# Analysis of the Implementation of SMKK (Construction Safety Management System) Based on the Regulation of the Minister of PUPR No.10/2021 on the Construction Project of Coastal Safety Development

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Abstract: The regulation governing the construction safety management system in Indonesia is the Regulation of the Minister of Public Works and Public Housing (Permen PUPR No. 10 Tahun 2021). The need for awareness of work safety and safety management systems is an obligation for all stakeholders in construction projects. This research aims to analyze the implementation of a construction safety management system in one of the coastal safety construction projects. For the following, this research aims to provide recommendations for applicable regulations based on a review of related literature. The method used in this research uses a quantitative approach with data analysis using descriptive analysis. Data collection was carried out using questionnaire distribution techniques and observation techniques. Observation and questionnaires forms refer to applicable regulations (Permen PUPR No. 10 Tahun 2021). The responses received and recorded which were included in the data analysis were 13 respondents, of which 13 respondents came from almost all divisions in the project. The number of articles included in this study is 25 articles. The results of the observation analysis 93% and questionnaires 96%. These results confirm that the implementation of the Work Safety Management System in the Coastal Protection Development Project has been implemented well or at a satisfactory classification level and is in accordance with applicable regulations. Based on the literature review, 4 things need to be considered in amending the observation form based Permen PUPR No. 10 of 2021, such as (1) imposition of sanctions; (2) provision of rewards; (3) workers have the right to express objections if the construction safety policy is doubted by workers; (4) training workers regarding the importance of implementing construction safety management system. The limitation of this study is that it only refers to a construction project which is a water sector construction project. To expand research and increase the level of percentage that is more mature, it is necessary to increase the sample of types of construction projects in the fields of building construction, highways, and other types of construction.

## 1 INTRODUCTION

Cases of accidents due to work in the construction sector are one of the highest cases of work accidents throughout the world (ILO, International Labor Organization). OSHA (Occupational Safety and Health Administration) also states that the construction industry has the highest risk of death compared to other industrial sectors. For the following, the number of work accidents in Indonesia based on the Social Security Administrator for Employment (BPJS Ketenagakerjaan) has increased continuously from the annual report year on year until 2021 reaching more than 200 thousand cases, where half of the number of work accident cases occurred in the construction industry.

Sustainable infrastructure development increases construction activity in Indonesia. But in fact, various problems are still found in the construction area, especially in the implementation of the Occupational Safety and Health Management System (SMK3). Implementation of an Occupational Safety and Health Management System (SMK3) is very necessary in controlling the risk of work accidents. However, there are huge of personnel do not realize and implement this management system that caused increase in the risk or potential risk of work accidents in the construction industry.



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Therefore, legislation was created as an effort to control the risk of work accidents, especially in the construction sector by ratifying the Regulations for Implementing the Construction Safety Management System (SMKK) which are currently in force, one of which is by the Government. Regulation. Regulation of the Minister of Public Works and Public Housing Number 10 of 2021 (Permen PUPR No.10 Tahun 2021) concerning Guidelines for Construction Safety Management Systems.

In this research, the aim is to measure the implementation of the work safety management system (SMKK) by taking one of the case studies of coastal safety construction projects. Apart from that, another objective of this research will be to examine the applicable laws and regulations to provide recommendation points based on a review of related literature.

## 1.1 Construction Safety Management System (SMKK)

In the Construction Safety Management System (SMKK) Regulations contained in PUPR Ministerial Regulation number 10 of 2021, it is part of the Construction Work implementation management system to ensure the realization of Construction Safety (PUPR Ministerial Regulation Number 10 of 2021, 2021).

The development of the construction industry in Indonesia is increasingly rapid, but the increase in construction work is not in line with improvements in the management of construction activities to minimize the risk of work accidents in construction. The high frequency of work accidents in the construction sector that occurred later became the beginning of a commitment to create zero accidents which was then transformed into statutory policies related to construction safety as a standard in the implementation of construction work to realize construction safety (Badaruddin et al., 2022).

## 1.2 Implementation of a Construction Safety Management System

The implementation of the SMKK (Construction Safety Management System) in Indonesia has been implemented by the Indonesian Government on the long run by time. The regulations regarding Occupational Safety and Health (OSH) in Indonesia have existed since the Dutch East Indies government. After Indonesia's independence and the enactment of the 1945 Constitution, several regulations including regulations regarding work safety has impacted at that time, Specifically the Veiligheids Reglement, were revoked and replaced with Law no. 1 of 1970 concerning Work Safety (Wahyuno, 2021). According to PUPR Ministerial Regulation No.10 of 2021, Construction Safety Management System (SMKK) implementation require security, safety, health, and sustainability standards.

## 1.3 Elements of Implementing a Construction Safety Management System

In implementing the Construction Safety Management System (SMKK) according to Ministry Publics Works and Housing regulation no. 10 / 2021, it is necessary includes Construction Safety Management System (SMKK) elements in the construction safety plan document. There are 5 (five) main elements in implementing Construction Safety Management System (SMKK). Following the details of the elements.

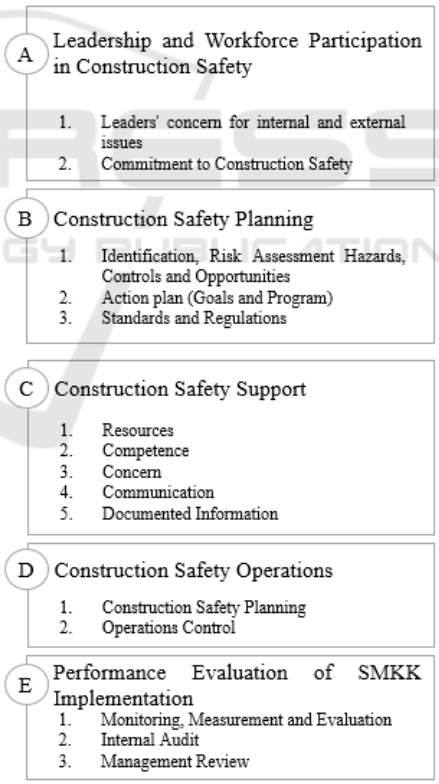


Figure 1: Elements and sub-elements in implementation construction safety management (SMKK).

# 2 METHODS

This research was work on data collection in 2 months period of time start from May 2023 to June 2023. The research method used was a quantitative approach. The philosophy of positivism that underlies the quantitative approach method used to research populations and certain statistical samples (Sugiyono, 2013). Other definition emphasize that quantitative research is a systematic, planned and structured research method (Siyoto & Sodik, 2015).

The data collection technique in this research uses 3 (three) method based on the type of research data observation and questionnaires for primary data and literature review for secondary data. The population in this research define by stakeholders in the construction project X beach for safety development project. The population is an object/subject area with certain characteristics (Sugiyono, 2013). While the sample is a portion of the population with certain characteristics (Sugiyono, 2013). In this study the sample was selected using purposive sampling/certain considerations and have been determined by contractors, supervisors, and workers that responsible on the X Beach Safety Development Project.

Data collection by observation and questionnaires uses the following assessment scale:

- Appropriate = 3, means "if the activity is fully implemented"
- Minor = 2, means "if the activity is implemented but not fully"
- Major = 1 means "if the activity is not implemented"

The data analysis on this research is primary data obtained through observation and distribution of questionnaires. The data collection analyzed using descriptive analysis to determine level of implementation classification based on government regulation of the Republic of Indonesia no.50 of 2012 concerning the implementation of occupational safety and health management systems (PP Republic Indonesia Number 50 of 2012, 2012).

Table 1: Classification of SMKK Implementation Levels.

| No | Percentage (%) | Classification |
|---|---|---|
| 1 | 0 – 59 % | Kurang |
| 2 | 60 – 84 % | Baik |
| 3 | 85 – 100 % | Memuaskan |

The secondary data collection was collected by journal articles related to the research topic and full reviewing with purposes adding aspects need to pay attention and will be aspects recommendation for amandement of the Ministry Public works and Housing No.10 2021.

# 3 RESULTS AND DISCUSSION

## 3.1 Data Characteristics

### 3.1.1 Respondent Characteristics

The collections data using distributing the questionnaire collected 13 respondents consist of supervisors, consultants, contractors, skilled workers. The following table summarize the characteristics of the respondents' samples on this research.

Table 2: Respondent Characteristics.

| No | Age | Last Education | Position | Work Experience | Respondent Group |
|---|---|---|---|---|---|
| R1 | >35 Tahun | S2/S3 | PPK Pengawas | 5-10 Tahun | Pengawas |
| R2 | >35 Tahun | D3/D4/S1 | Leader Konsultan | >10 Tahun | Konsultan Supervisi |
| R3 | >35 Tahun | S2/S3 | Tenaga Ahli Struktur | 5-10 Tahun | Konsultan Supervisi |
| R4 | >35 Tahun | Lainnya | Welder | <5 Tahun | Pekerja |
| R5 | >35 Tahun | SMA/SMK | Logistik | <5 Tahun | Pekerja |
| R6 | >35 Tahun | SMA/SMK | Intalasi Listrik | <5 Tahun | Pekerja |
| R7 | >35 Tahun | SMA/SMK | Mekanik | 5-10 Tahun | Pekerja |
| R8 | >35 Tahun | SMA/SMK | Driver Lapangan | <5 Tahun | Pekerja |
| R9 | 20-35 Tahun | D3/D4/S1 | Manajer Operasi | 5-10 Tahun | Karyawan Kontraktor |
| R10 | 20-35 Tahun | D3/D4/S1 | Drafter | 5-10 Tahun | Karyawan Kontraktor |
| R11 | 20-35 Tahun | SMA/SMK | Drafter | 5-10 Tahun | Karyawan Kontraktor |
| R12 | 20-35 Tahun | D3/D4/S1 | Adm. Teknik | <5 Tahun | Karyawan Kontraktor |
| R13 | 20-35 Tahun | SMA/SMK | Adm. Teknik | 5-10 Tahun | Karyawan Kontraktor |

*Note: R define Respondent

### 3.1.2 Literature Collected for Reviewing

The results of the literature study obtained by reviewing journals related to the application of occupational safety and health in construction projects with the aim of classifying and grouping each construction safety management system (SMKK) element found in these journals to review elements that are not yet listed in PUPR Ministerial Regulation no.10 of 2021, The results of these findings will be recommended as amendments The Ministry Public Works and Housing no.10, 2021. 25 journals were collected on this research for reviewing to catch out aspects for the regulation amendments.

Table 3: Literature review article.

| No. | Judul | Penulis |
|---|---|---|
| 1 | Analisis Penggunaan Penerapan Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) Pada Proyek Pembangunan RSUD Sunan Kalijaga Demak | Hari Setijo. P, dkk (2018) |
| 2 | Kendala Penerapan Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) Pada Kontraktor di Bali | G.A.P Candra Dharmayanti, dkk (2018) |
| 3 | Implementasi Kebijakan SMK3 di Perusahaan Kontraktor di Yogyakarta | R.A. Machfudiyanto dan D.P. Utomo (2019) |
| 4 | Peninjauan Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) Pada Proyek Pekerjaan Pondasi Condotel Multifungsi Aston Padang | Embun Sari Ayu (2019) |
| 5 | Analisis Penerapan Sistem Manajemen Keselamatan dan Kesehatan Kerja Pada Pembangunan Gedung dan Perumahan | Steven & Mega Waty (2020) |
| 6 | Usulan Perbaikan Penerapan Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) Pada Perusahaan Konstruksi Jalan | Fauzan Ariswa, dkk (2020) |
| 7 | Analisis Penerapan Kesehatan Dan Keselamatan Kerja (K3) di Perusahaan Jasa Konstruksi Kota Payakumbuh | Ade Dwi Putra, dkk (2021) |
| 8 | Analisis Penerapan Sistem Manajemen Keselamatan dan Kesehatan Kerja (K3) | Jurisman Amin & Kirami Bararah (2021) |
| 9 | Analisa Penerapan Sistem Manajemen Kesehatan dan Keselamatan Kerja (SMK3) Pada PTPN VI di Kecamatan Pangkalan Koto Baru Sumatera Barat | Mahdika P. N & Rina H (2022) |
| 10 | Analisis Penerapan Keselamatan dan Kesehatan Kerja (K3) Terhadap Kinerja Pekerja Konstruksi | Moh. Midchol Afan, dkk (2022) |
| 11 | Kajian Sistem Manajemen Keselamatan dan Kesehatan Kerja pada Perusahaan Konstruksi Jalan di Indonesia | Fajar Susilowati, dkk (2022) |
| 12 | Penerapan Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) pada Masa Pandemi Covid-19 di Proyek Konstruksi Maritime Tower | Anisah, dkk (2022) |
| 13 | Penerapan Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) Pada Proyek Konstruksi Gedung Kejaksaan Tinggi Kalimantan Timur | Habir, dkk (2022) |
| 14 | Penerapan Sistem Manajemen Keselamatan Konstruksi Dalam Pandemi Covid-19 Pada Proyek Pembangunan Struktur Atas Jembatan Progo Tempuran-Salaman | Kasih Puspitasari, dkk (2022) |
| 15 | Analisis Penerapan Sistem Manajemen K3 dan Kelengkapan Fasilitas K3 Pasa Proyek Konstruksi Gedung di Surabaya | A. F. Priyono & Feri Harianto (2019) |
| 16 | Analisis Penerapan Sistem Manajemen Keselamatan dan Kesehatan Kerja Pada Proyek Konstruksi Gedung Betingkat Tinggi | Ida Yuliana (2020) |
| 17 | Analisis Tingkat Risiko dan Penerapan SMK3 pada Proyek Pembangunan Rumah Sakit Umum Daerah Mangusada Badung | I Ketut Sutapa, dkk (2020) |
| 18 | Evaluasi Pelaksanaan Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) pada Proyek Pembangunan Gedung Bertingkat di Tanah Lunak | Henry Wardhana, dkk (2021) |
| 19 | Evaluasi Penerapan Sistem Manajemen Keselamatan dan Kesehatan Kerja Pada Proyek Konstruksi di Kota Banda Aceh | Aldina Fatimah dkk (2021) |
| 20 | Penerapan Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) Di Fakultas Teknik | Nurokhman, dkk (2021) |
| 21 | Evaluasi Penerapan Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) Pada Proyek Konstruksi di Provinsi Gorontalo | Maulin Wadipalapa, dkk (2022) |
| 22 | Analisis Faktor-Faktor Penghambat Kontraktor dalam Penerapan Sistem Manajemen K3 pada Proyek Konstruksi Gedung di Palangka Raya | C.M.Br Sinulingga, dkk (2023) |
| 23 | Analisis Penerapan Sistem Management Keselamatan dan Kesehatan Kerja (SMK3) pada Proyek Konstruksi Gedung | Amari & Machmud Efendi (2023) |
| 24 | Evaluasi Penerapan Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) pada Perusahaan Konstruksi | Ira Riswana dan Susilawati, (2023) |
| 25 | Pengaruh Penerapan SMK3 Pada Proyek Konstruksi Terhadap Kualitas Pekerjaan (Studi Kasus: Proyek Rehabilitas Gedung Kantor Kejaksaan Kota Madiun) | O. P. W. Prabowo & Moh. Abduh, (2023) |

**List of number literature source from indonesian researchers*

## 3.2 Data Analysis

### 3.2.1 Data Analysis of Observation Results

The data is processed by calculating points based on an assessment scale which determines the percentage per sub-element and construction safety management system (SMKK) element using equation (1).

$$P = \sum p/(p \times n) \times 100\% \quad (1)$$

with:

P = percentage
p = points
$\sum p$ = total points
n = amount of data

Based on the results of observation data processing, the percentage of observation data can be presented on Table 4.

Table 4: Percentage of Implementation of SMKK Observation Results.

| No. Criteria | Element/Criteria | Percentage |
|---|---|---|
| A | Leadership and Workforce Participation in Construction Safety | 98% |
| B | Construction Safety Planning | 95% |
| C | Construction Safety Support | 94% |
| D | Construction Safety Operations | 92% |
| E | Performance Evaluation of SMKK Implementation | 89% |
| **Average Percentage** | | **93%** |

The results of the analysis of criterion A (Leadership and Worker Participation In Construction Safety) with percentage of 98%, criterion B (Construction Safety Planning) with percentage of 95%, criterion C (Construction Safety Support) with percentage of 94%, criterion D (Construction Safety Operations) with percentage of 92% and criterion E (Construction Safety Performance Evaluation) with percentage of 89%. For those result, identify that criteria E is the smallest percentage. The value is caused by the construction safety evaluation has not been carried out because the project is on early-stage project working.

The processed observation data analyzed based on the construction safety management system (SMKK) implementation classification level table which refers to Government Regulation no.50/2012. The average percentage of all elements of construction safety management system (SMKK) implementation in the observation results was 93%. Based on the classification level table for construction safety management system (SMKK) implementation, it was found that the level of construction safety management system (SMKK) implementation in the Coastal Safety Development Project included the "**Satisfactory**" classification.

### 3.2.2 Data Analysis of Questionnaire Results

Analyzing of questionnaire data is based on the results of distributing questionnaires that have been carried out referring to Ministry Public Works and Housing Regulation no.10/2021. Processing questionnaire data in this research is calculates based on the questionnaire results assessment scale and determine the percentage on sub-element and construction safety management system (SMKK) element using equation (2).

$$P = \sum p/(p \times n) \times 100\% \quad (2)$$

with:

P = percentage

p = points

$\sum p$ = total points

n = amount of data

Based on the results of questionnaire data processing, the percentage of questionnaire data presented on Table 5.

Table 5: Percentage of Implementation of SMKK Questionnaire Results.

| No. Criteria | Element/Criteria | Percentage |
|---|---|---|
| A | Leadership and Workforce Participation in Construction Safety | 100% |
| B | Construction Safety Planning | 97% |
| C | Construction Safety Support | 94% |
| D | Construction Safety Operations | 97% |
| E | Performance Evaluation of SMKK Implementation | 91% |
| **Average Percentage** | | **96%** |

Analysis of questionnaire distribution data identify that criteria A (Leadership and Worker Participation in Construction Safety) with percentage of 100%, criteria B (Construction Safety Planning) with percentage of 97%, criteria C (Construction Safety Support) with percentage of 94%, criteria D (Operations Construction Safety) with percentage of 97% and criteria E (Construction Safety Performance Evaluation) with percentage of 91%. Criteria E which is the smallest percentage of all acquisitions for each element. This occurs because a construction safety evaluation has not been carried out because the work is only at an early stage.

Based on the table of classification levels for SMKK implementation which refers to Government Regulation no.50/2012, the classification level for SMKK implementation is based on the results of distributing questionnaires with an average percentage of 96%, including the "Satisfactory" classification.

### 3.2.3 Analysis of Literature Study Data

Based on a literature review that amount of journal articles included for this study, which aims to review elements/criteria/aspects that not mentioned in Ministry Public Works and Housing Regulation no.10/2021 as a guideline for implementing SMKK. The total amount of 25 articles were obtained as material for findings that will be recommended as amendments Ministry Public Works and Housing Regulation no.10/2021.

Table 6: Literature Study Data Analysis.

| Year | Writer | Element/Criteria | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | E |
| 2018 | Abied et al. | | | | * | |
| 2018 | Dharmayanti et al. | * | | * | | * |
| 2019 | Priyono & Harianto | * | * | * | * | * |
| 2019 | Machfudiyanto & Utomo | * | * | * | * | * |
| 2019 | Embun Sari Ayu | | | * | * | * |
| 2020 | Steven & Waty | * | * | * | * | * |
| 2020 | Ida Yuliana | * | | * | * | * |
| 2020 | Sutapa et al. | * | * | * | * | * |
| 2020 | Ariswa et al. | | | * | * | |
| 2021 | Ade Dwi Putra et al. | * | * | * | * | |
| 2021 | Amin & Bararah | * | * | | * | * |
| 2021 | Wardhana et al. | * | * | * | | * |
| 2021 | Fatimah & Zein | * | * | * | * | |
| 2021 | Nurwildani | * | * | * | * | * |
| 2022 | Nanda & Hardianti | | | * | * | * |
| 2022 | M. Afan et al. | | | * | * | |
| 2022 | M. Wadipalapa et al. | * | * | * | * | * |
| 2022 | Susilowati et al. | * | * | * | | * |
| 2022 | Anisah et al. | * | * | * | * | * |
| 2022 | Habir & Mardianti | * | * | * | * | * |
| 2022 | Puspitasari et al. | | | | | * |
| 2023 | Sinulingga & Dewantoro | | | * | * | * |
| 2023 | Amari & Effendy | | * | * | | |
| 2023 | Riswana & Susilawati | * | * | * | | |
| 2023 | Prabowo & Abduh | * | * | | | |
| | **Total** | **17** | **16** | **21** | **18** | **17** |

Based on the results of the literature review identify that the journals reviewed mostly discussed element C (Work Safety Support). Additionally, elements obtain as recommendations for amendments to Ministry Public Works and Housing Regulation no.10/2021 presented on Table 7.

Table 7: Additional Elements of Literature Study Results.

| No | Title | Writer | Element Criteria |
|---|---|---|---|
| 1 | Kendala Penerapan Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) Pada Kontraktor di Bali | G.A.P Candra Dharmayanti, dkk (2018) | **E. Construction Safety Performance Evaluation**<br>E.4 Compliance Sanctions<br>E.4.1 Provide sanctions for workers who do not comply with construction safety implementation |
| 2 | Implementasi Kebijakan SMK3 di Perusahaan Kontraktor di Yogyakarta | R.A. Machfudiyanto dan D.P. Utomo (2019) | **A. Leadership and Worker Participation in Construction Safety**<br>A.2.8 Workers can object to work if the construction safety policy is doubted by the worker except in special cases that can be accounted for by the person in charge of the SMKK management<br>**E. Construction Safety Performance Evaluation**<br>E.4 Compliance Sanctions<br>E.4.1 Give sanctions to the project team if work safety violations occur |
| 3 | Peninjauan Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) Pada Proyek Pekerjaan Pondasi Condotel Multifungsi Aston Padang | Embun Sari Ayu (2019) | **E. Construction Safety Performance Evaluation**<br>E.4 Compliance Sanctions<br>E.4.1 Provide sanctions for workers who do not implement work safety |
| 4 | Analisis Penerapan Keselamatan dan Kesehatan Kerja (K3) Terhadap Kinerja Pekerja Konstruksi | Moh. Midchol Afan, dkk (2022) | **C. Construction Safety Support**<br>C.3.3 Educate workers about the importance of implementing SMKK |
| 5 | Penerapan Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) Pada Proyek Konstruksi Gedung Kejaksaan Tinggi Kalimantan Timur | Habir, dkk (2022) | **E. Construction Safety Performance Evaluation**<br>E.4 Compliance Sanctions<br>E.4.1 Provide sanctions for violations of construction safety implementation<br>E.5 Awards<br>E.5.1 Give awards/rewards to workers who always comply with construction safety practices |
| 6 | Penerapan Sistem Manajemen Keselamatan Konstruksi Dalam Pandemi Covid-19 Pada Proyek Pembangunan Struktur Atas Jembatan Progo Tempuran-Salaman | Kasih Puspitasari, dkk (2022) | **E. Construction Safety Performance Evaluation**<br>E.4 Compliance Sanctions<br>E.4.1 Give sanctions if you violate the provisions for implementing work safety |
| 7 | Evaluasi Pelaksanaan Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) pada Proyek Pembangunan Gedung Bertingkat di Tanah Lunak | Henry Wardhana, dkk (2021) | **E. Construction Safety Performance Evaluation**<br>E.4 Compliance Sanctions<br>E.4.1 Give warnings and binding sanctions if you violate the provisions for implementing work safety to provide a deterrent effect |
| 8 | Analisis Faktor-Faktor Penghambat Kontraktor dalam Penerapan Sistem Manajemen K3 pada Proyek Konstruksi Gedung di Palangka Raya | C.M.Br Sinulingga, dkk (2023) | **E. Construction Safety Performance Evaluation**<br>E.4 Compliance Sanctions<br>E.4.1 Provide sanctions for violations of construction safety implementation<br>E.5 Awards<br>E.5.1 Give awards/rewards to workers who always comply with construction safety practices |

Identification from table of additional elements, implementation the construction safety management system (SMKK) necessary to impose compliance sanctions to workers that deterrent effect for workers avoid implementation the construction safety management system (SMKK). Provides reward and award for workers that implement well the construction safety management system (SMKK). Apart from that, aspects related to workers have the right to express objections if construction safety policies are doubted by workers as well as aspects related to training workers regarding the importance of implementing construction safety management system (SMKK). All these aspects can be considered to be included in the Ministry Public Works and Housing Regulation which as policy for construction safety management system (SMKK) as an effort to increase the implementation of construction safety management system (SMKK).

# 4 CONCLUSIONS

The result of this study conclude has been carried out to several points.

1. The observation results showed that the overall classification level of SMKK implementation was 93% and could be classified as satisfactory, meaning that the implementation of SMKK in the Coastal Safety Development Project was satisfactory and in accordance with all existing standards and regulations.
2. The results of the questionnaire analysis identify that the overall classification level for construction safety management system (SMKK) implementation was 96% and could be classified as satisfactory. On the other definition that the implementation of construction safety management system (SMKK) in the Coastal Safety Development Project was satisfactory.
3. The results of a literature study analysis the total of 25 articles regarding the implementation of occupational safety and health management systems in Indonesia. Obtained aspects of the construction safety management system **(**SMKK) implementation elements that recommendation aspects for amendments to Ministry Public Works and Housing Regulation number 10, 2021, such as:
   - Impose compliance sanctions on workers to provide a deterrent effect for workers who do not properly implement the SMKK program.
   - Provide rewards for workers who implement the SMKK program well.
   - Workers have the right to objections if the construction safety policy is doubted by workers.
   - Workers coaching on the importance of SMKK implementation.
4. For the future research can involve more stakeholders regarding the implementation of construction safety management system (SMKK) and SMK3, starting from service users, service providers, governments, universities, and to obtain research results and assessments related to more optimal implementation of SMKK or SMK3.

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