Abstract— Radical decentralization reform works or does not work for reducing communal conflict is still debatable. This study examines the linkage between decentralization policy and communal conflict in Indonesia. Two measurement of decentralization: administrative decentralization, and fiscal decentralization is examined. Data come from the Village National Census (Podes) 2003-2014 (N=301,974). 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 district proliferation policy.

Keywords: fiscal decentralization; administrative decentralization; communal conflict; multilevel analysis; Indonesia’s village

I. INTRODUCTION

The widening communal conflict across decentralized developing countries has been a focal point within decentralization and development studies. Decentralization reform in many countries has been believed as a tool to reduce communal conflict as through the reform local citizen are able to decide what they need and what they want. However, practice across decentralized developing countries show widening communal conflicts during decentralization reform.

Some prior studies found several factors that explain why decentralization could reduce and could lead communal conflicts. Based on a qualitative study by [1] in 1999, decentralization and several policies in Ghana could abate communal conflict between migrant farmers and host-landers due to land disputes. However, [2] explains that abundant resources within district government and new local political power have encouraged communal conflict during decentralization reforms period in Indonesia. While, [3] shows how decentralization reforms and proliferation policy in Pakistan are related to massive migrations from rural to growing cities, and associated with competition over economic resources, political representation, and ethnic identity between migrant and non-migrants. Another scholar, [4] argues that decentralization could increase local-level conflict by shifting power from ethnically heterogeneous areas to those dominated by only one or two ethnic groups.

This study provides new insights in understanding the linkage between radical decentralization reform and communal conflict in Indonesia. Based on a large national survey dataset, we test the hypothesis whether radical decentralization reform in the country which incorporates political, economic and administrative reform associated with widening communal conflict between 2003-2014. We argue that radical decentralization reform will lead to widening communal conflict due to lack capacity of local government in managing local politics as well as abundant resources transferred to local government.

The consequences of radical decentralization reform on communal conflict have been documented. However, these studies show contrasting findings. Some prior studies found that decentralization policy is good reducing communal violence due to domestic terrors, routine acts of violence and communal conflicts [5][6][7]. In 2009, [6] found that decentralization policy 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. A study of decentralization policy requires improved bureaucratic quality in reducing the likelihood of conflict [7]. However, other scholars found an increasing communal conflict associating with decentralization policy [8][9][10]. They all believe that there is a direct and indirect connection between increasing episodes of communal conflict with radical decentralization reform in Indonesia.

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, a study by [6] only covered districts within Java Island, and therefore findings could only be generalized within communal conflicts across districts in this island. Third, prior studies has not linked decentralization policies to the dimensions of decentralization. Some of them only examine the linkage between the fiscal decentralization and communal conflict, while the others only discuss the linkage of political decentralization and communal conflict. Fourth, prior studies ignore multilevel dimension of communal conflict. From a temporal variation perspective at the national level, most prior studies ignore multilevel dimension of communal conflict. Ignoring multilevel dimension of communal conflict may result in bias in which the results are unable to control unobserved contextual influences across villages within districts that may relate to shift communal conflict [11].

Given the current situation of the research, this study tends to fill those open gaps in several ways. First, this study covers until lowest administrative tiers (village level). By analyzing the association of decentralization and communal conflict until Indonesia’s lowest administrative tier (village (desa) and neighborhood (kelurahan)), this study reveals effect of...
decentralization reform on the areas mostly prone to communal conflicts. Second, this study differs from some of the prior studies which used only limited geographical coverage [6][12]. By using larger coverage of villages within districts, and districts within whole the provinces of Indonesia, this study contributes to enhancing results and findings which can be aggregated within communal conflicts across districts in Indonesia. Third, this study discusses more simultaneously measurement of decentralization policy. This study discusses not only about fiscal decentralization but also about administrative decentralization, and proliferation policy and their effect toward communal conflict. By considering more than 1 (one) measurement of decentralization simultaneously, this study provides more robust findings. Fourth, this study considers multilevel dimension of communal conflict. By considering the multilevel model, this study could examine the link between decentralization (at district level) and communal conflict (at village level). This analysis can be used to address multilevel heterogeneity by assuming that the association between the dependent variable and its covariates varies between districts and village level [13].

Three questions frame this study in examining the nexus of radical decentralization reform and communal conflict in Indonesia (2003-2014). First, How are the statistical trends and geographical distributions of violent communal conflict in decentralized Indonesia (2003-2014)? Second, could decentralization policy reduce communal conflict?

II. RESEARCH METHOD

Our study was based on Village Potential Census data (Podes) 2003-2014. The Podes data set are national representative data covered all villages in Indonesia. Podes consist of more than 7,200 villages (desa) and urban neighborhoods (kelurahan) across all 465 districts in Indonesia. In this study, we used Podes 2003-2014 which also has information about communal conflicts and the impacts of the conflicts (fatalities, injuries, and material damage). The Podes data set was linked to decentralization measure data from the Ministry of Home Office and the Ministry of Finance. Data were analyzed using multilevel logit regression. The next section describes detailed hypotheses, data, measurement, and method which We used in this study.

A. Repeated Cycle of Communal Conflict

Communal conflicts pose a severe threat to human security and kill thousands of people each year [1-4]. Developing countries faced repeated cycle of communal conflicts. Communal Conflicts often are not on-off events, but are ongoing and repeated [15]. Likewise, In Indonesia, some incidents of communal conflict repeated. Some Indonesian researchers point re-emergence of new communal conflict in post conflict areas [16][17]. For instance, Communal conflict re-outbroked in Ambon in 2011 which were rooted and affected by changing structure population of indigenous and migrant, segregation, and development malfunction [17].

B. Hypotheses linking decentralization policy and communal conflict

The linkage between decentralization policy and communal conflict has been studied across developing countries. However, the findings remain controversial. Some scholars found the benefit of decentralization on communal conflict argue that decentralization policy may reduce communal conflict. Radical decentralization reform reduces the likelihood of communal conflict by increasing level of allocative efficiency and the share of locally generated revenue [6][18][19]. On the other hand, scholars who found the detrimental effect of decentralization policy on communal conflict argue that decentralization policy leads to communal conflict through the ineffectiveness of fiscal decentralization through the practices of corruption, collusion, nepotism [20].

C. Data Sources

Based on those arguments and hypotheses, this study seeks to find how is the trend and geographical distribution of communal conflict during the period of 2003 to 2014, and examine whether decentralization in Indonesia contributes for reducing or increasing communal conflicts. Data Sources: Indonesia’s village potential census (Podes) 2003-2014 and official statistics.

To examine the effects of decentralization on communal conflict, we assembled district and village data from various sources. The data possess 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 [21].

The Podes data was linked to other official statistical data sets using district codes. For instance, we linked the Podes data to Official Statistics of District level, e.g., Gross Domestic Regional Product, Gini Ratio, Migrant Proportion, Population Density, and Head Count Poverty.

D. 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>
<thead>
<tr>
<th>Variables</th>
<th>Indicators</th>
<th>Definition</th>
<th>Sources of Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiscal Decentralization</td>
<td>Log of districts’ annual spending</td>
<td>Districts’ spending on balancing fund (2002-2013)</td>
<td>SIKD 2002-2013</td>
</tr>
<tr>
<td>Administrative Decentralization</td>
<td>Share of level education of local leader</td>
<td>Percentage of level education of village chief within districts</td>
<td>BPS-Podes 2003-2014</td>
</tr>
<tr>
<td>Communal conflict</td>
<td>Density of Communal conflict</td>
<td>A dummy indicator measures communal conflict occurs at villages in the last of a year village</td>
<td>BPS Podes 2003-2014</td>
</tr>
</tbody>
</table>

E. Measures of decentralization

Measuring fiscal and administrative decentralization we used district balancing fund (the year 2002, the year 2004, 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.

F. Two Level Regression Analyses

In this study, we use two-level logistic regression since communal conflict measured by a dummy variable, which are nested within districts’ variables [22].

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

\[
Y_{ij} = E_{ij}^* : Y_{ij} \sim \text{Binomial}(n_{ij}, E_{ij}^*)
\]

\[
\text{logit}(E_{ij}^*) = \beta_0 + \sum \beta_j W_j + \beta_k X_{ij} + \mu_j + \epsilon_{ij}
\]

with

- \( E_{ij}^* = \text{logit} (P(Y_{ij}=1)) \)
- \( E_{ij}^* \) outcome variables (communal conflict) in villages (i) nested within districts/cities (j)
- \( \beta_0 \) 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 proportion)
- \( X_{ij} \) 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 \( \sigma^2_e \)
- \( \mu_j \) is a random intercept varying over districts with mean zero and variance \( \sigma^2_{\mu} \)

III. RESULT AND DISCUSSION

G. Trend of Communal Conflict, 2003-2014

Results of statistic descriptive show decreasing communal conflict in Indonesia between 2003 and 2014 (Fig.1.). There were around 3% villages’ experiences communal conflicts, as well as the density of all conflict (include conflict with government apparatus and policeman). Ethnic communal conflicts show fluctuating trends, after cooled down from 2003 to 2005, ethnic-communal conflict tends to increase from 2005 to 2011. From 2011 to 2014, ethnic-communal conflict decreased significantly (from 0.2% villages to 0.1% villages).

H. Geographical Distributions of Communal Conflict

Fig. 2, 3, and 4 respectively point map of geographical distributions of communal conflict in Indonesia respectively in 2003, 2008, 2011, and 2014.

The map of Fig.2. points geographical distribution of communal conflict in Indonesia in 2003. In the earlier era of decentralization, the highest incidents of communal conflict occurred at Aceh, Central Sulawesi, Maluku, and North Maluku. Respectively, 534 villages and 184 villages within North Aceh and East Aceh District experience communal conflict in the early period of decentralization. Likewise, North Sulawesi and Central Sulawesi experienced mostly prone areas of communal conflicts respectively in 67 villages within Minahasa Districts and 55 villages within Poso Districts. In other areas, Villages near in north coastal areas within Cirebon Districts and Indramayu Districts demonstrated higher communal conflict risks in the earlier period of decentralization (respectively 86 villages and 88 villages).
Religious Fractionalism
Jayawijaya District in Papua (69 villages) (2nd map in Fig. 3).

Villages within Tolikara District, a proliferated district of
high-level education attained by village and neighborhood
bureaucracy (as measured by the proportion per district of the
administrative decentralization across all villages in the country.

Table 2. Multilevel logistic regression results of decentralization and
communal conflict in Indonesia, PODES 2003-2014

<table>
<thead>
<tr>
<th>Districts</th>
<th>Coef.</th>
<th>s.e.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative</td>
<td>-0.975*</td>
<td>0.148</td>
</tr>
<tr>
<td>Fiscal Decentralization</td>
<td>-1.08</td>
<td>7.310</td>
</tr>
<tr>
<td>Public, Law and Order</td>
<td>-3.741*</td>
<td>0.638</td>
</tr>
<tr>
<td>Function</td>
<td>-0.062</td>
<td>0.114</td>
</tr>
<tr>
<td>Proliferation</td>
<td>0.058*</td>
<td>0.004</td>
</tr>
<tr>
<td>Poverty</td>
<td>2.43*</td>
<td>0.274</td>
</tr>
<tr>
<td>Gini Ratio</td>
<td>-0.032</td>
<td>0.026</td>
</tr>
<tr>
<td>GDP</td>
<td>1.449*</td>
<td>0.209</td>
</tr>
<tr>
<td>Population Density</td>
<td>0.001*</td>
<td>0.001</td>
</tr>
<tr>
<td>Migrant</td>
<td>0.125*</td>
<td>0.082</td>
</tr>
</tbody>
</table>

Note: the model was controlled by individual, household, and
community characteristics

within North Halmahera (North Maluku). Communal conflicts
also occur 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. Likewise, in
2011 the highest incidents of communal conflict occur at
villages within Tolikara District, a proliferated district of
Jayawijaya District in Papua (69 villages) (2nd map in Fig. 3.).

The map entirely differed in 2014 (Fig.4.) in which the
highest density of communal conflict occurred 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.

I. Multilevel logistic regression

Next, multilevel logistic regression results show whether
decentralization associated with communal conflict across
archipelago (Table 2). The model shows a significantly
negative association between administrative decentralization
and communal conflict. By higher competency of local
bureaucracy (as measured by the proportion per district of the
high-level education attained by village and neighborhood
heads) may deflate communal conflict in the period of 2003 to
2014 in Indonesia. Likewise, Fiscal decentralization and
district proliferation policy could decrease communal conflict
in Indonesia. They negatively associated with communal
conflict. The greater and better sharing of budget allocation
for performing some key state function into local government
may deflate communal conflict in the period of 2003 to 2014
in Indonesia.

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. The proliferation
policy to separate a prior conflicted district into new districts
may reduce communal conflict. However, the model shows
that the fiscal decentralization and proliferation policy are not
significant policies in reducing the likelihood of communal
conflict in lowest administrative tiers. This result shows that
fiscal decentralization and proliferation policies seem not to be
significant factors in reducing communal conflict in the last
ten years of decentralized Indonesia, rather than administrative
decentralization. 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 proliferation policy. These null
findings confirm [23][25] who found the lack of capacity civil
servants are remains of largest problem facing communal
conflict in decentralized Indonesia. While [23][24][25] show
this evidence based on small case studies, our findings show
across all villages in the country.

Other important findings show that the positive association
of proportion migrant may relate with increasing conflict and
violence in districts with a greater number of balancing fund.
It indicates that the higher decentralizations could increase
the potential of communal conflict incidences between migrant
and indigenous people in competing for natural resources, and
access to public services. In another case, the socio-economic
marginalization of an indigenous group could escalate the
communal conflict. For example, a study which is conducted
by [26] in 2005 shows that in Central Kalimantan, the socio-
economic marginalization of Dayak (indigenous) from
Madurese (migrants) meet the failed districts’ capacity may
provoke the communal violence outbreak.

Other important findings show that district’s economic
inequality and poverty are sources of communal conflict in
two decades of decentralized Indonesia. In particular about
district’s economic inequality, Indonesia faces the rising of
inequality. The increasing gap of inequality between richest
and poorest from 2002 to 2014 is shown by [27] in 2016. The
richest 10 percent of Indonesians own an estimated 77 percent
of all the country’s wealth and in fact, the richest 1 percent
owns half of all the country’s wealth [27]. Indonesia’s
economic development is distinguished by an endemic
problem of regional economic inequality and poverty
[28][29][30][31][32]. Both endemic problems widen the
following decentralization and lead to communal conflict.
IV. CONCLUSION

This study shows that communal conflict in decentralization period (2003-2014) decreases significantly from 2003 to 2005. However, it increases slightly from 2005 to 2014. Despite are showing lower intensity during decentralization period, communal conflicts outbreak in post-conflict areas: Aceh, Central Kalimantan, Central Sulawesi, Maluku, North Maluku, and Papua. This study alerts that the World Bank theory about repeated cycle of violence could happen in Indonesia. Likewise, this study shows that local governments in Indonesia vary regarding policies for communal conflict reduction. At the district level, the policy depends on the ability of local governments to provide goods and services that meet the needs of local citizens, rather than financing capacity and granting district proliferation policy. The promises offered by decentralization are likely to be realized only when each local government strengthens its capacity [33][34][35]. Communal conflict reduction depends on the competence and the capability of street level bureaucracy in controlling how small-scale brawl not to be provoked into the escalated communal riot. Moreover, this study shows other characteristics of the districts level are linked to communal conflict at the village level. At the district level, key determinants of communal conflict range from Poverty Rate, Gini Ratio, GRDP, Population Density, Migrant Proportion, and Religious Fractionalization Index.

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