

# **THEORETICAL MODEL DEVELOPMENT OF THE GOVERNMENT'S ROLES IN ACHIEVING STAKEHOLDERS' SATISFACTION IN PPP TOLL ROAD**

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## **ABSTRACT**

High demand for toll road projects to support economic growth in Indonesia is currently causing significant involvement of the private sector through the Public Private Partnerships (PPP) program. The success of PPP projects should be measured by stakeholders' satisfaction as the ultimate success of PPP project has a close relationship with stakeholders. Social satisfaction is one of the three dimensions to sustainable development, beside economic and environmental, which is important consider objectively for ensuring long term viability of infrastructure projects such as PPP toll roads. Numerous research suggest that government plays an important role in achieving stakeholders' social satisfaction in infrastructure projects. However, what kind of important roles and through what kind of mechanism these roles can be played in PPP project have not been widely investigated through empirical research. This paper aims to develop a theoretical framework that will be used as the basis for modeling the government's roles in ensuring PPP toll road projects' success in Indonesia based on a stakeholders' social satisfaction perspective. Based on a thorough literature review, a theoretical model has been developed for testing using Structural Equation Modelling approach.

*Keywords:* developing country, government's roles, PPP toll road projects, stakeholders' social satisfaction, theoretical model.

## **INTRODUCTION**

Toll roads are now becoming an important PPP project in Indonesia as over 3450 km are expected to be completed in the next two decades, with the BOT (Build-Operate-Transfer) scheme (Wibowo, 2005). In the Indonesian context, a toll road as part of infrastructure project is usually developed through a PPP scheme (Indonesian PPP Guide, 2010). PPP is

defined as “a long-term contract between the public and private sectors where government pays the private sector to deliver infrastructure and related services on behalf, or in support, of government’s broader service responsibilities. PPPs typically make the private sector parties responsible for its delivery and performance on a whole-of-life basis” (National PPP Guideline, 2008).

A PPP project is considered as being successful only if the key interests of all stakeholders are satisfied (Ng et al., 2010). Several criteria of stakeholder satisfaction in PPP projects have been presented (Yuan et al., 2009; Ng et al., 2010). Nevertheless, there is lack attention given to the social aspect of satisfaction for the stakeholders in PPP projects. Social performance in infrastructure projects such as internal human resources and service provision for community development are also very important to be considered in order to achieve a sustainable project development (Doloi, 2012).

Government has important roles to promote the achievement of stakeholder’s social satisfaction through urban design project development (CABE and DETR, 2001) and participation mechanisms in infrastructure project development (Li et al., 2013). However, what kind of roles which are important in the achievement of stakeholders’ social satisfaction in the context of PPP project has rarely or never been investigated. Therefore, this research is aimed at investigating the roles of the government in PPP toll road project in relation to the achievement of stakeholder’s social satisfaction by developing and testing a conceptual model based on an intensive literature review.

## **LITERATURE REVIEW**

The concept of social satisfaction for the PPP stakeholder can be viewed from the perspective of project success as social satisfaction which can be considered as the criteria of project success. Therefore, to develop comprehensive understanding about the underlying concepts used in this research, related theory pertaining to PPP project success, social satisfaction in construction projects and government roles in PPP project will be intensively reviewed.

### **PPP project success criteria**

The success of PPP projects can be reviewed based on project success perspective. According to Müller and Turner (2007) success criteria are the measures by which we judge the successful outcome of a project and these are dependent variables which measure project success. The criteria of PPP project success has a close relationship with stakeholders (Yuan et al., 2009). Ng et al. (2010) asserted that a PPP project is regarded as being successful only if the key interest of all stakeholders are satisfied. Project stakeholders are those individuals and organizations who are actively involved in a project or whose interests may be affected

as a result of project execution or completion (Project Management Institute, 2009)

Several success criteria for PPP project according to stakeholder's perspective have been presented (Yuan et al., 2009; Ng et al., 2010). However, there is still a lack of attention given to the social aspect perspective success criteria. According to Doloi (2012), stakeholder social satisfaction in infrastructure project is also very important to be considered which part of the other satisfaction pillars (economic and environment) in order to achieve a sustainable project development.

### **Stakeholders' social satisfaction in construction projects**

Social terms are often found in the concept of social sustainability. Social sustainability concerns how individuals, communities and societies live with each other and set out to achieve the objectives of development models which they have chosen for themselves, also taking into account the physical boundaries of their places and planet earth as a whole (Colantonio et al., 2009).

Boström M. (2012) stated that the notions of social sustainability often refer to such aspects as social welfare, quality of life, social justice, social cohesion, cultural diversity, democratic rights, gender issues, workers' rights, broad participation, development of social capital and individual capabilities, and so forth. Some of stakeholders social satisfaction criteria in construction projects have been identified from previous research as can be seen in Table 1. According to the table, the social satisfaction criteria in general can be categorized into several aspects, namely quality of life, equity, interconnectedness, cultural diversity and public participation in democracy.

Government is believed has important role to promote the achievement of stakeholder's social satisfaction through urban design project (CABE and DETR, 2001) and participation mechanism in infrastructure project development (Li et al, 2013). Government can play the roles through the regulatory planning (CABE and DETR, 2001). In infrastructure project, the government has important roles as whether the participation is effective or not will be largely depend to them as the project owner (Li et al., 2013).

### **Government's roles in PPP project**

Government is defined as the group of people with the authority to govern a country or state; or a particular ministry in office (Oxford Dictionaries, 2013). Government is doing something for the community in to take an act but it cannot be done only by a person or a small group of people (Mintrom, 2012). According to Heywood (1999), government institutions related to create, implement and interpret the rules (laws)

Table 1. Social satisfaction for stakeholders in infrastructure projects

<b>Some of the typical social satisfaction for stakeholders</b>		<b>Source</b>
<b>A. Quality of life</b>		
1.	Provide safe and convenient public facilities involving its amenities (including for elderly, children and disabled)	Doloi (2012)
2.	Provide security and regulation compliance (lack of crime)	CABE and DETR (2001), Doloi (2012)
3.	Provide health and safety access	Colantonio et al. (2009), Doloi (2012)
4.	Provide job opportunity	Colantonio et al. (2009)
5.	Provide economic benefit (welfare) to government and local citizen (encouraging other development)	CABE and DETR (2001), Doloi (2012)
6.	Improve health and protecting environmental condition (less pollution)	CABE and DETR (2001)
7.	Provide facility for education and training (skills development)	Colantonio et al. (2009), Doloi (2012).
8.	Provide psychological need/wellbeing	CABE and DETR (2001)
9.	Adaptability to changing needs	Li et al. (2013)
10.	Acceptable tariff for any social groups	CABE and DETR (2001), Li et al. (2013)
11.	Availability of open space	Doloi (2012)
<b>B. Equity</b>		
1.	Provide equally opportunity access (based on human right and gender).	CABE and DETR (2001)
<b>C. Interconnectedness</b>		
1.	Provide access to work and activities location	CABE and DETR (2001)
2.	Maintain social cohesion and networking	CABE and DETR (2001)
<b>D. Cultural Diversity</b>		
1.	Maintain cultural diversity	CABE and DETR (2001)
2.	Provide pride and sense of belonging of the place (unique local characters and identity)	CABE and DETR (2001)
3.	Preserve cultural and heritage	Li et al. (2013)
<b>E. Public participation</b>		
1.	Community involvement in decision making	Colantonio et al. (2009)
2.	Increase public support (less opposition)	Li et al. (2013)

research, government's roles can be defined as the function that is played by the government in particular situation which cannot be done by person or small group of people. Government's roles can be categorized as at least nine sectors, namely market making, taxes, subsidies, regulation,

service supply, funding and contracting, partnering and facilitating, information and social marketing frameworks, and strategies (Mintrom, 2012).

Within PPP projects, Kumaraswamy and Zhang (2001) and Kwak et al. (2009) asserted that the government plays an important role in the success of PPP projects as neither success nor failure of any other schemes such as Build-Operate-Transfer (Kumaraswamy and Zhang) project, depends on the law, political and economic condition. The government plays an important role in reducing political risks and creating a favourable social, legal, economic, and financial environment for PPP infrastructure development (Zhang, 2005). According to many published research, the government's roles in PPP projects can mainly be categorized into several major roles as can be seen in Table 2.

Table 2. Major roles of the government in PPP projects

<b>No.</b>	<b>Major roles of government in PPP projects</b>	<b>Source</b>
1.	Project selection and planning	Birgonul and Ozdogan (1998), Zhang (2005)
2.	Provide conducive economic and political condition	Kumaraswamy and Zhang (2001), Kwak et al. (2009)
3.	Solving social and environmental issue	Kumaraswamy and Zhang (2001)
4.	Establish legal and regulatory framework	Kumaraswamy and Zhang (2001), Zhang (2005)
5.	Conduct competitive procurement	Birgonul and Ozdogan (1998), Kumaraswamy and Zhang (2001), Kwak et al. (2009)
6.	Perform contractual arrangements	Birgonul and Ozdogan (1998), Kumaraswamy and Zhang (2001)
7.	Provide supporting bureaucracy	Zhang (2005)
8.	Perform project monitoring and controlling	Kumaraswamy and Zhang (2001), Kwak et al. (2009)

## **THEORETICAL FRAMEWORK**

### **Relationships between government's roles and stakeholders' social satisfaction**

The achievement of stakeholders' social satisfaction can be seen from the perspective of urban development project which is similar in some ways to PPP projects which also seek urban development outcomes. According to CUBE and DETR (2001) the achievement of economic, social and environmental benefits can be delivered from good urban design. CUBE and DETR (2001) added that urban design is related to all physical parts of the built environment to which the public have access. Further, these parts fit together to create networks of space and activity, the functioning

of those space networks, and their role as a social venue. Dalsgaard (2012) revealed that participatory design can accommodate the values that are considered important for the stakeholders in the development of large-scale public projects such as a city library. Moreover, Dalsgaard added that participatory methods and techniques now have been widely applied, ranging from software development to urban planning.

The achievement of stakeholder social satisfaction can also be viewed from the participation perspectives the interest of various stakeholders can be captured and built to improve the project's long term viability and benefit to the community (Doloi, 2012). According to Li et al. (2012), ideally public participation includes stakeholder's participation in all of a project's lifecycle consisting of planning, design, construction, operation and demolition.

In the context of urban design and infrastructure projects, the government as project initiator has a very important role in terms of promoting good urban design (CABE and DETR, 2001) and stakeholder's participation and whether the participation is effective or not depends largely on the client or owner (Li et al., 2013), which is government. In the context of PPP projects, a proper government's role is characterized by the performance of eight major roles that have been identified from the literature which consist of: project selection and planning, provide conducive economic and political condition, solving social and environmental issues, establish legal and regulatory framework, conduct competitive procurement, perform contractual arrangements, provide supporting bureaucracy, and perform project monitoring and control.

Based on the review, the relationship between all underlying constructs can be expressed through a theoretical model as can be seen in Figure 1 that has been developed for this research. Following the theoretical model, several hypotheses can be constructed as follows:

- H<sub>1</sub>:** Project selection and planning, conducive economic and political condition, solving social and environmental issue, establish legal and regulatory framework, conduct competitive procurement, perform contractual arrangements, provide supporting bureaucracy, and perform project monitoring and controlling have positive influence to the proper government's roles. (This hypothesis consists of several hypotheses from H<sub>1a</sub> to H<sub>1h</sub>).
- H<sub>2</sub>:** Government's role in PPPs has a positive influence on participatory project design.
- H<sub>3</sub>:** Government's role in PPPs has positive influence on stakeholders' participation
- H<sub>4</sub>:** Stakeholders' participation has a positive influence on participatory project design
- H<sub>5</sub>:** Participatory Project design has a positive influence on stakeholders' social satisfaction

**H<sub>6</sub>:** Stakeholders' participation has a positive influence on stakeholders' social satisfaction.

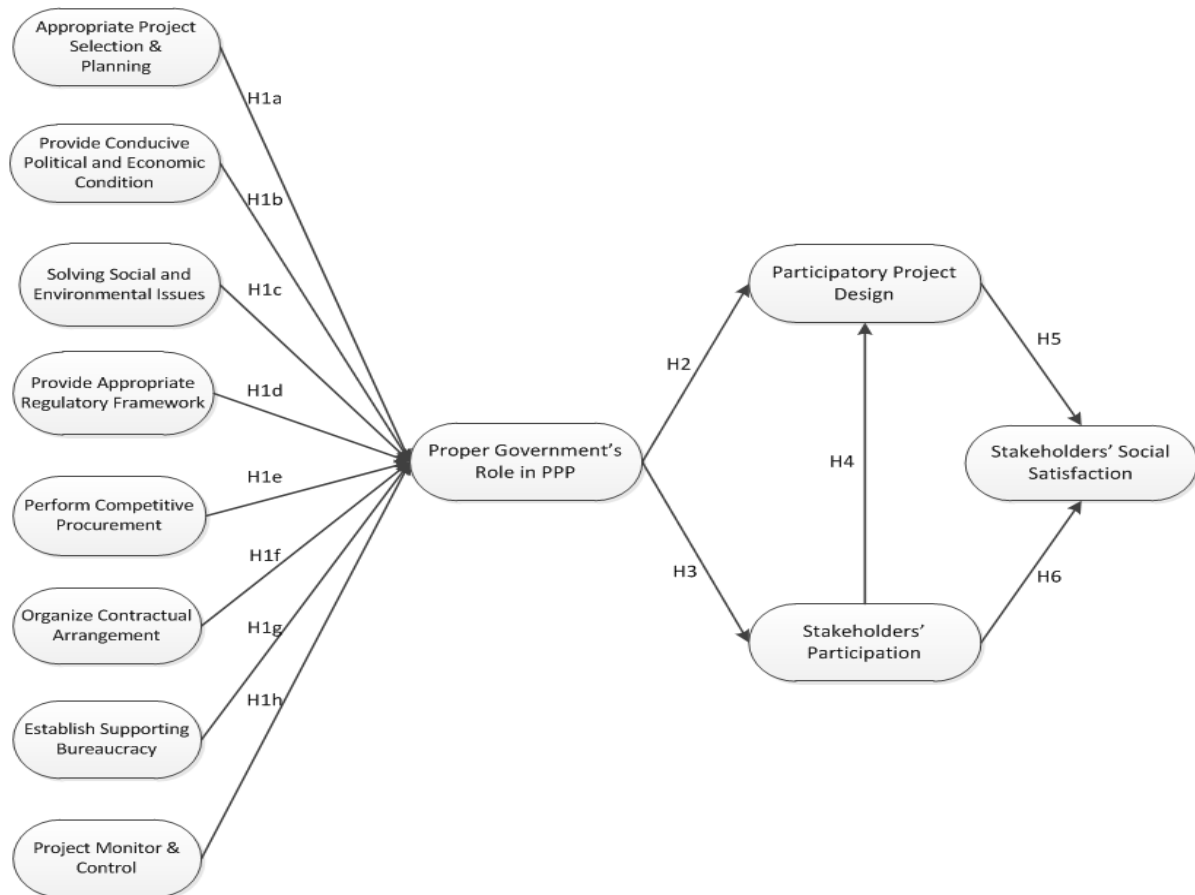


Figure 1. Theoretical Model of The Government's Role in Achieving Stakeholders' Social Satisfaction

Having developed a theoretical model for investigating the government's role in achieving social satisfaction in this research, further work will be conducted to test the model using empirical data based on structural equation modelling (SEM).

## DATA COLLECTION AND ANALYSIS

### Pilot Survey

Based on the literature review, a structured questionnaire survey to measure the attitudes, opinions and perceptions of the respondents has been developed. The five point measurement scale used is namely, 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree) and 5 (strongly agree). In order to ensure that the questions prepared can be understood by respondents and that there is no problem with the questions asked, a pilot survey has initially been performed before the main survey. The pilot survey using six experts in PPP toll road in Indonesia was aimed at understanding the current state and verifies the suitability factor (Ng et

al., 2010). Based on the experts comments, the questionnaires are currently being refined before proceeding to the main study.

## **Main Survey**

The main survey using the refined questionnaire will be distributed to the stakeholders which, have been involved in Indonesian PPP toll road projects. In general, they can be classified into three sectors, public sector, private sector, and general public or community. Public sector includes government's staff in the Toll Road Regulatory Agency (BPJT) within the Public Works Ministry and several departments of public works in provincial and district governments. The private sector consists of toll road operators in Indonesia, project consultants, contractors, and bankers (as lenders). Finally, general public consists of users, affected people/communities, pressure groups (non-governmental organization, media), and interested parties. Respondents will be selected based on their experience in PPP toll road projects development and operation in Indonesia. Meanwhile the general public respondents will be selected as they are aware of or affected by toll road projects.

Regarding to the number of samples for SEM analysis, there is no consensus on the amount considered reasonable Ng et al. (2010). However, Hair et al. (2010) provides guidance that 100 samples are needed where the model contains five or fewer constructs, each with more than three observed variables (indicators), and with high item of communalities, while 150 samples are required for models with seven or fewer constructs with modest communalities.. They added that the minimum samples depends on several factors, including model complexity and communalities each factor. In this research, it is expected 100-150 sample sizes will be received as the number of constructs used are four.

## **Data Analysis**

Data analysis will be performed using reliability and validity test. Reliability is used to measure research design consistency and the research measurement tools which is usually conducted using Cronbach's Alpha as a parameter (Vogt, 2007). Once the model meets the reliability test, a further step will be employed to test model validity through two steps of analysis which is measurement and structural model validities (Hair et al., 2010). Validity refers to the truth or accuracy of the research (Vogt, 2007). Validity is measured by several criteria of Goodnes of Fit (GOF) which indicates how well the model can generate a specified covariance matrix among the indicator, the similarity of reality (observed) and theory (estimated covariance matrix) (Hair et al., 2010). GOF consisting of absolute fit indices, incremental fit indices and parcimony fit indices (Hair et al, 2010). Absolute fit indices encompasses Chi-Square ( $\chi^2$ ), Godness of Fit Index (GFI), Root Mean Square Error of Approximation (RMSEA), Root Mean Square Residual (RMR). While



incremental fit indices embraces Normed Fit Index (NFI), Tucker-Lewis Index (TLI), Comparative Fit Index (CFI)). Finally, parcimony fit indices comprises Adjusted Goodness of Fit (AGFI) and Parsimony Normed Fit Indices (PNFI). While the Analysis of Moment Structure (AMOS) software will be initially employed for deriving a covariance based structural model, an additional partial least-square based methods known as PLS-Graph-3.0 before establishing the final structural model.

## **EXPECTED OUTCOMES**

This research investigates stakeholders' satisfaction of PPP toll road project from a social aspects satisfaction perspective. This research is also trying to develop links between stakeholder social satisfaction with the roles of government as a very important actor in PPP projects, including toll road projects. The initial pilot study indicates that the research is highly significant in investigating the importance of government's roles to achieving in success in PPP projects focusing on the social satisfaction. The results will allow government to perform better roles in the decision-making process to achieve stakeholder satisfaction in the implementation of PPP toll road projects in Indonesia.

## **CONCLUSION**

This research is aimed at investigating the government roles in achieving stakeholder's social satisfaction in PPP toll road projects. An intensive literature review has been conducted to investigate the concept of PPP project success criteria, social satisfaction in construction projects and the government's roles in PPP projects. The research gap has been identified for the opportunity to conduct research pertaining to the relationships between government's roles and stakeholders' social satisfaction. Finally, a theoretical model has been established as the basis for the structural equation model using empirical data.

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