

The Recipe for  
High Health Spending:  
A Qualitative Comparative Analysis of Indonesian Districts

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# Abstract

This study investigates the path to high health spending among local governments in Indonesia under the setting where administrative, fiscal, and political decentralization are already in place. The motivation behind this study is that Indonesia still has low level of health outcomes. Small amount of health spending is one prominent reason for this lack of achievement. However, the effort in improving health outcomes and its spending today in Indonesia is not solely in the hand of central government. After decentralization, local governments play a decisive part in executing the health policy. In practice, the level of health spending among local governments in Indonesia is contrast. Therefore, conducting comparison is one promising strategy to observe this phenomenon. By utilizing fsQCA, this study compares several conditions in one model that seems likely to improve health spending among 295 local governments in Indonesia. This study proposes, local direct election, high central transfer, good leadership, and high social pressure is the combination that likely leads to high local health spending. Based on the evidence presented in this study, the combination of high central transfer and high social pressure is the path to the high health spending.

*Keywords:* Decentralization, Direct Election, Health Spending, Indonesia, fsQCA.

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# List of Abbreviations

ASEAN	Association of Southeast Asian Nations
BPS	<i>Badan Pusat Statistik</i> /Statistics Indonesia
CETRO	Center for Electoral Reform
csQCA	Crisp Set Qualitative Comparative Analysis
DAK	<i>Dana Alokasi Khusus</i> /Specific Allocation Grant
DAU	<i>Dana Alokasi Umum</i> /General Allocation Grant
DPRDs	Local Representatives
fsQCA	Fuzzy Set Qualitative Comparative Analysis
GDP	Growth Domestic Product
IDR	Indonesian Rupiah
INDO-DAPOER	Indonesia Database for Policy and Economic Research
KPPOD	Regional Autonomy Watch
KPUDs	Regional Election Commissions
MK	<i>Mahkamah Konstitusi</i> /Constitutional Court
MMR	Maternal Mortality Rate
MoF	Ministry of Finance
MoHA	Ministry of Home Affairs
NDI	National Democratic Institute
NGOs	Non-governmental Organizations
UHC	Universal Health Coverage
U5MR	Under-five Mortality Rate
QCA	Qualitative Comparative Analysis
WDI	World Development Indicators
WHO	World Health Organization

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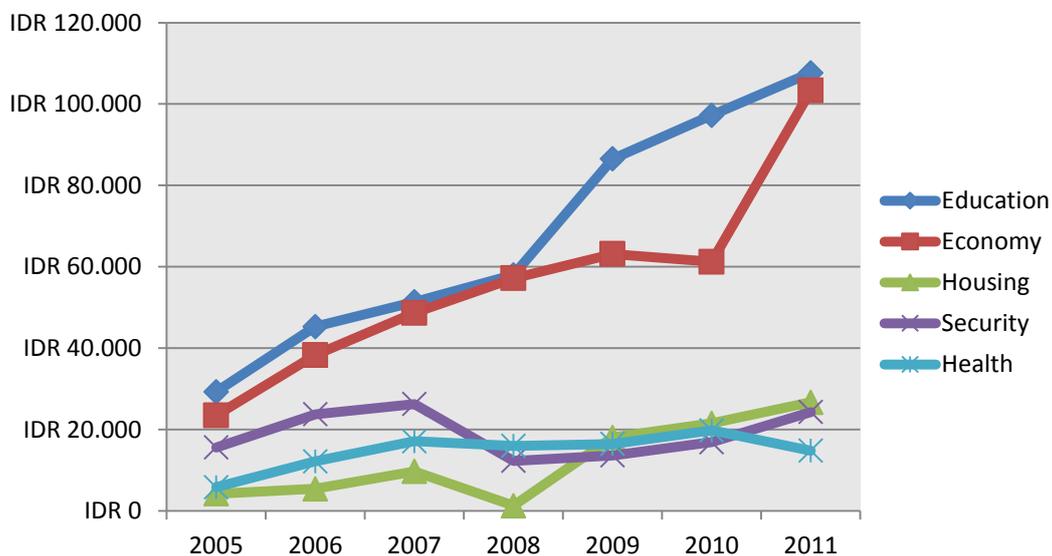
# 1 Introduction

## 1.1 Health Condition in Indonesia

Health is an essential sector in Indonesia. For example, health is among sectors that have an explicit purpose to pursue Millennium Development Goals (MDGs) by 2015.<sup>1</sup> Moreover, Indonesia is also aiming to achieve universal health coverage (UHC) for all Indonesian by 2019 (Harimurti et al. 2013 p v). However, despite its importance, Indonesia still relatively has low level of health funding.

In Indonesia, the combination between public-private provisions funds health services. However, the leading role and the majority source of funding are still in the hand of the public sector (Ibid p 5).

**Graph 1.1: Trend of Central Government Spending Based on Functions, 2005 - 2011 (In Million IDR)**



Source: Author's compilation based on the data from the Ministry of Finance (MoF).

Notes: 2005 & 2006 are realization and 2007 – 2011 are allocation data.

As displayed by Graph 1.1, the trend of government health spending in Indonesia has slightly improved after 2005. However, from 2007 to 2009, it

<sup>1</sup> Health sector is intended to pursue specifically goals number four, five, and six (UN 2015). The information is available here: <http://www.un.org/millenniumgoals/>

leveled out and then decreased in 2010. Moreover, the comparison between health spending and several development sectors' expenditures also portrays a rather contrasting figure. The spending on health compared with these sectors is substantially small, particularly with education and economy sector.

Consequently, Indonesia has low scores on several health outcomes. In 2011, Indonesians had a slightly lower level of life expectancy at 70 years compared with the average of ASEAN developing countries' score at 71 years. Moreover, Indonesia also had inferior results in measles vaccination rate and maternal mortality rate (MMR) compared with its ASEAN neighbors, most notably with Malaysia and Thailand (see Table 1.1).

**Table 1.1: Health Outcomes among ASEAN Developing Countries in 2011**

Country	GDP Per Capita (US\$)	Total Life Expectancy at Birth (years)	U5MR (per 1,000 live births)*	Measles Rate (%)	MMR (per 100,000 live births)**
Cambodia	810	71	42	93	200
Indonesia	2,920	70	32	80	210
Lao DPR	1,090	67	77	69	270
Malaysia	8,840	75	9	95	31
Myanmar	-	65	54	88	220
Philippines	2,620	68	31	79	120
Thailand	4,620	74	14	98	28
Vietnam	1,390	75	25	96	51
Average	3,184***	71	35	87	141

Source: Author's compilation based on the data from World Development Indicators (2015).

Notes: \* = Under-five Mortality Rate (U5MR) the score is the lower, the better, \*\* = Maternal Mortality Rate (MMR) data from 2010 and the score is the lower, the better, and \*\*\* = without Myanmar.

Given these facts, resources become one prominent concern for Indonesia in order to increase its health outcomes. Accordingly, in order to improve its health outcomes, first critical requirement for Indonesia is to invest more in its health sector (Kristiansen & Santoso 2006 p 258; Simatupang 2009 p 89).

However, it is worth to note that the effort in improving health spending in Indonesia is not solely in the hand of central government. Indonesia has been practicing decentralization since the end of the twentieth century or right after the demise of the authoritarian New Order regime in 1999. Decentralization has devolved the responsibility of public sector to provide public services including

health to the local level. Decentralization gives a strong message that the local governments have become decisive players in improving the health sector especially after the implementation of fiscal decentralization where the majority of health budget is transferred to district level (Simatupang 2009 p 20; Harimurti et al. 2013 p 7). Moreover, the implementation of the local direct election in 2005 has also brought the opportunity to strengthen the execution of fiscal decentralization. Directly elected local leaders are expected to accelerate the improvement of health outcomes by spending more in social sectors including health sector (Skoufias et al. 2011 p 11 & 2014 p 16).

## 1.2 Research Problem and Question

Examining the data disaggregated by districts, local health spending among Indonesian districts varies considerably. Some districts, indeed, still have a low level of health spending (e.g., Lampung Tengah regency only has IDR 9,318 per capita in 2012).<sup>2</sup> However, some of them already have a significant high level of health spending (e.g., Kaimana regency has IDR 2,061,491 per capita in 2012).<sup>3</sup> Looking at these contrasting numbers, these distinctive results leave a question on why those differences happened among those districts.

Several studies have been conducted to observe the impacts of decentralization especially through local direct election on local health spending in Indonesia. However, the results are relatively inconclusive and rather conflicting. For example, a study by Skoufias et al. (2014) concluded that the implementation of the local direct election had only a weak impact on domestic health spending. On the other hand, Kis-Katos & Sjahrir (2014 p 5) concluded that the local direct election had no effect on local health expenditure.

Therefore, this study argues that several other factors may also play a prominent role to affect local health spending besides local direct election such as local financial resources, leadership characteristics, as well as local social pressure. Furthermore, observing these factors and their combinations in order to find the similarities and differences within those districts is one favorable strategy

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<sup>2</sup> This amount is based on the data from the World Bank's INDO-DAPOER (please see Appendix 1.1).

<sup>3</sup> This amount is based on the data from the World Bank's INDO-DAPOER (please see Appendix 1.1).

in order to unravel the paths that lead to high local health spending as well as provide preliminary answer to solving the problem of health outcomes in Indonesia.

Equipped with the motivation. Therefore, this study raises the question:

*“What are the paths to high health spending among local governments in Indonesia after the implementation of local direct election?”*

One promising approach to answering the research question is by conducting a configurational comparison. Moreover, one particular technique in a configurational comparative approach is Qualitative Comparative Analysis (QCA). This particular method, through examining various factors as well as their combinations, is capable to reveal the path without ignoring the notion of causal complexity (Ragin 2008 & 2014; Kenworthy & Hicks 2008; Rihoux & Ragin 2009; Schneider & Wagemann 2012).

Accordingly, the aim of this study is to find the paths that lead to high health spending among local governments in Indonesia. Moreover, this paper adds to the stock of growing empirical evidence on the advantages and disadvantages of the decentralization especially in developing countries under the setting where administrative, fiscal, and political decentralization are already in place. This research also complements previous studies on health policy by employing a relatively new model as well as new approach in investigating the problem of health sector.

### 1.3 Outline

The remainder of this study is organized as follows. Chapter 2 is dedicated to explaining the decentralization concept in general as well as the decentralization reforms in Indonesia and explains how the decentralization system empowers local governments to have more power and authority to manage their own jurisdictions. The decentralization system and reforms in Indonesia are explained in order to show the background setting of this study. Chapter 3 discusses the determinants of local health spending where the implementation of the local direct

election, the central transfer, the local leadership, and the social pressure are taken into consideration. Chapter 4 explains the methodology and the data that employed. In chapter 5, the main analysis of the study is described with utilizing QCA particular tool namely the truth table. In chapter 6, the findings are interpreted. Finally, chapter 7 wraps up this study.

## 2 The Background: Decentralization

### 2.1 Concept of Decentralization

This part explains the concept of decentralization in general as well as clarifies its various forms and dimensions. This section aims to give the reader some initial insights on decentralization concept which is useful for reading this study further.

#### 2.1.1 Decentralization

Is not easy to define decentralization in simplest meaning as possible since it covers many forms and works across dimensions. Nevertheless, this study uses the relatively comprehensive definition of decentralization by Rondinelli (1981) since it not only captures the core definition of decentralization but also depicts decentralization fairly.

According to Rondinelli (1981 p 137), decentralization defined as the transfer of power and authority in planning, decision-making, implementing, managing public roles as well as responsibilities for public tasks from the central government and its representatives to their field agencies and to other various institutions from lower units of government or semi-autonomous public companies or autonomous local governments or non-governmental organizations (NGOs) or voluntary organizations or private sectors.

#### 2.1.2 Forms of Decentralization

Decentralization has various forms. Rondinelli (1981 p 137) differentiates the form of decentralization into two types. The first is functional and areal decentralization. The functional decentralization refers to the transfer of authority to execute the particular task to particular institutions that work at national level or among local governments, for example, field agencies from central ministries that

handling health or education missions. The areal decentralization refers to the transfer of authority to accomplish public tasks to institutions within well-defined political boundaries such as regency, city, and province.

The second form involves the three degrees of decentralization namely deconcentration, delegation, and devolution. Deconcentration refers to the shift of obligation from central governments to staff located at local representative offices without authority to perform the jobs freely, in other words central government commands on how to perform the tasks (Rondinelli 1981 p 137; Rondinelli 1983 p 14-15). Therefore, deconcentration considered as the lowest form of decentralization, and some argue that this form of decentralization is unlikely to bring advantages, but only disadvantages of decentralization (Litvack et al. 1998 p 4). Moreover, this kind of decentralization is usually happened in unitary countries without independent local governments where central field agencies are only to execute public services delivery in more effective and efficient manner (Ibid p 4).

The second degree of decentralization is called delegation, it refers to the transfer of authority and responsibility for policy-making and management of specific public tasks from central government to local governments or other institutions that not under direct control of central government, but completely accountable for those tasks (Ibid p 6). Therefore, this form of decentralization represents a more extensive form of deconcentration, and it also perceived as a strategy to remove some functions from inefficient government bureaucracies as well as the strategy of central government to keep highly profitable resources (Rondinelli 1983 pp 19-20).

The last form of decentralization is devolution. Devolution refers to the transfer of authority for decision-making, finance, and management to autonomous local governments that outside the control of central government (Litvack et al. 1998 p 6). As Rondinelli (1981 p 138 & 1983 p 25) also stated that this is the most extreme form of decentralization where local governments should be given full authority to exercise their public tasks within clear geographical boundaries and without under direct control from central government.

### 2.1.3 Dimensions of Decentralization

Observing several dimensions of decentralization from political, administrative, and fiscal dimension is beneficial to the fruitful understanding of decentralization. Yet, there is sometimes overlap and fuzzy definition in describing any of these dimensions. Moreover, all these dimensions can transform within dimensions and even into multi-dimensions at once across governments and sectors. Therefore, exposing some preliminary boundaries of these dimensions is essential when observing decentralization in general.

The first dimension is the political dimension of decentralization. This dimension denotes that the process of selection and competition of local representatives and local leaders through instrument of election or appointment lets citizens to choose better their representatives and leaders as well as to make those elected officials deliver better the needs of their citizens or, in other words, accountable (Ivanyna & Shah 2012 p 5). An example of this dimension is the implementation of the election at the local level to elect local representatives and local leaders by local citizens (Ahmad et al. 2008 p 4).

The second dimension is the administrative dimension of decentralization. This dimension suggests that the transfer of responsibility for the planning, financing, executing, and management of some public tasks from the central government and its agencies to field representatives of government agencies or local governments or public companies or NGOs or voluntary organizations or private sectors. This dimension in its practical application involves the three degrees of decentralization namely deconcentration, delegation, and devolution. In other words, this dimension denotes the application of power transfer into regulatory actions (Litvack et al. 1998 p 6; Ivanyna & Shah 2012 p 5).

The third is the fiscal dimension of decentralization. This dimension centers on the financial arrangement and responsibility as a fundamental element of decentralization (Ahmad et al. 2008 p 4). This dimension sets the financial arrangements including collecting local taxes or receiving intergovernmental transfer as well as the decisions about spending (Litvack et al. 1998 p 6). Moreover, fiscal decentralization comes in various forms including own revenue from taxes or charges, intergovernmental transfers, and borrowing (Litvack et al.

1998 pp 11–12; Ahmad et al. 2008 p 4). However, in many developing countries, the major source of fiscal decentralization is intergovernmental transfers. In these countries, usually local governments still rely heavily on central transfer even though some of them already had the authority to levy taxes.

In addition, some governments also shift responsibility for functions from the public to the private sector, the practice that called as privatization. Privatization lets tasks that had been mainly or exclusively the responsibility of government to be carried out by private sectors such as businesses enterprises or community groups or NGOs (Rondinelli et al. 1983 p 28).

## 2.2 Decentralization in Indonesia

In Indonesia, decentralization reforms happened in staggered manner within three distinctive phases. It is important to observe the changes that occurred in these stages through the three dimensions of decentralization since it constructs the form and the practice of current decentralization in Indonesia.

### 2.2.1 New Order Era

In New Order era, Indonesia was under a highly centralized and autocratic government. However, despite practicing a high-centralized form of government, the central government has started giving some “half-heartedly” decentralization practice to local governments through Law 5/1974. This law introduces lower degree practices of decentralization including exclusive election only to the second tier of local government namely regencies and cities. Moreover, provinces as the first tier of local government were excluded from the practices because some experiences with separatism movement that happened in 1950s (Simatupang 2009 p 6). In this era, the Ministry of Home Affairs played a prominent role in organizing all political selection and appointing local representatives from an exclusive list of nominees (Skoufias et al. 2011 p 5). Administratively, according to Law 5/74, local governments in Indonesia consist of a local leaders, executive field agencies, and local representatives (DPRDs) (Ibid p 5). Fiscally, local

governments in Indonesia were highly reliant on central government transfers as well as had limited own source incomes (Ibid p 5).

Nevertheless, in practice, this law was never fully executed as the regime under New Order was focused more to enhance political stability and regional unity in response to the communist revolution in 1965 (Simatupang 2009 p 6).

### 2.2.2 “Big Bang.”

Asian Financial Crisis in 1997 played a decisive role in the fall of New Order regime as well as in the implementation of “real” decentralization. Besides, the central government was also in urgent need to implement decentralization reform to suppress the growing demands of independence from provinces that had dissatisfaction with the central government and had long history of armed conflict such as Aceh (Simatupang 2009 p 6; Kis-Katos & Sjahrir 2014 p 6). Therefore, in 1999, two historic laws emerged under the new state administration led by President Habibie. These two laws namely Law 22/1999 regarding Local Administration and Law 25/1999 regarding Financial Balance between Central and Regions provide guidance for the implementation and execution of higher decentralization practices that set to be enacted no later than 1 January 2001. This famous event was called as “Big Bang” decentralization reform in Indonesia (Simatupang 2009 p 7).

Fiscally, the local leaders, mayors in urban areas or cities and regents in rural areas or regencies, have major controls to set the priorities of their jurisdictions, including the priorities to allocate the budget as well as its spending (Skoufias et al. p 6).

Administratively, this reform made the local governments has more decentralized features although still under a unitary system. Under this reform, the central government empowered more authority in delivering various public tasks to the two tiers of local governments; to provinces as the first tier of local government as well as to regencies and cities as the second tier of local government. Moreover, the central government made the provinces as their representation in the local region, but the two tiers of local government legally have no hierarchic relationship. Furthermore, provinces also have given more

responsibility to synchronize regencies and cities under their jurisdictions in executing public tasks, especially if more than one local government performs those tasks. However, six particular functions namely defense, security, justice, foreign affairs, fiscal affairs, and religion still directly under central government responsibility (Kis-Katos & Sjahrir 2014 p 7). In addition to Law no. 22/1999, the central government also issued Government Regulation (PP) 129/2000 regarding the Formation, Merging, and Liquidation of Local Governments. This regulation introduces a wider administrative decentralization. Prior to 2000, the establishments of new local governments (or the event which is called as proliferation) were mostly the result of central initiatives. However, this new regulation encourages the local initiatives for establishments of new local governments. With this law in practice, the number of local government has grown significantly in Indonesia (Simatupang 2009 p 7).

Politically, the directly elected local representatives (DPRDs) have more power and authority under this new arrangement. Law 22/1999 has given the right to the local representatives to elect the local leaders (Kis-Katos & Sjahrir 2014 p 7). Moreover, the local representatives also had the power to impeach local heads through their unsatisfactory judgment on local heads' annual accountability reports (Skoufias et al. 2011 p 6). Local representatives and local leaders serve for the period of five years and for a maximum of two terms (10 years in total) in the office. However, there is also the possibility to end before the term of five years finishes, for example because of death, illness, impeachment, as well as the establishment of new jurisdictions or proliferation.

Nevertheless, according to Skoufias et al. (2011 p 6), although the practice of political decentralization has been at a higher level, two concerns have showed up regarding the transfer of political power to the local representatives to select, control, and even dismiss local leaders. First, the local representatives seemed to abuse their power by intimidating the local leaders through impeachment and disrupting the balance of power between legislatives and executives. Second, the local representatives also appeared becoming more and more susceptible to money politics as their power and authority increased especially when the local leaders are running for re-election or when delivering annual accountability reports.

### 2.2.3 Post New Order

In 2004, the two previous laws on decentralization were amended. The two new decentralization laws namely the Law 32/2004 concerning Regional Autonomy and the Law 33/2004 concerning Inter-governmental Fiscal Relations revised those “Big Bang’s” laws.

Administratively, prior to 2004, there was no clear hierarchical line on the relationship between provincial and district governments. This unclear hierarchical relationship made the coordination between provinces as the first and districts as the second tier of local government difficult since districts were not obligatory to respond to provincial government. However, the new law resolved this issue. Law 32/2004 has stated clearly the role of provincial governments as the arm-length representation of the central government in the regions, thus giving them the power to coordinate districts within their jurisdictions (Simatupang 2009 pp 8-9). Moreover, the PP 129/2000 regarding the Formation, Merging, and Liquidation of Local Governments have been replaced with the PP 78/2007 which made the provinces more effective in filtering the creation of new local government (proliferation) under their jurisdictions (Ibid p 9).

Politically, as the previous arrangement brought some concerns regarding the abuse of power by the local representatives, some significant changes has been made. The new law made the local leaders more directly accountable to the citizen by implementing local direct election as opposed from the previous law where governors appointed by the President as well as regents and mayors elected by local representatives (Ibid p 9). This law entails several new obligations for the local leaders such as to control the jurisdiction along with the local parliaments, to implement local laws; including budget, to deliver accountability reports to the local representatives and central government, and to provide information to citizens on the government’s performance (Skoufias et al. 2011 p 7).

Fiscally, the central government plays a prominent role in administering the budget as they still manage the major proportion of financial matter. In this period, the central government plays its role by collecting and transferring the budget to the local governments in order for them to perform the provision of essential public tasks. Moreover, the central government also manages the

majority of tax arrangements. However, there are some significant changes in the type of budget where in the pre-decentralization period the majority of budgets were earmarked. In this era, the majority of the budgets is not earmarked and can be utilized by the local governments freely. For an example of these budgets are shared tax, natural resource revenues, and central transfer from the General Allocation Grant (DAU). Additionally, local governments also receive earmarked budgets in the form of the Specific Allocation Grant (DAK) (Kis-Katos & Sjahrir 2014 p 8).

This latest decentralization reform encourages the improvement of accountability and transparency between the local leaders, local representatives, and their citizens through the implementation of the local direct election. On the other hand, there is still no significant improvement in the fiscal arrangement. As a result, local governments still rely heavily on central transfer in fulfilling their public tasks.

## 3 Determinants of Health Spending

This chapter determines several factors that may affect the level of health spending among local governments in Indonesia. This study proposes the implementation of local direct election, the high degree of central transfer, the presence of good local leaders, and high social pressure are factors that likely to bring high domestic health spending.

### 3.1 Local Direct Election

The decentralization reform in 2004 has changed the political constellation in Indonesia. As a result, local citizens have given the right to elect directly their leaders where previously local representatives elect the local leaders. This new electoral arrangement offers the notion of improving accountability and responsiveness from directly elected local leaders because it deals with direct procedure for local citizen to be able to “reward” and “punish” their leaders through election and re-election, thus this arrangement is expected to bring more incentives for a better performance (Person & Tabellini 2004 p 80).

#### 3.1.1 Theory of Electoral Institutions

The correlation between local direct election as a part of electoral institutions and local governments' expenditure has become the primary focus of decentralization literature (e.g. Skoufias et al. 2011 & 2014; Kis-Katos & Sjahrir 2013 & 2014). As Oates (2008 p 321) stated, political incentives and electoral processes matter in understanding the decentralization outcomes. In general, electoral institution comes in two main forms; parliamentarism and presidentialism (Person & Tabellini 2004 p 79). Parliamentarism can be defined as where elected representatives appoint the executive leaders or indirect election. On other hand,

presidentialism can be understood as where citizen elect the executive leaders or direct election (Ibid p 79).

Moreover, these electoral forms have high correlation and tradeoff with fiscal policy (Person & Tabellini 2004 p 94; Persson & Tabellini 2004 p 42), including spending policy. Both forms have different advantages and disadvantages in their relation to spending. However, according to Skoufias et al. (2011 p 11 & 2014 p 16), presidentialism is widely believed to have greater benefits on spending policy than parliamentarism for several reasons. First, the local direct election has a strong concept to improve accountability as well as makes the local leaders more responsive to the citizen needs. Second, directly elected local leaders are expected to allocate more on spending, either by decreasing savings or increasing borrowing. Third, the local direct election offers more incentives for local leaders on re-election, for example by increasing spending that is focused on better or more public services. Additionally, presidentialism also has a simpler chain of delegation compared with parliamentarism (Person & Tabellini 2004 p 84). From these arguments, they suggest that local direct election gives opportunity for a local citizen to choose their leader that would deliver their best expectation of public services. As for leaders, the local direct election would provide them with more incentives for good behavior and better performance.

However, some scholars argue that those ideal promises would only happen in well-functioning democracy (Ibid p 84), such in developed countries where in developing countries the story is different. There are two main reasons behind this argument. First, the low level of transparency and constrained informational transfer in developing countries bring the advantage only in the hand of local politicians where they use for the benefits of themselves or the practice so-called “local capture” (Bardhan & Mokherjee 2000; Khaleghian 2004; Reinikka & Svensson 2004; Hutchinson et al. 2006). Second, low level of education in many developing countries tends to be associated with low level of public participation in policy-making as well as low level of expectation from the citizen to the public services (Lewis 2010 p 654; Machado 2013 p 5). Moreover, the previous theories of decentralization that become the foundation of those ideas are also based on the experience and condition of developed countries, primarily United States. Accordingly, when this method applied in developing countries, the same outcomes cannot expected to materialize.

### 3.1.2 Literature Review on Local Direct Election

The prominent shift of electoral arrangement has attracted interest among scholars to observe its impacts on public services including health. One prominent strategy to observe the effects of local direct election is through observing local spending. As previous studies have argued, spending is the initial impact to investigate from the shift where the actual outcomes would show up for a relatively longer period (Skoufias et al. 2011 p 3). Moreover, spending can act as proxy to perceive if the local governments have become more responsible and more responsive to their citizens (Skoufias et al. 2014 p 14). Furthermore, spending also can be a signal for a better performance especially after the implementation of fiscal decentralization where the budget in the hand of local governments increased significantly (Shah et al. 2012 p 4). Several studies have been conducted to observe the impacts of the local direct election on local spending including health in Indonesia. As in line with the theoretical debates, the results are mixed and relatively inconclusive.

Some of the studies have found that local direct election to be positively affected local health spending. For example, Skoufias et al. (2011 pp 17-18) found that the implementation of local direct election has significant impact on total local spending per capita in districts with direct election compared with districts without direct election in 2005. However, by looking at spending disaggregated by functions, they found that local direct election had different impact on two key public sectors namely education and health where the impact on education sector is significant while the impact on health sector is weak.

Moreover, in the recent update of their study, Skoufias et al. (2014 p 22) found the beneficial proof of decentralization where political decentralization after the implementation of fiscal decentralization has made local governments more accountable and more responsive to their citizen. They found that the local direct election have increased local health spending among Indonesian districts. One particular reason they argued for the increase is that the local leaders using their authority have provided local health insurance for poor and near poor citizen. Interestingly, they also found the increase in domestic health spending is also accompanied by a decrease in “other” category of spending as this finding suggests that the local governments financed those increases without adding the

district budget deficit (Ibid p 20), as well as without burdening the tax load to local citizens (Ibid p 15).

On the other hand, some of the studies have found that local direct election have negatively affected local health spending and even concluded that local direct election had no impact on local health expenditures. For example, a study by Kis-Katos & Sjahrir (2014 p 5) stated that political decentralization, either through legislature representation as well as local direct election on local leaders, had no conclusive impacts on development spending.<sup>4</sup> Furthermore, they found a setback of decentralization under local direct election where directly elected local leaders spent less in the health sector in the district with relatively lower public health coverage rates.

Furthermore, it is important to notice that the composition of districts spending on discretionary category also changed considerably during the year of local election as well as one year before local election in Indonesia as revealed by Skoufias et al. (2014 p 22). Their finding suggests two probabilities. First, incumbents who have the desire to be re-elected were using the local budget for buying votes for re-election by increasing discretionary type of spending. Second, there is a sign of local capture practice through corruption. As shown by Delavallade (2006 p 235), corruption tends to shift the budget from social sectors such as health, education, and social protection to non-social sectors such as defense, fuel and energy, culture, and public services and order. This study also explains the reason for the shift because those non-social sectors involve bigger amount of money as well as have more discretion.

Given these facts, those studies have shown that local direct election solely is not enough to ensure the increase of domestic health spending since there are many other factors that might affect the impacts of local direct election on local health spending such as local capture and corruption (Delavallade 2006; Skoufias et al. 2014). Therefore, in order to local direct election to come about with its ideal notion, it needs to be combined with other factors such as good leadership to minimize local capture practice, high social pressure to ensure the local governments perform at their best. Hence, the local direct election is likely to be

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<sup>4</sup> According to Kis-Katos & Sjahrir (2013) local development spending are spending on education, health, and physical infrastructure.

part of causal combinations that leads to high health spending among Indonesian local governments.

## 3.2 Central Transfer

Central transfer plays a prominent role in filling the budget of the local governments in Indonesia especially after the implementation of fiscal decentralization in 2004, where the majority of local budget for performing public tasks including health is coming from the central government.

### 3.2.1 Concept of Intergovernmental Transfer

In general, according to Shah (2007 pp 2-3), there are two kinds of grant in intergovernmental finance. First is general-purpose transfer. This grant is usually arranged by law and aimed to maintain local autonomy and enhance interjurisdictional equity. Second is specific-purpose transfer or conditional transfer. This transfer is designed to offer incentives for local governments to carry out specific programs or priorities.

Moreover, there are several roles of these grants. First is as a fiscal equalization instrument between central and local governments. Second is to pursue national goals such as preserving national standards of public services in health or education as well as synchronizing policy between central and local governments (Boadway 2007 pp 59–63).

### 3.2.2 Literature Review on Central Transfer

Several studies have confirmed revenue is correlated positively with the improvement of domestic health spending. The study by Kruse et al. (2012 p 150) found that local health spending in Indonesia is associated with the overall amount of local government revenues. In line with that finding, the report by the World Bank (2007 p 59) stated that the increase of local health spending among local governments in Indonesia is positively correlated with the rise of districts revenues; the higher the district revenue, the higher the domestic health

expenditure. However, this report also warned that the improvement in local health spending in Indonesia is not based on local needs.

In Indonesia, the local governments are still relying heavily on central transfer as their source of revenue to perform health tasks. As the study by Heywood & Harahap (2009 p 13) confirmed that local governments in Indonesia are reliant on the central government for the majority of their revenue as well as their health spending. In similar fashion, Kruse et al. (2012 p 150) found that central transfers mostly determined the improvement of local health spending in Indonesia. Moreover, Kis-Katos & Sjahrir (2013 p 14 & 2014 p 5) found that fiscal decentralization in the form of central transfer has improved the responsiveness of Indonesian local governments in the development sectors including health. They argued, informational advantages or inter-governmental competition may have led the increase in the local development spending after the implementation of fiscal and administrative decentralization (Kis-Katos & Sjahrir 2014 p 19).

One prominent form of central transfer in Indonesia is General Allocation Grant (DAU). This grant is the most prominent type of central transfer in Indonesia as well as funds the majority of local governments spending including health. Moreover, this grant gives full discretion to local governments to spend the funds according to their programs (Brodjonegoro & Martinez-Vazques 2004 p 165).

From this line of studies, it suggests that central transfer in the form of DAU as the primary source of districts' revenue among local governments in Indonesia plays an important role to increase local health spending. Therefore, it alone seems likely to increase the level of local health spending. However, since this study uses DAU to represent central transfer where central government gives full discretion to local governments in utilizing DAU, this discretion practice seems also to encourage local capture as warned by the World Bank (2007). Therefore, this factor needs to be combined with other factors such as good local leadership to ensure that the (part of) DAU is utilized for local health sector and high social pressure to enhance transparency in its practical application. Hence, this condition is likely to be part of causal combinations that leads to high local health spending.

### 3.3 Leadership

Several reasons for why leadership factor is important to consider in improving the local health spending among Indonesian districts. First, after the implementation of local direct election in Indonesia, local leaders are under direct spotlight from local and national mass media (Luebke 2009 p 224) as well as under heavy attention from local citizen as they are center of policy where their actions would deeply expose as well as heavily commented. Consequently, their words would also bring more magnitude and impact on local political constellation compared with other local political actors such as local representatives. Second, since the local leaders are directly elected, they have more incentives for doing good behavior in the form of re-election by local citizen (Person & Tabellini 2004 p 80) as well as getting national acknowledgement and political promotion by political parties (Enikolopov & Zhuravskaya 2007 p 2282). Lastly, as Luebke (2009 p 224) argued, local leaders have bigger window of opportunity to push policy reform that based on local citizen interests than local representatives in Indonesia, since local representatives are often too busy to keep their position in the “game” by maintaining their relationship with political parties and “sponsors” that in the end would put less priority on local citizen interests.

#### 3.3.1 Theory of Transformational Leadership

There are several theories on leadership. One prominent theory of leadership is transformational leadership or relationship theory which is first introduced by James MacGregor Burns in 1978 (Ciulla 1995 p 15). This theory centers on the nature of morally good leadership (Palanski & Yammarino 2009 p 407; Brown & Trevino 2006 p 598). This theory suggests that having good integrity is part of good leadership.

Several studies have observed the connection between leadership and integrity based on this theory (Martin et al. 2013) or ethics (Ciulla 1995). Moreover, several studies also concluded that good leaders are correlated positively with high integrity (Kirkpatrick & Locke 1991; Parry & Proctor-Thomson 2002). In their study, Parry & Proctor-Thomson (2002 p 92) found that

transformational leadership and the perceived integrity of leaders are significantly and positively related.

Furthermore, Kirkpatrick & Locke (1991 p 49) in their study emphasized the importance of honesty and integrity for leaders. In their study, integrity refers to consistency between word and action where honesty refers to being truthful or non-deceitful. Moreover, these two traits are also the foundation of a good relationship between leaders and followers (Ibid p 53).

### 3.3.2 Literature Review on Local Leadership

Leadership is one promising factor that affects policy reform (Mahbubani 2007; Luebke 2009). As have been stated by Mahbubani (2007 p 189), the leadership is one prominent factor to manage successful governments. However, as have been emphasized by Luebke (2009), leadership approach is often under-estimated although is not entirely new in political reform literature.

Leadership is among factor that capable to form policy outcomes by introducing reforms and directing bureaucratic practices (Luebke 2009 p 202; Skoufias et al. 2014 p 22). As Luebke (2009 p 225) added, local leaders in Indonesia recognize policy reforms as necessary device to gain incentives under direct election setting such as to attract voter, increase acknowledgment, and acquire donor funding. For example, Skoufias et al. (2014 p 22) found that the improvement of local health spending in Indonesia is because of the local leaders using their authority to provide local health insurance for their citizen. Moreover, the expansion of health spending can be seen as a policy reform where the expenditure on this particular sector is still relatively small in Indonesia compared with other development sectors.<sup>5</sup>

However, aside from the positive notions of leadership, there are also drawbacks of the leadership factor. As have been warned by Heywood & Choi (2010 p 11), they found that the increase of local health spending in Indonesia had no relationship with local health system outputs. In their finding, they have revealed the local capture practice in local health sector where local politicians regularly made good promises on health sector *inter alia* to implement free health

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<sup>5</sup> Graph 1.1 in Chapter 1 has shown this spending comparison.

care for all citizen. However, those good promises are only as far as strategy to attract votes from local citizen in upcoming local election, where actually there are no real commitment and concrete action to improve the performance of local health system and outcomes.

By looking at these facts, it is important to acknowledge the importance of good leadership factor in improving the local health spending and outcomes in Indonesia. In this study, good leadership is represented as having good integrity. Therefore, local leaders with high integrity are likely to be part of combinations that leads to the high domestic health spending.

### 3.4 Social Pressure

Social pressure is one prominent factor that could bring impact to how the government would perform (Adsera et al. 2003; Eckardt 2008). As Adsera et al. (2003 p 445) has stated, the performance of governments rely on how good citizens to hold them accountable.

#### 3.4.1 Theory of Public Control

According to this theory, there are two key determinants in order to guarantee the social pressure may bring impact to the performance of governments. First, there is should be direct election mechanism that allows citizen to punish and reward local leaders as well as to ensure good behavior from them. Second, the degree of information that the local citizen can access is also a factor to improve how the local government performs (Adsera et al. 2003). Since the mechanism of direct election is already part of the determinant in this study, hence this study focuses on the latter key factor namely the degree of information access.

This theory also added that the level of information local citizens have, either through mass media, personal networks or their own direct experiences, limits the chances for politicians to commit in political corruption and mismanagement (Ibid p 448). Moreover, as citizens have more clear information about the policies implemented by politicians and the setting in which they are executed, politicians have less opportunity to absorb resources for their benefits (Ibid p 448) or the

famous practice so-called local capture (Bardhan & Mokherjee 2000). Furthermore, Eckardt (2008 p 14) concluded that the higher access of information is correlated positively with higher government performance. As Ferraz & Finan (2011 p 1307) also added, one key factor to improve the performance of government is by improving the access for local citizen on information.

### 3.4.2 Literature Review on Social Pressure

Mass media is one form of a prominent intermediary which capable to create pressure and incentives to local governments' performance (Besley & Burgess 2001) and spending (Bruns & Himmler 2010). According to Omoera (2010), media have five important roles in ensuring good governance practices. First is the role of media as information carriers. Second is the role in shaping the policy-making agenda. Third is the role to watch over bad governance practices. Fourth is the electioneering role that delivering information on political campaign agenda to voters. Last is whistleblower role to report bad governance practices. With these roles, media is capable to enhance transparency and information delivery to local citizen on how the government performed.

Moreover, mass media is also capable to collaborate side by side with another group that has a similar interest in ensuring good governance practices such as NGOs. The study by Triwibowo (2012) confirmed that the collaboration between NGO and local media in Makassar Indonesia has led to the increase of government responsiveness in health services for the poor. The study also confirmed that local citizen in Makassar is delighted by the collaboration that provides the local citizen with effective control on the performance of their local government.

Furthermore, the role of mass media may also support the increase of local government health spending by giving incentives to politicians that react according to broad citizens' need thorough publications (Lewis 2010 p 654).

The role of media in enlightening the local citizens and enhancing transparency is well-acknowledged by this line of studies. This practice, in the end, is also capable to affect the local governments' performance on health spending as shown by Triwibowo (2012). Given these facts, therefore, local media

can be a part of a combination that leads to high health spending among local governments in Indonesia.

### 3.5 Where this study goes from here?

First, it is widely believed that the local direct election would bring more incentives for local leaders as well as more advantages for local citizen (Oates 2008). However, several studies found that local direct election did not bring significant improvements in the local development sector especially in the health sector (Kis-Katos & Sjahrir 2014). This happens because various reasons. First, informational transfer and transparency practice are constrained. Thus, this constraint leads to local capture practice by local leaders (Bardhan & Mokherjee 2000; Khaleghian 2004 p 180; Reinikka & Svensson 2004; Hutchinson et al. 2006). Second, the low level of education in developing countries has made citizen less aware of their rights and needs including health (Lewis 2010; Machado 2013).

Second, resources play a significant role in every aspect of policy execution including health. Therefore, the presence of revenue through central transfer is playing an important part in improving the local health spending. Several studies have confirmed this argument (Heywood & Harahap 2009; Kruse et al. 2012; Kis-Katos & Sjahrir 2013 & 2014). This study uses General Allocation Grant (DAU) as a proxy of central transfer where this grant puts discretion in the hand of local governments. Therefore, this study proposes, this factor needs to be combined with good leadership and social pressure as well as mechanism of punishing local leaders through direct election in order to ensure the government to utilize this particular grant for health sector.

Third, good local leadership would bring differences in how the local governments perform in Indonesia especially in health sector where this sector is still left behind compared with other development sectors particularly with education sector. Accordingly, the improvement in this sector needs higher commitment and reformist agenda (Luebke 2009). This study argues this factor is the key to eliminating local capture practice that diverts the resources for public

use. Therefore, this factor is likely to be part of a combination that leads to high local health spending among Indonesian districts.

Lastly, public control through mass media is also likely to be part of a combination that leads to high local health spending. Mass media enhances the information transfer for local citizen in order to inform their needs on health and the policy of their leaders on health sector. Therefore, this factor is also likely leads to high local health spending.

To sum up, in order for local health spending to improve among Indonesian districts, several factors are have to be in place; from the local direct election, the high central transfer, the good leadership, and the high social pressure. These factors would likely to eliminate the constraints that hamper the performance of local health sector in Indonesia such as, local capture, lack of resource, low health expectation, as well as low incentives for politicians. Therefore, the presence of this combination of factors is likely leads to high domestic health spending among local governments in Indonesia.

## 4 Methodology

This methodology chapter has two sections. The first section explains the general information on the grand method. The second section explains the particular methodology that employed in this study namely QCA. Moreover, the second section also explains respectively the process of case selection, the variables in this study including the outcome and the conditions, as well as the data that used.

### 4.1 A Configurational Comparative Method

The comparative strategy has rooted deeply in any efforts of human reasoning and observation. “Thinking without comparison is unthinkable. And, in the absence of comparison, so is all scientific thought and scientific research” (Swanson 1971 in Ragin 2014 p 1). Moreover, a phenomenon can be identified as something only if it is known as different from other phenomena (Rihoux & Ragin 2009 p xvii).

The comparative method has many practices such as single case studies that capable to unravel deeply complex cases with a thick explanation. However, the result of this study is difficult to generalize. On the other hand, the configurational comparative method is not only allows observing the causal complexity behind the cases, but at the same time is capable to handle cross-case comparisons. Moreover, configurational in this approach is defined as specific combination of factors (e.g. causal variables, ingredients, determinants) that might produce the intended outcome.

Since the aim of this study is to reveal the paths to high health spending among Indonesian districts after the implementation of direct election where in practice the level of health spending among Indonesian local governments differ considerably. Thus, one promising strategy in order to answer this problem is by conducting a comparison among those local governments by observing several combinations of factors that may lead to high health spending. Therefore, this strategy is chosen since this method is suitable for observing the causal complexity behind the process as well as allows conducting cross-case studies.

## 4.2 Qualitative Comparative Analysis (QCA)

One particular configurational comparative method in political science research is Qualitative Comparative Analysis (QCA). This methodology is first introduced by the American social scientist Charles C. Ragin (1987) (Schneider & Wagemann 2012 p 9).

The logical foundations of this method are going back to the study by Hume (1758) and in particular J. S. Mill's "canons" (1967) (Rihoux & Ragin 2009 p 2). Mill's "method of agreement" and "method of difference" are the most prominent in a comparative study. The "method of agreement" refers to removing all similarities but one and the "method of difference" refers to creating the absence of a common cause, even if all other conditions are similar. Both methods focused on the organized matching and contrasting of cases in order to find a shared causal link by removing all other possibilities.

This methodology proposes to connect the gap between qualitative and quantitative methods by requiring in-depth knowledge of the cases, the area of qualitative approach, as well as detecting cross-case patterns, the area of quantitative approach (Ragin 2008). In general, this particular methodology centers on set theory for observing explicit connections as well as useful for observing causal complexity where this can be understood as situation where an outcome may be produced from several different combinations of causal factors (Ragin 2008 p 23; Schneider & Wagemann 2012 p 12).

According to Rihoux & Ragin (2009 p 3), at first, QCA has been perceived as a "macro-comparative" method. However, QCA today can be applied in the "small-N" study and the "large-N" study as well (Ibid 2009 p 4). By using QCA, the goal is not to find a model that best fits the data, but to define the number and character of the different models that exist between observed cases (Rihoux & Ragin 2009 p 8) as well as to achieve some form of "short" (parsimonious) explanation of a certain phenomenon while still providing room for causal complexity (Ibid p 10).

QCA has several specific assumptions in its method. First, QCA permits "conjunctural causation" across observed cases in causality. This means that different combinations of factors may lead to the same result. Moreover, QCA

also permits a concept of “multiple conjunctural causation” which means that different paths may lead to the same result or equifinality (Ibid p 8). Thus, QCA rejects any form of permanent causality. Second, QCA does not assume “additivity” which means that the notion that each single cause has its independent impact on the outcome is rejected. Third, a causal combination may not be the only path to a particular result, other combinations are also possible. Fourth, the uniformity of causal effects is not assumed. Lastly, causality is symmetry which means that the presence and the absence of the outcome may involve different explanations (Ragin 2008 p 17; Rihoux & Ragin 2009 p 9).

In its practical application, QCA encourages two best practices. First, QCA provides the tool that are formalized and replicable. Formalized means that the application based on particular language that is well-defined and using the rules of logic. Since these formal rules is well-defined and standardized, it allows replicability. It means another study using the same dataset and choosing the same steps will get the same results (Rihoux & Ragin 2009 p 14). Second, QCA techniques encourage transparency in its practical application. This technique demands the study to be transparent in doing the observation such as when selecting variables, selecting thresholds for calibration, and presenting the truth table (Rihoux & Ragin 2009 p 14).

According to Rihoux & Ragin (2009 pp 15-16), QCA techniques can be utilized for assessing any assumption formulated by the researcher without testing a pre-existing theory or model. Therefore, this study aims to reveal the path to high local health spending by combining several factors that seem to be decisive to one model. This study also seeks to test if this study particular model is sufficient to improve the local health spending in Indonesia. This study argues that in order to improve the health spending among local governments in Indonesia, several factors have to be in place; the implementation of the local direct election, the high central transfer, the good leadership, and the high social pressure are likely to ensure the improvement of domestic health spending in Indonesia.

Furthermore, in observing the model that proposed in this study, this study uses one variant of QCA namely Fuzzy Set QCA (fsQCA). In general, there are two main variants in QCA namely Crisp Set QCA (csQCA) and Fuzzy Set QCA (fsQCA) (Schneider & Wagemann 2012 p 13). The prominent distinction between

these two variants of QCA is how they treat and operate the conditions. In csQCA, the condition is simply divided into two binary data based on Boolean algebra which first developed by George Boole (Rihoux & Ragin 2009 p 34). The condition in csQCA is treated either as present or true signaling by “1” or as absent or false signaling by “0” (Ragin 2014 p 86). On the other hand, fsQCA offers a more comprehensive approach to labeling and observing the conditions. This approach does not force the cases to fit into two dichotomy conditions as does the csQCA and rather designed to label each case with unique degree of membership in the interval between 0 to 1 (Rihoux & Ragin 2009 p 89). Therefore, fsQCA has several advantages compare to csQCA. First, fsQCA offers a more precise and demanding assessment of set-theoretic consistency than csQCA (Ibid p 119). Second, the assessment in fsQCA is more encompassing than the assessment in csQCA where the assessment in fsQCA is based on the pattern observed in all cases and not on a small subset of cases like in csQCA (Ibid p 119).

As any other techniques in QCA, the application of fsQCA demands the study to define first the cases and then the outcome that will become the goal of observation as well as the conditions. Accordingly, the next following sections of this chapter explain respectively the cases, the outcome of the study, the conditions, as well as the data that will be used in this study.

#### 4.2.1 Case Selection

The case selection is the part where its process would be based on the aim of the study (Rihoux & Ragin 2009 p 21).

This study seeks to observe health spending in Indonesia under the setting where administrative, fiscal, and political decentralization is already in place. The implementation of fiscal decentralization has shifted the majority of health budget to local governments. Moreover, the application of political decentralization through direct election has devolved the power and authority of policy-making to local level. Given these setting, thus, in order to observe the problem of health spending in Indonesia, the most appropriate strategy is by observing the local

governments as the main recipients of budget as well as main executor of health policy.

Therefore, the cases of this study are all the autonomous second-tier local governments in Indonesia. Per December 2012, Indonesia has 501 local governments that consist of 403 regencies and 98 cities. However, this study excludes several local governments because several reasons. First, this study excludes one regency and five cities from the capital Jakarta as these local governments are non-autonomous. Second, this study eliminates the local governments that affected by district splits (proliferation) as these splits affect local governments spending pattern (Skoufias et al. 2011 p 8) as well as the new districts will have no data on fiscal transfer since the central governments start to transfer to those newly districts after a certain period of time (Fitriani et al. 2005 p 62). Given these suggestions, hence, this study focuses only on districts that unaffected by splits. From 2005 to 2012, there are 110 local governments which consist of 103 regencies and 7 cities that affected by province or district splits.<sup>6</sup> Lastly, this study excludes the local governments that had no data on the variables. This unavailability of data happened for various reasons and for the most prominent reason is the districts did not submit the financial report to the Ministry of Finance. This final category consists of 71 regencies and 19 cities. In the end, this study has cases of 295 local governments. These cases represent 167,840,705 Indonesians or 68.55 percent of the total population in 2012.

#### 4.2.2 Variables

QCA has different terms regarding its variables compared with other methodologies. Therefore, in order to avoid confusion, this study needs to explain first the basic terms for variables in QCA.

For example, in quantitative approach, the dependent variable can be defined as a variable that caused the phenomenon of a causal theory or hypothesis (Van Evera 1997 p 11). However, in QCA this is defined as an “outcome of interest.” (Schneider & Wagemann 2010 p 404) Moreover, in quantitative approach, an independent variable can be defined as a variable of the causal phenomenon or

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<sup>6</sup> This calculation is based on the data from the Ministry of Home Affairs.

hypothesis (Van Evera 1997 p 10). On the other hand, this variable is defined as condition or causal condition in QCA (Schneider & Wagemann 2010 p 404). Moreover, it is also worth to note that, since QCA has several different assumptions regarding causality, the term of condition is not independent variable such in a statistical sense (Rihoux & Ragin 2009 p 182).

Thus, after having explained the terms of variables in this particular method, this study will stick to use these terms for consistency and avoiding further confusion that may arise.

#### 4.2.2.1 Outcome of Interest

The main task of this study is to unravel the path that leads to high health spending among Indonesian local governments after the implementation of direct election. Much of the previous scholarly literature and debates concerned that direct election has brought unintended outcome or weak impact on local health spending among districts in Indonesia (e.g. Skoufias et al. 2011 & 2014; Kis-Katos & Sjahrir 2013 & 2014). Therefore, it is quite challenging and will be much fruitful to focus on the positive “direction” of local health spending by looking at the districts with high health expenditure in order to observe why they have achieved that level of spending through investigating and comparing the conditions that they have with the districts that have low health spending. Given the discussion, hence, this study focuses its observation on the high level of health spending among Indonesian local governments as an outcome of interest. The local health expenditure in this study is defined as spending allocated for local health function per capita term in 2012.

Moreover, as have been briefly stated in the first chapter, there are several reasons for why high local health spending is essential. First, local health spending has a direct impact on local citizen as well as allocated for increasing human development outcomes (Skoufias et al. 2011 p. 12; Boulding & Brown p 204). Second, health spending aims for the improvement of the very fundamental health outcomes where in Indonesia those outcomes are still lacking.<sup>7</sup> Third, health spending also has a particular task to pursue Millennium Development

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<sup>7</sup> Table 1.1 in the first chapter has shown some of these outcomes.

Goals (MDGs). Lastly, given the common strategy of local governments in Indonesia to raise local revenue by changing spending allocation across sectors and not by increasing taxation (Skoufias et al. 2011 p 12), thus, the increase in health spending can be regarded as a good sign from a more responsive and more accountable local governments.

#### 4.2.2.2 Conditions

After having mentioned the cases and the outcome of interest, the next step is to define the conditions that will be observed in the cases.

There are several ways of choosing the conditions in QCA (Amenta & Poulsen 1994 p 25). This study uses the perspective approach by combining several conditions based on several theories and studies particularly the study by Luebke (2009), Skoufias et al. (2011 & 2014), and Kis-Katos & Sjahrir (2013 & 2014). The reason for this choice is that this study tries to offer a new model and approach to observing the path that leads to high health spending among Indonesian second tier local governments by including and combining more conditions that seem to be decisive into one model.

As have been discussed in the third chapter, there are four conditions that will be observed in this study's model; the implementation of local direct election as shown by its duration, the central transfer, the leadership, and the social pressure. The following paragraphs explain all these conditions respectively.

The first condition is the duration of the local direct election. This condition is included in the model in order to observe the impact of the local direct election in affecting the domestic health spending. As have been discussed, directly elected local leaders are expected to be more responsive to the citizen since the local direct election deals with direct procedure for local citizen to be able to "reward" and "punish" their leaders through election and re-election, where this arrangement is expected to bring more incentives for a better performance (Person & Tabellini 2004 p 80). Therefore, hypothetically, the longer the local direct election in place, the higher the local health spending. However, this ideal notion is not taken for granted since there are many studies have found the negative impact of local direct election (e.g., Kis-Katos & Sjahrir 2014). In other words,

the local direct election seems unlikely to increase the local health spending alone, but should be combined with the other conditions.

The second condition is the share of central transfer. It is important to remember, especially after the implementation of fiscal decentralization, the resources for the local governments in order to perform their public tasks is mostly coming from the central government transfer (Simatupang 2009 p 20; Skoufias et al. 2011 p 12; Harimurti et al. 2013 p 7). Therefore, it is important to include the element of fiscal decentralization when observing the local health spending. This study uses General Allocation Grant (DAU) as a proxy for the central transfer for one particular reason. DAU constitutes a major share of local budget and sets the decision to use the grant in the hand of local governments (Brodjonegoro & Martinez-Vazques 2004 p 165). Therefore, this condition is likely to improve the local health spending, however, since the use of this particular grant is fully in the hand of local governments, this condition should be combined with the other conditions in order to improve domestic health spending.

The third condition in this study is the leadership. After the implementation of local direct election, local leaders play more prominent role in regional political constellation since they are directly elected, they have more incentives for doing good behavior in the form of re-election by local citizen (Person & Tabellini 2004 p 80) as well as getting national acknowledgement and political promotion by political parties (Enikolopov & Zhuravskaya 2007 p 2282). This condition is often under-estimated by previous studies when observing the local government performances including spending. So far, only Luebke (2009) has employed the leadership factor in his study of Indonesian local governments. Therefore, as shown by previous literature, the leadership factor is included in this study since good leadership may bring differences on the local governments' performance. This study uses integrity index in order to show the good leadership. As shown by previous studies, good integrity is correlated positively with good leadership (Kirkpatrick & Locke 1991; Parry & Proctor-Thomson 2002).

The last condition is the social pressure. As previous studies suggested, social pressure are coming from a group of society, mass media, and NGOs as well as a local citizen (Adsera et al. 2003; Omoera 2010; Triwibowo 2012). These groups and individuals could affect the decision-making process of the local governments. This study uses literacy rate as a proxy for depicting social

pressure.<sup>8</sup> Ideally, this study prefers to use the local media penetration data to represent this condition. However, such data is still unavailable at the local level in Indonesia. Nevertheless, the literacy rate is employed. Literacy rates provide a relatively sufficient representation for mass media as it makes people understand their rights and needs (for the most part) through reading activities. Moreover, literacy today is not merely interpreted as the ability to read and write only, but it also seen as the continuum of skills that empower people to achieve their needs and to participate fully in society (Ahmed 2011 p 185).

### 4.2.3 Data

This thesis uses secondary data from a variety of sources such as official statistics from Statistics Indonesia (BPS), ministries database and reports, and the World Bank database as well as direct internet search. The next paragraphs explain all the data on the outcome and all conditions respectively.

The data for the outcome of interest namely the local health spending is taken from the World Bank's database on Indonesian districts which is called as Indonesia Database for Policy and Economic Research (INDO-DAPOER). This database provides high quality, consistent, comparable, and timely data on health spending across all tiers local governments in Indonesia. Moreover, this database also offers more validity and accuracy since the World Bank's staffs have also verified this database (Skoufias et al. 2014 p 10). In this study, the local health spending is depicted in Indonesian Rupiah (IDR) and in per capita term. This study sets the local health spending in 2012 only as the year of the outcome. The reason for this choice is this study aims to observe the local health spending among local governments in Indonesia at the latest condition as possible after the implementation of direct election in 2005. Accordingly, the most recent data available in 2012 is used.

The information on the duration of direct election is taken from various sources such as Ministry of Home Affairs (MoHA), National Democratic Institute (NDI), Regional Election Commissions (KPUDs), Center for Electoral Reform

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<sup>8</sup> Machado (2013) used adult literacy rate in order to capture accountability and the level of demand from citizen. Moreover, Sjahrir et al. (2014) also used literacy rate as proxy to represent pressure from educated people in affecting the incumbent's behavior and accountability in Indonesia.

(CETRO), as well as direct internet search. The collection process of this dataset is very challenging since the complete dataset on the local direct election from 2005 to 2011 is not available. However, for the purpose of this study, the author has painstakingly constructed the dataset. This dataset shows the duration of local direct election since the election being held for the very first time in June 2005 or since the disputed local election's results were resolved by the Constitutional Court (MK) until December 2011. The data of duration is shown in the monthly term.

The data on central transfer is the General Allocation Grant (DAU). The source of data is the World Bank's INDO-DAPOER. In this study, the data is average from 2006 – 2011 and shown per capita term in Indonesian Rupiah (IDR). The reason for this choice is to display the distribution of the DAU from one year after the direct election implemented and one year before the year of the outcome.

The data on leadership is derived from the survey of independent institution namely the Regional Autonomy Watch (KPPOD).<sup>9</sup> KPPOD has been conducting several investigations and publications regarding local economic performance among local government in Indonesia. Their survey is among the very first of its kind in Indonesia (KPPOD 2007 p 6). Their latest survey in 2007 and 2011 provides an index of the integrity of local leaders on several Indonesian districts. Accordingly, this study employs the survey as the proxy for good leadership. This index may not reflect directly the index of good leadership. However, several studies have argued that having good integrity is part of good leadership (Kirkpatrick & Locke 1991; Parry & Proctor-Thomson 2002). Therefore, it seems adequate to use this index to depict the level of good leadership among Indonesian districts. One thing to clarify is that the surveys are not conducted annually. So far, the surveys have been carried out twice, in 2007 and 2011. Therefore, if there is no data for the intended districts in 2011, the data from 2007 is also used. Since both surveys are still in study's time range.

The proxy for social pressure namely literacy is also taken from the World Bank's INDO-DAPOER. Literacy in this study is defined as the percentage of the population aged 15 years and over who are able to read and write Latin, Arabic, or

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<sup>9</sup> For further information on KPPOD's publication is available here: <http://www.kppod.org/index.php/en/publikasi/hasil-penelitian> (the publications are in Indonesian as well as in English)

other scripts (Statistics Indonesia 2015). Moreover, this study uses the data from 2011 only, as the latest condition of literacy before 2012 or year of the outcome.

Table 4.2 shows the compilation of the statistical information on the outcome and all conditions. Moreover, the complete “raw” dataset are shown in Appendix 1.1.

**Table 4.1: Descriptive Statistics**

<b>Group Set</b>	<b>Mean</b>	<b>Median</b>	<b>Std. Dev.</b>	<b>Min.</b>	<b>Max.</b>
Health Spending	302,581	227,412	261,684	9,318	2,061,491
Duration	62	71	16	24	77
Central Transfer	1,358,531	1,051,980	1,372,679	217,220	11,349,167
Leadership	53.7	53.4	12.3	14.9	89.8
Literacy	92.89	94.54	6.02	49.64	99.74

Notes: Number of observation is 295 local governments (N=295).

In the next step, all the “raw” data will be transformed into the fuzzy membership. However, before doing the conversion procedure or QCA calls it “calibration,” it demands the study to define first the thresholds for the calibration procedure. This procedure will be elaborated further in the next chapter.

## 5 Analysis

In conducting the analysis, this study has three respective parts. The first part explains the calibration including the brief introduction of the procedure, the thresholds placement, as well as the rationale behind the placement. The second part observes the necessity conditions in order to observe if the outcome is a subset of the conditions. The third part is analyzing the conditions by using the so-called truth table in order to investigate all the empirically causal configurations.

### 5.1 Calibration Procedure

Calibration practice in social sciences is still relatively new. However, it is a routine practice in other field of sciences *inter alia* natural sciences (Ragin 2008 p 72). According to Ragin (2008), calibrated measures are superior to un-calibrated measures as calibrated measures not only capable to show position of some cases that being different from each other, but it also possible to show their “degree” of position as it is more “in” or “out” from the set. For example, calibrated measures are not only capable to distinct countries as democratic or not, but it also capable to show their degree of membership in the set as to be closer with democratic or autocracy.

Moreover, calibration procedure is also intended to bridge two type of research methodologies namely quantitative and qualitative approach by achieving precision which is essential to quantitative researchers as well as to use substantive knowledge which is dominant to qualitative researches (Ragin 2008 p 82). In the calibration procedure, the precision comes in the form of quantitative assessment of degree of membership which is ranging from score of 0 (full exclusion from the set) to score of 1 (full inclusion of the set). Substantive knowledge provides the external criteria for conducting the calibration where this knowledge defines what represents full membership (closer to 1), full non-membership (closer to 0), and crossover point (0.5) (Schneider & Wagemann 2012 p 277). These external criteria for putting the thresholds are mainly based on

social knowledge, collective social scientific knowledge, and the researcher's own knowledge. Moreover, these external criteria should be specified clearly and must be used systematically and transparently (Ragin 2008 p 82; Schneider & Wagemann 2012 p 35).

There are two methods of conducting the calibration (Ragin 2008 p 85). First is the direct method where the researcher defines the values of an interval scale that represent the three qualitative cutoff points: full membership, full non-membership, and the crossover point. Second is the indirect method where the researcher uses the external standard for defining the degree of the case. In the second method, the researcher manually assigns each case into one of the six categories. The output of both calibration procedures is, as Ragin (2008 p 85) stated, a fine-grained calibration of the degree of membership of cases in sets, with scores ranging from 0.0 to 1.0. In addition, it is important to note that the scores from the calibration procedure are not probabilities but simply the transformation from interval scales into degree of membership in the set (Ragin 2008 p 88; Schneider & Wagemann 2012 p 31).

This study utilizes the direct method of calibration by utilizing the FSQCA software (Ragin & Davey 2014) as well as the four-value calibration method (Rihoux & Ragin 2009). In its practical application, as have been stated before, QCA suggests that the ideal thresholds selection for the calibration procedure is based on theoretical and substantive knowledge (Ragin 2008 p 86; Schneider & Wagemann 2012 p 36). However, since there are still rare "agreeable standards" of calibration relating to several conditions in this study. Thus, for some conditions, a mechanical technique that based on the mean is also used in order to define the thresholds (Rihoux & Ragin 2009 p 42).

Moreover, in deciding thresholds for fuzzy set membership, it is critical to define and label clearly the name of the intended set (Ragin 2008 p 89 & 208; Rihoux & Ragin 2009 p 93). For example, the thresholds for the set of "countries with higher GDP" and the set of "countries with moderate GDP" have to be differentiated where the thresholds for the set of "countries with higher GDP" should be greater than the set of "countries with moderate GDP." Furthermore, it is also important to define carefully the direction of the intended set where "in" from the set is heading to value of 1 and "out" from the set is heading to value of 0 (Schneider & Wagemann 2012 p 32). For example, when constructing the set of

“districts with good leadership,” the higher score from the good leadership index should be closer to 1. On the other hand, the lowest score on the index should be closer to 1 when constructing the set of “districts with bad leadership”.

Based on that information, in the following paragraphs, this study defines clearly all the name of each intended sets of outcome and all four conditions respectively. Then, this study selects the thresholds as well as explains the rationale behind those cutoffs.

First, the name of the set for the outcome of interest is the set of “districts with high health spending.” The thresholds setting for this set is based on substantive knowledge. This information is derived from the *BPJS Kesehatan*'s annual health insurance contributions. More precisely, the annual contributions for non-wage earners and non-workers categories as stated in the Presidential Decree 111/2013 regarding Health Insurance. This annual contribution is a compulsory national program by the central government and provides a comprehensive health benefit.<sup>10</sup> The annual contributions for these categories are divided into three class-based services where the third or the bottom class pay IDR 306,000 annually, and the second, and the first class pay annually of IDR 510,000, and IDR 714,000 respectively.

Since the aim of the set is “districts with high health spending,” therefore the threshold for the full membership is set at IDR 714.000 which is equal to the first class annual contributions. Moreover, the annual contribution for the third class which is equal to IDR 306.000 is set as the crossover point, as this amount represents the lowest amount to get adequate health care service. Finally, the threshold for the full non-membership in the set is simply set at IDR 153.000 or half value from the crossover point as this value clearly represents the inadequate health care amount. The rationale behind this selection is that these annual contributions draw a relatively direct connection between the costs that the citizens have to pay to get adequate health care with the public investment that local governments spend on the health sector.

Second, the thresholds for the duration are established for the set of “districts with the longer direct election.” The thresholds for this set are based on the information from the Ministry of Home Affairs (MoHA) as well as by looking at

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<sup>10</sup> The list of benefits is available here: <http://bpjs-kesehatan.go.id/bpjs/index.php/pages/detail/2014/12> (in English).

the local direct election's cycle. The implementations of local direct election among local governments in Indonesia occurred annually, starting from 2005 for the very first time among 206 local governments and until 2011 for 82 local governments (see Table 5.1). This set calculates the duration from 2005 as the year of first implementation of local direct election until 2011 as one year before the year of interest. However, since the study only focuses on the duration of direct election, it means this set is only taking into account the duration from the very first time local direct election implemented for each observed cases. Moreover, in Indonesia, the local election's cycle is for the period of five years. Therefore, it means that the districts that had elections in 2005 will have elections again in 2010. Given this information, this study focuses on the districts that had local direct elections in the period between 2005 until 2009 only.

**Table 5.1: Local Direct Election in Indonesia, 2005 - 2011**

No	Year	Regency	City	Total
1	2005	174	32	206
2	2006	60	11	71
3	2007	23	12	35
4	2008 & 2009	107	35	142
5	2010	182	35	217
6	2011	71	11	82

Source: Author's compilation based on the data from the Ministry of Home Affairs.

Based on that knowledge, the set divides the districts into four categories based on the year of local direct election implementation for defining the thresholds. Therefore, based on the distribution year of local direct election, this set employs four-value fuzzy set to create the degree of membership (Rihoux & Ragin 2009 p 90). Moreover, since in 2009 is only one district that had a direct election, this district is included with the districts that had local direct election in 2008. Furthermore, four-value fuzzy set divides the cases into four categories; fully in (score of 1), more in than out (score of 0.67), more out than in (score of 0.33), and fully out (score of 0). Therefore, the four categories of districts based on the year of local direct election from 2005, 2006, 2007, and 2008 are given the score of 1, 0.67, 0.33, and 0 respectively (see Table 5.2). The reason for this selection is to divide the districts that had a longer direct election and the districts that had a shorter direct election.

**Table 5.2: Four-value Fuzzy Set**

No	Year	Districts	Four-value Fuzzy Set	Four-value Fuzzy Label
1	2005	148	1.00	Fully in
2	2006	34	0.67	More in than out
3	2007	24	0.33	More out than in
4	2008	88	0.00	Fully out
5	2009	1	0.00	Fully out
<b>TOTAL</b>		<b>295</b>		

Source: Author's compilation based on the data from the Ministry of Home Affairs.

Third, the thresholds for the second condition or the central transfer are established for the set of “districts with the high central transfer.” The thresholds selection for this set is based on mechanical cutoff; the mean. The reason for this particular choice is simply to split between the districts who received relatively high central transfer compared with the districts who received low amount of central transfer from the observed cases. Therefore, the selection of the crossover point is set to the mean value; IDR 1.358.531.<sup>11</sup> Then, the threshold for the full membership is set at the double of the average; IDR 2,717,062. Lastly, the threshold for full non-membership is set at half value from the average; IDR 679,265.

Fourth, the thresholds for the third condition or the leadership are established for the set of “districts with good leadership.” The thresholds for this set are grounded on the KPPOD's information and the data distribution. The KPPOD's index is ranging from 100 as the maximum score and 0 as the minimum score (KPPOD 2007 p 12; 2011 p 8). Since the goal of the calibration in this set is to construct the set district with good leadership. Thus, the first step is to define the crossover point that divides the index and makes clear boundary between good and bad score on the index. From the index, it is clear that score of 50 represents the mid-value and it also represents the most ambiguity score from the index. Thus, this score is set as the crossover point. Then, thresholds for full membership is set at 90 and the threshold for full non-membership is set at 10 as these scores constitute almost highest and lowest score on the index.

Fifth, the threshold cutoffs for the fourth condition are constructed for the set of “districts with high literacy.” The threshold for this set is based on the substantive information namely the total national literacy percentage as well as the

<sup>11</sup> See the Table 4.2 on the descriptive data.

data distribution. Nationally, the literacy rate covers 92.8 percent of the population in 2011 (UNESCO 2012 p 26). Therefore, the value of 92.8 is set as the crossover point since this value represents the average literacy in all Indonesian districts. Moreover, the aggregate of literacy improvement in 32 LIFE countries,<sup>12</sup> which Indonesia is also included, between 1994–2004 and 2005–2009 is 3.1 per cent (Ibid 2012 p 25). Therefore, since the aim of this set is the set of higher literacy districts, for the threshold of full membership this study adds the aggregate value with the crossover point. This gives the value of 95.9 as the threshold of full membership. Lastly, the threshold for the full non-membership is set at 89.7 per cent as this value represents the crossover value minus the aggregate.

The summary of the threshold cutoffs for the outcome and three conditions namely central transfer, leadership, and literacy are shown in Table 5.3 below.

**Table 5.3: Direct Calibration Thresholds**

No	Set	Thresholds
1	Districts with high health spending	Full Membership : 714,000 Crossover Point : 306,000 Full Non-Membership : 153,000
2	Districts with high central transfer	Full Membership : 2,717,062 Crossover Point : 1,358,531 Full Non-Membership : 679,265
3	Districts with good leadership	Full Membership : 90 Crossover Point : 50 Full Non-Membership : 10
4	Districts with high literacy	Full Membership : 95.9 Crossover Point : 92.8 Full Non-Membership : 89.7

Notes: For the outcome and the central transfer value are in Indonesian Rupiah (IDR), for the literacy, value is in percentage (%), and the leadership is in original value.

After having specified all the thresholds for the outcome and the four conditions, the next step is conducting the calibration. The calibration process in this study uses the FSQCA software 2.5 (Ragin & Davey 2014).<sup>13</sup> The practical application of this calibration procedure is based on the information provided by Ragin (2008 pp 104–105). The complete calibration results are shown in Appendix 1.2 in this study.

<sup>12</sup> UNESCO Program in improving literacy rate for 32 countries, which Indonesia is one of the members.

<sup>13</sup> This software is available to download at this site: <http://www.socsci.uci.edu/~cragin/fsQCA/software.shtml>, and this particular freeware is created by Charles Ragin & Sean Davey (2014).

## 5.2 Necessity Conditions

QCA based its analysis on the set relations. Set relations can be defined as social phenomena that are connected causally or in some other integral manner and not merely definitional (Ragin 2008 p 14). For example, the hypothetical statement saying those literate countries is democratic countries. This statement implies that literacy is the subset of the set of democracy. However, this part of “connections” needs arguments and should be based on theory and knowledge (Ibid p 14) or set-theoretical relations.

One strategy in analyzing set-theoretical relations is by assessing commonalities. Moreover, there are two strategies for analyzing commonalities through cases. First, examining cases that had a similar outcome and to identify their common conditions. Second, examining cases sharing specific causal condition or combination of conditions and identify if they have a similar outcome. These two strategies are methods for establishing explicit connections (Ibid p 18). The first is suitable for analyzing necessary conditions where the second is appropriate for analyzing sufficient condition or combination of conditions (Ibid p 20).

Therefore, when using fsQCA to assess set relations, it is important to understand the notion of necessity and sufficiency of the conditions as this method centers on the explicit connection. A condition is regarded necessary if it is always present when the outcome happens. In other words, the outcome cannot happen in the absence of the condition. Moreover, a condition is regarded sufficient if the outcome always occurs when the condition is present. However, it is worth to remember that the outcome could also result from other conditions or the notion of equifinality (Rihoux & Ragin 2009 p xix).

Furthermore, it is also important to understand the notion consistency and coverage in assessing set-theoretic connections. Consistency signals the degree to which the cases sharing a given combination of conditions agree in displaying the outcome in question. In other words, consistency indicates how closely a perfect subset relation is estimated. On the other hand, coverage signals the degree to which a cause or causal combination “accounts for” instances of an outcome.

As Ragin (2008 p 45) stated, consistency is like significance, signals whether an empirical connection merits the close attention of the investigator. If a hypothesized subset relation is not consistent, then the researcher's theory or conjecture is not supported. On the other hand, coverage is like strength, it signals the empirical relevance or importance of a set-theoretic connection.

In fsQCA, a fuzzy subset relation exists when the membership scores in one set are consistently less than or equal to their corresponding membership scores in another (Ragin 2008 p 47). The fuzzy subset relation has a triangular form when depicted as a plot of two fuzzy sets (Ibid p 47).

An argument of causal necessity is supported when it can be demonstrated that instances of an outcome constitute a subset of cases of a causal condition. With fuzzy sets, the consistency of the necessary condition relationship depends on the degree to which it can be shown that membership in the outcome is consistently less than or equal to membership in the cause,  $Y \leq X$  (Ragin 2008 p 53).

According to Ragin (2008), the outcome (Y) is a subset of the causal condition (X); thus, all Y values are less than or equal to their corresponding X values. Therefore, a simple measure of the consistency of the subset relationship for a necessity condition is:

$$\text{Consistency: } (Y_i \leq X_i) = \frac{\sum [\min(X_i, Y_i)]}{\sum(Y_i)}$$

where min indicates the selection of the lower of the two scores. When all Y scores are less than or equal to their corresponding X scores, this formula gives a score of 1.0. When many Y exceed their corresponding X scores by wide margins, the calculation gives a score less than 0.5.

On the other hand, the notion of coverage is different from consistency, and the two sometimes work against each other because high consistency may produce low coverage (Ragin 2008 p 55). A simple measure of the importance or relevance of X as a necessary condition for Y is given by the degree of coverage of X by Y (Ragin 2008 p 61):

$$\text{Coverage: } (Y_i \leq X_i) = \frac{\sum [\min(X_i, Y_i)]}{\sum(X_i)}$$

**Table 5.4: Set Relation of Outcome as the Subset of Conditions (Necessity)**

No	Condition	Consistency	Coverage
1	Duration	0.665	0.357
	~ Duration	0.435	0.359
2	Transfer	0.782	0.772
	~ Transfer	0.568	0.275
3	Leadership	0.800	0.465
	~ Leadership	0.630	0.465
4	Literacy	0.781	0.415
	~ Literacy	0.372	0.312

Notes: These scores generated by FSQCA 2.5 software (Ragin & Davey 2014), and tilde sign (~) signals the absence of the conditions.

The consistency threshold for the necessity assessment in Table 5.4 is set at 0.900 or as close to 1.00 (perfect consistency) as possible (Schneider & Wagemann 2012 p 278), because when observing consistency scores below 0.750 is difficult to show that a set relation exists (Ragin 2008 p 46). However, when conducting consistency assessments, it is also important to take the number of cases into account as well, for example hundreds of cases. In this condition, perfect consistency does not guarantee automatically that there is set-theoretic connection exists (Ibid p 45) as well as there is rare occurrence of perfect consistency especially involved large number of cases.

As shown by Table 5.4, there is no single condition proposed in this study, from its presence and absence, is necessary for the outcome. Recall that, a condition is regarded necessary if it is always present when the outcome happens. In other words, the outcome cannot happen in the absence of the condition. The highest score of consistency in this assessment of necessary conditions based on the conditions proposed in this study is shown by the presence of good leadership where it has consistency score of 0.800. Moreover, the presences of high central transfer and high social pressure in the form of literacy have shown consistency score of 0.782 and 0.781 respectively. However, all these consistency scores are still below the expected threshold; 0.900.

Nevertheless, this study's model proposes that these four conditions as a single condition are not expected to lead to the outcome namely the high health spending. This study argues that the combination of all these conditions is likely to result in high health spending among Indonesian districts. Therefore, the next step is conducting the analysis with the help of the truth table to test if the combination of the conditions proposed in this study is sufficient to the outcome.

## 5.3 Truth Table Analysis

Truth table can be defined as an analytic device that displays all logically possible combinations of causal conditions and shows the distribution of cases across those combinations (Kenworthy & Hicks 2008 p 74; Ragin 2014 p 87). Moreover, the primary aim of the truth table is to guide the study in determining standards for the consistency of causal relationships (Kenworthy & Hicks 2008 p 76), as well as identifying explicit connections between the combination of causal conditions and the outcome (Ragin 2008 p 125). In this truth table analysis, this study proposes the combination of four conditions from longer local direct election, higher central transfer, good leadership, and high social pressure is likely leads to the outcome or high health spending. Therefore, in this section of study, this conjecture is put into the test.

With fuzzy sets, the degree to which a case exhibits a combination of conditions is determined by the condition that has the lowest score. As stated by Ragin (2008 p 114), this “weakest link” notion has argument that the degree to which a case shows a combination of conditions is only as strong as its level of expression of its weakest component. For example, if hypothetical conditions combined such as good leadership that has score 0.67 with high central transfer that has score 0.45 therefore the combination of good leadership and high central transfer has score 0.45 or the weakest score between the two.

Moreover, the bridge from fuzzy set analysis to truth tables has three main pillars (Ragin 2008 p 128; Rihoux & Ragin 2009 pp 104 - 104). First is the direct correspondence between the rows of a truth table and the corners of the vector space defined by fuzzy set conditions. Second is the assessment of the distribution of cases across the logically possible combinations of conditions. Third is the evaluation of the consistency of the evidence for each causal combination with the argument that it is a subset of the outcome. Therefore, this study centers on these three pillars in doing the truth table analysis.

Before that, some technical languages in fsQCA have to understand first when analyzing the truth table. There are three common language operations on fuzzy set; set negation, set intersection, and set union (Ragin 2008 p 36). First is negation. Negation is written with tilde signs ( $\sim$ ). It changes membership values

from 1.0 to 0.0 or from 0.0 to 1.0. As shown by Table 5.5, the negation of good leadership score for Agam Regency is 0.47 or the opposite direction of the score in good leadership at 0.53. This score can be translated like this; score for good leadership for Agam Regency is 0.53 and score for bad leadership for Agam Regency is 0.47.

Second is set intersection. This is understood as logical AND (\*) or when two or more sets are combined. In fuzzy sets, logical AND is achieved by taking the minimum membership score of each case in the sets that are combined or the “weakest link” argument. For example, the membership for Alor Regency in the set of districts with good leadership AND high literacy is 0.26 or the weakest score between two membership scores; 0.74 and 0.26 (see Table 5.5).

**Table 5.5: Example of Fuzzy Operations**

No	Districts	Leadership	Literacy	Negation of Leadership	Leadership AND Literacy	Leadership OR Literacy
1	Agam Reg.	0.53	0.94	0.47	0.53	0.94
2	Alor Reg.	0.74	0.26	0.26	0.26	0.74
3	Asmat Reg.	0.34	0.00	0.66	0.00	0.34

Notes: The values are taken from the actual fuzzy membership score for each respective district.

Lastly is set union. This is understood as logical OR (+) or when two or more sets joined through. In fuzzy sets, logical OR is achieved by taking the maximum membership score of each case in the sets that joined through. For example, the membership score for Asmat Regency in the set of districts with high leadership OR high literacy is 0.34 or the maximum score from two scores; 0.34 and 0.00 (see Table 5.5).

Having mentioned all the three main operations in fsQCA, this study advances with its first step analysis using the truth table. First, the study begins with analyzing the direct correspondence that exists between the rows of truth table and the corners of the vector space defined by fuzzy set causal conditions. As Ragin (2008 p 129) emphasized, this step is aiming to summarize the characteristics of the causal combination represented by each corner based on the available conditions.

In the fuzzy set, a multidimensional vector space constructed based on  $2^k$  corners, where  $k$  is the number of conditions (Rihoux & Ragin 2009 p 100; Schneider & Wagemann p 2013 p 92). As Table 5.6 shows, with  $2^4$  or four causal conditions, there are 16 logically possible combinations of causal conditions. Moreover, the sixteen intersections (\*) of combinations of the four causal conditions are depicted by the combination of 1 or 0 for each configuration where 1 signals the presence of condition and 0 signals the negation or absence of condition. For example, the first configuration consists of D (1), T (0), L (1), and R (1). It means that the first configuration row is the combination of districts that exhibit longer duration of direct election, low central transfer, good leadership, and high social pressure. Having revealed all the possible causal configurations, the study advances to the second pillar of analysis.

**Table 5.6: Truth Table Analysis**

No	Duration (D)	Transfer (T)	Leader (L)	Literacy (R)	Number of Cases	Raw. Consist
1	1	0	1	1	37	0.53
2	1	0	1	0	35	0.36
3	1	0	0	1	33	0.51
4	0	0	1	1	28	0.49
5	1	1	1	1	27	0.83
6	0	0	1	0	25	0.35
7	0	1	1	1	19	0.86
8	0	0	0	1	18	0.45
9	1	0	0	0	17	0.39
10	1	1	0	1	12	0.80
11	1	1	1	0	11	0.83
12	1	1	0	0	9	0.84
13	0	1	0	1	8	0.83
14	0	0	0	0	8	0.40
15	0	1	1	0	3	0.85
16	0	1	0	0	1	0.87
<b>Total Number of Cases</b>					<b>291</b>	

Notes: This truth table produced by FSQCA 2.5 software (Ragin & Davey 2014).

The second step is observing the distribution of cases across causal configurations. In this step, it is essential to observe the allocation of cases' membership scores across causal combinations in fuzzy set analysis because some causal combinations may be empirically insignificant. In other words, if most

cases have very low or even zero memberships in a combination, then it is pointless to assess that combination's link to the outcome (Ragin 2008 p 130).

The Table 5.6 also demonstrates intersections (\*) of fuzzy sets where each case can have a maximum of a single membership score greater than 0.5 in the combinations of the causal configurations. This gives information on how many cases are close to each corner of the vector space based on their degree of membership that above 0.5 (Ibid p 131). For example, the first configuration has 37 cases as shown by the number of cases' column. This means that in the first causal configurations ( $D * \sim T * L * R$ ), there are 37 cases that have membership above 0.50 in this particular configurations. Moreover, it is also worth to note that no matter how many fuzzy sets are combined, each case will have membership of higher than 0.5 in one and just one of the  $2^k$  logically possible combinations (Schneider & Wagemann 2012 p 100).

However, there is also an exception to this "just" one rule. As Schneider & Wagemann (2012 pp 100-101) stated, whenever a case has a membership of exactly 0.5 in one or more of the conditions, then its membership will not exceed 0.5 in any of the truth table causal configuration rows. It shows the fact those cases' empirical elements are such that it cannot agree whether the case is a member of the set being observed or ambiguous. As the Table 5.6 has shown, there are only 291 cases available in all the configurations from 295 initial cases. It means that in all the causal configurations possible there are four cases that have maximum of 0.5 membership score in all the causal configurations presented. Therefore, this study ignores those four cases as they have no clear response between "in" or "out" from the set being observed.

Moreover, another task in this second step is to define the threshold of number of cases in order to classifying the causal combinations as relevant or remainders where remainders defined as the rows that have no empirical cases (Ibid p 131). From Table 5.6, from sixteen causal configurations, there are no remainders as all the configurations have empirical case. As the table shown, there are always cases present in all those sixteen configurations ranging from 37 cases and 1 case in a single configuration. However, it is important to note several conditions when placing the threshold for the number of cases taken into the considerations such as the total number of cases and the number of conditions as there will be measurement or coding errors (Ibid p 133). When the total number of

cases is large, the prominent issue is not which configurations have cases, but which configurations have enough cases to warrant assessing the subset relation with the outcome (Ibid p 133). In other words, it has to be cautious in the large-N analysis to treat low frequency of cases causal configurations in the same way as those missing empirical cases altogether (Ragin & Rihoux 2009 p 107). Accordingly, since the number of cases in the causal configurations is large (291 cases), thus higher frequency of cases is used. In order for the causal configuration to proceed to the next step of analysis, it has to consist of at minimum five cases. As Table 5.6 has shown, there are two causal configurations that exhibit only 3 and 1 case. Therefore, these causal configurations are deleted for the last procedure. Therefore, this study has two logical remainders or rows that do not have empirical cases. However, this study ignores these remainders as these remainders have an only small proportion of cases (N=4) from the total of cases that have passed the number of cases threshold.

The last step in analyzing the truth table is measuring the consistency of the causal combinations. Consistency scores range from 0 to 1, with 0 indicating perfectly no subset relationship and 1 denoting a perfect subset relationship (Kenworthy & Hicks 2008 p 76). Ideally, the consistency scores should be near one as possible or perfect consistency. However, there is rare occurrence of perfect consistency in fuzzy set, especially if involving large-N study (Ragin 2008 p 135). Looking at the number of cases in this study, for the causal combination consistency threshold, this study uses the threshold of 0.80 for assessing the consistency of the causal combinations. The formula for measuring consistency is:

$$\text{Consistency: } (X \leq Y) = \sum [\min(X_i, Y_i)] / \sum(X)$$

where min indicates the selection of the lower of the two values;  $X_i$  is degree of membership in a causal combination, and  $Y_i$  is degree of membership in the outcome (Ragin 2008 p 134).

From Table 5.7, six causal configurations have met the minimum threshold as they have consistency score above 0.80. Moreover, there is also substantial consistency gap between the sixth and the seventh causal configurations; from 0.80 to 0.53. This gap also provides practical information in placing the threshold. After having specified the consistency score, the next step is filling the outcome's

column where causal configurations that met the threshold are given with 1 and 0 if they below the threshold (Ragin 2008 p 135). As the Table 5.7 shown, this procedure has been done.

**Table 5.7: Truth Table Consistency Thresholds**

No	Duration (D)	Transfer (T)	Leader (L)	Literacy (R)	Number of Cases	Outcome	Raw. Consist
<b>1</b>	0	1	1	1	19	<b>1</b>	<b>0.86</b>
<b>2</b>	1	1	0	0	9	<b>1</b>	<b>0.84</b>
<b>3</b>	0	1	0	1	8	<b>1</b>	<b>0.83</b>
<b>4</b>	1	1	1	0	11	<b>1</b>	<b>0.83</b>
<b>5</b>	1	1	1	1	27	<b>1</b>	<b>0.83</b>
<b>6</b>	1	1	0	1	12	<b>1</b>	<b>0.80</b>
<b>7</b>	1	0	1	1	37	0	0.53
<b>8</b>	1	0	0	1	33	0	0.51
<b>9</b>	0	0	1	1	28	0	0.49
<b>10</b>	0	0	0	1	18	0	0.45
<b>11</b>	0	0	0	0	8	0	0.40
<b>12</b>	1	0	0	0	17	0	0.39
<b>13</b>	1	0	1	0	35	0	0.36
<b>14</b>	0	0	1	0	25	0	0.35

Notes: This truth table produced by FSQCA 2.5 software (Ragin & Davey 2014). Consistency threshold: 0.80.

The next procedure is generating the solutions by using the FSQCA software (Ragin & Davey 2014). The results of the analysis are presented in the next chapter.

## 6 Result and Interpretation

This chapter has three parts. The first part shows the process on how this study selects the result based on the solutions produced by the analysis in the previous chapter. The second part interprets how the chosen solution contributed to the high local health spending among observed cases. The last part discusses its implication on the policy on improving the local health spending in among local governments in Indonesia.

### 6.1 Result

As shown by Table 6.1, the result from the truth table analysis in fsQCA is three set of solutions; complex, parsimonious, and intermediate solution.

The complex solution is the solution with no logical remainders used. On the other hand, the parsimonious solution is the solution with all logical remainders used without any evaluation of their plausibility. Lastly, the intermediate solution where only the logical remainders that “make sense” from the substantive and theoretical knowledge are used in the solution (Ragin 2008 p 163 - 164). In generating the solutions, this study has chosen the presence of all four conditions is likely leads to high health spending.

From the Table 6.1, the complex solution suggests two paths to high local health spending based on the evidence presented in this study. First, the combination of high transfer and high social pressure leads to high health expenditure. This solution has low consistency level at 0.77 and has quite moderate coverage at 0.59. Second, the combination of high social pressure and direct election produces the path to high health spending. This second solution has slightly lower consistency and coverage level at 0.76 and 0.51 than the first.

The parsimonious solution suggests there is only one path to high health spending among Indonesian districts observed in this study. The high central transfer is the only path that leads to the high health expenditure. This solution has a quite significant combination between consistency and coverage level at 0.77

and 0.78 respectively. However, this solution used all the logical remainders and even without assessing their plausibility. Therefore, the study chooses to avoid this solution.

**Table 6.1: Solutions**

No	Solutions	Raw Coverage	Unique Coverage	Consistency
Complex Solution:				
1	T * R	0.59	0.22	0.77
	T * D	0.51	0.14	0.76
Solution Coverage: 0.73 Solution Consistency: 0.77				
Parsimonious Solution:				
2	T	0.78	0.78	0.77
Solution Coverage: 0.78 Solution Consistency: 0.77				
Intermediate Solution:				
3	T * R	0.59	0.22	0.77
	T * D	0.51	0.14	0.76
Solution Coverage: 0.73 Solution Consistency: 0.77				

Notes: These solutions generated by FSQCA 2.5 software (Ragin & Davey 2014).

The last solution namely the intermediate solution offers two paths to high local health spending among local governments in Indonesia. In general, the solutions produced in this solution are identical to the solutions produced from the complex solution.

As Ragin (2008 p 175) has argued, the intermediate solution is preferred and suggested for two reasons. First, this solution is the most interpretable solution. Second, this solution has a balance between parsimony and complexity based on the substantive and theoretical knowledge of the researcher (Ragin 2008 p 175).

To sum up, from the analysis, there are three paths to high local health spending among Indonesian districts based on the evidence presented in this study. This study opts for the intermediate solution since this solution is generated based on the selection of this study when generating the solution. In generating the solution, the study chooses the presence of all conditions from direct election,

high central transfer, good leadership, and high social pressure is likely to contribute to the high local health spending.

From the intermediate solution, two paths lead to high local health spending among local governments observed in this study. This study chooses the path that has higher consistency and coverage level from those two paths (see Table 6.1). Accordingly, the path is:

**Transfer \* Literacy → High Local Health Spending**  
**(Coverage: 0.59 and Consistency: 0.77)**

Based on the evidence presented in this study, the path to high local health spending among local governments in Indonesia is the combination of high central transfer and high social pressure. The next section will elaborate further this finding. In addition, for further information on the practical application of this truth table procedure see Ragin (2008 pp 143–144).

## 6.2 Interpretation

Interpretation is one last crucial step in conducting research with QCA. Through interpretation process, the result of the study is presented and the reasons are argued. Therefore, this section is dedicated to interpreting the chosen path in this study.

Based on the analysis and evidence presented in this study, the path to high health spending among local governments in Indonesia is the combination of high central transfer and high social pressure. Therefore, this study interprets this result with the discussion for each condition proposed in this study.

First, the high central transfer is on the path that leads to high local health in Indonesia. This finding is not surprising. The impact of central transfer to improve the local health spending is well known by the previous studies (Kruse et al. 2012; Heywood & Harahap 2009; Kis-Katos & Sjahrir 2013 & 2014). However, what makes this finding is different from the previous studies is that the finding in this study is a combination of central transfer and high social pressure. High social pressure as represented by literacy rate in this study has also the part of a

combination that leads to high health spending in Indonesia. This finding suggests that the higher the level of social control the higher the health spending. As the theory of public control has suggested, how the governments performed is also depends on how the public control their politicians through mechanism of direct election as well as by the access of information they have (Adsera et al. 2003). This finding suggests that the available resource from central government transfer and the control from society is one way to ensure the improvement in local health spending.

Second, based on the evidence presented in this study, it is surprising that good leadership factor does not lead to high health spending among local governments in Indonesia. One possible reason for this phenomenon is strong political competition as suggested by Boulding & Brown (2014). Their study on Brazilian municipalities found that municipalities with more competitive elections spend less on social spending including health. In some districts in Indonesia, strong local political competition is existence.

Third, local direct election also seems to improve the local health spending based on the solutions presented in this study. As shown by Table 6.1, local direct election combined with high central transfer also leads to high health spending among local Indonesian districts. However, this solution has just slightly lower consistency and coverage scores from the path that this study has chosen. Nevertheless, local direct election seems to be part of the improvement in local health spending along with the high central transfer. This suggests that directly elected leaders are allocating more to social sectors including health as argued by Skoufias et al. (2011 & 2014).

## 7 Conclusion

After the implementation of decentralization, the effort on improving the health sector in Indonesia is not solely in the hand of central government. In the presence of decentralization, the local governments have become important players in improving the health sector where the majority of health budget is transferred to district level (Simatupang 2009 p 20; Harimurti et al. 2013 p 7). Moreover, the implementation of local direct election in 2005 has also brought the opportunity to strengthen the execution of fiscal decentralization.

However, twelve years after the implementation of fiscal decentralization and six years after the implementation of direct election, the level of local health spending is still far from ideal. The reason for this is partly because the local capture practice by local elites as well as low education that makes the control over the government is missing.

Therefore, this study argues that several conditions have to be present in order to ensure the improvement on local health spending as well as to solve those constraints on the low level of health outcomes in Indonesia. This study proposes that the local direct election, and high central transfer, good leadership and high social pressure is likely to lead to high health spending among Indonesian local governments.

After conducting the analysis with fsQCA, this study finds that combination of high central transfer and high social pressure that leads to high local health spending in Indonesia. The finding of this study complements the long list of decentralization studies that have observed the impact of decentralization on development sector. In addition, the finding in this study is not to be generalized. In QCA, the problem with causal complexity is also makes the issue of generalization is rather modest.

## 7.1 Limitation and Future Studies

This study also suffers from some limitations. First, this study ignores one prominent condition that could affect local social spending namely corruption. As previous literature suggested, corruption tends to divert the resource for health sector into non-social sector (Delavallade 2006). However, there is still no reliable data on corruption at the local level in Indonesia. Second, the calibration thresholds also suffer from some weaknesses. This is partly because there is still nonstandard agreement for defining the thresholds for calibration from some conditions in this study. For example, in defining the literacy rate there is still no guidance on what level is the literacy level defined as high literacy. Third, using QCA with large number of cases (N=295) has some disadvantages. The most apparent disadvantage is the study has less intimacy with each observed case.

This study has two suggestions for future research. First, it is interesting to observe the impacts of corruption in affecting the local health in Indonesia. Therefore, this is promising study to conduct if the data on local corruption is available. Second, this study suggests for future studies when observing decentralization in Indonesia to separate between regencies and cities as they have several different characteristics although this is often neglected.

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**Appendix 1.1: Raw Dataset**

<b>No.</b>	<b>District</b>	<b>Outcome</b>	<b>Duration</b>	<b>Leadership</b>	<b>Literacy</b>	<b>Central Transfer</b>
1	Agam Reg.	165,590	77	51.8	95.70	938,670
2	Alor Reg.	318,413	37	64.1	91.70	1,562,182
3	Asmat Reg.	1,004,879	77	40.9	49.64	6,483,391
4	Balangan Reg.	430,171	77	57.8	95.65	1,655,417
5	Balikpapan City	271,584	68	71.2	97.97	319,937
6	Bandung City	90,669	40	56.0	99.09	370,608
7	Banggai Kepulauan Reg.	235,052	64	42.4	94.67	1,597,295
8	Banggai Reg.	242,186	67	69.4	93.92	1,409,992
9	Bangka Barat Reg.	414,242	77	57.9	93.59	1,321,393
10	Bangka Tengah Reg.	359,240	77	70.3	95.80	1,276,881
11	Bangka Reg.	306,108	41	64.7	96.65	973,691
12	Bangkalan Reg.	157,221	46	56.5	77.87	504,678
13	Bangli Reg.	337,086	77	56.3	85.65	1,233,160
14	Banjar Baru City	338,127	77	52.4	98.95	1,163,691
15	Banjar Reg.	259,579	77	48.3	94.48	739,832
16	Banjar City	536,121	36	56.3	96.91	1,268,140
17	Banjarmasin City	129,640	77	52.9	97.63	654,076
18	Banjarnegara Reg.	131,859	62	64.9	88.24	563,133
19	Bantaeng Reg.	286,968	38	67.4	78.28	1,320,171
20	Bantul Reg.	191,383	77	64.4	91.23	613,556
21	Banyumas Reg.	153,536	45	27.1	94.06	465,181
22	Banyuwangi Reg.	90,979	77	35.2	87.36	480,503
23	Barito Kuala Reg.	227,954	50	53.8	94.15	1,084,135
24	Barito Selatan Reg.	489,329	67	41.9	98.71	2,547,055
25	Barito Timur Reg.	416,176	42	51.1	97.89	2,876,933
26	Barito Utara Reg.	543,848	38	53.8	96.63	2,562,181
27	Barru Reg.	385,827	77	84.7	86.71	1,536,454
28	Batam City	175,057	70	49.8	98.93	287,057

<b>No.</b>	<b>District</b>	<b>Outcome</b>	<b>Duration</b>	<b>Leadership</b>	<b>Literacy</b>	<b>Central Transfer</b>
29	Batang Reg.	149,866	59	52.3	90.36	578,288
30	Batanghari Reg.	280,117	71	44.3	93.95	1,181,624
31	Batu City	80,535	48	42.9	95.46	1,150,049
32	Bau-bau City	321,282	48	60.7	92.47	1,968,023
33	Bekasi Reg.	77,574	56	51.6	94.14	217,220
34	Bekasi City	117,151	46	38.7	98.01	261,171
35	Belitung Timur Reg.	487,190	77	64.0	96.06	2,199,969
36	Belitung Reg.	474,382	36	60.7	96.23	1,620,672
37	Bengkayang Reg.	233,556	77	45.3	88.41	1,369,483
38	Bengkulu Selatan Reg.	470,233	39	67.6	94.51	1,906,533
39	Bengkulu City	130,368	50	55.4	99.22	1,169,328
40	Berau Reg.	761,072	75	59.8	96.71	1,573,099
41	Bima City	180,065	42	40.0	93.23	1,697,084
42	Binjai City	1,696,463	77	39.9	98.58	1,114,502
43	Bintan Reg.	433,079	77	57.0	96.14	1,032,743
44	Bitung City	229,534	76	62.4	99.03	1,458,829
45	Blitar Reg.	92,915	72	50.9	91.62	571,311
46	Blitar City	584,863	76	71.1	96.96	1,615,870
47	Blora Reg.	149,191	77	65.1	85.06	571,670
48	Boalemo Reg.	371,263	63	65.0	93.22	1,575,902
49	Bogor Reg.	106,043	40	50.7	94.42	247,739
50	Bogor City	82,005	36	53.9	97.89	409,161
51	Bojonegoro Reg.	139,491	47	61.2	84.73	466,296
52	Bone Bolango Reg.	388,092	77	62.1	96.84	1,710,060
53	Bone Reg.	159,503	45	61.4	86.41	743,447
54	Boven Digoel Reg.	823,815	77	45.3	92.30	11,349,167
55	Boyolali Reg.	184,102	77	59.6	88.59	609,499
56	Brebes Reg.	86,723	48	52.8	84.72	399,776
57	Bukittinggi City	186,816	77	45.2	99.38	2,134,280
58	Bulukumba Reg.	184,779	77	66.2	85.25	906,407

<b>No.</b>	<b>District</b>	<b>Outcome</b>	<b>Duration</b>	<b>Leadership</b>	<b>Literacy</b>	<b>Central Transfer</b>
59	Bungo Reg.	310,874	66	37.0	96.33	1,141,193
60	Buol Reg.	319,600	55	50.1	96.94	2,111,996
61	Buton Reg.	201,038	64	89.8	85.38	1,218,379
62	Cianjur Reg.	112,920	70	45.0	97.54	380,747
63	Cilacap Reg.	96,691	50	56.8	91.48	472,340
64	Cilegon City	291,756	77	53.2	97.53	720,117
65	Cimahi City	294,215	50	55.4	99.74	519,181
66	Cirebon Reg.	155,994	38	50.7	90.63	385,956
67	Dairi Reg.	241,826	35	47.9	98.70	1,194,115
68	Deli Serdang Reg.	100,073	37	48.1	97.91	437,111
69	Dharmas Raya Reg.	271,149	77	49.4	97.27	1,339,913
70	Dumai City	504,181	77	48.5	97.93	520,846
71	Ende Reg.	267,281	36	49.2	93.96	1,263,519
72	Enrekang Reg.	312,270	38	44.8	87.87	1,345,361
73	Fak-Fak Reg.	957,276	75	64.0	98.13	5,318,156
74	Gorontalo City	513,898	42	61.9	99.03	1,481,038
75	Gowa Reg.	105,910	77	73.4	82.32	665,792
76	Gresik Reg.	168,169	77	57.5	94.56	416,796
77	Grobogan Reg.	109,469	70	65.4	89.57	451,800
78	Gunung Kidul Reg.	151,622	77	56.8	84.94	730,722
79	Halmahera Barat Reg.	290,106	77	34.8	94.78	2,194,972
80	Halmahera Selatan Reg.	426,094	77	62.3	95.37	1,550,663
81	Hulu Sungai Selatan Reg.	481,470	43	52.1	95.22	1,367,019
82	Hulu Sungai Tengah Reg.	247,223	77	46.3	96.65	1,163,356
83	Hulu Sungai Utara Reg.	311,371	51	57.8	95.53	1,128,945
84	Humbang Hasundutan Reg.	280,129	77	57.4	97.26	1,586,536
85	Indragiri Hilir Reg.	150,268	36	30.8	97.66	592,199
86	Indragiri Hulu Reg.	232,553	77	48.8	96.87	777,463
87	Indramayu Reg.	128,498	74	68.5	84.32	405,422
88	Jambi City	177,132	40	38.4	98.55	748,188

<b>No.</b>	<b>District</b>	<b>Outcome</b>	<b>Duration</b>	<b>Leadership</b>	<b>Literacy</b>	<b>Central Transfer</b>
89	Jayapura Reg.	516,520	62	60.8	92.29	3,959,762
90	Jayapura City	162,484	77	65.5	98.28	1,468,645
91	Jember Reg.	111,307	77	44.6	81.19	395,990
92	Jeneponto Reg.	187,436	38	61.9	74.60	889,346
93	Jepara Reg.	129,347	57	53.4	92.46	481,098
94	Jombang Reg.	166,721	40	65.0	92.87	461,493
95	Kaimana Reg.	1,537,702	75	64.0	96.92	7,993,905
96	Kapuas Hulu Reg.	302,762	77	51.6	90.21	2,336,364
97	Kapuas Reg.	287,549	46	49.5	95.29	1,405,910
98	Karang Asem Reg.	227,282	77	61.1	76.14	894,265
99	Karawang Reg.	138,006	73	61.9	92.52	332,165
100	Karimun Reg.	404,717	69	56.4	96.35	723,206
101	Katingan Reg.	281,411	42	18.9	98.57	2,746,017
102	Kaur Reg.	305,830	77	50.5	97.34	1,792,898
103	Kebumen Reg.	113,142	77	51.6	91.53	523,656
104	Kediri Reg.	84,775	77	47.1	91.93	458,716
105	Kediri City	738,314	36	51.7	97.19	1,446,125
106	Keerom Reg.	1,122,294	77	22.8	77.14	6,329,650
107	Kendal Reg.	136,534	77	52.9	89.31	529,445
108	Kendari City	213,026	53	56.5	96.39	1,212,429
109	Kepahiang Reg.	296,328	77	38.5	94.56	1,779,127
110	Kepulauan Talaud Reg.	530,782	36	63.4	98.20	8,227,636
111	Klaten Reg.	72,156	74	57.0	87.68	635,991
112	Klungkung Reg.	436,557	37	72.7	82.39	1,613,946
113	Kolaka Reg.	257,774	37	44.9	92.90	1,247,925
114	Konawe Selatan Reg.	129,623	77	58.7	90.81	1,253,494
115	Kota Baru Reg.	256,089	77	59.0	93.15	1,220,295
116	Kotawaringin Barat Reg.	323,910	77	61.0	94.16	1,603,031
117	Kuantan Singingi Reg.	225,421	67	50.9	96.97	1,022,290
118	Kudus Reg.	185,189	44	57.4	92.77	567,806

<b>No.</b>	<b>District</b>	<b>Outcome</b>	<b>Duration</b>	<b>Leadership</b>	<b>Literacy</b>	<b>Central Transfer</b>
119	Kulon Progo Reg.	273,738	65	54.5	92.00	1,048,724
120	Kuningan Reg.	158,099	38	52.1	96.99	577,453
121	Kutai Barat Reg.	697,864	69	51.4	96.60	2,048,405
122	Lamandau Reg.	533,043	42	58.0	97.18	4,127,254
123	Lamongan Reg.	133,720	77	58.9	88.71	492,151
124	Lampung Tengah Reg.	9,318	73	40.4	93.73	564,936
125	Landak Reg.	159,468	63	43.6	92.51	1,060,772
126	Langkat Reg.	119,801	38	39.4	97.27	595,873
127	Lebak Reg.	129,398	36	54.4	94.82	476,653
128	Lebong Reg.	275,423	77	46.7	95.54	2,206,544
129	Lembata Reg.	405,790	66	41.8	91.18	1,947,442
130	Limapuluh City Reg.	169,977	77	34.4	97.22	1,138,630
131	Lingga Reg.	738,143	77	40.1	89.99	1,873,676
132	Lombok Tengah Reg.	130,453	77	35.1	75.33	594,222
133	Lubuk Linggau City	266,654	46	79.9	97.93	1,103,001
134	Lumajang Reg.	116,805	39	46.0	86.56	516,009
135	Luwu Timur Reg.	400,954	77	71.0	92.75	1,000,722
136	Luwu Utara Reg.	343,900	77	66.5	92.86	1,025,623
137	Luwu Reg.	212,322	38	67.6	90.31	1,006,045
138	Madiun Reg.	155,477	41	57.3	86.24	701,983
139	Madiun City	375,668	36	61.5	97.11	1,484,031
140	Magelang Reg.	104,482	37	59.1	93.29	497,791
141	Magelang City	933,903	77	55.4	96.96	1,981,262
142	Magetan Reg.	207,143	41	62.4	89.94	774,022
143	Majalengka Reg.	143,058	38	43.5	95.08	540,871
144	Malang Reg.	78,604	74	37.7	89.34	385,942
145	Malang City	91,184	40	45.6	97.06	561,675
146	Mamuju Utara Reg.	229,100	75	56.3	88.82	1,818,804
147	Manado City	127,079	76	44.8	99.56	971,417
148	Mandailing Natal Reg.	156,523	77	64.9	98.60	909,156

<b>No.</b>	<b>District</b>	<b>Outcome</b>	<b>Duration</b>	<b>Leadership</b>	<b>Literacy</b>	<b>Central Transfer</b>
149	Manggarai Barat Reg.	169,022	77	57.5	93.52	1,117,672
150	Mappi Reg.	825,334	77	31.0	85.08	5,548,746
151	Maros Reg.	222,935	77	52.9	86.02	1,018,850
152	Medan City	197,234	77	40.8	98.71	391,191
153	Melawi Reg.	249,807	77	54.7	85.42	1,631,360
154	Merangin Reg.	177,622	43	14.9	94.97	1,128,543
155	Merauke Reg.	500,322	77	43.9	94.48	3,652,605
156	Metro City	511,784	77	57.1	98.38	1,621,848
157	Mimika Reg.	794,726	44	48.3	93.45	1,558,438
158	Minahasa Utara Reg.	202,254	77	51.4	99.24	1,436,580
159	Minahasa Reg.	147,923	47	62.4	99.34	1,180,821
160	Mojokerto Reg.	86,083	75	63.0	93.39	490,348
161	Mojokerto City	1,105,527	36	50.4	96.80	1,987,051
162	Morowali Reg.	352,929	48	52.9	94.74	1,975,125
163	Muara Enim Reg.	313,066	42	67.9	96.69	552,139
164	Muaro Jambi Reg.	209,976	65	46.5	96.71	874,781
165	Mukomuko Reg.	418,689	77	41.8	93.30	1,552,382
166	Murung Raya Reg.	519,440	42	48.9	98.51	4,108,156
167	Musi Banyuasin Reg.	357,963	63	82.2	97.70	308,688
168	Musi Rawas Reg.	200,076	77	80.7	95.88	792,034
169	Nganjuk Reg.	181,122	44	45.2	91.07	574,542
170	Ngawi Reg.	126,638	77	66.5	85.54	658,325
171	Ogan Ilir Reg.	141,913	77	63.3	97.24	756,440
172	Ogan Komering Ilir Reg.	156,751	35	65.8	95.45	734,622
173	OKU Selatan Reg.	145,669	77	59.1	97.10	787,690
174	OKU Timur Reg.	151,635	77	68.6	94.85	616,955
175	Ogan Komering Ulu Reg.	238,875	77	63.7	95.92	1,088,017
176	Pacitan Reg.	185,788	71	30.0	89.35	744,862
177	Padang Panjang City	1,042,218	40	52.5	97.45	3,811,011
178	Padang Pariaman Reg.	161,605	77	40.5	93.53	1,020,281

<b>No.</b>	<b>District</b>	<b>Outcome</b>	<b>Duration</b>	<b>Leadership</b>	<b>Literacy</b>	<b>Central Transfer</b>
179	Padang Sidempuan City	282,951	48	58.1	98.64	1,334,540
180	Padang City	109,672	37	44.3	98.35	721,785
181	Pagar Alam City	298,590	45	79.9	97.60	1,486,324
182	Palangkaraya City	162,973	38	54.2	98.62	1,636,912
183	Palembang City	110,091	41	69.5	97.34	477,575
184	Palopo City	470,553	43	64.1	94.91	1,648,480
185	Palu City	318,433	76	58.6	97.83	1,105,426
186	Pamekasan Reg.	148,388	44	55.3	81.82	545,782
187	Pandeglang Reg.	89,705	74	40.4	94.52	543,659
188	Pangkajene Kepulauan Reg.	282,520	77	44.5	86.35	1,072,460
189	Pariaman City	379,847	40	42.1	97.58	2,974,161
190	Parigi Moutong Reg.	181,826	44	67.3	91.56	934,134
191	Pasaman Barat Reg.	172,449	77	53.3	94.38	929,945
192	Pasaman Reg.	243,526	77	45.8	97.98	1,171,685
193	Pasir Reg.	1,097,275	77	66.5	96.70	714,295
194	Pasuruan Reg.	103,095	42	21.9	89.65	402,286
195	Pasuruan City	350,141	74	32.7	95.32	1,248,549
196	Pati Reg.	154,698	64	57.5	87.59	509,646
197	Payakumbuh City	508,369	51	46.6	97.51	2,071,728
198	Pekalongan Reg.	196,548	66	49.4	90.08	545,907
199	Pekalongan City	252,570	77	58.5	95.93	921,919
200	Pekan Baru City	67,163	65	48.9	99.27	404,514
201	Pelalawan Reg.	123,788	69	33.9	95.56	718,912
202	Pematang Siantar City	327,353	77	55.5	99.30	1,275,548
203	Pesisir Selatan Reg.	185,215	76	41.0	94.80	979,519
204	Pinrang Reg.	207,371	24	59.8	92.02	996,330
205	Pohuwato Reg.	359,463	77	61.5	92.86	1,896,359
206	Polewali Mandar Reg.	184,603	38	60.8	83.71	897,044
207	Ponorogo Reg.	180,694	77	36.3	88.67	609,880
208	Pontianak City	210,640	37	46.0	94.33	742,116

<b>No.</b>	<b>District</b>	<b>Outcome</b>	<b>Duration</b>	<b>Leadership</b>	<b>Literacy</b>	<b>Central Transfer</b>
209	Poso Reg.	307,324	77	51.9	96.98	2,107,718
210	Prabumulih City	424,042	43	83.4	96.76	1,262,593
211	Probolinggo Reg.	118,339	46	65.3	81.84	503,025
212	Probolinggo City	395,169	36	81.3	88.58	1,135,731
213	Pulang Pisau Reg.	303,687	42	67.3	97.83	2,420,865
214	Purbalingga Reg.	159,811	77	78.9	92.63	539,723
215	Purwakarta Reg.	133,513	46	38.7	96.07	517,142
216	Purworejo Reg.	179,584	74	44.6	91.74	716,594
217	Rejang Lebong Reg.	261,871	77	47.4	94.54	1,254,670
218	Rembang Reg.	223,773	77	69.4	91.36	685,604
219	Rokan Hulu Reg.	192,694	68	61.1	96.72	524,554
220	Salatiga City	631,295	66	63.6	95.03	1,296,001
221	Samarinda City	159,273	74	45.1	97.61	420,569
222	Sambas Reg.	190,231	67	48.4	91.55	883,294
223	Sampang Reg.	104,518	47	48.5	69.78	497,284
224	Sanggau Reg.	191,335	37	34.4	89.31	1,079,466
225	Sarolangun Reg.	211,194	64	52.9	94.97	1,224,079
226	Sawahlunto Sijunjung Reg.	222,886	76	36.2	92.84	1,348,802
227	Sawahlunto City	834,480	42	49.2	97.11	3,379,073
228	Sekadau Reg.	204,486	77	38.8	90.15	1,353,075
229	Selayar Reg.	334,814	77	78.9	92.24	2,014,536
230	Seluma Reg.	204,015	77	45.3	93.96	1,426,736
231	Semarang City	102,169	77	44.8	96.00	414,722
232	Serdang Bedagai Reg.	133,944	77	36.8	97.40	625,094
233	Seruyan Reg.	286,825	42	63.1	96.33	2,787,275
234	Sidenreng Rappang Reg.	265,543	37	52.4	87.21	1,200,113
235	Sidoarjo Reg.	112,538	74	51.6	97.76	348,662
236	Sikka Reg.	271,075	43	65.1	88.43	1,051,980
237	Simalungun Reg.	125,800	74	50.9	96.85	741,524
238	Singkawang City	372,859	48	28.4	88.83	1,436,774

<b>No.</b>	<b>District</b>	<b>Outcome</b>	<b>Duration</b>	<b>Leadership</b>	<b>Literacy</b>	<b>Central Transfer</b>
239	Sinjai Reg.	227,412	42	66.5	86.05	1,289,652
240	Sintang Reg.	253,212	77	46.2	89.11	1,374,922
241	Situbondo Reg.	171,093	77	44.2	77.80	673,072
242	Sleman Reg.	145,152	77	30.3	93.44	536,187
243	Solok Selatan Reg.	351,591	77	52.7	95.45	1,587,274
244	Solok Reg.	149,510	77	37.9	95.96	1,063,049
245	Solok City	442,440	77	38.6	97.79	3,410,654
246	Soppeng Reg.	245,109	77	87.9	85.60	1,402,424
247	Sorong Selatan Reg.	1,440,807	75	71.8	85.43	5,708,028
248	Sorong City	337,227	56	52.2	97.51	1,356,642
249	Sragen Reg.	177,811	68	63.2	83.22	632,531
250	Subang Reg.	105,954	38	55.5	91.39	444,085
251	Sukabumi Reg.	121,830	77	48.6	97.28	365,402
252	Sukabumi City	615,581	44	50.5	98.38	914,844
253	Sukamara Reg.	873,939	42	54.8	93.98	6,173,071
254	Sukoharjo Reg.	132,093	77	58.2	89.56	603,037
255	Sumbawa Barat Reg.	351,295	77	77.9	91.46	1,589,837
256	Sumbawa Reg.	245,965	77	55.6	90.85	969,826
257	Sumedang Reg.	166,069	44	54.7	97.30	572,423
258	Sumenep Reg.	131,393	77	57.8	73.71	530,978
259	Surabaya City	224,804	77	48.5	97.06	243,017
260	Surakarta City	194,873	77	59.7	95.98	824,715
261	Tabanan Reg.	377,963	77	63.3	92.00	979,011
262	Takalar Reg.	271,493	48	61.3	81.05	1,105,998
263	Tanah Datar Reg.	212,536	75	50.9	96.33	1,096,145
264	Tanah Karo Reg.	228,936	73	48.7	98.13	1,094,824
265	Tangerang City	119,802	40	47.9	97.58	272,333
266	Tanjung Balai City	313,251	74	46.7	97.94	1,399,728
267	Tanjung Jabung Barat Reg.	318,519	71	37.7	96.25	890,322
268	Tanjung Jabung Timur Reg.	171,039	68	40.0	86.68	1,066,049

<b>No.</b>	<b>District</b>	<b>Outcome</b>	<b>Duration</b>	<b>Leadership</b>	<b>Literacy</b>	<b>Central Transfer</b>
269	Tanjung Pinang City	404,494	47	65.7	98.70	1,115,172
270	Tapanuli Tengah Reg.	280,281	71	57.3	93.85	919,724
271	Tapanuli Utara Reg.	266,626	36	52.3	97.60	1,278,088
272	Tapin Reg.	394,264	47	53.9	95.36	1,563,488
273	Tasikmalaya City	289,732	50	49.1	99.48	669,824
274	Tebo Reg.	147,293	67	28.0	96.48	1,042,657
275	Tegal Reg.	113,503	37	52.6	89.47	430,412
276	Teluk Bintuni Reg.	1,312,338	75	53.4	89.19	6,086,633
277	Teluk Wondama Reg.	2,061,491	75	67.9	79.65	8,837,747
278	Temanggung Reg.	137,895	41	57.8	94.48	593,268
279	Tidore Kepulauan City	429,259	77	55.4	97.30	2,723,163
280	Timor Tengah Selatan Reg.	136,255	36	29.6	79.47	910,651
281	Timor Tengah Utara Reg.	221,876	74	31.1	85.79	1,298,939
282	Toba Samosir Reg.	407,352	77	45.5	98.28	1,521,654
283	Tojo Una-Una Reg.	385,683	77	64.9	96.03	1,573,835
284	Toli-Toli Reg.	276,325	76	69.8	93.22	1,482,323
285	Tomohon City	321,433	77	54.0	99.24	2,360,989
286	Trenggalek Reg.	181,906	75	48.2	91.44	679,739
287	Tuban Reg.	130,384	67	64.5	85.00	468,446
288	Tulungagung Reg.	203,200	44	52.3	93.53	623,701
289	Wajo Reg.	257,647	38	48.7	86.95	896,516
290	Wakatobi Reg.	420,768	75	82.1	93.53	2,066,919
291	Way Kanan Reg.	105,360	77	62.9	94.89	796,314
292	Wonogiri Reg.	132,697	74	57.5	83.50	621,922
293	Wonosobo Reg.	176,068	74	65.3	91.16	558,699
294	Yapen Waropen Reg.	771,001	77	24.9	92.43	3,301,392
295	Yogyakarta City	342,936	60	63.6	97.16	907,514

### Appendix 1.2: Fuzzy Set Scores

No.	District	Outcome	Duration	Leadership	Literacy	Central Transfer
1	Agam Reg.	0.06	1.00	0.53	0.94	0.14
2	Alor Reg.	0.52	0.00	0.74	0.26	0.61
3	Asmat Reg.	0.99	1.00	0.34	0.00	1.00
4	Balangan Reg.	0.71	1.00	0.64	0.94	0.66
5	Balikpapan City	0.34	0.67	0.83	0.99	0.01
6	Bandung City	0.01	0.00	0.61	1.00	0.01
7	Banggai Kepulauan Reg.	0.20	0.67	0.36	0.86	0.63
8	Banggai Reg.	0.22	0.67	0.81	0.75	0.53
9	Bangka Barat Reg.	0.69	1.00	0.64	0.68	0.46
10	Bangka Tengah Reg.	0.60	1.00	0.82	0.95	0.41
11	Bangka Reg.	0.50	0.00	0.75	0.98	0.15
12	Bangkalan Reg.	0.05	0.00	0.62	0.00	0.02
13	Bangli Reg.	0.56	1.00	0.62	0.00	0.37
14	Banjar Baru City	0.56	1.00	0.54	1.00	0.30
15	Banjar Reg.	0.29	1.00	0.47	0.84	0.06
16	Banjar City	0.84	0.00	0.62	0.98	0.40
17	Banjarmasin City	0.03	1.00	0.55	0.99	0.04
18	Banjarnegara Reg.	0.03	0.67	0.75	0.01	0.03
19	Bantaeng Reg.	0.41	0.00	0.79	0.00	0.46
20	Bantul Reg.	0.10	1.00	0.75	0.18	0.04
21	Banyumas Reg.	0.05	0.00	0.15	0.77	0.02
22	Banyuwangi Reg.	0.01	1.00	0.25	0.01	0.02
23	Barito Kuala Reg.	0.18	0.33	0.57	0.79	0.23
24	Barito Selatan Reg.	0.79	0.67	0.35	1.00	0.93
25	Barito Timur Reg.	0.69	0.00	0.52	0.99	0.97
26	Barito Utara Reg.	0.85	0.00	0.57	0.98	0.93
27	Barru Reg.	0.64	1.00	0.93	0.00	0.60
28	Batam City	0.07	0.67	0.50	1.00	0.01
29	Batang Reg.	0.04	0.67	0.54	0.09	0.03

<b>No.</b>	<b>District</b>	<b>Outcome</b>	<b>Duration</b>	<b>Leadership</b>	<b>Literacy</b>	<b>Central Transfer</b>
30	Batanghari Reg.	0.38	1.00	0.39	0.75	0.31
31	Batu City	0.01	0.33	0.37	0.93	0.28
32	Bau-bau City	0.53	0.33	0.69	0.42	0.79
33	Bekasi Reg.	0.01	0.33	0.53	0.79	0.01
34	Bekasi City	0.02	0.00	0.30	0.99	0.01
35	Belitung Timur Reg.	0.79	1.00	0.74	0.96	0.87
36	Belitung Reg.	0.78	0.00	0.69	0.97	0.64
37	Bengkayang Reg.	0.19	1.00	0.41	0.01	0.51
38	Bengkulu Selatan Reg.	0.77	0.00	0.79	0.84	0.77
39	Bengkulu City	0.03	0.33	0.60	1.00	0.30
40	Berau Reg.	0.97	1.00	0.68	0.98	0.62
41	Bima City	0.08	0.00	0.32	0.60	0.68
42	Binjai City	1.00	1.00	0.32	1.00	0.25
43	Bintan Reg.	0.72	1.00	0.63	0.96	0.19
44	Bitung City	0.18	1.00	0.72	1.00	0.56
45	Blitar Reg.	0.02	1.00	0.52	0.24	0.03
46	Blitar City	0.89	1.00	0.83	0.98	0.64
47	Blora Reg.	0.04	1.00	0.76	0.00	0.03
48	Boalemo Reg.	0.62	0.67	0.75	0.60	0.62
49	Bogor Reg.	0.02	0.00	0.51	0.83	0.01
50	Bogor City	0.01	0.00	0.57	0.99	0.01
51	Bojonegoro Reg.	0.04	0.33	0.70	0.00	0.02
52	Bone Bolango Reg.	0.65	1.00	0.71	0.98	0.68
53	Bone Reg.	0.05	0.00	0.70	0.00	0.06
54	Boven Digoel Reg.	0.98	1.00	0.41	0.38	1.00
55	Boyolali Reg.	0.08	1.00	0.67	0.02	0.04
56	Brebes Reg.	0.01	0.33	0.55	0.00	0.01
57	Bukittinggi City	0.09	1.00	0.41	1.00	0.85
58	Bulukumba Reg.	0.08	1.00	0.77	0.00	0.12
59	Bungo Reg.	0.51	0.67	0.27	0.97	0.28

<b>No.</b>	<b>District</b>	<b>Outcome</b>	<b>Duration</b>	<b>Leadership</b>	<b>Literacy</b>	<b>Central Transfer</b>
60	Buol Reg.	0.52	0.33	0.50	0.98	0.84
61	Buton Reg.	0.11	0.67	0.95	0.00	0.35
62	Cianjur Reg.	0.02	0.67	0.41	0.99	0.01
63	Cilacap Reg.	0.02	0.33	0.62	0.22	0.02
64	Cilegon City	0.43	1.00	0.56	0.99	0.06
65	Cimahi City	0.44	0.33	0.60	1.00	0.02
66	Cirebon Reg.	0.05	0.00	0.51	0.11	0.01
67	Dairi Reg.	0.22	0.00	0.46	1.00	0.33
68	Deli Serdang Reg.	0.02	0.00	0.46	0.99	0.02
69	Dharmas Raya Reg.	0.34	1.00	0.49	0.99	0.48
70	Dumai City	0.81	1.00	0.47	0.99	0.02
71	Ende Reg.	0.32	0.00	0.49	0.75	0.40
72	Enrekang Reg.	0.51	0.00	0.40	0.01	0.49
73	Fak-Fak Reg.	0.99	1.00	0.74	0.99	1.00
74	Gorontalo City	0.82	0.00	0.71	1.00	0.57
75	Gowa Reg.	0.02	1.00	0.85	0.00	0.04
76	Gresik Reg.	0.06	1.00	0.64	0.85	0.02
77	Grobogan Reg.	0.02	0.67	0.76	0.04	0.02
78	Gunung Kidul Reg.	0.05	1.00	0.62	0.00	0.06
79	Halmahera Barat Reg.	0.42	1.00	0.24	0.87	0.86
80	Halmahera Selatan Reg.	0.71	1.00	0.72	0.92	0.60
81	Hulu Sungai Selatan Reg.	0.78	0.00	0.54	0.91	0.50
82	Hulu Sungai Tengah Reg.	0.24	1.00	0.43	0.98	0.30
83	Hulu Sungai Utara Reg.	0.51	0.33	0.64	0.93	0.27
84	Humbang Hasundutan Reg.	0.38	1.00	0.64	0.99	0.62
85	Indragiri Hilir Reg.	0.05	0.00	0.19	0.99	0.03
86	Indragiri Hulu Reg.	0.19	1.00	0.48	0.98	0.07
87	Indramayu Reg.	0.03	1.00	0.80	0.00	0.01
88	Jambi City	0.07	0.00	0.30	1.00	0.06
89	Jayapura Reg.	0.82	0.67	0.69	0.38	1.00

<b>No.</b>	<b>District</b>	<b>Outcome</b>	<b>Duration</b>	<b>Leadership</b>	<b>Literacy</b>	<b>Central Transfer</b>
90	Jayapura City	0.06	1.00	0.76	1.00	0.56
91	Jember Reg.	0.02	1.00	0.40	0.00	0.01
92	Jeneponto Reg.	0.09	0.00	0.71	0.00	0.11
93	Jepara Reg.	0.03	0.33	0.56	0.42	0.02
94	Jombang Reg.	0.06	0.00	0.75	0.52	0.02
95	Kaimana Reg.	1.00	1.00	0.74	0.98	1.00
96	Kapuas Hulu Reg.	0.48	1.00	0.53	0.08	0.90
97	Kapuas Reg.	0.41	0.00	0.49	0.92	0.53
98	Karang Asem Reg.	0.18	1.00	0.70	0.00	0.11
99	Karawang Reg.	0.04	1.00	0.71	0.43	0.01
100	Karimun Reg.	0.67	0.67	0.62	0.97	0.06
101	Katingan Reg.	0.38	0.00	0.09	1.00	0.96
102	Kaur Reg.	0.50	1.00	0.51	0.99	0.72
103	Kebumen Reg.	0.02	1.00	0.53	0.23	0.02
104	Kediri Reg.	0.01	1.00	0.45	0.30	0.02
105	Kediri City	0.96	0.00	0.53	0.99	0.55
106	Keerom Reg.	1.00	1.00	0.12	0.00	1.00
107	Kendal Reg.	0.03	1.00	0.55	0.03	0.03
108	Kendari City	0.14	0.33	0.62	0.97	0.34
109	Kepahiang Reg.	0.45	1.00	0.30	0.85	0.72
110	Kepulauan Talaud Reg.	0.84	0.00	0.73	0.99	1.00
111	Klaten Reg.	0.01	1.00	0.63	0.01	0.04
112	Klungkung Reg.	0.72	0.00	0.85	0.00	0.64
113	Kolaka Reg.	0.28	0.00	0.41	0.52	0.38
114	Konawe Selatan Reg.	0.03	1.00	0.66	0.13	0.39
115	Kota Baru Reg.	0.27	1.00	0.66	0.58	0.35
116	Kotawaringin Barat Reg.	0.53	1.00	0.70	0.79	0.63
117	Kuantan Singingi Reg.	0.17	0.67	0.52	0.98	0.18
118	Kudus Reg.	0.09	0.00	0.64	0.49	0.03
119	Kulon Progo Reg.	0.35	0.67	0.58	0.32	0.20

<b>No.</b>	<b>District</b>	<b>Outcome</b>	<b>Duration</b>	<b>Leadership</b>	<b>Literacy</b>	<b>Central Transfer</b>
120	Kuningan Reg.	0.05	0.00	0.54	0.98	0.03
121	Kutai Barat Reg.	0.95	0.67	0.53	0.98	0.82
122	Lamandau Reg.	0.84	0.00	0.65	0.99	1.00
123	Lamongan Reg.	0.03	1.00	0.66	0.02	0.02
124	Lampung Tengah Reg.	0.00	1.00	0.33	0.71	0.03
125	Landak Reg.	0.05	0.67	0.38	0.43	0.21
126	Langkat Reg.	0.03	0.00	0.31	0.99	0.03
127	Lebak Reg.	0.03	0.00	0.58	0.88	0.02
128	Lebong Reg.	0.35	1.00	0.44	0.93	0.87
129	Lembata Reg.	0.68	0.67	0.35	0.17	0.79
130	Limapuluh City Reg.	0.06	1.00	0.24	0.99	0.27
131	Lingga Reg.	0.96	1.00	0.32	0.06	0.76
132	Lombok Tengah Reg.	0.03	1.00	0.25	0.00	0.03
133	Lubuk Linggau City	0.32	0.00	0.90	0.99	0.24
134	Lumajang Reg.	0.02	0.00	0.43	0.00	0.02
135	Luwu Timur Reg.	0.67	1.00	0.83	0.49	0.17
136	Luwu Utara Reg.	0.57	1.00	0.78	0.51	0.19
137	Luwu Reg.	0.14	0.00	0.79	0.08	0.17
138	Madiun Reg.	0.05	0.00	0.63	0.00	0.05
139	Madiun City	0.63	0.00	0.70	0.98	0.57
140	Magelang Reg.	0.02	0.00	0.66	0.62	0.02
141	Magelang City	0.99	1.00	0.60	0.98	0.80
142	Magetan Reg.	0.13	0.00	0.72	0.06	0.07
143	Majalengka Reg.	0.04	0.00	0.38	0.90	0.03
144	Malang Reg.	0.01	1.00	0.28	0.03	0.01
145	Malang City	0.01	0.00	0.42	0.98	0.03
146	Mamuju Utara Reg.	0.18	1.00	0.62	0.02	0.73
147	Manado City	0.03	1.00	0.40	1.00	0.15
148	Mandailing Natal Reg.	0.05	1.00	0.75	1.00	0.12
149	Manggarai Barat Reg.	0.06	1.00	0.64	0.67	0.26

<b>No.</b>	<b>District</b>	<b>Outcome</b>	<b>Duration</b>	<b>Leadership</b>	<b>Literacy</b>	<b>Central Transfer</b>
150	Mappi Reg.	0.98	1.00	0.19	0.00	1.00
151	Maros Reg.	0.16	1.00	0.55	0.00	0.18
152	Medan City	0.11	1.00	0.33	1.00	0.01
153	Melawi Reg.	0.25	1.00	0.59	0.00	0.65
154	Merangin Reg.	0.07	0.00	0.07	0.89	0.27
155	Merauke Reg.	0.81	1.00	0.39	0.84	0.99
156	Metro City	0.82	1.00	0.63	1.00	0.64
157	Mimika Reg.	0.97	0.00	0.47	0.65	0.61
158	Minahasa Utara Reg.	0.12	1.00	0.53	1.00	0.54
159	Minahasa Reg.	0.04	0.33	0.72	1.00	0.31
160	Mojokerto Reg.	0.01	1.00	0.73	0.64	0.02
161	Mojokerto City	1.00	0.00	0.51	0.98	0.80
162	Morowali Reg.	0.59	0.33	0.55	0.87	0.80
163	Muara Enim Reg.	0.51	0.00	0.79	0.98	0.03
164	Muaro Jambi Reg.	0.13	0.67	0.43	0.98	0.11
165	Mukomuko Reg.	0.70	1.00	0.35	0.62	0.61
166	Murung Raya Reg.	0.83	0.00	0.48	1.00	1.00
167	Musi Banyuasin Reg.	0.59	0.67	0.92	0.99	0.01
168	Musi Rawas Reg.	0.11	1.00	0.91	0.95	0.08
169	Nganjuk Reg.	0.08	0.00	0.41	0.16	0.03
170	Ngawi Reg.	0.03	1.00	0.78	0.00	0.04
171	Ogan Ilir Reg.	0.04	1.00	0.73	0.99	0.07
172	Ogan Komering Ilir Reg.	0.05	0.00	0.77	0.93	0.06
173	OKU Selatan Reg.	0.04	1.00	0.66	0.98	0.07
174	OKU Timur Reg.	0.05	1.00	0.80	0.88	0.04
175	Ogan Komering Ulu Reg.	0.21	1.00	0.74	0.95	0.23
176	Pacitan Reg.	0.09	1.00	0.18	0.03	0.06
177	Padang Panjang City	1.00	0.00	0.55	0.99	1.00
178	Padang Pariaman Reg.	0.06	1.00	0.33	0.67	0.18
179	Padang Sidempuan City	0.39	0.33	0.65	1.00	0.47

<b>No.</b>	<b>District</b>	<b>Outcome</b>	<b>Duration</b>	<b>Leadership</b>	<b>Literacy</b>	<b>Central Transfer</b>
180	Padang City	0.02	0.00	0.39	1.00	0.06
181	Pagar Alam City	0.46	0.00	0.90	0.99	0.57
182	Palangkaraya City	0.06	0.00	0.58	1.00	0.65
183	Palembang City	0.02	0.00	0.81	0.99	0.02
184	Palopo City	0.77	0.00	0.74	0.89	0.65
185	Palu City	0.52	1.00	0.66	0.99	0.25
186	Pamekasan Reg.	0.04	0.00	0.60	0.00	0.03
187	Pandeglang Reg.	0.01	1.00	0.33	0.84	0.03
188	Pangkajene Kepulauan Reg.	0.39	1.00	0.40	0.00	0.22
189	Pariaman City	0.63	0.00	0.36	0.99	0.97
190	Parigi Moutong Reg.	0.08	0.00	0.79	0.23	0.13
191	Pasaman Barat Reg.	0.07	1.00	0.56	0.82	0.13
192	Pasaman Reg.	0.23	1.00	0.42	0.99	0.30
193	Pasir Reg.	1.00	1.00	0.78	0.98	0.05
194	Pasuruan Reg.	0.02	0.00	0.11	0.05	0.01
195	Pasuruan City	0.58	1.00	0.21	0.92	0.38
196	Pati Reg.	0.05	0.67	0.64	0.01	0.02
197	Payakumbuh City	0.82	0.33	0.44	0.99	0.83
198	Pekalongan Reg.	0.10	0.67	0.49	0.07	0.03
199	Pekalongan City	0.26	1.00	0.65	0.95	0.13
200	Pekan Baru City	0.01	0.67	0.48	1.00	0.01
201	Pelalawan Reg.	0.03	0.67	0.23	0.94	0.06
202	Pematang Siantar City	0.54	1.00	0.60	1.00	0.41
203	Pesisir Selatan Reg.	0.09	1.00	0.34	0.87	0.16
204	Pinrang Reg.	0.13	0.00	0.68	0.32	0.17
205	Pohuwato Reg.	0.60	1.00	0.70	0.51	0.77
206	Polewali Mandar Reg.	0.08	0.00	0.69	0.00	0.12
207	Ponorogo Reg.	0.08	1.00	0.26	0.02	0.04
208	Pontianak City	0.13	0.00	0.43	0.81	0.06
209	Poso Reg.	0.50	1.00	0.54	0.98	0.84

<b>No.</b>	<b>District</b>	<b>Outcome</b>	<b>Duration</b>	<b>Leadership</b>	<b>Literacy</b>	<b>Central Transfer</b>
210	Prabumulih City	0.70	0.00	0.92	0.98	0.40
211	Probolinggo Reg.	0.02	0.00	0.76	0.00	0.02
212	Probolinggo City	0.66	0.00	0.91	0.02	0.27
213	Pulang Pisau Reg.	0.49	0.00	0.79	0.99	0.91
214	Purbalingga Reg.	0.05	1.00	0.90	0.46	0.03
215	Purwakarta Reg.	0.03	0.00	0.30	0.96	0.02
216	Purworejo Reg.	0.08	1.00	0.40	0.26	0.06
217	Rejang Lebong Reg.	0.30	1.00	0.45	0.84	0.39
218	Rembang Reg.	0.17	1.00	0.81	0.20	0.05
219	Rokan Hulu Reg.	0.10	0.67	0.70	0.98	0.02
220	Salatiga City	0.92	0.67	0.73	0.90	0.43
221	Samarinda City	0.05	1.00	0.41	0.99	0.02
222	Sambas Reg.	0.09	0.67	0.47	0.23	0.11
223	Sampang Reg.	0.02	0.33	0.47	0.00	0.02
224	Sanggau Reg.	0.10	0.00	0.24	0.03	0.23
225	Sarolangun Reg.	0.13	0.67	0.55	0.89	0.36
226	Sawahlunto Sijunjung Reg.	0.16	1.00	0.26	0.51	0.49
227	Sawahlunto City	0.98	0.00	0.49	0.98	0.99
228	Sekadau Reg.	0.12	1.00	0.30	0.07	0.49
229	Selayar Reg.	0.55	1.00	0.90	0.37	0.81
230	Seluma Reg.	0.12	1.00	0.41	0.75	0.54
231	Semarang City	0.02	1.00	0.40	0.96	0.02
232	Serdang Bedagai Reg.	0.03	1.00	0.27	0.99	0.04
233	Seruyan Reg.	0.41	0.00	0.73	0.97	0.96
234	Sidenreng Rappang Reg.	0.31	0.00	0.54	0.00	0.33
235	Sidoarjo Reg.	0.02	1.00	0.53	0.99	0.01
236	Sikka Reg.	0.34	0.00	0.76	0.01	0.21
237	Simalungun Reg.	0.03	1.00	0.52	0.98	0.06
238	Singkawang City	0.62	0.33	0.17	0.02	0.54
239	Sinjai Reg.	0.18	0.00	0.78	0.00	0.42

<b>No.</b>	<b>District</b>	<b>Outcome</b>	<b>Duration</b>	<b>Leadership</b>	<b>Literacy</b>	<b>Central Transfer</b>
240	Sintang Reg.	0.26	1.00	0.43	0.03	0.51
241	Situbondo Reg.	0.07	1.00	0.39	0.00	0.05
242	Sleman Reg.	0.04	1.00	0.19	0.65	0.03
243	Solok Selatan Reg.	0.58	1.00	0.55	0.93	0.62
244	Solok Reg.	0.04	1.00	0.29	0.96	0.21
245	Solok City	0.73	1.00	0.30	0.99	0.99
246	Soppeng Reg.	0.23	1.00	0.94	0.00	0.52
247	Sorong Selatan Reg.	1.00	1.00	0.84	0.00	1.00
248	Sorong City	0.56	0.33	0.54	0.99	0.50
249	Sragen Reg.	0.07	0.67	0.73	0.00	0.04
250	Subang Reg.	0.02	0.00	0.60	0.20	0.02
251	Sukabumi Reg.	0.03	1.00	0.47	0.99	0.01
252	Sukabumi City	0.91	0.00	0.51	1.00	0.12
253	Sukamara Reg.	0.98	0.00	0.59	0.76	1.00
254	Sukoharjo Reg.	0.03	1.00	0.65	0.04	0.03
255	Sumbawa Barat Reg.	0.58	1.00	0.89	0.21	0.62
256	Sumbawa Reg.	0.24	1.00	0.60	0.13	0.15
257	Sumedang Reg.	0.06	0.00	0.59	0.99	0.03
258	Sumenep Reg.	0.03	1.00	0.64	0.00	0.03
259	Surabaya City	0.17	1.00	0.47	0.98	0.01
260	Surakarta City	0.10	1.00	0.67	0.96	0.09
261	Tabanan Reg.	0.63	1.00	0.73	0.32	0.16
262	Takalar Reg.	0.34	0.33	0.70	0.00	0.25
263	Tanah Datar Reg.	0.14	1.00	0.52	0.97	0.24
264	Tanah Karo Reg.	0.18	1.00	0.48	0.99	0.24
265	Tangerang City	0.03	0.00	0.46	0.99	0.01
266	Tanjung Balai City	0.51	1.00	0.44	0.99	0.52
267	Tanjung Jabung Barat Reg.	0.52	1.00	0.28	0.97	0.11
268	Tanjung Jabung Timur Reg.	0.07	0.67	0.32	0.00	0.22
269	Tanjung Pinang City	0.67	0.33	0.76	1.00	0.25

<b>No.</b>	<b>District</b>	<b>Outcome</b>	<b>Duration</b>	<b>Leadership</b>	<b>Literacy</b>	<b>Central Transfer</b>
270	Tapanuli Tengah Reg.	0.38	1.00	0.63	0.73	0.13
271	Tapanuli Utara Reg.	0.32	0.00	0.54	0.99	0.41
272	Tapin Reg.	0.66	0.33	0.57	0.92	0.61
273	Tasikmalaya City	0.42	0.33	0.48	1.00	0.05
274	Tebo Reg.	0.04	0.67	0.16	0.97	0.20
275	Tegal Reg.	0.02	0.00	0.55	0.04	0.02
276	Teluk Bintuni Reg.	1.00	1.00	0.56	0.03	1.00
277	Teluk Wondama Reg.	1.00	1.00	0.79	0.00	1.00
278	Temanggung Reg.	0.04	0.00	0.64	0.84	0.03
279	Tidore Kepulauan City	0.71	1.00	0.60	0.99	0.95
280	Timor Tengah Selatan Reg.	0.03	0.00	0.18	0.00	0.12
281	Timor Tengah Utara Reg.	0.16	1.00	0.20	0.00	0.43
282	Toba Samosir Reg.	0.68	1.00	0.42	1.00	0.59
283	Tojo Una-Una Reg.	0.64	1.00	0.75	0.96	0.62
284	Toli-Toli Reg.	0.36	1.00	0.82	0.60	0.57
285	Tomohon City	0.53	1.00	0.57	1.00	0.90
286	Trenggalek Reg.	0.08	1.00	0.47	0.21	0.05
287	Tuban Reg.	0.03	0.67	0.75	0.00	0.02
288	Tulungagung Reg.	0.12	0.00	0.54	0.67	0.04
289	Wajo Reg.	0.28	0.00	0.48	0.00	0.12
290	Wakatobi Reg.	0.70	1.00	0.92	0.67	0.83
291	Way Kanan Reg.	0.02	1.00	0.72	0.88	0.08
292	Wonogiri Reg.	0.03	1.00	0.64	0.00	0.04
293	Wonosobo Reg.	0.07	1.00	0.76	0.17	0.03
294	Yapen Waropen Reg.	0.97	1.00	0.13	0.41	0.99
295	Yogyakarta City	0.57	0.67	0.73	0.99	0.12