basic physical infrastructure*, *local governments' coordination*, and *administrative efficiency*. Notably, at least two distinctive paths may be trodden for development: one focuses on providing better hard basic infrastructure such as roads and internet service, and the other improving soft institutional infrastructures for better intergovernmental coordination; and yet it was the satisfactory presence of *both* of these conditions that induced the most business investments. Finally, our data also showed that *administrative efficiency* was preconditioned by satisfactory *local governments' coordination*. This corresponded with our field interviews with local officials in a province on the island of Sumatra (August 2014) that one of the most difficult tasks for their provincial investment coordination board was to harmonize and streamline the business registration

3. Tempo.co. (2015). "Gov't to revise special allocation fund for 2016". Updated 30 June, 2015; accessed January 30, 2016. http://en.tempo.co/read/news/2015/06/30/056679736/Govt-to-Revise-Special-Allocation-Fund-for-2016.

processes created by various regional governments, which were primarily interested in generating incomes from administrative charges and protecting local businesses.

Meanwhile, various governance conditions were found to be more necessary conditions for development. Rather than correlating significantly as individual factors with business investments (except *basic infrastructure*), it was the number of these conditions combined which increased with investments. Governance related the most with business investments when four or at least three of its dimensions were satisfactory (especially with OS, ARL, BI and LGC). Nonetheless, not all kinds of investment decisions were found to have such a relationship. Only short- to medium-term decisions on staff expansion (hiring and training) and product innovation were found to be related; longer-term investments in equipment upgrading and research and development were not. These findings, in addition to the nested relations discussed above, showed the inadequacy of conventional statistical methods (Ragin, 2008) in understanding the nature and influence of governance conditions in decentralization reforms.

Most importantly, the two main findings from our analysis (*i.e.*, the great varieties in governance among provinces, and the increase in short- to medium-term business investments with satisfactoriness of a combination of governance conditions) together provided good evidence, and arguably some qualification, for the hypothesis that governance is an important mediator in decentralization reform (Bardhan, 2002; Faguet, 2014). Decentralization is not a silver bullet for development for the developing countries, and its successful implementation depends on getting the governance right.

Notably, there are some anomalies in our findings which demand further explanations. Three provinces demonstrated positive outcomes in all three short- to medium-term investments while reporting less than satisfactory governance conditions. Looking into their political-economic situations and major economic activities, we found some alternative explanations. Papua Barat, one of these provinces, was granted provincial status only recently in 2004 with its separation from the original province of Papua. It was granted special autonomy from the central government seemingly to alleviate separatist tension. The arrangement also allows the province to retain most of its revenues from its rich natural resources such as gold, copper, oil and gas. The reported positive investment outcome of the province reflects such political arrangement. Kalimantan Tengah, another anomaly from our findings, presents a slightly different scenario. Weak in industrial production and absent a major urban center, it relies primarily on tourism, as well as palm oil plantations and timber from its vast forest. The limited diversity of its economic activities does not seem to require sophisticated governance conditions other than a politically stable and secure business environment. Finally, Sulawesi Utara boasts mainly fisheries and spices, yet it also deep seaports and is strategically located on the two major international sea lanes connecting the Pacific and Indian Oceans. The province's positive investment sentiment might have been sustained by such geographical advantages and further promoted by the anticipation of favorable national infrastructural planning in the near future. Overall, political power, economic structures as well as geographical locations seem to complement accounts of governance when inducing economic activities and development in the decentralized units. More careful comparative studies are needed to tease out the influence of these as well as other important local dynamics.

All in all, our findings support the literature's call for researchers and practitioners to pay special attention to the political-institutional complex in which decentralization takes place. The outcome of decentralization may be suboptimal in developing countries because good governance conditions and practices are not in place. This study elaborated on the potential influence of various dimensions of governance on development, and looked into the case of Indonesia for empirical evidence. Our findings demonstrated that despite the uniform decentralization reform introduced in Indonesia, great varieties can be found among individual provinces in the perceived qualities of their various physical and institutional infrastructures, and reported investment tendencies from local businesses. Benefiting from a set-oriented analytical approach, the findings suggested that satisfaction with some governance dimensions might be preconditions for the others, and short- to medium-term investment decisions of businesses (measured as planned/actual staff expansion and product innovation) were related to a combination of satisfactory governing dimensions. These findings complement conventional statistical methods by analyzing the mediating role of governance in decentralization reforms. Further research may be pursued to understand in detail how individual as well as various combinations of physical and institutional infrastructures may be conducive to the impacts of decentralization on development.

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Appendices

A. Descriptive statistics

	N	Min.	Max.	Mean	Standard Deviation
Administrative Efficiency	33	1.80	5.72	3.3943	0.93826
Local Governments' Coordination	33	1.21	6.46	4.2708	1.13036
Basic Infrastructure	33	2.15	7.07	4.4862	1.22684
Accountability and Rule of Law	33	2.36	5.72	4.5422	0.86360
Order and Security	33	3.39	7.28	5.8476	0.98182
Equipment Upgrading	33	5.25	8.43	6.8546	0.76393
Staff Hiring	33	0.00	1.00	0.6970	0.46669
Staff Training	33	4.00	7.15	5.5799	0.66244
New Products	33	4.00	7.00	5.5469	0.69383
Research and Development	33	3.14	6.45	4.9065	0.66156
Valid *N* (list-wise)	33				

B. Correlations

	Administrative Efficiency	Local Governments' Coordination	Basic Infrastructure	Accountability and Rule of Law	Order and Security	Equipment Upgrading	Staff Hiring	Staff Training	New Products
Local Governments' Coordination	0.716**								
Basic Infrastructure	0.424*	0.543**							
Accountability and Rule of Law	0.589**	0.826**	0.667**						
Order and Security	0.391*	0.538**	0.629**	0.613**					
Equipment Upgrading	-0.179	0.029	0.259	0.205	0.187				
Staff Hiring	0.181	0.330	0.214	0.203	-0.072	0.188			
Staff Training	0.212	0.084	0.182	0.049	0.099	0.306	0.279		
New Products	-0.051	0.014	0.365*	0.124	0.045	0.289	0.121	0.346*	
Research and Development	0.040	-0.167	-0.073	-0.176	-0.158	0.133	0.015	0.474**	0.440*

*** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed)*

C. Governance conditions and measures

Governance conditions	Measures
Administrative Efficiency	- The time needed to deal with permits and other public documents or matters is not burdensome - Administrative requirement to deal with permits and other public documents or matters is not burdensome - Corruption is not a severe problem
Accountability and Rule of Law	- In the province, judiciary services are readily accessible - In the province, judiciary bodies are independent and fair - In this province, the government carefully considers the voices of businesses and citizens in making its policy decisions - In this province, the government regulators closely follow the laws and regulations in their enforcement - In the province, contracts are respected and enforced - Public contracts are awarded based on meritocracy (not favoritism or kickbacks)
Order and Security	- Control of crimes and violence in the province is effective - The political condition (including ethnic and religious relations) in the province is stable - Businesses and citizens don't have to worry about their property rights
Local Governments' Coordination	- Laws and regulations across different local governments in the province are harmonized - There is good collaboration and coordination among local governments within the province
Basic Infrastructure	- Quality of power supply - Quality of water supply - Quality of roads - Access/coverage of the internet

D. Number of respondents from each province

No.	Province	Participants	No.	Province	Participants
1	Aceh	19	18	Maluku	23
2	Bali	16	19	Maluku Utara	12
3	Bangka Belitung, Kepulauan	22	20	Nusa Tenggara Barat	30
4	Banten	15	21	Nusa Tenggara Timur	19
5	Bengkulu	21	22	Papua	24
6	Gorontalo	21	23	Papua Barat	28
7	Jawa Barat	21	24	Riau	30
8	DKI Jakarta	28	25	Sulawesi Barat	22
9	Jambi	16	26	Sulawesi Selatan	43
10	Jawa Tengah	36	27	Sulawesi Utara	31
11	Jawa Timur	13	28	Sulawesi Tengah	23
12	Kalimantan Barat	21	29	Sulawesi Tenggara	16
13	Kalimantan Selatan	25	30	Sumatera Utara	10
14	Kalimantan Timur	19	31	Sumatera Barat	13
15	Kalimantan Tengah	20	32	Sumatera Selatan	25
16	Kepulauan Riau	13	33	Yogyakarta, DI	18
17	Lampung	32		Total	725

E. Dimensions of governance

Governance conditions	Loadings		
	ARL	AE	OS
In this province, the government regulators closely follow the laws and regulations in their enforcement	**0.860**	0.194	0.228
In the province, judiciary services are readily accessible	**0.833**	0.343	0.074
In this province, the government carefully considers the voices of businesses and citizens in making its policy decisions.	**0.772**	0.206	0.307
In the province, judiciary bodies are independent and fair	**0.766**	0.279	0.274
Public contracts are awarded based on meritocracy (not favoritism or kickbacks)	**0.727**	0.177	0.165
In the province, contracts are respected and enforced	**0.641**	0.242	0.337
The time needed to deal with permits and other public documents or matters is not burdensome	0.330	**0.893**	0.058
Administrative requirements to deal with permits and other public documents or matters are not burdensome	0.314	**0.869**	-0.041
Corruption is not a severe problem	0.168	**0.617**	0.310
Control of crimes and violence in the province is effective	0.258	0.326	**0.830**
The political condition (including ethnic and religious relations) in the province is stable	0.205	-0.165	**0.799**
Businesses and citizens don't have to worry about their property rights	0.414	0.362	**0.613**

Note: Dimensions were derived using principal component analysis with varimax rotation; Kaiser-Meyer-Olkin index = 0.769; Bartlett's test of sphericity was significant at the *0.001 level. Boldface items in each column are those used for the same dimension.*

F. Governance conditions and Investment outcomes

Province	No.	AE	LGC	BI	ARL	OS	Equipment Upgrading	Staff Hiring	Staff Training	New Product	R&D
Papua Barat	23	0	0	0	0	0	1	1	1	1	0
Bali	2	0	0	0	0	1	1	0	0	0	0
Bengkulu	5	0	0	0	0	1	1	1	1	0	0
Kalimantan Tengah	15	0	0	0	0	1	1	1	1	1	1
Nusa Tenggara Timur	21	0	0	0	0	1	1	0	0	1	0
Sumatera Selatan	32	0	0	0	0	1	1	1	0	0	0
Lampung	17	0	0	0	1	0	1	1	1	0	0
Kalimantan Selatan	13	0	0	1	0	1	1	1	0	0	0
Bangka Belitung	3	0	0	0	1	1	1	0	0	1	0
Jambi	9	0	0	0	1	1	1	0	1	0	0
Sulawesi Utara	27	0	0	0	1	1	1	1	1	1	0
Maluku	18	0	1	1	0	1	1	1	1	1	1
Banten	4	0	0	1	1	1	1	0	1	1	0

Province	No.	AE	LGC	BI	ARL	OS	Equipment Upgrading	Staff Hiring	Staff Training	New Product	R&D
Jawa Barat	7	0	0	1	1	1	1	1	0	1	0
Papua	22	0	0	1	1	1	1	1	0	1	0
Riau	24	0	0	1	1	1	1	1	1	0	0
Yogyakarta	33	0	0	1	1	1	1	0	0	1	0
Kalimantan Timur	14	0	1	0	1	1	1	1	1	0	0
Sulawesi Tenggara	29	0	1	0	1	1	1	1	0	0	0
Gorontalo	6	0	1	1	1	1	1	1	1	1	0
Jakarta	8	0	1	1	1	1	1	1	0	1	0
Jawa Tengah	10	0	1	1	1	1	1	1	1	1	0
Nusa Tenggara Barat	20	0	1	1	1	1	1	1	1	1	1
Sulawesi Selatan	26	0	1	1	1	1	1	1	1	1	0
Kalimantan Barat	12	1	1	0	1	1	1	0	1	1	1
Aceh	1	1	1	1	1	1	1	1	1	1	0
Sulawesi Barat	25	1	1	1	1	1	1	1	1	0	0
Sulawesi Tengah	28	1	1	1	1	1	1	1	0	0	0