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# STUDY ON PERCEPTION OF CITY GOVERNMENTS REGARDING INNOVATION IN FINANCING OF URBAN INFRASTRUCTURE

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#### **Abstract:-**

This paper aims to study the perception from city government regarding the financing innovation of city's infrastructure. Cities need to provide basic infrastructure services—clean water, power and electricity, roads, public transit, sewage systems, telecommunications, schools, hospitals, to name a few — to support growth. Infrastructure is capital-intensive and expensive to build and, once built, lasts a long time. Apart from the fiscal aspect, the readiness of Indonesian cities to expedite urban infrastructure developments varies from one city to another. In this regard, city administrations need to increase the human resource capacity to support infrastructure development. With the high-demand of infrastructure provisions, high numbers of employees are needed to meet the demand as the current government priority sets ambitious targets in developing the infrastructure.

There are dominant factors that hinder infrastructure development in Indonesian cities:

Lack of financial capacity, matching private sector with financially viable projects, lack of capacity in human resources, regulatory and political risks, and land dispute and land acquisition. To overcome this, city governments need to innovate around financing methods in a highly regulated finance regime. Moreover, this study seek to understand the challenges faced by five Indonesian city governments in finding innovative ideas in financing the needed infrastructure.

**Keywords:** - OCB, organizational citizenship behavior, job satisfaction, General policy makers



#### INTRODUCTION

The report from Indonesian Association of Urban & Regional Planners in 2017 about Indonesia Most Livable city Index showed that almost 40% of people living in Indonesian cities today feel that their cities are less liveable than what they aspire them to be.

Indonesia's large urban infrastructure deficit, rising inequality and slow growth in labour productivity, Challenges still lie ahead. Indonesia's restricted 4% growth of GDP for every 1% of urbanization indicates that Indonesian cities are not benefiting from the urbanization trend. Factors that may be affecting such lack of development may include: Insufficient investments in infrastructure, high population density (congestion), and pollution.

The main factors consistently across cities are congestion, pollution, and lack of infrastructure. The result is gridlock in most Indonesian cities. This gridlock is costing cities like Jakarta at least USD 5 billion annually. (Jakarta Globe, Year). In order for the Indonesian economy to grow at its potential 6 to 8 percent annually, Indonesia must start addressing gridlock in its cities. Cities need to build the much-needed infrastructure. The growth of urban areas supposedly has been followed by the growth of infrastructure development to improve the living quality of the population. Further, the infrastructure sector is essential to drive the economy. Investments in infrastructure contribute to higher productivity and growth, facilitate trade and connectivity, and promote economic inclusion.

Prioritizing the urban infrastructure (i.e. transportation efficiency, safe water access and sewerage coverage for Indonesian households) can help Indonesia's urbanization to be more beneficial and achieve positive development

The true problem lies in finding the financing necessary to build this infrastructure. Budget prioritization for infrastructure is slowly being compartmentalized to allow for the utmost effectiveness and efficiency for infrastructure acceleration. Whether it is through supervising provisions in the fiscal, monetary, or real sector, the government is adamant that growing the nation's infrastructure is and should be one of the main economic objectives for the growth of the country's long-term future. Nonetheless, the assurance from central government is not enough. The city government's role is equally important to ensure that the urban infrastructure development targets are achieved.

Historically most financing of Indonesian cities in the past came from the central government who periodically sent funding from collected taxes. However, since regional autonomy was introduced in 2000, more efforts are put in place to increase the autonomous running of cities with the new method including participation of private sector through a PPP (Public-private partnerships), which the project is funded by domestic or international private capital and then in return the investors gain a license on which they can make back revenue.

City government and management need to improve their capacity with various innovative ways of funding infrastructure development. The city management needs to be able to understand ways of funding, when most of their options are closed due to regulations on financing. There are 5 dominant factors in Indonesian cities: lack of financial capacity, matching private sector with financially viable projects, lack of capacity in human resources, regulatory and political risks, land disputes and land acquisition.

The main objective of the research is to identify and understand how city government innovates around financing methods in a highly regulated finance regime. Moreover, this research seeks to understand the challenges faced by city governments in finding a way to produce the necessary infrastructure, identify innovative ideas done by city governments, and finds suitable methods to replicate in other Indonesian cities.

**Financial Capability** Governance What are the cities' main What are the main priorities financing resources for for governance reform to infrastructure development? expedite urban infrastructure Do they have sufficient provision? financial capability? **Human Capacity** Innovation What are the efforts pursued What are the city to increase cities' human administration' innovative resource and institutional ways to fulfill its infrastructure capacities to meet urban needs?

Figure 1: Main Factors in the Acceleration of Urban Infrastructure

# Funding Options for Cities: case studies from abroad

infrastructure needs?

The infrastructure investment has specific characteristics comparing to other investment. The nature of the infrastructure is typically a long-term asset with long economic life, a provision of key public services, have a strong non-elastic demand, natural or quasi monopoly, high entry barrier and regulated assets (Gatti, 2012b in Della Croce and Gatti, 2014). In a country, the opportunity of infrastructure investment exist in the regions where the gap is the greatest. In Indonesia, the capital cities of the province presented the gap where urbanization is a dominant result of growing population numbers. The global trend of financing infrastructure has offered different channels of investment that is available to the private sector. Della Croce and Sharma (2014) propose equity and debt as a financing vehicles. The equity itself can be listed or unlisted, where listed is in the form of shares or exchange traded funds issued by the infrastructure operators (companies). The unlisted channels can be direct and indirect, where funds flows in the project or through private equity. As for debt or loan channel, it can be offered through the exchange market (corporate bonds) or over the counter market such as project infrastructure debt and bonds, or via asset-backed securities (issued by special purpose vehicle (SPV)). See Figure 1.

Financing Equity Market Listed Unlisted OTC traded Asset-backed Listed infra Project/infra Direct Indirect Corp bonds Shares security project funds debt and bonds Infra project (shares Infras Investment of infra fund operators in project (private equity) operators)

Figure 1. Different channels to infrastructure investments available to the private sector

Source: Della Croce and Sharma (2014).

Some big cities already used debt financing like bonds to develop their infrastructure. For example, Ahmedabad and Bangalore in India, Johannesburg and Kigali in Africa.

The city of Sao Paolo, was able to raise over fund for two small redevelopment areas in the first five years of their CEPAC bond offering. These bond proceeds represented almost 60 percent of the annual property tax revenues for the city as a whole. The proceeds provide upfront funding to build roads, transit, and affordable housing in the designated redevelopment areas. Bonds sold in private auctions were also used by cities as non-budgetary funding to pay for infrastructure and housing contractors and vendors that provided goods and services in the redevelopment areas.

CEPAC (Certificados de Potencial Adicional de Construção or Certificates for Additional Construction Potential) bonds that represent an innovative urban funding instrument that combine value capture, development exaction, and air rights sales approaches. It was developed on 2004. CEPAC bonds are issued by municipal governments as additional development rights on specially designated areas within their cities that need redevelopment. This bonds entitle the bond buyers (typically, developers and investors) to build above the density limit specified by the current zoning regulations (referred to as "up-zoning"). The bonds are offered both through public and private auctions and are openly traded in the stock market.

#### How Cities in Indonesia Funding Their Infrastructure case studies in Indonesia

In Indonesia, the local government of province relies on funding from the central government in budget mechanism, including for infrastructure development. The province run the government budget called Anggaran Belanja Pemerintah Daerah (APBD), which used mostly to pay salaries of civil service and utilities. Furthermore, city governments spent mainly for operational costs, where 37% of allocation went to public official expenditures, which is higher than 20% for capital expenditure. It caused insufficient in infrastructure investments. The budget allocation should be public-oriented, meaning that the allocation and the actual disbursement should mainly consist of expenditure for public goods and services.

The current setup of the city government spending for infrastructure development may cause delay in meeting the infrastructure demand.

The city governments, thus, need to find alternatives to finance infrastructure development. In relation to this, the Indonesian Financial Services Authority (OJK) released regulations on regional bonds, green bonds and business process acceleration (e-registration) to facilitate the city governments accelerating their infrastructure development. In addition, the regulation on perpetual securities investment scheme is issued and may be a breakthrough in financing infrastructure projects.

Cities and mayors need to become more fiscally self-reliant, smarter and financially savvier. Instead of relying primarily on national governments and the private sector, cities need to be at the forefront in developing their own infrastructure financing solutions. They need to be proactive in involving multiple stakeholders early on, coming up with creative and innovative ideas themselves, designing projects that are bankable, and marketing them actively and globally.

Along with the promotion of private sector investments, such as public-private partnership (PPP) scheme and issuance of securities, numbers of external financing sources from international financial institutions, bilateral and multilateral loan and grants are used to fill the gap in infrastructure financing. The figure below describes how many city governments spend.

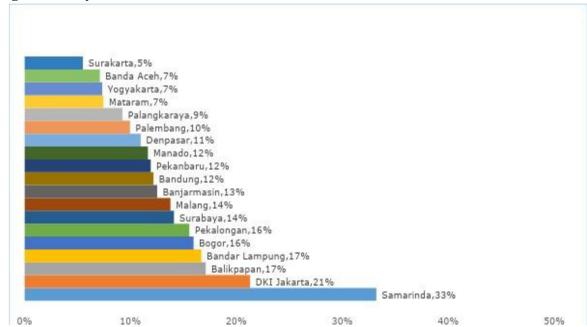


Figure 2: City Governments APBD Allocation for Infrastructure

Source: INDO-DAPOER, World Bank

#### **Innovation in city Government**

Apart from the fiscal aspect, the readiness of Indonesian cities to expedite urban infrastructure developments differs from one city to another. In this regard, city administrations need to increase the human resource capacity to support infrastructure development. With a high-demand of infrastructure provisions, high numbers of work force are needed to meet the demand as the current government priority sets ambitious targets in developing the infrastructure.

Cities can adopt a variety of approaches to fund or finance smart city projects. It is important to distinguish between these two terms, which are often used interchangeably. Financing refers to the time-shifting of costs through which a borrower (for example, a city) can defer costs incurred for capital projects until a future point in time (such as the loan maturity date). Funding refers to the means by which project costs are repaid by the city through mechanisms such as property taxes. Financing and funding are used to pay for and generate revenue to service costs related to traditional infrastructure development.

Moreover, city mayors need to consider the human capacity and innovative ways in accelerating the infrastructure. To support the infrastructure, the city government needs to provide capacity-building to the public officials concerning the subjects related to infrastructure development particularly in project management aspect. The capacity-building program is also required to prepare the workforce and construction companies, thus, the development meets the infrastructure demand and service quality.

Innovation becomes a critical aspect to overcome risk and challenges in developing urban infrastructure. A limitation of central government budget to transferring the funds to the local governments is to prosecute mayors to provide alternative ways in providing infrastructure. Policy instruments, financial instruments, engineering and technology innovation can be developed to not only tackle certain risks and challenges but also to create more benefits to the society and environment.

With the influx of foreign capital and operations coming in, proper supervision is needed to ensure a successful operation. However, with the government and political parties having their own motives, it would be prudent to limit the amount of interference to allow the private sector to function at its best as politics can slow down and delay projects unnecessarily. The governance done should also be executed by those with competence to assess risks, attract more investment, to not deter investors through non-productive actions.

#### INSIGHT FROM FIVE CITY MAYORS IN INDONESIA

The survey is designed to expand the knowledge of financial industry practitioners, city planners, on the role of city governments to address the urban infrastructure investment by optimizing available financing resources and creating innovative actions to overcome barriers in infrastructure finance.

The survey was conducted through interviews with five city mayors and officials in the city government. The survey explores how infrastructure investment is addressed by the Indonesian city governments. The survey was conducted in two terms, the first in November 2017, and the second interview in May 2018. The interview targeted five city mayors, or city officials should the mayor be unavailable at time of interview. The primary data collection and information came directly from them as the city leader and manager.

The study used interviews as the main qualitative method to gather data, including observations, and interviews with through questionnaires. The authors prepared a questionnaire for the interview, known as a structured interview, which involves a set of predetermined questions. As the opening question, the authors asked about how much the city mayor allocated in the annual budget for infrastructure development. This would give a first

description on the priority set by the mayors to accelerate the urban infrastructure investment in his/her city. The second question is on the opportunity for innovation needed by the city government to overcome barriers such as limited financing resources.

Subsequently, the interviews aimed to dig up ways of implementation or activities conducted by the city government on whether a proper framework had been prepared and enforced to support innovation in the acceleration of urban infrastructure finance. The authors also asked about incentives set by the city government in order to attract investors with the necessary capital, which was considerably large. In addition, the city mayors were asked to share their ideas on any methods that aimed to increase investments for urban infrastructure. Finally, the interview aimed to find ways of implementation or activities conducted by the city government on whether a proper framework has been prepared and enforced to support innovation in the acceleration of urban infrastructure finance.

# **Innovation amongst Leaders of Indonesian Cities**

The limited fiscal capacity of local and federal budgets are dominant factors of the inability for local government to build necessary infrastructure. In all 5 cities, governments felt that their existing budgets were not adequate to finance the needed infrastructure. Hence, mayors believed that innovation was key to be able to come up with a solution to narrow the financing gap.

There were various examples of innovative ways for the city to either make the most of their existing budget, or to develop new alternative schemes. The cities of Bogor, Jakarta and Surabaya put the importance on developing the capacity of its staff as one of the priorities. Their key capacity building program was designed and implemented by involving the Agency for Staffing and Human Resource Development at the Ministry of Bureaucratic Reform. Through the exercise, the city identified several key areas to focus on, including improvement in relevant licenses and regulations; ensuring political stability and security; and providing access to land and creating legal certainty.

However, government regulation PP No.18 on local government, has been identified as an obstacle to the ability for local government to innovate, due to the uniformity concept that led to some specialist services being removed. Local governments need to be provided with a certain degree of freedom to form specialized services in accordance with the unique conditions of the city.

Different infrastructure sectors have different requirement and opportunities for financing. Surabaya has been very advanced in developing its waste sector that has gone as far as introducing an urban emission reduction program in their waste management sector. The financing of such an exercise was done through cooperation with Ministry of Public Works and Public Housing. These sector's site plans were adopted into the local spatial plan of the RTRW, to ensure the legal status of such infrastructure. This gives more certainty to any investor willing to work with city government to develop facilities.

All city governments surveyed indicated that certain issues remained the most important aspects that were mostly still obstacles, including land access and legal certainty, licensing and related regulations.

### **New Introduced Financing Schemes**

Surabaya, Jakarta and Bandung, has introduced a Public Private Partnership (PPP) at a certain level or sector. Projects such as the Bandung Urban Transport System, Umbulan Water Supply in Surabaya and the Jakarta Jakpro MRT Line were among the projects. Bandung claimed that they had implemented PPP scheme even before the central government implemented the KPBU scheme.

Other innovative financing schemes popular among city governments were corporate social responsibility (CSR) programs in partnership with private sector and philanthropic organizations. Optimization of CSR funds for the development of priority sectors such as park building, poverty alleviation, structuring street vendors, and UMKM development, were done in Bogor.

Jakarta was active in working together with investors and the world through CSR; partnerships with universities, non-governmental organizations and philanthropy, communities and community groups; development of a smart street lighting system, and the development of intermediate treatment facilities for processing waste.

By the same token, Surabaya developed CSR forums that explored the potential of CSR more optimally. Community participation became an important part of the program. This was to ensure that the plans and implementation of infrastructure could address the actual targets.

The city of Yogyakarta was involved in the national priority program of smart city development in Indonesia, the development and application of digital-based development planning tools (e-planning, e-budgeting, e-commerce, e-monitoring, etc.), and development of start-up business programs.

# **Developing Human Capacity**

Human capacity was key to the ability of city governments to be able to perform innovation around financing of infrastructure. The city governments in Indonesia led various training and developed IT systems to support innovation. Bandung developed a new system called *SIRA* (similar to e-budgeting in Jakarta) that enabled local bureaucracy to do collaborations. In Bogor, all bureaucracy had to adopt the Management Information Systems Planning for all budgeting and reporting (*SIMRAL*) as a minimum standard benchmark.

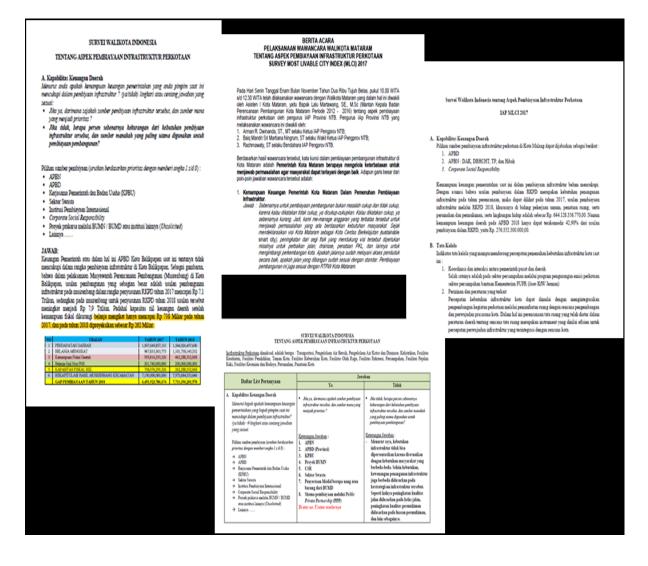
Central government agencies such as *Bappenas* and the Ministry of Internal Affairs play an important role in providing training programs for local government officials. There are also training programs developed by state-owned companies in infrastructure such as the Indonesian Infrastructure Guarantee Fund (*PII*) and Multi Infrastructure Facility (*SMI*). Cities also provided their staff with training, certification, competency and quality tests. This was done in addition to various opportunities to increase formal education levels for planners, and establishment of regional apparatus organisations.

All five cities have stated capacity building program in their Work Plan (*RKPD*) and city Annual Budget (*APBD*) to accommodate financing for capacity development, either through education and degrees or non-degree training for ASN and through funding for community empowerment in housing and residential departments, public works and layout planning

departments, and environmental departments on domestic wastewater management. Jogyakarta also did benchmarking studies with other cities as a learning method for their practical actions/innovation.

Figure 3: Questionnaire Design





#### **Conclusion**

Infrastructure development has changed the way city governments manage their cities, reinforcing the role of government in enabling cities to catalyze long term economic impact for citizens, businesses, and the city as a whole. Economic growth in cities is challenged and businesses at risk as urban infrastructure is lacking, but so too is the broader economic wellbeing and global competitiveness of our cities and our country.

In these challenging times, governments are coping with the normal course of fiscal stress overlaid with a new set of extraordinary demands on their resources. At the same time, it is clear that reverting to a default setting of earlier times - putting infrastructure investment on hold until the economy has recovered - will put economies in an ever more precarious position going forward.

If infrastructure gaps are to be narrowed, the public sector must respond with creative and flexible solutions that evolve with the changing environment. The old models of financing and delivering infrastructure must give way to new, innovative models.

With more highly qualified human resources and processes, cities can produce good quality projects. Cities and central government must always work together to support urban infrastructure projects as a matter of priority. In the past five years we have seen elected mayors around the country come up with the theme of green parks and usage of smart cards as key features of their quick wins post-election. Generic city branding exercises make us wonder if that is the limit of their innovation. Mayors will now have to think beyond beautification of cities. Cities need mayors with visions, and yet commercially savvy to pick up the infrastructure challenge upfront.

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