

PERFORMANCE EVALUATION OF NATIONAL ROAD CONSTRUCTION MANAGEMENT IN INDONESIA



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INTRODUCTION

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NATIONAL ROADS IN INDONESIA

INTERNAL PROBLEMS

execution process of the construction of national roads were affected by the condition of:

- human resources,
- equipment,
- materials,
- working methods,
- the market prices, and
- weather conditions



EXTERNAL PROBLEMS

- increased repetitive load axle vehicle,
- flood,
- disruption of road function and space,
- and the access roads from the areas that are difficult to control



The performance evaluation of the national road is intended to:

- (1) conduct an inventory, identify, and provide feedback to the national road construction project problems;
- (2) evaluate the national road construction project roads systematically on each work unit office;
- (3) actualize the proper quality, time, and cost of road construction management

INTRODUCTION


SCOPE OF THE RESEARCH

- examine the results of previous studies relating to the control and supervision of national road projects
- technical and non-technical data collection of national road projects of year 2015
- conduct a comprehensive inventory and identification of the obstacles and problems during the process of national road projects


 **Previous Studies**

 **Data Collection**

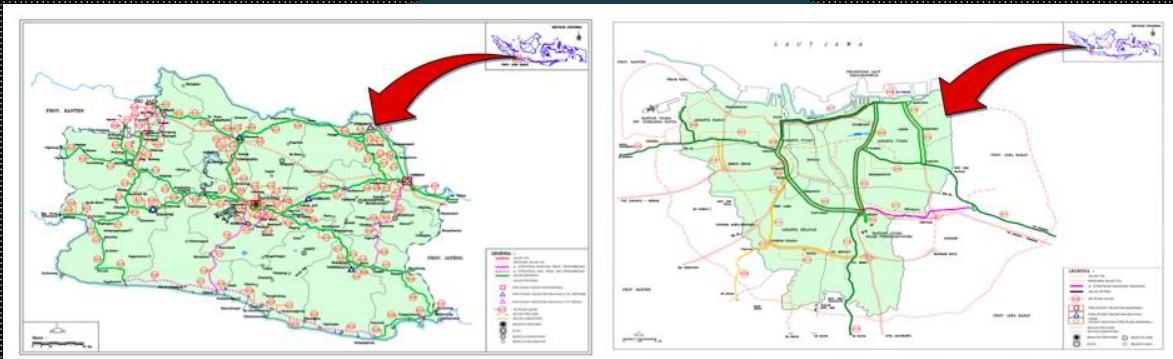
 **Inventory & Identification**

Disaster-prone Locations 

Evaluation & Recommendation 

Disseminate 

- identification of the disaster-prone locations and landslides in several national roads
- Conduct a comprehensive evaluation and recommendation of the technical and non-technical problems that occurs during the process of national road projects
- disseminate the results of the performance evaluation of the national road

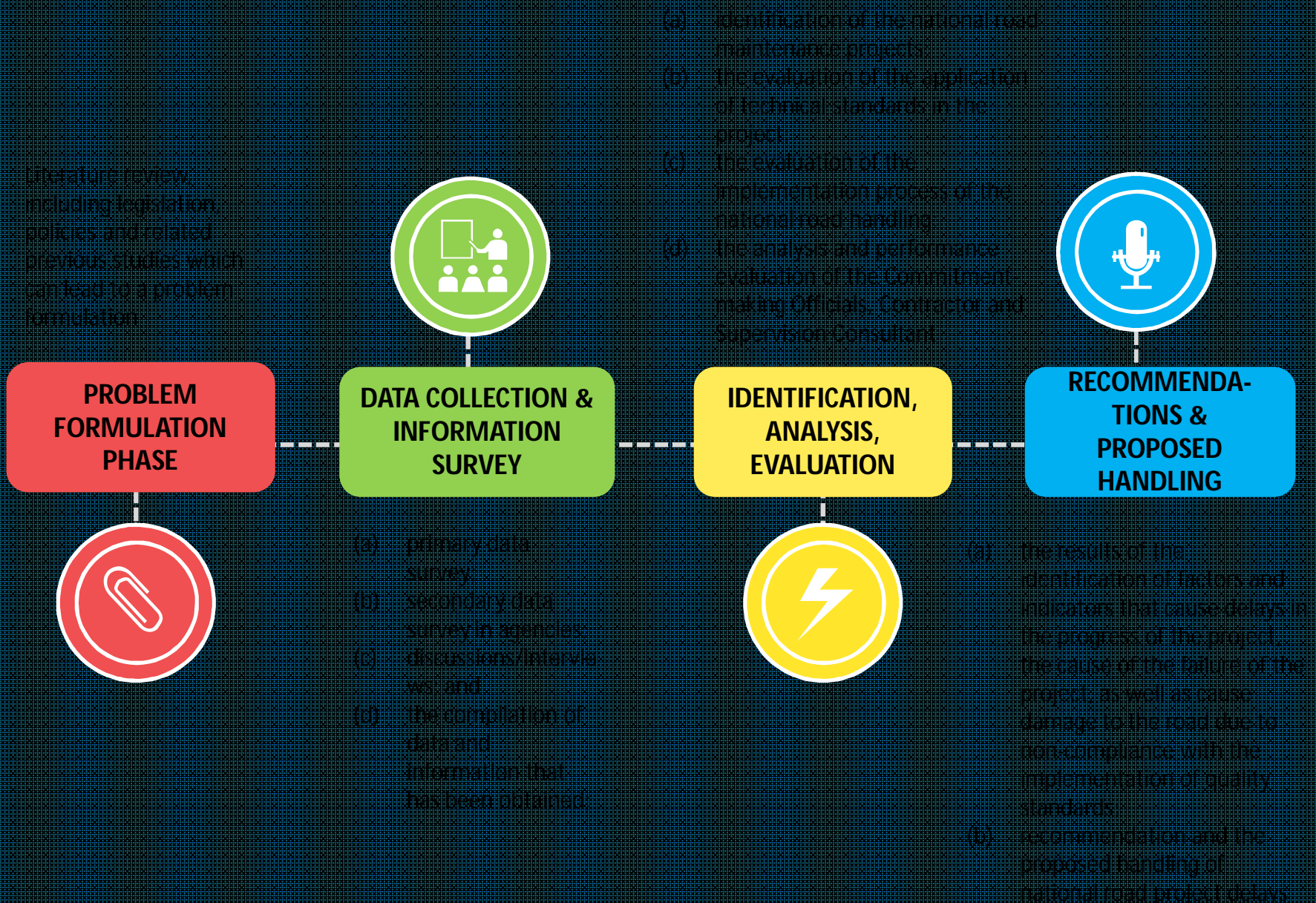


Research location (West Java Province and Tanjung Priok Freeway)

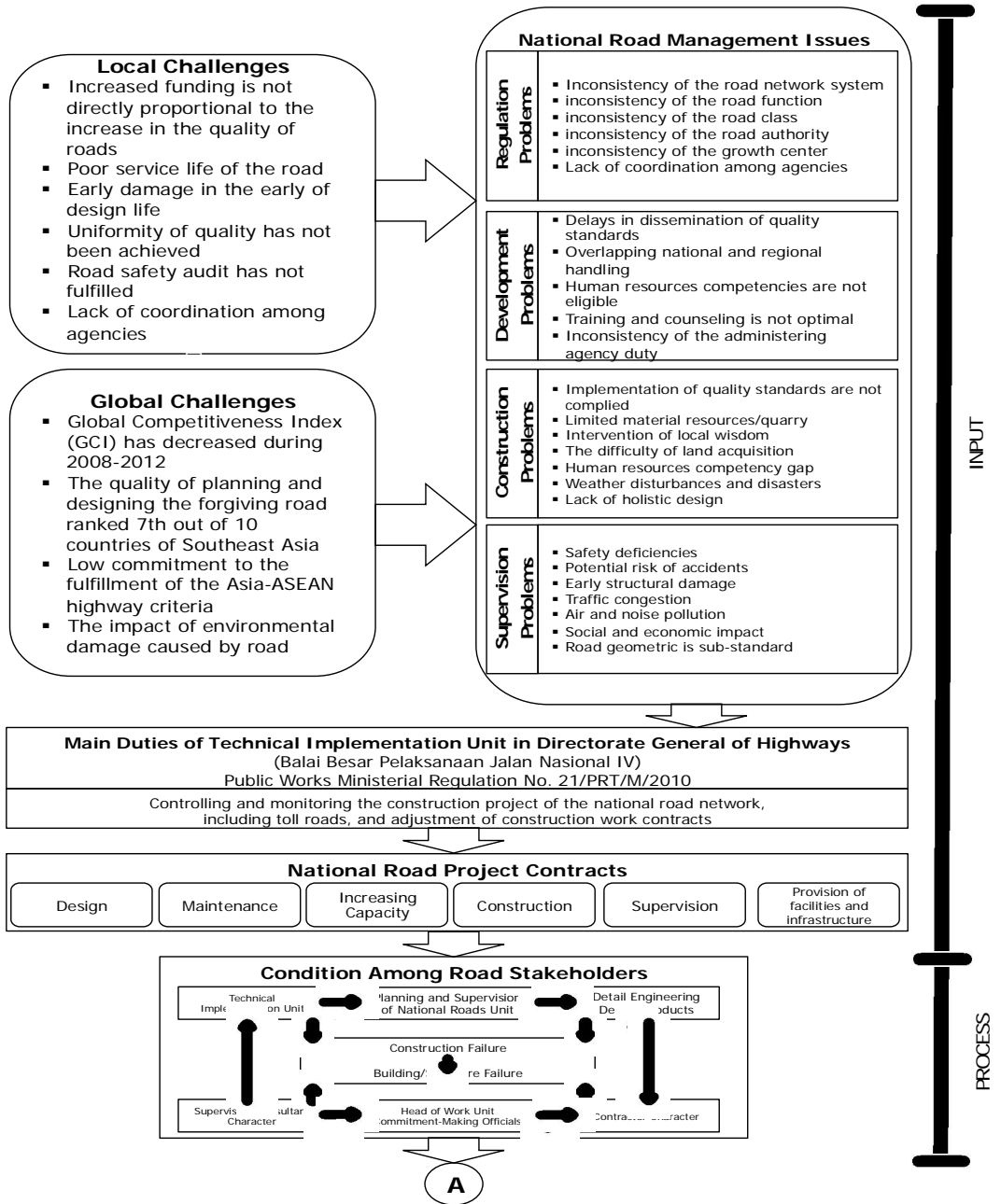
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RESEARCH FRAMEWORK AND METHODOLOGY

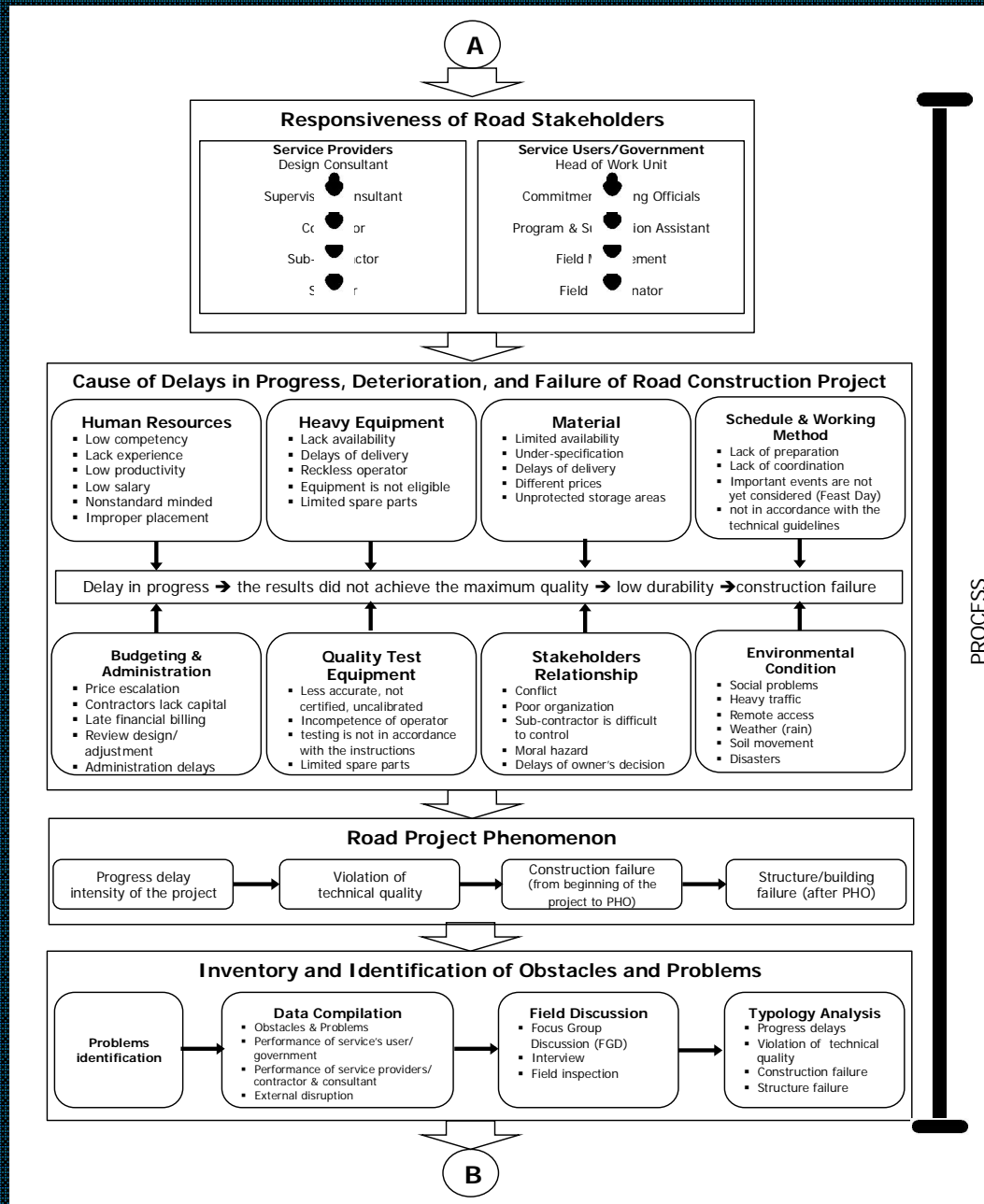
2. RESEARCH FRAMEWORK AND METHODOLOGY



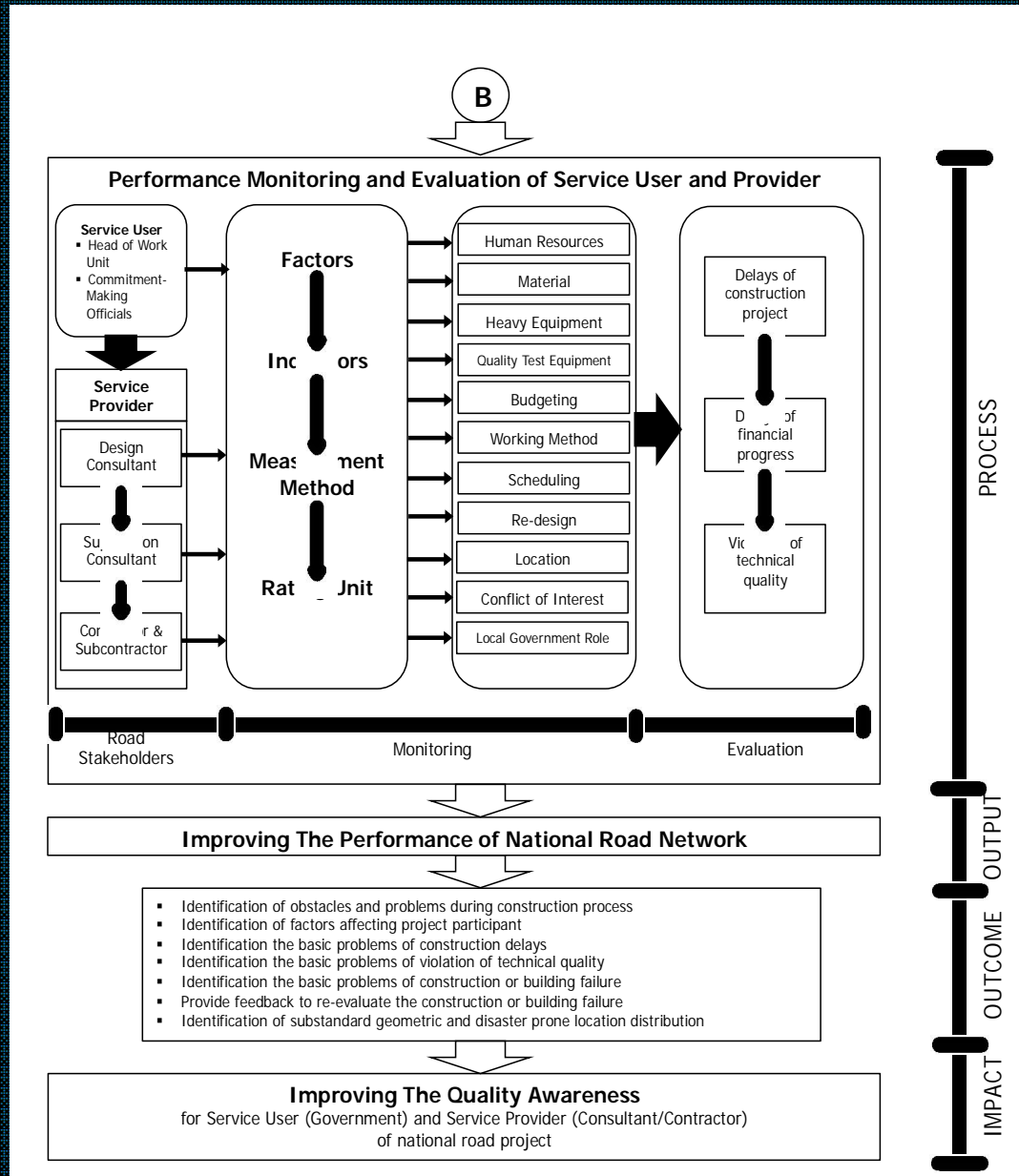
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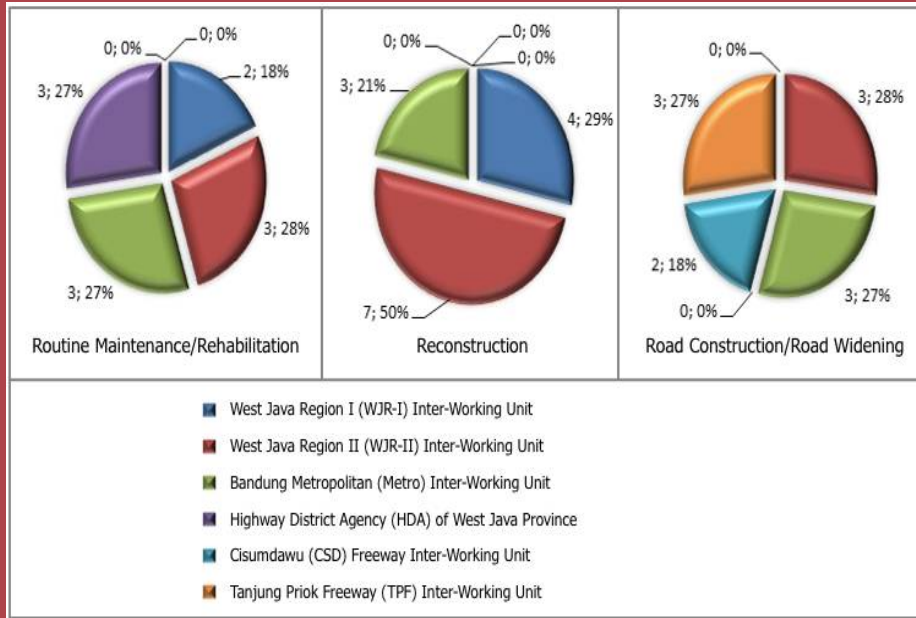


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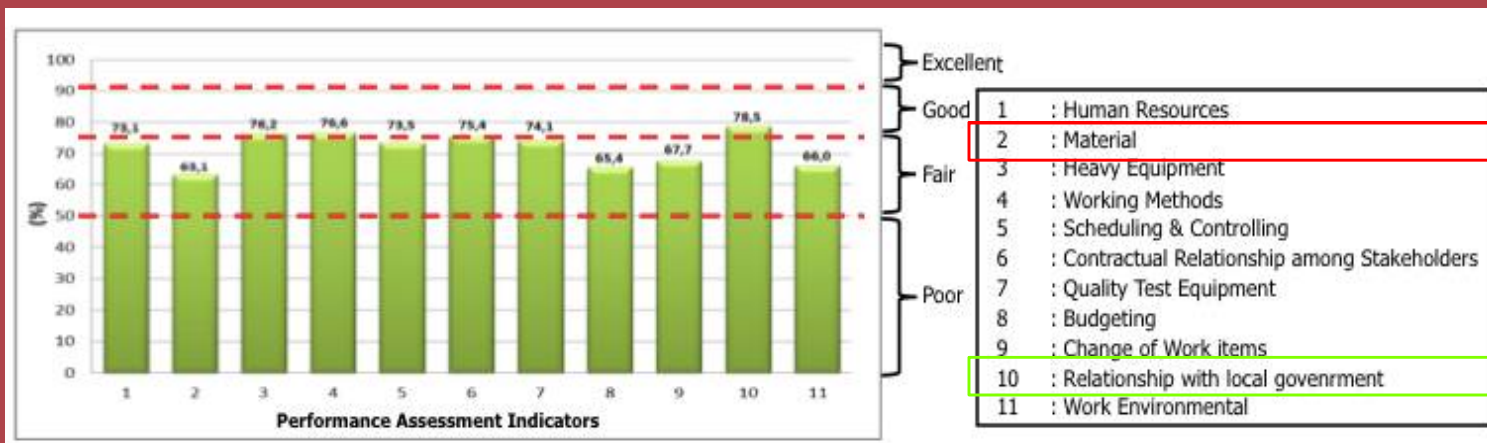
ANALYSIS AND DISCUSSION

3. ANALYSIS AND DISCUSSION

The Road Project Data in West Java Province Inter-Working Unit



- The number of routine maintenance/rehabilitation projects are majority owned by the West Java Region II (WJR-II) Inter-Working Unit, Bandung Metropolitan (Metro) Inter-Working Unit, and Highway District Agency (HDA) of West Java Province as many as 3 projects (27%).
- The number of reconstruction projects majority owned by the West Java Region II (WJR-II) Inter-Working Unit as many as 7 projects (50%).
- The number of road construction/road widening projects majority owned by West Java Region II (WJR-II) Inter-Working Unit, Bandung Metropolitan (Metro) Inter-Working Unit, and Tanjung Priok Freeway (TPF) Inter-Working Unit as many as 3 projects (27%).



3. ANALYSIS AND DISCUSSION

Substandard Geometric Locations & Disaster Prone Area on National Roads in West Java Province



Based on the road safety audit, such observations are detailed in important aspects:

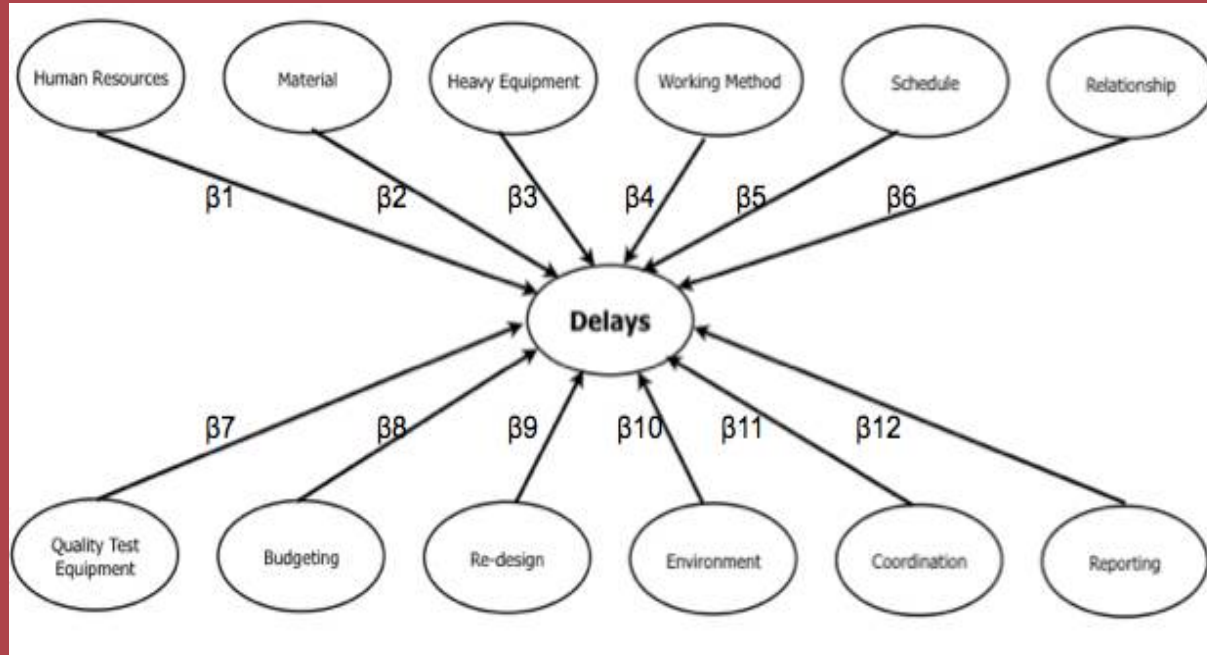
- (a) **cross-section of the road** (traffic lane, road shoulders, median, drainage, the threshold for road safety and safety traffic equipment);
- (b) **horizontal alignment** (straight sections, corners section, intersection, and road access);
- (c) **vertical alignment** (straight sections, climbing lane, and curved vertical); and
- (d) **the coordination of horizontal and vertical alignment.**

The distribution of substandard geometric locations on national roads in West Java province which technically requires priority handling, most of which is an area with **hilly contours**. In addition, the geometric aspects can not be separated from the limitations of **the road side space**. Some roads that are prioritized also have **unstable ground conditions** and with **high daily traffic volume**

3. ANALYSIS AND DISCUSSION

Evaluation of Factors and Indicators Affecting Delays on National Roads Project

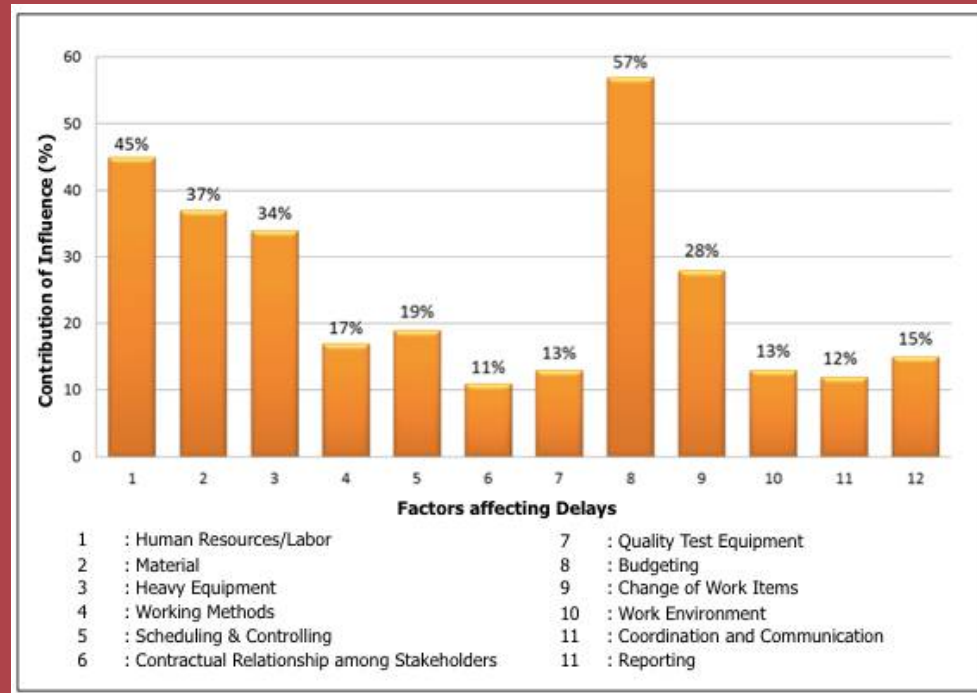
FULL MODEL STRUCTURAL EQUATION MODELING



$$\text{Delays on Road Projects} = \beta_1 + \beta_2 + \beta_3 + \beta_4 + \beta_5 + \beta_6 + \beta_7 + \beta_8 + \beta_9 + \beta_{10} + \beta_{11} + \beta_{12}$$

3. ANALYSIS AND DISCUSSION

The results of Structural Equation Modeling of factors and performance indicators affecting project delay



Delays on Road Projects =

(45% Human Resource/Labor) + (37% Material) + (34% Heavy Equipment) + (17% Working Methods) + (19% Scheduling & Controlling) + (11% Contractual Relationship) + (13% Quality Test Equipment) + **(57% Budgeting)** + (28% Change of Work Items) + (13% Work Environment) + (12% Coordination and Communication) + (15% Reporting)

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CONCLUSION

4. CONCLUSION

PROPOSED RECOMMENDATIONS



Provide a **"reward"** to the well performed Service Provider (Contractor and Supervision Consultant) in the form of Certificate of Appreciation and publishing their success.

Control the Service Provider that has bad track record, by **monitoring and evaluating** professionally and consistently from the beginning of the project

Head of Work Unit and Commitment-Making Officials should issue **warning letters** by the time adds delay is still tolerated

Unannounced **random field investigation** during the project to check directly to: labor skills, material quality, proper and feasible machine, consistency of working methods, etc

PROPOSED RECOMMENDATIONS



Record of the contractor and subcontractor's performance shall be arranged into a **Data Base Contractors Assessment**
→ reference to determine the contractor reputation

Revision of related regulations of procurement
→ The Service Provider Track Record assessment is an important factor in determining the winning bidder

Associations or institutions that determine the "Grade" of contractors, must consider the **track record** as a factor **determine the grade** of the contractor

Publish the **quantitative contractor performance assessment methods** in order to achieve precise quality, time, and law

4. CONCLUSION

PROPOSED RECOMMENDATIONS

Publish the **quantitative structured performance appraisal method** of design consultants to achieve precise technical standards and criteria for the design of the road

Publish the **quantitative supervisory consultant performance assessment methods** to achieve precise quality, time, and law



PROPOSED RECOMMENDATIONS

The results of the performance assessment can be made as the track record of the service provider. The service user should be taken into consideration in determining the **principal administrative sanctions** if quality of the road project is under specification and for the procurement committee in the determination of the winning candidates in the procurement process of road construction project



thank you

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