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# Jurnal PERENCANAAN PEMBANGUNAN

*Bridging Knowledge to Policy*

The Indonesian Journal of Development Planning

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**Volume I No. 2 - September 2017**

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## Popularizing Bridging Knowledge to Policy in Indonesia

Bridging Knowledge and Policy consists essentially of two phrases: bridging research to policy and bridging knowledge to power. Utilizing research in order to formulate policies and knowledge-based in making decisions is a link to good policy to be successfully implemented.

Crewe and Young in a working paper entitled *Bridging Research and Policy: Context, Evidence and Links* (2002) states that in developed countries the problem of 'power without knowledge' has been the concern of public policy experts since the 1950s. At that time there was a natural relationship between research and policy making. A linear model for example, pioneered by Lasswell, describes the policy-making process as a series of stages in which information is a rational consideration for policymakers. It is constantly experiencing developments also received criticism in the following decades. Caplan, for example, suggests that considerable differences in views between researchers and policy makers make prevention of adequate use of research for policy (Neilson, 2001). This is reinforced by Clay and Schaffer's (1984) which states with a quote that 'policy is a chaos of goals and accidents'. This is a critique of the linear model used too far, because the decision-making process is not simple, but not an accident.

In Indonesia the integrated process in the framework of bridging research to policy and bridging knowledge to power has not become a culture. Research conducted by Datta, Hendytio, Perkasa, and Basuki (2016) from the Indonesian Center for Strategic and International Studies (CSIS) in collaboration with the Knowledge Sector Initiative - Australia Government shows that decision makers are still distant from research and knowledge. Policymakers and policy decision makers, both in government (executive) and legislative, do not use the means of policy research or policy analysis that is integrated in the formulation and decision-making policy. From the research, the policy maker seeks access to research and knowledge related to policy issues through ways including: formal and informal meetings, focus group discussions and workshops, open and closed seminars, reports and study summaries, internet, comparative studies, video conferencing, and mass media. The legislature does not have a think tank, whereas the government does not optimize research and development institutions (government think tanks).

Policy maker conducts consultations or accesses research and knowledge through the above methods to competent parties, i.e. universities, international and foreign institutions, non-governmental organizations, government institutions, research and development bodies (Balitbang) of ministries and agencies, private research centers, as well as private consultants. Balitbang, which actually has the task of preparing policy research and policy analysis here is treated as an 'outsider' as a university or private study institution.

Among policymakers and decision makers in government, the problems in using research and knowledge vary: (a) Lack of funding for the availability of policy-focused research being prepared, (b) Lack of experts in conducting research that focuses on the policy being prepared, (c) the limited independence of decision makers to take action on the recommendation of a study or knowledge, and (d) lack of quality data that can be used as the background of the study, so justification for the policy becomes questionable.

Meanwhile, policy makers and decision makers in the legislative area emphasize more limited time in order to accommodate research and knowledge. The lack of public scrutiny that the product of the policies they have established has been based on research and knowledge is also a constraint.

Jurnal Perencanaan Pembangunan (JPP) is a publication supporting one of the functions of Bappenas as a government think tank. To that end, JPP carries the mission of 'Bridging Knowledge and Policy', becoming the bridge of science to be the basis of a public policy. In the second edition of 2017, JPP presents 6 papers reviewing and analyzing the following issues.

Muttaqin, Wittek, Heyse, and van Duijn present papers on Indonesian children who are still not in school in 497 districts. This paper is very useful for educational decision makers and educators, both at the central and regional levels to address children who are not in school.

Zulkarnaen presents the topic of the impact of economic and political openness on the economy in Asia. The study covers China, Japan, South Korea, Indonesia, Malaysia, Philippines, Thailand, Singapore, India, Pakistan and Bangladesh using panel data from 1984 to 2011. This research can be exploited by macro-level policy makers to adapt to the development of economic openness and politics.

Bratakusumah examines complementary models in interaction between political officials and bureaucrats in Indonesia. For policymakers dealing with how bureaucratic and political relationships should be, this assessment can be one of knowledge in policy considerations.

Next Hendraputra who do analysis of civic satisfaction on public services using Twitter. This research is quite relevant to the development of social media and how the government can respond whether what they do already meet public expectations or not.

Winata, Geldin, and Qui take on the topic of urban resilience, about and strategies for water management in two coastal cities in Indonesia. Water problems in urban is a classic problem that must be overcome by government. This research can be considered in formulating water management policy of cities in Indonesia.

Finally, Ermanita reviews local government bonds by conducting comparative studies between Japan and Indonesia. This research can be a consideration of the solution in overcoming the problems of development financing at the local level.

**Muhyiddin**  
**Editor in chief**  
**Jurnal Perencanaan Pembangunan**  
**(The Indonesian Journal of Development Planning)**

# Why Do Children Stay Out Of School In Indonesia?

Tatang Muttaqin<sup>1</sup>

Ministry of National Development Planning/BAPPENAS

Rafael Wittek, Liesbet Heyse, Marijtje van Duijn

## Abstract

Municipal and household-level determinants for Indonesian children out of school are studied using multilevel analysis of 221,392 children in 136,182 households in 497 municipalities. The higher the poverty rate and public education expenditure per capita, the higher the likelihood that children drop out. However, a high(er) mean of municipality education expenditure significantly reduces children's likelihood to never attend school while a high(er) poverty rate significantly increases the likelihood that children will never attend school. At the household level, expenditure, spending on education, and head of household's educational background have a significant effect on reducing the number of children out of school.

Keywords: Indonesia, out-of-school, opportunity structure, municipality, household

<sup>1</sup> Tatang Muttaqin is a Sociologist by training in the Department of Sociology of the Faculty of Behavioural and Social Sciences, the University of Groningen under the supervision of Rafael Wittek, Liesbet Heyse and Marijtje van Duijn.

# Why Do Children Stay Out Of School In Indonesia?

Tatang Muttaqin, BAPPENAS

## I. Introduction

United Nations General Assembly resolution 44/25/1989 on the Convention on the Rights of the Child emphasizes the pivotal role education plays in human development. Even though many countries have ratified this convention, globally, there is still a large gap between its ratification and implementation. Approximately 69 million children, mostly girls, are still deprived of their right to basic education (UNICEF, 2014). In line with the global agenda, all citizens have the essential right to access to education as declared by the Constitution of Indonesia. Eager to improve access and quality of education, the People's Consultative Assembly in Indonesia amended the Constitution in 2001 by allocating 20 percent of the state budget to education (Blöndal, Hawkesworth and Choi 2009).

As a matter of fact, the Indonesian education system provides educational services for more than 50 million pupils from primary to senior secondary education who are enrolled in 258,000 schools (BAPPENAS, 2015). However, since 2006, there has been little progress in reducing the number of children who are out of school. This paper aims to simultaneously explain why some Indonesian children never go to school and others drop out.

The concept of 'out-of-school children' generally refers to children that should be in primary school but are not (UNESCO 2005). For this study on Indonesia, we broaden the concept to compulsory basic education, focusing on children aged 7-15 years who should be in primary and junior secondary schools. Theoretically, we depart from an opportunity structure approach, which refers to the scale and distribution of conditions to accomplish specific outcomes (Merton 1995, 25) and specifically to the rules and norms that individuals are supposed to comply with in order to achieve goals.

Because of Indonesia's decentralized system, the effectiveness of national policies depends heavily on municipalities (districts and cities) since these autonomous local governments have the authority and resources to manage primary and secondary education services. We therefore expect that municipality resources – such as public education expenditure per capita, poverty rate and average household education expenditure per municipality – will explain why some children are in school and others not (Colclough et al. 2000). Although municipalities might provide an adequate budget to abolish the educational fee, making it free, several children still might be out of school because their household resources are limited. Thus, we reason that household resources and characteristics will also influence children's opportunities to attend school (Pong & Ju, 2000). Hence, the main research question of this paper reads: Which characteristics at the level of municipalities, households and children help to explain why children never attend or drop out from school in Indonesia.

This study makes three contributions to current research on educational attainment. First, though much research focuses on school dropout, only few studies pay attention to children who never set foot in a school in their entire life, especially in Indonesia (Shahnaz & Naeem 2012; Suliman and El-Kogali 2010; Shindler 2010; Arunatilake 2006). Second, by empirically assessing the opportunities



and constraints that these children face and by relating them to those of children who do attend school or have dropped out from school, we can provide a systematic comparison of these three groups in one study. This allows us to shed light on similarities and differences between children who never attend school and those who dropped out from school (Shindler 2010). Third, whereas previous studies have mainly focused on individual, family and community-related explanations (cf. Anderson 2010), we extend the focus by incorporating municipality factors and employ multilevel analysis that allows us to simultaneously examine the effects of children's, household and municipal levels. Thus, this study provides insights into the effect of municipality resources on school attendance. Policy makers in Indonesia's education sector may benefit from this analysis, since it disentangles to what degree and how does government investments in education reduce children out of schooling.

## II. Theoretical Framework

We base our study on opportunity structure theory, which refers to the idea that opportunity, i.e. the chance to gain certain goals, such as education, is shaped by the way society or an institution is organized or structured (Roberts 2009). This theory suggests that people live in the social order that consists of culture and structure. While culture creates goals for persons in society, social structure may facilitate individuals to achieve those aims. A well-established society provides legitimate and appropriate ways to achieve one's goals (Merton 1968). Nevertheless, if there is a discrepancy between cultural goals and these structurally accessible means, individuals seek and use another means to achieve their objectives. In the case of children's education, this means that when a society (culture) holds the shared value that education is important, but the structure does not provide equal access to legitimate means for achieving the aspiration, higher levels of deviance will result. People will be more likely to create innovative alternatives for achieving the same goals everyone aspires to. For instance, the objective of education is to increase social mobility and when people are unable to attend school, they may go to work earlier.

Roberts (2009) classifies two dimensions in the opportunity structure. The push force is exerted mainly by ascribed status, such as family background and gender, and the pull factor comes from the government, as a service provider of education. In this paper, we focus on educational opportunities and constraints, particularly in terms of available resources at the municipality and the household-level.

At the municipal level, local government is a structure that may provide educational opportunities and constraints. For instance, when local governments have adequate budgets they can provide affordable and free education nearby, which also increases accessibility to schools. At the household level, we assume that mainly parents or other caretakers make the investment decision to send children to school, as in most other countries. We expect parents or caretakers to weigh future benefits of sending their children to school as an opportunity against the constraint of immediate costs. Children, but also other household members, may benefit from these investments (Huisman and Smits, 2009).

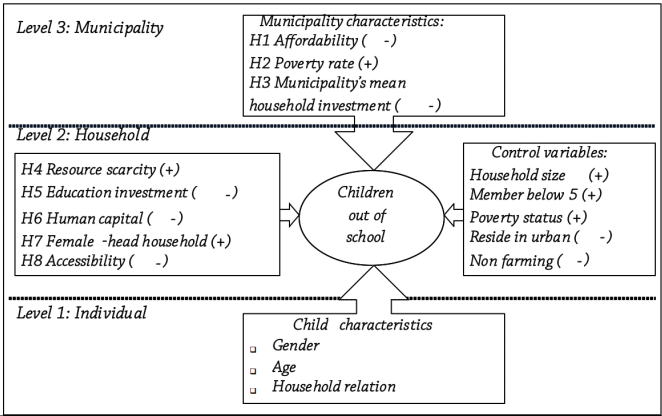
Only a few studies address children who never go to school. Using the individual and institutional categorization, some studies emphasize individual factors to explain why children never attend school. For example, Suliman and El-Kogali (2010) revealed that the opportunity costs of a child's time and a child's lack of interest in school influence children's non-participation in Egypt. Additionally, Shindler (2010) concludes that physical disability seems a substantial barrier to accessing education, especially in rural areas in South Africa. The institutional factors associated with children never attending school vary. For instance, Arunatilake (2006) explored the



determinants of non-participation of 5-14 year old children in Sri Lanka and found that various demand and supply-side factors influences the decision of parents to keep children out of school, such as poverty, direct and indirect costs of schooling, cultural factors and job market relevance.

Building upon the notion of push and pull factors, as well as micro and macro-level explanations, below we first discuss how local government resources provide opportunities and constraints for children to go to school and then continue by analyzing educational constraints and opportunities at the household level. Figure 1 provides a summary overview of our conceptual model. To simplify the hypotheses, we assume that the social mechanism leading to children never attending school or dropping out from school is quite similar.

**Figure 1.** Theoretical Framework



### 2.1 The impact of the municipality resources

At the municipality level, we assume that government resources are important in providing opportunities for children to go and stay in school, especially because in the Indonesian decentralized system substantial financial resources and autonomy are distributed to the local government level to implement programs and improve education service (Sjahrir & Kis-Katos 2011). This makes local governments crucial actors in providing access to education. In such a decentralized structure, we expect variation at the local level, because municipalities will differ in their public education expenditures. Such variations may influence the affordability of schools for households.

One important variation is that some local governments have decided to reduce the school fee, whereas others have not (Barrera-Osorio, Linden & Urquiola 2008). Several municipalities provide schools with additional operational school assistance ( BOSDA) on the condition that the school abolishes school fee. As a result, schooling might become free or more affordable, especially for the nine-year compulsory education. Lower cost and free education are expected to motivate parents to send their children to school, given that the costs of schooling, including fees, are often a key reason for parents to not send their children to school or to let them dropout (Liu, 2004). Based on these arguments, we predict that the lower the local government's public education expenditure per capita the more likely children are (a) to never attend school and (b) to drop out from school (H1).

Second, households residing in municipalities with higher poverty rates often lack community investment in child development (Pusponegoro, 2013). Consequently, they are likely to receive less social and economic support for child

development, which may in turn reduce opportunities to go to school (Brooks-Gunn & Duncan, 1997). Therefore, we predict that the higher the poverty rate of a municipality, the more likely children will (a) never attend school and (b) drop out from school (H2).

Third, parental investment decisions need to be made regarding the education expenditures of their children. Parents' decision to invest in the education of their children might be influenced not only by the level of wealth but also by the community's aspirations as to education. The context and community in which they reside shape parents' decisions on education investments. Consequently, we expect that the lower the municipalities mean household education expenditure, the more likely children are to (a) never attend school or (b) drop out from school (H3).

## **2.2 The impact of household socio-economic status (SES)**

At the level of the household, we expect that income, education investments, parents' educational level, household structure, and distance to school are important factors in parents' decisions on education. First, economically better off households can be assumed to have more opportunities and resources for spending money on their children's education (McNeal, 1999). Less wealthy parents may either need their children to contribute to the household income, through wage-earning employment, or ask their children to take on additional tasks to free other household members for paid work (Suharti, 2013). Consequently, we expect the lower the household expenditure per capita in the household, the more likely that children will (a) never attend school or (b) drop out from school (H4).

Second, parents or caretakers' investments in education are associated with the degree of awareness of the importance of education. In modern societies, parents have fewer opportunities to achieve a good position in society for their children through direct occupational transmission or through the transfer of capital (Treiman & Ganzeboom, 1990). As a result, education becomes more important as a vehicle of social mobility, which increases the importance parents attach to education, and therefore the price they are willing to pay. The household education expenditure per capita thus partly reflects how parents value education: it is not only determined by household wealth but also by parents' values and preferences for education. If they value education, then we expect them to invest more in education. As a result, we predict that the lower household education expenditure per capita, the more likely that children (a) never attend school or (b) drop out from school (H5).

Third, the parent's own educational attainment matters for their decisions on educational investment (Becker & Nigel, 1994). Highly educated parents strongly prefer to increase their children's education because they recognize the importance of education. Thus, we expect that the lower the education level of the household, the more likely children are (a) to never attend school or (b) to drop out from school (H6).

Fourth, the household structure affects the availability of resources. Especially in female-headed households, children might be more constrained to go to school, because women in the developing world tend to be disadvantaged relative to men in their access to assets, credit, employment, and education (Lloyd & Blanc 1996). We therefore expect that children in female-headed households are more likely to never attend school (a) or (b) will drop out from school (H7).

Finally, accessibility is crucial for children to be able to attend school, as previous studies show (e.g. Alisjahbana, 1999; Gitter & Barham, 2007). Access can be hindered by the distance children have to travel to school. Especially in remote areas with poor transportation infrastructures, households in villages without a school may face prohibitive transportation times and costs. Parents might find it too dangerous to send their young children to another village and might wait until their children

are older. As a result, we expect that school availability decreases the likelihood of children (a) never attending or (b) dropping out of school (H8).

III. Methodology

3.1 Data

We combined three official datasets from 2010. First, we used the National Socio-economic Survey (SUSENAS) 2010 from the Indonesian Central Bureau of Statistics (CBS) consisting of 1,178,494 individuals with 114 variables in 293,715 households with 134 variables. From this dataset, we selected the population aged 7-15 years, since it represents the official school ages during nine years of compulsory education. This selection results in 221,392 children in 136,182 households nested in 497 municipalities. Second, we used the Village Potential Statistics (PODES) from the CBS (2011) that provides information on the characteristics of about 65,000 villages. Third, we used the local government expenditure (LGE) dataset of 2010 as provided electronically by the Ministry of Finance (MoF, 2013). It contains 479 districts/municipalities, which is fewer than the SUSENAS dataset because decentralization in Indonesia led to newly created districts and municipalities. To reconcile the SUSENAS (497 municipalities) and the LGE dataset (484 municipalities after separating five municipalities), we added the data of the main municipalities for education expenditure to the new established 13 municipalities, giving the same total of municipalities as the SUSENAS dataset.

3.2 Measurements

Dependent variables. School enrolment was measured in three categories: “1” never attended school, “2” currently attending school (used as a reference category) and “3” not attending school anymore. Table 1 shows that 94.9 percent of children attended, approximately 3.6 percent were no longer enrolled and 1.5 percent had never attended school.

Independent variables. At the municipality level, we constructed three predictors: municipality education expenditure per student is constructed from the municipality education expenditure divided by the number of students in primary and junior secondary school, adjusted by the poverty line in each municipal to ensure comparability. Then, to reduce the undue influence of large expenditure per capita, we take the log of these numbers, ranging from 1.68 to 7.46 as exhibited in Table 1. The second predictor is the mean of municipal household education expenditure. This is taken from an aggregate of the household education expenditure per capita, adjusted by the municipal poverty. We also converted these numbers to the log, ranging from 1.54 to 5.95. The third predictor is the municipality’s poverty rate. It is created from aggregating the household poverty status in a municipality.

Table 1. Descriptive statistics

*N<sub>level1</sub>*=221,392; *N<sub>level2</sub>*=136,182; *N<sub>level3</sub>*=497.

Levels and variables	Min	Max	Mean	Std. Dev.
<b>School participation (N=221,392)</b>				
Never	0	1	.015	
Enrolling	0	1	.949	
Not_anymore	0	1	.036	
<b>Level 3 - Municipality (N=497)</b>				
Log of municipality public education per pupil	1.68	7.46	5.256	.545
Poverty rate at municipality	.02	.50	.155	.094
Log of municipality's mean household education expenditure	1.54	5.95	4.129	.670
<b>Level 2 - Household (N=136,182)</b>				
Log Expenditure percapita	3.08	9.83	5.825	.491
Education expenditure percapita (binary)	0	1	.963	
Head of household education: Below primary (ref.)	0	1	.220	
- Primary	0	1	.326	
- Junior secondary	0	1	.162	
- Senior secondary and more	0	1	.292	

Head of household gender	0	1	.087	
School availability at village	0	1	.940	
<b>Level 1 - Child (N=221,392)</b>				
Sex	0	1	.482	
Age (10.9 years as mid for centring)	7	15	10.883	2.574
Relation to head of household: Child (ref.)	0	1	.881	
- Grandchild	0	1	.077	
- Relatives	0	1	.037	
- Others	0	1	.005	
<b>Control variables at household level (N=136,182)</b>				
Household size	1	24	4.931	1.663
Number of household members aged 0-4 years:	0	1	.645	
No child (ref.)				
- One child	0	1	.301	
- Two child	0	1	.049	
- Three child	0	1	.005	
- Four child and more	0	1	.001	
Household poverty status	0	1	.150	
Place of residence	0	1	.395	
Head of household source income: Agriculture (ref.)	0	1	.442	
- Mining, industry and construction	0	1	.164	
- Services	0	1	.365	
- Others	0	1	.029	

At the household level, five measures were used: (1) household expenditure per capita adjusted by the poverty line in each municipality. We then transformed this to the log of household's expenditure per capita adjusted by the poverty line as displayed in Table 1; (2) household's education expenditure per pupil adjusted by the poverty line in each municipality. This average education expenditure is not only spent for primary and junior secondary but also for preschool, senior high school and higher education. We coded "0" for households that do not spend money on education and "1 to 20" for 20 group percentiles of household education expenditure. We also coded them in binary with "0" as no spending on education and "1" for household spending on education; (3) heads of household's education level consisting of "1" for below primary/none (22.0%), "2" for completed primary (32.6%), "3" for completed junior secondary (16.2%), "4" senior secondary and more (29.2%); (4) female-headed household coding "0" for male and "1" for female with only 8.7 percent of households being female-headed; (5) accessibility with "1" as school available in village or less than three kilometers away for primary school and six kilometers away for lower secondary school (according to the official definition of accessibility), and "0" for unavailable. In general, schools are accessible in 94 percent of the cases.

Control variables. We include children's characteristics and other household's characteristics as control variables. Firstly, girls are more likely to drop out because gendered practices at the household level affect opportunities for girls, especially in developing countries. Secondly, older children are more likely to be out of school because growing older increases the opportunity cost of their time that leads to drop out (Ersado, 2005). Thirdly, a child's relationship to the head of household is a strong predictor of dropout or being out of school. Children's characteristics are important factors explaining why children are out of school but they are not the focus of our analysis.

At the household level, the following control variables were used: (1) household size, ranging from 1 to 24 (average being 4.9, SD 1.663); (2) households with a child below five years, consisting of none as "0" with about 64.5 percent, one child as "1" (30.1%), two or three children as "2" (4.9%) and "3" (0.5%) correspondingly, and four and more children as "4" (0.1%); (3) poverty status, with "0" for not poor and "1" for poor households, approximately 15 percent; (4) place of residence, with "0" for

rural and “0” for urban, with about 39.5 percent residing in urban areas, (5) source of household income, with “1” for agricultural,(44.2%), “2” for manufacturing/mining (16.4%), “3” for services (36.5%) and “4” for others (2.3%).

### 3.3 Analytical procedure

Multilevel multinomial regression analysis using MLwiN 2.3 (Rasbash, Browne & Goldstein, 2014) was applied. This method allows us to consider the hierarchical nature of our data, and permits us to test the effects of children's, household and municipal level variables (Snijders & Bosker, 2012). A sequence of models was estimated, building up from the individual level, to test the hypotheses at all levels, including control variables at the household level. The models were estimated using MCMC estimation with initial burn-in length of 20,000. This was followed by a monitoring chain with length 50,000 (with the final model rerun with 50,000 burn-in and 100,000 chain).

## IV. Empirical Findings

To examine those children who are out of school within households and municipalities, we started our analysis by estimating a null model that included two random intercepts to compare both children who never attend school and children who dropped out from school to the reference category (children attending school).

**Table 2.** Multilevel Multinomial Regression Analyses for Children Aged 7-15 with Never Attend and Dropout from School as Dependent Variables

	Never		Not anymore	
Fixed Part				
Intercepts	5.344 (0.747)	8.417 (0.586)	2.113 (0.855)	5.793 (0.786)
<b>Level 3 - Municipality</b>				
Municipality education expenditure per capita (Log)	0.034 (0.083)	0.140 (0.070) *	0.022 (0.085)	-0.175 (0.068) **
Municipality poverty rate	2.866 (0.595) **	3.699 (0.497) **	2.868 (0.578) **	-3.795 (0.507) **
Mean of municipality household education	-0.311 (0.089) **	-0.152 (0.071) *	-0.265 (0.093) **	0.105 (0.073)
<b>Level 2 - Household</b>				
Expenditure percapita (Log)	-0.833 (0.055) **	-1.203 (0.040) **	-0.410 (0.077) **	0.860 (0.065) **
Education expenditure percapita (binary)	-4.562 (0.060) **	4.655 (0.075) **	-4.681 (0.059) **	4.795 (0.074) **
Head of household education: <i>Below primary (Ref.)</i>				
- <i>Primary</i>	-0.468 (0.057) **	0.437 (0.040) **	-0.433 (0.057) **	-0.415 (0.041) **
- <i>Junior secondary</i>	-0.691 (0.079) **	-1.120 (0.060) **	-0.635 (0.079) **	-1.068 (0.060) **
- <i>Senior secondary &amp; more</i>	-0.714 (0.076) **	-1.298 (0.059) **	-0.690 (0.081) **	-1.272 (0.061) **
Head of household sex: <i>Male (Ref.)</i>				
- <i>Female</i>	0.041 (0.081)	0.082 (0.055)	0.212 (0.082) **	0.322 (0.058) **
School available at village: <i>Unavailable (Ref.)</i>				
- <i>Available</i>	-0.453 (0.070) **	0.072 (0.069) **	-0.437 (0.071) **	0.055 (0.072)
<b>Level 1 - Individual</b>				
Child sex: <i>Boy (Ref.)</i>				
- <i>Girl</i>	-0.120 (0.045) **	0.390 (0.032) **	-0.123 (0.045) **	0.397 (0.032) **
Age (grandmean)	-0.144 (0.009) **	0.643 (0.011) **	-0.154 (0.009) **	0.642 (0.010) **
Relation to head of household: <i>Child (Ref.)</i>				
- <i>Grandchild</i>	-0.285 (0.094) **	0.466 (0.073) **	-0.441 (0.095) **	-0.514 (0.073) **
- <i>Relatives</i>	0.351 (0.107) **	0.495 (0.068) **	0.245 (0.108) *	0.456 (0.070) **
- <i>Others</i>	0.990 (0.254) **	2.168 (0.141) **	0.607 (0.258) *	2.038 (0.143) **
<b>Control variables at Household level</b>				
Hsize			0.162 (0.013) **	0.154 (0.011) **
Member household below 5 years: <i>Zero (Ref.)</i>				
- <i>One child</i>			-0.160 (0.053) **	0.023 (0.040)
- <i>Two children</i>			-0.342 (0.092) **	0.009 (0.077)
- <i>Three children</i>			-0.257 (0.205)	0.034 (0.201)
- <i>Four and more children</i>			-0.774 (0.445)	-1.084 (0.507) *
Household poverty status: <i>Nonpoor (Ref.)</i>				
- <i>Poor</i>			0.263 (0.069) **	0.099 (0.056)
Household residence: <i>Rural (Ref.)</i>				
- <i>Urban</i>			-0.021 (0.066)	-0.128 (0.044) **

Household source income: *Agriculture*  
(*Ref.*)

- Mining, industry, construction	-0.173 (0.081) *	0.083 (0.052)
- Service	-0.178 (0.071) *	-0.191 (0.048) **
- Others	-0.191 (0.171)	-0.651 (0.121) **

<b>Random Part</b>				
Level 3 - Municipality				
Constants	0.704 (0.068)	0.521 (0.048)	0.686 (0.067)	0.491 (0.046)
Cons.Not anymore/cons.Never	0.170 (0.041)		0.137 (0.039)	
Correlations	0.281		0.236	
Level 2 - Household				
Constants	0.061 (0.021)	2.034 (0.138)	0.006 (0.001)	2.057 (0.117)
Cons.Not anymore/cons.Never	0.064 (0.045)		0.025 (0.011)	
Correlations	0.173		0.219	
-2*loglikelihood:				
DIC:	60,020.5		59,620.6	
pD:	7,019.6		6,923.0	

Standard errors shown in parentheses. \*\*  $P < 0.01$ ; \*  $P < 0.05$ .

The multilevel multinomial analyses show that several child-level characteristics are related to the likelihood of children being out of school. Model 1 in Table 2 reports that children's characteristics explain the probabilities of children not at school. Compared to boys, girls are less likely to never attend and drop out from school. As expected, the age of children out of school has different effects. Growing older significantly decreases the probability of children never attending school but it increases children's chances to have dropped out from school. Position in household is also significantly related to the likelihood of non-attendance. Compared to the position of a child, being the grandchild of the head of household significantly decreases the likelihood of children to never attend or drop out from school. In contrast, in the position of a relative or 'other' significantly increased the likelihood to never attend and drop out from school.

#### 4.1 The impact of variations in municipality characteristics

Table 2 demonstrates Model 1 without taking into account control variables and Model 2 by including control variables. After including control variables in Model 2, the headed-female household becomes significantly link with increasing the likelihood of children never attending school and drop-out. On the other hand, the significant effect of the mean of municipality household education on the children's likelihood of dropping out disappears.

We now turn to the hypotheses formulated on the educational opportunity structure at the municipality level. As autonomous government entities, municipalities have a crucial role in providing primary and secondary education services and thus in facilitating opportunities for households to send their children to school. However, the municipality capacity to provide accessible and affordable school varies. Our first hypothesis proposed that the lower the local government's public education expenditure per capita, the more likely children are (1a) to never attend school and (1b) to drop out from school. The multilevel multinomial analyses show that local government's public education expenditure per capita does not have a significant effect on decreasing children's likelihood to never attend school ( $\beta = .034$  SE .083 and  $\beta = .022$  SE .085, respectively) as exhibited in Model 2 (final model) of Table 2. Taking into account the variables at the household level as the final model provides clear evidence to refute hypothesis 1a: government expenditure does not decrease the likelihood of children never to attend school.

The results also show that the higher the local government's public education expenditure per capita, the lower the likelihood of children to drop out after taking into account all individual-level and household-level variables ( $\beta = -.140$  SE .070).



Considering all household-level variables, the coefficient estimate increases slightly to  $-.175$  SE  $.068$ . Thus local government interventions as represented by public education expenditure per capita significantly reduce children's chances to drop out from school. Hypothesis 1b is thus supported.

The second set of hypotheses suggested that the higher the poverty rate of a municipality, the more likely that children would (2a) never attend school or (2b) drop out from school. We found that the model results support hypothesis 2a. After taking into account all individual, household, municipal level and variables, the final result given in Model 2 (Table 2) shows that residing in a municipality with a higher poverty rate significantly increases the likelihood of children never attending school ( $\beta=2.868$  SE  $.578$ ). Meanwhile, the results show that the higher the poverty rate of a municipality is significantly associated with a lower likelihood of children dropping out from school ( $\beta=-3.795$  SE  $.507$ ).

Hypothesis 3 predicted that the lower the municipalities' mean household education expenditure, the more likely that children (3a) never attend school or (3b) drop out from school. Without taking into account the variables at the household level, the results of Model 2 in Table 2 show that a high(er) municipality mean household education expenditure significantly reduces the likelihood of children to never attend school ( $\beta=-.331$  SE  $.093$ ) and drop out from school ( $\beta=-.152$  SE  $.071$ ). However, after including all household-level variables, the results change for children who drop out from school. The results suggest that a high municipality's mean household education expenditure is not strongly or significantly related to the likelihood of children to drop out from school ( $\beta=-.105$  SE  $.073$ ). These findings partially support hypothesis 3a: the higher the municipality's mean household education expenditure the more likely that children never attend school ( $\beta=-.243$  SE  $.076$ ) but there is no clear evidence of such relationship for children's dropping out from school (3b).

#### 4.2 The impact of household characteristics

We also looked at the impact of household attributes and their effect on children's school enrollment. Model 2 in Table 2 presents the effects of household expenditure per capita, household education expenditure per capita, female-headed households, school (un)availability as proxy for school distance, and head of household's educational background on children out of school.

The fourth set of hypotheses predicts that the lower the household expenditure per capita, the more likely children will (4a) never attend school or (4b) drop out from school. After taking into account all individual, household and municipal levels and control variables, our results in Model 2 of Table 2 fully support these hypotheses 4a and 4b. The results suggest that a high(er) household expenditure per capita diminishes the likelihood of children never attending school ( $\beta=-.410$  SE  $.077$ ) and dropping out from school ( $\beta=-.860$  SE  $.065$ ). The patterns of household expenditure for children who never attend school and who drop out from school are almost similar but the effect size of the household expenditure per capita is significantly larger in reducing the likelihood of children's dropping out from school than the likelihood of their never attending school.

The fifth set of hypotheses suggests that the lower household education expenditure per capita, the more likely it is that children will (5a) never attend school or (5b) dropout from school. The results in Model 2 of Table 2 support these expectations. Findings show that the household education expenditure per capita significantly reduces the likelihood of children both never attending ( $\beta=-4.681$  SE  $.059$ ) and dropping out from school ( $\beta=-4.795$  SE  $.074$ ). We also found that after including the variables at household level, the coefficient increased slightly both for children not attending school and dropping out from school. Although the patterns



of household education expenditure per capita for children who never attend school and who drop out from school are in a similar direction, the magnitude of the household education expenditure per capita on lowering the likelihood of children's never attending school is larger than those of children's dropping out from school.

In addition, we examined both decile and percentile groups of the household education expenditure per capita and their effects. The results (not shown in Table 2) reveal that even though the household education expenditure per capita significantly decreases the likelihood of children being out of school, there is no difference in estimated effects among either decile or percentile groups of the household education expenditure per capita. Based on these results, we used the binary household education expenditure variable in the final model to simplify the model.

The sixth set of hypotheses predicts that the lower the education level of the household head, the more likely children are to never attend school (a) or to drop out from school (b). After including all individual, household, and municipal levels and control variables, Model 3 in Table 3 shows that compared to heads of households with below primary school education, a higher educational level of the head of the household significantly decreases the likelihood of children being out of school. Moreover, compared to children living in households where the head's education is below primary, children from households whose heads completed primary, junior and senior secondary or higher education are less likely to never attend school by  $\beta = -.433$  (SE .057),  $\beta = -.635$  (SE .079) and  $\beta = -.690$  (SE .081), respectively.

Additionally, the same patterns are found for children who drop out from school but the estimated effects are bigger than for those who never attend school with  $\beta = -.415$  (SE .041),  $\beta = -1.068$  (SE .060)  $\beta = -1.272$  (SE .061), respectively. In summary, our findings fully support the hypotheses, that the lower the education level of the household head, the more likely children are to never attend school (6a) or to drop out from school (6b).

The seventh set of hypotheses states the expectation that children in female-headed households are more likely to (7a) never attend school or (7b) dropout from school. Before considering the control variables at household level, no significant association is found between female-headed households and the likelihood of children attending school and dropping out from school, as illustrated in Model 1 of Table 2. After including the variables at the household level, Model 2 of Table 2 reveals that being part of a female-headed household increases the children's probability to never attend school ( $\beta = .212$  SE .082) and to drop out from school ( $\beta = .322$  SE .058). The analysis also suggests that the effect of the female-headed households on children to drop out from school is stronger than on those never attending school. Hypotheses 7a+b is thus confirmed.

Finally, the eighth set of hypotheses predicts that school availability decreases the likelihood of children to (8a) never attend or (8b) dropout from school. When we look at Models 1 and 2, we see that the effects of school availability are mainly the same. The findings reveal that school availability significantly reduces the children's likelihood of never attending school and this associated negatively although not significantly with children's chances for dropout. Then, after including the variables at the household level, Model 2 in Table 2 illustrates that the results are almost similar. School availability in a village significantly diminishes the likelihood of children to never attend school ( $\beta = -.437$  SE .071) but it is insignificantly related to reduce the likelihood of children to drop out from school ( $\beta = -.055$  SE .072).

All in all, the findings suggest that if schools are unavailable in a village and there is a need to transport children more than three kilometers for primary school and more than six kilometers for junior secondary school, children are less likely

to attend school. Therefore, school availability significantly reduces the probability of children to never attend school (8a). This indicates that school unavailability is important to understand why some children never attend school but seemingly it is not a defining factor to explain why children drop out from school (8b). Concerning accessibility, as indicated by school availability in a village and distance to school, our findings reveal that the effect of school availability on children never attending school is stronger than for children dropping out.

## V. Discussion And Conclusions

This paper sought to answer the question of which characteristics of municipalities, households and children explain why children never attend or drop out from school in Indonesia. Opportunity structure theory was used to argue that macro and micro attributes at both municipal and household levels facilitate or constrain children from attending school.

Using a multilevel approach, the hypotheses at the municipal level were supported only partially. First, efforts to improve access to schooling as indicated by the public education expenditure significantly reduce the likelihood that children drop out from school but no clear evidence was found that they decrease children's likelihood to never attend school. One may conclude from this that the government – through its expenditure – can help prevent children from dropping out from school but it may not help sufficiently to attract/encourage all children to attend school for the first time, such as children isolated in remote areas and street children in urban areas.

Second, regarding municipality poverty rate, our findings showed that residence in a municipality with a higher poverty rate significantly increases the likelihood of children to never attend school but it decreases the likelihood of children dropping out. This suggests that the poverty rate at the municipal level has an opposite effect on children to never attend or drop out from school. These interesting findings could be explained as follows: (1) the industrialized municipality might increase the average household income and provide job opportunities in the unskilled labor market. This may attract children to work and that leads to their dropping out from school. Because jobs are not available in non-industrialized municipalities, children residing there may stay longer at school. This situation is confirmed by the finding that children who live in households whose head works in the transportation, storage and communication sector have an increased likelihood to drop out from school (McCulloch & Grover 2010); (2) the central government significantly increased education expenditure since 2009 as mandated by constitutional amendments. An enormous education budget was spent mainly on students completing universal compulsory education. As a result, primary and junior secondary schools, included in universal compulsory education, benefited from this policy. This is in line with previous experiences in economic crises, which showed that educational interventions such as providing nation-wide scholarships successfully prevented children from dropping out from primary school (Sparrow 2007). This policy provides more scholarships to higher poverty rate municipalities and that might be reducing the dropout rate. Since scholarships are distributed to children in school, not to children out of school, this policy will not decrease children's likelihood of never attending school.

Furthermore, the results show that the higher the municipality's mean of household education expenditure, the higher the children's likelihood of never attending school. Although the municipality's mean of household education expenditure is also related to reducing children's likelihood of dropping out, the

effect is not strong enough to be significant. This thought-provoking finding implies that the size of average household education expenditure could be explained by other factors, which by themselves could be sufficient to have children stay at school. For instance, some municipalities had decided to abolish school cost with a consequent reduction in average household education expenditure at the municipality level (Paqueo & Sparrow 2005). In addition, school-based management policy enables schools to determine their own school fee or make it free. This might increase school fee variations (Yonezawa & Muta 2001). Consequently, the effect of the mean of household education expenditure may be weaker.

#### Impact of household and individual levels

At the household level, factors such as a household's wealth, investment in education and educational background of the head of the household are all significantly related to reduce children's' never attend and dropout rates. If the household is richer, invests more in education, and the household head has a higher level of education, the likelihood of children to never attend and dropout from school decreases significantly. Meanwhile, the fact that a woman is head of the household is not significantly related to the likelihood of children attending and dropping out but this relationship becomes significant after including the variables at the household level. It indicates that variables such as poverty and source of income are very important for the children's likelihood to never attend and drop out from school if they live in a female-headed household, mainly unemployed widows.

The findings show that school availability decreases the likelihood of children to never attend school but does not mitigate the chance of dropping out of school. If we look at the municipal level, these different mechanisms could be explained by the opportunity structure as follows. The proportion of children never attending school ranges from 10–87 percent in 16 municipalities in Papua Island (calculated from Susenas, CBS 2010). It indicates that the reasons for parents not sending their children to school may relate to school distance, difficult transportation and lack of infrastructure.

Surprisingly, the largest proportion of dropout, ranging from 8–10 percent does not occur in Papua Island (calculated from Susenas, CBS 2010). This indicates that school availability in a village is not clearly related to children dropping out from school. The dropout rate probably relates to labor market opportunity both in industrialized municipalities and in agricultural municipalities (Calculated from Susenas, CBS 2010). While job opportunities in industrialized municipalities attract children to drop out from school permanently, similar opportunities in agriculture municipalities attract children to work temporarily. Those job opportunities become a constraint for children going to school. Surprisingly, seven municipalities with zero dropout are mainly in Papua Island (calculated from Susenas, CBS 2010).

School non-participation has always been linked to a limited opportunity structure in developing countries. Our findings suggest that in the Indonesian case, resources (expenditure and education) matter, especially at the household level. However, the impact of various components of the opportunity structure at the municipal, household and individual levels are mixed and interrelated. We found that factors explaining why children never attend and drop out from school are quite similar for most of the variables included, but are substantially different for a limited set of factors, namely, public education expenditure per capita, poverty rate per municipality, municipality's mean household education expenditure, and the availability of schools.

### 5.1 Policy implications

What policy recommendations can be inferred from this study? First, as this study shows, government expenditure can have a positive effect on preventing

school dropout. However, one should be aware that the amount of government money alone does not entirely explain the effect of government interventions on children's school enrollment. Focus on spending and quality of spending, in terms of corruption for example, are potentially equally important explanations. In terms of focus on spending, unfortunately our analyses could not shed light on the effect of various government interventions or educational activities on improving school enrollment. Also, we could not include indicators for the quality of spending. We are therefore very careful to draw policy implications from the effect this study lacks, namely of government expenditure on children's likelihood to go to school for the first time. However, in combination with the strong positive effect of household wealth and head of household's educational level, which are stable and independent of all other factors and circumstances included, one could conclude that better off households with more knowledge are in a better position to send their children to school and keep them there. Therefore, one could consider the use of direct financial support to poorer households and empowering interventions as possible solutions, especially for children living in a female-headed household.

Our study might indicate that government intervention at the institutional level might not be the sole solution. Government interventions may need to shift gradually from providing institutional support at the national or regional level, to giving support channeled through institutions, such as municipalities and schools, to households and children, or to apply solutions at both institutional and individual levels simultaneously. New government interventions, such as household socio-economic empowerment, the national program for community empowerment or the program nasional pemberdayaan mandiri (PNPM) and cash transfer programs or bantuan tunai langsung (BLT) may be promising initiatives in this respect, next to scholarships to children from poor families.

Finally, though school availability is no barrier for children in urban areas, it is still a constraint for children in rural areas, particularly in geographically challenging areas, such as Papua Island. Our results make clear that living in village without a school or with one located a long distance away substantially increases the likelihood of children never attending school. These findings imply that building schools in rural villages and remote areas might be a solution. If this is impossible due to the low population density in remote rural areas, an alternative might be to provide a "mini-school model" for primary school, and provide boarding schools and long-distance learning systems for junior high school (ISPA 2013). This is how an important constraint to attending school could be overcome.

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# **Assessing the Impacts of Political and Economic Openness on GDP Growth: Case of Asian Countries**

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## **Abstract**

The economic performance of a nation is measured in the gross domestic product (GDP). Over the last two decades, the rising of economic development in East Asian accompanies openness in economic and political environment more than ever before. This paper seeks to figure out the pattern of how economic openness and political openness of Asian countries influence GDP growth by using panel method. We treat the GDP growth as the dependent variable and political rights, civil rights, trade liberalization, foreign direct investment as independent variables. I draw time-series data for 11 Asian countries: China, Japan, South Korea, Indonesia, Malaysia, Philippines, Thailand, Singapore, India, Pakistan and Bangladesh from 1984 to 2011 using Freedom house, World Bank and United Nations Commission for Trade and Development (UNCTAD). Results, even though imperfect, show that high levels of political openness and economic openness indeed improve the economic development of China and Indonesia.

**Keywords:** GDP growth, Political Openness, Economic Openness, Asian Countries, Panel data

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# Assessing the Impacts of Political and Economic Openness on GDP Growth: Case of Asian Countries

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## I. Introduction

### 1.1 Background

In the last two decades, the development of the world economy has undergone significant changes, reflected by shifting the focus of the economy from Europe and America to the Asian Pacific region, in particular East Asian Countries such as Japan, Korea and China (Haryadi, 2008). In addition, changes in the world economic order are also marked by the opening of the world economy. Economies are increasingly integrated across countries, thus economic turmoil in one country or a particular region will result in economic turmoil not only in that country or region itself, but also in other countries in accordance with the first' country's level of economic openness.

Nowadays countries prefer to participate in an open economy, allowing export and import, both on the flow of goods and services and also investment in capital and human resources. This is in line with a study by Dollar and Kraay (2000), which provided evidence that the countries with more open economies are experiencing more rapid economic growth compared to countries with relatively closed economies in the period 1970-1990.

Along with economic openness, during the last two decades political and civil liberties have spread out around the world (Griswold, 2007). Many countries "have successfully transformed themselves into functioning democracies that protect basic civil and political freedoms" (Griswold, 2007).

However, the openness in politics and economies has led to at least two different views; pro liberalization and anti-liberalization. The adherents of liberalization argue that economic openness will have a positive impact on the economy of a country that is characterized by a decline in the price of imported products, the increasing purchasing power of consumers, and the increased competitiveness of domestic products in the export market, which in turn increases the overall GDP of the country. This is in line with studies conducted by Bhagwati (1993), using the Hecksher-Ohlin theory, that free trade would benefit both parties. Although anti-liberalization followers acknowledge that economic openness can provide benefits, conditions of economic power in their respective countries are quite varied, which of course will bring benefits, even differences. There is a trend of negative impacts for countries whose economies are still developing and underdeveloped. This is supported by a number of studies such as Michaely (1977), Heller and Porter (1978), and Balassa (1978) which proved that the positive impact of economic openness on the economy of each country impact is not the same.

Numerous studies have also demonstrated a positive correlation between economic growth and political rights such as Helliwell (1994), Feng (1997) and, Heo and Tan (2001). However, other researches such as Przeworski and Limongi (1993, 1997) and Barro (1996) found little to no correlation between political rights, democracy and economic growth

China (berbasis perguruan tinggi) dan Daedeok Innopolis di Korea Selatan yang kami ambil dari studi Tim Analisis Kebijakan Bappenas tahun 2014 (Noor Arifin et.al, 2014).

1.2. Objectives

This short paper aims at analyzing the impacts of the political and economic

elements on the economic performance in Asian. I assume that this regional economic performance is characterized by mixed conditions of economic and political openness. This study will proceed as follows. In the first section, I introduce a literature review regarding the impact of political and economic openness on economic performance. In the second section, I propose a specific model based on theoretical models and a literature review of the models. Sign hypotheses are shown in the third section, followed by section focusing on the discussion of the results of this study and also the conclusion. Finally, I will propose several policy implications.

## **II. Literature Review**

The impact between political and economic openness on economic performance remains controversial. There have been several studies done already on the association of political openness economic openness and their impact on economic performance. In this part, we will introduce some of the important research that has been done concerning this topic.

### **2.1 Pro Political Openness**

Feng (1997, p.398) asserts "that democracy is likely to have a significant indirect effect on economic growth through its impact on political stability".

Berggren (2003, p.205) states "Free markets are conducive to economic growth, which is why measures such as privatization, freedom to establish new businesses, freer pricing, more flexible contract laws, and less regulation of domestic and international trade and of capital transactions are important". He also states "An impartial and strong judicial system that protects private-property rights and upholds contracts and agreements is central for a strong economic development"(Berggren, 2003, p.205).

Vega-Gordillo and Alvarez-Acre (2003), have quantified a direct correlation between the levels of civil, economic, and political freedom and the rate of national economic growth. Vega-Gordillo and Alvarez-Acre (2003, also cited in Nalley and Barkley, 2005, p.124) proclaimed "that democracy should facilitate economic growth through the development of an institutional framework that is more compatible with incentives to engage in productive transactions".

Wittman (1989, 1995) and Baba (1997, also cited in Nalley and Barkley, 2005, p.125) argued that "democracy enables the development of institutions that guarantee the transparency of the policy-making process and that institutions such as property rights are crucial to economic growth."

Rodrick (2000) demonstrated empirically that participatory democracies are associated with higher-quality growth, defined as more predictable long-term growth rates, greater short-term stability, better resilience to adverse shocks, and a broader distribution of wealth.

### **2.2. Anti Political Openness**

However, Przeworski and Limongi (1993, 1997) and Barro (1996 also cited in Nalley and Barkley, 2005, p.126) found "little to no correlation between political rights, democracy and economic growth." Barro (1996, also cited in Nalley and Barkley 2005, p. 126) "found a nonlinear relationship between democracy and growth: democracy enhanced growth at low levels of political rights or freedom, but depressed growth as more political freedom was obtained." "Although there are exceptions throughout the literature, economic theory suggests that the adoption of economic freedom by a society is more likely to promote higher economic growth than a society that is characterized by lower levels of economic freedom."(p. 126)

### 2.3 Pro Economic Openness

Study which has been done in several new industrial countries (NICs) such as Hong Kong, Korea and Singapore showed that trade liberalization creates fairly rapid growth for each country (Aggarwal and Agmon, 1990).

Similar opinion was also expressed by Mulyono (1997) showing that world trade is believed to play a major role in enhancing global prosperity. Therefore, measures aimed to reduce and eliminate trade barriers need to be supported.

Matusz et al. (1999) who conducted a survey of 50 empirical studies found that the implementation of trade liberalization will increase employment in the field of agricultural and industrial products and eventually it will reduce poverty.

Many studies also have been carried out to investigate the fundamental theories of Foreign Direct Investment (FDI), the advantages of FDI, and the relationship between FDI and economic development. Examples are Driffield and Love (2007), and Tian (2007). All of them suggest that foreign direct investment has a positive effect on economic performance.

### 2.4 Anti Economic Openness

Although in one side economic openness can provide benefits, however, conditions of economic power in their respective countries are quite varied which of course will bring benefits even differences there is a trend with negative impacts for countries whose economies are still developing and underdeveloped. This is supported by a number of studies such as Daly (1993), Nayyar (1997), and Feridhanusetyawan and Rizal (1998), which proves that the positive impact of economic openness on the economy caused each countries are not the same.

Daly (1993) shows that free trade will increase the production the world but without assurance that all the countries which involved will be benefited. Also, study conducted by Nayyar (1997) states that the benefits of trade liberalization accumulate only in a small part of developing countries that the countries that fall into the category of more advanced such as Thailand, Korea and China.

Feridhanusetyawan and Rizal (1998) show that with trade liberalization, higher economic welfare will be achieved. However, the welfare cannot be enjoyed equally by all countries. Even countries in the regions such as Latin America, parts of Europe, the Middle East, and former Soviet Union countries are negatively impacted.

While there have been plenty of studies done on political and economic openness, there have been limited studies done on a single country and on a time series basis. In this study, we investigate the relationship between political and economic openness and economic performance focusing only on China and Indonesia. Also, in this study we try to incorporate economic crisis as an indicator which is none of the study mentioned above have tried to do.

## III. Theoretical Model

Political openness is defined as citizen's rights to participate in politics (Bessette, 2012). Many researchers have tried to assess political openness, such as Garribay and colleagues who identify six channels: 1) electoral participation, 2) competition, 3) accountability, 4) rule of law, 5) transparency and 6) interfaces (Garribay, et al. 2008). Along this line, Freedom House also measures political rights as one indicator of political openness by using the Gastil concept of political rights. The Gastil's concept of political rights is indicated by this basic definition: "Political rights are rights to participate meaningfully in the political process" (Barro, 1999, page 160). "In a democracy this means the right of all adults to vote and compete for public office, and for elected representatives to have a decisive vote on public policies" (Barro, 1999,

p. 160-161). "Elections are held freely, fairly and competitively in democratic countries and opposition parties play an important role in checks and balances" (Feng, 2003, p. 44).

Also, the protection of human rights through the provision of civil liberties is one of the most fundamental indicators in political openness (Benyishay, 2010). "Property rights are usually determined at the most elementary level as the right to consume services of, the right to generate income from and the right to alienate an asset" (Benyishay, 2010, p. 284).

Economic openness is generally considered trade liberalization where its effect is reflected in the performance of exports and imports (Dominte, 2005). The exports illustrate the penetration of internal products on foreign markets and the imports reflect the opportunities to accumulate upper quality resources that sustain the economy.

Theoretically, there seems to be little doubt that long-run economic growth should be positively influenced by economic openness. Most theoretical models generate this relationship through transfers in technology and innovation which are facilitated by openness and trade. The more open the economy is, the easier it becomes to import and adopt technological innovations from higher-productivity trading partners, and thus the higher the growth rate (Karras, 2003).

Fatah et al. (2012) developed a model to investigate the impact of political freedom, economic openness and human development on real GDP per-capita in China, Indonesia and Malaysia. In the model, they included birth rate and life expectancy as a demographic variable. The results showed that openness has a positive, strong association with GDP per-capita. The estimated coefficients have the expected signs and are statistically significant. Also, it showed that higher fertility rate has a strong, negative and large effect on economic growth for all three countries. However, the result also indicated that life expectancy at birth is not statistically significant in Indonesia even at the 10% level.

Based on several studies and theoretical background explained above, I try to introduce a model which is going to be implemented in this study. The dependent variable and independent variables in this study are based on similar time series cross sectional data constructed by Fatah et al. (2012) except we eliminate the demographic variable since I think that the result is quite ambiguous. In this regard, our approach also quite differs from the approach taken by other researchers in the sense that I also incorporate GDP per capita in this study as a control variable.

$$\text{Model 1: } GDP\ Growth_{int} = \alpha_{1nt} + \alpha_{2nt}Civil + \alpha_{3nt}Pol + \varepsilon_{int}$$

$$\text{Model 2: } GDP\ Growth_{int} = \beta_{1nt} + \beta_{2nt}Trade + \beta_{3nt}FDI + \varepsilon_{int}$$

$$\text{Model 3: } GDP\ Growth_{int} = \gamma_{1nt} + \gamma_{2nt}Civil + \gamma_{3nt}Pol + \gamma_{4nt}Trade + \gamma_{5nt}FDI + \varepsilon_{int}$$

Model 4:

GDP Growth: Real GDP Growth between 1984-2011, measured in percent change

Pol: Political Rights between 1984-2011, measured in 1-7 scale

Civil: Civil Liberties between 1984-2011, measured in 1-7 scale

Trade: Trade Liberalization between 1984-2011, measured in percentage of real GDP

FDI: inflows of FDI between 1984-2011, measured in the percentage of GDP

GDPCAP: Real GDP per-capita between 1984-2011, measured in US\$ in 2005

Relations of the above-mentioned variables will be analyzed using software Stata12. Multivariate analysis using Pooled Ordinary Least Squares (OLS) will be run to understand the relationship between independent and dependent variables in Asian countries.

Given the type of data in this study, we expect that there will be autocorrelation and heteroskedasticity problems because this study deals with time series and cross sectional data. Also, it is quite possible that since we are dealing with time series data, we expect that the issue of multicollinearity would occur particularly between civil liberties and political rights.

When autocorrelation and heteroskedasticity issues are present in the data set, the OLS is still unbiased but not efficient.

In the case when heteroskedasticity and autocorrelation occurs, I, then, apply the Robust Standard Error to correct not only heteroskedasticity but also autocorrelation.

III. Hypothesis

According to some studies that are described above, there is a significant relationship between the levels of economic and political openness and economic performance. In this study, we establish hypotheses as follows:

- 1) In terms of Civil Liberties
  - H0 = 0 : There is no relationship between Civil Liberties and GDP Growth.
  - Halt < 0 : There is a negative relationship between Civil Liberties and GDP growth. It means that if the index in civil liberties decreases, then we expect the GDP growth to increase.
  
- 2) In terms of Political Rights
  - H0 = 0 : There is no relationship between Political Rights and GDP growth.
  - Halt < 0: There is a negative relationship between Political Rights and GDP growth. It means that if the index in political rights decreases, then we expect the GDP growth to increase
  
- 3) In terms of Trade Liberalization
  - H0 = 0 : There is no relationship between trade liberalization and GDP growth.
  - Halt: > 0: There is a positive relationship between trade liberalization and GDP growth.
  
- 4) In terms of FDI
  - H0 = 0 : There is no relationship between FDI and GDP growth.
  - Halt: > 0: There is a positive relationship between FDI and GDP growth.

Table 1. Hypothesis Table

Dependent Variable	Independent Variable	Explanation	Expected Sign
Real GDP Growth	Pol	Political Rights: index measured on a scale 1 to 7 where 1 corresponds to the greatest freedom and 7 represents the lowest freedom.	-
	Civil	Civil Liberties: index measured on a scale 1 to 7 where 1 corresponds to the greatest freedom and 7 represents the lowest freedom.	-
	Trade	Trade Liberalization: percentage measured by the product of total export and import divided by real GDP.	+
	FDI	Net Inflows of FDI: percentage measured by the net inflows of FDI divided by GDP.	+
	GDPCAP	GDP per Capita: measured in US\$ by dividing the total Gross Domestic Product (GDP) with total population	+

IV. Independent and Dependent Variables

The independent variables in this study are: political openness (as defined as political rights and civil liberties) and economic openness (as defined as trade liberalization and net flows of FDI). “Pol” is for political rights and “Civil” is for civil liberties. Data for political rights and civil liberties are taken from the Freedom House data 2013. Each data is annual data, measured on a scale 1 to 7 where 1 corresponds to the greatest freedom and 7 represents the lowest freedom. The same source of data for political rights and civil liberties is also used by other studies such as in Barro (1994) and Fatah et al. (2012).

“Trade” is for trade liberalization measured in the percentage of GDP (total export and import divided by GDP) and it is captured in our regression equations by using trade openness data from UNCTAD. “FDI” is for net flows of FDI measured in the millions of US\$ where the data is also from UNCTAD. Also, in this study I include GDP per capita for the eleven Asian countries from 1984 to 2011.

After all data have been collected, we tabulate them into the descriptive statistics as shown in the Table 2. The mean is the arithmetic average of the scores and it is calculated by dividing the sum of the observation by the number of observations (Agresti and Finlay, 2009). Standard deviation is also used when the data are interval or ratio.

Table 2. Descriptive Statistics

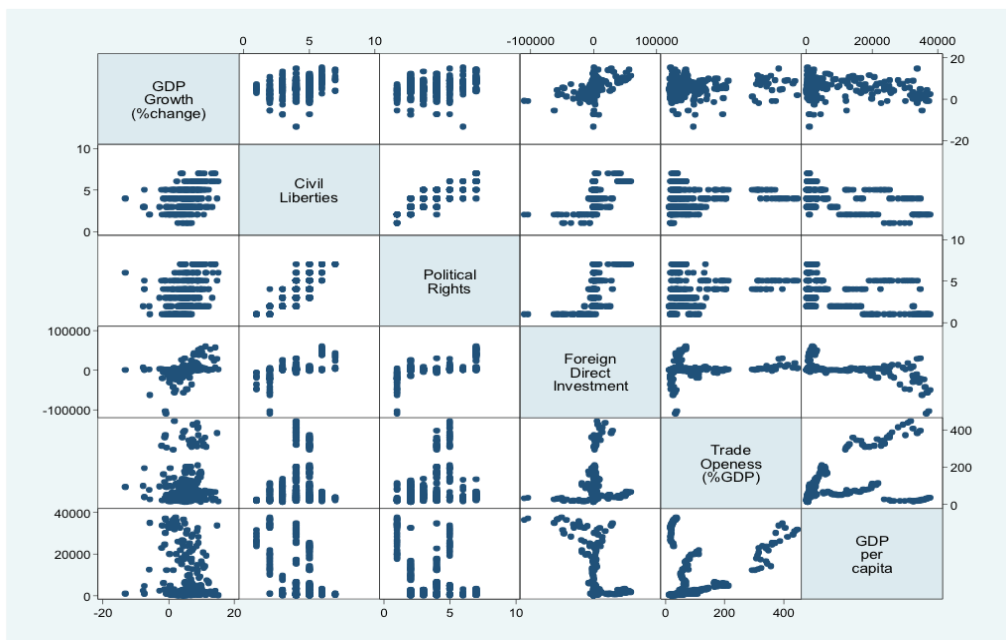
Variable	Obs	Mean	Std. Dev.	Min	Max
Civil	308	3.909091	1.352347	1	7
FDI	308	1227.297	17772.42	-109356.3	60144.83
GDP	308	5.561851	3.89805	-13.13	15.18
GDPCAP	308	7307.998	10907.09	246.44	37554.18
Pol	308	3.594156	1.808656	1	7
Trade	308	88.58127	95.90312	13.34	445.62
year	308	1997.5	8.090892	1984	2011
code	308	6	3.167424	1	11
reg	308	2	.7397508	1	3
r1	308	.2727273	.4460865	0	1
r2	308	.4545455	.4987399	0	1
r3	308	.2727273	.4460865	0	1

Also, before running the regression on GDP growth, it is useful to examine the correlations among the variables. According to Table 3 and graph 1, surprisingly the relationship between real GDP growth and political rights and civil liberties is positive even it is not strong. Table 3 also shows that both Trade and FDI are positively correlated with real GDP growth. This is consistent with several studies which supporting the positive impact of economic openness on economic growth.

**Table 3.** Correlation Matrix of Variables

	GDP	Political	Civil	Trade	FDI	GDPCAP
GDP	1.000					
Political	0.3160	1.000	0.8670			
Civil	0.3518	0.8670	1.000			
Trade	0.0782	0.2035	0.1385	1.000		
FDI	0.4171	0.5720	0.5537	0.1445	1.000	
GDPCAP	-0.2107	-0.3520	-0.4611	0.3719	-0.5021	1.000

**Graph 1.** Scatter Plot of Variables



## V. Results and Discussion

Table 4, 5 and 6 below present the results of the multivariate statistical analysis in this study separately. Table 4 shows the results from the Pooled OLS.



5.1 Pooled OLS

Table 4. Regression Results for Pooled OLS

Variable	Model 1	Model 2	Model 3	Model 4
Intercept	1.6861357 (0.0131)	5.3843577 (0.0000)	3.3697899 (0.0000)	3.0618121 (0.0013)
Political	0.09364517 (0.6873)		-0.18051665 (0.4367)	-0.208432 (0.4728)
Civil	0.90536131 (0.0038)		0.69078588 (0.0232)	0.77722568 (0.0545)
Trade		0.00074428 (0.7279)	0.00058281 (0.7862)	-0.00062634 (0.8052)
FDI		0.0000909 (0.0000)	0.00007243 (0.0000)	0.00007853 (0.0000)
GDPCAP				0.00002327 (0.3695)
R <sup>2</sup>	0.12	0.17	0.19	0.19
N	308	308	308	308

Dependent variable: Real GDP growth  
P statistics are in parentheses

According to Table 4, in eleven Asian countries, political rights and civil liberties have a positive relationship with real GDP growth particularly in model 1. However, in model 3 and 4 political rights has a negative relationship though both of them are statistically insignificant. The estimated coefficients for political rights are 0.093 on the first model, -0.180 on the third model and -0.208 on the fourth model. I interpret the coefficient on the first model as a 1 point increase in political rights (less freedom), on average, which would increase the real GDP growth by about US\$ 0.093 percent per year, holding all variables in the equation constant. In the third model, the estimated coefficient is -0.180. I interpret the coefficient as a 1 point increase in political rights (less freedom), on average, which would decrease the real GDP growth by about 0.180 percent per year, holding all variables in the equation constant. Also, I interpret the coefficient on the fourth model as a 1 point increase in political rights (less freedom), on average, which would decrease the real GDP growth by about 0.208 percent per year, holding all variables in the equation constant.

The estimated coefficients for civil liberties (Civil) on the first, third and the fourth model are 0.905, 0.691 and 0.777 respectively. In the first model, it means that every 1 point increase in civil liberties (less freedom), on average, which would increase the real GDP growth by about 0.905 percent per year, holding all variables in the equation constant. In the third model it means that every 1 point increase in civil liberties (less freedom), on average, would increase the real GDP growth by about 0.691 percent per year, holding all variables in the equation constant. Also, I interpret the coefficient on the fourth model as a 1 point increase in political rights (less freedom), on average, which would increase the real GDP growth by about 0.777 percent per year, holding all variables in the equation constant. It is important to remember that all coefficients are statistically significant at 10 percent error level.

Along with the results in political openness, the regressions of economic openness also show an unexpected result especially on the fourth model where the estimated coefficient for trade liberalization (Trade) is -0.0006. It means that every 1 percent increase in trade liberalization, on average, will decrease real GDP per-capita by about 0.0006 percent per year, holding all variables in the equation constant. However, on all models the coefficients for trade liberalization are not statistically significant.

The estimated coefficients for inflows of FDI on all models show expected sign which is positive relationship. In the second model we interpret that every US\$1 million increases in net inflows of FDI, on average, will increase real GDP growth by about 0.00009 per year or every US\$ 1 billion increase increases, will increase the real GDP growth by about 0.09 percent per year. In the third model, the estimated coefficient of FDI is 0.00007 that means US\$ 1 million increases in net inflows of FDI will increase the real GDP growth by about 0.00007 percent per year, holding all variables in the equation constant. In other words, every US\$ 1 billion increases in net inflows of FDI will increase the real GDP growth by 0.07 percent per year.

Even though some signs for estimated coefficients between models for same variables are opposed, it is not hard to explain. The size of the sample we use is small (only 11 countries and 28 years) therefore, the result is not stable.

Then, how to explain the unexpected sign of the coefficients? One answer is that there is an error of specification in this model. However, to know the right answer, continuing researches are needed.

By using this pooled OLS method, it is indicated that from the political openness, only civil liberties is having significant impact on economic growth than political rights, even though the sign is different than I expect. Whereas from the economic openness, net inflows of FDI is more significant than trade liberalization.

### 5.2 Fixed Effect vs Random Effect

In this section, I will show the 2 tables from two different methods and I will evaluate which model is better according to the Hausman Test.

*Table 5. Regression Results for Fixed Effect*

Variable	Model 1	Model 2	Model 3	Model 4
Intercept	4.5475751 (0.0002)	6.8336201 (0.0000)	5.7531566 (0.0000)	6.5798932 (0.0061)

Political	-0.07277295 (0.7533)		-.08616648 (0.7170)	-0.07090256 (0.7885)
Civil	0.32637585 (0.3730)		0.30970651 (0.4213)	0.15400186 (0.7534)
Trade		-0.01489158 (0.0877)	-0.01289194 (0.1567)	-0.00116389 (0.9562)
FDI		0.00003858 (0.0349)	0.0000405 (0.0292)	0.00003155 (0.1906)
GDPCAP				0.000020622 (0.1453)
R <sup>2</sup>	0.002	0.021	0.023	0.044
N	308	308	308	308

Dependent variable: Real GDP growth

P statistics are in parentheses

**Table 6.** Regression Results for Random Effect

Variable	Model 1	Model 2	Model 3	Model 4
Intercept	3.1923782 (0.0031)	5.5299644 (0.0000)	3.5080042 (0.0008)	3.4182934 (0.0121)
Political	.00358018 (0.9874)		-0.13485271 (0.5608)	-0.14844292 (0.6004)
Civil	0.60285237 (0.0720)		0.65338584 (0.0443)	0.66926524 (0.2098)
Trade		-0.00055738 (0.8723)	- 0.00093095 (0.8110)	0.00051565 (0.8804)

FDI		0.00006621 (0.0000)	0.00005447 (0.0007)	0.00006109 (0.0005)
GDPCAP				- 0.000008182 (0.8390)
r <sup>2</sup> _o	0.12	0.17	0.19	0.19
N	308	308	308	308
rho	0.16	0.07	0.10	0.03

Dependent variable: Real GDP growth

P statistics are in parentheses

Table 5 and 6 reports the results across various models using Fixed and Random effect respectively. Columns 1 and 2 show the results of using political openness and economic openness separately. Column 3 shows the results of using both openness altogether whereas in column 4, I add GDP per capita as an independent variable.

As we can see that from table 5 and 6, political rights has negative signs, means that it has negative relationship with the real GDP growth. These results are similar with the Pooled OLS method. Although they are not significant, civil liberties give us unexpected sign on both tables. Coefficients on FDI are quite consistent on both tables and always have positive signs which mean any increases in FDI will also increase the real GDP growth.

## VI. Conclusion and Policy Implication

The focus of this study is to analyze the impact of political and economic openness on economic performance, particularly in eleven Asian countries. I will conclude the results on table 7 below.

**Table 7. Statistical Comparison**

Variable	Pooled OLS	Fixed Effect	Random Effect	PCSE*
Intercept	3.0618121 (0.0013)	6.5798932 (0.0061)	3.4182934 (0.0121)	3.061812 (0.001)
Political	-0.208432 (0.4728)	-0.07090256 (0.7885)	-0.14844292 (0.6004)	-0.208432 (0.370)
Civil	0.77722568 (0.0545)	0.15400186 (0.7534)	0.66926524 (0.2098)	0.7772257 (0.036)

Trade	-0.00062634 (0.8052)	-0.00116389 (0.9562)	0.00051565 (0.8804)	-0.0006263 (0.833)
FDI	0.00007853 (0.0000)	0.00003155 (0.1906)	0.00006109 (0.0005)	0.0000785 (0.000)
GDPCAP	0.00002327 (0.3695)	0.000020622 (0.1453)	- 0.000008182 (0.8390)	0.0000233 (0.361)
R <sup>2</sup>	0.12	0.17	0.19	0.19
N	308	308	308	308

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Dependent variable: Real GDP growth

P statistics are in parentheses

\*PCSE is Panel Corrected Standard Error

## 6.1 Conclusion

Many studies and previous literatures suggest that political stability or increase in political right and civil liberty often leads to rapid economic growth. I find some empirical evidence that supports this theory. According to this study, in terms of political openness, political rights can better explain the increase in real GDP growth in Asian countries even though the coefficient is not statistically significant on all methods. This finding is supporting research results done by Fatah et. al (2012). While this variable gives us an expected sign, civil liberties gives us positive sign which is opposed to our hypothesis. I also find a weak direct link between civil liberties and economic growth on all methods. Not only it gives us unexpected signs but also the coefficients are significant only on Pooled OLS and PCSE methods.

In terms of economic openness, only FDI can better explain the impact on the real GDP growth while trade liberalization is ambiguous since it changes sign. All four regression models on all statistical methods indicate that FDI has a positive, strong association with GDP growth. The estimated coefficients have the expected signs and are statistically significant. These results confirm the earlier findings that FDI foster economic growth.

The R<sup>2</sup> for our region specification is ranging from 0.12 to 0.19, indicating that this set of variables explains about 12 to 19 percent of the variation in economic growth. Of course, some countries may differ in terms of magnitude of relationship, considering that the average relationships across countries are not a precise recipe applicable to all countries across time.

## 6.2. Policy Implication

This study examines the impact of economic openness (in the form of trade liberalization and net inflows of FDI) and political openness (political rights and civil liberties) in eleven Asian countries (China, Japan, South Korea, Indonesia, Malaysia, Philippines, Thailand, Singapore, India, Pakistan and Bangladesh) in the period of 1984 - 2011. Using the cross-country growth regression, the results show that FDI and political freedom variables are significant determinants of economic growth.

Of course, this framework does not fully explain all the critical factors that accelerates economic growth and does not wholly capture the relationships between macroeconomic variables, policy variables, natural resources and economic outcomes. However, it does highlight several important elements that contribute to rapid economic growth in these economies. Each country has its own policy and different approaches to gear towards robust economic growth. Given real GDP growth is not a good measure of development for the countries as a whole, due to lack of inclusiveness of the measure, no indicator of the degree inequality in income distribution, differences in the exchange rates, population and prices of goods and services, it is very difficult to do a comparative analysis across countries and it is not surprisingly to see the discrepancies between the region and each country growth regressions.

In this study, the main factors that explain rapid economic growth in Asian are FDI and political freedom. With the incentive policy of Reforms Opening Up, China for example has successfully attracted foreign technology and capital which has triggered technological progress and accelerates economic growth.

A negatively significant sign of political freedoms is found to be significantly stimulating economic growth. These results will strengthen the view that societies with greater democratic tend to have higher level of GDP growth. These findings can propose important considerations for policymakers in these countries. The empirical evidence suggests that FDI and political rights are main elements to enhance Asian's economic growth. These countries could consider to formulate policy that will attract and benefit more from FDI inflows and greater openness.

The limitation of our research is obvious that: 1. The size of our sample is small that biases exist and 2. The depth of our knowledge with respect to this field is shallow. Therefore, the amount of information this article contains is limited.

Therefore, for future research, I suggest using a larger sized panel dataset than what this study uses. Instead of emphasizing particular numbers of states in East, South East and South Asian, a sample that includes all countries in Asian is valuable. Also, a new model that contains variables from cultural, geographic and historical dimensions should be considered.

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# **Complementary Model In Interaction Between Political Officials And Bureaucrats In Indonesia**

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## **Abstract**

The relationship between politics and the bureaucracy or the political influence of the bureaucracy is a discourse that also surfaced in Indonesia. Various laws are made to realize the Indonesian bureaucracy that is free from political influence. In fact, a complementary interaction between political officials and bureaucrats is a necessity in a bureaucratic system contained in Indonesia. The influence or control of political officials should be carried out within the framework of supervising the implementation of policies that have been decided in the political process, and provide corrections to bureaucrats when found errors or irregularities.

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# Complementary Model In Interaction Between Political Officials And Bureaucrats In Indonesia

Deddy S. Bratakusumah, BAPPENAS

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## I. Introduction

One of the topics of discussion that is always raised in the public administration sector is the separation between the bureaucracy and politics. In this discourse declared that public administration should not be influence by politics, there must be a strict separation between political officials and politicians and career bureaucrats in governance. Separation is primarily within the competence and involvement in the formulation and implementation of public policy.

Bureaucracy and political interaction debate, often referred to as the dichotomy between the administration and politics. Dichotomy concerning the relationship between bureaucrats with public officials. Related to this dichotomy Waldo (1987) states:

*"Nothing is more central in thinking about public administration than the nature and interrelations of politics and administration. Nor are the nature and interrelations of politics and administration matters only for academic theorizing. What is more important in the day-to-day, year-to-year, and decade-to-decade operation of government than the ways in the politics and administration are conceptualized, rationalized, and related one to the other."*

Accordingly, there is no longer considered important arena, concerning the public administration, in addition to the debate about the relationship between politics and public administration itself. This relationship, not just a mere theory, but most importantly from day to day, year to year and even decade to decade is how we conceptualize politics and public administration, rationalizing them and how relations with one another.

The relationship between politics and the bureaucracy or the political influence of the bureaucracy is a discourse that also surfaced in Indonesia. Various laws are made to realize the Indonesian bureaucracy that is free from political influence. Could it be realized? If not what are the barriers? Or simply will not materialize? This is a subject that is discussed in this paper.

## II. Literature Review

### 2.1 Bureaucracy

Bureaucracy is often interpreted as anything done by government actors and all its effects are concerned by the community. The most remembered by the public certainly things that relates to treatment and behaviour of the poor and unjust bureaucratic. Especially lunge public bureaucracy associated with the service. As a result, the bureaucracy is often portrayed as inefficient and even corrupt. Despite the fact that all the bureaucrats who are members of the State Civil Apparatus (SCA) in Indonesia have behaviour and form as such.

The negative image of the workings of bureaucracy occurred throughout the world, as has been expressed by various researchers, analysts and writers, and in fact this very day still has not changed, to this matter Crozier (1964) mentioned:

*"(Bureaucracy) evokes the slowness, the ponderousness, the routine, the complication of procedures, and the maladapted responses of 'bureaucratic' organizations to the needs which they should satisfy, and the frustrations which their members, clients, or subjects consequently endure."*

Bureaucracy can be defined as "Rule by Officials" (Heywood, 2002), which translated as meaning "arranged by officials." Bureaucracy itself is not only in the public sector but also found in the private sector. Many definitions put forward by experts and thinkers on this bureaucracy, the classic sense of the bureaucracy of the most famous put forward by Max Weber namely:

*"..... Organizations that have specific functions regulated by the rules..... these organizations comply with the principles of hierarchy ..... units which are under, controlled and controlled by superiors ..... administrative provisions, decisions, and regulations set forth and recorded in writing....."*

From the definition presented by the Weber, Garston (1993) try to make sense of bureaucratic as:

*"A bureaucracy is an organizational structure characterized by a hierarchy whose occupants are appointed, whose lines of authority and responsibility are set by known rules (including precedents), and in which justification for any decision requires references to known policies whose legitimacy is determined by authorities outside the organizational structure itself."*

Therefore, we can interpret that the bureaucracy is an organization that has levels, each level is occupied by an officer appointed or removed, along with the rules concerning the authority and responsibilities, and every policy must be made known by a fiduciary. Fiduciary here should, in the private sector are the shareholders, which is usually represented by the commissioner, while the public sector is the people represented by Member of Parliaments elected to represent the people.

Analysis of bureaucracy in public administration even for social scientists is relatively new (Garston 1993), but the evidence of history, proving that the bureaucracy and administration have been there almost as old as the human civilization. Analyses of the Roman Empire, how the Egyptians built the pyramids and ancient irrigation system, the Javanese build Borobudur Temple, the governance system of the Majapahit kingdom, the government system of Srivijaya empire, the Chinese built the Great Wall and a variety of historical fact something government can be ascertained will comes to bureaucracy and administration.

In democratic practice, the bureaucracy was not in harmony with democracy. Essentially people want the bureaucracy as a waitress or a servant for all their needs because democracy is the people who decide who will run the government, including the bureaucracy. But in fact it turns out people are only as customers, meaning that whatever is presented by the bureaucracy, the people can only accept it. More specifically Keyes (2015) said:

*"Bureaucracies are inherently antidemocratic. Bureaucrats Reviews their power derive from their position in the structure, not from their relations with the people they are supposed to serve. The people are not masters of the bureaucracy, but its clients."*

In fact anti-democratic bureaucracy. Bureaucracy creates and uses his power not based on the interests of the people whom it serves, but on the position and his position. People is not master of bureaucracy, people are only the customers. The interaction between the political and administration in the implementation

On the other side of the post of the bureaucrats to the democratic system established by political officials who are elected democratically. So it is difficult to say that the bureaucracy to the task will be free from political influence.

## 2.2 Bureaucracy and Politics

Classic discourse on the relationship between politics and administration delivered by experts such as Wilson, Goodnow and Weber (Kartasasmita, 2009). They expressed various ideas related to administration and politics as well as the interaction between the two.

Wilson (1887) is one of the thinkers who want to separate the administration from political influence, as well as his opinion:

*"The field of administration is a field of business. It is removed from the hurry and Strife of politics.... Administration lies outside the proper sphere of politics. Administrative questions are not political questions. Although politics sets the tasks for administration, it should not be suffered to manipulate its offices."*

Wilson asserts that administration is one of the elements of the business. So that, the administration should be separated from politics that heavily focused on the interest. Although basically the political decisive administrative duties. Politics should not be manipulating the administration. In this connection it can be concluded that Wilson is very concerned about the disruptions of politics and political parties and politicians corruption in the public administration. However, in the end, Wilson argues that politics and administration should be able to interact in improving governance.

Meanwhile, Goodnow in his book entitled "Politics and Administration" (1900), argues,

*"There were two basic functions of government: the expression of the popular will and the execution of that will."*

According to Goodnow there are actually two basic functions of government were then divided into three pillars of government (executive, legislative and judicial), namely:

1. Defining the will of the people,
2. To carry out the will of.

Furthermore Goodnow added that the first function is realized through politics in the form of policy, and the second function executed by the administration or bureaucracy. Thus, according to Goodnow theoretically between administration and politics can be separated, but in practice cannot be separated, they complement each other to perform the basic functions of government.

While Weber said, that the bureaucrats in their duties should remain impartial and must remain politically neutral. From the views of thinkers can be noted that in fact they do not separate between the administration and politics explicitly, but recommend for interaction between the public administration and politics.

Regarding the interaction synthesized by Appleby in his book "Policy and Administration" (1949), he says politics is everything that should be and has been done by the government, therefore the administration cannot be separated from politics. In other words, it is difficult to separate clearly between administration and politics. According to Appleby:

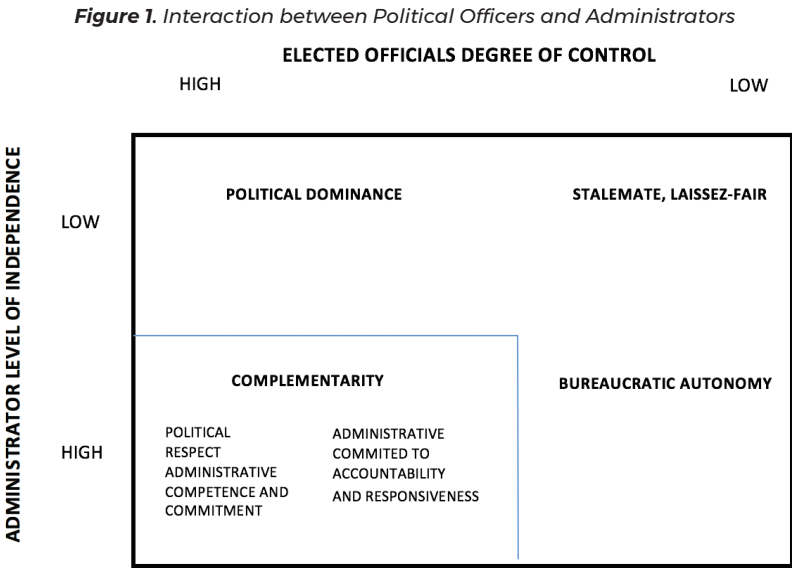
*"Everything having to do with the government and everything the government does is political, for politics is the art and science of government. But in terms of mass, only a small part of politics is partisan."*

of policy was manifested in the involvement of bureaucrats in the public policy making process. The involvement of bureaucrats become a necessity because of the increasing complexity of the problems faced in running the government. Governance issues related to economic, social, defence, human rights, environmental, energy and poverty. In reality there is no doubt that the bureaucrats have more competence and experience in these fields.

In the course of time, the idea of the separation between policy and administration grew again in the 1990s with the idea of being “Reinventing Government” and “New Public Management”. Such thinking suggests that there should be a separation between policy makers with the administration or implementation of policies, executing anyone. The emphasis of this concept is that the government is just as policy makers and the public as well as private as the executor of the policy. In the main these thoughts unconsciously recognize that governments composed of political and bureaucratic officials who make policy.

Therefore, in 2001 Svava convey thoughts on Complementary Model between politics and administration. Svava’s idea is illustrated in a diagram as embodied in Figure 1.

The diagram in Figure 1, separating the condition of interaction between political officials and administrators in four quadrants:



Source: Svava, 2001

- **Quadrant I: Political Dominance**  
This condition illustrates the very strong control of political officials in the independence of the administrators were very weak
- **Quadrant II: Stalemate, Laissez-fair**  
This condition indicates a state where the control of political officials is weak, the independence of the administrator was weak as well.
- **Quadrant III: Bureaucratic Autonomy**  
This condition describes the independence of the administrator is very strong while the dominance of political officials is very weak.
- **Quadrant IV: Complementarity**  
Conditions are ideal in which the control of political officials is very strong and the independence of the administrator is also very strong.

In this condition will find two states namely:

1. Administration competent and committed, as well as respecting political decisions,
2. The Administrator is committed to accountability and responsiveness.

Svara further asserted that this model describes the interaction that we've found, in which the political officials and administrator influence each other in equality. Administrator or career bureaucrats assist in policy making and preparing with good effort and the way in implementing the policy. Furthermore, political officials overseeing the implementation of policies, rebuke and look for evidence of poor performance of the administrators in implementing the policy, and make corrections to build on the error.

### III. Conditions in Indonesia

Bureaucracy in Indonesia in fact has existed since the royal era, then continues in the Dutch colonial era by implementing a more modern bureaucracy, Sukarno, Suharto era or the New Order era until today at the time of the Reformation that has been held by six presidents.

Since Indonesia proclaimed independence in 1945 until now, the political system is applied in governance has affected the government bureaucracy. In the early days of independence where applicable political system known as "Liberal Democracy", political parties and politicians are very dominant in influencing the bureaucracy, even the ministry has created form the entity of certain parties, such as the Ministry of Religious Affairs are entitled Party NU or party that based on Islam. The result is disharmony between one ministry with other.

Later in the period of "Guided Democracy" bureaucracy under the control of the president, even though the president Sukarno at that time did not escape the influence of the military and political parties. At the time the concept of "Guided Democracy" echoed NASAKOM (Nationalist-Religious-Communist) were very influential to the bureaucracy. Even at that time all the civil servants had to be members of one political party which fall within the category "Nasakom."

Meanwhile, during the reign of Suharto, political system known as "Pancasila Democracy", the president still carries very powerful control of the state apparatus, which consists of the Armed Forces and Civil Servants. Although at the time there are political parties, there are at least two namely the United Development Party (PPP) and the Indonesian Democratic Party (PDI), but the Civil Service is registered as a member of the "Golkar" through the Indonesian Civil Servants Corps (KORPRI), even the military became elements of "Golkar". So at that time known adage that Golkar consists of ABG (ABRI, Bureaucracy and mass organizations of Golkar). Bureaucracy in the reign of Suharto tightly controlled by the president. As a result of the strong control of the president, the government can run a variety of programs and policies without obstacles of bureaucracy.

As a result of the economic crisis that continues on the political crisis, has brought Indonesia at a time of change, known as the Reformation. The period of reform has brought Indonesia back to the system of "liberal democracy", where all the people and groups may establish a political party and participate in elections, all political parties have been registered and qualified. As an illustration, in 1999 Election, 48 political parties were participated, in 2004 participated by 24 political parties, in 2009 participated by 44 political parties, and in 2014 participated by 15 political parties. The results of the constitutional amendments have also established that the president and vice president are elected directly in one package. Similarly, the local elections for governor, mayor and regent are elected directly.



As a result of the political system that is applied at the time of the Reformation have also changed the pattern of interaction between political officials with the bureaucracy. With the direct presidential election system, and especially the direct local head, resulting that the candidate have to had a successful team. This condition is the beginning of a distortion of the relationship between political officials with the bureaucracy. In some areas of the bureaucrats lost his job because he does not support the incumbent local head who ran back, and was re-elected. Political officials actually very strong to control the bureaucracy.

Politics and bureaucracy in Indonesia in practice cannot be separated. In fact what happens is very dominant political officials and arbitrarily affect the position, career and authority of bureaucrats. This situation occurs because according to the prevailing regulations, political officials is an authoritative official patron.

Efforts to synergize the interaction between political officials and bureaucrats are being pursued to be strengthened, through Law No. 5, year 2014 on the State Civil Apparatus (SCA). In the bill is expressly said that State Civil Apparatus is a profession, but an official from the SCA coaches remain political officials. As overseers that the interaction between political and bureaucratic officials to run a fair, transparent and considering the competence, the law has assigned the State Civil Reform Commission (KASN) to oversee the selection and appointment of positions in the bureaucracy in Indonesia.

Thus, various efforts and laws that exist and are being developed in Indonesia, is expected to apply the model presented by Svarga on a complementary model (Quadrant IV) between political and bureaucratic officials. This model will provide, the competent and committed administration, as well as respecting political decisions, which is committed to accountability and responsiveness. In turn, this positive synergy will be able to accelerate realization of the ideals of the nation state, which is a fair society in prosperity and prosper in fairness.

#### **IV. Concluding Remark**

Complementary interaction between political officials and bureaucrats is a necessity in a bureaucratic system contained in a democratic state run, such as Indonesia.

The influence or control of political officials should be carried out within the framework of supervising the implementation of policies that have been decided in the political process, and provide corrections to bureaucrats when found errors or irregularities.

Political neutrality of bureaucrats in the democratic system, for example, carry the right to vote in elections or ban political party membership, not related to the interaction between political officials and bureaucrats.

Bureaucratic neutrality in the interaction between political officials and bureaucrats are the competence and commitment of the bureaucrats to implement policies that are already contained in the plan or program of government regardless of political ideology or political party from political officials.

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# Analyzing Civic Satisfaction on Public Service Using Twitter Data

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## **Abstract**

In recent years, the digital technology has transformed rapidly, allowing social media to become an important place for people to express their thoughts and opinion on any topic that they want. In this paper, we present an analysis of twitter data regarding civic satisfaction and opinion of public service in Indonesia. We try to capture the tweets which discussed several topics related to traffic condition, public service and driving license service. Then we present an analysis process using a framework and present the result which may help government have a better picture of certain problems.

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# Analyzing Civic Satisfaction on Public Service Using Twitter Data

Ade Hendraputra, BAPPENAS

## I. Introduction

Today internet network is crowded by mobile device which boost internet user up to half of the human population (3.649 billion internet users) and 75 percent of internet users is using their mobile device like a cell phone and tablets to access information on the internet. The simplicity of the internet makes people really close to their gadgets. This fact leads people to enter a new era of communication. Social media is a tool that people use to communicate and discuss the wide spread of topics.

Furthermore, the Government which has a mandate from their citizen to develop their country should recognize this new communication technology as a complimentary way to assess their performance on serving the citizen and measure their citizen satisfaction level.

This research provides a literature review on how social media can be used and leveraged as a tool to analyze civic opinion and satisfaction on several interested topics on government program and simulation as well as statistical analysis on twitter data which crawled in a certain time period.

As a initial hypothesis, we also want to prove that social media analysis is easy and instant for government officers to implement and can be a good tool during public policy planning and evaluation process.

## II. Related Work

### 2.1 Public Sector and Big Data

Governments used to receive a huge demand and pressure to increase their productivity. Especially after we meet global recession in the last 2008, many governments has a difficulty to provide an excellent public service which at a same time, they also tied into the budgetary constraints that force them to reduce the large number of deficits and high level of national debt. Moreover, public money also needed to stimulate economic growth which can help their economy run well. Furthermore, this economic problem has also caused by high demand for medical and social services to serve their citizens.

As recent MGI research has shown, the way that government need to overcome with such constraints is by walking through a change in their productivity which sometimes relatively has a low level. While the productivity level in the public sector is hard to measure, MGI research revealed an evidence that public sector productivity growth has fallen behind that of the private sector in many (or most) economies. Furthermore, UK office of National Statistics experiment reported declining productivity in the public sector from 1995 to 2005, while MGI research reported increasing growth of productivity in the market sector. In the big picture, the declining productivity performance of the UK public sector was caused by the government's increasing employment.

Is it possible big data and social media can help the public sector to win its battle of productivity? To attempt to answer this question, we studied the civic, social media activities of the public sector performance, with a focus on Indonesia country. McKinsey research found that big data levers, for example, increasing transparency

and applying advanced analytics, offer the public sector a powerful tool of strategies and techniques to increase productivity and achieving higher levels of efficiency and effectiveness. In McKinsey research case study shows Europe’s public sector could potentially reduce the costs of administrative activities by 15 to 20 percent, which make the equivalent of €150 billion to €300 billion (\$223 billion to \$446 billion)—or even higher—in newest research data. This estimate includes both efficiency gains and a reduction in the distance between the actual and potential collection of tax revenue. Furthermore, these effort could accelerate annual productivity accretion by up to 0.5 percentage points over the next ten years.

We believe that big data can play a similar role in other countries and regions, too. Other governments around the world face many of the same social and economic challenges, and the big data opportunities we discuss above will apply elsewhere, particularly in other developed countries Indonesia. Private sectors are familiar with this technology for several purposes such as their market strategy and decision support system. So we believe that in the simplest way, this big data can help the government to get an instant input from their citizen in social media.

### 2.2 Indonesia Technology Demographic

Indonesia is undoubtedly one of the most attractive markets in Southeast Asia. With a population of over 250 million – the largest in the region and the fourth largest in the world, after China, India, and the US. According to We Are Social’s compendium of world digital stats, Indonesia now has 88.1 million active internet users, up 15 percent over the past 12 months.

Its mobile market has exploded over the past couple of years. SIM subscriptions in Indonesia stand at 326.3 million, way more than its population. This means each mobile phone user owns an average of two SIM cards. 85 percent of the population own mobile phones, while 43 percent carries smartphones.

With nearly 79 million social media users or 30% of the total population, we believe that social media should be a valuable asset for finding out people statements regarding some issue that matter for the government.

Twitter comes in third as most popular social media platform in Indonesia, with close to 17 million users. In recognition of the importance of this region, Twitter opened an office in Jakarta in March 2015.

Figure 1. Twitter Users

Twitter Users and Penetration in Select Countries in Southeast Asia, 2014-2019						
millions and % of internet users						
	2014	2015	2016	2017	2018	2019
<b>Twitter users (millions)</b>						
Indonesia	12.0	14.3	16.8	18.9	20.9	22.8
Philippines	5.5	6.6	7.5	8.5	9.5	10.4
Vietnam	4.0	4.7	5.4	6.1	6.7	7.3
Thailand	2.7	3.1	3.4	3.7	3.9	4.1
Malaysia	1.5	1.7	1.9	2.1	2.2	2.4
Singapore	0.4	0.4	0.5	0.5	0.5	0.6
<b>Twitter user penetration (% of internet users)</b>						
Indonesia	14.3%	15.4%	16.3%	16.8%	17.0%	17.1%
Philippines	11.4%	12.2%	12.8%	13.2%	13.7%	14.1%
Malaysia	11.1%	11.9%	12.4%	12.7%	12.8%	12.9%
Thailand	11.0%	11.8%	12.3%	12.6%	12.8%	12.9%
Vietnam	9.8%	10.5%	11.1%	11.6%	12.1%	12.2%
Singapore	9.2%	10.3%	10.8%	11.3%	11.7%	12.1%

*Note: internet users who access their Twitter account via any device at least once per month*  
*Source: eMarketer, Nov 2015*

200380 www.eMarketer.com

The social media platform has also been credited for its big role in the Indonesian presidential elections in 2014. Today Indonesian president Mr. Joko Widodo's which sponsored tweets by one of his election consultants had 2014's second most retweeted tweet. So we believe that if the government can still use this platform to deliver government campaign, they may have a better citizen involvement and support of their people.

## **2.3 Twitter**

Twitter is a microblogging service and belongs to the category of online social networks. Users of Twitter have the possibility to send short messages with a maximum length of 140 characters to communicate with each other or just to state their opinions. In Twitter's wording such a message is called a status, whereby it is also common to call it a tweet. To subscribe to the tweets of another user, users have to set up a follow-relationship, in example, user A will receive all tweets of user B and therefore A is called a follower of B. As a consequence, user B is called a friend of user A. The difference in the naming of the direction of the relationship between two users can be explained by the unidirectional manner of the relationship in Twitter's social network.

Twitter has been growing in popularity since its opening in 2006. According to twitter (2016), on 31 Dec 2013 there were already more than 313 million active users per month which cover nearly every country in the world. Approximately 1 billion tweets are created every day (Twitter, 2016). Like other online social networks, Twitter is also extensively used to gain interesting information about trends and opinions as well as marketing tools. Moreover, one can list, in example, companies utilizing the dialogic capacity of social media for communication with stakeholders (Rybalko and Seltzer, 2010), (Lovejoy et al., 2012), emergency services, obtaining up-to-date information for disaster relief (Chatfield, et al., 2014), and health organizations detecting (Aramki, et.al., 2011) and predicting (Achrekar, et al., 2011) outbreaks of diseases, to mention just a few instances of Twitter's widespread utilization. The number of areas of application is increasing steadily and tools that rely on Twitter become more and more sophisticated (MacEachren, et al., 2011). For example, in the case of an earthquake, it takes only seconds until first related tweets appear, which in turn can be utilized to visualize earthquake activities on a map (Sakaki, et al., 2013). Such kind of news or, to be more general, information, is propagated much faster via Twitter than by common news agencies.

For researchers and trend analysts Twitter offers two technically different possibilities to access this huge amount of data. There is the option to collect tweets happening in real-time by using a stream access to the public tweets. The other option is a using Twitter API, which provides the possibility to request free selectable information, e.g., details about a special user or a user's tweet timeline. The Twitter API suffers from limitations in respect of the frequency of allowed data requests, while the tweet amount of the free-of-charge stream access is limited by a public streaming cap. That's the way after serial experiment using open source application and found that limitation hinder us to get a complete dataset, finally we found Twitter Achiever offers as an add-on in the Google Spreadsheet which offer simple and cloud based computing service.

## **III. Methods**

### **3.1. Dataset**

One of the main issues of the analysis is the availability of adequate datasets. A method that called "Firehose" access, offers the complete data, but is very expensive to get. The other variant which we called "Spritzer" is using a sample stream which, according to Twitter and other researcher, offers only one percent of all tweets, even

though it is free of charge. Alternatively, one can access the stream by applying a filter like keywords or geo-coordinate bounding boxes. The output of this filtered stream is still limited to not more than 1% of the global count of tweets. In the past, there was another sample stream available, called "Gardenhose", which offered 10% of all tweets. Today, signing up for a free Gardenhose access is no longer possible, nevertheless the existing accounts are still valid. Hence, there are still users of the Gardenhose stream, today. In this paper, we examine the Twitter's streams and direct our attention to Twitter's statement of these streams being lively collected by selecting keywords. To obtain the dataset for our studies, we accessed Twitter's streaming Twitter API "Twitter Archiver" using the Google sheets API.

Twitter Archiver lets us easily save tweets for any search keyword or hashtag in a Google Spreadsheet. Enter a search query, or a hashtag, and all matching tweets are automatically saved in the Google Sheet. You can write simple queries, use boolean search or include advanced Twitter search operators to create more complex queries. Twitter Archiver can be used for saving tweets around trending hashtags, conference tweets, your brand mentions, Geo-tagged tweets, and more. It polls, twitter every hour and pulls all the matching tweets into the Google Spreadsheet.

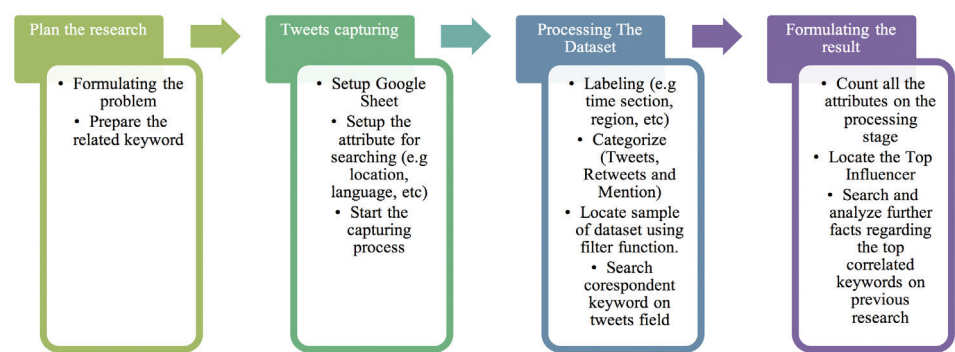
The output file of our dataset is based on spreadsheet format. Twitter Archiver generates a new worksheet with the following fields which appear in the following order.

- Date
- Screen Name
- Full Name
- Tweet Text
- Tweet ID
- App
- Followers
- Follows Retweets
- Favorites
- Verified User Since
- Location
- Bio
- Profile Image
- Google Maps

### 3.2 Our Approach And Findings

Our experiment starts with creating a research procedure to examine the dataset for social media analysis. Below is our concept diagram based on our iteration in this research.

Figure 2. Research Process Diagram



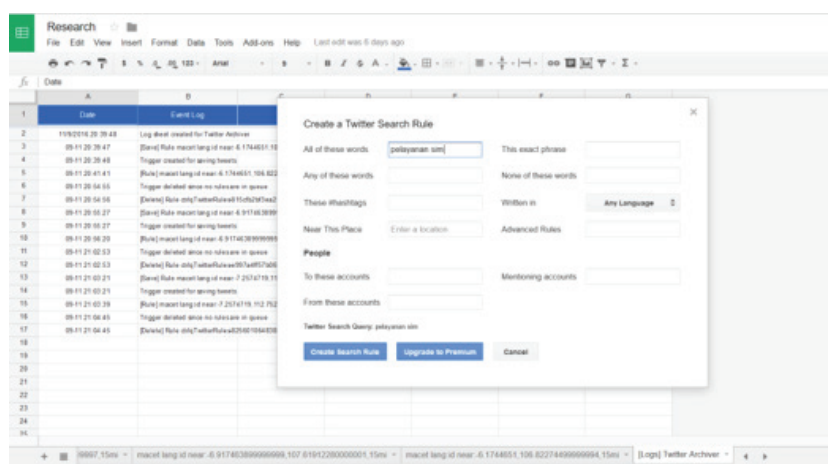


Based on PDCA framework, which is commonly used by most of government project management, we suggest that this technique can be used on both Plan and Check stage. In our research we try to simulate using three problems, understand the problem based on public opinions and facts on the social media and show the formulating suggestion to overcome the problem.

Furthermore, we test this framework using 3 problems (two specific problems and one general problem. The first two problems are traffic jam and driving license service represent a specific problem, then public service as a general problem. So basically, we want to find the actual public opinion on those three issues.

Then we continue capturing tweets process. In this process, thank to Labnol which provide a robust Google Sheet API to search and easy to set up (Agarwal, 2015). Moreover, during the capturing process, we can maintain our anonymity aspect. This aspect is important for public policy planner in the very beginning process because we could test the policy without concern of effecting public behavior before the policy tested or implemented.

**Figure 3.** Twitter Archiver Search Interface



The next process is processing the dataset. At this stage, we also tried to feed the dataset into several Social Media Analytics tools, but most of them has their own structure so we had a difficulty to use it and takes time to reformat it especially in a big number of data. For people who has not or low level of computer skills, it would be a nightmare for them and hinder people to buy-in to this issue. So learn from predictive modeling concept, we offer this simple and straightforward concept to analyze the data. Basically, first people need to be labelled data based their output. For example, if you need a further research on time frame and geo-tag, you label the dataset by adding new columns and fill it. Then, people examine few correlated keywords on sample data, means that read a few tweets on the dataset and write on a piece of paper which later it would be used to analyze the whole data set. Literally, we believe that user just needs an spreadsheet skills to examine and analyze the data.

Finally, in the last stage, which is formulating the result, we execute and count the correlated keywords on the whole dataset so we can see how much that suspected keywords affect the main problem. Then use the previous research and facts regarding that correlated keywords to explain the contributed problems of the main problems.

Moreover, by having these contributed problems we may have a better understanding of the main problem so policy maker can create a policy to overcome the contributed problems and gain the success rate of solving the main problem.

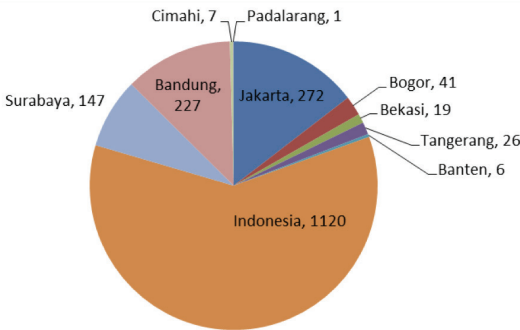
The diagram shows three interlocking gears. A large red gear at the bottom is labeled 'Main Problem'. Two smaller gears, one green at the top and one brown on the left, are both labeled 'Contributed Problems'. Curved arrows indicate a clockwise flow: from the Main Problem to the brown Contributed Problem, then to the green Contributed Problem, and finally back to the Main Problem.

[illegible]

Time Period	Percentage
06am - 10am	21%
10am - 3pm	21%
3pm - 7pm	30%
7pm - 10pm	15%
10pm - 6am	13%

The next process is processing the dataset. By this stage, we added time section and location label to the dataset. We divide the time into 5 sections which are morning commute time (6pm – 10am), working time (10am – 3pm), return time (3pm – 7pm), after work time (7pm – 10pm) and night time (10pm – 6am). From figure 4, we find out that after working hours become the most active tweet time by 30% of tweets compare to night time that only 13% of tweets. The interesting fact is, during the morning commute time and working time, twitter users still experience the traffic jams on their trip.

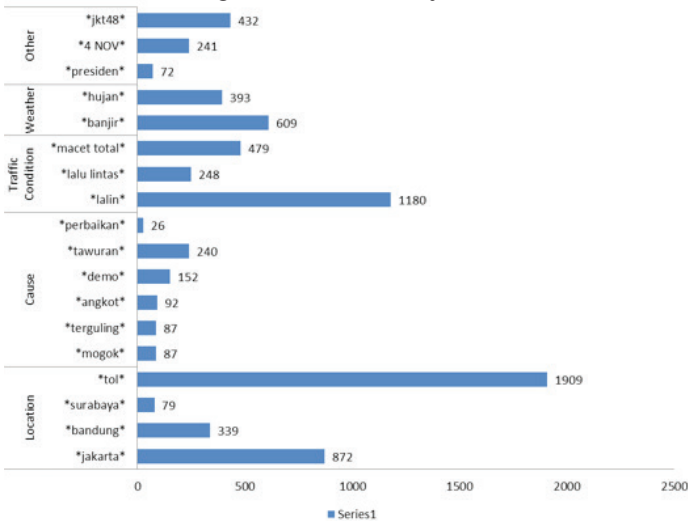
**Figure 7. Geo Information**



From figure 5, we found the facts that most of tweets come from 3 major cities in Indonesia which are Jakarta (Capital city of Indonesia), Bandung (Capital city of West Java Province), and Surabaya (Capital city of East Java Province). Moreover, location field in the Dataset also cannot be whole used to filter the data based on the location because the twitter user sometimes does not state the real position of them. Then most of the google maps field, also return blank because most of the users turn the GPS location off by default. So if you want to search down the topic based on a certain location, you need to do in the very beginning process which is set up the Twitter Achiever parameter.

Next, we enter the result formulating result process. At this point, we select sampling data and read several tweets as well as gather some correlated keywords. Then, we are grouping of those correlated keywords and count the appearance of those keywords on the whole dataset.

**Figure 8. Correlated Keywords**



We found 5 groups of topics based on that correlated keywords, which are Location, Cause, Traffic Condition, Weather and Other. Next we analyze and test this correlated keywords using previous research and facts.

From location group, reveal facts that it is consistent with Ministry of Transportation research at 2014. This research stated that the highest traffic cities are Bogor, Jakarta, Bandung and Surabaya. Bogor area is a part of the greater Jakarta region so the number of tweets consistent with this research. Still in this group, the "tol" word which means highway/toll road fulfills the tweet conversation by nearly 20% of tweets. So from those facts, we can suggest that government need take an action by having main road and toll road improvement and advancement especially in this three location.

Furthermore, in the cause group, we found "perbaikan" (means repair process), "tawuran" (means peoples riot), "demo" (means protest/demonstration), "angkot" (means small bus transportation, "terguling" (means overthrowing vehicle/traffic accident) and "mogok" (means break down vehicle). Even though the total number of those keywords mentioned is low, we can understand the cause of a traffic jam so we can prepare the right action to eliminate the effect. From that fact, we can suggest that toll road operator and transportation department should be ready and prepare a procedure for "perbaikan", "mogok" and "terguling" situation because it is a part of road service.

Moreover, in terms of small bus transportation, Jakarta and other cities in Indonesia still using a small bus transportation, which have a low capacity so it is not compatible and efficient for travel within the Greater Jakarta Region so people change their movement style using private car and motorcycle. Again still from previous research, shows that road capacity as has reached a peak of their maximum capacity. So from that circumstance, we suggest to the government to change these "angkot" and develop a higher capacity transportation as well as perform a reliable transit transportation.

The last correlated keywords in cause group are "tawuran". This is a kind of social problem happened in the big city in the developing country, when a group of people acting like criminals and attack another group of people in the middle of the road. Especially in Jakarta when all Indonesian ethnic migrate and try to find a better life, they can easily trigger a conflict just because of small things that happen in the road. We suspect that this problem is coming from social problem in the big city so from this research, we are not only found the correlated keywords, but also another main problem in the big city so solving this social problem would effect to traffic problem too. We suggest that the government could have a better solution for this social problem, like creates a new job opportunity, intensify police patrol and approach the religious leader in the areas.

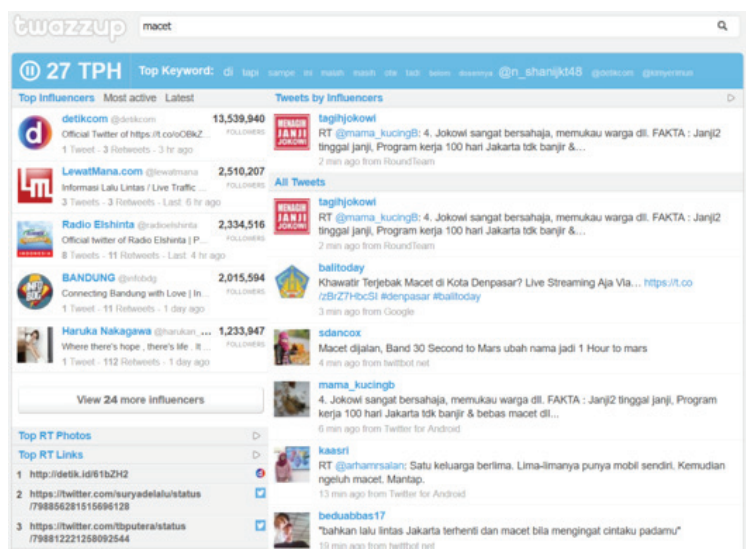
The traffic condition group is a group sentiment which indicates people report traffic condition. "lalu lintas" and "lalin" words has a same meaning which is traffic. Then "macet total" words mean indicating a traffic is jammed or stuck with no or less movement. In this issue, right now Indonesian government agency and other traffic information service already use this Twitter platform to report the traffic condition combined with placing CCTV along the main route.

The next group is weather. Located on the equator, Indonesia has 2 main season, which are dry season and wet season. Especially now, when wet season, "banjir" (means water flood) and "hujan" (means rain) words become a popular keywords in the tweets. This condition happens because a poor condition of drainage which cannot handle a high level of rain water. We suggest in the dry season, government can do normalization and improvement in the drainage especially along the main road. Then distribute the weather warning on social media and other ways so people will be ready and well prepared.

The last group is other groups. In our analysis process we find out these three words which are “presiden” (mean president), “4 NOV” and “JKT48”. Regarding president, we find out from the tweets, that president convoy may affect the traffic, but we think that is okay because he is a president and need to be respected on the road. For “4 NOV” word, this is an abbreviation for an event of recent protest regarding religious issues. Lastly, “JKT48” is a group of girl band idol who are famous in the youth segment. Surprisingly, the youth really admires with them so while they tweet regarding traffic, they used to mention their idol too.

We also mentioned top influencers in the last stage. Using Twazzup app, it would help us locate the top influencers. As we described before that this account can help government to share, address and advertise their approach in the right channel so it would have a greater impact to their follower.

Figure 9. Top Influencers



From figure 9, we find out that the top influencers in the traffic jam problem are detikcom, lewatmana.com, radio elshinta, infobandung and Haruka Nakagawa. The first four of the top influencers are the news media, traffic info provider, news radio and city information provider. However the last top influencer is still coming from a member of JKT48 group. So beside the media and information provider, government also needs to consider a popular artist as their ambassador to solve their problem.

#### 4.2 Public Service & Driving License

Figure 10. Tweets Category for Public Service

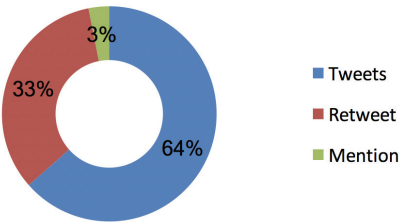
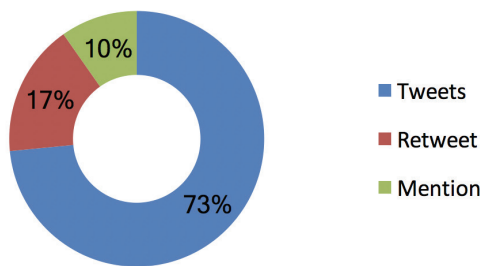


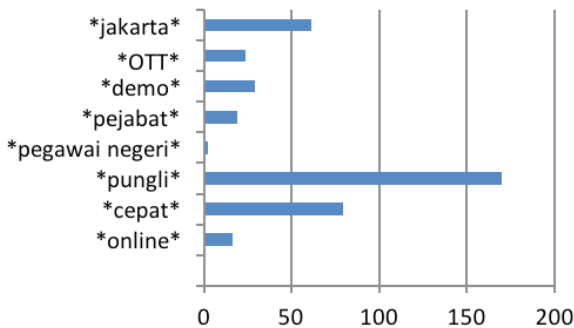
Figure 11. Tweets Category for Driving License



From both above figures, even though, the tweets are dominating the conversation, it does not mean that most of them are commenting and representing the actual condition of both keywords. When we did further investigation, most of tweets just share the other source of news.

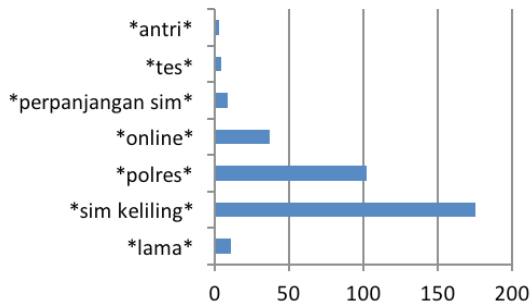
Furthermore, for labeling process also both keywords cannot represent the actual time and situation of the problems. However for the analyzing the dataset using correspondent keywords, we still able to figure out the most significant keywords that related to the main problems.

Figure 12. Correspondent Keywords for Public Service



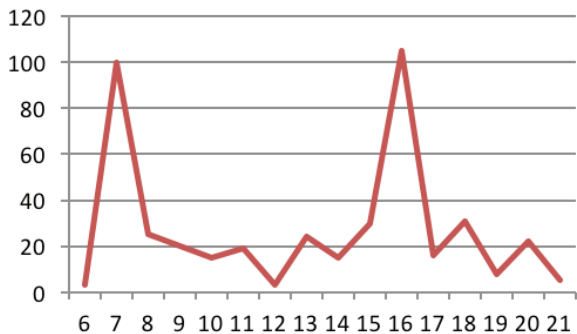
The top three of the corresponding keywords is “pungli” (means gratification), “cepat” (means fast response) and “Jakarta” (is a capital city of Indonesia). For public service problem, we believe that citizen demands the service without any corruption activities on it, fast response and Jakarta as a capital city can be a role model for the other local government.

Figure 13. Correspondent Keywords for Driver Licensing



The top three of the corresponding keywords is “sim keliling” (means mobile service), “polres” (means city/municipality level police and “online” (means online service). For public service problem, we believe that citizen demands more online info on mobile service. Especially in Indonesia, when driver licensing service is prepared by local police, people the excellent service from this local institution. Other anomalies from this data represents below.

**Figure 14.** Number of Tweets per day



The number of the tweets on date 6 and 16 was really high compared to other days. In the beginning, we thought that this is because of the days itself, but when we dug further, this anomaly triggered by tweets from local police regarding the information of mobile service on that day. So we believe that this data support our previous thoughts that mobile service is the most demanded info for the citizen.

Finally, from both problems, our frameworks still work for finding out the corresponding keywords. However, for unpopular topics like this, we cannot have a real comment from the twitter users compare to the first problem. So based on the number of outputs from searching process, still anybody can use this framework to have a further information regarding a main problem.

### V. Conclusion And Future Research

Having this research really open our mind regarding how deep big data from social media can be used for government as an input for the public policy plan and evaluation. In this paper we have shown the simple and instant, but effective process of archiving tweets regarding an issue that want to be solved. We also create a framework to analyze it, find the correlated problem and using previous knowledge and research, we can overcome the problem in holistic ways. Also, we can easily locate the top influencers who can be a leverage to gain the civic engagement and participation in solving problem together.

Furthermore, again, this method cannot necessarily judge whether government program is failing or success, but this social media can be used as a tool to gain the success level. Learning from private entities which already used this big data analytics on social media, government also has an opportunity to exploit this approach for a better service and greater success in the future.

Hence, with this work, future publications and research may escalate this approach and analysis using proper sentiment analysis as an application of predictive analysis for social media and creates a social media dashboard which focus on government necessity. Especially for Indonesian language sentiment, there is still rare to find it.



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# **Adaptive Governance for Building Urban Resilience: Lessons from Water Management Strategies in Two Indonesian Coastal Cities**

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## **Abstract**

Using a combination of vulnerability and resilience frameworks, this paper examines governance challenges and strategies to coastal and water-related resilience in two Indonesian cities. It compares the methods that local governments have used to engage different stakeholders and enact various policy solutions, in order to understand how multi-scalar elements of governance influence vulnerability and adaptive capacity to water-related hazards. After discussing shocks and stresses of note that span the social, economic and environmental realm, a comparative analysis will be carried out for two large coastal cities in Indonesia, Surabaya and Semarang. A combination of resilience frameworks as a basis for analysis reveals the different approach of each city to enhance resilience. While Surabaya centered on enhancing people participation and efforts internally, Semarang more focused on instituting comprehensive plans and external collaboration. These different approaches suggest that resilience can be built from different ways. A combination of adequate financing, technical capacity, excellent leadership, an understanding of the root causes and pressures, and long-term visions is necessary for impactful governance.

**Keywords:** vulnerability, resilience, water-related hazard, coastal city, governance

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# Adaptive Governance for Building Urban Resilience: Lessons from Water Management Strategies in Two Indonesian Coastal Cities

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## I. Introduction: Stresses and Shocks in Indonesia Amid Climate Change

Indonesia is considered to be the world's largest archipelagic state, with over 17,000 islands and a population of about 250 million (Wingqvist and Dahlberg, 2008). 65% of people live near the coast and 75% of cities are also located along the coast (Khomarudin, 2013). These characteristics, coupled with low elevation, make Indonesian coastal cities susceptible to a range of climate-related stresses, and ultimately to climate-related shocks. The island of Java, in particular, faces many challenges that include rapid high urbanization, poverty, and underemployment (Wingqvist and Dahlberg, 2008).

Urbanization in coastal cities has increasingly problematic consequences. Both cities of interest in this paper, Semarang and Surabaya, are subject to very high rates of urbanization and have high population densities - 7000 persons/km<sup>2</sup> in Surabaya and 7100 persons/km<sup>2</sup> in Semarang (Asian Development Bank, 2016). Rapid urbanization has encouraged the development of informal settlements referred to as *kampungs*, which are unplanned low-income communities without legal land tenure (Ernawati et al., 2013). These informal coastal settlements are particularly vulnerable to environmental phenomena such as sea level rise, coastal inundation, land subsidence, coastal erosion, and tidal flooding (Marfaei et al., 2007; Wijaya, 2015). Exposure to these climate-related stresses – defined by the IPCC (2014) as “the presence of people, livelihoods, species or ecosystems, environmental functions, services, and resources, infrastructure...in places and settings that could be adversely affected” – exacerbate other social and economic elements. Half of Indonesia's population lives below the poverty line of US\$2 per day and contribute to very high unemployment and underemployment rates (Wingqvist and Dahlberg, 2008). Low-income households typically participate in the informal sector, which depends on small trade and home-based activities. If there were to be any disruption to these informal settlements, however, their sources of income could be eliminated. Since coastal cities may not have access to the necessary resources for all citizens in times of disaster, the economic security of people working in the informal sector constitute a high local priority.

The cities of Semarang and Surabaya also face water-related stresses. Semarang has a history of overexploitation of groundwater resources. Semarang has depended on its own groundwater to meet an increasing demand for water as a result of high population.. However, tapping local aquifers has led to a steep reduction in groundwater levels, which has in turn resulted in land subsidence and seawater intrusion (Marfaei et al., 2007; City of Semarang, 2016). As a result of climate change, major annual and seasonal changes in precipitation are projected for the future and have already been observed. Scientists project a 10% increase in rainfall between April and June, and a 75% decrease in rainfall in the dry season between July and September, as a result of climate change. These changes will impact water availability in many ways, increasing the possibility of droughts in the dry season and flooding during the rainy season, which could ultimately displace a large number of people living in these coastal cities. Coastal flooding is another water-related stress and shock that occurs frequently in many of the large coastal cities in Indonesia. This form of flooding can be attributed to several processes, such as high tides due to

astronomical tidal activity, wave action caused by winds, high sea levels combined with high river flows, and accelerated sea level rise due to climate change (Marfai et al, 2007). Water quality is also a major stress for Indonesia's population. About two thirds of public water supplies are derived from increasingly polluted surface waters (Fulazzaky, 2014). This unsafe water is one of the major sources of disease in Indonesia, and the lack of adequate sanitation facilities is a primary cause of fecal contamination in urban water supplies.

Governance plays an important role in coordinating responses to stresses and shocks, and in some cases, can act as a stressor. Prior to 1999, Indonesian governance was characterized by centralized national power and limited local and regional autonomy. But after the fall of President Suharto, government functions were devolved to local governments, who were given authority to carry out most development projects. By 2004 the process of decentralization had advanced significantly (Prasetyamartati, 2013), but local governments were not necessarily able to deliver services to their people more effectively. In fact, poorly coordinated actions between local governments led to many adverse consequences in sectors like water management.

With the aforementioned introduction of shocks and stresses, the aim of this paper is to capture lessons learned from water management approaches of Semarang and Surabaya to build city-level resilience to water related issues. This paper focus on how governance strategies has increased or decreased vulnerability to water-related issues in those cities. This evaluation are discussed in greater detail after introducing some basic theoretical grounding of vulnerability and resilience. Those theoretical ground are used to compare the methods that local governments have used to engage different stakeholders and enact various policy solutions of water related issues. This comparative analysis will create understanding about how multi-scalar elements of governance influence vulnerability and adaptive capacity at city level, specifically of high-risk low-income groups. Finally, this paper introduces a preliminary set of measures to quantify how different governance approaches could be weighted and evaluated.

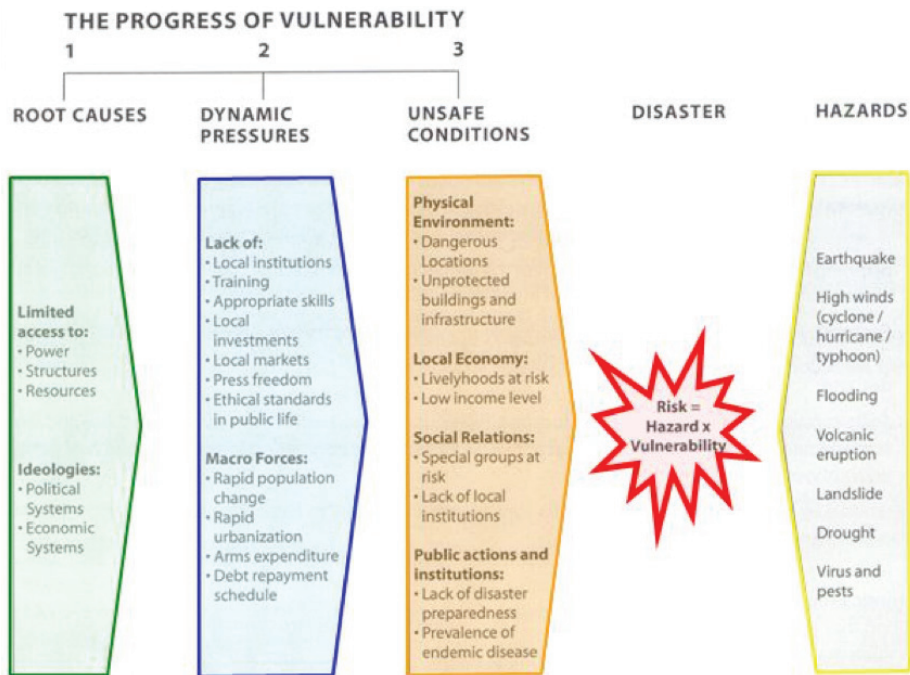
## **II. Theoretical Framework and Approach**

To understand the potential that adaptive governance can have in coastal cities, one must understand the concept of vulnerability. According to Neil Adger (2006), the concept of vulnerability has been a powerful analytical tool for describing susceptibility to harm, powerlessness, and marginality of both physical and social systems. In this case, vulnerability can be defined as "the propensity or predisposition to be adversely affected, and it encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope or adapt" (IPCC, 2014). Another concept is that of adaptive capacity, which is defined as "the ability of a system to adjust to climate change (including climate variability and extremes) to moderate potential damages, to take advantage of opportunities, or to cope with the consequences." (IPCC, 2007). In the two case studies that follow, the actions taken (or not taken) increased or decreased the adaptive capacity of the individuals to respond to water-related shocks and stresses. Additionally, this study applies the concept of resilience in greater detail. In keeping with the IPCC definitions, resilience refers to the capacity of social, economic, and environmental systems to cope with a hazardous trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation (IPCC, 2014). Each of the concepts mentioned above are interlinked. For the purpose of this work, it can be conceptualized that in reducing vulnerability to water-related hazards,

resilience is affected in some way or other. This paper therefore seeks to describe how the actions taken to address water related issues in the cities of Semarang and Surabaya affect the vulnerability of their people, but also their resilience to these shocks and stresses.

The “Pressure and Release” Model proposed by Blaikie et al. (2003), provides a useful starting point in this context. The model recognizes that disasters are not just natural events, but are also the product of social, political and economic environment, as these are extremely influential in structuring people’s lives (Blaikie et al., 2003). Vulnerability in this model runs from root causes (such as the political economic system), to dynamic pressures (such as rapid urbanization), to unsafe conditions (unprotected structures) (Hufschmidt, 2011). These pressures and root causes, combined with natural hazards such as floods, result in disasters (Adger, 2006; Hufschmidt, 2011). In order to reduce the risk of disasters or to gain ‘release’, it is necessary to address these dynamic pressures and root causes. This model however, does not include a discussion of adaptive capacity and resilience. As such, we draw on the characteristics, processes, and outcomes of adaptation actions as proposed by Nelson et al. (2007). Their approach takes into consideration system flexibility and unpredictability, which need to be managed to allow desirable responses in uncertain situations (Nelson et al., 2007). This approach suggests that adaptation and adaptive capacity, as well as self-organization, are necessary for resilience. The approach also looks at multiple states, thresholds, and scales, which suits the purposes of comprehensively examining Semarang (institutionally focused, internationally assisted, community-specific) and Surabaya (people-focused, internally driven, at citywide scales and beyond).

Figure 1. Pressure and Release (PAR) Model



Source: Blaikie et al., 2003

### III. Analysis: Governance Strategies on Managing Water-related Issues

#### 3.1 Building Institutional Resilience in Semarang

While Semarang's city leadership – heavily supported by international organizations – played a critical role in the adoption of “resilient” policies, their policy interventions arguably resulted in more learning among city bureaucrats than through grassroots self-organization. In 2009, Semarang was selected as one of the core participating cities in one of the Rockefeller Foundation's first major resilience programs, ACCCRN (the Asian Cities Climate Change Resilience Network). The ACCCRN program's goal, to address climate impacts in medium-sized cities in South and Southeast Asia, mainly focused on bridging technical and financial capacity gaps. Major reasons for selecting Semarang included its competent leadership and commitment to implementing and owning related projects (Sutarto and Jarvie, 2012). Over several years, the initiative launched community-specific pilot projects to restore coastal mangrove forests, increase rainwater harvesting, and develop an early flood warning system (Rockefeller Foundation, 2016). These commendable efforts certainly involved elements of community participation, but were externally financed and designed to meet predetermined city plan goals. While the Rockefeller Foundation has supported some initiatives that clearly foster self-organization, such as open-data participatory mapping of hazards (Roberts, 2015), these activities were not as common.

ACCCRN's planning outputs and technical capacity building laid the groundwork for sector-based vulnerability assessments and further government-defined, not grassroots-orchestrated actions. First, ACCCRN's 2010 “City Resilience Strategy” for Semarang provided broad recommendations, based on a vulnerability analysis of the city (Setiadi, 2010). While ACCCRN held workshops and roundtable dialogues to train bureaucrats in resilience thinking and drafting vulnerability assessments, GIZ (German foreign aid) and ICLEI (the International Council for Local Environment Initiatives) partnered with Semarang to further advise adaptation goals in the city's long term development plan (ICLEI, n.d.). By 2013, Semarang received an invitation to join another Rockefeller Foundation program for select local governments, 100 Resilient Cities. This program supported city meetings to coordinate resilient actions, eventually including a committee of dozens of top ministers and advisers, all of whom informed a more detailed and prescriptive city resilience strategy released in 2016. Three of the strategy's six thematic resilience priorities directly or indirectly address coastal flooding: sustainable water and energy, readiness for disasters and diseases, and transparent public information and governance (City of Semarang, 2016). The plan's new approach mixes prescriptive components (e.g. financial incentives for household rainwater harvesting technology) with organic components (e.g. community-based sanitation systems). However, many of its proposals – “upstream area reforestation, involving local communities” – do not necessarily empower communities to self-organize (City of Semarang, 2016). These plans are understandably meant to be ambitious long-term visions that guide future decisions. Semarang's piecemeal and often community-specific approach contrasts Surabaya's governing philosophy.

#### 3.2 Kampung-Centered Resilience in Surabaya

As capital of East Java province and the second largest city in Indonesia, Surabaya has been key to Indonesia's economic development. Surabaya makes up almost half of East Java's economic growth (Damayanti, 2006). Its seaport, Tanjung Perak, acts as a hub for local, regional and international trade, known as one of the busiest ports in Southeast Asia (Ernawati, 2013). Yet while the city's significant economic opportunities attract investors and jobseekers from surrounding regions,



leading to strong economic growth, they also lead to adverse effects associated with high urbanization. Most settlers cannot compete in the formal housing market, occupying informal settlements known as *kampungs* with few public services and high population densities. This is reflected by the fact that almost 70% of Surabaya population lives in only 7% of the city's total area (Ernawati, 2013; Silas, 1989).

Physical characteristics of the city also make it vulnerable to climate change impacts. Topographically, Surabaya is located in a low-lying coastal area downstream of the Brantas River Basin, the largest river basin in East Java. Approximately 80% of the city is dominated by lowland area, ranging from 1 to 10 m above mean sea level (Sulma et al, 2012). These physical conditions, coupled with a significant rate of sea level rise between 5.48 and 5.80 mm/year (Sulma et al., 2012), make the city prone to river and coastal flooding. In fact, flooding has remained an annual phenomenon in Surabaya since the colonial era in the 18th century (Husain, 2015). Illegal shelters along riverbanks, waste-clogged drainage systems, and river sedimentation are believed to contribute to this phenomenon (Husain, 2015).

Surabaya's local government has implemented several programs to tackle water management issues, implemented mainly through a *kampung*-centered approach. Interestingly, through this approach, Surabaya's city government acknowledges *kampungs* as part of its development strategy to improve living conditions of low-income families. Initially started in the 1920s to prevent the spread of disease from *kampungs* to nearby residents, the *Kampung Improvement Program* (KIP) has become a national program, now implemented in hundreds of cities in Indonesia (Silas, 1992). As the strategy's original innovator, Surabaya continues to attract large numbers of study tours and cities wishing to benchmark their own progress (Bunnell et al, 2013). Through this program, Surabaya has received awards from ICLEI in 1991 and UN-Habitat in 2008 for its best practice in urban environment improvement (Bunnell et al., 2013; Husain, 2015). In addition, the approach was also replicated in Thailand and several African countries (Husain, 2015).

By providing access to basic infrastructure and economic opportunities, KIP significantly reduced the vulnerability of low-income neighborhoods to water quality issues. Basic infrastructure provided by the program include: water supply networks, access roads and footpaths along side drains, washing and toilet facilities, solid waste facilities, elementary schools, and public health centers (Silas, 1992). Almost 60% of participating *kampungs* are now relatively free of flood events due to this program (Husain, 2015). Meanwhile, to improve the economic capacity of low-income households, KIP promoted home-based industries such as food vending, hairdressing, and traditional mask making. The Surabaya "Green and Clean Program," the latest form of *kampung*-centered approaches, successfully provides economic opportunities for *kampung* communities through waste banks. These banks function as centers for exchanging recyclables for cash, thus reducing solid municipal waste while supporting household living expenses (Wijayanti and Suryani, 2015).

Much of the success of the *kampung*-centered approach can be explained by strong partnerships between various stakeholders and active involvement from both the government and the communities. From the beginning, communities eagerly took part in detecting their priorities and contributing their own resources to the program (money, labor, and building materials). On average, communities funded 50% of the program's budget (Silas, 1992). Surabaya's city government, supported by a local university, planned and implemented the program with regular consultation from community leader and elders, chosen by local people. Women, through local women organizations, also contributed significantly to the program, especially through sustainability campaigns. They monitored the use of building materials, collected money, and cleaned rubbish from footpaths and drains. The other



significant factors contributing to the program's success were strong government leadership and cross-border cooperation. Tri Rismahrini, the city's current mayor, spearheaded the Surabaya Green and Clean campaign through a "lead-by-example" philosophy (Bunnell et al., 2013). She personally collected trash regularly and patrolled city parks at night (Weiss, 2013). Under her leadership, the city partnered with the Japanese city of Kitakyushu to replicate their best practices for waste management (Bunnell et al., 2013). The ability to reproduce Surabaya's approach, largely relying on self-organized and self-sustained community involvement, illustrates the power of governments to achieve results without external support or explicit direction.

### 3.3. Comparative Analysis

The two case studies above demonstrate how focusing at different scales (community-specific vs. citywide and beyond), using different resources (external vs. internal), and producing different outcomes (plans and trained staff vs. local participation) can build resilience in different ways. In the case of Surabaya, we see some of the dynamic pressures and root causes mentioned in the Pressure and Release Model. The KIP was able to deal with some of the underlying causes of resource and service access through infrastructure and mechanisms for economic improvement, demonstrating some validity to the model, given the rate of flood reduction. The Semarang case study, meanwhile, focused on improving the dynamic pressures of institutions and training, though it is too soon to tell whether the city's efforts will pay off.

In the Semarang case, resilience efforts were dependent on external financing and intervention, which raises path dependency questions of potentially unsustainable outside interventions. While locally empowering post-Suharto reforms intended to make cities more directly accountable and efficient in serving the needs of its citizens, most Indonesian cities have increasingly resorted to local and not regional governance solutions. The one exception has been a multi-local governing body in Java's special district of Yogyakarta. The Kartamantul Joint Secretariat, a committee constituting both low-level and high-level bureaucrats from the City of Yogyakarta and its two adjacent districts, regionally coordinates issues such as wastewater and floodwater drainage (Firman, 2010). Some notable tasks include integrating drainage and flood management plans along boundary areas of each district, as well as taking a regional watershed management approach to infrastructure planning (DELGOSEA, n.d.). While flood management and access to water resources has seen greater success under Yogyakarta's model, German foreign aid has continued to fund the initiative, which suffers from a lack of sufficiently trained staff (Firman, 2010). This demonstrates just how often external institutions have propped up attempts for resilient flood management. The KIP, on the other hand, demonstrates that resilience-building efforts can be successful without external intervention and the uniquely large sums of money Semarang received. For both of these efforts to be sustained, though, exceptional leadership and eventual partnerships with external actors were required.

Semarang not only shows the time it takes to institute comprehensive policy frameworks, but also how plans themselves do not guarantee actual actions. Committed leadership in both Semarang and Surabaya has led to continued support of ambitious actions, but a change in leadership at the top could delay funding and guidance for long-term plans at the very least. On the one hand, Semarang's City Resilience Office and Surabaya's KIP and Green and Clean Program certainly leave an influential legacy that won't be completely undone if there were to be a change. Semarang, for one, has an ambitious long-term plan that can be used to guide future leaders' actions to sustain city's resilience. It also collaborated with other cities in the 100 Resilient Cities network, placing outside pressure on the reforms made thus far.

However, the plans mostly addressed bureaucratic technical capacity and not the lack of capacity of local people and their role in preventing floods. Whereas in Surabaya, the process to economically empower, not eliminate, informal kampungs spread quickly throughout other cities and led to locally substantial results. Perhaps decades of KIP experience allowed stakeholders to find the best way to implement a program fitting the local conditions. Surabaya's cooperation with neighboring cities and strong local support thus seemed to improve KIP's longevity and show dynamic pressures and solutions come from inside and outside city boundaries.

#### IV. Conclusion and Recommendation

Comparative discussion reveals some combination of adequate financing, technical capacity, excellent leadership, an understanding of the root causes and pressures, and long-term visions is necessary for impactful governance. Several other conclusions seem evident. Resilience-building efforts need to address processes outside of city boundaries to be effective. Cities should balance efforts to govern locally with opportunities to expand financial and technical resource networks transnationally. Lastly, since not all leaders will be good, building bureaucratic technical capacity is important to help ensure successful planning and project implementation over time. Effectiveness of project implementation is equally important, though detail information on this issue in case studies is limited. However, we argue that good leadership reflected from the level of transparency and corruption are important to ensure effective project implementation. While the above two case studies seem to be at odds with each other in terms of approach, they might suggest that all aspects of good governance cannot be achieved with one initiative. There should be different attempts to address as many institutional barriers as possible, in order for resilience to truly be achieved.

With the majority of Semarang's planned goals still underway, measures of resilience are difficult to immediately quantify side-to-side with Surabaya's. However, this study proposes several metrics moving forward to better assess the resilience and impact of cities with different governance approaches. As a new emerging paradigm of development, a wealth of knowledge exists around a plethora of resilience indicators, but each of them has limitations to consider. In their analysis of 17 sets of resilience indicators, Lisa et al (2015) suggest that there is no consensus exists on how to measure resilience. Each set of indicators is influenced by its conceptual roots such as disaster management, agriculture sustainable livelihoods, and ecological. Even though indicators can only tell part of the whole story, they suggest that at least three broad criteria should be included: learning processes in order to gain better understanding of threats from previous hazard experiences and to enhance the ability to share information; Options to ensure a diversity of choices are available in coping with shocks and stresses; and flexibility emphasizes the importance of self-regulation (Lisa et al., 2015). Those three criteria are basically in conjunction with the framework used in this analysis such as the importance to address root causes and dynamic pressure of vulnerability proposed by PAR model. In term of flexibility, Nelson et. al's approach suggests the same important element of self-regulation. Measures proposed in this paper are derived from the combination of those theoretical frameworks and lessons from case studies in the two cities.

The proposed measures involves comparing existing city conditions and goals with outcomes of a particular sector, such as waste management in the context of flooding. Goals in Semarang's city resilience strategy, such as increasing local waste bank training, can thus be evaluated for impact and effectiveness using other relevant goals, such as sanctioning water polluters and increasing waste-to-energy (City of Semarang, 2016). Common metrics for inputs and/or outcomes (e.g. waste banks) also allow general conclusions to be drawn between the sector-based actions of different

cities. The following list of criteria and indicators should act as a first step towards more comprehensive indices to measure the efficacy of resilient governance, involving both direct measures and indirect proxies. Once the relevant data collection is prioritized and operationalized, this type of framework can begin generalizing how the different governance approaches of cities like Semarang and Surabaya tangibly build resilience in different ways.

Suggested Measures for Quantifying Urban Water-related Resilient Governance:

a. Inputs

- Diversity and redundancy of resources to determine the weight of internal and external resources. Measure: percent of city funds from local, national, international sources.
- Inclusivity to determine the impacts of different kinds of capacity building Measures: access to primary and secondary education per capita, and number of locals versus government bureaucrats trained for resilience projects.
- Potential for self-organization. Measures: Percent of local awareness and access to mandatory participatory planning sessions, and number of local interest groups.

b. Outcomes

- Regional collaboration. Measures: percent of resilience projects jointly administered by actors outside city boundaries, and number of study tour exchanges reported.
- Addressing multiple root causes. Measure: cost savings from action co-benefits.
- Implementation effectiveness. Measure: city average of major corruption and transparency indices, and percent response to online city improvement complaints.
- Reaching goals of specific initiatives (waste management in the case of both Surabaya and Semarang). Measures: number of waste banks created, number of local participants, annual municipal waste reduced, waste bank money turnover.

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# **Enhancing Local Economic Independency by Issuing Local Government Bond: Comparing Japan and Indonesia**

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## **Abstract**

For more than a decade, Indonesia has been practicing decentralization. During this period, local governments still experience difficulties in generating local revenues to fund their development. Local government bonds (LGBs) are actually one of the finest sources for financing local development. However, until now there is no real practice in issuing local bonds in Indonesia though it is allowed in the existing regulation. There are still many considerations which hindered the realisation of LGB issuance ranging from the rule of mechanism to the local governments' readiness themselves. To gain more insights about the issue, learning from another country (in this case: Japan) on how they manage LGBs effectively and securely will be beneficial. Comparison model between the two countries is chosen to see the regulation and managerial aspects in LGB implementation including the main institution in central level, rules of the game, buyers and purposes. By having this comparison, it is expected that some crucial factors can be looked at, which may then provide us some information on why LGBs are yet to bloom in Indonesia. Moreover, the comparison is expected to provide some basis about the possibility to ease policy adoption for Indonesia in managing LGBs.

**Key words:** local government bond (LGBs), institutions, buyers, rule of games and purposes

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# Enhancing Local Economic Independency by Issuing Local Government Bond: Comparing Japan and Indonesia

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## I. Introduction

### 1.1 Background

Indonesia undertook a major change on its local governance system in 1999, shortly after President Soeharto (who held the presidency since 1968) stepped down in 1998. The central and local government relationship was then shifted from authoritarian centralistic into democratic de-centralistic (Lewis, 2010). Under decentralisation era, significant authorities as well as funding have been delegated to local level. However, this change has not yet inspired improvement in service delivery and infrastructure conditions in many districts. In practice, there are still many barriers in delivering local government's functions optimally. The first barrier would be the high dependency on central government funding. Turner (2006) argues that Local governments are being more dependent on central transfer since decentralisation. Unfortunately, the dominant proportion of these local government budgets (APBD) is allocated for expenditure on salaries rather than capital expenditures. Secondly, the economic activities are not evenly distributed across space; most of them are still concentrated on Java (57.99%) and Sumatera (23.81%) (BPS, 2014). This condition brings about difficulties for outer islands (outside Java) to increase their economic performance. Thirdly, there are still disparities in infrastructures development, especially between western and eastern parts of Indonesia (Bappenas, 2015). Poor infrastructure in eastern Indonesia certainly influences the local economy, which in turn also influence its contribution to the national economy. More funding for infrastructure development in the region is greatly needed.

Having these backgrounds, local governments still have a long way to be fully independent economically. When local governments with high transfer dependence encounter unexpected financial problems, it may lead to limitation of raising additional revenues. Thus, their options to cope with the problems will be limited to either cutting services, running deficits, or relying on arrears to employees and contractors (Rodden, 2002). Then, it becomes important to find an alternative for local governments to improve their economic performance particularly on how they finance their infrastructure. In many countries, Mochida (2008) argued that local borrowing is an important source for long term development project.

Local bond policy in Indonesia has not been implemented easily; even when the regulation already allows the local government to issue bonds. There are still many things to be prepared by the central government before local bonds are issued. Some issues need to be well prepared, ranging from local governments' capacity to the rules of mechanism. The following are the factors which hamper local government in issuing LGBs: 1) a local government must obtain the local parliament's approval for issuing each LGB; 2) a local government must gain audit rating 'WTP' or satisfactory and 3) macroeconomic stability. In this case, MOF concerns whether both central and local governments are ready to have guarantee mechanism if risks like default or bankruptcy happen (Qorib, 2014).

In order to find the appropriate model, learning from other countries experience could be beneficial. Turning the attention to Japan, this country has the experience in using local bond as an instrument to tackle their local financial problems. Japanese local debt is also remarkably high. For comparison, in FY 2005, general government

outstanding debt amounted to about JPY 760 Trillion and about JPY 170 trillion was local government debts (New York Times, 2007, in Mochida, 2008). Even though Japan's journey in performing local bond has not always been successful, they have run continuous policy improvement. Japan's local bond system has now gradually shifted from the traditional model (strict administrative control) towards fiscal rule and market discipline (Mochida, 2008). Thus, it is important to learn the experiences as well as the policies on how Japan manages this, and making comparison with Indonesia's case. This study would identify the differences between the two countries as well as the key factors which might lead to policy success (or failure) on local debt. The comparison is also expected to bring some recommendations for the possibility of policy adoption by looking at the compared main aspects in the analysis.

This paper will be divided into five sections. First, the introduction discusses briefly about the condition of decentralisation particularly on fiscal issues between Indonesia and Japan. The second section is the objectives of this paper. The third section contains literature review which mainly discuss about the local government bond and the global system of local finance in Japan. The fourth section compares local bond management between Indonesia and Japan by focusing on several aspects like involved institutions in central level; the rules – mechanism; buyers and purposes. The last section will provide conclusion and recommendation.

## 1.2 Objectives

The following are the objectives of this paper:

- Learning about Japan's local finance system particularly local government bond management
- Conducting comparison of local government bond (LGB) policy between Japan and Indonesia by focusing on several aspects, which are: institutions, rule of game, buyers and purpose
- Proposing recommendations for policy adoption and/or policy adjustment

## II. Literature Review

### 2.1 Local Government Bond (LGB)

By definition, local government bond could 'represent a promise by state or local government units (called the issuers) or other qualified issuers to repay to lenders (investors) an amount of money borrowed, called principal, along with interest according to a fixed schedule' (O'Hara, 2012, p.1). In Japan, local government bond (LGB) has taken significant role in filling the gap between local fiscal capacity and its development needs. Apart from covering expenditures, LGB also constitute the debt of local government and it is separated from central government debt (MOF, 2014). As an instrument to fill the gap, the areas in which Japan LGB could finance are also limited for: 1) expenditure of public enterprises (traffic, gas, water provision, etc.); 2) investment, loans; 3) re-finance of local bonds; 4) disaster restoration and 5) public works (MIC, 2007). These areas are strictly stipulated in Article 5 of the Local Public Finance Law.

Japan has three different kinds of LGB: 1) individual LGB, which means every local government (prefecture or municipality) may issue bond to the public. Terms and conditions for this LGB are mainly based on the negotiation with syndicated underwriters and bidding process; 2) Joint-LGB, which means more than one local government units sell a certain bond together. Since FY2003, local governments in Japan started offering Joint-LGBs in order to minimize costs and achieve stable financing; and 3) LGB for resident, or called as citizen participatory-type public offering LGB. This instrument aims not only to increase the variation of financing methods for individual investors, but also to urge citizens' participation in local government finance (MIC, 2007).

In order to prevent the unwanted impact of LGBs issuance, some safeguarding policies must be provided. According to Ter-Minassian and Craig (1997), there are at least four main instruments related to local borrowing which should be opted by the government as an LGB's operating mechanism. The first is high reliance on capital market. In this case, government has fewer roles in managing LGB and let the market takes major part. The second is enforcing strict administrative controls. Local government has to obtain an approval from central before issuing LGB. The third is setting the fiscal rules. The central government might define absolute level of several things like debt service ratio, debt repayment, tax collection ratio and/or net revenue. The fourth is applying cooperative approach or negotiation. However, in the last few years, Japan was in a transition period where implicit government guarantee and strict administrative control have been being phased out in favour of fiscal rules and market discipline (MIC, 2007). During this period, Mochida (2008) argued that a set of actions in performing Japan LGB reform has been developed in recent years for local government advancement in terms of autonomy and self-responsibility.

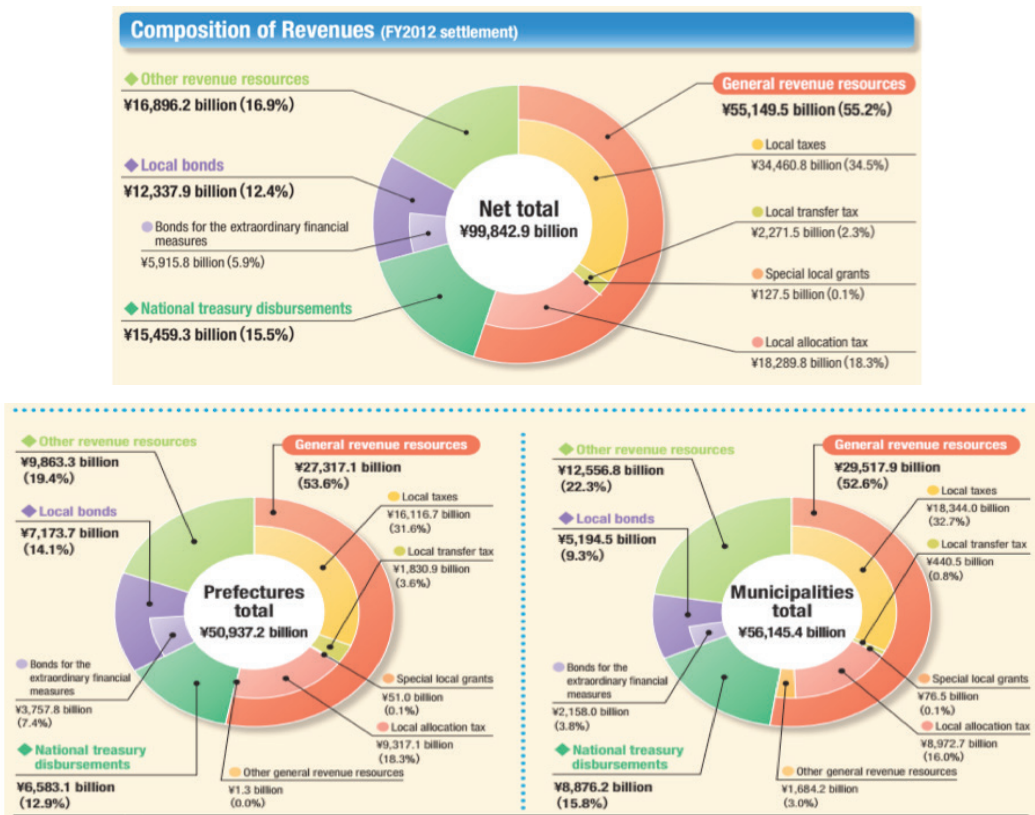
Applying similar standing rules of defining limit and/or ratio in LGBs (like Japan) have also been carried out in other countries. Austria and Spain set limits on the absolute level. Germany also arranges the limits of LGB for investment purpose. Yet other countries like Brazil and Korea have applied the same rules like Japan by setting the limit of local debt to their debt service on the revenues (Ter-Minassian and Craig, 1997; Singh and Plekhanov, 2005, in Mochida, 2008, p.137).

## **2.2 The Global System of Local Finance in Japan**

During post-war period, local financial system in Japan was significantly changed from highly centralised to more decentralised way. This alteration was initiated by Professor Carl Shoup and was aimed to reduce the dominance of the central government. Because of having more delegated functions, Shoup recommended that local governments should also have other important substances such as increasing tax revenues, applying conditional grants, clear distribution of functions and using equalisation grant (Mochida, 2008). However, in practice, local government finance until now is still closely related with the central government. Not only that local government still tend to rely on central transfers, the central government also constructs Local Fiscal Plan annually alongside the national budget (Park, 2011). Moreover, according to Japan's Local Finance Law, local government finance should be financially independent, while in reality, the central government takes a major role in controlling local budgets (Ishii and Wada, 2015).

Due to the larger responsibilities, local governments in Japan have been equipped with several revenue channels. There are two types of revenue resources: ordinary/common and special revenues. The ordinary revenues include local tax revenues (Chihozei), unconditional tax grants from the central government (Chiho-Kofuzei), and local shared taxes (Joyo zei). Besides that, special revenues consist of conditional tax grants from the central government (Kokko-Shisyutsu-kin), profits from public sector enterprises, and local government bonds (Ishii and Wada, 2015). Following is the local government revenues breakdown in fiscal year 2012:

**Chart 1. Local Government Revenue Breakdown**



Source: Ministry of Internal Affairs and Communications. White Paper on Local Public Finance, 2014

According to chart 1, the revenue pattern in both prefecture and municipality is quite similar. Their revenues are dominantly derived from local taxes, followed by other revenue resources, such as local allocation taxes (LAT), national treasury disbursement, local government bonds and others. To define such figures, the Ministry of Internal Affairs and Communications (MIC) is mainly responsible to estimate the projected revenues and projected expenditures together with the Ministry of Finance (MOF). Both ministries negotiate and decide what instruments should be selected to fill the gaps (MIC, 2007). Following are the instruments: 1) simply transfer funds from the central in form of various subsidies; 2) local allocation taxes (LAT) which are collected nationally but then redistributed to local governments; and 3) if both instruments are insufficient, MOF and MIC must renegotiate and find other means to fill the gap (Park, 2011). One of the means which may be opted is local government bond.

### III. Comparing Japan and Indonesia: Local Government Bond (LGB) Management

In developing countries, local government bond (LGB) market is highly considered as a competitive alternative besides bank loan (Liu, 2009). Linking with the principle of local autonomy, the aim of increasing local financial independence through local bond issuance seems important. However, it might create significant problems in terms of concept and operational issues, particularly for third world countries with high level of corruption and inequality (Rodden, 2002). Therefore,

learning good experiences by different countries is worthwhile in identifying the possible problems and may even finding solution and possibilities of policy adoption. In this section, comparison between two countries in LGB management will be analysed into four aspects: involved institutions in the central level, rule of game or mechanism, buyers and purposes.

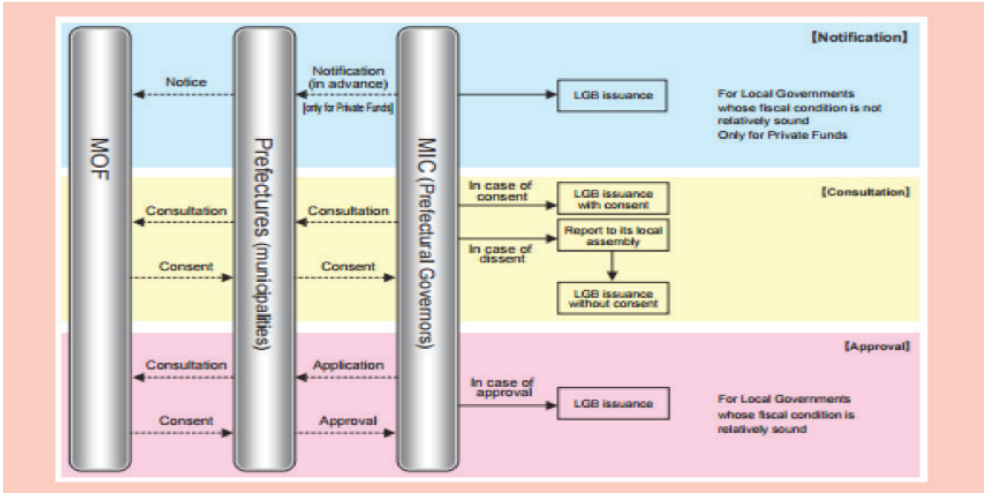
### 3.1 Main Institutions in Central Level

There are many actors in local government bond market in which each has distinct roles. There are central government (certain ministries), local government, public finance investment bankers, underwriters, salespeople, trader, analysts, lawyers, financial analysts, rating agencies, insurers, commercial bankers, investors, brokers, technology developers and vendors, the media, and regulators (O’Hara, 2012). However, in practice, following are the main actors related to the implementation of local government bond both in Japan and Indonesia:

Japan	Indonesia
<b>Main Actors:</b> <ul style="list-style-type: none"> <li>Ministry of Internal Affairs and Communications (MIC) - <b>dominant</b></li> <li>Ministry of Finance (MOF)</li> </ul>	<b>Main actors:</b> <ul style="list-style-type: none"> <li>Ministry of Finance - <b>dominant</b></li> <li>Otorita Jasa Keuangan / Financial Service Authority</li> <li>Ministry of Home Affairs</li> </ul>
<b>RESPONSINILITIES</b>	
<b>Ministry of Internal Affairs and Communications (MIC)</b> <ul style="list-style-type: none"> <li>monitoring the fiscal situation of each local government (prefecture and municipality)</li> <li>disallow any local governments whose debt ratio exceed a defined limit to issue the bond</li> <li>responsible to set certain limits/ratios for LGBs requirement (Mochida, 2008)</li> </ul>	<b>Ministry of Finance (MOF)</b> <ol style="list-style-type: none"> <li>giving either approval or refusal for every LGB issuance</li> <li>Defining several limits and/or ratios, such as (GR No. 30/2011): <ul style="list-style-type: none"> <li>Fiscal capacity for each province and/or municipal</li> <li>Real borrowing necessity of local government</li> <li>Debt service coverage ratio (ratio which indicates the capacity of local government to repay the principal of bond)</li> <li>maximum limit of local debt</li> </ul> </li> </ol>
<b>Ministry of Finance</b> <ul style="list-style-type: none"> <li>responsible for budget formulation in central level</li> <li>oversees the expenditure process (Neary, 2006)</li> <li>maintaining the interest rate of local bond</li> <li>creating solutions to absorb larger government bond</li> <li>In the process of granting the consent, MIC should coordinate with MOF in advance</li> </ul>	<b>Otoritas Jasa Keuangan / Financial Service Authority</b> <p>Responsible to give the effective declaration for allowing certain LGB to be issued publicly in the capital market (Bappenas, 2014).</p>
	<b>Ministry of Home Affairs</b> <p>Although the final decision of LGB's issuance is within the authority of MOF, every local government should consult with MOHA (GR No.30/2011).</p>

The figure below shows the detail mechanism of LGB issuance in Japan.

Figure 1. LGB Issuance Process in Japan



Source: MOF- Japan, 2014

In general, the procedures of LGB issuance in Indonesia must follow several steps (PMK No. 111/2012):

- Defining activities and/or project which will be funded from LGB
- Preparing the feasibility study
- Obtaining the consent of Local Parliament (DPRD)
- Submit all the documents required as mentioned above to the MOF.

Afterwards, LGB should be reviewed by OJK

- Preparing the Local Regulation (called Perda)
- If the LGB is approved by MOF and OJK, public offering can be initially started in capital market

### 3.2 Rule of the Game

LGB system in Japan has altered gradually from strict administrative control towards market discipline combined with fiscal rule (Mochida, 2008). Before FY 2006, local government must have approval from MIC for every LGB issuance. This approval system was then abolished, though in particular conditions some local governments still require clearance from central government (MIC, 2007). On the other hand, even though there has been no real implementation yet in Indonesia, the central government has stipulated the mechanism of LGB issuance in GR No. 30/2011 on Local Borrowing. Different with Japan, Indonesia combines the LGB system between strict administrative control and fiscal rules (GR No. 30/2011).

Japan	Indonesia
<b>Assured by government (MIC, 2007)</b> <ul style="list-style-type: none"><li>• If the gap between needs and revenues is less than certain limit or in minus position, central government will decide necessary action or measurement</li><li>• In micro level, local government finance is also supported by Local Allocation Tax (LAT) system which is used as reserve funds</li></ul>	<b>Administrative Control</b> <p>Each new application of LGB issuance requires an approval from MOF, OJK as well as the Local Parliament (DPRD). (PMK No.111 Year 2012)</p>



	<p><b>Getting DPRD's approval being one of the crucial factors which hindered the realisation of LGB's issuance.</b> It seems difficult to mix between government's purpose and politician's interest. This situation resulted in some LGB proposals cannot be processed until now such as DKI Jakarta and Bandung.</p>
<p><b>Early warning system</b></p> <p>Even though the approval system of LGBs was abolished and the new "inform and consult" system started, the central government still has an 'early warning system'.</p> <p>In detail, the following are the arrangements for each limit (MIC, 2007; MOF, 2014):</p> <ul style="list-style-type: none"> <li>• Debt Payments Ratio in General Accounts For local governments whose debt payments are over 18% of its total general revenues, an approval from MIC must be obtained</li> <li>• Deficit Level in General Accounts If a local government touches the maximum level of deficit, approval from MIC is needed (2.5% for Prefectures and Designated Cities to 10%)</li> <li>• approval system of MIC is also required for particular conditions related to the delay of interest or redemption payment</li> </ul>	<p><b>Fiscal Rule</b></p> <p>Every local government should apply all of these limits below before submitting their LGB (PMK No. 111/2012; GR No 30/2011):</p> <ul style="list-style-type: none"> <li>• the total of debt outstanding (new debt and existing debt) cannot exceed 75 % of total local government revenues in the previous fiscal year</li> <li>• Audit rating must be "WTP" (<i>Wajar Tanpa Pengecualian</i>) or at least "WDP" (<i>Wajar dengan Pengecualian</i>). This audit rating is commonly known as 'high satisfactory level'. <b>Only few number of local government gain this 'WTP' rating.</b> In some degree, it limits the opportunity for other local governments to propose LGBs.</li> <li>• its DSCR (debt service coverage ratio) cannot exceed 2.5 every single year</li> <li>• maximum limit of cumulative deficit in APBN and APBD is 3% of current GDP</li> </ul>
<p><b>Fiscal reconstruction plan</b></p> <ul style="list-style-type: none"> <li>• Formulating new comprehensive index as a tool to monitor financial position of local government</li> <li>• Involving both central and prefecture in reconstruction planning</li> <li>• Executing temporary financing of deficit related to LGB (MIC, 2006d, in Mochida, 2008, 130).</li> </ul>	<p><b>No Central Guarantee</b></p> <p>There are no any guarantee from central government if LGB experience the unwanted problem such as default. The certain scheme should be obeyed by the local government to minimize this risk (Bappenas, 2014; PMK No. 111/2012):</p> <ul style="list-style-type: none"> <li>• Providing Reserve Funds</li> <li>• Assigning a specific institution (guarantor) which is responsible to assure each LGB can be absorbed in the capital market.</li> <li>• Local government should hire some professionals to manage bonds in the capital market.</li> </ul>



	<p><b>This ruling mechanism might lead to the low participation of local government</b> in proposing LGBs to the central government. In this scheme, all of burdens if the worst case happen is on the local government's side.</p>
<p><b>Market Discipline</b></p> <p>Releasing LGBs to the market should be equipped with some preconditions such as (Ter-Minasian and Craig, 1997):</p> <ul style="list-style-type: none"> <li>• adequate information about borrower's capacity to the creditors;</li> <li>• no regulations on financial intermediaries</li> <li>• bailout seems irrational</li> <li>• local government must monitor and respond to market signals before deciding to issue new borrowing or not</li> </ul>	

### 3.3 Buyers or Funding Sources

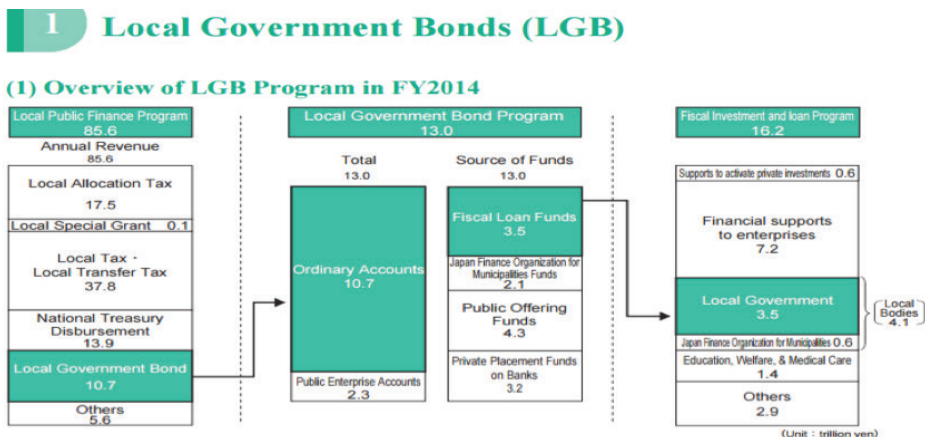
Japan	Indonesia
<ol style="list-style-type: none"> <li>1. LGBs in Japan can be funded into two main sources: <ul style="list-style-type: none"> <li>• <b>Public funds</b> which are derived from the Fiscal Loan Funds and the Japan Finance Organization for Municipalities Funds <sup>2</sup>. (Park, 2011; MOF, 2014).</li> <li>• <b>Private funds</b> cover public offering funds and private placement funds<sup>3</sup>. (MOF, 2014)</li> </ul> </li> <li>2. In general, the buyers of these LGBs are central government through FILP, particular institutions in central level, citizens and private sector (Park, 2011; MOF, 2014).</li> <li>3. Japan has no restriction for foreign residents and/or companies who intend to involve in purchasing LGBs (Park, 2011; MOF, 2014)</li> </ol>	<p>LGBs in Indonesia are publicly offered in the capital market. Thus, <b>every party can purchase</b> LGBs either derived from: public institutions, private organisations or individual residents.</p>

Based on the budget figure in FY 2014 (see Figure 2 below), LGBs in Japan are mainly funded by private funds derived from public offerings and private placement funds, then followed by public funds. This trend of creditor's contribution has been predicted to change from public funds to private funds (Mochida, 2008).

<sup>2</sup> The Fiscal Loan Funds are included in the Fiscal Investment and Loan Program (FILP) provided by the central government as a funding source of LGB. The Japan Finance Organization for Municipalities Funds is funded by investment from all regions to assist local governments in financing long term and low-interest rate of LGBs

<sup>3</sup> Public offering here means that local governments will purchase their bonds through markets. In addition, private placement funds are LGBs which are purchased by financial institutions and some business associations.

Figure 2.



Source: MOF- Japan, 2014

### 3.4 Purposes

Japan	Indonesia
<p>The areas in which local bonds can be issued are clearly stipulated into several parts (MIC, 2007):</p> <ul style="list-style-type: none"> <li>Expenditure of public enterprises like traffic, gas, water provision;</li> <li>Investment, loans;</li> <li>Re-finance of local bonds;</li> <li>Disaster restoration;</li> <li>Public works</li> </ul>	<ul style="list-style-type: none"> <li>The objectives of LGB issuance in Indonesia are not specifically defined in the existing regulation.</li> <li>Based on the respective regulation, LGB can be issued to finance any kinds of public service infrastructures which have the potential to generate revenue for local government itself.</li> </ul>

## IV. Conclusion and Recommendation

### 4.1 Conclusion

The comparison between Indonesia and Japan revealed a number of important points in understanding the current situations of the two countries, their strengths and weaknesses, and the challenges they face. After reviewing the main aspects which have been compared in both countries (actors, rule of game, purposes and buyers), policy adoption might not be simple for Indonesia's case. We can see some of the conditions is quite different, and significantly so, particularly in the rule of the game. The absent of safeguarding mechanism from the central Government, and the lack obligation to qualify for WTP seem to be a factor that hinders LGB proposal for local governments. Considering the lack of reference in this particular issue, so further research to look more into the matter is highly needed.

To summarise, the following are the main aspects in this paper which need to be considered before applying the full implementation of LGB in Indonesia:

- Main actors: applying separated functions between issuer, operator and checker in respective local government

- Rule of game: Safeguard policy seems important to be applied. It considers that not all local governments have back up plan if unwanted things in LGB's management happen (such as default)
- Purpose: Indonesia needs to be more focus on the LGB's purposes itself.
- Buyers: LGBs can be purchased by everyone but it seems crucial to have the arrangement of portfolio investment

## 4.2 Recommendation

If Indonesia wants to adopt several concepts or mechanism in Japan's LGB, there are some key factors that Indonesia needs to consider (Liu, 2009):

1. Macroeconomic stability. Issuing LGBs is not only an intergovernmental fiscal relationship between central and local but it also engages other parties such as creditors. Therefore, assuring overall economic stability is crucial to attract the buyers and maintaining their trust level.
2. Ex-Ante Regulatory Frameworks. There are several suggestions which might be useful to be considered as a pre-implementation of LGBs:
  - Central government needs to provide effective fiscal rules (setting the limits and/or ratios). Due to high reliance of local finance on central transfer, applying strict fiscal rules before issuing bonds seems reasonable in preventing the potential of negative impacts of LGBs.
  - Enforcing the local government's transparency such as involving independent audit, periodic public disclosure of key fiscal data, and others.
  - The purposes of issuing LGBs should be also clearly define to ensure that local government would spend bond wisely and effectively
  - Revising the condition related to the collateral aspect in the existing regulation. In this case, if the projects/assets funded by LGBs are inadequate to be categorised as collateral, central should rethinking about another formula to ensure that local government is able to provide sufficient reserve funds.
3. Ex-Post Insolvency System. The vertical imbalance as well as high reliance on central transfer among local government in Indonesia is still high. Central government should at least think about the safeguard policy for LGBs management

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