

Understanding Social Conflict in Indonesian Infrastructure Projects Based on the Causes and Impacts

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Abstract— As an archipelagic country with high cultural diversity, development projects in Indonesia are required to involve the community as a stakeholder appropriately. However, community engagement in the project is a dilemma where society can be a good supporter, while on the other side, it can be a risk factor. This research aimed to determine the type of project conflict that affects social conflict between the project and the local community and the impacts arising from social conflict. This study used 40 data on infrastructure projects in Indonesia collected from the questionnaire and analyzed using the Relative Importance Index (RII) method. This research revealed that value conflict was the most influential type causing social conflict, followed by affective, task-related, and rule-related conflicts. A personal relationship is the biggest impact caused by the project's social conflict, followed by the impact of cost, CSR, time, and the local workers' satisfaction. This research indicated that social values and norms still influenced the local community's life. Project managers can use these findings to develop conflict management strategies according to local socio-cultural conditions in order to reduce the potential for project-related conflict to escalate into social conflict. For further research, these results can be used as a reference in developing an appropriate environmental and social framework under the socio-cultural conditions of the Indonesian community; thus, social conflicts can be avoided, and project performance can be achieved according to the specified goals.

Keywords— Type of conflict; project social conflict; environment and social framework; infrastructure project; local socio-culture.

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I. INTRODUCTION

The growth of construction sector development in Indonesia has increased significantly in the last few decades. In 2020, the Indonesian Central Bureau of Statistics reported that Indonesia's construction capitalization in 2019 reached 1,973.15 trillion rupiahs (131.54 billion USD at an exchange rate of 15,000 per USD). This value has increased by 17.52% from the 2018 achievement. However, this aggressive growth is not enough to improve the quality of Indonesia's infrastructure to support the national economy. The World Bank criticized the Global Competitiveness Report that Indonesia's position in 2019 was ranked 50th or fell two from 2018. This condition is ironic because the growth in value and construction capital is inversely proportional to the quality produced. Several geographical, demographic, and social conditions are the important factors that influence the achievement of Indonesian infrastructure's capacity and quality.

Indonesia is a very large archipelagic country with more than 17,000 islands. Different geographical and demographic

conditions and the diversity of socio-cultural factors are the obstacles to aligning development programs nationally. To increase Indonesia's infrastructure capacity, Indonesian construction actors must pay attention to the patterns of socio-culture interactions formed due to the influence of local geography. This is one of the inhibiting factors for the project due to disputes and conflicts with local communities. Consortium for Agrarian Reform (KPA) [1] reported that agrarian conflicts due to infrastructure development had increased significantly. In 2017, KPA recorded 16 cases due to infrastructure development in Indonesia. Meanwhile, in 2019 there was a spike in more than 400% or 83 cases of conflict.

The Indonesian Committee for Acceleration of Priority Infrastructure Delivery (KPPIP), as the cross-ministerial/institutional joint committee, also reported that the main challenge for infrastructure development in Indonesia is the issue of land acquisition, including the potential for resistance and disputes. The contribution given by land issues to infrastructure development reaches 30%. The Indonesian Central Bureau of Statistics corroborated the data, which also recorded an increase of 15% in general conflicts that occurred

in Indonesia from 2011 to 2018. In 2018, The National Human Rights Commission of Indonesia responded to conflicts due to infrastructure development by publishing its studies on development for the public interest. In the report, they delivered several basic reasons for the refusal of the affected community to be carried out for the development, which are the value of compensation (67.65%), settlement of ownership (17.65%), threats to environmental damage, and customary land (5.88%), loss of livelihood (2.94%), physical access (2.94%), and criminalization (2.94%) [2].

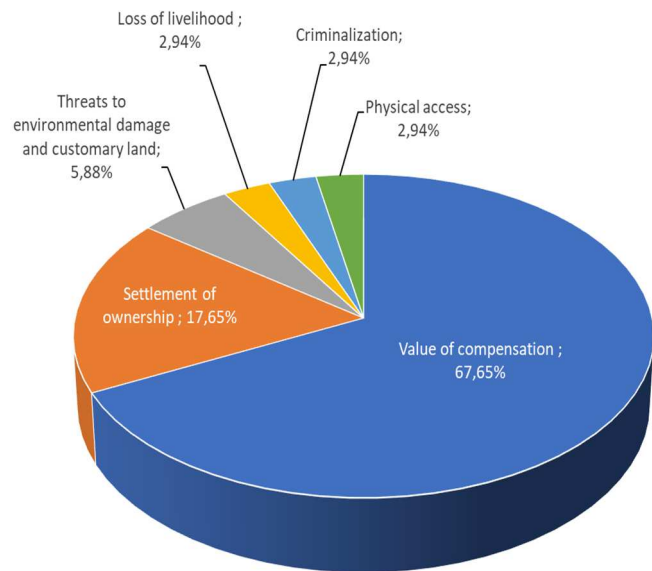


Fig. 1 Refusal reason by the community regarding infrastructure project (KOMNAS HAM [2])

The conditions prove the community's dissatisfaction with the benefits they received from the development process. Omenge et al. [3] stated that a conflict situation is a bargaining situation when the ability of one party to achieve the desired goal will depend on the choices or decisions made by the other party. Conflicts must be identified correctly to reduce the potential for greater losses to the project [4]. Sanggoro et al. [5] stated that appropriate early mitigation of the interests and expectations of the community towards the project could minimize the potential for social conflicts to obtain optimal project achievements. Conflict management in construction projects is important to achieve sustainable development. Martsri et al. [6] argued that sustainability development consists of three fundamental aspects: energy, economy, and environment (3E). In addition to being an important aspect of development, these become a basic need for the community. The interdependence of these aspects causes conflict to become a critical issue that must be managed and mitigated appropriately.

This study aimed to reveal the impact of social conflict in infrastructure projects in Indonesia on the perceptions of project actors. By understanding the impacts, project actors can carry out better mitigation and planning to anticipate losses in the project. To date, little research still examines the factors and impacts of conflict on Indonesia's infrastructure development.

A. Community Engagement

In 2018, the Project Management Institute (PMI) [7] defined a stakeholder as a person, group of people or organization who can influence or be affected by a project. The Project Management Institute (PMI) [7] and Olander [8] shared the same opinion regarding the position of local peoples or communities in the project stakeholder structure by placing them as external influences. Meanwhile, Freeman et al. [9] argued that local communities are the project's main stakeholders. However, both place the local community as a component of project stakeholders who influence project implementation. Identifying stakeholders is fundamental and needed in developing plans and planning management based on their effects and impacts [10].

The local community as a social community has connections with the political and government systems that make it has high complex; therefore, it needs a special approach through interaction patterns by maximizing the ability of interpersonal relationships of its stakeholders. Community involvement in project activities increases the potential for disputes and conflicts. Nguyen and Mohamed [11] described the influence of stakeholders based on their level of power and importance. The higher the power level and the greater the importance, the greater the influence of stakeholders on the project. In this case, society is both an object and a subject in the political and social system, thus enabling its position to influence political and social decisions in the community [4].

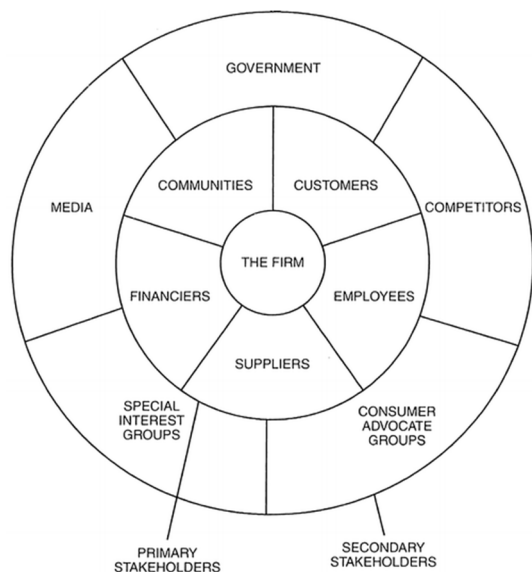


Fig. 2 The stakeholder wheel (Freeman et al. [9])

B. Conflict in the Project

The involvement of many parties in any activity can create a conflict of interest that can lead to open conflicts between interested parties. Omenge et al. [3] defined that conflict can occur because of the interaction between interdependent people and those who think the goals are incompatible. Conflict can also occur due to the interference of one actor with another. Khalid and Fatima [12] stated that conflict is a common and unavoidable consequence of social interaction in society and organizations and is seen as an indication of a

failed function. Meanwhile, Wang et al. [13] argued that there are three aspects of development: social, environmental, and economic. However, these three aspects can also cause conflict in a project [14]. Further, conflicts that occur in projects depend on the characteristics of the project, and the size of the project determines the level of risk and the type of conflict [15], [16].

According to Hartono et al. [17], project performance and success are determined by the conflicts' quality and quantity. Task conflict and emotional conflict are types of conflict that affect project performance in general. Wu et al. [18] and Riley [19] also agreed with Hartono. According to them, the two conflicts have proven to influence the project directly. However, Wu and Riley added process conflicts to prove their relationship and influence on the project. Meanwhile, Richardson [20] divided the conflict as follows:

- Task-related conflicts: conflicts that occur due to differences of opinion about the task group (functional).
- Process-related conflicts: for instance, conflicts caused by controversy or debate about how tasks should be completed (dysfunctional).
- Role-related conflicts result from differences in the level and type of responsibility that various people think they should have.
- Affective conflicts: conflicts that occur due to emotional arguments based on interpersonal compatibility; and
- Value-related conflicts: conflicts/controversy caused by differences in systems or values.

C. Impact of Social Conflict

In general, several studies have shown that conflict has an impact on project performance. According to PMBOK [7], the results were traditionally calculated on the achievement of cost, quality, and time. The results of Vaux and Kirk [21] state that the consequences of conflict are delayed schedules decreased morale and motivation, and reduced profits. His opinion confirmed the previous research by Rathenam and Dabup [22]. He stated that poor relations between the community and conflicts with local workers are factors that affect the project. Even though Vaux [21] and Rathenam [22] have different points of view on modeling factors and their impacts on projects, it can be seen that there is a strong relationship between factors and impacts on projects in the two studies.

Celik et al. [23] examined the negative impacts of a development project on the environment and society. According to him, the increasing impact caused by a construction activity has another consequence: the increase in social costs. Similarly, Chen et al. [24] stated that conflict could affect project performance, especially cost performance. Furthermore, Xue and Xiang [25] explained that conflicts that cannot be controlled and managed properly would result in social instability.

D. Variable and data analysis

This research used the type of conflict as a variable that affects social conflict and an impact variable based on the type of conflict that occurred in the project. Based on the literature review, the types and the impact of conflicts are determined in Table 1.

TABLE I
TYPE OF PROJECT-RELATED CONFLICT AND IMPACT OF SOCIAL CONFLICT VARIABLES

Variable	Description
<i>Project-Related Conflict Variables</i>	
Task-Related Conflict (TRC)	Disputes between the project team and the community are caused by differences in point of views, opinions, and perceptions in completing project tasks and activities, including work results and work processes.
Role-Related Conflict (RRC)	Disputes between the project team and the community are caused by differences in point of view, opinions, and perceptions in applying company rules in completing work.
Affective Conflict (AC)	Disputes between the project team and the community are caused by differences in points of view, opinions, and perceptions in the context of interpersonal relationships, including personal interactions involving emotions.
Value-Related Conflict (VRC)	Disputes between the project team and the community are caused by differences in point of views, opinions, and perceptions in understanding and implementing behavior regarding respect for a system and values prevailing in the community's social order.
<i>Impact of Social Conflict Variables</i>	
Cost Impact (CI)	Cost losses due to social conflicts (overhead costs, material/equipment losses, community compensation, damage repairs, fines or other sanctions incurred, etc.).
Time Impact (TI)	Delays due to strikes caused by refusal or other countermeasures that result in the project not being completed.
Employee Satisfaction Impact (ESI)	Local workforce complaints and dissatisfaction with project management rules.
Personal Relationships Impact (PRI)	Conditions of personal conflict between the project team and the local community on the project.
CSR Impact (CSRI)	Social costs are incurred in the form of social and religious donations/assistance.

Source: Data analysis

The data were collected using a questionnaire submitted to project managers who handled infrastructure development projects in Indonesia from 2019 to 2021. The questions were about the impact of social conflict due to development projects.

The questions consisted of "how much do the conflict type variables affect the occurrence of social conflict in the project?" and "how much did the social conflict affect the project performance?". The responses were measured using a Likert scale as follows:

- very low : scale 1,
- low : scale 2,
- moderate : scale 3,
- high : scale 4,
- very high : scale 5.

The responses were then processed using the Relative Importance Index (RII) method. The analysis was divided into two parts: the effect of the type of project conflict on the social conflict and its impacts on infrastructure projects.

TABLE II
SUMMARY OF QUESTIONNAIRE RESPONSE

Variable	Frequency				
	Very Low 1	Low 2	Moderate 3	High 4	Very High 5
TRC	0	0	16	17	7
RRC	0	0	15	22	3
AC	0	0	12	19	9
VRC	0	0	12	18	10
CI	0	0	9	24	7
TI	0	1	17	18	4
ESI	0	0	19	21	0
PRI	0	0	7	22	11
CSRI	0	0	14	16	10

Source: Data analysis

Using this RII method, the ranking of project conflict variables that affect social conflict and the impact of social conflict on project implementation can be obtained based on the project manager's perception. The following formula below is the RII used to determine the relative ranking of the index.

$$RII = \frac{w}{A \times N} \quad (1)$$

Where, w is the value given by the respondents in answering the questionnaire based on the Likert scale. The relative index criteria used was based on the study by Kassem et al [26], as follows:

- very high (VH) : 0.80 – 1.00
- high (H) : 0.60 – 0.80
- moderate (M) : 0.40 – 0.60
- low (L) : 0.20 – 0.40
- very low (VL) : 0.00 – 0.20

III. RESULTS AND DISCUSSION

The questionnaire was distributed to 40 respondents who are project managers who have managed infrastructure projects in Indonesia from 2019 to 2021. Based on the

respondents' data in Table 3, the respondents met the criteria as an expert in project management, as seen in their experience as project managers for more than five years. In fact, 52.5% have more than 20 years of experience as a project manager. Likewise, the respondents' educational background was dominated by bachelor's and master's degrees (97.5%). The infrastructure projects managed by the respondents in the last three years also showed good diversity in which they could represent Indonesia's main infrastructure sectors.

TABLE III
RESPONDENT DEMOGRAPHY

Respondent Characteristic	Frequency	Percent
<i>Experience as Project Manager</i>		
Less than 5 years	-	-
5-10 years	9	22.50%
10-20 years	10	25.00%
20-30 years	13	32.50%
More than 30 years	8	20.00%
<i>Education degree</i>		
Diploma in Civil Engineer	1	2.50%
Bachelor in Civil Engineer	32	80.00%
Master	7	17.50%
Doctor	-	-
<i>Type of Project</i>		
Road and Bridge	16	40.00%
Building	8	20.00%
Dam and Water Resource	15	37.50%
Airport and Harbor	1	2.50%

Source: Data analysis

The validity and reliability analysis results from the questionnaire in Table 4 indicate a good value. The value met the test requirements, namely the r-statistic and Cronbach's alpha values. This value indicates the ability of the research instrument to measure variables accurately and the instrument's consistency in testing on the same conditions and respondents.

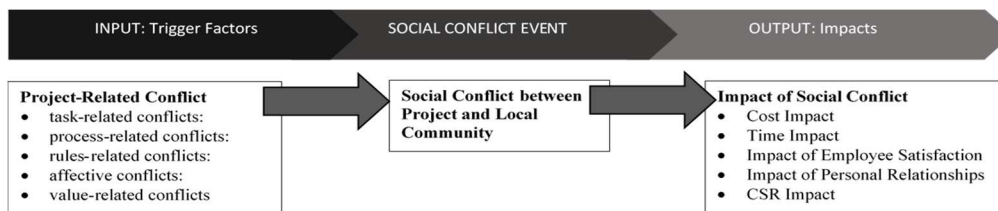


Fig. 3 Conceptual models of project social conflict

TABLE IV
VALIDITY AND RELIABILITY ANALYSIS

Variable	Description	Validity			Reliability	
		T-Stat.	T-Table*	Validity	Cronbach's alpha	Reliability (>0.7)
<i>Type of Project-Related Conflict</i>						
TRC	Task-Related Conflict	0,945		Valid		
RRC	Role-Related Conflict	0,878	0,312	Valid	0,842	Reliable
AC	Affective Conflict	0,921		Valid		
VRC	Value-Related Conflict	0,879		Valid		
<i>Impact of Social Conflict</i>						
CI	Cost (Loss) Impact	0,728		Valid		
TI	Time Impact	0,755		Valid		
ESI	Employee Satisfaction Impact	0,615	0,312	Valid	0,783	Reliable
PRI	Personal Relationship Impact	0,682		Valid		
CSRI	CSR Impact	0,794		Valid		

*Significant level 5%

TABLE V
PEARSON CORRELATION OF PROJECT-RELATED CONFLICT AND IMPACT OF SOCIAL CONFLICT

Variable	Correlation								
	TRC	RRC	AC	VRC	CI	TI	ESI	PRI	CSRI
TRC - Task-Related Conflict	1								
RRC - Role-Related Conflict	.823**	1							
AC - Affective Conflict	.878**	.700**	1						
VRC - Value-Related Conflict	.726**	.698**	.743**	1					
CI - Cost (Loss) Impact	.687**	.621**	.597**	.584**	1				
TI - Time Impact	.626**	.509**	.542**	.401*	.470**	1			
ESI - Employee Satisfaction Impact	.396*	.359*	0,248	.342*	.480**	0,279	1		
PRI - Personal Relationship Impact	.463**	0,264	.591**	.316*	0,251	.460**	0,219	1	
CSRI - CSR Impact	.544**	.532**	.619**	.651**	.454**	.444**	.398*	.461**	1

** . Correlation is significant at the 0.01 level (2-tailed)

* . Correlation is significant at the 0.05 level (2-tailed)

TABLE VI
RELATIVE IMPORTANCE INDEX OF PROJECT-RELATED CONFLICT TYPE AND IMPACT OF SOCIAL CONFLICT

Variable	Description	RII	Rank	Category
<i>Type of Project-Related Conflict</i>				
TRC	Task-Related Conflict	0,755	3	High
RRC	Role-Related Conflict	0,740	4	High
AC	Affective Conflict	0,785	2	High
VRC	Value-Related Conflict	0,790	1	High
<i>Impact of Social Conflict</i>				
CI	Cost (Loss) Impact	0,790	2	High
TI	Time Impact	0,725	4	High
ESI	Employee Satisfaction Impact	0,705	5	High
PRI	Personal Relationship Impact	0,820	1	Very High
CSRI	CSR Impact	0,780	3	High

Source: Data analysis

The next test aimed to see the relationship between variables from the correlation test. This correlation coefficient refers to the Pearson correlation coefficient to see the phenomenon of the relationship between two or more variables in the research model. Table 5 shows the correlation between variables of social conflict and the impact of social conflict in infrastructure projects in Indonesia. The result shows a strong correlation between the variables of the type of project conflict and the impact of the social conflict.

Table 6 shows the analysis results using RII method. The rating was arranged based on the RII on the variables of the type of project-related conflict and the impact of the social conflict. The ranking shows the respondents' perception of the factors that influence the occurrence of social conflict and the impact it caused. Based on the RII analysis, social conflicts in infrastructure projects in Indonesia were mostly caused by value-related conflicts (VRC). This conflict was related to the socio-cultural conditions of the pluralistic Indonesian society. These results strengthened Sanggoro et al [27] research which stated that the dominance of their stakeholders strongly influences infrastructure projects in Indonesia. This dominance is a cultural heritage passed down from generation to generation, forming a value in the community's social life.

Meanwhile, based on the relatively important index of the impact of the social conflict also shows the same. The personal relationship (PRI) between the project team and the community is the most affected by social conflicts in a project. This impact perpetuates the condition of Indonesian society as an entity with a strong socio-cultural life norm. The attitude of social collectivity is a strong reason that personal relationships are greatly affected by the existence of social conflicts in the project.

The next rank is affective conflict (AC), a conflict due to the emotional relationship between the project team and the community. This conflict generally occurs due to personal behaviors that involve emotional and personal sentiments. Indonesian society has a high level of politeness. Thus, conflicts that usually occur are conflicts that are in direct contact with conflicts of values. This is evidenced by the high correlation value between value-related conflict (VRC) and affective conflict (AC) (Table 5).

The other factor is task-related conflict (TRC) due to different views and expectations regarding work results and processes. Generally, natural hazards are the main factor causing conflict. Likewise, different project outcomes from community expectations or changes in community accessibility to economic and social resources trigger disputes and conflicts. Moreover finally, role-related conflicts (RRC), namely conflicts that occur due to the application of company and project rules in completing work. This conflict was not intense since it merely highlighted conflicts between project management and the local community being hired. Role-related conflicts (RRC) can develop into social conflicts if they involve other sensitive issues to society, such as issues of slavery or equality.

In the social conflict impact variable, the cost impact (CI) is the second important factor after the impact of personal relationships (PRI). These results show that social conflicts in projects always impact cost losses. According to PMBOK [7], project performance always aims at achieving cost, quality, and time targets. Thus, conflict as one of the problems that hinder projects will directly impact project performance. The cost impact (CI) can also be seen from the third RII, namely the impact on social costs (CSRI). According to Wang et al. [28], Corporate Social Responsibility (CSR) as a form of project effort to reduce social impacts on the community and as a concept of sustainability is also seriously affected by social conflicts in the project. The social community as one of the conflict subjects will linearly increase the social costs, whereas, at the same time, the social community is also

positioned as the object of sustainable development in the CSR concept.

The next level is the impact on the project implementation schedule (TI). Respondents considered that the project schedule was not affected by social conflicts. This can happen because, in general, most of conflicts do not occur because of rejection but because of disagreements due to processes and results that do not match expectations. In addition, an educated community helped understand the importance of improving the quality and quantity of Indonesia's infrastructure to improve the community's economy and living standards.

The last impact of social conflict is the satisfaction of local workers (ESI-Employee Satisfaction Impact) with the project. This impact was not the most serious impact on social conflict, indicating that rule conflict is a type of conflict that affects social conflict the most. Employee dissatisfaction with the project is not a serious impact because it is not only based on social stability maintained in the project environment but is influenced by the level of wages and staffing rules imposed by the project on its workers. This is why social conflict does not seriously impact workers' satisfaction with the project.

Based on the research results, it can be seen that conflicts related to values or norms (VRC) and personality (AC) become the main cause of social conflict. This is also confirmed by the biggest impact resulting from social conflict was the ruin of good relations between the project and the community (PRI). This opinion also describes the condition of the Indonesian people who have cultural diversity as a very strong heritage that is maintained in shaping social values and norms. This study confirms Meng et al. [29], who stated that projects must consider cultural differences. The impact of conflict can be very serious when two cultures clash and cannot be managed properly. Project managers must see this phenomenon as important information to determine the right strategy to minimize potential conflicts and their impact on infrastructure projects in Indonesia. The ability of project managers to determine the right strategy is a challenge to the managerial abilities of project actors, where managers must have the ability to assess the behavior of the surrounding environment [30]. The project manager's inability to control conflict will greatly impact social and economic aspects and increase pressure on the government to maintain social stability, increase costs and reduce participation interest [31].

IV. CONCLUSION

This study researched the types of project-related conflicts that influence the occurrence of social conflicts in infrastructure projects in Indonesia. Using the RII method, value-related conflict is the type of project-related conflict that caused the most influence on the occurrence of social conflicts in the project. Then successively are affected by affective conflicts (AC), tasks-related conflict (TRC), and role-related conflict (RRC).

Meanwhile, social conflicts in the project have an impact on the project in the aspect of personal relationships (PRI) between the project and the community, followed by the costs impact (CI), social costs or CSR impact (CSRI), time impact (TI), and employee satisfaction (ESI). The results confirm that socio-cultural conditions in Indonesia are still very strong in influencing the behavior and attitudes of the community

towards the project. This phenomenon is very important for project managers in developing appropriate project conflict management strategies.

The recommendation of this research is that further research can create a model that can measure the opportunities and potential for social conflict in the project and predict the impact caused by the social conflict. Thus, social conflicts in the project can be anticipated and mitigated appropriately to achieve the best project performance.

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