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# Stakeholder Identification and Collaboration Indicators in The Construction of Pedestrian Facilities in Jakarta

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**Abstract**

*One of the programs the Jakarta Capital City Government runs is to lower the traffic in the city by offering spacious and comfortable pedestrian areas. The entire street idea, which divides road space to accommodate different user kinds and abilities, including those with disabilities, is used in its implementation. However, Stakeholder participation has certain drawbacks, including poor institutional coordination and subpar program execution integration with pertinent regional apparatus. This issue is believed to arise when multiple stakeholders' interests are involved, leading to disparities in sectoral perspectives and egos. These issues also make it more challenging to carry out the program's provision of pedestrian amenities. This research identifies internal and external stakeholders who influence the construction of pedestrian facilities in Jakarta and identifies indicators that affect their collaboration.*

## Introduction

Jakarta's traffic situation has worsened alarmingly (Harmadi et al., 2016). In 2021, the congestion level in Jakarta reached 34%, meaning that the average travel time was 34% longer compared to initial conditions without congestion. This index ranked Jakarta 46th out of 404 cities worldwide (Tomtom Traffic Index, 2021). Road users' perceptions indicate that several factors contribute to this traffic congestion: high usage of private automobiles, high usage of two-wheeled motorbikes, and a vehicle volume that exceeds the road capacity (Sahr Nyuma & Lawrence Sao, 2020; Sitanggang & Saribanon, 2018; Weinert et al., 2007).

The Governor of Jakarta, from 2017 to 2022 highlighted the city's urban management, noting that development has often focused on private vehicles (Nelfira, 2022). In recent years, the Jakarta Capital City Government has attempted to reduce congestion by implementing a hierarchy of transportation development priorities to facilitate the use of private vehicles. The priority is pedestrians (Department of Transportation, 2019). To support this priority, the government has adopted the complete street concept, which aims to consider the needs of all users during the planning, design, construction, and operation of streets, as mandated by Minister of Public Works Regulation Number: 03/PRT/M/2014 (Department of Highways, 2021).

However, the implementation of pedestrian infrastructure has faced challenges. The Jakarta Provincial Representative Audit Agency publicly criticized the poor coordination among the city's regional work units in sidewalk arrangements. They argued that in addition to the Department of Highways, agencies like the Department of Water Resources and the



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Department of Micro, Small, and Medium Enterprises should be involved in the process (Commission D of Regional Legislative Council, 2019). The Regulation of the Governor of Jakarta Number 58 of 2021, concerning the Road Map for Bureaucratic Reform for 2020-2024, states that inter-institutional coordination and integration with relevant regional apparatus have not been optimal.

Poor coordination and isolated stakeholder engagement networks can hinder collaborative practices in construction projects. Public authorities must create synergy between the public and private sectors, finance, global organizations, society, and Non-Governmental Organizations (Malik et al., 2022). Research in the Northwest of England has shown that a lack of collaboration is a crucial factor influencing construction. Studies on sustainable construction in China reveal that the government plays an important role, and balancing stakeholder interests during the project decision-making process remains challenging (Li et al., 2018).

Even though pedestrian facility construction projects differ from other construction projects, the general approach to stakeholder management issues is similar. This research focuses on identifying the stakeholders influencing the construction of pedestrian facilities in Jakarta and the indicators that impact their collaboration.

## Methods

This research uses a case study on the construction of pedestrian facilities in Jakarta, and the methods used are literature studies and surveys/ discussions with experts. The data collection process was obtained from literature studies, which were used to get a list of internal and external stakeholders who might be involved in construction and to collect indicators that influence stakeholder collaboration. The results obtained from the literature study were followed up with a survey/ discussion and validation based on the viewpoints of experts who are competent and experienced in the construction and development of infrastructure projects within the Jakarta Capital City Government. Discussions were held with at least 5 experts to obtain validation using the Delphi method.

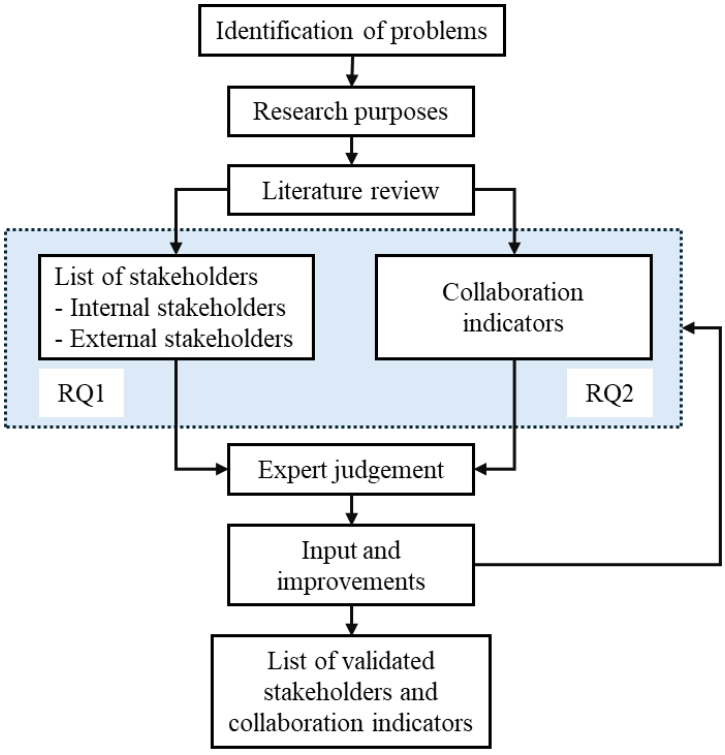


*Figure 1. Research Methodology Flow Chart*



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Based on the reviewed literature, the research used stakeholders on the development of pedestrian facilities in Jakarta as variable X. The stakeholders included internal stakeholders (X1 with 5 indicators) and external stakeholders (X2 with 20 indicators). In comparison, the collaboration as variable Y consisted of 5 sub-variables with 22 indicators. Based on the literature review, the project's stakeholders conveyed the partnership's success. Conversely, this collaboration has several indicators that affect the process of preparation and execution. The following research conceptual framework diagram shows the relationship between the variables.

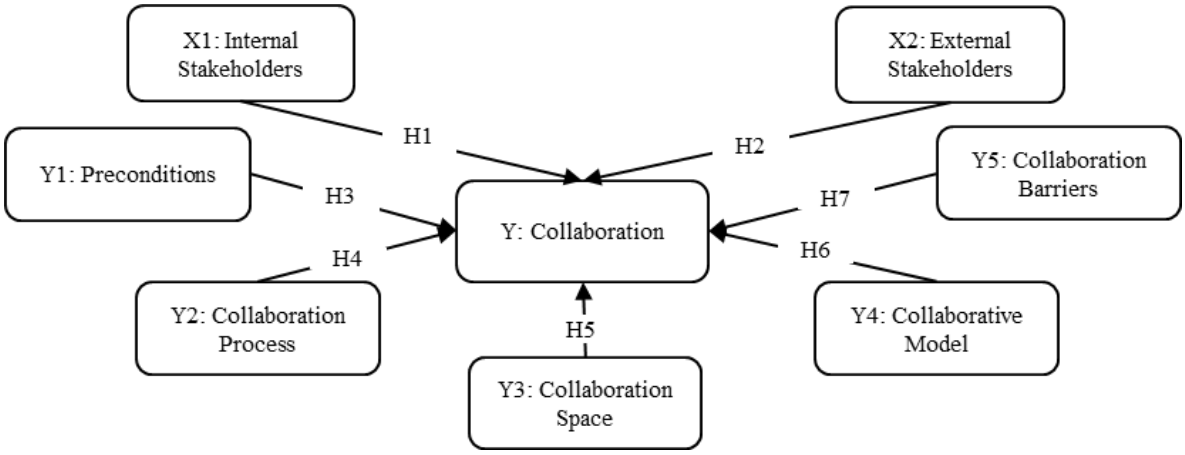


*Figure 2. Research Conceptual Framework*

## Results and Discussion

### Results

After expert judgment and analysis were carried out using the Delphi method, this research identified a list of internal and external stakeholders who influence the development of pedestrian facilities in Jakarta and indicators that influence stakeholder collaboration. From a total of 25 initial indicators for the stakeholder list, 17 indicators were obtained, consisting of 4 internal stakeholders and 13 external stakeholders. The identified stakeholders are summarized in Table 1 below.

Table 1. List of Stakeholders in the Construction of Pedestrian Facilities in Jakarta

| No. | Stakeholders | Role | Reference |
|---|---|---|---|
| $X_1$ | **Internal stakeholders** | | |
| $X_{1.1}$ | Department of Highways | Project owner | Regulation of the Gov No. 58 of 2022 |
| $X_{1.2}$ | Contractor | Build construction according to design and specifications | Olander, 2007; Vogwell, 2003; Manowong dan Ogunlana, 2010; Moura dan Teixeira, 2010; Chan dan Oppong, 2017 |
| $X_{1.3}$ | Supervising consultants | Supervise to ensure construction complies with specifications | |
| $X_{1.4}$ | Supplier | Providing specified goods by requirements | |
| $X_2$ | **External stakeholders** | | |
| $X_{2.1}$ | Head of Village | Conduct outreach to society to obtain input and accommodate society's needs. | Expert judgement |
| $X_{2.2}$ | Department of Parks and City Forests | Issue technical recommendations for felling affected trees/ plants | Regulation of the Gov No. 58 of 2022 |



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| | | | |
|---|---|---|---|
| $X_{2.3}$ | Civil Service Police Unit | Assist in curbing advertisements that do not comply with regulations | Regulation of the Gov No. 58 of 2022 |
| $X_{2.4}$ | Department of Investment and Licensing | Issue permits required for implementing construction activities | Regulation of the Gov No. 58 of 2022 |
| $X_{2.5}$ | Department of Transportation | Issue technical recommendations relating to road lanes, bicycle lanes, bus stop placement and wayfinding, and traffic management | Regulation of the Gov No. 58 of 2022 |
| $X_{2.6}$ | Department of Water Resources | Issue technical recommendations relating to roadside drainage systems and designs | Regulation of the Gov No. 58 of 2022 |
| $X_{2.7}$ | Department of Micro, Small, and Medium Enterprises | Assist in controlling/ relocating street vendors that do not comply with regulations | Regulation of the Gov No. 58 of 2022 |
| $X_{2.8}$ | Practitioner | Provide input on construction planning and implementation | Regulation of the Gov No. 58 of 2022 |
| $X_{2.9}$ | Building owner | Parties affected by construction are involved in providing input | Regulation of the Gov No. 58 of 2022 |
| $X_{2.10}$ | Road users/ pedestrians | Beneficiaries and parties affected by construction are involved in providing input. | Regulation of the Gov No. 58 of 2022 |
| $X_{2.11}$ | Disability groups | Provide input regarding the availability of pedestrian paths for special needs | Regulation of the Gov No. 58 of 2022 |
| $X_{2.12}$ | Business Entity<br>- electric power supply utility<br>- clean water supply utility<br>- telecommunications network provider utilities | Securing/ relocating utility assets affected by construction | Regulation of the Gov No. 58 of 2022 |
| $X_{2.13}$ | General public | Parties affected by construction | Regulation of the Gov No. 58 of 2022; Cleland, 1999; Manowong dan Ogunlana, 2010 |

From 22 proposed indicators, 21 validated indicators were obtained for indicators that influence stakeholder collaboration, which were divided into 5 sub-varies as summarized in Table 1.2 below.

Table 2. Indicators that Influence Collaboration

| No. | Indicators | Description | Reference |
|---|---|---|---|
| $Y_1$ | **Preconditions** | | |
| $Y_{1.1}$ | Have a common goal | Collaboration must have a common goal or problem to be solved, and it is not enough if the parties have their own goals. | Brna, 1998; Giesen, 2002; Camarinha-Matos dan Afsarmanesh, 2008 |



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| | | | |
|---|---|---|---|
| $Y_{1.2}$ | Consensus/ mutual agreement | The existence of a consensus/joint agreement to collaborate has implications for the need to share something. | Brna, 1998; Giesen, 2002; Camarinha-Matos dan Afsarmanesh, 2008 |
| $Y_{1.3}$ | Accept each other's abilities. | Each group must be able to receive mutual benefits from the models and abilities possessed by each member. | Brna, 1998; Giesen, 2002; Camarinha-Matos dan Afsarmanesh, 2008 |
| $Y_{1.4}$ | Maintaining a common vision | Each group accepts each other's agreed vision and goals to achieve common goals. | Brna, 1998; Giesen, 2002; Camarinha-Matos dan Afsarmanesh, 2008 |
| $Y_{1.5}$ | Share understanding of obstacles | Each group must share an understanding of the various problems faced, which has implications for creating discussions voluntarily. | Brna, 1998; Giesen, 2002; Camarinha-Matos dan Afsarmanesh, 2008 |
| $Y_2$ | **Collaboration process** | | |
| $Y_{2.1}$ | Identify the parties involved | Identify the parties involved and bring them together | Giesen, 2002 |
| $Y_{2.2}$ | Determine the scope and outcomes | Determine the scope of collaboration and the expected results | Giesen, 2002 |
| $Y_{2.3}$ | Determine the collaboration structure | Determine leadership patterns/ models, responsibilities, division of roles, ownership systems, communication processes, decision-making patterns, access to resources, scheduling, and milestones or significant events. | Giesen, 2002 |
| $Y_{2.4}$ | Determining policy patterns | Handling disputes/ conflicts, accountability, giving rewards and recognition, and ownership of the assets produced | Giesen, 2002 |
| $Y_{2.5}$ | Risk identification and emergency action | Identify risks in collaboration and plan emergency actions | Giesen, 2002 |
| $Y_{2.6}$ | Build commitment to collaborate | All involved must build a commitment to collaborate | Giesen, 2002 |
| $Y_3$ | **Collaboration space** | | |
| $Y_{3.1}$ | Facilitative environment | Collaboration can occur in the same place (collocated collaboration) or different areas (remote or virtual collaboration) | Winkler, 2002 |
| $Y_{3.2}$ | Adequate time | Collaboration can be done at the same time (synchronous collaboration) or at different times (asynchronous collaboration) | Winkler, 2002 |
| $Y_4$ | **Collaborative model** | | |
| $Y_{4.1}$ | Manage the parties involved | Collaboration between parties is implemented by managing those involved | Nursin' et al., 2018 |
| $Y_{4.2}$ | Understand the differences in cultural dimensions (ethnic and corporate) | Know and understand cultural dimensions, both ethnic culture and company culture | Nursin' et al., 2018 |



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| | | | |
|---|---|---|---|
| $Y_{4.3}$ | Conflict management and resolution | Understand conflict management and resolve conflicts when they occur | Nursin' et al., 2018 |
| $Y_{4.4}$ | Effective communication and according to needs | Maintain effective communications tailored to project needs | Ahmad et. al; 2018; Nursin et al., 2018 |
| $Y_5$ | **Collaboration barriers** | | |
| $Y_{5.1}$ | Ownership and sharing of resources | Related to the resources brought by members or resources obtained by the coalition to carry out tasks | Wolff, 2005 |
| $Y_{5.2}$ | Reward for contribution | Find fairways to determine individual contributions to the creation of collective intellectual property | Wolff, 2005 |
| $Y_{5.3}$ | Commitment to problem solving | Regarding the rights and obligations between members in a collaboration, how does each party respond when obstacles arise | Wolff, 2005 |
| $Y_{5.4}$ | Decreased sense of responsibility | A typical phenomenon in partnership is a weak or diminished sense of responsibility on the part of one or more parties | Wolff, 2005 |

Of all the initial indicators submitted to experts, there were several indicators that were removed or replaced because they were not relevant in the construction phase of pedestrian facilities in Jakarta. Most of this is because these indicators are at the planning stage or do not have a direct impact during the construction process.

The development of pedestrian facilities in Jakarta involves a complex network of stakeholders and collaborative processes (Dirgahayani et al., 2020; Satispi et al., 2023). The identification and categorization of these stakeholders, alongside the validation of collaboration indicators, provide valuable insights into the dynamics of such infrastructural projects (Castelblanco & Guevara, 2024; Xue et al., 2020). This discussion will delve into the implications of the stakeholder analysis and the collaboration indicators on the development of pedestrian facilities in Jakarta.

**Stakeholder Analysis**

The stakeholder analysis revealed a diverse set of internal and external stakeholders, each playing a critical role in the construction of pedestrian facilities in Jakarta (Syahbandi et al., 2022). The internal stakeholders, which include the Department of Highways, contractors, supervising consultants, and suppliers, are directly involved in the execution and oversight of the construction process (Marastuti & Riantini, 2024; Osei-Asibey et al., 2021). Their roles are well-defined, with the Department of Highways acting as the project owner and contractors and consultants ensuring that the construction meets the required specifications and standards.

External stakeholders, on the other hand, comprise a broader array of entities, including governmental departments, local authorities, and community groups (Ji & Darnall, 2022). These stakeholders are instrumental in providing the necessary regulatory approvals, technical recommendations, and community engagement (McLaren & Corry, 2021). For instance, the Department of Parks and City Forests issues technical recommendations for environmental concerns, while the Department of Transportation oversees traffic management and road lane regulations.

The inclusion of community groups such as road users, disability groups, and the general public underscores the importance of public participation in the development process. These



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stakeholders provide valuable input regarding the usability and accessibility of pedestrian facilities, ensuring that the final outcome meets the diverse needs of Jakarta's population.

## Indicators Influencing Stakeholder Collaboration

The validation of 21 indicators across five sub-variables highlights the multifaceted nature of stakeholder collaboration in construction projects. These indicators provide a comprehensive framework for assessing and enhancing collaboration among the various stakeholders.

### *Preconditions for Collaboration*

The preconditions emphasize the necessity of having a common goal, mutual agreement, and a shared vision among stakeholders. This alignment is crucial for fostering cooperation and ensuring that all parties are working towards the same objectives. Accepting each other's abilities and understanding the obstacles further solidify the foundation for effective collaboration.

### *Collaboration Proces*

The process indicators focus on the practical aspects of collaboration, such as identifying involved parties, defining the scope and outcomes, and establishing a collaboration structure. These steps are essential for organizing the collaboration and ensuring that roles and responsibilities are clearly defined. Building commitment and handling risks are also critical for maintaining a smooth and productive collaboration process.

### *Collaboration Space*

Creating a facilitative environment and allocating adequate time for collaboration are important for accommodating different modes of interaction. Whether collaboration occurs in the same physical space or virtually, and whether it is synchronous or asynchronous, these factors significantly impact the effectiveness of stakeholder interaction.

### *Collaborative Model*

Managing involved parties, understanding cultural differences, conflict resolution, and effective communication are pivotal in implementing a successful collaborative model. These indicators address the interpersonal and organizational dynamics that influence how stakeholders interact and work together.

### *Collaboration Barriers*

Identifying and addressing barriers to collaboration, such as ownership and sharing of resources, reward for contributions, commitment to problem-solving, and a sense of responsibility, are crucial for overcoming challenges that may arise during the project. These barriers often pose significant risks to the success of collaborative efforts if not managed appropriately.

## Implications for Practice

The findings from this research have several practical implications for the development of pedestrian facilities in Jakarta. Firstly, the clear identification of stakeholders and their roles facilitates better project management and coordination. By understanding the specific contributions and expectations of each stakeholder, project managers can tailor their engagement strategies accordingly.

Secondly, the validated collaboration indicators provide a robust framework for enhancing stakeholder collaboration. By focusing on the identified preconditions, processes, spaces, models, and barriers, project teams can develop targeted interventions to foster more effective collaboration. This approach can lead to improved project outcomes, as collaborative efforts are more likely to be aligned with the project's goals and objectives.



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Lastly, the emphasis on public participation and community engagement reflects the growing recognition of the importance of inclusivity in urban development projects. By involving a wide range of external stakeholders, including community groups and general public, the project can better address the needs and preferences of its end users, leading to more sustainable and user-friendly pedestrian facilities. In conclusion, the research provides a comprehensive understanding of the stakeholder landscape and collaboration dynamics in the construction of pedestrian facilities in Jakarta. The insights gained from this study can inform future projects, ensuring that they are managed more effectively and inclusively.

## Conclusion

The indicators in this research are a list of stakeholders involved and influential in the construction of pedestrian facilities in Jakarta, which are divided into internal stakeholders and external stakeholders and indicators that influence collaboration. They all need to collaborate for successful construction. There are a number of things that need to be considered in building a collaboration, namely preconditions/ prerequisites or basic needs for all parties involved, the process or a number of steps/ stages used to complete the work, collaboration space in the form of adequate environment and time, collaborative models between parties, and need to overcome barriers to collaboration. This research is the first step to develop stakeholder management in the construction of pedestrian facilities in Jakarta to improve collaboration. For further purposes, stakeholder management development can be used as information to improve development performance and can be further developed for future research.

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