ANALYSIS OF OHS COSTS IN THE ROAD CONSTRUCTION PROJECT OF SINGARAJA CITY – MENGWI (SHORT CUT BEDUGUL POINT 5 - 6)

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Abstract. Short Cut Bedugul is a short road construction project on the Singaraja-Denpasar route. The short cut development includes the implementation of an occupational health and safety management system (SMK3). The 5-6 point short cut project includes the grade of a large project and places great importance on work safety. Field conditions with high rainfall make the area prone to landslides that can endanger workers, as well as environmental temperatures that reach 20°C which can affect work productivity. The objectives of this study are: To analyze the implementation of occupational safety and health (K3) on the Short Cut project point 5-6 Bedugul. To find out the amount of costs incurred in implementing K3 on the Short Cut point 5-6 Bedugul project. To analyze the percentage of safety and health costs (K3) to the short cut project value point 5-6 Bedugul. The type of research used in this research is descriptive research. and a quantitative descriptive of the construction of the Singaraja City Boundary Road - Mengwi (Short Cut Bedugul point 5–6) the use of K3 such as the use of safety helmets, light vests, masks, gloves, and safety belts is in accordance with the law and is very disciplined and obedient to existing regulations. set. The percentage of K3 costs to the project value refers to the CIRCULAR OF THE MINISTER NO. 66 / SE / M / 2015 Regarding the Cost of Implementing an Occupational Safety and Health Management System (SMK3) Construction in the Public Works Sector is 0.7%.

Keywords : K3 Costs, Bedugul Short Cut, points 5–6.

1. INTRODUCTION

Entering the development of the era of industrialization which is global in nature as it is today, industrial competition to win markets at regional, national and international levels is carried out by each company on a competitive basis. Industrialization is inseparable from human resources, where every human being is expected to be a ready-to-use resource and be able to help achieve company goals in the required fields [1].

Human resources in a company are an asset that needs to be safeguarded and maintained because in carrying out a work, a worker is often faced with dangerous equipment and workplace conditions that can threaten the health and safety of human resources themselves [2]. Work safety is an important component of labor protection. Work safety is a condition that is safe or safe from suffering, damage or loss in the workplace [3].

Data from Jamsostek in 2018 shows that the number of work accidents is 173,041 cases in Indonesia, for cases of minor accidents in factory-character work environments and cases with fatal consequences are dominated in construction environments, while construction includes all types of work, be it building projects, roads, bridges, tunnels, irrigation, dams, and the like [4].

Short Cut Bedugul is a short road construction project on the Singaraja-Denpasar route. In the short cut

development process, there are several factors that cause the author to be interested in researching the occupational health and safety management system (SMK3) applied in the field, including seeing the grade of large projects and prioritizing work safety, seeing the conditions in the field with high rainfall. causing the area to be prone to landslides so that it can endanger workers, as well as environmental temperatures that reach 20oC which can affect work productivity.

2. METHODS

This type of research used in this research is descriptive research. Descriptive research is defined as a study conducted to describe or describe a phenomenon that occurs in a project [5]. Quantitative descriptive is research conducted with the aim of making an objective picture of a situation. This method is used to solve or answer problems that are being faced in the current situation or that are happening [5]. Quantitative is data in the form of numbers or data which are extrapolated [6]. Project for Construction of the Singaraja City Boundary Road - Mengwitani (Short Cut point 5-6 Bedugul), which is located at Wanagiri Village - Gitgit Village, Sukasada District, Buleleng Regency.

P = work productivity (kg / hr.ppm or kg / min.ppm); O = output in the form of dry anchovy weight (kg); I = input in the form of workload calculated based on work pulse (ppm); and t = length of time worked (hours).

The productivity level is calculated for each worker during the drying process using a solar dryer and drying in the sun as shown in Figure 1.
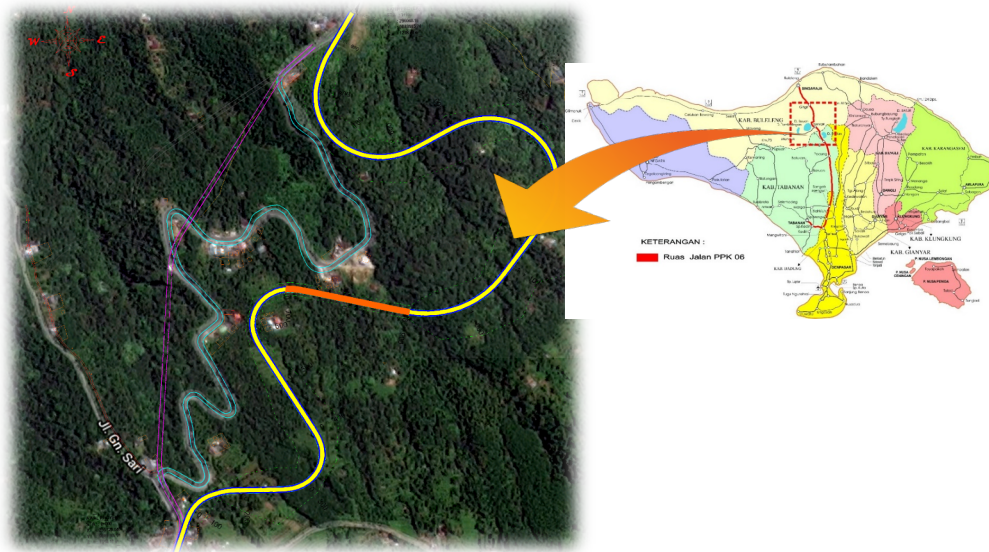

Figure 1. S*hort Cut* titik 5-6 Bedugul

The sample is part of the number and characteristics possessed by the population [6]. Sampling in this study is a probability sampling technique, namely simple random sampling using the Slovin formula. Probability sampling is a sampling technique that provides equal opportunities for each element (member) of the population to be selected as members of the sample [7]. The sample size in this study is determined by the Slovin formula as follows:

$$n = \frac{N}{1 + N.e^2}$$

Where:
n = sample size
    N = population size
    E = critical value (error rate)
(Note: generally 1% or 0.01%, 0.5 or 0.05% and 10% or 0.1% are used, any of which the researcher can choose to use)
The population in this study amounted to 80 people with a significant level of 10%, the size of the sample in this study were:

$$n = \frac{N}{1 + N.e^2}$$

$$n = \frac{80}{1 + (80 \times 0,1^2)}$$

N = 32

So, the number of respondents in this study was 32 people.

Data collection is a process of approaching the subject and the process of collecting the characteristics of the subject needed in research [6]. Data collection in this study has been carried out on the Short Cut project point 5-6 Bedugul, as for the data collection procedure, as follows:

1. Interview

Interviews as a search and information collection technique are carried out by directly visiting respondents to be asked for information about an object of research.

2. Questionnaires

Data collection was carried out by distributing questionnaires to assess and identify possible implementation of the project.

3. RESULTS AND DISCUSSION

The validity test is a test used to show the extent to which measuring instruments are used in measuring what is being measured. [3] states that the validity test is used to measure whether a questionnaire is valid or not. From the questionnaires that have been distributed, the validity value is obtained as shown in the following table:

Table 1. Validity Test

Frekuensi			
No Item	r hitung	r tabel (0,05 : 32)	Information
1	0,860	0,349	Valid
2	0,884	0,349	Valid
3	0,861	0,349	Valid
4	0,790	0,349	Valid
5	0,784	0,349	Valid
6	0,802	0,349	Valid
7	0,802	0,349	Valid
8	0,813	0,349	Valid
9	0,807	0,349	Valid
10	0,824	0,349	Valid

From the results of the calculation of the validity test of the questionnaire, it shows that all the questionnaire items are valid. The questionnaire item was declared valid because the results of the r count of 32 respondents for all questionnaires were greater than r table at the significance level (α) = 5%, namely 0.349 or Sig <0.05. From the results of the validity test, it can be stated that all items in this questionnaire are valid and can be trusted to retrieve research data.

Reliability test is used to test the reliability and consistency of data from the questionnaire. This shows that the measurement of the same attributes repeated will give the results of conditions that are identical or very similar [3]. Reliability test is a tool for measuring a questionnaire which is an indicator of changes or constructs. A questionnaire is said to be reliable or reliable if someone's answer to a question is consistent over time [8]. Reliability in quantitative research shows that the numerical results produced by an indicator are not different due to the characteristics of the measurement process or the measurement instrument itself. From the questionnaires that have been distributed, the reliability value is obtained as shown in the following table:

Table 2 Reliability Test Results on the use of K3

No	Variable	Cronback's Alpha (Resultl)	Cronback's Alpha (Minimum)	Information
1	Using K3	0,93	0,6	Reliabel

The results of the calculation of the reliability test on the questionnaire show that the average use of K3 on the project is consistent. The questionnaire was declared reliable because the results of Cronback's Alpha (Results) were greater than Cronback's Alpha (Minimum), which was 0.6. From the results of the reliability test it can be stated that the entire questionnaire is reliable and the answers from the respondents on average are consistent or reliable. Judging from the results of the validity and reliability tests, it was found that most of the answers from respondents for the use of K3 in the field were very disciplined and highly considered by the company so that the use of K3 in the new road construction project, the border of Singaraja City - Mengwi was considered very good.

The cost plan must cover the total needs of the work, be it material or material costs, equipment costs (rent or purchase), worker wages and other costs required. Broadly speaking, the RAB consists of 2 main components, namely, the volume of work and the price of the work unit.

This percentage of K3 costs aims to find out what percentage of K3 costs have an effect on the value of the project. This percentage can be calculated as follows:

Project Contract Value: Rp. 140,684,958,700.00
K3 fee before PPN: Rp. 905,905,000.00
PPn 10% VAT: Rp. 90,590,500.00
K3 fee: Rp. 996,495,500.00

So, for the percentage of K3 costs to the contract value, namely = 0.7%

Judging from the percentage of K3 costs, which is 0.7% of the total contract value, when compared to the Circular of the Director General of Construction at the Ministry of Public Works and Public Housing which has just been issued, the amount of the cost of organizing K3 construction is 1.0% - 2.5% of the contract value. the construction project reviewed showed that the costs required for the cost of prevention and inspection costs of work accidents amounted Rp726.182.726,28 atau 5,39% of the total contract value consisting of costs personal protective equipment Rp585.780.486.28 [8]. So the company is not maximally using the K3 budget so that it needs to be optimized again for purchases related to K3, because after all workers have the right to work in safe conditions and the company is obliged to fulfill it because if a work accident occurs then the risk is also borne by the company.

4. CONCLUSION

The legal basis for the use of K3 is regulated in Law no. 18 construction on the use of K3, precisely in article 22 of the Construction Work Contract: at least it must include a description of "Protection of workers which contains provisions regarding the obligations of the parties in the implementation of K3 and social security". In the New Road Development Project for the Singaraja City Boundary - Mengwi (Short Cut Bedugul points 5–6) the use of K3 such as the use of safety helmets, light vests, masks, gloves, and safety belts is in accordance with the law and is very disciplined and obedient to existing regulations. set. The cost required in the K3 budget plan for the New Road Construction Project for Singaraja City Boundary - Mengwi (Bedugul Short Cut point 5 - 6) is Rp. 996,495,500.00 (including VAT). The percentage of K3 costs to the project value refers to the CIRCULAR OF THE MINISTER NO. 66 / SE / M / 2015 Regarding the Cost of Implementing an Occupational Safety and Health Management System (SMK3) Construction in the Public Works Sector is 0.7%.

5. REFERENCES

[1]   Dharma, Kusuma Kelana (2011), Perkembangan Industrialisasi
[2]   Frans, Virgini Pingkan,"Biaya dan Manfaat Dari Alat Pelindung Diri: Studi Kasus di Depot LPG PT. Pertamina (Persero), Tanjung Priok, Jakarta, Indonesia,"J.Finance and Accounting. Vol.2,No2,Sept.2013.
[3]   Ghozali (2009) Uji Validitas dan Uji Reliabilitas, qmc.binus.ac.id.
[4]   Kesehatan dan Keselamatan Kerja (K3) Ramli 2010 : Definisi, dan Indikator Penyebab. https://jurnal – sdm.blogspot.com.
[5]   Metode Penelitian (Notoatmodjo,2010), eprints.ums.ac.id
[6]   M. Hanif Dhakiri, 2019 Peraturan dan perundang-undangan yang berisi tentang keselamatan dan kesehatan kerja, httsp://bssn.go.id
[7]   Pengertian Populasi dan Sampel Menurut Sugiyono (2010:117), adeletorn.blogspot.com
[8]   Jawat, I. W., Suwitanujaya, I. (2018). Estimasi Biaya Pencegahan Dan Pengawasan K3 Pada Proyek Konstruksi. Jurnal Paduraksa, 1(6), 88–101