



Analysis influence factors of domination, competency and interpersonal skill in the stakeholder interaction to infrastructure project success

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Abstract

Project is picture of interaction model from various interests in social communication among the stakeholders. Stakeholders interaction factors can be influenced by domination and competencies beside their interpersonal skills. This research based on samples of respondents from East Java and West Sumatra provinces, Indonesia, which have similar social behavior and socio-cultural strength. Subject of research focused on three main project's stakeholders, which will be analyzed by partial least square-structural equation model (PLS-SEM). The result of analysis shows that domination factor has the greatest influence to infrastructures project implementation. It means that influence of feudalism cultural heritage remain affecting to local people character and work culture. However, respondents from East Java consider competency as a significant variable which influences the infrastructure project success. West Sumatera respondents are the opposite, where competency is not a significant variable to the project success directly. Meanwhile, interpersonal skill can be good mediation variable for domination and competency to the project success in the West Sumatra, but it is not good enough to mediate domination to project success in the East Java. Thus, it can be concluded that West Sumatra respondents have a more feudal interaction style than stakeholders in East Java.

Keywords: Stakeholders Interaction; Infrastructure Project; Interpersonal Skills; Domination; and Feudalism Culture.

1. Introduction

Dispute and social problem in a project is one of the problems that hampers project implementation, particularly infrastructure which is always directly contiguous to social community in the surrounding areas. This matter usually becomes the reason of delays that contributes to the project's losses. In many cases, the project delay is also caused by late project plan and preparation, handover and land use which is not going well, obstacles due to work permit, project funding as well as weakness of personnel capability and competency (Najah and Pontan, 2018:139).

Based on data from the official website of the Ministry of Public Works and Public Housing (PUPR) of the Republic of Indonesia, in last November 2018 the Ministry's absorbed budget was 63% of the target by 90%, meaning that there is an outstanding budget 27% which has not been used. Besides internal factors, impact of the project delay also gave contribution to the low absorbed budget in 2018.

It is not only in the Ministry of PUPR, but the project slowdown is also complained by many local governments who feel worried to the project reach which does not conform to the target. As a matter of fact, in Aceh Province in 2017 the completion time of the 460 project packages was critical and threatened to be delayed or even terminated by the contract (Rosadi, 2017).

In order to overcome the problem of infrastructure project delay, the Government has even established the National Committee for Acceleration of Priority Infrastructure Delivery (KPPIP). KPPIP review of which says that the biggest challenge of infrastructure development in Indonesia is: 1) land acquisition problem that contributes 30% throughout infrastructure development, 2) plan and preparation problems related to coordination between the project's stakeholders contributing 27%, and 3) private participation and project funding problem contributing 25%.

In several years ago, many cases of social conflict due to project problems were recorded. In the MRT's elevated line construction, rejections from people who deemed that the MRT's elevated line construction had damaged the city planning were found (Himawan, 2013). Likewise in detiknews.com report in 2018, at least 659 social disputes related to the infrastructure development involving 652,738 family heads throughout Indonesia.

Success of the project itself is traditionally measured by an indicator achievement of cost, quality and time and eventually in the development it also adds customer satisfaction as one of its parameters (PMI, 2018). By testing the indicator of social acceptance in the project success variable, it can add a new reference to the achievement target of a project and it is expected to be able to reduce or even eliminate social problem in the future through maximizing role and positive interaction between project's stakeholders.

2. Literature study

2.1. Interaction models and project's stakeholders

Management of stakeholders begin from an identification process of each stakeholder to the impact of the project. From such identification, then a plan of involvement of the project's stakeholders can be made based on potency owned as well as its influence upon the project implementation.

The management of stakeholders is a part of project manager duties and one of difficult duties for a project manager is to identify group or type of the stakeholders which necessarily obtains previous attention, as long as issues brought and expressed by such stakeholders.

Society as social community having connection with political system directly and indirectly, is the component of stakeholders, which is conceptually external party of the project, but it has a high complexity, so that a special approach through the interaction model by maximizing interpersonal skill of stakeholders is needed.

2.2. Domination of stakeholders

Stakeholder can be categorized in three criteria, that is the stakeholder having a power to influence (dormant stakeholder), the stakeholder having legitimacy (discretionary stakeholder) and the stakeholder having urgency to the project (demanding stakeholder) (Bonnafous-Boucher et al., 2012). The three criteria of the stakeholders above can be categorized as impact or domination model caused by stakeholder.

According to Chandra et al (2011), the impact of stakeholder's domination can be categorized as follows:

- 1) The urgency of stakeholder, that is a level in which demand or claim of the stakeholder requests attention immediately.
- 2) The stakeholder's knowledge measured from degree of concern up to total ignorance to the project implementation.
- 3) Proximity of the stakeholder interpreted as existence of the stakeholder relating to the involvement and relationship with the project and proximity of the stakeholder's communication with the project.
- 4) Attitude of the stakeholder reflecting whether the stakeholder having attitude towards supporting or having opposition to the project.

From the two theories about the impact or domination of the stakeholders above, it can be compacted and categorized to five indicators of stakeholder domination as follows: a) Power of the Stakeholders, (b) Legitimacy of the Stakeholders, (c) Urgency of the Stakeholders, (d) Proximity of the Stakeholders and (e) Attitude of the Stakeholders.

2.3. Competency of the stakeholders

In the effort of reaching success of the project, the competency of each stakeholder related to its ability to meet and exceed the expectation of the project. Competency in several journals is termed as empowerment of the stakeholders having definition of multidimensional social process helping to earn profit all their lives by using power owned and to do an action to important issues (Chandra et al., 2011).

Tuuli and Rowlingson (2009), summarized the empowerment variables to five primary variables as measurement parameter in their research, that is: 1) Intrinsic Motivation, (2) Opportunity to Perform, (3) Ability to Perform, (4) Task Performance Behaviours and (5) Contextual Performance Behavior.

Whilst, El-Sawalhi and Hammad (2015) found that the important factors which significantly influences the stakeholders management are: 1) Project Manager competencies, (2) Ability of making transparent evaluation of alternative solution based on stakeholders concerns, (3) Ability to effective communication between project and the stakeholders, (4) Ability of setting common goals and objectives for the project, (5) Ability to exploring stakeholder needs and expectation.

In South Africa, Eyiah-Botwe (2016) rewrote results of Aigbavboa and Thwala research about success factors of the stakeholders composed on the basis of 6 research mean values, as follows: (1) Preparation and provision of an effective leadership, (2) Clearly defining project objectives, (3) Identification of process and skills, (4) Providing effective project management, (5) Team work and (6) Integrated procurement process.

In another journals, Yang J. et al., (2009), it gives factors influencing success of the Stakeholders, with 5 indicators, the highest range of which are: (1) Managing Stakeholders with social responsibilities, (2) Exploring stakeholders needs and constraints to project, (3) Communicating with and engaging stakeholders properly and frequently, (4) Understanding the area of stakeholders' interest and (5) Identifying the stakeholders properly.

From all indicators of measurement influencing the success of the stakeholders above, it can be compacted and grouped to seven indicators influencing or measuring competency level of the stakeholders, as follows:

- 1) Intrinsic motivation measured by how good someone is to themselves and their jobs (Tuuli and Rowlingson, 2009);
- 2) Technical competency, measured by ability, experiences, training and job knowledge, enabling someone to have ability to perform his/her job, reflecting how someone does his/her job measured according to the feasibility of completing duties carried out, responsibility in accordance with the job description, performing works expected, formal performance indicated in the work, directly influencing assessment of the performance (Tuuli and Rowlingson, 2009);
- 3) Conceptual ability is measured according to facility behaviour between personnel and task dedication behaviour. Facility behaviour between personnel is measured according to a praise given at the time of getting success, speaking with team members to do task, saying something to team members in order to get good result, supporting to find difference, having a team to be fair, Asking challenging tasks, training discipline and independent control, giving initiative to solve problem, being persistent in order to remove obstacles of completing tasks and handling difficult jobs enthusiastically (Tuuli and Rowlingson, 2009);
- 4) Ability of evaluation and problem solving are measured according to ability of evaluating transparently to the alternative solution based on interest level of the stakeholders (El-Sawalhi, 2015);
- 5) Communication skill is measured according to the level and quality of communication by involving the stakeholders well and continuously (Yang J et al., 2009);
- 6) Managerial and leadership competency is measured according to ability of creating good project management process, forming team cooperation, integrating project resource procurement (Eyiah-Botwe, 2016).
- 7) Risk management competency is measured according to the ability of emphasizing needs and project constraint (Yang J et al., 2009). Ability of identifying, managing and doing preventing action as well as improving the risk occurred.

2.4. Interpersonal skills / stakeholder social competency

Interpersonal skill is a part of social competencies; thus, Hurlock (2000) describes it. The social competency itself is highly influenced by social participation made by individual. The broader its social participation, the higher its social competency.

Handfield as written by Idrus (2009), defines the interpersonal competency as ability of developing and keeping effective relationship. The relation with this research context, as explained previously that one of the problem obstructing the project performance is the social problem having high complexity, because it involves many people having ability of creating social conflicts by involving power and opinions of the problem.

Interpersonal skill is expected to be a connecting bridge between interaction components of the stakeholders to create a model of positive communication expected to create a project climate to be healthy and directly improve success of the project. Such conception conforms to Jerving (2001) as re-written by Idrus (2009), which defining the interpersonal competency as the ability of developing and keeping effective relationship. Therefore, Idrus (2009) identifies the indicator of interpersonal competency variable by getting opinion from Stephenmarks (2006), among others: a) Self-awareness, (b) Listening skill, (c) Empathy and understanding and (d) Communication skill.

Whilst, using opinion of Buhrmester et al (1988) as measuring indicator stating that interpersonal competency covers the following aspects:

- 1) Ability of being initiative, that is effort of beginning an interaction form and relation with others or larger social environment.
- 2) Ability of being self-disclosure, that is ability of disclosing himself/herself, giving personal information and award to others.
- 3) Ability of being assertive, that is individual ability and willingness of expressing feeling definitely and holding his/her rights expressly.
- 4) Ability of giving emotional support, covering ability of calming down and giving safe feeling to others when such person is in stress and problem conditions. This ability comes from empathy of oneself.
- 5) Ability of handling conflict covers attitudes of planning problem solving strategy, re-considering assessment or problem and developing new self-esteem. Planning problem solving strategy is how the related individual formulates a method to settle the conflict as good as possible.

2.5. Project success factor

Success of the project implementation traditionally is measured according to the conformity to the product quality, accuracy of time and suitability of budget. However, in the development, engineers and expertise, also add an achievement factor of the project target as success factor of the project.

Conformity to the product quality can be indicated from whether the rejection of deliverables by owners or project's supervisors, in which the meaning is all deliverables, can be accounted according to the requirements asked in the contract.

Whilst, accuracy of time is measured according accuracy parameter between the planned target and actual target in accordance with the time scheduled. Conformity of budget is cost calculated can meet and fulfil all requirements for quality and quantity as requested in the contract.

Achievement of the project target according to PMBOOK (PMI, 2018) includes customer satisfaction and reaching other standard and criteria agreed. In order to explain about definition and understanding of customer satisfaction, theory approach relating to the definition of work satisfaction can be used. According to Kotler (2009), work satisfaction is a feeling and positive attitude in the work environment relating to the needs to be reached in the existing reality. Whether a project owner along with his/her stakeholders is satisfied or not comes from a comparison between the impression of performance (Result) of product or service.

Other standards and criteria agreed can contain the social community attitude and reaction to the project implementation. Such criteria of social community acceptance have not been included generally in the criteria of project implementation success assessment. According to Parson in Ritzer (2009), there are 3 independent functional systems existing in the social sustainability having different goal and needs to reach it; such three things are economic system, political system and cultural system. The three functional systems become basic social value influencing stakeholders to assess a project.

So that, conclusion of the explained theory above is success indicator of the project implementation can be measured according to achievement indicators of : (a) Cost, (b) Quality, (c) Time, (d) Customer Satisfaction and (e) Social Acceptance.

2.6. Hypothesis of research

By considering the interaction model and its variables, the hypothesis of this research is composed as follows:

- H1: Domination of stakeholders will significantly and positively influence to the project success.
- H2: Competencies of stakeholders will significantly and positively influence to the project success.
- H3: Interpersonal skills of stakeholders will significantly and positively influence to the project success.
- H4: Competencies of stakeholders will significantly and positively influence to the domination of stakeholders.
- H5: Domination of stakeholders will significantly and positively influence to the project success through the interpersonal skills of stakeholders.
- H6: Competencies of stakeholders will significantly and positively influence to the project success through the interpersonal skills of stakeholders.
- H7: Domination, competencies and interpersonal skills of stakeholders will significantly and positively influence to the project success simultaneously.

Hypothesis above will be used to conclude research of 3 sample datas, that is East Java, West Sumatera and Total Sample and at the end of research the hypothesis between sample data to be concluded to the response of each province and thoroughly to the interaction model of stakeholders influencing the project success will be compared.

3. Research methodology

3.1. Research type

Based on the method and measurement, this research is categorized in survey research using questionnaires as data source. This research type is quantitative research aiming for describing phenomenon or social symptom quantitatively or analyzing how the phenomenon or social symptoms occurred in the community is connected each other.

3.2. Research variable

Independent variables in this research consists of 3 interaction components of stakeholders influencing the project implementation, among others:

- 1) Domination of Stakeholders (X1-DOM), measured according to indicator (a) Power of Stakeholders (X1.1-DOM1), (b) Legitimacy of Stakeholders (X1.2-DOM2), (c) Urgency of Stakeholders (X1.3-DOM3), (d) Proximity of Stakeholders (X1.4-DOM4) and (e) Attitude of Stakeholders (X1.5-DOM5).
- 2) Competency of Stakeholders (X2-COM), measured according to the indicator of (a) Intrinsic Motivation (X2.1-COM1), (b) Technical Competency (X2.2-COM2), (c) Conceptual Ability (X2.3-COM3), (d) Evaluation and Problem Solving Ability (X2.4-COM4), (e) Communication Skill (X2.5-COM5), (f) Managerial and Leadership Competency (X2.6-COM6) and (g) Risk Management Competency (X2.7-COM7).
- 3) Interpersonal Skills of Stakeholders (X3-INT), measured according to the indicator of (a) Initiative Ability (X3.1-INT1), (b) Self-Disclosure Ability (X3.2-INT2), (c) Assertive-behaving Ability (X3.3-INT3), (d) Emotional Supporting Ability (X3.4-INT4) and (e) Management Conflict Ability (X3.5-INT5).

Dependent variables in this research explain about standard and parameter of the Project Success (Y-IPS), comprising the indicator of (a) Cost Achievement (Y.1-IPS1), (b) Quality Suitability (Y.2-IPS2), (c) Time Achievement (Y.3-IPS3), (d) Customer Satisfaction (Y.4-IPS4) and (e) Social Acceptance (Y.5-IPS5).

3.3. Research population and sample

This research population is the stakeholders relating to and having direct influence upon the infrastructure project implementation. Three main actors of the stakeholders to be as subject of this research are the Project Owner, Design Consultant / Supervision Consultant and Main Contractor. Determination of population in this research used data from Directorate General of Highways, the Ministry of Public Works and Public Housing contained in the List of Provincial Activity Details of Budget Ceiling in the 2018 Budget Year by taking two Provinces, among others East Java and West Sumatera Provinces.

Selection of East Java and West Sumatera as research sample is based on consideration of cultural similarity which is still influenced in its social community life and proximity of human development index; according to data from the Central Statistic Body in 2018, East Java and West Sumatera obtain each index value of 70,77 and 71,73. Other proximities can be also seen in the demography of its region having spread of tribe, religion and race which are almost similar.

Sampling was made proportionally in each region of three main actors of the project's stakeholders based on total of the project package which was on going or planned by Directorate General of Highways.

3.4. Data analysis technique

This research will use Partial Least Square (PLS) as supporting tool of its analysis. The Software applied in this research uses SmartPLS 3.0. According to Ghozali (2014), PLS approach is distribution free (not to assume certain distributing data, it can be in the form of nominal, category, ordinal, interval and ratio). In PLS, all standards of variance can be assumed as variance which is useful to explain.

3.5. Research framework

This research will test the interaction model influence upon the project's stakeholders based on domination, competency and interpersonal skills to the project success using the sample standard in East Java, West Sumatera regions and combination of all samples from both regions. The interaction model analyzed in this research is proposed as in figure 1 below.

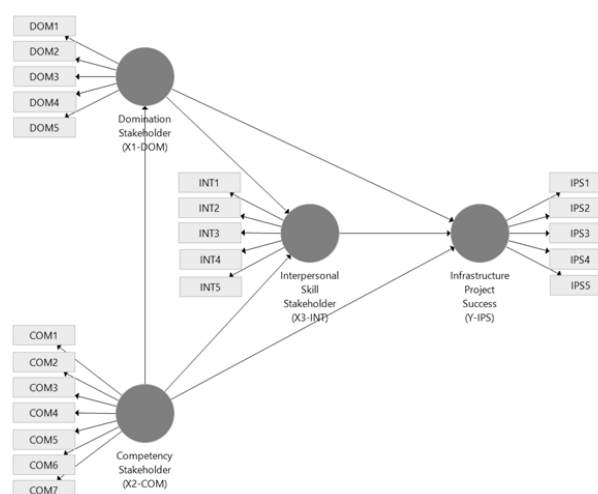


Fig. 1: Interaction of Stakeholders Model.

4. Finding and discussion

4.1. Description of research object

Total of sample used in this research is 81 project stakeholders spread in two provinces from each criteria of stakeholders selected. From all respondents of stakeholders participating in this research, the respondents of 45 years old are 47 or 58.05% with the composition of 23 people from East Java and 24 people from West Sumatera. Those having working experience of more than 20 years are 41 respondents or 50.62% composing 22 people from East Java and the rest of 19 people from West Sumatera. Respondents' education level is dominated by graduation from Bachelor degree of 65 people or 80.25% composing 34 people from East Java and 31 people from West Sumatera.

4.2. Mean analysis

Questionnaire of this research uses measurement of Likert scale with 5 assessment levels with score 5 for very good/absolutely agree and score 1 for very bad/absolutely disagree. Each indicator is assessed by two different questions having correlation with its indicator. Measurement result of mean using SPSS 22, from which the mean value can be concluded that respondent gives good assessment to the indicator of urgency, conceptual ability, emotional supporting ability and social acceptance; from the result of mean analysis, each value is 7.7531, 7.569, 7.580 and 7.7284. It means the respondents deem that such indicators are good enough to reflect relation of each interaction variable of the stakeholders to the Project Success.

4.3. Outer model evaluation

This measurement model testing will be made for 3 sample data, that is sample from East Java, West Sumatera and Total Sample (combination of East Java and West Sumatera). This measurement model evaluation uses SmartPLS 3 software to get values of loading factor, convergent validity, composite reliability and Cronbach's Alpha.

The loading factor is the value used to test the validity of research indicators based on the result of questionnaires. The value of loading factor based on the estimating of SmartPLS 3 must have the value of more than 0.7 meant that the research indicator has enough validity. Indicator having the loading value of less than 0.7, must be eliminated and can not be included in the model measurement.

From the result of estimation to this interaction measurement model, indicator of DOM4 and INT3 in the three sample model as well as IPS4 in the model of total sample and sample of West Sumatera has the loading value less than 0.7. Each values are 0.589, 0.662 and 0.512 for DOM4, whilst 0.05, 0.649 and 0.494 for INT3 as well as 0.610 and 0.399 for IPS4, so that it must be deleted and makes re-estimation.

Furthermore, it can be seen through the value of convergent validity, that is a level to what extent the measurement result of a concept indicates positive correlation with the measurement result of other concepts which theoretically must have positive correlation. This value of convergent validity uses the value of average variance extracted (AVE) which must be more than 0.5 to be said good. Result of AVE value from this research having values more than 0.5 and meaning that having good validity.

The further measurement is by observing the discriminant validity of this model equation relating to the value of cross loading, that is loading value from each indicator to other indicators. The discriminant validity is met if the loading indicator value to its construct is higher than the loading value to other constructs. Indicators which not meet to the requirement above, must deleted from model and shall be re-estimate. Indicator that must be deleted from this model are DOM4 (All Samples, East Java and West Sumatera), IPS4 (All Samples and West Sumatera) and INT3 (All Samples, East Java and West Sumatera).

The reliability test in this equation must meet the requirements that the composite reliability value must be more than 0.7 and its Cronbach's Alpha is more than 0.6. From estimating this model, resulting that all datas having value more than 0.7 for composite reliability and more than 0.6 for Cronbach's Alpha, which can be concluded that the variable used has good reliability.

4.4. Influence of f² and Q² predictive relevance

The value of f² is measurement to the influence upon predictor latent variable to the structural level. The value of f² for 0.02, 0.15, and 0.35 can be interpreted as dimension of small, medium and high influences. Table 1 is the value and influence upon latent variable based on this research model.

Whilst, the value of Q² is obtained by using R² produced from model data processing from SmartPLS 3 displayed as in Table 2.

In table 2 the value of Q² in each sample data indicates 0.925 for all samples, 0.898 for East Java and 0.968 for West Sumatera; the meaning is all have the value of more than 0 (zero), so that the conclusion is this measurement model has the good value of predictive relevance.

Table 1: Value of F² and Dimension of Influence

Relation	ALL SAMPLES		EAST JAVA		WEST SUMATERA	
	f sq.	Concl.	f sq.	Concl.	f sq.	Concl.
DOM → IPS	0.548	High	0.417	High	0.528	High
DOM → INT	0.025	Small	0.003	Small	0.146	Small
COM → DOM	0.449	High	0.477	High	0.450	High
COM → IPS	0.001	Small	0.019	Small	0.024	Small
COM → INT	0.690	High	0.536	High	1.481	High
INT → IPS	0.523	High	0.457	High	0.286	Med

4.5. Inner model evaluation

Result of model analysis for this evaluation is based on the result of SEM-PLS data as in figure 2 for measurement of all sample data, figure 3 for the sample measurement of East Java and figure 4 for sample model of West Sumatera which displaying the each value of R square and path coefficient.

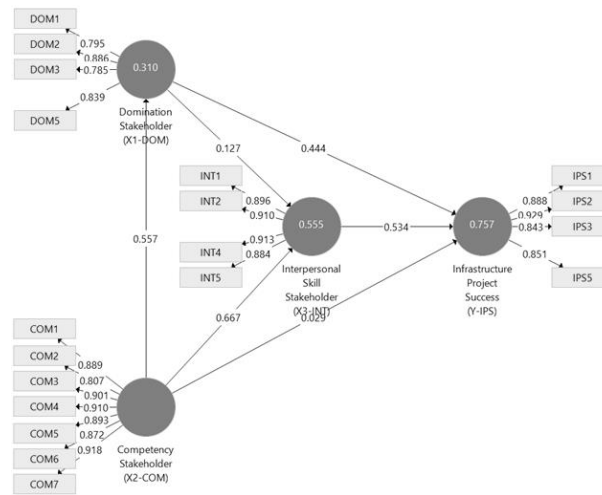


Fig. 2: Equation Model of All Sample Data.

From figure 2, the equation obtained from the model measurement for all sample data is as follows:

$$IPS = 0.444 \text{ DOM} + 0.555 \text{ INT} + 0.029 \text{ COM}; R^2 = 0.757;$$

$$INT = 0.127 \text{ DOM} + 0.667 \text{ COM}; R^2 = 0.555;$$

$$DOM = 0.557 \text{ COM}; R^2 = 0.310$$

(1)

Definition 1 : Equation model formula for all sampel data

Based on the equation (1) above, the conclusion is as follows:

- 1) The value of R^2 IPS is 0.757, the meaning is IPS is influenced by DOM, COM and INT by 75.7%, while the rest is influenced by other factors not examined in this research. DOM has path coefficient of 0.444 with positive direction; this matter proves that relation in the same direction is found. If DOM increases 1 unit, IPS will increase to be 0.444 and otherwise. COM and INT have path coefficient of 0.029 and 0.534 with positive direction proving the relation in the same direction found. If COM and INT increases 1 unit, IPS will increase to be 0.029 and 0.534 and otherwise.
- 2) The value of R^2 INT is 0.555, the meaning is INT is influenced by DOM and COM by 55.5%, while the rest is influenced by other factors not examined in this research. Each DOM and COM have path coefficient of 0.127 and 0.667 with positive direction; this matter proves that the relation in the same direction is found. If DOM and COM increases 1 unit, INT will increase to be 0.127 and 0.667 and otherwise.
- 3) The value of R^2 DOM is 0.310, the meaning is DOM is influenced by COM by 31.0%, while the rest is influenced by other factors not examined in this research and the path coefficient of COM of 0.557 with positive direction proving the relation in the same direction. If COM increases 1 unit, DOM will increase to be 0.557 and otherwise.

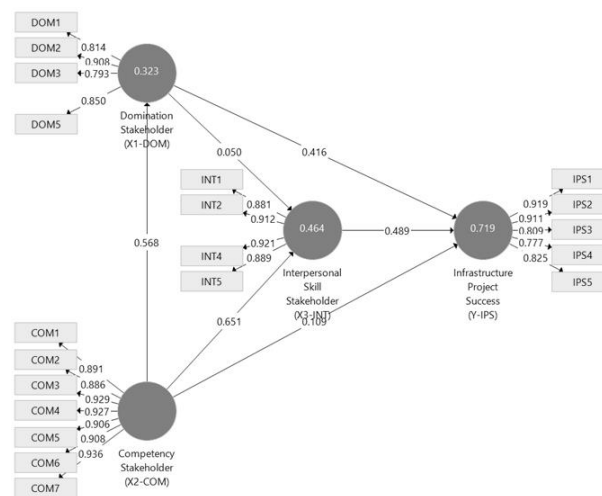


Fig. 3: Equation Model of East Java Sample Data.

In figure 3, the equation obtained from the sample data model measurement for East Java is as follows:

$$IPS = 0.416 \text{ DOM} + 0.489 \text{ INT} + 0.109 \text{ COM}; R^2 = 0.719;$$

$$INT = 0.050 \text{ DOM} + 0.651 \text{ COM}; R^2 = 0.464;$$

$$\text{DOM} = 0.568 \text{ COM}; R^2 = 0.323 \tag{2}$$

Definition 2: Equation model formula for East Java sampel data

The conclusion of sample model for East Java, as pointed in (2) uses the same interpretation as in the conclusion of data model of all samples (Figure 2). The information is obtained that the IPS variable by 71.9% can be explained by DOM, INT and COM variables; while the rest is 28.1% influenced by other factors not included in this research.

The information is obtained that the INT variable by 46.4% can be explained by DOM and COM variables; while the rest is 53.4% influenced by other factors not included in this research. In DOM variable by 32.3% can be explained by COM variable; while the rest is 67.7% influenced by other factors not included in this research.

Furthermore, as model in figure 4 equation of sample data for West Sumatera is as follows:

$$\text{IPS} = 0.408 \text{ DOM} + 0.472 \text{ INT} + 0.129 \text{ COM}; R^2 = 0.810;$$

$$\text{INT} = 0.227 \text{ DOM} + 0.723 \text{ COM}; R^2 = 0.757;$$

$$\text{DOM} = 0.557 \text{ COM}; R^2 = 0.311 \tag{3}$$

Definition 3 : Equation model formula for West Sumatera sampel data

The conclusion in sample model for West Sumatera (Figure 4) is that IPS variable by 81.0% can be explained by DOM, INT, and COM variables; while the rest is 19.0% influenced by other factors not included in this research.

The INT variable by 75.7% can be explained by the interaction of DOM and COM variables; while the rest is 24.3% influenced by other factors not included in this research. In DOM variable by 31.1% can be explained by COM variable; while the rest is 68.9% influenced by other factors not examined in this research.

From the three equations based on the samples in its region, information can be obtained that interaction of DOM, INT and COM variables of the stakeholders in West Sumatera is more capable to explain about IPS variable than that in East Java and combination of samples thoroughly.

Likewise, INT variable in West Sumatera can be explained better by DOM and COM variables than to other sample models. In East Java, its COM variable is better in the explanation of DOM variable than two other sample models.

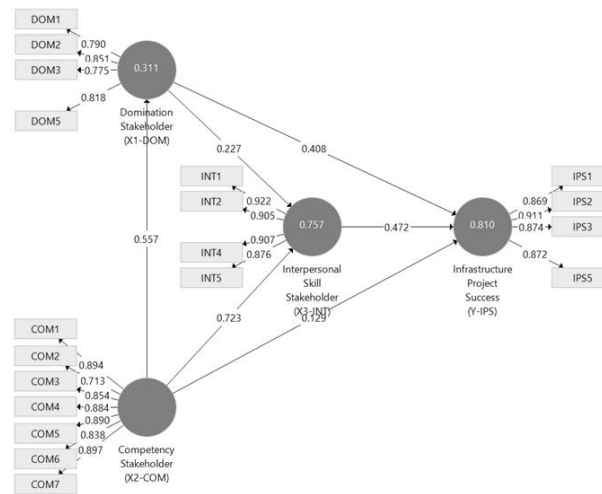


Fig. 4: Equation of West Sumatera Sample Data.

Table 4: Indirect Effect (Value of Path Coefficient, T-Statistics and Model Significance) in Mediation Hypothesis Testing

Path	Path coefficient	t-stat.	Sign.	Mediation Hypothesis (H _a)
ALL SAMPLES				
COM → DOM → IPS	0.247	4.612	0.000	Accepted
DOM → INT → IPS	0.068	0.908	0.364	Rejected
COM → INT → IPS	0.356	4.226	0.000	Accepted
EAST JAVA				
COM → DOM → IPS	0.237	2.900	0.004	Accepted
DOM → INT → IPS	0.025	0.210	0.834	Rejected
COM → INT → IPS	0.319	2.276	0.023	Accepted
WEST SUMATERA				
COM → DOM → IPS	0.227	3.281	0.001	Accepted
DOM → INT → IPS	0.107	2.044	0.042	Accepted
COM → INT → IPS	0.341	2.632	0.009	Accepted

4.6. Hypothesis testing

- a) Partial hypothesis testing

This partial hypothesis testing is to test the influence upon the significance between predictor latent variable and criterion latent variable directly. This testing is made by considering t-statistic and its t-table and between the significance value and its research significance level; in this research it uses significance level by 5% or 0.05. Criteria of this hypothesis testing is as follows:

Hypothesis:

H₀: No influence of independent variable to dependent variable found

H_a: Influence of independent variable to dependent variable found

Accept H₀ and reject H_a, if:

Significance > 0.05 or t-stat. < t-table

Accept H_a and reject H₀, if:

(4)

Definition 4: F-statistic formula for simultant hypothesis testing

Particulars:

N= Total sample

k= Total independent variable

R²= Influence value of R²

Significance < 0.05 or t-stat. > t-table

This measurement uses assumption in the bootstrapping process with total sub-sample of 500 and significance level of 0.05, so that t-table used according to the standard of SmartPLS 3 is 1.960.

The partial hypothesis of the significance value and t-statistics of this model measurement is presented in table 3.

Table 3: Path Coefficient, T-Statistics and Partial Hypothesis

Path	Path Coefficient	t-stat.	Sign.	Hip. (H _a)
ALL SAMPLES				
DOM → IPS	0.444	6.022	0.000	Accepted
COM → IPS	0.029	0.342	0.733	Rejected
INT → IPS	0.534	6.926	0.000	Accepted
EAST JAVA				
DOM → IPS	0.416	3.861	0.000	Accepted
COM → IPS	0.109	0.856	0.392	Rejected
INT → IPS	0.489	5.513	0.000	Accepted
WEST SUMATERA				
DOM → IPS	0.408	3.673	0.000	Accepted
COM → IPS	0.129	0.770	0.442	Rejected
INT → IPS	0.472	2.878	0.004	Accepted

a) Mediation hypothesis testing

This hypothesis is to test the influence upon the relation and significance from mediation variable towards predictor latent variable and criterion latent variable in its measurement model. Criteria of this hypothesis testing is as follows:

Hypothesis:

H₀: No influence of mediation variable between independent variable and dependent variable found

H_a: Influence of mediation variable between independent variable and dependent variable found

Accept H₀ and reject H_a, if:

Significance > 0.05 or t-stat. < t-table

Accept H_a and reject H₀, if:

Significance < 0.05 or t-stat. > t-table

The partial hypothesis of the significance value and t-statistics of this model measurement is presented in table 4.

b) Simultaneous hypothesis testing

This hypothesis is used to know the influence upon the relation and significance between independent variable and dependent variable simultaneously. To test this hypothesis by comparing between F-statistic to –Table. F-calculation is obtained from the calculation with formulation as follows:

$$F = \frac{(n-k-1)R^2}{k(1-R^2)}$$

Criteria of this hypothesis testing is as follows:

Hypothesis:

H₀: No Influence of independent variable and dependent variable simultaneously found

H_a: Influence of independent variable and dependent variable simultaneously found

Accept H₀ and reject H_a, if:

F-statistic < F-table

Accept H_a and reject H₀, if:

F-statistic > F-table

F-table is obtained from table F using DF1 base as denominator and DF2 as numerator obtained from the following calculation (5):

DF1 = Total independent variable

DF2 = n – k – 1

(5)

Definition 5 : Denominator and numerator for F-table

Result of the calculation above, is displayed in the table and concluded to its hypothesis as in table 5.

From the result of simultaneous hypothesis testing, it can be seen that in 3 sample data, all independent variables has simultaneously a significant influence upon the dependent variable.

Table 5: Simultaneous Hypothesis Testing Table Based on F-Statistic and F-Table

Path	F-statistic	F-table	Hypothesis
ALL SAMPLES			
COM and DOM → IPS	121.494	3.11	Accepted
COM and DOM → INT	48.641	3.11	Accepted
COM, DOM and INT → IPS	79.958	2.72	Accepted
EAST JAVA			
COM and DOM → IPS	99.790	3.11	Accepted
COM and DOM → INT	33.761	3.11	Accepted
COM, DOM and INT → IPS	65.674	2.72	Accepted
WEST SUMATERA			
COM and DOM → IPS	166.263	3.11	Accepted
COM and DOM → INT	121.494	3.11	Accepted
COM, DOM and INT → IPS	109.421	2.72	Accepted

4.7. Discussion and implication of research

a) All sample interaction model

Based on the result of hypothesis testing in the interaction model for all sample data, it can be concluded that in this interaction model, Domination does not give influence upon the increase in Interpersonal Skill of Stakeholders and the Competency having no significant influence upon the Project Success.

However, Domination has significant influence upon the Project Success, and Competency to the Project Success, Interpersonal Skill to the Project Success and Competency to the Interpersonal Skill. It means that throughout East Java and West Sumatera assesses role of the interaction of Domination which is still strong enough in the interaction model of infrastructure project and the Competency precisely does not give direct effect to the Project Success. This matter shows that a cultural pattern and culture firmly rooting in community life in both regions still dominates as the previous explanation and the feudalism heritage still gives impact to the Infrastructure Project Implementation.

If seen from the mediation testing, the role of Interpersonal Skill is also significant enough to influence relation between Competency and the Project Success; this matter indicates that the Competency owned is only able to give contribution to the Project Success if it is supported by the good Interpersonal Skill.

For a while, the Domination is not able to give influence upon the Interpersonal Skill, meaning that the higher Domination will not make the Interpersonal Skill better, but able to influence the better Project Success.

Domination as mediation variable which is only able to explain about relation between Competency and Project Success. Its meaning that the better Competencies owned by the Stakeholders and by being mediated by the Domination obtained is able to explain about condition of the Project Success significantly.

Simultaneously, Domination, Competency and Interpersonal Skill are able to explain about the significant influence upon the Project Success; likewise, Domination and Competency to the Interpersonal Skill jointly gives significant influence.

Competency and Domination of Stakeholders partially and simultaneously give a significant influence upon the Project Success.

By 75.7% of influence which can be explained by the Domination, Competency and Interpersonal Skill, observing the value of path coefficient, 0.444 between Domination and Project Success, 0.534 between Interpersonal Skill and Project Success and 0.029 between Competency and Project Success can be read that the role of Interpersonal Skill has influence more than two other variables.

The influence upon the Interpersonal by 55.5% is able to be explained well by Domination and Competency, with the value of path coefficient of 0.667 for the Competency to the Project Success and 0.127 between Domination to the Interpersonal Skill, for which the Interpersonal Skill quality can be explained by Competency more than the Domination.

b) East Java interaction model

Based on the result of hypothesis resting in the interaction model for sample data of East Java, all of the result give influence upon the conclusion towards the sample testing thoroughly. It means that East Java becomes reflection to the conclusion of this research hypothesis, because the research conclusion of all samples is the same result of the conclusion obtained from the respondents' sample testing of East Java.

By 71.9% of influence which can be explained by the Domination, Competency and Interpersonal Skill, observing the value of path coefficient, 0.416 between Domination to Project Success, 0.489 between Interpersonal Skill to Project Success and 0.109 between Competency to Project Success can be read that the role of Interpersonal Skill has influence more than two other variables.

The influence upon the Interpersonal Skill by 46.4% is able to be explained well by Domination and Competency, with the value of path coefficient of 0.651 for the Competency to the Project Success and 0.050 between Domination to the Interpersonal Skill, for which the Interpersonal Skill quality can be explained by Competency more than the Domination.

c) West Sumatera interaction model

Based on the result of hypothesis testing for sample data of West Sumatera, it can be concluded that in this interaction model, partially all of its variables have significant influence upon its criterion, except relation between the Competency to the Project Success having no significant influence.

Likewise, in the hypothesis testing of mediation, Interpersonal Skill and Domination, relation of significant influence as mediation variable in this model can be explained, except in the interaction between the Competency to the Project Success through the Domination and Interpersonal Skill having no significant influence.

In the simultaneous hypothesis testing, all predictor variables can be jointly able to give significant influence upon each criterion.

From the result above, it can be understood that West Sumatera based on the questionnaires, indicates different results with previous two sample models, in which according to the questionnaire data, the respondents in West Sumatera assess that Domination, although it is small, but it gives positive impact and influence significantly to the Interpersonal Skill.

Social strength owned is also able to increase the Interpersonal Skill in this interaction. This matter can be concluded that culturally the Domination effect in West Sumatera is stronger than in East Java.

If it is seen from the value of influence, by 81.0% of the Project Success can be explained well by the Domination, Competency and Interpersonal Skill. Each variable having path coefficient of 0.129 for the Competency to the Project Success, 0.472 for Interpersonal Skill to the Project Success and 0.408 for the Domination to the Project Success. It means that the Interpersonal Skill has better influence than two other variables, but the coefficient value of Domination to the Project Success is not far from the Interpersonal Skill to the Project Success; this is different with two previous data processing result, producing coefficient number between two coefficients which is far enough.

Likewise influence value of Interpersonal Skill can be explained well by Domination and Competency by 75.7%, with each path coefficient of 0.723 for the Competency to the Interpersonal Skill and 0.229 between the Domination to Interpersonal Skill. Such result indicates the value and pattern which is equal to two measurement above, basic different from this model measurement is Domination in West Sumatera having better value to the Interpersonal Skill and its significant influence which is different from that previously. This matter strengthens the assumption that West Sumatera has more tightly relationship and holds principles of feudalism heritage more as impact of culture and local wisdom, so that the Domination owned by the Stakeholders is better and will give positive influence upon the Project Success and Interpersonal Skill of the Stakeholders.

5. Conclusion and suggestion

5.1. Conclusion

Result of this research gives an overview on interaction of the Stakeholders in East Java and West Sumatera measured based on Domination, Competency and Interpersonal Skill variables to the Infrastructure Project Success. From all samples processed in this research, it can be concluded as follows:

- 1) Domination of the Stakeholders consistently gives significant influence upon the Project Success in such two sample regions. Measurement composition of DOM-INT-IPS or COM-DOM-IPS, indicate significant influence upon the Project Success. Therefore, the larger Domination owned by the Stakeholders in any modelling condition whatever is able to contribute positively to the Project Success directly. Domination is one of the parameters still calculated in the project interaction in Indonesia; it is enabled as a result of strong enough influence upon the culture and tradition in social community life which is past heritage having feudalistic cultural.
- 2) Competency of the Stakeholders does not influence the Project Success, except in East Java, that positioning the Competency as variable influencing significantly to the Project Success. This matter describes that in East Java although the Domination effect is still strong enough to influence the project implemented, but in socio-culture it has been able to be more realistic in developing its interaction model. If not modelled together with Domination and Interpersonal Skill, Competency can be parameter influencing the Project Success, although it is not strong enough when it must be modelled together with the Domination and Interpersonal Skill jointly in its interaction model, in which in such model the influence upon Competency will be taken over by the Interpersonal Skill, so that the Competency when modelled together with the Domination and the Interpersonal Skill can not influence the Project Success directly. West Sumatera remains consistent to show that the Competency can not directly and individually influence the Project Success when it has modelled with Interpersonal Skill. This matter indicates highly strong influence from the Interpersonal Skill over the Competency variable in West Sumatera.
- 3) The Interpersonal Skills of stakeholders influences significantly to the Project Success. From all measurement models, it shows that the Interpersonal Skill of the Stakeholders is the only variable consistently giving influence upon the Project Success in all modelling compositions. It proves that the Interpersonal Skill is the important parameter, which should not be included in the Competency indicators as it is now. The Interpersonal Skill is only created to be one of the parts existing which in its measurement it can be lost in model. But based on this research, the Interpersonal Skill gives significant influence upon the Project Success in all models partially and almost all models show influencing value to the Interpersonal Skill over the Project Success as mediation variable significantly and simultaneously.

5.2. Recommendation

Based on the result of this research, benefit and suggestion, which can be used to consider in the similar researches in the future, are obtained among others:

- 1) This research was only focused on the project managed by Directorate General of Highways, based on the 2018 Budget Year. Whereas, the infrastructure projects is not only managed by one Directorate General, so that to obtain the description widely and objectively, it should make a research in other infrastructure sectors such as Water Resources, port and airport affairs, etc.
- 2) This research only took sample from West Sumatera and East Java, while the traditional and cultural patterns existing in Indonesia are numerous and varied. So that two regions investigated have not been able to be a big picture of Interaction Models in Indonesia and a similar research should be made by taking more various samples such as middle and east part of Indonesia having highly different culture and tradition.
- 3) This research was focused on the Project Owner, Designer/Supervision Consultant and Main Contractor as researcher subject. While the Stakeholders of the Project as mentioned by Olander (2003) and PMBOOK (2017) included Employees, Suppliers, sub-contractors, Media, NGO, etc. So that in the future it is expected that more and different subjects can be used and other description enabling to support or contrast to the hypothesis produced in this research is obtained.

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