

Ethnic Diversity, Social Norms and Elite Capture: Theory and Evidence from Indonesia

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ABSTRACT

Elite capture is a natural concern regarding decentralisation. We highlight the effects of ethnic diversity and social norms on the extent of such capture. Ethnic diversity, through differences in the preference for public goods, facilitates capture. However, this may be counteracted by social norms which promote cooperative behaviour within communities. We test these theoretical predictions using community-level data from the 1997 and 2007 Indonesian Family Life Survey (IFLS) rounds with fiscal decentralisation being implemented in between. We exploit a particular institutional feature of Indonesian communities — namely, the observance of traditional “Adat” laws to proxy coordination across ethnic groups. Overall, we find that ethnic diversity depresses community-level development spending after decentralisation, particularly where Adat laws (which promote an ethic of mutual co-operation) are not followed. The opposite is observed for spending on non-developmental items.

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1 Introduction

Political decentralisation presents several potential benefits, some of which arise from better public service delivery owing to better information being available at local levels of governance (see e.g., Bardhan and Mookherjee (2006a)). Also, decentralisation that involves a certain devolution of powers to local agents may promote democracy and increase accountability to local people. However elite capture may not be ruled out in decentralised settings (Bardhan and Mookherjee (2000)). The lobbying and bargaining by the local elite may well serve to undermine the potential gains for the rest of the community. Moreover, the issue may be further complicated in an ethnically heterogeneous environment.² We explore the inherent trade-off between the gains from decentralisation and the losses from elite capture in a setting with ethnic diversity. Undoubtedly, ethnic diversity implies a certain difference in the preferences over public goods. However, different ethnic groups may well have difficulties in coordinating over collective activities alongside there being any intrinsic taste differences. This creates a role for *local institutions* which may affect these coordination costs by promoting mutual cooperation and engagement.

The present paper aims to address the following questions. Is elite capture more likely in an ethnically diverse environment following the implementation of decentralisation? Is there any role for local institutional features to mitigate the extent of such capture? We examine these questions in the context of Indonesia — a multi-ethnic country which embarked upon fiscal decentralisation at the turn of the millennium.

To develop these ideas precisely, we utilise a simple model of lobbying where society has citizens with different preferences over local public spending. In our framework, there is an elite group and the remaining citizens – namely, the non-elites – are divided into two ethnic groups. Thus, like in Bandiera and Levy (2011) there is diversity in terms of social class (elite/non-elite) and in terms of ethnic preferences (within the non-elites). Ethnic diversity in our model stems from the difference in *sizes* of the different ethnic groups. Diversity in taste arises since each group has its own most-preferred allocation of the (local) public funds which are all – in principle – distinct across the groups.

The main idea is the following. Fiscal decentralisation – by increasing the influence of the local politician – raises the interest of the community in being able to “influence” the same. To do so, the elite may exert itself as a lobby or it could involve one of the two ethnic groups in the lobby as well. The local politicians are keen on garnering support from the community and, in the absence of a lobby, would simply implement the benevolent planner’s policy. However, the lobby by exerting itself may be able to tilt policy in favour of the lobby group. In equilibrium, there arises a distortion in policy in relation to that of the benevolent planner’s with a positive probability. We highlight the factors which affect the

²We discuss the relevant literature on ethnic diversity and public spending/development in some detail below.

extent of this distortion in public spending. In particular, our simple model demonstrates that coordination costs across the different ethnic groups, i.e., factors pertaining to *local institutions* are crucial elements. Intuitively, the elite are able to exploit this difference across the ethnic groups to distort spending to their advantage. This, in turn, implies that any local institutional feature which can affect these coordination costs will change the scope of the distortion in local public policy.

In reality, however, one typically does not have a clear empirical measure of coordination costs relating to local public policy across various ethnic groups. This is precisely why Indonesian communities provide an ideal setting for examining these nuanced differences. The presence of the Adat custom will allow us to utilise adherence to Adat laws as implying high level of mutual interaction and cooperation within the community. The Adat system relies heavily on the notion of “consensus building” (*musyawarah*) which involves community members to engage in group deliberation leading to consensus in communal matters. We are furthermore able to see these forces at play more clearly, owing to the 2001 decentralisation which allowed the local elites within the communities a chance to organise themselves and lobby. Our theory predicts that in the post-decentralisation period, ethnic diversity will adversely affect developmental spending – owing to elite capture – at the community level particularly in communities which eschew Adat customs (hence, ‘non-adat’). In other words, the communities which follow Adat norms are able to offset (at least, partially) the extent of elite capture in the face of ethnic diversity.

Fiscal decentralisation in post-Suharto Indonesia, which has its roots in Law 22/99 and Law 25/99 enacted in January 2001, was largely an exogenous event for the communities. It gave local communities more autonomy in raising local revenues while enforcing strict budgetary cuts on the central leadership to supply development grants to these communities. It also granted administrative authority to local governments to hire staff and conduct local government affairs with a minimum intervention of the central government. Local community governments were made responsible to the district government who provided the bulk of their funds after fiscal decentralisation; in other words, the centre of power moved from the central government in Jakarta to the district governments located in district head-quarters after fiscal decentralisation. We study the local communities at 1997 and at 2007 — two junctures separated by the introduction of fiscal decentralisation in 2001. Our analysis is based on the community level data obtained from 1997 and 2007 Indonesian Family Life Survey (IFLS) from 312 rural and urban communities from 36 districts in 13 provinces. These waves allow for a *pre* and *post* study vis-a-vis the fiscal decentralisation policy.

The IFLS rounds provide important information on three key aspects. They are:

(A) the information about the community’s adherence to Adat norms. Adat law was recognised by the colonial administration in the Dutch Indies as part of a dual legal system in which natives were subject to ‘their own religious laws, institutions and customs so far as they were not in conflict with generally recognized principles of equity and justice ...’ (Fasseur

2007). Based on the knowledge and information of a local expert, the Indonesian Family Life Surveys (IFLS) classified all communities in terms of their adherence to adat laws.³

(B) Information on the spending allocation of the local community government in both 1997 and 2007 rounds. This includes spending on social (e.g., local schools and health centres) and physical (e.g., roads and transport) infrastructure; spending on staff salary, office maintenance, official trips and contingencies; and grants for various developmental programs. Accordingly, we are able to construct different measures of development spending (valued by the poor/non-elite) and also non-development spending (valued by the elite).

(C) Information on the various ethnic groups and their sizes in the surveyed communities.

Using these data, we are able to test our theory’s predictions for elite capture via the pattern of local public spending. We compare communities characterised — within a district — by different levels of ethnic diversity and Adat adherence, *before* and *after* the exogenous introduction of fiscal decentralisation.⁴ We consistently find that communities which do not strictly follow Adat laws and are ethnically diverse tend to have lower levels of development spending at the community level after controlling for a host of explanatory variables. Moreover, the effect on the spending on non-development categories (like the salaries of local leaders and their administrative expenses, etc.) is in the opposite direction. Thus, these empirical findings align very closely with our theoretical predictions.

We rule out the possibility of divergent pre-trend level of outcomes in adat and non-adat communities in diverse societies. Further these key findings survive a battery of robustness checks: e.g., they extend to the use of social and physical infrastructure spending at the community level, they prevail when using the shares (out of total public spending) of the different variables in conjunction with the levels of spending under the various heads, they also are consistent across different measures of ethnic diversity. All these results consistently exhibit the same pattern, namely, that of greater elite capture marked by ethnic diversity and lack of Adat adherence in the aftermath of fiscal decentralisation.

We delve further into the possible differences between adat and non-adat communities which might serve to highlight the mechanism behind our empirical findings. In particular, we find that observable characteristics of leaders, namely, age, sex, education, tenure are not significantly different between adat and non-adat communities. However, the leaders are *more* likely to be insiders (i.e., reside in the community than outside of it) in adat communities. Thus, greater mutual co-operation among community members may induce an insider leader to deliver more towards development in adat (as opposed to non-adat) communities. Relatedly, an “outsider” leader may need to contend with higher co-ordination costs of public service delivery and especially so in communities where mutual cooperation is lower (i.e., non-adat communities).

³A detailed descriptive account of Adat is provided in Section 1.1 below.

⁴Our identification strategy is explained in greater detail under Section 3.2.

Our contribution intertwines with various strands of the literature. The literature on ethnic diversity and development revolves around the general consensus that ethnic diversity is detrimental to development (Easterly and Levine, 1997; Alesina et al. 1999; Banerjee and Somanathan, 2007; Collier 2008). More recently, Ashraf and Galor (2013) point out that diversity could have *both* positive and negative impacts on economic outcomes. It is argued that there exists an optimal level of diversity for each stage of economic development, reflecting the interplay between the opposing effects of diversity on the development process.⁵ In a similar vein, Gomes (2020) argues that ethnic diversity leads to a higher stock of knowledge in society about how to rear ones children and thus improves the health outcomes of children, whereas individual ethnic distances act as barriers to accessing such knowledge and thus lead to worse health outcomes. Our stand is that adherence to adat norms in Indonesia may induce co-operation even in societies with high ethnic diversity.

The literature on decentralisation is rich and diverse. Some of this literature tends to analyse the effects of some aggregate measure of decentralisation on public policy and development in cross-country setup (see for example, Davoodi and Zou (1998), De Luca et al. (2002), De Mello and Barenstein (2001), Fishman and Gatti (2002) and Enikolopov and Zhuravskaya (2007)). Additionally, there is the literature – mostly in the fields of political science and economics – on democratic capture by the elite or other interest groups by means of vote buying, voter co-optation, patronage networks, and the use of force or its threat (e.g., see Bardhan, 2002; Bardhan and Mookherjee, 2006a; Bardhan and Mookherjee, 2006b) at a more local level. Besley et al. (2005) assess the role of individual characteristics of the local politicians on the quality of decentralised governance. They find that education increases the likelihood of selection to public office and reduces the odds that a politician uses political power opportunistically. As such, these afore-mentioned studies do not directly focus on identifying the nature of elite capture and control of local public policy in ethnically diverse communities following decentralisation.

In terms of the work on Indonesia, Martinez-Bravo (2014) assesses the impact of the first post-Soeharto parliamentary election in Indonesia to test if new democracies experience greater electoral fraud and more clientelistic spending than established democracies. The main finding is that the body of appointed local officials that a new democracy (predominantly the urban ones) inherited from the previous regime is a key determinant of the extent of these practices. Relatedly, Martinez-Bravo, Mukherjee and Stegmann (2017) show that allowing old-regime agents to remain in office during democratic transitions is a key determinant of the extent of elite capture. Soeharto-regime mayors were allowed to finish their terms before being replaced by new leaders. Since mayors political cycles were not

⁵The adverse effect pertains to the detrimental impact of diversity on the efficiency of the aggregate production process. The beneficial effect of diversity, on the other hand, concerns the positive role of heterogeneity in the expansion of societys production possibility frontier. A wider spectrum of traits is more likely to contain those that are complementary to the advancement and successful implementation of superior technological paradigms.

synchronized, this event generated exogenous variation in how long old-regime mayors remained in their position during the democratic transition. Districts with longer exposure to old-regime mayors experience worse governance outcomes, higher elite persistence, and lower political competition in the medium run. Their results suggest that slower transitions towards democracy allow the old-regime elites to capture democracy. Their findings being largely concerned with the political ramifications of decentralisation (old-regime mayors lead to lower political competition, etc.) provide a complementary dimension to our approach.

Next, we briefly dwell upon two papers which are closest to our work. Bandiera and Levy (2011) examine if political outcomes in local democracies are determined by the preferences of the median, typically poor agents, or that of the rich elite. Their theoretical setup builds on a citizen-candidate type model where coalitions are allowed. The main prediction is that in ethnically diverse societies, the elite are able to offer a platform which defeat the one most preferred by the poor (non-elite) as a whole. Hence, they are able to distort policy in their favour owing to the difference in ethnicity-based preferences among the non-elite. Their empirical analysis using the 1997 Indonesian Family Life Survey data reveals that democratic policy outcomes are closer to the elite preferences in ethnically diverse decentralised communities. The other is Padro-i-Miquel et al. (2014) who examine the case of rural China. They demonstrate that one of the preconditions for exogenously introduced grassroots democracy to be effective is the degree of community homogeneity in some vertical attribute (religion in their case) that allows better provision of public goods. In particular, they find that voter heterogeneity constrains the potential benefits of elections for public goods provision.

While closely related to these two papers, our work makes a marked departure in that we show how ethnically diverse communities may benefit less from fiscal decentralisation owing to the strategic actions of the local elite when coordination costs across ethnic groups are salient. In this respect, we explore the role played by ethnic and institutional factors in determining the scope of elite capture. We are able to pinpoint a specific mechanism linking ethnic diversity to local developmental spending post-decentralisation highlighting the role of local institutions; in the empirical analysis this is operationalised by utilising a specific institutional feature of Indonesian communities — namely, the observance (or not) of Adat.

The remainder of the paper is organised as follows. Section 1.1 contains a brief background on Indonesia's politico-economic features, particularly, the institution of Adat. Section 2 presents a simple model designed to address our main questions. Section 3 describes the data, the empirical strategy and findings and Section 4 concludes. All proofs are contained in the appendix.

1.1 Indonesia’s politico-economic structure: A brief background

1.1.1 Decentralisation and local governance

Indonesia was under Suharto’s autocratic rule for more than three decades, from 1965 to 1998. During his regime, the population was subject to tight control of the government and the military. With the introduction of the ‘1979 village law’, village affairs were brought under the supervision and close control of higher authorities. While the law stated that the village had “the right to manage its own affairs”, it immediately noted that this “does not mean autonomy” (General Clarification, section 7). The village was nothing more and nothing less than “the lowest level of the government structure directly under the sub-district chairman”. Since 1979, the head of villages classified as ‘desa’ has been elected in village-level elections held every 8 years, while the heads of ‘kelurahan’ villages (urban/city) were appointed by upper levels of administration. These have been the *de jure* selection rules of community leaders though in practice the process may have varied. In short, Indonesia has been culturally and politically decentralised even though local leader selections may have been controlled by the central regime under Suharto. However, the nation was under the unambiguously tight grips of central fiscal control until 2001.

Fiscal decentralisation in post-Suharto Indonesia has its roots in Law 22/99 and Law 25/99 enacted in January 2001. Following fiscal decentralisation, the central government provided grants to different districts using a ‘fiscal needs’ formula based on various district-level characteristics (see Pal and Wahhaj (2017)). It also granted administrative authority to local governments to hire staff and conduct local government affairs with a minimum intervention of the central government; local community governments were made responsible to the district government who provided the bulk of their funds after decentralisation. In other words, the centre of power moved from the central government in Jakarta to the district governments located in district head-quarters after decentralisation.

1.1.2 Adat: an overview

Adat is a very broad concept; moreover, it is very fluid and varies significantly across Indonesia. Adat, being largely oral, is commonly translated as ‘customary law’ or ‘traditional law’. Adat applies chiefly to land, certain family law issues (including marriage, divorce, and inheritance), contracts, and some criminal offences (see, e.g., Butt and Lindsey (2018)). Lindsey (1996) notes that their content and form is as diverse as the societies that have developed them. Thus, it varies significantly from place to place even across relatively short distances (see Stephens (2003)). It is sometimes territorial, as with Javanese adat; genealogical, as with Minangkabau adat in Northern Sumatra; or religious, as with adat in Flores, which is based on Catholic traditions.

In spite of the diversity, there are some *universal principles* which are shared by most (if not

all) adat systems. The following excerpt from Alisjahbana (1966) captures them well:

“a preponderance of communal over individual interests, a close relationship between [people] and the soil, an all-pervasive magical and religious pattern of thought, and a strong family-oriented atmosphere in which every effort [is] made to [resolve] disputes through conciliation and mutual consideration.”

This emphasis on the community, equilibrium, and harmony, rather than on the individual, is the key unifying theme underlying adat. This manifests itself in a preference for informal mediation through deliberation and consensus (*musyawarah* and *mufakat*) and an emphasis on community members assisting one another as required (*gotong royong*). The communal property of entitlements to land is another common characteristic of adat. While it is possible for land to be held by individuals in some adat systems, in many it is held communally (*hak ulayat*). This defines the adat community’s right of control of the allocation and use of land and any resources produced on, or contained within, it; the purpose for which it can be used; and for how long it may be so used. Often it will be the village head (*kepala desa*) who decides these matters; in others, adat elders or councils decide; in still other cases, a process of *musyawarah* is necessary (see Fitzpatrick (1997)).

During their colonisation of Indonesia, the Dutch were fearful of Islam being used to mobilise Indonesians against their rule, and therefore worked to privilege adat over Islamic law. Several debates about adat took place soon after Indonesia’s independence. The People’s Consultative Assembly (*Majelis Permusyawaratan Rakyat*, MPR) stated in 1966:

“The principles for developing the national law must correspond with the political direction of the state and must be based on adat law that does not hamper the promotion of a just and prosperous society.”⁶

In reality, merging adat with state-made law rarely worked in adat’s favour and most Indonesian legislators tended to ignore it especially during Suharto’s rule (see, e.g., Butt and Lindsey (2018)). In the post-Suharto era, there seems to be a change in political attitude towards adat. Adat rights were mentioned in various statutes concerning natural resources enacted from 1999 onward. Indonesia’s Constitution was amended in 2000 to recognise the rights of traditional communities. In a ceremony at the Presidential Palace on 30 December, 2016, President Joko Widodo formally handed 13,100 hectares of land to nine communities in the recognition of their land rights.⁷

In terms of the essential implications of adherence to adat customs, we emphasise the universal traits — namely, the focus on placing the community’s interest over any individual member’s and involving the entire community in decision-making duties (through deliberation and consensus-building). Thus, adhering to adat essentially implies a natural tendency towards cooperation with others (hence, lower coordination costs in terms of public action).

⁶MPRS Decision II/ 1960, appendix A, para 402.

⁷“Jokowi Grants First- Ever Indigenous Land Rights to 9 Communities” Mongabay.com (4 January 2017) <https://news.mongabay.com/2017/01/jokowi-grants-first-ever-indigenous-land-rights-to-9-communities/>.

2 Theory

Here we set up a simple model to study the effects of ethnic and institutional factors on elite capture following decentralisation. Decentralisation increases the influence of the local politician. This, in turn, implies that the community as a whole recognise that controlling the local politician is valuable. This potentially spurs the constituent ethnic groups within the community to lobbying in order to influence the local politician. However, the degree of diversity inherent in society — be it in terms of taste or ethnicity — affects the coordination efforts by influencing the potential gains and the costs of cooperation.

2.1 A Model

In our model, there is a local politician (L) and two constituent social groups within the village community — call them E and C , where the former denote the (local) elite and the latter the non-elite citizens. We will assume that the mass of the elites is λ which lies between $(0, 1/2)$ and that of the non-elite citizens is $1 - \lambda$. Furthermore, the non-elites are divided into two distinct *ethnic* groups. Suppose $\rho \in [1/2, 1)$. Let $\rho(1 - \lambda)$ denote the size of the larger ethnic group while the smaller group is of mass $(1 - \rho)(1 - \lambda)$. We shall call them C_1 and C_2 , respectively, so that $C_1 \cup C_2 = C$. This division of the village community along class (elite/non-elite) and ethnic lines (two groups within the non-elite) is similar to the one in Bandiera and Levy (2011).

A major distinction across the three socio-economic groups arises from their preferences over the allocation of (local) public goods — which, post-decentralisation, depends upon the extent to which either group can influence L . Let us say that post-decentralisation there is a quantity of funds (the local budget) which is in the hands of L . Call this amount R which is assumed to be strictly positive. Now depending upon the efforts of a lobby (if any arises), the distribution of the local public goods will be determined. We assume that the elite E — by virtue of its social standing — has a first-mover advantage in deciding the composition of the lobby.

If the elite decide to lobby alone and are successful, then they get to enjoy R solely by themselves — thus the members of C_1 and C_2 are deprived of this public spending. Alternatively, E could strategically decide to involve one of these two groups in the lobby and exclude the third one. In the latter situation (E and either C_1 or C_2 jointly lobby), the total value of the resources R is assumed to diminish to $R\alpha$, where $\alpha \in (0, 1)$. One could think of α embodying the extent of alignment of preferences among E and the non-elite group over (local) public spending. Alternatively, α may be considered as a proxy for the coordination costs for collective action between the rich and the poor. Either interpretation is valid for the context we study. A similar preference factor/coordination cost parameter exists for cooperation between the two poor but ethnically distinct groups. This is reflected by the

parameter β , where $\beta \in (0, 1)$.

In case no lobby is able to successfully influence L , then they each get a baseline payoff of $R\alpha\beta$. Think of the resulting mix of public goods as one which is like a ‘compromise’ bundle — hence providing each group with a payoff no higher than what their (respective) optimal mix of public goods would bring, at the same time being ‘fair’ in a sense. Alternatively, one could think that L wishes to maximise his popularity because of electoral incentives and hence offers this bundle which excludes nobody. In this scenario, L retains the surplus from having complete influence over local spending which provides L a payoff of $U > 0$.

The sequence of events in this game is as follows.

- (i) The elite group, E , moves first and decides amongst the following actions: lobby alone, suggest lobbying jointly to either C_1 or C_2 , or not lobby.
- (ii) In case E suggests joint lobbying, the other group can either accept or refuse. In the latter case, E can either lobby singly or not at all.
- (iii) Based on C_1 , C_2 and E ’s lobbying decisions, L decides to resist or not.
- (iv) If the citizens decide not to lobby, then L gets allots the funds equally – so all groups get a payoff of $R\alpha\beta$. The same outcome (i.e., funds shared equally/no exclusion) accrues if L wins the contest. Otherwise the winner(s) of the lobbying game get to exclude the non-lobbyists.

The outcome of the lobbying is determined by a contest success function which will be made clear shortly.

Before proceeding further, it is necessary to highlight some key features of our simple model. There is a distinction between ethnic diversity (as measured by the population sizes of the ethnic groups) and diversity over the preferences over public funds usage. The former is captured by the parameter ρ , which denotes the ethnic cleavage within the non-elites. The latter manifests itself in the tension between what is optimal for a specific subgroup and what is optimal for the entire community — it is reflected in the compromising that is needed when lobbying alongside others. In our setup, this type of diversity is effectively captured by two parameters, namely, α and β . The closer either is to unity, the smaller the differences in taste between the various groups.

Another feature which is relevant concerns the identity of the elite. We envisage the elite as a group of citizens who possibly have higher incomes than the rest and *certainly* wield more political influence than the others. To be sure, this political influence may stem from their holding positions of economic power. Relatedly, the higher economic stakes may well impel these wealthier citizens to lay aside their differences and form a more active lobby group which can react more quickly to the changing political scenario than the rest. While this interplay of economic and political factors is no doubt important, we abstract away from developing this connection more fully and simply endow this minority group E with a

first-mover advantage.

Furthermore, in our setup, the political arrangement for “sharing” the local budget prior to decentralisation is not pertinent for the equilibrium after decentralisation. This is because that prior arrangement is not a “default option” for any of the players — there is no possibility of any group threatening to revert to the original (i.e., pre-decentralisation) arrangements.

Next, we describe the payoffs in each of the possible subgames which follow from E ’s choice at the step (i).

We assume that there is a group leader within each group — C_1 , C_2 or E — who decides on the effort/resources for lobbying on behalf of the group; all the members of the group then contribute according to this decision. This is essentially to rid ourselves of the standard free-rider problem.⁸ The group leader chooses the effort level with the aim of maximising the expected per-capita payoff to the group just like in Esteban and Ray (2008).

In the case that the local leader L decides to resist the lobby, he does so with the same intensity regardless of the identity of the lobby. This simplifying assumption signifies that L is non-partisan in the sense that any lobby opposing the egalitarian allocation is opposed with equal vehemence. Call this resistance effort $e(L)$ which we normalise to unity.

We start with the case where E chooses to lobby alone.

Case (A): E lobbies alone

Here E ’s problem is to choose the effort level e to maximise

$$\left[\frac{1}{\lambda e + 1} \right] R\alpha\beta + \left[\frac{\lambda e}{\lambda e + 1} \right] \frac{R}{\lambda} - \psi e.$$

The opposition stems from L ’s effort of unity. E wins with probability $\frac{\lambda e}{\lambda e + 1}$ and shares the entire budget amongst its members – hence the R/λ term. In case L is able to successfully repel the lobby, the former’s preferred egalitarian mix of public spending is provided which yields $R\alpha\beta$ to every citizen.

Of course, such lobbying is costly and to capture this we introduce a linear cost of ψe where the parameter ψ is positive.

Case (B): E and C_1 lobby jointly

Here the total value of the resources R is assumed to diminish to $R\alpha$, where $\alpha \in (0, 1)$ captures the coordination costs or divergence in preferences over public spending. We posit

⁸This approach is quite common in such types of games. See Esteban and Ray (1999), (2008) among others.

that the elite are able to corner a larger share of the resources – we capture this asymmetry with a single parameter $\theta > 1$. Also, we assume that they contract between themselves to supply the same level of effort per-capita. Call this e .

Like before, L opposes with effort equals unity. So the payoff to E is given by

$$\left(\frac{[\lambda + \rho(1 - \lambda)]e}{[\lambda + \rho(1 - \lambda)]e + 1} \right) \left(\frac{R\alpha\theta}{\lambda + \rho(1 - \lambda)} \right) + \left(\frac{1}{[\lambda + \rho(1 - \lambda)]e + 1} \right) R\alpha\beta - \psi e.$$

To ensure that the above is strictly concave in e , we assume that $\alpha\theta > 1$.

The payoff to group C_1 is given by

$$\left(\frac{[\lambda + \rho(1 - \lambda)]e}{[\lambda + \rho(1 - \lambda)]e + 1} \right) \left(\frac{R\alpha s_1}{\lambda + \rho(1 - \lambda)} \right) + \left(\frac{1}{[\lambda + \rho(1 - \lambda)]e + 1} \right) R\alpha\beta - \psi e,$$

where $s_1 < 1$ is the share obtained after adjusting for the larger share (θ) taken by E . As $R\alpha$ is divided among (unequally) among E and C_1 , it must satisfy the following restriction:

$$\theta\lambda \left(\frac{R\alpha}{\lambda + \rho(1 - \lambda)} \right) + s_1\rho(1 - \lambda) \left(\frac{R\alpha}{\lambda + \rho(1 - \lambda)} \right) = R\alpha.$$

This yields the following expression for s_1 .

$$s_1 = 1 - \frac{\lambda(\theta - 1)}{(1 - \lambda)\rho}.$$

It is worth emphasizing that the effort e is chosen by E but C_1 has the right to refuse this contract if the group feels it is better off by not lobbying.

Case (C): E and C_2 lobby jointly

The situation is similar to Case (B). The payoffs are analogous — one simply needs to adjust for the group size (C_2 instead of C_1).⁹ So the payoff to E is given by

$$\left(\frac{[\lambda + (1 - \rho)(1 - \lambda)]e}{[\lambda + (1 - \rho)(1 - \lambda)]e + 1} \right) \left(\frac{R\alpha\theta}{\lambda + (1 - \rho)(1 - \lambda)} \right) + \left(\frac{1}{[\lambda + (1 - \rho)(1 - \lambda)]e + 1} \right) R\alpha\beta - \psi e.$$

The payoff to group C_1 is given by

$$\left(\frac{[\lambda + (1 - \rho)(1 - \lambda)]e}{[\lambda + (1 - \rho)(1 - \lambda)]e + 1} \right) \left(\frac{R\alpha s_2}{\lambda + (1 - \rho)(1 - \lambda)} \right) + \left(\frac{1}{[\lambda + (1 - \rho)(1 - \lambda)]e + 1} \right) R\alpha\beta - \psi e,$$

⁹Hence, we replace ρ with $1 - \rho$ in all the expressions.

where $s_2 < 1$ is the share obtained after adjusting for the larger share (θ) taken by E . Straightforward accounting delivers the following:

$$s_2 = 1 - \frac{\lambda(\theta - 1)}{(1 - \lambda)(1 - \rho)}.$$

Case (D): Nobody lobbies

Each of the groups get the same payoff which is $R\alpha\beta$ while L gets his payoff U .

2.2 Equilibrium

Based on E 's action at the first stage, only one of the preceding cases will arise in equilibrium when ignoring mixed strategies. Given the nature of the game, we adopt *subgame perfection* as the appropriate equilibrium concept. We begin with solving for the equilibrium payoffs to the different players in each of the subgames described in cases (A) – (D). The appendix contains the details of the derivations of these expressions.

2.3 Main Results

Suppose E chooses to lobby alone. In that situation (case (A)), the optimal choice of effort by E is given by

$$e_0 = \frac{[\frac{R}{\psi}(1 - \alpha\beta\lambda)]^{1/2} - 1}{\lambda}.$$

Suppose E and C_1 decide to collectively influence the local politician, namely, case (B). Here each of the two groups provide the same per-capita effort e . In this subgame, the optimal (common) effort level of C_1 and E is given by

$$e_1 = \frac{[\frac{R\alpha}{\psi}(\theta - \beta[\lambda + (1 - \lambda)\rho])]^{1/2} - 1}{\lambda + (1 - \lambda)\rho}.$$

Finally, we turn to case (C), where E and C_2 decide to collectively influence the local politician. In this subgame, the optimal (common) effort level of C_2 and E is given by

$$e_2 = \frac{[\frac{R\alpha}{\psi}(\theta - \beta[\lambda + (1 - \lambda)(1 - \rho)])]^{1/2} - 1}{\lambda + (1 - \lambda)(1 - \rho)}.$$

LEMMA 1. $e_1 < e_2$ for $\rho \in (1/2, 1)$ and $e_1 = e_2$ for $\rho = 1/2$.

Proof. See Appendix. ■

This preliminary result enables us to make a comparison between E 's potential lobby partners. In particular, we are able to argue that E will always prefer to lobby along with the minority group over the majority one. The following observation re-iterates this point.

OBSERVATION 1. *E 's payoff from lobbying jointly with C_2 exceeds the one from lobbying jointly with C_1 for every $\rho \in (1/2, 1)$.*

Proof. See Appendix. ■

An immediate corollary of this result is the fact that E 's payoff from joint lobbying is monotonically decreasing in the size of the lobbying partner.

The preceding observation is agnostic about whether E prefers lobbying alone than teaming up with either of the ethnic groups. It is important to bear in mind that E 's payoff from lobbying alone does not depend upon the ambient level of ethnic diversity. If it is the case that for every value of $\rho \in (1/2, 1)$ that the elite prefer lobbying alone, then ethnic diversity would have *no* effect on elite capture/democratic spending at all. This issue is dealt with in the following observation.

OBSERVATION 2. *There exists a unique $\hat{\rho} \in (0, 1)$ such that E 's payoff from lobbying jointly with C_2 exceeds the one from lobbying alone for every $\rho \in (\hat{\rho}, 1)$.*

Proof. See Appendix. ■

We next proceed to examine E 's payoff from lobbying jointly with C_1 vis-a-vis the one from lobbying alone. But before we can rank these two options, we need the following lemma.

LEMMA 2. *The payoff to E from $E \cup C_i$ is increasing in θ for $i = 1, 2$.*

Proof. See Appendix. ■

The intuition behind Lemma 2 is quite straightforward. Starting from an initial level of θ , an increment (in θ) increases the expected payoff even the effort level is kept unchanged. However, the expectation of a higher prize upon success (owing to the increment in θ) spurs E on to pick a higher effort level — the cumulative effect raises the payoff to E .

OBSERVATION 3. *There exists a unique $\theta^* > 1/\alpha$ such that E 's payoff from lobbying alone exceeds the one from lobbying jointly with C_1 whenever $\theta < \theta^*$ for every $\rho \in [1/2, 1)$.*

Proof. See Appendix. ■

The core intuition behind Observation 3 can be found in the logic of Lemma 2: if θ is sufficiently low then E would rather seek to lobby by itself than team up with C_1 . Note,

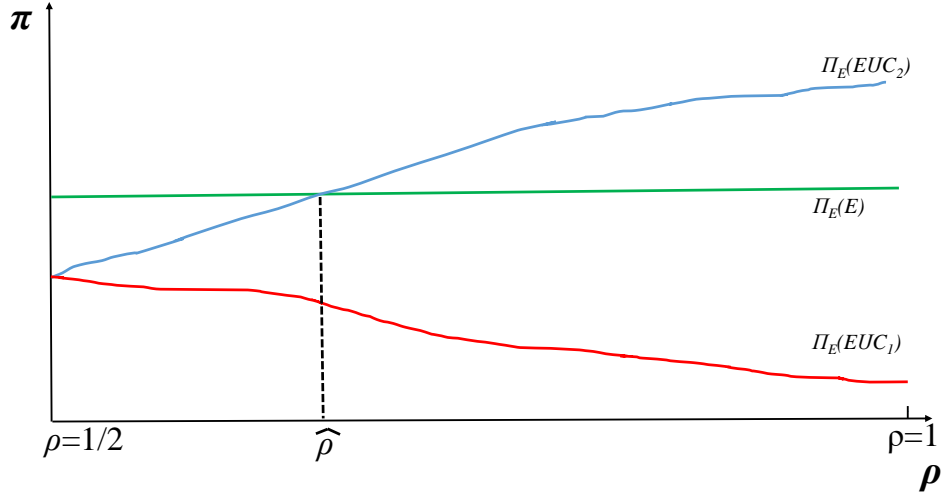


Figure 1: *Payoffs to E*. The dependence on ethnic diversity (ρ).

however by Observation 1, this does not preclude lobbying with C_2 which may still dominate E lobbying alone.

An immediate corollary of Observation 3 is that $\hat{\rho} > 1/2$ — in other words, the level of ethnic diversity where E would prefer switching from lobbying with C_2 to lobbying alone arrives at a point before the distinction between the sizes of the two ethnic groups disappears. This simply follows from the fact that $\pi_E(E)$ exceeds $\pi_E(E \cup C_1; \rho = 1/2)$ which in turn is identical to $\pi_E(E \cup C_2; \rho = 1/2)$.

Figure 1 plots the payoffs to E under the three possible lobbying situations — alone (as denoted by $\pi_E(E)$), with C_1 (as denoted by $\pi_E(E \cup C_1)$) and with C_2 (as denoted by $\pi_E(E \cup C_2)$). Clearly, $\pi_E(E)$ is constant across all possible values of the ethnic diversity parameter ρ . Given the insights from Observation 1, we have $\pi_E(E \cup C_2)$ increasing in ρ and $\pi_E(E \cup C_1)$ falling in ρ as ρ varies from $1/2$ to approaching unity. Observations 2 and 3 deliver a unique $\hat{\rho}$ between $1/2$ and unity.

It must be borne in mind that both $\pi_E(E \cup C_1)$ and $\pi_E(E \cup C_2)$ depend upon θ (recall Lemma 2) — so this figure pertains to a certain level of θ . Any increase (decrease) in θ will raise (lower) both these curves while leaving $\pi_E(E)$ unaffected.

Based on the discussion above, it is clear that E has a preference for lobbying jointly with C_2 over all other options available for a certain range of values for ρ — specifically, for ρ between $\hat{\rho}$ and unity. A natural question which arises in this context is the following: when does C_2 agree to lobby with E rather than refuse (and either let E lobby alone or with C_1)? The following observation deals with this issue.

OBSERVATION 4. *There exists $\underline{\psi} > 0$ such that for any $\psi \leq \underline{\psi}$, C_2 will prefer to lobby jointly*

with E than stay out whenever λ is smaller than $\underline{\lambda}$, where $\underline{\lambda} \equiv \frac{(1-\rho)}{(\theta-\rho)}$. If $\lambda \geq \underline{\lambda}$, then C_2 will always stay out.

Proof. See Appendix. ■

It is important to note that $\underline{\lambda}$ is falling in the size of C_1 . Hence, for highly homogeneous societies (i.e., $\rho \rightarrow 1$), $\underline{\lambda}$ approaches 0 thereby reducing the likelihood of C_2 joining E .

Collecting the results from the preceding observations, we have the following proposition.

PROPOSITION 1. *When $\psi \leq \underline{\psi}$, $\lambda < \underline{\lambda}$ and $\theta \in (1/\alpha, \theta^*)$, the following is guaranteed:*

- (i) *For $\rho \leq \hat{\rho}$, E lobbies alone in equilibrium.*
- (ii) *For $\rho \in (\hat{\rho}, 1)$, the equilibrium lobby group is $E \cup C_2$.*

Proposition 1 uncovers the impact of ethnic diversity on the equilibrium lobby group. This allows us to gauge how distant the equilibrium allocation is from the social planner's — namely, $R\alpha\beta$ which is the payoff to each member of the society (elite and non-elite). Increasing diversity (lowering ρ) increases the chance of pure elite capture as the equilibrium lobby shifts from being $E \cup C_2$ to E alone. In other words, the extent of exclusion increases as one crosses $\hat{\rho}$ from the right. This, however, is not enough to claim that elite capture or greater exclusion entails on the left of $\hat{\rho}$ — one needs to account for the respective chances of success for the lobby around $\hat{\rho}$. The following observation engages with this very issue. In terms of notation, let the success probability of the lobby $E \cup C_2$ be denoted by p_2 and that of the lobby consisting of E alone by p_0 .

OBSERVATION 5. *The following relations between p_0 and p_2 always hold:*

- (i) *p_2 exceeds p_0 as $\rho \rightarrow 1$.*
- (ii) *As ρ falls, so does $\frac{p_2}{p_0}$.*

Proof. See Appendix. ■

As ethnic diversity increases, $\frac{p_0}{p_2}$ increases too. Hence, the success probabilities of the respective lobbies on either side of the threshold are closer to each other for values of ρ close to $\hat{\rho}$ than when $\rho \rightarrow 1$.

Combining Proposition 1 and Observation 5 yields the following insight: as one focuses on a neighbourhood around the threshold $\hat{\rho}$, one observes greater exclusion for societies which are more ethnically diverse within that neighbourhood. This arises *both* from the size of the excluded groups and also from the fact that the success probabilities of the respective lobbies on either side of the threshold are more similar within this neighbourhood around $\hat{\rho}$. In sum, increasing ethnic diversity leads to more exclusion (or greater elite capture) when the society is *more ethnically diverse to begin with*.

It is worth reflecting upon the fact that Proposition 1 is relevant when the marginal cost of lobbying effort (ψ) is sufficiently low, the mass of the elite (λ) is adequately small and the expropriation powers of the elite (θ) are somewhat bounded. These assumptions are not particularly demanding, especially when viewed in the context of Indonesian communities. Lobbying the local politician need not entail a high marginal effort cost. Similarly, the ability of the elite to distort the allocation in their favour could be substantial (after all θ is assumed to be higher than $1/\alpha$ where $\alpha \in (0, 1)$) but certainly is not without bounds. Finally, the elite in a community could be just a handful of individuals who because of their economic and social standing are able to dictate the order of things.

What happens if they fail to hold? If the marginal cost of effort is above the threshold, then C_2 may not find it in its interest to lobby — thus, the equilibrium lobby group will just be E alone. The issue is similar for the elite size threshold $\underline{\lambda}$. Given the definition of this threshold (i.e., $(1 - \rho)/(\theta - \rho)$), it is more likely that this threshold is not met for highly ethnically homogeneous societies. In other words, for communities which are highly homogeneous in ethnic composition any marginal change in ethnic diversity will *not* affect the equilibrium lobbying behaviour and as a result, the extent of elite capture.

For θ larger than θ^* , the possibilities are slightly richer. Clearly, for θ approaching infinity, neither C_1 nor C_2 would be willing to lobby as their respective shares s_1 and s_2 would have been driven to zero — so again the lobby group is simply E . However, there is a range for θ beyond θ^* where C_1 may be willing to join (while C_2 refuses). To be sure, whether E would prefer teaming up with C_1 over going ahead alone is indeterminate. But it may be possible that for certain configurations of the parameters, the equilibrium lobby is indeed $E \cup C_1$. Figure 2 depicts such a possibility. Here, for $\rho \in [1/2, \hat{\rho})$ the equilibrium lobby group is $E \cup C_1$ as C_2 prefers staying out of the lobby. For $\rho \in [\hat{\rho}, 1)$, E lobbies alone. Comparing this situation with Proposition 1, brings out the differences most starkly. In this situation, the extent of elite capture actually *falls* with increases in ethnic diversity.

The preceding discussion makes it clear that if the conditions for Proposition 1 are *not* met then the predictions of the model would be substantially different. Specifically, greater ethnic diversity will either not affect the extent of capture or may even reduce it.

Given Proposition 1, one may ask if the coordination costs across the ethnic groups — captured by β — affect this relationship between ethnic diversity and elite capture. This is the subject of the following observation.

OBSERVATION 6. *Any increase in the coordination costs across the ethnic groups (i.e., any decrease in β) leads to an unambiguous rise in lobbying efforts for every $\rho \in [1/2, 1)$.*

Proof. See Appendix. ■

The logic behind Observation 6 is easy to grasp. As the default option — i.e., $R\alpha\beta$ — becomes less attractive, each of the potential lobby groups respond by increasing their effort

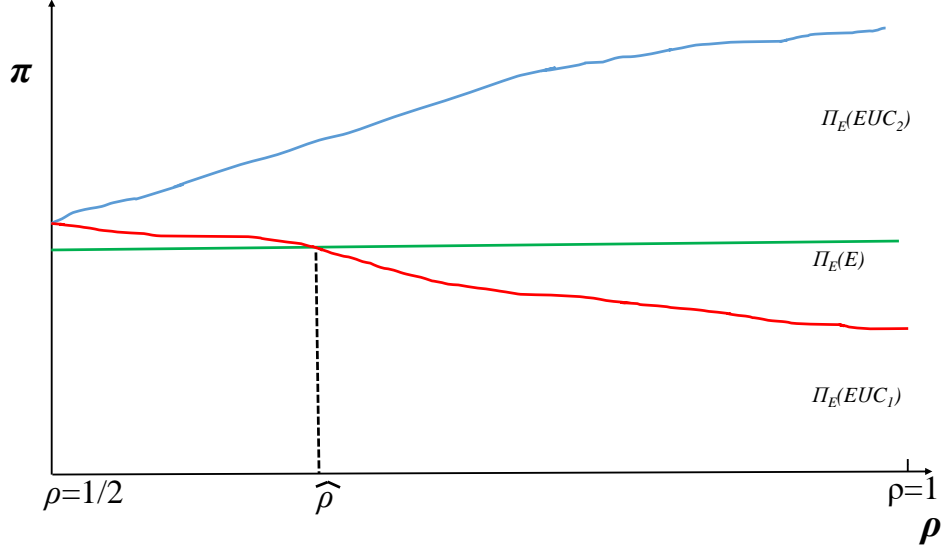


Figure 2: *Payoffs to E*. Variation with θ .

levels so as to avoid the default option. Note, Observation 6 does not affect the result in Proposition 1 in any significant qualitative way although there is clearly a quantitative impact (all the payoff curves for E in Figure 1 respond to shifts in β). In particular, one may claim — by Observation 6 — that for lower values of β there will be a higher chance of success for the lobby (since their effort increases) and hence the higher probability of exclusion (of the non-lobbying group(s)). This is summarised in the following proposition.

PROPOSITION 2. *As coordination costs across ethnic groups increases (i.e., fall in β), the extent of elite capture increases with diversity (i.e., with falling ρ) provided that the conditions for Proposition 1 are met.*

2.4 A brief overview

The simple model we have presented above provides some novel insights on the dependence of elite capture on ethnic and institutional factors. The starting point is this: decentralisation shifts the fate of public funds to the local level and opens up the possibility of elite capture. A lobby is formed either by the elite alone or in conjunction with one of the two ethnic groups in the community in order to coax the local politician to target the funds solely towards the lobby. Our main contributions are the following:

(I) We show how the composition of the lobby is dependent on the ambient level of ethnic diversity (see Proposition 1). Increasing ethnic diversity leads to more exclusion (or greater elite capture) when the society is *more ethnically diverse to begin with*. For communities which are sufficiently homogeneous in their ethnic composition, any marginal change in

ethnic diversity will actually *not* affect the extent of elite capture. Thus, the implications in terms of elite capture from an increase in ethnic diversity very much depends upon the initial level of diversity in society. In this, we depart from the standard insights from extant theories which yield a negative relationship between ethnic diversity and general public spending regardless of the initial ethnic heterogeneity.

(II) We examine the relationship between ethnic diversity and elite capture in light of the coordination costs across the ethnic groups. We demonstrate that if, owing to local institutions, cooperation between groups is easier to sustain then the extent of capture for ethnically diverse communities is lower (see Proposition 2). In other words, lower coordination costs or a better ethic of cooperation across ethnic groups can (partially) mitigate the effect of ethnic diversity on capture.

3 Empirical Analysis

The theory, although simple, provides a rich set of testable predictions which we take to the data on Indonesian communities. Building on the insights listed in Section 2.4 above, we focus on the following ones:

(i) A community which is more ethnically diverse will experience greater distortion in local public spending – hence, more elite capture in such a community – provided that the level of diversity is above a certain threshold.

(ii) The degree of elite capture is greater in communities where coordination costs across ethnic groups are higher.

It is worth emphasizing that the effects listed in (i) and (ii) are only salient in societies which exhibit some degree of ethnic diversity. So, for communities which are practically homogeneous in ethnic composition neither (i) nor (ii) is to be observed.

In the empirical exercise, we examine various items of local public expenditure and in particular, look at developmental spending which clearly is valued by the non-elites. Combining with this data on ethnic diversity at the level of the community, we are able to check the prediction in (i).

For (ii), we exploit a special institutional feature of Indonesian communities — namely, Adat laws. These laws promote an ethic of mutual cooperation in the community. As argued earlier in Section 1.1, such active interaction across the ethnic groups reduces coordination costs across the same within the community in question. In light of this, we check if the link between ethnic diversity and local public spending is affected by whether the community adheres to Adat laws or not. Specifically, a community which is ethnically diverse *and* does not follow Adat norms will be subject to greater capture by the elite lobby and hence implement policies less favourable to the masses.

All of these predictions can only have salience if the local politician actually *has* any influence on community-level spending. Hence, we examine this in the context of fiscal decentralisation in Indonesia which came into force at the turn of the century.

3.1 Data

Our analysis is based on the community level data obtained from 1997 and 2007 Indonesian Family Life Survey (IFLS) from 312 rural and urban communities, drawn from 36 districts lying in 13 provinces including Jakarta, Bali, Java (central, east and south), Sumatra (north, west and south), Lampung, West Nusa Tenggara and south Kalimantan. Although IFLS data are available for the years 1993, 1998 and 2000 as well, information on local politics could be found only in the 1997 and 2007 surveys, thus explaining our choice.

This is a particularly rich data set that provides community level information on a whole range of demographic characteristics and access to public goods, local governance and its public finances, citizens' participation in planning and implementation of local development projects, as well as a range of public utilities, infrastructure and transport, health and education facilities (see Frankenberg and Thomas (2000) and Strauss et al. (2009) for study design and overview of the data set).

3.1.1 Measures of local development

The composition of public spending and public goods has become the key instrument for policies for economic development (IMF and World Bank 2003). In recent years, development assistance to heavily indebted poor countries has been made conditional on increase on certain categories of public spending that are thought to be pro-poor. In particular, components of public spending aimed at reducing poverty levels focuses on education, health, agriculture, safety nets, infrastructure, rural development and others (IMF and World Bank 2003). This practice has its roots in the works of Aschauer (1989), Barro (1991), Easterly and Rebelo (1993), Devarajan et al. (1996). Aschauer (1989) argued that investment in core infrastructure like streets, railways, airports has the most explanatory power for private sector productivity in the United States. Along similar lines Easterly and Rebelo (1993) suggested that public investment in infrastructure boosts economic growth. Barro (1991) further argued that productive spending on education (which develops human capital) and defence (which protects property rights) are growth enhancing. In this respect, a distinction is often made between social and physical infrastructural goods. While investment in physical (e.g., transport and communications) infrastructure will facilitate production of both goods and services, investment in health and education will contribute to healthy and educated workers, and thereby improve labour productivity.

Fiscal decentralisation of 2001 had offered more autonomy in local spending and the deliv-

ery of public services including health, education and physical infrastructure (Brodjonegoro (2001)). IFLS data provides information on the spending allocation of the local community government in both 1997 and 2007 rounds. Total spending has the following components: (i) development spending refers to spending on new social (e.g., local schools and health centres) and physical (e.g., roads and transport) infrastructure as well as maintenance of existing infrastructure; (ii) non-development spending includes spending on staff salary, office maintenance, official trips and contingencies; (iii) some under-developed communities also receive grants for various developmental programs, e.g., IDT for under-developed communities.

The selection of communities for the Inpres Desa Tertinggal (IDT) program is made by the National Development Planning Agency (BAPPENAS) and the Ministry of Home Affairs (MoHA) and it is based on the PODES socioeconomic survey by the Central Bureau of Statistics. The 1994 selection considered three basic indicators: village facilities and potential, housing and the environment and population characteristics. The selection criteria however had some flaws for identifying consumption levels; for instance, too much weight was given to infrastructure deficiencies that do not always reflect lowest consumption levels-and thus the selection for the 1995 program gave more prominence to expenditure levels. Also, the number of households in the community determined how often these communities would be selected for IDT funds. Under IDT, the government, by virtue of presidential instructions, provided selected poor communities (or villages) with lump-sum grants designated for small business loans. These selected villages were then instructed to choose relatively poor households that would be eligible for IDT loans based on village-level meetings. These were facilitated by the village head and a local government agency called Lembaga Ketahanan Masyarakat Desa (LKMD, Village Community Resilience Board). About 40% of the communities have been selected for the anti-poverty programme IDT in our sample.

Accordingly, our key index of local development is the natural logarithm of annual development spending (labelled as *devexp*) for each community. We also analyse a similar measure which include funds from IDT. We also check the robustness of these estimates by considering the natural logarithm of communitys annual spending on social infrastructure (labelled as *socexp*) and also that on physical infrastructure (labelled as *infraexp*). For indicators of public spending which are not development related, we utilise the information on salary and administrative expenses of the local officials.¹⁰

3.1.2 Community Co-ordination and Adherence to Adat norms

Adat law was recognised by the colonial administration in the Dutch Indies as part of a dual legal system in which natives were subject to ‘their own religious laws, institutions and customs so far as they were not in conflict with generally recognized principles of equity and justice ...’ (Fasseur 2007). In an effort to promote national unity, the post-colonial

¹⁰More on these different measures of spending later.

Suharto regime took a more heavy-handed approach, and ‘no political rights were allowed to follow from cultural difference or ethnic identity’ (Davidson and Henley, 2007: Chapter 1). Over time, the new system of local governance introduced by the Suharto regime, including administrative bodies at the district and community level, significantly undermined the authority of adat leaders and their ability to enforce adat rules (Kato 1988). Nevertheless, adat law remained salient and relevant, especially to rural life in Indonesia during the Suharto regime.

	1997 (% of total communities)		2007 (% of total communities)	
	Rural (desa)	Urban (kelurahan)	Rural (desa)	Urban (kelurahan)
Adat laws are never broken	38.41	24.81	28.69	21.63
Adat laws are sometimes broken	40.58	51.13	35.25	23.56
Adat laws are frequently broken	1.45	3.76	9.84	20.67
Only a few understand Adat laws	19.57	19.55	26.23	34.13

Table 1: Adherence to Adat laws. *Sources and Notes.* Percentages are based on responses to questions in the community questionnaire in IFLS2 and IFLS4 regarding the extent to which community members follow adat laws.

Based on the knowledge and information of a local expert, the Indonesian Family Life Surveys (IFLS) classified all communities in terms of their ‘adherence to adat laws’. The IFLS data place each community into one of four possible categories: (i) traditional laws are almost never broken; (ii) traditional laws are sometimes broken; (iii) traditional laws are frequently broken and (iv) only a few people understand traditional laws.

In nearly 80% of rural communities and 75% of urban communities, adat laws were reported to be ‘feared’ and sometimes or ‘almost never broken’ in the 1997 survey. Using the same dataset, Bandiera and Levy (2011) find a strong correlation (73%) between community governance according to adat law and current practice. In the following years, Indonesia witnessed major economic and political changes, including the East Asian Financial crisis, the end of the Suharto regime and the beginning of the process of fiscal decentralisation. By 2007, adherence to adat laws appear to have declined significantly with 61% of rural communities and 45% of urban communities reporting that they were ‘feared’ and ‘sometimes broken’ or ‘almost never broken’.

We classify a community as an adat community if adat laws are ‘almost never broken’; it is a non-adat community otherwise. Table 1 summarises the adherence to adat laws in rural and urban communities in 1997 and 2007. In fact, a smaller proportion of sample communities adhered strictly to adat law in 2007 than in 1997. While strict adherence to adat registered an overall decline in 2007, the movement was not unidirectional — actually, some less ‘strict’ adat/non-adat communities switched to strict adherence in 2007. Hence, we categorise only those communities which practice strict adherence in both periods as *Adat* and the rest as

Non-Adat.

Adat rules generally prescribe how each community member should contribute to collective activities as well as the punishment for falling short of these prescriptions. Therefore, we argue that communities where adat rules are generally ignored or forgotten, cooperation in traditional collective activities are also weak. In most of the Adat communities, there is a strong presence of mutual co-operation groups in both the 1997 and 2007 IFLS rounds.¹¹

3.1.3 Ethnic diversity

We observe the size of the top three ethnic groups in each sample community which we use to construct two alternative indices of ethnic diversity which are commonly used in the literature. It is worth reiterating that the top three ethnic groups in any community basically form all of it. Our first measure is *Frac* which is defined as follows: $Frac = 1 - \sum p_i^2$ where p_i is the population share of the i -th group, for $i = 1, 2, 3$. In this case, the larger the sum of squares of the three population shares, the smaller will be the extent of ethnic diversity measure *Frac*.

We also generate an alternative index of ethnic diversity labelled *Frac1*, which is measured by the inverse of the largest ethnic group. The larger the size of the largest ethnic group, the lower is the extent of ethnic diversity measure *Frac1* and vice versa.

It is important to re-iterate that the Adat customs are embraced by the community as a whole or not; and this is quite unrelated to the ethnic divisions in the community. Hence, Adat norms may help build social co-operation even in ethnically diverse society using a carrot-and-stick approach: (i) the presence of mutual co-operation groups for security, health, education, food security, construction and infrastructure, and assistance to community members; and (ii) the use of punishment/ostracisation to discipline in the case of transgressions.

3.2 Empirical strategy

We aim to assess the effect of ethnic diversity on local public spending following fiscal decentralisation and how the relation is conditioned by the community's adherence (or not) to Adat laws (our measure of local institutions). This motivates the following empirical specification for community i in district j in year t :

$$Y_{ijt} = \beta_0 + \beta_1 FD_t + \beta_2 NonAdat_{ij} + \beta_3 Eth.Div_{.ij} + \beta_4 NonAdat_{ij} * FD_t + \beta_5 Eth.Div_{.ij} * FD_t$$

¹¹Table 4 in Pal and Wahhaj (2017) demonstrates how individuals who break the adat rules of their community can face significant penalties, including the payment of fines, ostracism and even, in some cases, expulsion from the community. As expected, the penalties are more severe in communities which practise stronger adherence to adat laws.

$$+\beta_6 Eth.Div_{ij} * NonAdat_{ij} * FD_t + \beta_7 Eth.Div_{ij} * NonAdat_{ij} + \gamma \mathbf{X}_{ijt} + D_j + u_{ijt}$$

The dependent variable Y_{ijt} represents a set of local public spending variables in the community including development spending (*devexp*) and IDT, spending on social (*socexp*), on physical infrastructure (*infraexp*) at period t where $t \in \{1997, 2007\}$. Note that spending on social and physical infrastructure are two components of total development spending in a community in a year. The rest of the total community spending is spent on wages and salaries of community staff, their travels and other administrative items. We utilise the last set of variables too.

The spending items under the “development spending” head are likely to generate investment in essential public goods, both physical infrastructure like roads and transport and social infrastructure like health and education facilities, which are likely to boost local development. Here, our flagship dependent variable is the (natural log of) total development spending in the community.¹² We also report results with the share of development spending (at the community level) — denoted by *shdev* — as an additional metric of general welfare spending.

The variable FD_t is essentially a dummy variable which takes a value of 1 for year 2007 and 0 for 1997. The D_j variables represents the district dummies so that we compare the outcomes across communities — within a district — pre and post fiscal decentralisation.

In order to capture the variation in inter-ethnic coordination costs, we utilise whether the community had a stable adherence to traditional adat laws or not. In particular, we construct a binary variable *Adat* that takes a value 1 if a community strictly adhered to adat laws in both the sample years 1997 and 2007; it is 0 for others. It follows from Table 1 that a community’s adherence to adat laws declined between 1997 and 2007, which reflects the strategic nature of this choice by sample communities. In order to avoid this aspect of strategic choice, we utilise this stricter definition of *Adat* so as to ensure that there has been no change in adherence to adat laws in these communities. The variable *Non-Adat* is basically $1 - Adat$ and hence reflects those communities where adherence to Adat norms has been lax/non-existent in either of the two periods.

Traditional institutions like adat laws have, historically, played an important role in community life in Indonesia, up to and during the colonial period. It follows from our earlier discussion that communities where adherence to adat laws was strong, community members were expected to participate in, and could expect to benefit from, a range of collective activities and this is the traditional practice. A community’s adherence to adat laws is determined by the age-old traditions rather than by current community governance structure, thus making *Adat* (equivalently, *Non-Adat*) exogenous to the local public spending process.

Given that fiscal decentralisation offered more autonomy to these communities, we interact the *Non-Adat* variable with the FD_t dummy. This is guided by our theoretical model,

¹²We use $\log(1 + Devexp)$ in order to deal with cases where there has been no spending under the development head.

which relies on the premise that fiscal decentralisation *raises the stakes for the elite to lobby*. The precise distortion arising out of lobbying as we argue in the theoretical model, depends crucially on the *coordination costs* across the various groups within a community, an issue closely linked to whether or not the community ascribes to Adat laws.

We use two different measures of ethnic diversity. The flagship one is the standard fractionalisation type of measure which we denote by *Frac*. We also employ an alternative definition of diversity, which we call *Frac1*, which is simply the inverse of the size of the largest ethnic group (both measures have been defined precisely earlier).

The set of other control variables \mathbf{X}_{ijt} include a number of community-level variables used in the analysis. These include variables like whether the head has completed High School (dummy variable), head lives in the community (dummy variable), community population, community area (in hectares), Urban/Rural community (dummy variable), distance from the district headquarters (in miles) and if Islam is the dominant religion (dummy variable).

Table 4 summarises the summary statistics of all the relevant variables. It is useful to bear in mind that nearly three-fourths of the communities in our sample do not follow Adat norms in a strict sense. Also, both measures of ethnic diversity indicate that while the communities in Indonesia are fairly ethnically diverse there is significant heterogeneity across them. In particular, nearly half of the sample communities are very homogeneous in the sense that the largest ethnic group is at least 91% of the community’s population. The key coefficient of interest is β_6 — the one on the triple interaction term *NonAdat*Eth.Div.*FD_t*. This captures the partial effect on the various measures of community-level spending of a community’s being ethnically diverse *and* having high coordination costs — within a district — in the post-decentralisation period. By (i) and (ii) stated initially in Section 3, we expect β_6 to be negative for the set of communities which are somewhat ethnically diverse — i.e., for the set where the largest ethnic group is *less* than 91% of the community’s population.

Note, the identification strategy relies on the following factors. First, we argue that the key explanatory variables are exogenous: (a) fiscal decentralisation was imposed by the central government and as such was beyond the influence of local communities in Indonesia. (b) The measure of ethnic diversity is stable (over time) in our sample communities and is therefore unaffected by the outcome variables. (c) We consider a community’s stable adherence to adat rules over time, thus mitigating concerns regarding reverse causation.

One of the identifying assumptions is thus that higher levels of government did not strategically influence dynamics differentially for adat-adhering and non-adat-adhering villages that are more/less ethnically diverse. We argue that the question at hand is interesting enough to accept this caveat.¹³

There may still remain some unobservable factors that may influence these key explanatory variables and if correlated with the random error term, could bias our estimates. In order

¹³We are grateful to an anonymous referee for raising this point.

to reduce this potential omitted variable bias, we include a rich set of community-level time invariant factors as control variables aside from district dummies (D_{jt}). Given the change in fiscal allocation after FD, we also test the robustness of our estimates by including district*year dummies to account for the district-level unobserved time trends. Our core results remain qualitatively unchanged.

Fragmented geography and urbanisation could be important candidates for ethnic diversity (Ahlerup and Olsson (2007), Michalopoulos (2012)) which justify the inclusion of two binary variables, namely, if it is an urban community and also if the community has access to sea. While we do not have information on land quality, but inclusion of community population and geographic size of the community would reflect population density which could be considered to be a proxy for land quality especially in rural communities. We also control for distance of the community from district head quarter to account for the closeness of the community to the district head quarter. The latter became particularly important after fiscal decentralisation as the centre of power moved from Jakarta to the district head quarters, as district authorities became responsible for disbursement of central funds and also for monitoring the community's progress.

Our main analysis focuses on the differences triggered by fiscal decentralisation in various types of public spending in ethnically diverse communities across those who follow Adat norms and those who do not. Note, if these two sets of communities (Adat/Non-Adat) had very different spending patterns prior to fiscal decentralisation then the difference-in-differences nature of our analysis would be jeopardised. While the paucity of data on Adat adherence in pre-1997 rounds limits us to some extent in examining pre-treatment trends, we are able to compare the set of communities in 1997 in terms of any observable differences in spending levels. Table 2 contains such a comparison. In this table, we can observe that the 1997-levels and shares of spending on various items were not significantly different across ethnically diverse communities which adhered to Adat laws and those which did not. This should not perhaps come as a surprise given the highly centralised nature of governance under the Suharto regime. The Suharto regime did not advocate the salience of cultural practices like Adat — preferring the espousal of a common national identity (see e.g., the Village Law 1979); this further reduces any observable differences across communities in terms of public spending patterns.

Another threat to our identification strategy could arise if one argues that *even* post-decentralisation, the community had little say over the spending decisions. We are convinced that such is not the case based on the following:

(i) Several scholars argue that decentralisation increased the autonomy of the local communities. For example, Pal and Wahhaj (2017) clearly state “The passage of the decentralisation laws in Indonesia in 1999 substantially increased the control of village governments over public investment decisions” (pp 393).

(ii) If such was indeed the case, then one would expect null results which is contrary to

Year=1997	Non-adat	Adat	<i>T-stat</i>
Log of total development spending	11.27	10.48	0.4654
Log of total development spending including IDT	12.04	11.22	0.4743
Log of total non-development spending	9.53	9.24	0.1742
Log of total spending on Salaries	7.37	8.2	-0.5033
Share of development spending	0.45	0.447	0.0489
Share of spending on Salaries	0.08	0.09	-0.4748

Table 2: Mean comparison of outcomes in adat and non-adat communities. *Notes.* Means of different measures of spending used in the regression analysis are compared across Adat and Non-Adat communities within the sample of ethnically diverse (i.e., the *Frac1* exceeds the median value) communities in 1997. As the *T-stat* column denotes, the difference in means for each of these variables is not statistically significant at the 10 per cent level or lower in 1997.

what we find. Also, Pal and Wahhaj (2017) document systematic differences with respect to social/physical infrastructure spending post-decentralisation across communities.

(iii) Table 3 sheds light on various aspects of community-level public spending in 1997 and 2007. There was a substantial drop in the share of revenue from the central government in a community’s overall revenue sources as one moves from 1997 to 2007 — the share drops from 32.9% to less than 7%. This is accompanied by a rise in the district government’s share (from 9.11% to 40.66%). This shift clearly indicates the rise in the importance of local levels of government in the post-decentralisation period.

On the basis of the above, we rule out this critique to our empirical strategy.

Variables	1997 Mean (sd)	2007 Mean (sd)	Variables	1997 Mean (sd)	2007 Mean (sd)
<u>Share of spending on:</u>			<u>Total spending (000 Rp) on:</u>		
Social Infrastructure	0.1078 (0.1153)	0.1284 (0.1955)	Social Infrastructure	164 (318)	1057.2 (2633)
Physical infrastructure	0.0658 (0.0839)	0.4992 (0.3691)	Physical infrastructure	75.1 (135.4)	1540 (2659)
<u>Share of revenues from:</u>			<u>Total revenue ((000 Rp) from:</u>		
Central Government	0.3291 (0.3119)	0.0663 (0.1745)	Central Government	67.32 (164.3)	146.6 (528)
Provincial Government	0.1444 (0.2920)	0.1345 (0.2681)	Provincial Government	135.16 (376)	673.8 (2086)
District Government	0.0911 (0.1877)	0.4066 (0.3479)	District Government	2214 (63.37)	523.3 (898.4)
Local income	0.3786 (0.3781)	0.3925 (0.3256)	Local income	235.5 (726)	2393.7 (100961)

Table 3: Spending in communities in 1997 and 2007. *Notes.* Total community spending includes spending on new investment (social and physical infrastructure), maintenance of local public goods and also that on paying salaries and transfers. Total community revenue is generated from grants from central, provincial and district governments and also funds raised from local communities. The remaining balance is accounted for by various governmental transfers under different development programmes. All nominal variables are measured at 2010 price level.

Variable definitions	Variable name	Obs	Mean	std. Dev.	Min	Max
Index of political transition	StatusV	624	0.6763	0.4683	0	1
Log of total development spending	lDevexp	623	14.9990	7.0899	0	21.4164
Log of total development spending including IDT	lDevexp_idt	623	15.7086	6.7458	0	22.8027
Log of Social Infrastructural spending	lSocexp	631	4.4314	7.1708	0	19.3007
Log of Social Infrastructural spending including IDT	lSocexp_idt	623	9.7456	8.1747	0	21.8219
Log of Physical Infrastructural spending	lInfraexp	631	5.2018	7.6209	0	19.7169
Log of Physical Infrastructural spending including IDT	lInfraexp_idt	623	10.4062	8.4771	0	21.4164
Log of total spending on Salaries	ltotsal	631	13.4240	7.2005	0	22.3327
Share of development spending	Shdev	602	0.5155	0.358	0	1
Share of spending on social infra	Shsoc	624	0.077	0.1393	0	1
Share of spending on physical infr	Shinfra	624	0.1746	0.3004	0	1
Size of the largest ethnic group $\geq 91\%$	Pop1_91	624	0.5096	0.5003	0	1
Ethnic diversity (primary): Frac	Frac2	620	0.2363	0.2414	0	0.9757
Ethnic diversity (auxiliary): Frac1	Frac1	620	13.323	6.313	10	111.1
Non-adat	Non- Adat	624	0.7419	0.4379	0	1
1 if the head has at least high sch	Headshs	624	0.8077	0.3944	0	1
1 if the head lives in the community	HeadinvD	624	0.7115	0.4534	0	1
log of community population	Lvpop	622	8.7778	0.9855	5.5452	12.2356
log of community area in hectares	Lvsize	619	5.6898	1.7923	0.0296	20.7232
1 if it is in urban area	Urban	624	0.5881	0.4926	0	1
Distance from the district HQ in miles	Disdhq	624	4.5442	8.9741	0	112
1 if the dominant religion is Islam	Islam	624	0.8333	0.3729	0	1

Table 4: Summary Statistics of Regression Variables.

3.3 Results

Our baseline results are collected in Table 5. In each column in this table, the dependent variable is the (log of) total development spending in the community. For the results reported in the first two columns, the sample is restricted to communities which are *Non-Adat* — so they have not strictly adhered to Adat customs in both survey rounds (1997 and 2007).

The idea is that these are communities where coordination costs across ethnic groups is higher than in the remaining communities. So predictions (i) and (ii) listed under Section 3 are being put to a test here. We check for whether more ethnically diverse communities had different levels of development spending in the post-decentralisation period in *Non-Adat* communities. In other words, is the coefficient $Frac * FD$ statistically significant when the universe is that of *Non-Adat* communities?

As noted earlier in Sections 2.4 and 3, the effects should be more salient in societies which exhibit some ethnic diversity (not nearly homogeneous ethnically). This motivates the removal of ethnically homogeneous communities. Hence, column (1) restricts the sample to those *Non-Adat* communities which are not completely ethnically homogeneous. Column (2) takes this idea even further by restricting the sample to those *Non-Adat* communities where the largest ethnic group constitutes less than 91% of the population, hence $Pop1 < 91$. We pick this 91% cutoff as nearly half of the sample communities are very homogeneous in the

sense that the largest ethnic group is at least 91% of the community’s population (see Table 4 above for the variable *Pop1_91*). Note, that the median value of *pop1* is 91%.

We expect the coefficient on *Frac*FD* to be negative and statistically significant in column (2) and perhaps also in column (1) as the effect is expected only in a set of communities with a sufficient degree of ethnic diversity. This is precisely what we find. The coefficient on *Frac*FD* is not statistically significant in column (1) but becomes negative and statistically significant in column (2). This suggests that more ethnically diverse communities had *lower* levels of development spending in the post-decentralisation period when we focus on communities with higher inter-ethnic coordination costs (i.e., *Non-Adat*). Notice, we always employ *district* fixed effects; hence, the comparison is across communities within a district. Additionally, we control for a rich array of community-level characteristics given that we are unable to use *community* fixed effects.

In the remaining columns of Table 5, we test for this in a more comprehensive manner by pooling together both sets of communities — Adat-adhering and the rest. Column (3) is a direct analogue of column (1) but now including the Adat-adhering communities as well. The estimation equation is the one specified above in Section 3.2. So now, the coefficient of interest is one on the triple-interaction term *Non-Adat*Frac*FD*. By the logic of our theory, we expect this coefficient to be negative and statistically significant in column (4) and perhaps also in column (3). Again, the results are in line with these expectations. The coefficient on *Non-Adat*Frac*FD* is not statistically significant in column (3) but becomes negative and statistically significant in column (4). This suggests that ethnically diverse communities which do not follow an ethic of mutual cooperation tend to have lower development spending in the post-decentralisation period. Table 12 in the Appendix is an exact counterpart to Table 5 where the outcome variable is the (log of) total development spending including that from the IDT programme in the community.

In the remainder of the analysis, we will repeatedly check for such patterns using this pooled sample of Adat-adhering and non-adhering communities for different variables pertaining to local public spending.

3.3.1 Spending in levels and as shares

The implications of the results in Table 5 are probed further here. In particular, we aim to explore the heterogeneity in the coefficient on the triple-interaction term *Non-Adat*Frac*FD* as we examine different samples of communities. To that end, we distinguish between the set of communities which are ethnically diverse as opposed to ones which are nearly ethnically homogeneous. Our theory predicts a clear effect for the former set but no effect for the latter.

Table 6 contains some such results. Here, we contrast the findings across the two sets of communities — ethnically diverse and not — in alternating columns. In the odd-numbered

VARIABLES	(1)	(2)	(3)	(4)
	<i>Pop1</i> < 100	<i>Pop1</i> < 91	<i>Pop1</i> < 100	<i>Pop1</i> < 91
	<u>Non-Adat only</u>	<u>Non-Adat only</u>		
Non-Adat			-3.1942 (2.357)	-19.1464*** (3.135)
Frac	-4.9197** (2.369)	2.4586 (4.365)	-20.2225** (8.037)	-52.5698*** (7.250)
FD	4.2454*** (1.179)	9.5001*** (2.200)	1.2618 (3.148)	-23.1998*** (7.056)
Non-Adat*Frac			15.2051* (8.168)	54.6076*** (8.186)
Non-Adat*FD			2.9850 (2.973)	32.4904*** (7.925)
Frac*FD	0.5242 (2.471)	-9.8788** (4.431)	15.5029 (9.477)	76.5060*** (15.758)
Non-Adat*FD*Frac			-15.0490 (9.677)	-85.9700*** (16.569)
Constant	8.9196** (3.846)	0.5410 (4.511)	11.2285** (5.354)	20.0649*** (4.755)
Other controls	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Observations	413	288	436	300
R-squared	0.218	0.256	0.227	0.265

Table 5: Diversity and local development spending. *Notes.* The dependent variable in columns (1) through (4) is the log of Development expenditure in the community, i.e., *lDeve**xp*. Local institution is proxied by *Non – adat* in all the columns. In the first two columns, we restrict the sample to those communities which do not strictly adhere to Adat norms in both rounds (i.e., 1997 and 2007), hence *Non – Adat* communities. In the remaining two columns, we utilise both *Adat* and *Non – Adat* communities. In columns (1) and (3) the sample is restricted to those communities which are not entirely ethnically homogeneous, hence *Pop1* < 100; and in columns (2) and (4) the sample is restricted to those communities where the largest ethnic group constitutes less than 91% of the population, hence *Pop1* < 91. Other controls: Head has completed High School (dummy variable), Head lives in the community (dummy variable), community population, community area (in hectares), Urban/Rural community (dummy variable), distance from the district headquarters (in miles) and if Islam is the dominant religion (dummy variable). Robust standard errors clustered at the district level in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

columns, the sample is restricted to fairly homogeneous communities, i.e., where the size of the largest ethnic group constitutes is at least 91% of the population. In the even-numbered columns, the sample is restricted to those communities where the largest ethnic group constitutes less than 91% of the population.

In the first two columns, the dependent variable is the log of development spending and in columns (3) and (4) it is the log of development spending including IDT. As can be seen from columns (1)–(4), the coefficient on the triple-interaction term $Non-Adat*Frac*FD$ is statistically significant when one considers the set of communities which are more ethnically diverse, i.e., when $Pop1 < 91$. Moreover, the coefficient is negative re-enforcing the main idea from Table 5.¹⁴

Each of the columns (5)–(8) in Table 6 have, as the dependent variable, the share of development spending out of the total public spending in the community. In columns (5) and (6) it is share of development spending (out of the total public spending at the community level) and in columns (7) and (8) it is the share of development spending when including the IDT programme.

Looking at the share in apposition with the level is interesting for the following reason. It provides a sense of whether there was a more (or less) than proportional change in response to any potential changes in the overall budget at the community level. This is important as the remaining share is clearly non-development spending which is largely wages and salaries of community staff, their travels and other administrative items. We posit that these latter items are something valued by the elite — at least, more than what the non-elite do as they are typically not the direct beneficiaries — and hence looking at how the share of development spending (and thereby, non-development spending) responds is quite illuminating.

As can be observed from the columns (5)–(8) in Table 6, the coefficient on the triple-interaction term $Non-Adat*Frac*FD$ is statistically significant when one considers the set of communities which are more ethnically diverse, i.e., when $Pop1 < 91$. Thus, apart from there being a negative association with the *level* of development spending there exists one when considering the *share* of development spending too. The latter results are suggestive of the idea that in the post-decentralisation period, there is also a *relative* movement away from what the non-elite want (i.e., development spending) in addition to there being an *absolute* one in communities which do not strictly adhere to Adat laws and are ethnically diverse.

These results are robust to using an alternative measure of ethnic diversity. Table 13 in the Appendix replicates the findings in Table 6 using our second measure of ethnic diversity, namely, $Frac1$. Furthermore, we explore the robustness of these findings using a fuller set of interaction terms (with the FD variable). Table 14 in the Appendix contains such results.

¹⁴For the sake of the structure of Table 6, column (2) here is reproduced from Table 5.

VARIABLES	Pop1 ≥ 91 [1]	Pop1 < 91 [2]	Pop1 ≥ 91 [3]	Pop1 < 91 [4]	Pop1 ≥ 91 [5]	Pop1 < 91 [6]	Pop1 ≥ 91 [7]	Pop1 < 91 [8]
	IDevexp	IDevexp	IDevexp_idt	IDevexp_idt	shdev	shdev	shdev_idt	shdev_idt
Non-Adat	2.0383 (2.844)	-19.1464*** (3.135)	1.8336 (2.820)	-16.1073*** (3.706)	0.1085 (0.123)	-0.9337*** (0.192)	0.1073 (0.122)	-0.7882*** (0.231)
Frac	-39.0539 (65.399)	-52.5698*** (7.250)	-49.6368 (75.883)	-48.3215*** (8.118)	-1.1378 (2.674)	-2.4582*** (0.409)	-1.7282 (3.531)	-2.3279*** (0.444)
FD	5.9772* (2.995)	-23.1998*** (7.056)	5.7643* (2.997)	-19.8040** (7.298)	0.2093 (0.132)	-1.9795*** (0.411)	0.2249* (0.132)	-1.8242*** (0.416)
Non-Adat*Frac	53.0880 (58.037)	54.6076*** (8.186)	66.9823 (73.567)	48.6404*** (9.088)	2.1249 (2.315)	2.6108*** (0.520)	3.0989 (3.447)	2.3612*** (0.576)
Non-Adat*FD	-2.2699 (2.978)	32.4904*** (7.925)	-1.8189 (2.959)	27.4997*** (8.346)	-0.1192 (0.134)	2.2126*** (0.505)	-0.1304 (0.133)	1.9678*** (0.527)
Frac*FD	41.0493 (64.656)	76.5060*** (15.758)	40.0552 (74.871)	69.4174*** (16.293)	-1.9303 (3.288)	5.2620*** (0.852)	-1.7996 (4.099)	4.9800*** (0.903)
Non-Adat*FD*Frac	-71.7773 (60.139)	-85.9700*** (16.569)	-70.0240 (72.152)	-75.5729*** (17.348)	0.4400 (2.576)	-5.6478*** (1.012)	0.1405 (3.557)	-5.2143*** (1.080)
Constant	15.9237*** (4.659)	20.0649*** (4.755)	16.6302*** (4.853)	17.0534*** (5.757)	0.5973** (0.269)	1.0888** (0.322)	0.7070** (0.275)	1.0017** (0.374)
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	304	300	304	300	303	298	303	298
R-squared	0.230	0.265	0.268	0.300	0.189	0.142	0.200	0.157

Table 6: Diversity and local development spending (totals and shares). *Notes.* The dependent variable in columns (1) and (2) is the log of Development expenditure in the community, while in columns (3) and (4) it is the same including IDT. Columns (5)–(8) have the corresponding shares out of total public spending in the community. In the odd-numbered columns, the sample is restricted to fairly homogeneous communities, i.e., where the size of the largest ethnic group constitutes is at least 91% of the population. In the even-numbered columns, the sample is restricted to those communities where the largest ethnic group constitutes less than 91% of the population. Other controls: Head has completed High School (dummy variable), Head lives in the community (dummy variable), community population, community area (in hectares), Urban/Rural community (dummy variable), distance from the district headquarters (in miles) and if Islam is the dominant religion (dummy variable). Robust standard errors clustered at the district level in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

It is worth emphasizing that the coefficient on the triple-interaction term $Non-Adat*Frac*FD$ being negative and significant for the set of communities which are more ethnically diverse (i.e., when $Pop1 < 91$) is one of the main predictions of our theory. That said, once we split the sample by the $Pop1 < 91$ variable we run into the issue of imbalance as regards the proportion of adat to non-adat communities since adat adherence (in the strict sense) is more common among ethnically homogeneous communities.¹⁵ To address this issue of relatively fewer adat communities in the ethnically diverse set (i.e., when $Pop1 < 91$), we re-run the baseline regressions – specifically, the ones in columns 2,4,6 and 8 in Table 6 – using the wild cluster bootstrapping method to adjust the standard errors. The results are essentially unchanged. The coefficient on $Non-Adat*Frac*FD$ is negative and statistically significant like before. A collection of these results is presented in Table 18 in the Appendix.

3.3.2 Components of Development Spending

We next proceed to unpick the effects on the two components of development spending in the community — namely, physical infrastructure spending and social infrastructure spending. As mentioned earlier, the former comprises spending on roads, communications and connectivity while the latter concerns spending on healthcare and education. While these two forms of infrastructural spending are quite distinct in terms of their aims and objectives, there is little reason *a priori* to presume that the non-elites would prefer one set more than the other. To be sure, one could argue that the elite care about these aspects too but it is well-known that they have other possibilities of fulfilling their needs (e.g., private schooling and health facilities) which the poor have no recourse to. In that sense, it is plausible to claim that these types of spending are more valued by the non-elite sections of society.

In Table 7, we report some results where the outcome variable is one or the other type of infrastructure spending at the community level. Specifically, in columns (1) and (2), the dependent variable is the log of physical infrastructure spending in the community while in columns (3) and (4) the dependent variable is similar but also accounting for the IDT programme. Columns (5)–(8) pertain to social infrastructure spending with columns (5) and (6) having the log of social infrastructure spending in the community as the dependent variable while columns (7) and (8) have use their counterparts which account for the IDT programme. Like in Table 6, in the odd-numbered columns, the sample is restricted to fairly homogeneous communities, i.e., where the size of the largest ethnic group constitutes is at least 91% of the population. In the even-numbered columns, the sample is restricted to those communities where the largest ethnic group constitutes less than 91% of the population.

The pattern which emerges is broadly the same as documented for total development spending in Table 6.

¹⁵Recall, we only consider communities which have strictly adhered to adat norms in *both* periods as *Adat* (so, the rest are *Non-Adat*).

VARIABLES	Pop1 ≥ 91 [1]	Pop1 < 91 [2]	Pop1 ≥ 91 [3]	Pop1 < 91 [4]	Pop1 ≥ 91 [5]	Pop1 < 91 [6]	Pop1 ≥ 91 [7]	Pop1 < 91 [8]
	lInfraexp	lInfraexp	lInfraexp_idt	lInfraexp_idt	lSocexp	lSocexp	lSocexp_idt	lSocexp_idt
Non-Adat	2.6943 (2.259)	-17.3813*** (4.575)	1.9837 (2.783)	-13.9836*** (4.857)	0.7386 (2.244)	-19.9628*** (3.874)	0.7107 (2.470)	-13.3774** (5.730)
Frac	-4.6540 (45.918)	-45.2787*** (12.034)	-56.3179 (56.324)	-39.4755*** (12.846)	6.0956 (43.270)	-54.5910*** (10.023)	-42.5848 (49.726)	-37.3480** (15.871)
FD	-10.7211*** (2.294)	-36.1705*** (6.596)	-6.4766* (3.320)	-34.5388*** (6.430)	-9.6883*** (2.134)	-37.7858*** (6.225)	-4.9496 (3.534)	-20.5820** (7.970)
Non-Adat*Frac	12.3393 (43.778)	45.1747*** (11.032)	69.9862 (58.911)	39.0933*** (12.706)	6.9821 (47.464)	55.2081*** (9.061)	67.4100 (50.980)	34.5035** (15.518)
Non-Adat*FD	-2.2021 (2.310)	27.0051*** (6.541)	4.4513 (3.582)	31.0703*** (7.358)	-0.2987 (2.202)	30.1552*** (6.183)	2.4662 (3.591)	16.6481* (8.451)
Frac*FD	10.2865 (50.123)	65.8680*** (16.133)	5.7610 (70.704)	65.2242*** (15.837)	3.2181 (48.374)	76.7061*** (15.561)	-12.3419 (67.679)	38.9638** (18.343)
Non-Adat*FD*Frac	-14.2764 (48.645)	-66.8646*** (15.597)	2.2184 (72.637)	-66.5015*** (17.142)	-11.4245 (52.739)	-78.6519*** (14.913)	-7.5580 (65.550)	-35.2322* (18.787)
Constant	8.4943** (4.218)	19.2972** (8.003)	4.2689 (7.607)	20.8850** (8.588)	2.2155 (4.089)	21.3789** (8.177)	-1.1612 (5.727)	21.6614** (9.035)
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	305	301	304	300	305	301	304	300
R-squared	0.692	0.525	0.291	0.228	0.560	0.477	0.258	0.210

Table 7: Diversity and local development spending (different components). *Notes.* The dependent variable in columns (1) and (2) is the log of physical infrastructure expenditure in the community, while in columns (3) and (4) it is the same including IDT. Columns (5)–(8) have the corresponding variables for spending on social infrastructure in the community. In the odd-numbered columns, the sample is restricted to fairly homogeneous communities, i.e., where the size of the largest ethnic group constitutes is at least 91% of the population. In the even-numbered columns, the sample is restricted to those communities where the largest ethnic group constitutes less than 91% of the population. Other controls: Head has completed High School (dummy variable), Head lives in the community (dummy variable), community population, community area (in hectares), Urban/Rural community (dummy variable), distance from the district headquarters (in miles) and if Islam is the dominant religion (dummy variable). Robust standard errors clustered at the district level in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

In the sample of communities where the largest ethnic group constitutes less than 91% of the population, the coefficient on the triple-interaction term $Non-Adat*Frac*FD$ is negative and statistically significant for both categories of infrastructure spending. In the case of physical infrastructure spending, the magnitude of the coefficient is similar when comparing across the with and without IDT columns. This is, however, not the case for social infrastructure spending where the coefficient is much reduced in size and somewhat in significance in the case of spending which accounts for IDT. While this asymmetry is interesting in its own right, we do not dwell upon it as our theory is agnostic about this.

These results are robust to using an alternative measure of ethnic diversity. Table 15 in the Appendix replicates the findings in Table 7 using our second measure of ethnic diversity, namely, $Frac1$.

3.3.3 Non-development Spending

Recall that in Table 6, we had observed that the share of total development spending was lower in the post-decentralisation period for ethnically diverse communities which did not observe Adat laws strictly. In other words, the share of total *non-development* spending was *higher* in the post-decentralisation period for these very same communities. This is our first piece of evidence of capture by the local elites in these communities in line with our theoretical predictions.

Here, we add to this by delving further into this category of spending. Both the 1997 and the 2007 rounds of the IFLS provide detailed information on village finance including both revenue and expenditure of the community government. We gather the information of the salary expenditure of village government officials. This includes the salary for the village leader, village secretary, head of different sections of the government, head of Dusun (hamlet heads of different linguistic groups) and Badan Permusyawaratan Desa (BPD or the village consultative body). We aggregate these salary expenditures to create a new variable of public spending, namely, the total spending on salaries. Table 4 reveals that the mean of the log of this variable is 13.424 which is comparable to the mean of the log of total development spending (the sample mean is 14.999). Hence, it is quite evident that the total spending on salaries of these local sub-district officials constitute a significant portion of the overall community-level public spending.

We posit that this spending on salaries is preferred by the elite in the community in the manner that spending on infrastructure development is preferred by the non-elite members of the community. Our claim rests on the following premises:

- (a) these are items enjoyed privately by very few members of the community, namely, by the village level officials with practically little or no spillover effects, and
- (b) these officials (elected or otherwise) have sufficient influence with the district-level officials

which is the next higher rung of governance and also the one holding considerable power post-decentralisation.

In other words, we claim that diverting funds towards the salaries and other expenses of these local officials at the cost of lower infrastructure spending is a clear indication of a movement *away* from the non-elite's public spending priorities. Hence, we expect the effect on this category of spending to be the opposite of what we have observed so far.

Table 8 contains some results where the outcome variable pertains to spending on salaries of the local officials. The dependent variable in columns (1)–(3) is the log of spending on salaries of officials in the community, while in columns (4)–(6) it is the share of such salary expenditure out of the total public spending in the community. In columns (1) and (4) the sample is restricted to those communities which are not entirely ethnically homogeneous. In columns (2) and (5), the sample is restricted to fairly homogeneous communities, i.e., where the size of the largest ethnic group constitutes is at least 91% of the population. In columns (3) and (6), the sample is restricted to those communities where the largest ethnic group constitutes less than 91% of the population.

In columns (2) and (3) of Table 8, the coefficient on the triple-interaction term $Non-Adat*Frac*FD$ is negative and statistically significant. Moreover, the magnitude of the coefficient in column (2) (i.e., the more ethnically homogeneous sample of communities) is more than twice that of the coefficient in column (3) which has the more ethnically diverse set of communities. This is in stark contrast with *all* the previous results.

This asymmetry is heightened when we look at the cases where the dependent variable is the share of such salary expenditure in the total public spending. Specifically, in column (5) the coefficient on $Non-Adat*Frac*FD$ is negative and statistically significant and it is positive and statistically significant in column (6). This suggests that being a Non-Adat and ethnically diverse community is associated with an *increase* in the share of salaries in total public spending in the post-decentralisation period for the more ethnically diverse set of communities.

It is worthwhile reiterating that the corresponding association with any form of development spending for the same sample of communities has been *negative*.

Taken together, these sets of results strongly indicate that for the more ethnically diverse set of communities (specifically, where the largest ethnic group constitutes less than 91% of the population), being a Non-Adat and ethnically diverse community leads to lower development spending (in levels and shares) and a higher share of salaries in the total public spending in the community. These results are robust to using an alternative measure of ethnic diversity.

Table 16 in the Appendix replicates the findings in Table 8 using our second measure of ethnic diversity, namely, $Frac1$.

VARIABLES	Pop1 < 100	Pop1 ≥ 91	Pop1 < 91	Pop1 < 100	Pop1 ≥ 91	Pop1 < 91
	(1)	(2)	(3)	(4)	(5)	(6)
	ltotsal	ltotsal	ltotsal	shsalary	shsalary	shsalary
Non-Adat	-1.3936 (3.013)	-0.2416 (2.528)	-16.4634*** (3.388)	-0.0080 (0.053)	-0.0761** (0.029)	0.2089 (0.162)
Frac	-17.5989* (10.419)	-107.6200** (49.906)	-50.5462*** (9.933)	-0.2734 (0.179)	-2.1939*** (0.762)	0.3275 (0.515)
FD	5.7251* (3.220)	5.5513** (2.362)	-11.1069 (6.768)	0.4200*** (0.111)	0.0533 (0.041)	1.2078*** (0.243)
Non-Adat*Frac	10.4393 (10.480)	105.7954** (52.537)	46.1635*** (7.910)	0.1601 (0.168)	1.4022* (0.829)	-0.4471 (0.538)
Non-Adat*FD	0.9457 (3.350)	0.0774 (2.478)	18.8810*** (6.458)	-0.2052** (0.102)	0.0742 (0.049)	-1.0224*** (0.269)
Frac*FD	14.2261 (10.326)	115.9435** (50.059)	52.5669*** (15.774)	0.0471 (0.372)	5.0394** (2.086)	-1.9662*** (0.668)
Non-Adat*FD*Frac	-9.0517 (10.784)	-114.6093** (52.335)	-49.5634*** (14.456)	0.2840 (0.374)	-3.7602** (1.838)	2.3663*** (0.699)
Constant	1.8725 (4.390)	7.2318* (4.122)	13.0326* (7.671)	0.2936 (0.272)	0.3187 (0.257)	0.0071 (0.465)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	442	306	306	383	283	256
R-squared	0.475	0.402	0.533	0.425	0.348	0.447

Table 8: Diversity and local spending (non-developmental). *Notes.* The dependent variable in columns (1)–(3) is the log of spending on salaries of officials in the community, while in columns (4)–(6) it is the share of such salary expenditure out of the total public spending in the community. In columns (1) and (4) the sample is restricted to those communities which are not entirely ethnically homogeneous. In columns (2) and (5), the sample is restricted to fairly homogeneous communities, i.e., where the size of the largest ethnic group constitutes is at least 91% of the population. In columns (3) and (6), the sample is restricted to those communities where the largest ethnic group constitutes less than 91% of the population. Other controls: Head has completed High School (dummy variable), Head lives in the community (dummy variable), community population, community area (in hectares), Urban/Rural community (dummy variable), distance from the district headquarters (in miles) and if Islam is the dominant religion (dummy variable). Robust standard errors clustered at the district level in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

3.3.4 Local leadership

So far we did not account for the nature of local leadership in the community. As can be seen from Table 9), there were a variety of methods by which communities selected their leaders. While in several communities it was fairly democratic by the use of voting or consensus-building, in several others the selection was done by the local elite (termed “oligarchy” in Table 9). While in the pre-decentralisation period the influence of these local leaders would have been limited, the same can hardly be said for the post-decentralisation years. In other words, the nature of local leadership could potentially have a bearing upon the local public spending patterns especially in the post-decentralisation period.

	<u>1997</u>		<u>2007</u>	
	Rural	Urban	Rural	urban
Consensus	38	53	15	18
Voting	64	50	100	78
Oligarchy	18	89	5	96
Total	120	192	120	192

Table 9: Different methods of selection of community leaders. *Notes.* ‘Consensus’= 1 if the community leader is selected by consensus building through meetings; ‘Voting’=1 if the community leader is elected by voting; ‘Oligarchy’=1 if the community leader is selected by few elites.

Our theoretical model does not explicitly account for this feature. We do assume that the leader L (who is endowed with authority over spending in the post-decentralisation period) is acting in the interests of *all* the community members. But that refers to the district-level official who is ‘local’ in the sense of not being based in Jakarta as part of the central government. We do not explicitly model the local community leader. In reality, the district official can only implement the spending with the cooperation of the community leader. Thus, the final local level public spending is also subject to the actions of the community leader. Given this situation, our model implicitly assumes that in the absence of any lobbying the combined efforts of the district *and* the community leader serve the entire community and not just the interests of the local elite. In other words, one can interpret our model as one which implicitly assumes that the local community leader is basically democratic in his/her actions.

In light of the above discussion, we expect our core results to hold in the sample of communities where the community leader is democratically elected. In the case where the community leader is hand-picked by the elite, we do not know what to expect. It may well be possible that a community dominated politically by the local elite may not register much change after fiscal decentralisation as it is equally prone to elite capture in both time periods. This is what we seek to examine here.

To that end, using the information on leader selection from 1997 and 2007 rounds of IFLS data, we generate an index of local democratisation as follows:

$Status_V = 1$ if the community selected a leader by voting or consensus building in both 1997 and 2007 or it became so only in 2007; it is zero otherwise.

Table 10 contains the results which distinguish between communities in terms of the nature of their local leadership, i.e., by $Status_V$. In the first four columns, we restrict attention to communities for which $Status_V = 0$; therefore, these are communities in which the selection of the leader was done by the local elite (termed “oligarchy” in Table 9). In the last four columns, we consider only those communities for which $Status_V = 1$; hence, here the leader is elected democratically.

The dependent variable in columns (1) and (5) is the log of Development expenditure in the community, while in columns (3) and (7) it is the same including IDT. Each of the remaining columns have – as the dependent variable – the corresponding shares out of total public spending in the community for the dependent variable in the column preceding it. Also, in all the columns the sample is restricted to those communities which are not entirely ethnically homogeneous.

In columns (1)–(4) of Table 10, we find that the coefficient on the triple-interaction term $Non-Adat*Frac*FD$ is not statistically significant. This suggests that in communities where the local leader is chosen by the local elite there seems to be no change in the pattern of development spending over time in Non-Adat communities which are ethnically diverse. This is true whether one considers the level of development spending or its share out of the total public spending. In columns (5)–(8), things look somewhat different. Here we find the results echoing our previous findings. The coefficient on the triple-interaction term $Non-Adat*Frac*FD$ is negative in all the columns and is statistically significant for the share of development spending. Thus, it is the set of communities with democratically elected leaders which exhibit the same spending patterns as the overall sample.

These results are robust to using an alternative measure of ethnic diversity. Table 17 in the Appendix replicates the findings in Table 10 using our second measure of ethnic diversity, namely, $Frac1$.¹⁶

In relation to the role of local leaders, we probe further into the possible differences between adat and non-adat communities which might serve to highlight the mechanism behind our empirical findings. In particular, we find that observable characteristics of leaders, namely, age, sex, education, tenure are not significantly different between adat and non-adat communities. However, the leaders are *more* likely to be insiders (i.e., reside in the community than outside of it) in adat communities.

Table 11 contains a summary of these comparisons.

¹⁶The results in Table 17 are, in fact, stronger than the ones reported in Table 10.

VARIABLES	Status_V=0				Status_V=1			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Non-Adat	-5.0146 (7.720)	-0.2482 (0.405)	-3.2875 (6.534)	-0.1668 (0.392)	-1.1960 (2.661)	-0.0747 (0.126)	-0.6115 (3.134)	-0.0277 (0.161)
Frac	-7.8675 (28.477)	-0.8393 (1.832)	-4.7639 (24.694)	-0.6348 (1.738)	-21.6267*** (6.429)	-0.8617*** (0.312)	-21.2456*** (6.840)	-0.8176** (0.352)
FD	-3.4181 (5.642)	-0.9416** (0.381)	-4.4280 (5.241)	-0.9776** (0.376)	3.8604 (3.224)	-0.0367 (0.154)	3.7483 (3.473)	-0.0056 (0.175)
Non-Adat*Frac	4.6211 (28.939)	0.5302 (1.818)	2.1100 (24.688)	0.3713 (1.727)	15.6525** (6.652)	0.6681* (0.342)	14.6352** (7.248)	0.5960 (0.393)
Non-Adat*FD	4.8104 (6.591)	0.6999 (0.434)	6.6940 (5.791)	0.7594* (0.421)	0.4649 (3.169)	0.1678 (0.156)	0.3123 (3.552)	0.1221 (0.185)
Frac*FD	8.6650 (28.493)	0.7518 (1.917)	19.4077 (27.342)	1.2752 (1.928)	15.5144** (7.292)	1.0512*** (0.385)	15.2778* (7.934)	0.9152** (0.427)
Non-Adat*FD*Frac	-7.3703 (28.047)	-0.4544 (1.912)	-18.5647 (26.421)	-1.0125 (1.902)	-9.6454 (7.864)	-0.9573** (0.425)	-9.7772 (8.533)	-0.8450* (0.483)
Constant	26.8219 (19.011)	1.4023 (0.885)	22.2892 (16.632)	1.3397 (0.836)	6.4097 (5.890)	0.2678 (0.247)	7.1864 (6.965)	0.3247 (0.324)
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	181	181	181	181	255	255	255	255
R-squared	0.223	0.258	0.254	0.243	0.429	0.331	0.449	0.301

Table 10: Diversity and local development spending (local leadership). *Notes.* The dependent variable in columns (1) and (5) is the log of Development expenditure in the community, while in columns (3) and (7) it is the same including IDT. Each of the remaining columns have – as the dependent variable – the corresponding shares out of total public spending in the community for the dependent variable in the column preceding it. The sample is restricted to those communities which are not entirely ethnically homogeneous in all the columns. Moreover, columns (1)–(4) have only those communities which have not had a democratically elected local leader in the post-decentralisation round (i.e., in 2007) while columns (5)–(8) have the remaining communities. Other controls: Head has completed High School (dummy variable), Head lives in the community (dummy variable), community population, community area (in hectares), Urban/Rural community (dummy variable), distance from the district headquarters (in miles) and if Islam is the dominant religion (dummy variable). Robust standard errors clustered at the district level in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

	Adat	Non-Adat	T-stat
Head age	44.88	44.42	0.6393
Head male	0.9723	0.9733	-0.0692
Head \geq shs	0.81	0.71	-0.665
Leader tenure	7.37	7.39	-0.0198
Head insider	0.81	0.68	3.0611***

Table 11: Local leader characteristics. *Notes.* The first columns lists the various characteristics of the local leader for the communities in our sample. The second column lists the values for these characteristics when the sample is that of Adat communities while the third does the same for the Non-adat ones. The *T-stat* column provides a comparison of means for each of these leader characteristics.

One may plausibly posit that greater mutual co-operation among community members may induce an insider leader to deliver more towards development in adat (as opposed to non-adat) communities. Relatedly, an “outsider” leader may need to contend with higher coordination costs of public service delivery and especially so in communities where mutual cooperation is lower (i.e., non-adat communities).

3.3.5 Further robustness: ITCV Analysis

Frank (2000) and Frank et al. (2013) had proposed a method for testing the robustness of causal inference using the impact threshold of a confounding variable or ITCV in short. This method has been widely used in the literature (see e.g., Harrison, Boivie, Sharp and Gentry (2018), Hubbard, Christensen and Graffin (2017)). The ITCV analysis essentially enables one to determine how strong the effect of a hypothetical confounding variable would have to be to overturn the current findings. The program calculates the percentage of observations for each potentially confounding variable which have to be biased in order for inference to be a concern. Therefore, we refer to the evaluation of the estimate against the threshold as the “robustness” of the inference.

We ran the ITCV analysis for the key explanatory variables, namely, *Non-Adat* and *Frac*, which could be potentially confounding. To be sure, in our analysis we always control for a rich number of community characteristics including community population, geographic size of the community — factors which may systematically differ between adat and non-adat communities, or equally between more or less ethnically diverse ones. However, as it is not possible to control for all potential confounding factors, we use the ITCV analysis to test the robustness of our estimates for the key variables.

Using the Stata command *Konfound*, we obtained the following estimates for the sample of communities which are not completely ethnically homogeneous, i.e., $pop1 < 100$. For *Non-Adat*, to invalidate the model inference 40.03% (175) cases would have to be replaced with

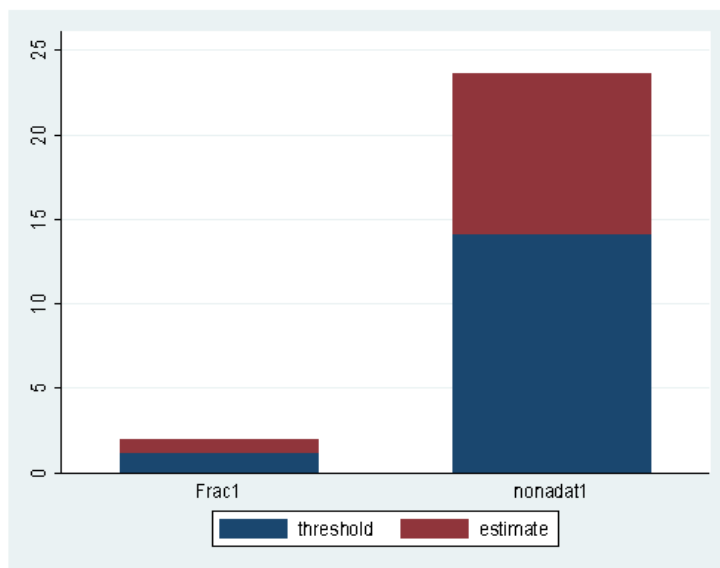


Figure 3: *Sensitivity analysis*: ITCV for Development spending using sample $pop1 < 100$.

cases for which there is an effect of 0, which seems absurdly high. For *Frac*, to invalidate the model inference 41.90% (183) cases would have to be replaced with cases for which there is an effect of 0, which is again too high. These estimates are presented in Figure 3: the region above the threshold represents the percent of the estimated coefficient that would have to be replaced with null cases in order to invalidate the significant effect. Since the ITCV estimate exceeds the threshold by a significant margin, it validates the robustness of our inference.

We repeat the same ITCV analysis for the sample of communities where the largest ethnic group is less than 91% of the total population. In this case too, the robustness of our estimates are confirmed. For *Non-Adat*, to invalidate the inference 63.93% (192) cases would have to be replaced with cases for which there is an effect of 0. For *Frac*, to invalidate the inference 62.97% (189) cases would have to be replaced with cases for which there is an effect of 0. These estimates are presented in Figure 4.

Taking stock of our entire empirical findings, we observe a robust and consistent pattern in the level and shares of different components of local public spending when viewed before and after the fiscal decentralisation event. The patterns are stable across various specifications and are consistent with the predictions of our theoretical model. These results strongly indicate that local elite capture makes its presence felt more strongly in the post-decentralisation period — via distortion in local public spending — in communities which

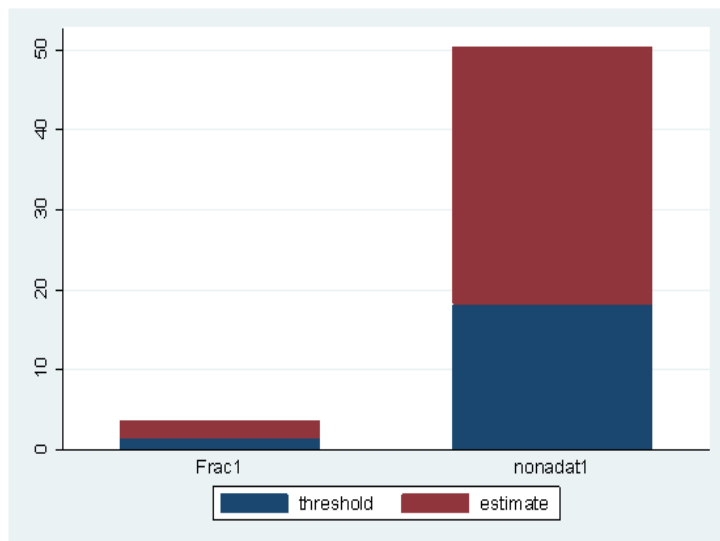


Figure 4: *Sensitivity analysis*: ITCV for Development spending using sample $pop1 < 91$.

lack sufficient internal cohesion (*Non-Adat*) and happen to be ethnically diverse.

4 Conclusion

In this paper, we present an analysis of the trade-off between the gains from decentralisation and the losses from local elite capture in the context of an ethnically diverse society. In particular, our focus is on the salience of local institutions in this trade-off. Using the massive fiscal decentralisation programme in Indonesia which came at the end of Suharto’s regime, we document some consistent empirical patterns.

To highlight how exactly ethnic diversity may affect the efficacy of the local political process, we build a simple model of lobbying where citizens may lobby the local politician to tilt the spending in their favour. The local elite is endowed with a first-mover advantage of selecting one of the ethnic groups as it’s lobbying partner. Alternatively, the local elite could simply lobby alone. The lobby group if successful can dictate public spending and thereby limit to benefiting only themselves. Ethnic diversity will compound the problem as the elite would be able to exploit the differences in preferences across the ethnic groups to form a lobby. In such a scenario, any factor which serves to raise coordination across the citizens from differing ethnicities would reduce the distortion in spending and bring it more in line with the requirements of the masses.

In our empirical exercise, we highlight a distinct feature of Indonesian communities which we argue is capable of affecting cooperation among the citizens. We utilise the presence of centuries-old Adat norms which emphasise consensus building among the community members and thereby reduce coordination costs and enhance cooperation. Hence, communities which did not adhere to Adat norms are more likely to have higher coordination costs across ethnic groups. Miguel and Gugerty (2005) argue how inability to impose social sanctions in diverse communities leads to collective action failures. We, in a similar vein, argue that ability of Adat communities to impose social sanctions had facilitated collective action in our sample. Using IFLS 2007 data, we find that individuals who break the adat rules of their community can face significant penalties, including the payment of fines, ostracism and even, in some cases, expulsion from the community. As expected, the penalties are more severe in communities which practise stronger adherence to adat laws. In our empirical analysis, we consistently found that communities which were not Adat and were ethnically diverse tended to have lower levels of development spending at the community level after controlling for a host of explanatory variables. We observe the opposite effects for what we term ‘non-development’ spending. Taken together, these empirical findings appear consistent with the mechanisms outlined in our theory.

Our analysis highlights that fiscal and political decentralisation are not necessarily a panacea for ethnically diverse communities. The overall impact of decentralisation on community governance and consequent local development in diverse communities depends not only on the nature and extent of fiscal autonomy, but also on the prevailing local demographic and institutional features.

It is quite possible that being a community which adheres to Adat laws makes it somewhat different in ways which can influence the trajectory of local public spending quite aside from affecting the level of cooperation and coordination costs within the community. To be sure, this other potential channel must take effect only — or at least, predominantly — in ethnically diverse communities (perhaps facilitated by an insider leader). While there seems to be no such obvious confounding factor, it cannot be ruled out in principle and hence the need to explore these subtleties in a more nuanced manner. Nonetheless, we believe that our findings shed new light on an issue which is both intellectually stimulating and policy-relevant.

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Appendix

Derivations of E's optimal effort levels for the three cases.

Consider Case (A). E 's problem is to choose the effort level e to maximise

$$\left[\frac{1}{\lambda e + 1} \right] R\alpha\beta + \left[\frac{\lambda e}{\lambda e + 1} \right] \frac{R}{\lambda} - \psi e.$$

Notice that the objective function is strictly concave in e as $1/\lambda > \alpha\beta$. Here the FOC for E is given by:

$$\frac{R(1 - \lambda\alpha\beta)}{(\lambda e + 1)^2} = \psi.$$

Hence, we get

$$e_0 = \frac{\left[\frac{R}{\psi}(1 - \alpha\beta\lambda) \right]^{1/2} - 1}{\lambda}.$$

Next consider Case (B). Here, the payoff to E is given by

$$\left(\frac{[\lambda + \rho(1 - \lambda)]e}{[\lambda + \rho(1 - \lambda)]e + 1} \right) \left(\frac{R\alpha\theta}{\lambda + \rho(1 - \lambda)} \right) + \left(\frac{1}{[\lambda + \rho(1 - \lambda)]e + 1} \right) R\alpha\beta - \psi e.$$

So E will choose an effort level to maximise this objective function.

Notice that the objective function is strictly concave in e whenever $\alpha\theta > 1$. Here the FOC for E is given by:

$$\frac{R\alpha(\theta - \beta[\lambda + (1 - \lambda)\rho])}{([\lambda + (1 - \lambda)\rho]e + 1)^2} = \psi.$$

Hence, we get

$$e_1 = \frac{\left[\frac{R\alpha}{\psi}(\theta - \beta[\lambda + (1 - \lambda)\rho]) \right]^{1/2} - 1}{\lambda + (1 - \lambda)\rho}.$$

Analogous steps generate the corresponding expression for case (C).

Proof. [LEMMA 1.] From the FOC for the $E \cup C_1$ case, we have

$$\frac{R\alpha}{\psi} \left(\theta - \beta[\lambda + (1 - \lambda)\rho] \right) = ([\lambda + (1 - \lambda)\rho]e + 1)^2.$$

The solution is denoted by e_1 . Similarly, for the $E \cup C_2$ case, we have

$$\frac{R\alpha}{\psi} \left(\theta - \beta[\lambda + (1 - \lambda)(1 - \rho)] \right) = ([\lambda + (1 - \lambda)(1 - \rho)]e + 1)^2.$$

The solution is denoted by e_2 . Since, $\rho \in [1/2, 1)$ it must be that

$$[\lambda + (1 - \lambda)\rho]e_1 \leq [\lambda + (1 - \lambda)(1 - \rho)]e_2.$$

This implies $e_1 < e_2$ for $\rho \in (1/2, 1)$ and $e_1 = e_2$ for $\rho = 1/2$. ■

Proof. [OBSERVATION 1.] Take any $\rho \in (1/2, 1)$. Let

$$U_1(e) \equiv \left(\frac{e}{[\lambda + \rho(1 - \lambda)]e + 1} \right) R\alpha\theta + \left(\frac{1}{[\lambda + \rho(1 - \lambda)]e + 1} \right) R\alpha\beta.$$

Similarly, let

$$U_2(e) \equiv \left(\frac{e}{[\lambda + (1 - \rho)(1 - \lambda)]e + 1} \right) R\alpha\theta + \left(\frac{1}{[\lambda + (1 - \rho)(1 - \lambda)]e + 1} \right) R\alpha\beta.$$

Hence, E 's payoff from $E \cup C_1$ is given by $U_1(e) - \psi e$. Similarly, E 's payoff from $E \cup C_2$ is given by $U_2(e) - \psi e$.

Note, $U_1(e_1) < U_2(e_1)$ since $\rho \in (1/2, 1)$. Hence,

$$U_1(e_1) - \psi e_1 < U_2(e_1) - \psi e_1.$$

By definition,

$$U_2(e_1) - \psi e_1 \leq U_2(e_2) - \psi e_2.$$

Hence,

$$U_1(e_1) - \psi e_1 < U_2(e_1) - \psi e_1 \leq U_2(e_2) - \psi e_2.$$

This completes the proof. ■

Proof. [OBSERVATION 2.] The payoff to E from $E \cup C_2$ is

$$\left(\frac{e}{[\lambda + (1 - \rho)(1 - \lambda)]e + 1} \right) R\alpha\theta + \left(\frac{1}{[\lambda + (1 - \rho)(1 - \lambda)]e + 1} \right) R\alpha\beta - \psi e.$$

Setting $\rho = 1$, implies that the above becomes

$$\left(\frac{e}{\lambda e + 1} \right) R\alpha\theta + \left(\frac{1}{\lambda e + 1} \right) R\alpha\beta - \psi e.$$

Recall the expression for E 's payoff when lobbying alone. It is

$$\left[\frac{1}{\lambda e + 1} \right] R\alpha\beta + \left[\frac{\lambda e}{\lambda e + 1} \right] \frac{R}{\lambda} - \psi e$$

which on simplification becomes

$$\left(\frac{e}{\lambda e + 1}\right)R + \left(\frac{1}{\lambda e + 1}\right)R\alpha\beta - \psi e.$$

As $\alpha\theta > 1$, E 's payoff from $E \cup C_2$ for $\rho = 1$ is strictly higher than that from lobbying alone. Notice, that the payoff to E from $E \cup C_2$ is continuous and (by Observation 1) monotonically decreasing in ρ . Hence, there exists a unique $\hat{\rho} \in (0, 1)$ such that E 's payoff from lobbying jointly with C_2 exceeds the one from lobbying alone for every $\rho \in (\hat{\rho}, 1)$. ■

Proof. [LEMMA 2.] Consider the case of $E \cup C_2$. The payoff to E from $E \cup C_2$ is

$$\pi_E(E \cup C_2) \equiv \left(\frac{e}{[\lambda + (1 - \rho)(1 - \lambda)]e + 1}\right)R\alpha\theta + \left(\frac{1}{[\lambda + (1 - \rho)(1 - \lambda)]e + 1}\right)R\alpha\beta - \psi e.$$

Observe that it is dependent on θ . Moreover, the optimal effort e_2 is increasing in θ . Let $\bar{\theta} > \underline{\theta} > 1/\alpha$ with corresponding optimal effort levels $\bar{e}_2 > \underline{e}_2$. By definition,

$$\pi_E(E \cup C_2; \bar{\theta}, \bar{e}_2) \geq \pi_E(E \cup C_2; \bar{\theta}, \underline{e}_2).$$

In addition, we have

$$\pi_E(E \cup C_2; \bar{\theta}, \underline{e}_2) > \pi_E(E \cup C_2; \underline{\theta}, \underline{e}_2).$$

Combining these, we get

$$\pi_E(E \cup C_2; \bar{\theta}, \bar{e}_2) > \pi_E(E \cup C_2; \underline{\theta}, \underline{e}_2).$$

Hence, the payoff to E from $E \cup C_2$ is increasing in θ . The arguments for the case of $E \cup C_1$ are analogous. ■

Proof. [OBSERVATION 3.] When $\rho = 1/2$, E is indifferent between lobbying with C_1 or C_2 . Let e^* denote the optimal effort choice by E for joint lobbying in that situation.

Note that for $\alpha\theta = 1$,

$$\left(\frac{e^*}{\lambda e^* + 1}\right)R + \left(\frac{1}{\lambda e^* + 1}\right)R\alpha\beta - \psi e^* > \left(\frac{e^*}{\left(\frac{\lambda+1}{2}\right)e^* + 1}\right)R\alpha\theta + \left(\frac{1}{\left(\frac{\lambda+1}{2}\right)e^* + 1}\right)R\alpha\beta - \psi e^*$$

given that $\lambda \in (0, 1/2)$.

Observe that the LHS is $\pi_E(E; e^*)$ while the RHS is $\pi_E(E \cup C_1) = \pi_E(E \cup C_2)$ since $\rho = 1/2$. Hence for $\alpha\theta = 1$,

$$\pi_E(E; e_0) \geq \pi_E(E; e^*) > \pi_E(E \cup C_1; e^*, \rho = 1/2)$$

where the first (weak) inequality follows from definition.

Given that $\pi_E(E; e_0)$ is independent of θ and $\pi_E(E \cup C_1; e^*, \rho = 1/2)$ is increasing in θ (by Lemma 2), there must be a unique θ — call it θ^* — such that

$$\pi_E(E; e_0) = \pi_E(E \cup C_1; e^*, \rho = 1/2)$$

when $\theta = \theta^*$. Hence, for every $\theta < \theta^*$ we have $\pi_E(E; e_0) > \pi_E(E \cup C_1)$ when $\rho = 1/2$.

Moreover, by Observation 1 we have that $\pi_E(E \cup C_1)$ is decreasing in ρ . Thus, for every $\theta < \theta^*$ we have $\pi_E(E; e_0) > \pi_E(E \cup C_1)$ when $\rho \in [1/2, 1)$, thereby completing the proof. ■

Proof. [OBSERVATION 4.] For C_2 to prefer lobbying over staying out, the following must hold

$$\pi_{C_2}(E \cup C_2) \geq \left(\frac{R\alpha\beta}{\lambda e_0 + 1} \right),$$

where the RHS denotes the payoff to C when E lobbies alone and fails, and

$$\pi_{C_2}(E \cup C_2) \equiv \left(\frac{e_2}{[\lambda + (1 - \rho)(1 - \lambda)]e_2 + 1} \right) R\alpha s_2 + \left(\frac{1}{[\lambda + (1 - \rho)(1 - \lambda)]e_2 + 1} \right) R\alpha\beta - \psi e_2,$$

where

$$s_2 = 1 - \frac{\lambda(\theta - 1)}{(1 - \lambda)(1 - \rho)}.$$

The above inequality can be written as

$$e_2 \left[\left(\frac{1}{[\lambda + (1 - \rho)(1 - \lambda)]e_2 + 1} \right) R\alpha s_2 - \psi \right] \geq R\alpha\beta \left[\frac{1}{\lambda e_0 + 1} - \frac{1}{[\lambda + (1 - \rho)(1 - \lambda)]e_2 + 1} \right],$$

where

$$e_2 = \frac{[\frac{R\alpha}{\psi}(\theta - \beta[\lambda + (1 - \lambda)(1 - \rho)])]^{1/2} - 1}{\lambda + (1 - \lambda)(1 - \rho)}.$$

Hence, the LHS can be re-written as

$$e_2 \psi^{1/2} \left[\left(\frac{(R\alpha)^{1/2} s_2}{(\theta - \beta[\lambda + (1 - \lambda)(1 - \rho)])^{1/2}} \right) - \psi^{1/2} \right].$$

Now consider the case where $\frac{(\theta - 1)}{(1 - \rho)} < \frac{(1 - \lambda)}{\lambda}$. Hence, $s_2 > 0$. Note, $\forall \psi > 0$,

$$e_2 \psi^{1/2} \left[\left(\frac{(R\alpha)^{1/2} s_2}{(\theta - \beta[\lambda + (1 - \lambda)(1 - \rho)])^{1/2}} \right) - \psi^{1/2} \right]$$

is falling in ψ .

Moreover, as $\psi \rightarrow 0$ both $\lambda e_0 + 1$ and $[\lambda + (1 - \rho)(1 - \lambda)]e_2 + 1$ approach infinity (follows

from their definitions). Hence, by making ψ arbitrarily close to 0,

$$\left[\frac{1}{\lambda e_0 + 1} - \frac{1}{[\lambda + (1 - \rho)(1 - \lambda)]e_2 + 1} \right]$$

can be made to approach 0. This implies that there exists $\bar{\psi}(\rho) > 0$ such that for $\psi = \bar{\psi}(\rho)$ the following holds:

$$e_2 \psi^{1/2} \left[\left(\frac{(R\alpha)^{1/2} s_2}{(\theta - \beta[\lambda + (1 - \lambda)(1 - \rho)])^{1/2}} \right) - \psi^{1/2} \right] = R\alpha\beta \left[\frac{1}{\lambda e_0 + 1} - \frac{1}{[\lambda + (1 - \rho)(1 - \lambda)]e_2 + 1} \right]$$

and for all $\psi < \bar{\psi}(\rho)$,

$$e_2 \psi^{1/2} \left[\left(\frac{(R\alpha)^{1/2} s_2}{(\theta - \beta[\lambda + (1 - \lambda)(1 - \rho)])^{1/2}} \right) - \psi^{1/2} \right] > R\alpha\beta \left[\frac{1}{\lambda e_0 + 1} - \frac{1}{[\lambda + (1 - \rho)(1 - \lambda)]e_2 + 1} \right].$$

Define $\underline{\psi}$ to be the $\liminf \{\bar{\psi}(\rho) : \rho \in [1/2, 1)\}$. This proves the first part of the observation.

Now consider the case where $\frac{(\theta-1)}{(1-\rho)} \geq \frac{(1-\lambda)}{\lambda}$. Hence, $s_2 = 0$. Here for every $\psi > 0$

$$e_2 \psi^{1/2} \left[-\psi^{1/2} \right] < R\alpha\beta \left[\frac{1}{\lambda e_0 + 1} - \frac{1}{[\lambda + (1 - \rho)(1 - \lambda)]e_2 + 1} \right].$$

Hence, C_2 will prefer to stay out than lobby with E . ■

Proof. [OBSERVATION 5.] Recall $e_0 = \frac{[\frac{R}{\psi}(1-\alpha\beta\lambda)]^{1/2}-1}{\lambda}$. Hence,

$$p_0 \equiv \frac{\lambda e_0}{\lambda e_0 + 1} = \frac{[\frac{R}{\psi}(1-\alpha\beta\lambda)]^{1/2}-1}{[\frac{R}{\psi}(1-\alpha\beta\lambda)]^{1/2}}.$$

Also, $e_2 = \frac{[\frac{R\alpha}{\psi}(\theta-\beta[\lambda+(1-\lambda)(1-\rho)])]^{1/2}-1}{\lambda+(1-\lambda)(1-\rho)}$ implies

$$p_2 \equiv \frac{[\lambda + (1 - \lambda)(1 - \rho)]e_2}{[\lambda + (1 - \lambda)(1 - \rho)]e_2 + 1} = \frac{[\frac{R\alpha}{\psi}(\theta - \beta[\lambda + (1 - \lambda)(1 - \rho)])]^{1/2} - 1}{[\frac{R\alpha}{\psi}(\theta - \beta[\lambda + (1 - \lambda)(1 - \rho)])]^{1/2}}.$$

Observe that for $i = 0, 2$,

$$p_i = \frac{x_i - 1}{x_i}$$

where $x_0 = [\frac{R}{\psi}(1 - \alpha\beta\lambda)]^{1/2}$ and $x_2 = [\frac{R\alpha}{\psi}(\theta - \beta[\lambda + (1 - \lambda)(1 - \rho)])]^{1/2}$.

Moreover, p_i is increasing in x_i . Hence we need to simply compare x_0 and x_2 to ascertain

which of the two p_i 's is greater. As $\rho \rightarrow 1$, by $\alpha\theta > 1$ we have

$$\frac{R\alpha}{\psi}(\theta - \beta[\lambda + (1 - \lambda)(1 - \rho)]) > \frac{R}{\psi}(1 - \alpha\beta\lambda).$$

This establishes part (i).

For part (ii), note that $\frac{R\alpha}{\psi}(\theta - \beta[\lambda + (1 - \lambda)(1 - \rho)])$ is increasing in ρ . This implies p_2 falls as ρ falls. As p_0 is independent of ρ , we have that p_0/p_2 increases as ρ falls. ■

Proof. [OBSERVATION 6.] This is clear from inspecting e_0 , e_1 and e_2 . ■

VARIABLES	(1)	(2)	(3)	(4)
	<i>Pop1</i> < 100	<i>Pop1</i> < 91	<i>Pop1</i> < 100	<i>Pop1</i> < 91
	<u>Non-Adat only</u>	<u>Non-Adat only</u>		
Non-Adat			-2.6778 (2.595)	-16.1073*** (3.706)
Frac	-4.8992** (2.012)	0.7292 (3.550)	-19.7206** (7.848)	-48.3215*** (8.118)
FD	4.3796*** (0.973)	7.8936*** (2.257)	1.2802 (3.203)	-19.8040** (7.298)
Non-Adat*Frac			14.7461* (8.081)	48.6404*** (9.088)
Non-Adat*FD			3.0953 (3.131)	27.4997*** (8.346)
Frac*FD	0.4613 (2.110)	-6.5544* (3.439)	15.9491* (9.497)	69.4174*** (16.293)
Non-Adat*FD*Frac			-15.5418 (9.757)	-75.5729*** (17.348)
Constant	8.6267** (4.205)	0.5072 (4.778)	10.5497* (5.610)	17.0534*** (5.757)
Other controls	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes
Observations	413	288	436	300
R-squared	0.254	0.291	0.263	0.300

Table 12: Diversity and local development spending (robustness). *Notes.* The dependent variable in columns (1) through (4) is the log of Development expenditure in the community including IDT, i.e., $\ln Devexp_IDT$. Local institution is proxied by *Non – adat* in all the columns. In the first two columns, we restrict the sample to those communities which do not strictly adhere to Adat norms in both rounds (i.e., 1997 and 2007), hence *Non – Adat* communities. In the remaining two columns, we utilise both *Adat* and *Non – Adat* communities. In columns (1) and (3) the sample is restricted to those communities which are not entirely ethnically homogeneous, hence $Pop1 < 100$; and in columns (2) and (4) the sample is restricted to those communities where the largest ethnic group constitutes less than 91% of the population, hence $Pop1 < 91$. Other controls: Head has completed High School (dummy variable), Head lives in the community (dummy variable), community population, community area (in hectares), Urban/Rural community (dummy variable), distance from the district headquarters (in miles) and if Islam is the dominant religion (dummy variable). Robust standard errors clustered at the district level in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

	Pop1 ≥ 91 [1]	Pop1 < 91 [2]	Pop1 ≥ 91 [3]	Pop1 < 91 [4]	Pop1 ≥ 91 [5]	Pop1 < 91 [6]	Pop1 ≥ 91 [7]	Pop1 < 91 [8]
VARIABLES	IDevexp	IDevexp	IDevexp_idt	IDevexp_idt	shdev	shdev	shdev_idt	shdev_idt
Non-Adat	-97.7736 (102.013)	-42.1586*** (10.509)	-123.3781 (129.781)	-37.0102*** (9.626)	-4.7321 (5.209)	-2.0202*** (0.487)	1.2217 (1.374)	0.0550 (0.431)
Frac1	-7.4569 (11.344)	-3.2606*** (0.721)	-9.3956 (13.190)	-2.9438*** (0.654)	-0.2177 (0.533)	-0.1519*** (0.029)	0.1889 (0.140)	0.0083 (0.034)
FD	-71.6332 (115.236)	-43.6689*** (11.136)	-70.2384 (134.009)	-36.9736*** (10.148)	-2.3309 (8.525)	-2.4853*** (0.482)	8.0553* (4.045)	-1.6224** (0.607)
Non-Adat*Frac1	9.9792 (10.063)	3.3634*** (0.733)	12.5194 (12.853)	3.0288*** (0.667)	0.4739 (0.512)	0.1567*** (0.030)	-0.1146 (0.137)	-0.0073 (0.035)
Non-Adat*FD	131.0355 (106.937)	51.0084*** (11.237)	128.7477 (130.041)	43.7785*** (10.378)	3.7585 (8.495)	2.5035*** (0.506)	-6.3362* (3.371)	1.4494** (0.625)
Frac1*FD	7.7593 (11.382)	3.8432*** (0.845)	7.5981 (13.264)	3.3908*** (0.774)	0.2179 (0.846)	0.1592*** (0.031)	-0.8009* (0.403)	0.0945** (0.045)
Non-Adat*FD*Frac1	-13.3301 (10.576)	-3.9835*** (0.853)	-13.0553 (12.885)	-3.5046*** (0.785)	-0.3756 (0.843)	-0.1609*** (0.032)	0.6265* (0.336)	-0.0944** (0.046)
Constant	90.5220 (115.114)	43.0681*** (13.247)	110.6203 (132.960)	37.3592*** (12.012)	2.8561 (5.364)	2.2667*** (0.519)	-1.0746 (1.278)	0.6519 (0.657)
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	304	301	304	301	297	289	281	252
R-squared	0.231	0.256	0.268	0.295	0.179	0.179	0.267	0.240

Table 13: Diversity and local development spending (totals and shares: robustness). *Notes.* The dependent variable in columns (1) and (2) is the log of Development expenditure in the community, while in columns (3) and (4) it is the same including IDT. Columns (5)–(8) have the corresponding shares out of total public spending in the community. In the odd-numbered columns, the sample is restricted to fairly homogeneous communities, i.e., where the size of the largest ethnic group constitutes is at least 91% of the population. In the even-numbered columns, the sample is restricted to those communities where the largest ethnic group constitutes less than 91% of the population. Other controls: Head has completed High School (dummy variable), Head lives in the community (dummy variable), community population, community area (in hectares), Urban/Rural community (dummy variable), distance from the district headquarters (in miles) and if Islam is the dominant religion (dummy variable). Robust standard errors clustered at the district level in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

	Popl < 100		Popl < 100		Popl < 91		Popl < 91		Popl ≥ 91		Popl ≥ 91		Popl < 100		Popl < 100	
VARIABLES	IDEVEXP	IDEVEXP_IDT	IDEVEXP	IDEVEXP_IDT	IDEVEXP	IDEVEXP_IDT	IDEVEXP	IDEVEXP_IDT	IDEVEXP	IDEVEXP_IDT	IDEVEXP	IDEVEXP_IDT	IDEVEXP	IDEVEXP_IDT	IDEVEXP	IDEVEXP_IDT
Non-Adat	-18.3235** (7.550)	-17.5332** (7.912)	-40.1334** (8.727)	-36.0751** (9.029)	-89.7077 (99.117)	-112.3193 (124.057)	-1.0960*** (0.372)	-1.0960*** (0.245)								
Frac1	-1.6320266*** (610.458)	-1.5923137** (618.162)	-3.0799689*** (675.027)	-2.8465495*** (675.277)	-8.6229050 (11.175.452)	-9.5586536 (12.749.746)	-91.8591*** (27.585)	-91.8591*** (17.892)								
FD	-7.6045 (13.261)	-8.0161 (13.481)	-52.1466** (20.396)	-50.2815** (20.060)	-85.7229 (117.778)	-68.6535 (131.039)	-0.2679 (0.752)	-0.2679 (0.475)								
Non-Adat*Frac1	1.5116354** (615.337)	1.4873594** (623.994)	3.0943048*** (697.685)	2.8584947*** (710.625)	9.1649979 (9.746.038)	11.4052491 (12.272.881)	83.9765*** (27.369)	83.9765*** (19.081)								
Non-Adat*FD	16.6780* (8.669)	17.0678* (8.975)	62.3228*** (13.060)	57.6797*** (12.892)	140.6292 (104.718)	131.8841 (123.893)	0.7541 (0.398)	0.7541 (0.386)								
Frac1*FD	1.4762301** (691.653)	1.4978570** (700.960)	4.4661364*** (959.733)	4.2095956*** (946.466)	10.3396942 (11.423.276)	8.7695320 (12.855.308)	43.5735 (50.557)	43.5735 (30.414)								
Non-Adat*Frac1*FD	-1.36557062* (692.479)	-1.4101032** (703.080)	-4.4928705*** (981.390)	-4.2313860*** (978.399)	-14.25554343 (10.324.764)	-13.3315631 (12.260.618)	-31.5795 (50.453)	-31.5795 (30.871)								
Headshs	0.1557 (1.138)	0.4322 (1.216)	0.9382 (1.534)	1.2073 (1.425)	-0.2038 (1.514)	0.2507 (1.501)	0.0315 (0.072)	0.0315 (0.036)								
Headshs*FD	-0.5396 (1.300)	-1.2747 (1.395)	-1.0921 (1.901)	-1.5510 (1.918)	0.5821 (1.685)	0.3752 (1.595)	0.0811 (0.097)	0.0811 (0.058)								
HeadlnvD	-2.7832* (1.625)	-2.6296 (1.648)	-3.2398* (1.729)	-3.2377* (1.777)	-2.8461** (1.153)	-1.6980* (1.018)	-0.0786 (0.063)	-0.0786 (0.031)								
HeadlnvD*FD	4.1622** (1.726)	3.2157* (1.682)	4.5445** (1.857)	4.0366** (1.882)	3.5498** (1.348)	2.2952* (1.189)	0.0645 (0.097)	0.0645 (0.066)								
Disdliq	-0.0922** (0.037)	-0.1104*** (0.035)	-0.0672 (0.061)	-0.0941* (0.055)	-0.0271 (0.199)	-0.0410 (0.181)	-0.0013 (0.002)	-0.0013 (0.002)								
Disdliq*FD	0.0575 (0.035)	0.0662* (0.034)	0.0400 (0.039)	0.0496 (0.038)	-0.0317 (0.195)	-0.1106 (0.175)	0.0030 (0.002)	0.0030 (0.002)								
Lvpop	1.4275* (0.825)	1.3516 (0.845)	1.4355 (1.052)	1.2267 (1.072)	1.0909 (0.690)	1.0385 (0.705)	0.0798** (0.037)	0.0798** (0.016)								
Lvpop*FD	-1.2374 (1.135)	-0.9993 (1.067)	-0.7672 (1.745)	-0.1286 (1.587)	-1.9813** (0.939)	-2.0282** (0.917)	-0.0019 (0.047)	-0.0019 (0.056)								
Lvsize	-0.2865 (0.298)	-0.2378 (0.286)	-0.2419 (0.418)	0.0265 (0.373)	-0.4507 (0.300)	-0.4251 (0.285)	0.0016 (0.016)	0.0016 (0.008)								
Lvsize*FD	0.7309** (0.314)	0.6252** (0.300)	0.5030 (0.462)	0.1862 (0.432)	0.5588* (0.313)	0.4913* (0.294)	0.0194* (0.020)	0.0194* (0.011)								
Urban	0.7394 (1.652)	0.3078 (1.479)	0.8292 (2.137)	0.7141 (2.207)	0.9243 (1.114)	0.3071 (1.101)	0.0314 (0.081)	0.0314 (0.044)								
Urban*FD	0.3919 (1.838)	0.2980 (1.676)	-1.4530 (2.665)	-2.4620 (2.540)	-0.1595 (1.206)	0.3558 (1.208)	-0.1791* (0.106)	-0.1791* (0.094)								
Sea	2.8255* (1.609)	3.3437** (1.606)	2.1110 (1.708)	2.7689* (1.595)	3.1259** (1.465)	2.7256* (1.473)	0.1389** (0.065)	0.1389** (0.028)								
Sea*FD	-2.8923* (1.582)	-2.6384 (1.635)	-1.4943 (1.809)	-1.5840 (1.692)	-3.2582** (1.574)	-2.3058 (1.494)	-0.1314* (0.068)	-0.1314* (0.050)								
Constant	25.5728** (10.791)	24.7875** (11.805)	42.6980*** (14.456)	38.7386** (15.357)	95.3694 (114.845)	103.9284 (129.312)	0.8592*** (0.451)	0.8592*** (0.214)								
District dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	436	436	300	300	303	303	420	379								
R-squared	0.274	0.300	0.304	0.337	0.283	0.302	0.200	0.281								

Table 14: Diversity and local development spending (totals and shares: interactions with FD). Notes. The dependent variable in columns (1), (3) and (5) is the log of Development expenditure in the community, while in columns (2), (4) and (6) it is the same including IDT. Columns (7) and (8) have the corresponding shares out of total public spending in the community. Other controls: Head has completed High School, Head lives in the community, community population, community area, Urban/Rural community, distance from the district headquarters and if Islam is the dominant religion. Robust standard errors clustered at the district level in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

VARIABLES	Pop1 ≥ 91 [1]	Pop1 < 91 [2]	Pop1 ≥ 91 [3]	Pop1 < 91 [4]	Pop1 ≥ 91 [5]	Pop1 < 91 [6]	Pop1 ≥ 91 [7]	Pop1 < 91 [8]
	lInfraexp	lInfraexp	lInfraexp_idt	lInfraexp_idt	lSocexp	lSocexp	lSocexp_idt	lSocexp_idt
Non-Adat	-24.8239 (79.603)	-37.3124*** (10.551)	-130.1176 (106.980)	-29.6470*** (9.557)	-18.8360 (84.982)	-54.2899*** (10.313)	-126.2820 (91.828)	-25.4270** (12.300)
Frac1	-1.2768 (8.201)	-2.7904*** (0.638)	-10.6519 (10.078)	-2.3370*** (0.628)	0.5543 (7.606)	-4.0902*** (0.614)	-8.1561 (8.828)	-2.0106*** (0.849)
FD	-32.5411 (90.565)	-51.8787*** (9.454)	-19.0934 (126.912)	-49.3538*** (9.134)	-19.8053 (86.027)	-69.0298*** (9.511)	15.3811 (121.572)	-19.6507 (18.312)
Non-Adat*Frac1	2.7463 (7.819)	2.8634*** (0.657)	13.2061 (10.519)	2.3769*** (0.645)	1.9496 (8.344)	4.2076*** (0.630)	12.6957 (9.032)	1.9999** (0.867)
Non-Adat*FD	27.2217 (87.980)	44.0975*** (9.821)	3.7859 (130.505)	44.8335*** (9.761)	25.8168 (94.059)	63.0555*** (9.798)	18.9177 (117.856)	16.2397 (18.738)
Frac1*FD	2.1792 (8.924)	3.1941*** (0.630)	1.2586 (12.516)	3.0989*** (0.674)	1.0076 (8.489)	4.6438*** (0.633)	-2.0365 (11.945)	1.2451 (1.250)
Non-Adat*FD*Frac1	-2.9389 (8.660)	-3.3037*** (0.644)	0.0720 (12.852)	-3.0699*** (0.701)	-2.6059 (9.269)	-4.7922*** (0.640)	-1.6410 (11.591)	-1.1771 (1.266)
Constant	21.3121 (83.232)	38.0702*** (11.298)	110.8319 (101.518)	36.1196*** (11.613)	-3.2488 (76.896)	54.2985*** (11.638)	80.4578 (89.221)	32.7524** (13.493)
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	305	302	304	301	305	302	304	301
R-squared	0.692	0.517	0.291	0.225	0.560	0.479	0.259	0.201

Table 15: Diversity and local development spending (different components). *Notes.* The dependent variable in columns (1) and (2) is the log of physical infrastructure expenditure in the community, while in columns (3) and (4) it is the same including IDT. Columns (5)–(8) have the corresponding variables for spending on social infrastructure in the community. In the odd-numbered columns, the sample is restricted to fairly homogeneous communities, i.e., where the size of the largest ethnic group constitutes is at least 91% of the population. In the even-numbered columns, the sample is restricted to those communities where the largest ethnic group constitutes less than 91% of the population. Other controls: Head has completed High School (dummy variable), Head lives in the community (dummy variable), community population, community area (in hectares), Urban/Rural community (dummy variable), distance from the district headquarters (in miles) and if Islam is the dominant religion (dummy variable). Robust standard errors clustered at the district level in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

VARIABLES	Pop1 < 100	Pop1 ≥ 91	Pop1 < 91	Pop1 < 100	Pop1 ≥ 91	Pop1 < 91
	(1) ltotsal	(2) ltotsal	(3) ltotsal	(4) shsalary	(5) shsalary	(6) shsalary
Non-Adat	-20.5877** (10.149)	-195.3264** (95.978)	-53.6955*** (8.787)	-0.0991 (0.187)	-2.6189* (1.485)	0.2375 (0.464)
Frac1	-1.8755** (0.805)	-19.9054** (8.935)	-4.0560*** (0.599)	-0.0146 (0.016)	-0.3928*** (0.137)	0.0119 (0.038)
FD	-11.1882 (10.754)	-207.4462** (91.048)	-46.4042*** (13.320)	0.6766* (0.338)	-8.9946** (3.868)	1.8886*** (0.666)
Non-Adat*Frac1	1.7648** (0.808)	19.5097** (9.438)	4.0483*** (0.588)	0.0106 (0.016)	0.2544* (0.148)	-0.0147 (0.038)
Non-Adat*FD	18.1720* (10.796)	208.9278** (95.291)	55.3903*** (13.336)	-0.4385 (0.327)	6.8674** (3.399)	-1.5753** (0.668)
Frac1*FD	1.6779* (0.838)	21.3006** (8.954)	4.0861*** (0.899)	-0.0206 (0.027)	0.9051** (0.385)	-0.1046** (0.050)
Non-Adat*FD*Frac1	-1.5807* (0.846)	-20.8905** (9.379)	-4.0749*** (0.883)	0.0259 (0.027)	-0.6794** (0.338)	0.1073** (0.050)
Constant	21.2931** (10.294)	206.2491** (90.264)	49.0351*** (11.922)	0.3791 (0.361)	4.2372*** (1.282)	-0.0515 (0.765)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	437	305	301	378	282	251
R-squared	0.461	0.401	0.529	0.405	0.348	0.425

Table 16: Diversity and local spending (non-developmental). Notes. The dependent variable in columns (1)–(3) is the log of spending on salaries of officials in the community, while in columns (4)–(6) it is the share of such salary expenditure out of the total public spending in the community. In columns (1) and (4) the sample is restricted to those communities which are not entirely ethnically homogeneous. In columns (2) and (5), the sample is restricted to fairly homogeneous communities, i.e., where the size of the largest ethnic group constitutes is at least 91% of the population. In columns (3) and (6), the sample is restricted to those communities where the largest ethnic group constitutes less than 91% of the population. Other controls: Head has completed High School (dummy variable), Head lives in the community (dummy variable), community population, community area (in hectares), Urban/Rural community (dummy variable), distance from the district headquarters (in miles) and if Islam is the dominant religion (dummy variable). Robust standard errors clustered at the district level in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

VARIABLES	Status_V=0				Status_V=1			
	[1] lDevexp	[2] shdev	[3] lDevexp_idt	[4] shdev_idt	[5] lDevexp	[6] shdev	[7] lDevexp_idt	[8] shdev_idt
Non-Adat	-16.5174 (39.839)	-0.1150 (1.850)	-10.6583 (34.670)	-0.9969 (2.331)	-18.8994** (7.525)	-0.8154** (0.357)	-17.9390** (8.420)	-0.7370* (0.432)
Frac1	-1.0431 (3.289)	0.0006 (0.158)	-0.6539 (2.868)	-0.0800 (0.198)	-1.7362*** (0.550)	-0.0707** (0.027)	-1.6782*** (0.600)	-0.0655** (0.032)
FD	-20.8313 (40.600)	-0.0549 (2.136)	-33.3930 (37.978)	-2.9134 (2.685)	-9.1921 (9.789)	-0.9551* (0.494)	-8.7673 (10.726)	-0.8091 (0.564)
Non-Adat*Frac1	1.0352 (3.345)	-0.0018 (0.161)	0.6409 (2.912)	0.0765 (0.201)	1.7108*** (0.555)	0.0719** (0.028)	1.6570*** (0.603)	0.0677** (0.032)
Non-Adat*FD	22.3302 (41.496)	-0.2225 (2.186)	35.5479 (38.777)	2.6921 (2.738)	15.5909 (9.885)	1.2770** (0.496)	15.4015 (10.780)	1.1480** (0.567)
Frac1*FD	1.6884 (3.609)	-0.0809 (0.188)	2.8957 (3.393)	0.1930 (0.239)	1.3746* (0.709)	0.0956** (0.037)	1.3259* (0.775)	0.0837** (0.041)
Non-Adat*FD*Frac1	-1.6590 (3.620)	0.0875 (0.191)	-2.8659 (3.406)	-0.1862 (0.239)	-1.4082* (0.727)	-0.1082*** (0.038)	-1.4043* (0.784)	-0.0991** (0.042)
Constant	39.5834 (47.515)	1.1679 (2.214)	30.7978 (42.528)	2.2777 (2.646)	22.3002** (10.013)	0.9154** (0.447)	22.5031* (11.713)	0.9199 (0.567)
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	181	170	181	181	255	255	255	255
R-squared	0.219	0.245	0.251	0.241	0.418	0.330	0.434	0.299

Table 17: Diversity and local development spending (local leadership). *Notes.* The dependent variable in columns (1) and (5) is the log of Development expenditure in the community, while in columns (3) and (7) it is the same including IDT. Each of the remaining columns have – as the dependent variable – the corresponding shares out of total public spending in the community for the dependent variable in the column preceding it. The sample is restricted to those communities which are not entirely ethnically homogeneous in all the columns. Moreover, columns (1)–(4) have only those communities which have not had a democratically elected local leader in the post-decentralisation round (i.e., in 2007) while columns (5)–(8) have the remaining communities. Other controls: Head has completed High School (dummy variable), Head lives in the community (dummy variable), community population, community area (in hectares), Urban/Rural community (dummy variable), distance from the district headquarters (in miles) and if Islam is the dominant religion (dummy variable). Robust standard errors clustered at the district level in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

<i>Pop1 < 91 sample</i>				
	[1]	[2]	[3]	[4]
	lDevexp	lDevexp_idt	shdev	shdev_idt
Nonadat*FD*Frac	-5.7990** (0.02)	-5.1928** (0.0370)	-5.7177*** (0.0020)	-5.3724** (0.0130)

Table 18: Diversity and local development spending: Wild cluster bootstrapping. *Notes.* The t-stat and the p-value for the key independent variable of interest, i.e., *Nonadat*FD*Frac*, are reported in each column. The standard errors have been computed through the wild cluster bootstrap method (using Stata command *boottest*); the corresponding p-values are reported in parentheses. The dependent variable in columns (1) is the log of Development expenditure in the community, while in column (2) it is the same including IDT. The remaining columns have – as the dependent variable – the corresponding shares out of total public spending in the community for the dependent variable in the columns preceding it. The sample is restricted to those communities where the largest ethnic group constitutes less than 91% of the population. Other controls: Head has completed High School (dummy variable), Head lives in the community (dummy variable), community population, community area (in hectares), Urban/Rural community (dummy variable), distance from the district headquarters (in miles) and if Islam is the dominant religion (dummy variable). *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.