

DELAY ANALYSIS USING IN-DEPTH INTERVIEW METHOD: CASE STUDY POST-DISASTER RECONSTRUCTION IN LOMBOK

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ABSTRACT

Earthquake disasters have a significant impact, especially on infrastructure, socio-economy, and housing. In August 2018, there were earthquakes in Lombok; the Government then issued a reconstruction policy, especially in the housing sector. In the worst affected areas in North Lombok, the reconstruction process is targeted to be completed in March 2019, but as of February 2020, at least 7,210 houses have not been constructed. Further discussion is needed to determine the delay factors in post-disaster housing reconstruction. A qualitative approach was chosen to emphasize the benefits and information gathering by exploring the phenomenon under study. Seven informants from representatives of the Government, facilitators, and the community were selected to be interviewed regarding the delays. The data analysis used in this study used a descriptive approach by categorizing the results of the interviews according to previous research and experts. Thus, data analysis was found five issues of delay that are closely related to communication and coordination, human resources, materials and supplies, workmanship and quality, and monitoring.

Keywords: delay; post-disaster; reconstruction; Lombok; facilitators.

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INTRODUCTION

Indonesia is one country that is vulnerable to earthquake disasters (Istikomah et al., 2019). Geographical position increases Indonesia's vulnerability to earthquakes (Elsen et al., 2019). Indonesia is located between necessary plates has tectonic conditions. Large areas are situated on the Burma and Sunda plates; some locations are also surrounded by the Australian, Indian, and Yangtze Plates (Bird P., 2003). In the past 15 years, earthquakes have surged Indonesia on different locations, such as in Aceh (9.2 M, 2004), in Nias (8.4 M, 2005), in Bengkulu (8.5 M, 2007), in West Sumatra (7.7 M, 2010), and Mentawai (8.3 M, 2010) (Irsyam et al. 2017).

Based on the Climatology and Geophysics Meteorology Agency (BMKG), during 2018, earthquake activity continuously took place in Indonesia as much as 11,577 times with various magnitudes and depths (BNPB. 2020). The vast archipelago increases the probability of earthquakes. Lombok is one of the most vulnerable places to large-scale earthquakes (Istikomah et al., 2019).

Lombok is located between two "Earthquake-generators," namely the Flores back-arc thrust to the north and the boundaries of the Sunda and Indo-Australian tectonic plates in the south (Istikomah et al. 2019). The earthquakes occurred on July 29, 2018, and August 5, 2018, with a scale of 6.4 and 6.9 on the Richter scale (Azhari et al. 2020) scale. Delays in post-disaster reconstruction are inevitable. The re-occurrence of earthquakes should be an essential record for the Government. The collapse of the post-disaster reconstruction process is like a recurring error. This is undoubtedly a problem, especially in the post-disaster reconstruction process in Lombok in 2018 (Nugraha P. 2019).

Delays in post-disaster reconstruction projects in Lombok, West Nusa Tenggara, also occurred due to ineffective government and community communication. This proves that there will be no delay if the post-disaster housing reconstruction program has been implemented correctly. The chain of events is categorized as a delay based on the reality of the situation and supported by the statement of Vice President Jusuf Kalla last period. He said the reconstruction process began in early September 2018, and the realization of all housing in Lombok and Sumbawa, West Nusa Tenggara, should be completed in March 2019 (Nugraha P. 2019). Especially in North Lombok, on February

4, 2020, the number of houses built was 25,047, while those in the reconstruction process were 11,757. This means that there are still about 7,210 who still haven't made progress.

Evaluation of project progress is carried out by comparing the realization and the plan (Dumadi et al., 2014). Lombok's post-disaster housing reconstruction project is targeted for March 2019, albeit with an extension until December 2019. As of March 2020, this post-disaster reconstruction project has not been fully realized, especially in areas with the highest disaster rates. Disasters in remote locations require a strategic and tailored approach to a communication plan by the local community's characteristics (Purworini et al., 2019). The Government used a self-help scheme to tackle the circumstances. This will accelerate the reconstruction process, but not in reality (Saputra, 2020). It is essential to know and identify the delay factors and how the reconstruction process is carried out in Lombok. Thus, acquiring the causative factors of uncertainty can help avoid or reduce the negative consequences in the future, such as cost overruns that can be detrimental (Salam, 2019). The analysis of delay factors can explain the various obstacles faced and propose solutions to accelerate and develop the post-disaster reconstruction process. Finally, it can reference future post-disaster recovery programs in Indonesia and other areas focused on the housing sector.

RESEARCH METHOD

This study describes the delay factor in the post-disaster reconstruction project in Lombok in early August 2018. This research is a case study where case study research is a study that explores a problem with certain limitations, in-depth data collection, and includes sources of information (Yin & Robert. 1984). This research is limited by the time, place, and case study in programs, events, activities on individuals.

By these objectives, this study will use a qualitative approach. Qualitative research is not like quantitative research, which seeks to find generally applicable laws, but rather in the process of translating social phenomena, understanding one's life experiences, exploring concepts (Bowles & Aston, 1998). This qualitative method can be chosen because it is more adaptable when dealing with multiple realities; it directly correlates with researchers and respondents. It is more sensitive and adaptive to many of the influences and value patterns in the field (Moelong. 2004).

Moreover, the qualitative approach was chosen because it emphasizes the benefits and gathering of information by exploring the phenomena studied. Bogdan and Taylor expressed that qualitative research is a research procedure that produces descriptive data in written or oral words from the observed perpetrator; the characteristic of qualitative methods is more concerned with process than results (Modeling. 2004).

Research Framework

The data analysis process consists of four stages: initial data collection, data transcript, triangulation, and conclusion withdrawal. After the stages are carried out, it is expected to be known the causes of delays and the reconstruction process of post-disaster projects in North Lombok. The research stage is shown in Figure 1 below.

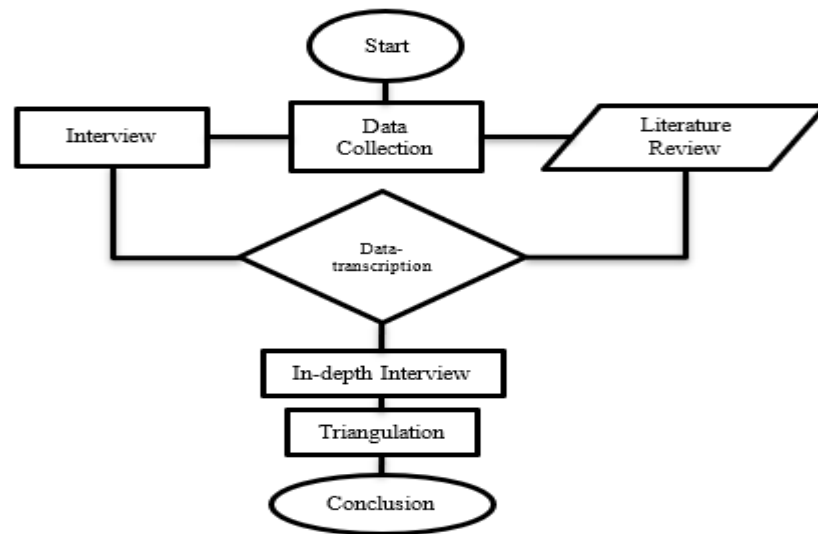


Figure 1. Research Framework

The data collection process in this study focused on the factors that caused delays in reconstruction after the Lombok disaster. Based on previous research, at least seven factors can cause delayed post-disaster reconstruction process (Bilau et al., 2018). This basis is a consideration to conduct interviews with parties related to the reconstruction process.

The informants selected to be the data sources in the study came from various sectors. The technique of choosing informants in this study is purposive. Purposive sampling is selecting a group of subjects based on specific traits that are thought to be closely related to previously known population characteristics (Grinnell, 1993). Because this research is qualitative and descriptive, i.e., research conducted by entering certain social situations, making observations, and interviews with people who are considered to know about the situation.

Therefore, the technique of informant selection in this study is purposive, i.e., chosen with specific considerations and goals (Grinnell, 1993). An informant is a person who can provide information about the situation and conditions of the research setting. An informant should have a wealth of experience with a research background (Moelong, 2004). The individuals who will be taken as a sample of informants in the study know about the reality of events at the research site. Key informants must represent the population and relate directly to the phenomena to be investigated. Based on the characteristics of informants, the informants to be selected are people who are directly involved in post-disaster housing redevelopment projects in North Lombok and have at least two years of experience as representatives of the government, housing developers, and the community. The range of 6-8 informants meets the requirements (Smith et al. 2018), and even the basic theme is proposed after the initial six informants (Grinnell, 1993).

The limit of the number of respondents in this study is seven people who represent the post-disaster reconstruction process in North Lombok, including the Head of the Regional Disaster Management Agency (BPDB) of North Lombok; Head of North Lombok Rehabilitation and Reconstruction Office; Chairman of the Rehabilitation and Reconstruction Section of North Lombok; Head of North Lombok Environmental Social Service; Coordinator of Facilitators of North Lombok region, Facilitator of Medane Village of North Lombok; and the Chairman of Pokmas Medane Village as a representative of the beneficiary association.

The number of informants is based on the saturation of information obtained. Information is expected to reach saturation point or redundancy (Zainal A. 2014). The selection of people who can be used as informants in this study has at least two years of experience in the post-disaster housing reconstruction process and experts in related fields, especially the North Lombok case. Table 1 will describe informants that have been defined in the form of unique codes.

Table 1. Informant's Identification

Informant	Code
Head of Regional Disaster Management Agency (BPDB) North Lombok	I1
Head of North Lombok Rehabilitation and Reconstruction Office	I2
Chairman of the Rehabilitation and Reconstruction Section of North Lombok	I3
Head of North Lombok Environmental Social Service	I4
Coordinator of Facilitators of North Lombok region	I5
Medane Village Facilitator	I6
Chairman of Pokmas Medane Village as a representative of the beneficiary association	I7

Primary and Secondary Data

Primary data is obtained from in-depth interviews. With this in-depth interview, informants can obtain preliminary data incomplete and detailed detail. An interview is "a form of verbal communication that aims to get data or information. An in-depth interview is a two-person conversation to obtain information, focused on content that focuses on the purpose of description, prediction, and systematic explanation, from research.

The study used in-depth, semi-structured interviews. This semi-structured approach explores the depth of informant perceptions/views related to research objectives with open-ended questions. In addition, in-depth interviews were conducted because they had previous relationships with informants. The technique used is probing, which is an effort to dig deeper information from informants (Grinell. 1993)

The study also used interview guidelines whose use was dynamic. Interview guidelines may change if needed and may be asked to informants depending on the conditions and circumstances in the information submitted by the informant. This interview guide contains open-ended questions that give the informant way to answer correctly. The conversation used is also informal so that the atmosphere is more relaxed and not tense. So that through this conducive and comfortable atmosphere can be collected materials and data about obstacles and guiding factors for delays in reconstruction after the North Lombok disaster. Some documentation, such as reconstruction photos, is also taken to collect and interpret data.

Secondary data of this research is done using the library review process. Most journals, books, and articles are used to pick up literature. The literature study is the reading and analysis of the research theme. Before doing the interview, a search of literature about post-disaster reconstruction has been collected to obtain an overview.

Research Instruments

Researchers are the main instrument in collecting and interpreting data based on interview guidelines in qualitative research. By conducting in-depth interviews, it can be understood the meaning of social interactions, exploring the feelings and values reflected in the speech and behavior of respondents. A data collection instrument is a tool used to measure the data to be collected. This data collection instrument is inseparable from the method of data collection. The instrument is a semi-structured interview guideline if the data collection method is in-depth. Semi-structured interview questions are described as follows.

Interview guidelines

Question points have been compiled in such a way using references to previous research (Bilau et al., 2018) related to delays in post-disaster reconstruction. This point is displayed in table 2.

Table 2. Research Instrument

Topic	Indicator	Code
Overview of the post-disaster reconstruction process in North Lombok (A)	General description of the post-disaster reconstruction process	A1
	Institutional structures that handle the reconstruction process	
	Initial data collection of beneficiaries	
	Disbursement process	
Coordination Communication (B)	Inadequate availability and inadequate distribution of each element's resources, roles, and responsibilities.	B1
	Ineffective communication	B2
	Inadequate local institutional capabilities lead to poor coordination and loss of trust with stakeholders.	B3
	The unclear function of any element related to development.	B4
Financial management (C)	Lack of transparency in financial management.	C1
	Inadequate local institutional management of money causes the flow of funds to be disused.	C2
Human Resources (D)	Lack of Skilled Labour	D1
	Inadequate public finances make it impossible to pay skilled workers	D2
	Lack of local human resources	D3
	Many needs and limited time impact the use of available workers (no standard)	D4
	Social jealousy between migrant workers and local workers	D5
Community Health and Safety (E)	Lack of awareness of health and safety risks to the reconstruction environment, lack of health and safety standards, and lack of regulations on safe development.	E1
	The use of hazardous materials and the transportation of large vehicles lead to unsafe environments, cultural and attitude problems, and a lack of commitment to health and safety.	E2
Material and supplies (F)	The price of material needs increases dramatically, causing purchasing power to decrease and also causing the quality of buildings to fall.	F1
	Delays in the procurement and supply of resources	F2
	Unavailability of materials	F3
	Materials distribution	F4
Artistry Quality (G)	Lack of training on workers, lack of regulation of worker recruitment mechanisms	G1
	There are inadequate human resources, poor material quality, and a lack of applied technology for development.	G2
	Inadequate pre-qualification of participating organizations.	G3
	Inadequate worker skills	G4
	Spontaneous use of imported labor due to pressure to rebuild quickly and short-term targets	G5
Monitoring (H)	local institutions inadequate to monitor developments	H1
	Sudden preparation leads to a lack of planning for development.	H2
	Political influence and lack of party autonomy of supervisory/monitoring	H3

RESULT AND DISCUSSION

The first stage in inferring the causative factors of delay is done by categorizing the interview results of informants. These factors are categorized by code. After categorization, it was found what factors were the cause of the delayed post-disaster reconstruction process in North Lombok. Saturation is obtained after being felt. Most (>50%) informants mention one factor in common. The interview results also showed at least two delay factors not found in the post-disaster reconstruction process in North Lombok based on previous research, namely Financial Management and Public Health and Safety. No informant mentioned these factors, so they will not be featured in this discussion.

Coordination and communication during design and development

The communication mechanisms attempted are carried out in smaller groups (through the provision of facilitators) so that the target group can receive the intended message. The results show that new programs still not commonplace for most people become obstacles to the development process. In communication and coordination factors, the cause is less effective communication (Code B2) and unclear functioning of any development-related elements (Code B4), which in this case is a third party or applicator.

The presence of facilitators assuages coordination because the management mechanism and self-help facilitator aim to reduce bureaucracy's length. Early socialization to introduce models that are considered new by society is a challenging process. Ineffective communication among stakeholders has led to confusion and misinterpretation of this community-based program. However, it is known that the self-managed scheme carried out by the Government will facilitate and speed up the reconstruction process. However, once again, the institution's lack of ability to socialize the program provides an opportunity for lack of effective coordination and communication in the reconstruction process. The condition of the traumatized community also contributes to this mechanism of communication and coordination, giving rise to mistrust between the community and the Government and even among the beneficiaries.

Another problem related to communication and coordination is the presence of a third party or applicator. The government has authorized property developers to provide development services to speed up the reconstruction process. But in reality, many people are deceived by the applicator. The vagueness of applicators by the Government, such as contracts and so on, ultimately provides an opportunity to cheat on society. Common frauds include a decline in the quality of buildings, unsupervised construction, and money smuggling. This vagueness gives the impression that the coordination and communication process faces problems in society and government agencies.

Human Resources

One of the obstacles faced by the reconstruction process of North Lombok is the lack of a workforce. Regarding human resource factors, the problems disclosed by informants are closely related to the lack of local labor (Code D3) and exceptionally skilled workers (Code D1). The availability of human resources has drastically affected post-disaster housing reconstruction. A lack of skilled workers slowed reconstruction. The housing development is simultaneously then the limitations of workers cannot be avoided. Human resources are a significant factor after all informants highlight materials and supplies.

Materials and Supplies

The availability of materials and supplies is a factor in delays in various locations. Of course, because of the reconstruction process held simultaneously. Material and inventory factors are factors that are always disclosed by informants, which are related to three problems such as the price of materials that rise dramatically (Code F1), delays in the procurement process and resource supply (Code F2), the availability of minimal local materials (Code F3).

The availability of cement and wood, the primary material of the house's structure, is also a factor in the delay. The popularity of wooden houses makes many residents want it, even though in Lombok, there are only a few types of trees that meet Indonesia's standard criteria. While cement, which is the core of a house, is undoubtedly hunted in every region of North Lombok, local

production cannot meet the community's needs. Rare building materials force most people to use low-quality materials.

Work Process and Quality

Artistry and quality are the following factors that affect the delay in the post-disaster reconstruction process in North Lombok. Work planned, done, and supervised by the community itself becomes polemic. Although helping by facilitators is still done to ensure quality and homework, mistakes are inevitable. In interviews with informants, artistry and quality factors often appear in the form of Inadequate Human Resources and Poor Material Quality (Code G2) and Spontaneous Labor Use (Code G5).

Artistry and quality should be a concern for the Government of Indonesia. Constraints such as poor material quality, incompetent impromptu workers, and lack of workers certainly add to the long list of reconstruction processes. Assessments carried out at each stage will monitor the quality of the building. At the same time, if it does not reach earthquake-resistant standards, it must be corrected until it meets the specified criteria. Repeated repair processes will cause delayed reconstruction.

Monitoring Process

Almost all damaged houses rebuilt after the quake with stimulant funds in North Lombok did not meet earthquake-resistant standards. For that, surveillance on the ground needs to be tightened. Unfortunately, the number of facilitators or supervisors in North Lombok as of February 4 is 400, not proportional to the number of people affected. All informants have the same opinion regarding factor monitoring; the problem with this factor is the inadequate local institutional capacity to monitor developments (H1).

The lack of parties monitoring the reconstruction process is the last factor. Not only does that cause delays that arise, but the quality of the building does not meet the criteria. Even so, the limitations of an institution to conduct surveillance cannot be avoided because post-disaster, it is impossible to bring in trained assessors to monitor all reconstruction activities. Although this is also the facilitator's responsibility, the imbalance between the number of facilitators and the community makes the monitoring process ineffective.

CONCLUSION

Several factors were identified related to post-disaster housing reconstruction in Lombok. Delay factors are related to communication and coordination, human resources, materials and equipment, workmanship, quality, and monitoring. Natural phenomena that often occur in Lombok, such as earthquakes, should concern stakeholders and parties involved. These factors are expected to improve and evaluate what points should be considered in the framework of housing reconstruction after the earthquake in the future. An important lesson from these findings is that it is critical to determine the right strategy as housing reconstruction begins, taking into account the various factors of delay that impact the goals to be achieved through the reconstruction process, such as the provision of safer homes and resilient housing at the same time. Affected residents need preparation in the form of a un complex development framework. Finally, the participation of all parties becomes crucial for the readiness for future earthquake disasters.

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