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Does fiscal decentralization good for reducing communal conflict?

A multilevel analysis of communal conflict at Indonesia's villages 2008-2014

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Abstract— **Whether fiscal decentralization is good for reducing communal conflict is still debatable. This study examines the linkage between fiscal decentralization and communal conflict in Indonesia, administrative decentralization, and political decentralization is examined as well. Data come from the Village National Census (*Podes*) 2008-2014 (N=234,717). Results of two-level logit regression show that fiscal decentralization not significantly associated with reducing communal conflict. The findings suggest that decentralization work for reducing communal conflict through better capacity of local bureaucrats rather than through financing capacity in delivering public services and the enhanced opportunities for channeling citizen participation in direct political participation.**

Keywords— fiscal decentralization, communal conflict, multilevel analysis, Indonesia's village)

I. INTRODUCTION

Indonesia is one of developing countries which still face communal conflict and violence. Before decentralization, communal conflicts caused by ethnic rivalries occurred in Jakarta, Tasikmalaya, Semarang, Yogyakarta, Solo, West Kalimantan and Central Kalimantan. Moreover, communal conflicts caused by inter-religious factors broke out in Maluku, North Maluku, and Central Sulawesi. Also, many rural areas have been affected by smaller-scale 'routine' communal conflicts over resources, politics, and identities along Indonesian's Archipelago, from Aceh until Papua [1]. Since 2001, radical decentralization has changed the political, economic and social contexts in Indonesia. Some scholars documented evidence that in the early years of decentralization, communal conflict happened over resources, politics, economy, and identities [2,3,4].

Some scholars argue whether a violent communal conflict is widespread or locally contained [5,6]. Barron and Sharpe (2008) in [5] showed that communal violence in Indonesia is contagious. While, Varshney (2008) in [6] shows that large-scale communal violence in Indonesia, such as riots and pogroms, is locally concentrated, but small-scale group communal violence, such as lynching and inter-village brawls is quite widespread. Regarding those trends, understanding violent communal conflict at the local level is especially important, because the predominant pattern of violent conflict during the post-Suharto period (1998-2003) was changing from vertically state-society conflict to horizontal society-society violence (communal violence) [4,7,8].

The United Nations Support Facility for Indonesian Recovery (UNSFIR) documented pioneering social violent conflict database titled "Patterns of Collective Violence in Indonesia in the period of 1990 to 2003" whereas communal conflicts occurred about 3,608 total number of incidents. Communal conflicts in Indonesia not only resulted in various total numbers of incidents but also caused an increasing number of deaths and reducing GDP per capita. UNSFIR (2004) in [9] also reported some incidents of communal conflict in Indonesia could reach over 10,700 deaths [9]. World Bank conducted Violence Conflict in Indonesia Study (ViCIS) in 2010 documented there were 2,000 incidents of communal violence every year occur in 4 provinces with inhabited by 4 % of total Indonesian people since 2006 [10]. Likewise, in the period of 2006 to 2009, communal violence murdered around 600 people, injured 6000 people and destroyed over 1600 houses. In another case, Indonesian Central Board of Statistics (BPS) documented communal conflicts in Indonesia increased to approximately 5,831 death tolls and IDRs 900 million total number of material losses in period 2003 to 2008 [11]. This number is equal to twenty-two times of Indonesian's GDP per capita.

The increasing communal conflict in Indonesia in the period of 1999 to 2014 seems to be linked with the political transition in this country. Since 2001, Indonesia embraced radical decentralization that transformed the country's local government political system. Decentralization has given every district or local government the power to perform the key functions of a state, including the provision of health, education, environmental and infrastructure services. Further reforms in 2005 allowed citizens to elect their own mayor and parliament through direct local elections. By the end of 2006, more than half of all districts had conducted direct local elections [12]. Abundant resources within district government and new local political power have also encouraged communal conflict during this period [13].

The consequences of fiscal decentralization on communal conflict have been documented. However, these studies show contrasting findings. Some prior studies found that fiscal decentralization is good reducing communal violence due to domestic terrors, routine acts of violence and communal conflicts [14,15,16]. Murshed, Tadjoeddin, and Chowdhury (2009) found that Fiscal decentralization could reduce the tension of communal conflict due to a mechanism that fiscal decentralization may satisfy the needs of local communities with which people identify more closely in local level rather than centralized policy [15]. Tranchant (2008) found Fiscal decentralization could reduce the likelihood of conflict by strengthening bureaucratic quality [16]. However, other scholars found an increasing communal conflict associating with fiscal decentralization [17,18,19]. They all believe that there is a direct and indirect connection between increasing episodes of communal conflict with fiscal decentralization.

Despite the important results, several limitations are notified in these prior studies. First, most of those studies use provincial and districts level in addressing the association of decentralization and communal conflict. By ignoring village level as the lower administrative tiers, the study could not capture the effect of decentralization and communal conflict properly until the most prone areas of communal conflict. Second, some of the prior studies used limited geographical coverage. For example, in [15], Murshed, Tadjoeddin, and Chowdory (2009) study only covered districts within Java Island, and therefore findings could only be generalized within communal conflicts across districts in this Island.

This study aims to fill those gaps in several ways. First, we use national representative census about the nexus between decentralization and communal conflict by focusing on Indonesia over the period of 2008-2014. However, this study mostly differs from previous studies which only covered limited provinces and districts in Indonesia [15, 20]. Since this study captures the association of decentralization and communal conflict in Indonesia, It will cover whole districts level and villages' level instead. By analyzing the association of decentralization and communal conflict until Indonesia's lowest administrative tier (village *Desa* and neighborhood *Kelurahan*), this study reveals the effect of decentralization on the most prone areas to communal conflicts. Second, this study differs from some of the prior studies which used only limited geographical coverage [15,20]. By using larger coverage of districts and municipalities, villages and neighborhoods within whole the provinces of Indonesia, this study reveals how were communal conflicts distributed geographically in Indonesia in the period of 2008 to 2014. This study also contributes to enhancing the results and findings which can be generalized within communal conflicts across districts in Indonesia.

II. RESEARCH METHODS

A. Hypotheses linking fiscal decentralization and communal conflict

The linkage between fiscal decentralization and communal conflict has been studied across developing countries. However, the findings remain controversial. Some scholars found the benefit of fiscal decentralization on communal conflict argue that fiscal decentralization may reduce communal conflict. Fiscal decentralization reduces the likelihood of communal conflict by increasing level of allocative efficiency and the share of locally generated revenue [15,18,21]. On the other hand, scholars who found the detrimental effect of decentralization on communal conflict argue that fiscal decentralization leads to communal conflict through the ineffectiveness of fiscal decentralization through the practices of corruption, collusion, nepotism [22,23]. Based on those hypotheses, this study seeks to find whether fiscal decentralization in Indonesia contributes for reducing or increasing communal conflicts. The next section describes detailed data which are used to examine these hypotheses.

B. Data Sources: Indonesia's village potential census (Podes) 2008-2014 and official statistics

To examine the effects of fiscal decentralization on communal conflict, we assembled district and village data from various sources. The data possesses a multilevel structure, with villages nested within districts. Data on villages is taken from The Village Potency Census (*Podes*) from the year 2008 to the year 2014 while district data comes from nationally-representative surveys and official statistics. The *Podes* was conducted every 3 (three) years by the Indonesian Central Board of Statistic (*Badan Pusat Statistik*) since 1983. *Podes* provides detail information on a range of characteristics including about the incidents of local communal conflict and violence, the proportion of village heads who attained higher education within districts, and the number of community groups within districts. Information is gathered by conducting interviews with the key informants such as *Kepala Desa* (rural village heads) and *lurah* (urban neighborhood heads) and other credible informants as well as some field observation [24].

The *Podes* data was linked to other official statistical data sets using district codes. For instance, we linked the *Podes* data to Districts' Ethnic Fractionalization Index (EFI). That index measures ethnic heterogeneity or ethnic diversity. The index ranged from 0 (homogeneous) to 0.94 (heterogeneous) [25]. Moreover, we linked the *Podes* data to Official Statistics of District level, e.g., Gross Domestic Regional Product, Gini Ratio, and Head Count Poverty.

C. Variables Definition

(1) Measures of communal conflict

Communal conflict is measured by constructing dummy indicators of communal conflicts events in villages level for each key factors: inter-village brawls, disputes between groups within one village with other groups in other villages, student riot, ethnic riot, and others. Table 1 describes detailed variables, definition, and source used in this study.

Table 1: Variables, Definition, and Source of Data

Variables	Indicators	Definition	Sources of Data
Fiscal Decentralization	Log of districts' annual spending	Districts' spending in public, law, and order function in(2007-2013)	SIKD 2007-2013
Administrative Decentralization	Share of level education of local leader	Percentage of level education of village chief within districts	BPS-Podes 2008-2014
Political Decentralization	Age of direct democracy	Duration year from first direct Mayor election (*pilkadal*) in (2008-2014)	MoH 2008-2014
Communal conflict	Density of Communal conflict	A dummy indicator measures communal conflict occurs at villages in the last of a year village	BPS Podes 2008-2014

(2) Measures of fiscal decentralization and other measures of decentralization

In order to measure fiscal decentralization, we used district spending in public, law and order function (the year 2007, the year 2011, and the year 2013; the year prior to my chosen *Podes* dataset), as districts' development spending data in the Indonesian budgeting system takes at least one year to produce effect. Second, to measure administrative decentralization, a dataset from the *Podes* census is used. This dataset indicates the proportion of education level which was attended by village head within districts. Third, to measure political decentralization we used the age of direct local democracy (*Pilkadal*) as a proxy measure of democratic maturity.

(3) Other determinants of communal conflict

Some determinants were included to control the likelihood of communal conflict across villages. Van Klinken (2007), in [4] argued that ethnic heterogeneity is the primary determinants of communal conflict in Indonesia. We restrain communal conflict with ethnic diversity across districts. We use Ethnic Fractionalization Index (EFI) based on 2010 Indonesia Population Census based on quantifying that index by Arifin et al. (2015) in [25]. The Index shows range from 0 (for homogenous) and 1 (for heterogeneous).

Villages' experienced daily crimes are included to control for communal conflict. Daily crimes are measured by density of theft, robbery, gambling, heist, lynching, raping/sex abuse, drug abuse, and firing. Those low-level acts of violence may turn into riots in villages. GDRP, Gini ratio, and poverty are included to control whether economic development in district affects communal conflict. Prior studies suggest that communal conflicts are rooted also by economic rivalries and supply of public goods, poverty, and economic inequality [5,26].

We also include slum areas, converted land use, and mining areas to control whether area deprivation associated with communal conflict. Barron, Kaiser, and Pradhan (2009) in [2] found that key determinants of communal conflict in village level related to competition to access limited natural resources and the rights in controlling them, the presence of slum areas, natural disaster and cropland's shrinking to non-cropland use.

We utilize existing community guard system to measure whether institutional capacity in managing communal conflict reduce the likelihood of communal conflict within villages. The Density of Non-Governmental Organization (NGO), *Ormas* and religion based organization is included to examine whether such groups contribute for reducing communal conflict. Putnam, Leonardi and Nanneti (1993) found that social groups not only exert pressure on the government in providing better services but also present models of the services in subjecting community welfare [27]. At the same time, such groups provide a channel for the community in keeping peace and order.

A Number of territorial force officer (*Babinsa*) at villages is included to control for communal conflicts. Sangaji (2007) showed by his qualitative study that the significant presence of the security forces in several disadvantaged areas and most prone to communal conflict zones in Indonesia increase the communal violence [28]. In this study, Territorial Force Officers (*Babinsa*) reflects army representatives in the lowest administrative tiers of local civil government. They are vertically responsible to the army force of Indonesia to anticipate the potential threat to the state. In districts, this territorial force officers under *Koramil* (Resort Military Command) command within *Kodim* (district military command).

The role of local traditional leaders in communal conflict resolving is important. Qualitative studies identify their beneficial roles, such as *Tuan Guru* in NTB provinces in resolving communal conflict around village heads' election [22], Raja's *role* in resolving communal conflict in Ambon [29], and *Penghulu* in Central Kalimantan in leading customary laws [30].

Communal conflict may also occur due to widening institutional information. This study also examines the association between access to television and communal conflict. This variable is measured by constructing dummy variable that one or more of types of televisions can be watched or not in particular village. We adjusted that this density of access to a television channel in the villages and neighborhoods are related to its biased media and violence contents, e.g., violence and rated R TV Series, prime time film tv, breaking news, crimes film, and criminal news.

In another case, this study also tests the linkage of long drought with communal conflict. Some scholars and practitioners believe that in developing countries, drought is associated with communal conflict. For Instance, a study in Somalia by Maystadt and Ecker (2014) [31], study about drought, natural water scarcity in Syria [32] and research in Boyolali and Semarang, Indonesia about competition over clean waters [33]

D. Two Level Regression Analyses

In this study, we use two-level logistic regression since communal conflict measured by a dummy variable [34].

We set up two-level logit regression model equations with random intercepts in villages and neighborhoods level (unit level 1) to predict the outcome variable *Y* using the explanatory variables in villages and neighborhoods and districts (unit level 2). Considering a village or neighborhood *i* nested in a district *j*, logit two-level regression is

$$Y_{ij} = E_{ij*}\,;\, Y_{ij} \sim Binomial(n_{ij}, E_{ij*})$$

$$logit(E_{ij*}) = \beta_0 + \sum \beta_j W_j + \beta_{ij} X_{ij} + \mu_j + \epsilon_{ij}$$

with

E_{ij*}= logit (P (E_{ij*}=1))

E_{ij*} *is outcome variables (communal conflict) in villages (i) nested within districts/cities(j)*

β_0 is a random intercept

W_j is a set of district characteristics (e.g Fiscal District Spending, Poverty, Gini index, GDRP, Population Density, and Migrant Population)

X_{ij} is a set of villages characteristics (e.g. ethnic diversity, daily crimes, access to television, slum areas, mining areas)

$\epsilon_{ij}$is error which is assumed logistic distributed with zero and variance σ_{ϵ}^2

μ_j is a random intercept varying over districts with mean zero and variance σ_{μ}^2

III. FINDINGS AND DISCUSSION

A. Findings

(1) Geographical distribution of communal conflict

Figure 1, 2, and 3 describe geographical distribution of communal conflict in Indonesia respectively in 2008, 2011, and 2014.

In the year 2008, the highest incident of communal conflict mostly occurred in 46 villages within Jayapura District (Papua) and 39 villages within North Halmahera (North Maluku). Communal conflicts also occurred in 67 villages within two districts of West Java Provinces respectively (34 villages within Cirebon District and 33 villages within Bogor Districts. North Sumatera, Central Sulawesi, Maluku and Nusa Tenggara Timur also performed moderate density of communal conflict in 2008.

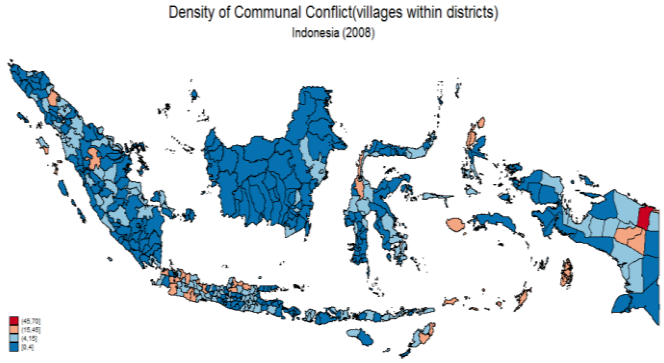

Figure 1 Geographical Distributions of Communal Conflict in Indonesia (2008). Source: calculated by the authors based on *Podes* 2008.

While in the year of 2011, the geographical distribution of communal conflict in Indonesia shows the highest incidents of communal conflict occur at villages within Tolikara District, a proliferated district of Jayawijaya District in Papua (69 villages).

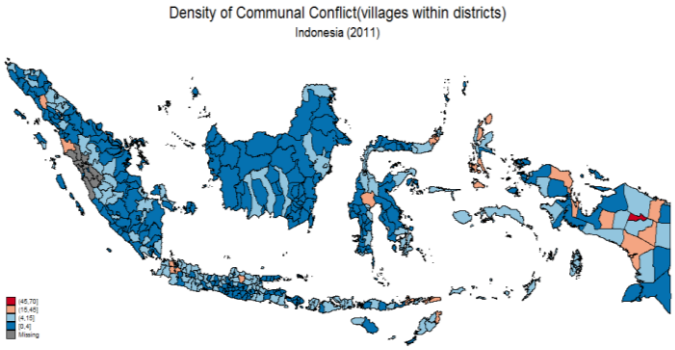

Figure 2 Geographical Distributions of Communal Conflict in Indonesia (2011). Source: calculated by the authors based on *Podes* 2011.

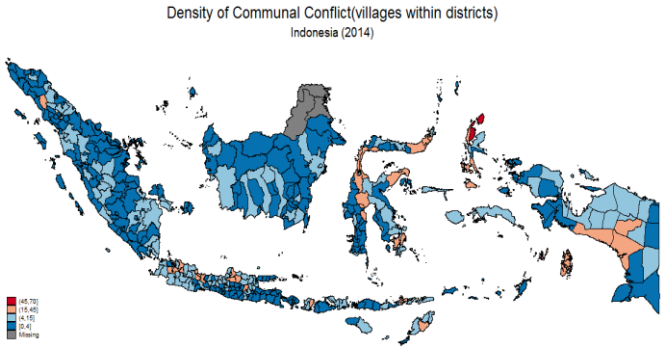

Figure 3 Geographical Distributions of Communal Conflict in Indonesia (2014) Source: calculated by author based on *Podes* 2014

Figure 3 shows the highest density of communal conflict occur in two proliferated New Districts in North Maluku, North Halmahera (52 villages) and South Halmahera (39 villages). Likewise, Maluku Tengah District shows the vulnerability of communal conflict incidents. 39 villages within this district experienced communal conflict in 2014.

From those three maps, We find that communal conflict still occurred within Indonesian post-conflict areas, such as Maluku, North Maluku, Central Sulawesi, although in minor scales rather than occurred in the past.

(2) Logit and multi-level logit regression of communal conflict

Table 1 presents regression result of the one level logit and two- level logit and shows the standard error of logit regression is lower than the standard error of multi-level logit regression. However, the results of multi-level logit are the more robust rather than single-level logistic regression since the multi-level logit results accounting for nested structure of the data.

Fiscal decentralization has no significant association with communal conflict. However administrative decentralization decreases communal conflict in Indonesia (-0.47, $p < 5\%$). We found villages under competence village head less likely having communal conflict. In contrast, Ethnic heterogeneity as measured by EFI increases a likelihood of communal conflict (0.59, $p < 5\%$). GDRP seems not a determinant of communal conflict. Likewise, economic inequality and poverty increase likelihood of communal conflict (1.32, $p<5\%$ and 1.71, $p<0.5\%$ respectively).

Table 2: Logit and multi-level logit regression

	Logit		Multilevel logit	
	Coef.	SE	Coef.	SE
District				
Adm. Decen.	-0.63*	0.11	-0.47*	0.20
Fiscal Decen.	-0.02	0.04	-0.09	0.10
Pol. Decen.	-0.02*	0.01	0.00	0.02
EFI	0.42*	0.07	0.59*	0.17
GDRP	-0.05*	0.02	-0.08	0.05
Gini Ratio	0.03	0.36	1.32*	0.50
NGO	0.00*	0.00	0.00	0.00
Poverty	-0.12	0.23	1.71*	0.48
Teritorrial force officers	0.00	0.00	0.00	0.00
Eastern Indonesia	0.89*	0.05	0.11	0.08
Village				
Local Traditional Leaders	6.84*	0.07	6.96*	0.07
Community Socap.	0.19*	0.04	0.20*	0.04
Slum Areas	0.51*	0.06	0.37*	0.06
Converted Land Use	0.17*	0.04	0.19*	0.04
Mining Areas	0.17*	0.04	0.17*	0.04
Television	0.25*	0.05	0.28*	0.06
Daily Crimes	1.24*	0.04	1.21*	0.04
Drought	0.20*	0.09	0.34*	0.09
Mountain	-0.10*	0.05	-0.18*	0.05
Valley	0.00	0.08	0.03	0.08
Seaside	0.40*	0.04	0.28*	0.05
Years				
2011	-0.51*	0.05	-0.50*	0.09
2014	-0.67*	0.07	-0.66*	0.16
Constants	-3.05*	0.82	-1.81	2.00
Sigma_u			0.87*	0.04
Rho			0.19	0.01

*Reported *p<0.05*

Source: The *PODES* 2008, 2011, and 2014 and Official Statistics

B. Discussions

The question of what the nexus of fiscal decentralization and communal conflict has long been of interest to social scientists. However, this has rarely been explored in the context of a radical decentralized Indonesia using comprehensive geographical coverage and simultaneously long period of census dataset. Based on Indonesia's national village census 2008-2014, we examine the relationship of fiscal decentralization-communal conflict.

The main results show that fiscal decentralization does not contribute significantly to reducing communal conflict in this country. Only administrative decentralization that helps for reducing communal conflict in the country. Whereas, fiscal and political decentralization is not. Null findings are found in the association between local government's expenditure on the public, law peace and order function and total balancing fund (own district revenue, block grant (DAU), and specific grant (DAK)), and age of direct local democracy (*Pilkadal*) on communal conflict. This contrasting result seems to signal that decentralization in Indonesia reduces communal conflict through better capacity of street-level bureaucrats at village government rather than through financing capacity in delivering public services and the enhanced opportunities in channeling citizen participation in direct political involvement. These null findings confirm Duncan (2007) and Ascher and Mirovitskaya (2016) who found the lack of capacity civil servants are remains of largest problem facing communal conflict in decentralized Indonesia. While Duncan (2007) in [35] and Ascher and Mirovitskaya (2016) in [36] show this evidence based on small case studies, our findings show across all villages in the country.

Other important findings show that district's economic inequality and poverty are sources of communal conflict in decentralized Indonesia. Indonesia's economic development is distinguished by an endemic problem of regional economic inequality and poverty [37,38,39,40,41]. Both endemic problems widen the following decentralization and lead to communal conflict.

IV. CONCLUSIONS

Our findings show that ethnic heterogeneity is a source of communal conflicts. Hegre (2001) argue that communal conflicts are rooted in the dynamics of difference within inter-group relations where groups saw themselves as different due to the ethnic and cultural background [42]. Green (2008) found that in developing countries, such as in Uganda and Indonesia, the communal conflict that strongly associated with ethnicity [43]. Further, Van Klinklen (2007) explains that ethnic heterogeneity is the main determinants of communal conflict in decentralized Indonesia [4]. Decentralization to some extent strengthens ethnic primordialism in Indonesia through the phenomena called *Putra Daerah* (indigenous local leader).

Second, the result confirms Barron, Kaiser and Pradhan (2009) who found that communal conflict in village level related to competition to access limited natural resources, natural disaster and cropland's shrinking to non-cropland use [2]. The presence of mining areas and natural disaster related to climate (drought) in villages level shows the manifestation of competition over scarce and the access rights in controlling them. Some studies show that competing for scarce natural resource and drought are associated with communal conflict such as in Indonesia and Syria [13,31]. Based on the qualitative study, Sukmawan and Yuwono (2012) shows that competition over clean water escalates to the communal conflict between two villages in the border Boyolali District and Semarang District [32]. In another case, the land conversion from agricultural use to non-agricultural use is the likelihood of communal conflict. In villages level when cropland, especially communal farmland is shrinking in availability and turn into non-cropland use could trigger to communal conflict. These conflicts emerge due to common reason that communal cropland represents an unclear property right to whom the land belongs to [2]. Sanyal and Mukhija (2001) found that slum areas could be a latent factor in creating communal conflict related to mismanagement in housing allocation in Mumbai India [44]. The variability of communal conflict is positively associated with inequality in housing and living (as measured by density of slum areas in villages' level). The presence of slum areas across the Indonesia's' villages shows that development yet not fulfills economic equality and prosperity.

Third, others two findings confirm that access to television indirectly links to violent behavior which may be escalated to communal conflict [45,46,47,48]. Moreover, the results confirm [49] that daily crimes, as measured by low-level violence may turn into riots in villages could predict variability of communal conflict in villages.

We realize that the findings consist of two limitations. First, because of the cross-sectional design, we have to be cautious about the possible causality of associations. The estimated coefficient should be viewed as a measure of association, rather than causation. The causal effect of decentralization and communal conflict is something with future research, using panel data on communal conflict and the most appropriate method should seek to establish. Second, communal conflict is measured by a dummy variable. This measure allows to identifying communal conflict in villages level only capture whether or not types of communal conflict occurred in the villages. More robust measurement of communal conflict should consider the number of communal conflicts.

Despite these limitations, this study has several important contributions to the literature and communal conflict management policy in developing countries. First, this study highlights that decentralization work for reducing communal conflict through better capacity of local bureaucrats rather than through greater sharing financing capacity in delivering public services. While prior studies show these findings in the contexts of citizen happiness, combating spatially communal violence, bridging digital divide, poverty reduction, and corruption eradication [50,51,52,53,54], We show in the context of reducing multilevel communal conflict in Indonesia.

Second, this study suggests that ethnic diversity in districts level could alleviate the risk factor of some variability of communal conflict until lower administrative tiers, e.g., local traditional leaders, and community group social capital. Ethnic diversity may cause that local traditional leaders not effective in handling conflict in heterogeneous areas, even are associated with higher level of communal conflict. This same pattern is shown by community group social capital. The result shows that an area with more abundant community group social capital is positively associated with communal conflict. We may interpret this result that in more heterogeneous villages, community group social capital is most strong in bonding social capital rather bridging social capital. Relative, that is in more heterogeneous areas social cohesion is more fragile rather than in less homogenous areas. A Future study could take this pattern into account in showing more robust finding.

This study also shows other key determinants of communal conflict in village level, e.g., slum areas, access to television and daily crimes. This study contributes to Barron, Kaiser, and Pradhan (2009)'s finding in [2] that this variable could be additional key determinants in associating with communal conflict's variability in lower administrative tiers.

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