



## Implementation of SMKK During Covid-19 in the Project to Add New Buildings/Rooms to the Abang II Community Health Center in Karangasem Regency

I Komang Agus Ariana<sup>1\*</sup>, Danang Erno Susilo<sup>2</sup>, I Gusti Ngurah Putu Dharmayasa<sup>3</sup>, I Ketut Nuraga<sup>4</sup>

Program Studi Teknik Sipil, Universitas Pendidikan Nasional

**Corresponding Author:** I Komang Agus Ariana [agusariana@undiknas.ac.id](mailto:agusariana@undiknas.ac.id)

---

### ARTICLE INFO

*Keywords:* Covid 19, CSMS, Construction Project, Workplace Safety

*Received :* 29, January

*Revised :* 28, February

*Accepted:* 25, March

©2026 Ariana, Susilo, Dharmayasa, Nuraga: This is an open-access article distributed under the terms of the [Creative Commons Atribusi 4.0 Internasional](https://creativecommons.org/licenses/by/4.0/).



### ABSTRACT

The COVID-19 pandemic has necessitated stringent measures in Construction Safety Management Systems (CSMS) to minimize virus transmission and ensure workplace safety. This study aims to evaluate the implementation of CSMS on the New Building/Room Addition Project at Puskesmas Abang II in Karangasem Regency, focusing on key factors such as cost, equipment, labor, materials, methods, time, and technical aspects. The research employs a descriptive qualitative method with data collected through a questionnaire involving 30 respondents. The results indicate that the implementation of CSMS on this project is quite effective, with an average effectiveness score of 84%. The findings reveal that all examined factor cost, equipment management, labor training, material handling, work methods, time management, and technical aspects—play a crucial role in maintaining workplace safety and mitigating COVID-19 related risks.

---

## INTRODUCTION

With the entry of Covid-19 in Indonesia, the Indonesian state directly experienced obstacles in various sectors. One of the sectors most affected by the spread of Covid-19 was the construction sector, which was marked by the hampered construction project development process, around 78.9% of construction work was delayed. '(Sari and Suryan 2021). For this reason, the government has carried out preventive treatment for the spread of Covid-19 in the implementation of development activities for consumers and service providers, policy efforts implemented by the government were carried out to realize safety in construction projects, public safety, and safety around us in existing construction work during the Covid-19 pandemic '(Luthfi Parinduri1) 2020).

In order to reduce the spread of Covid-19 during the implementation of work on government projects, the implementation of the Occupational Safety Management System (DwicaHYaningsih, KN 2023) is tightened, so that the spread of Covid-19 can be minimized and work accidents in the field are zero. The Occupational Safety Management System (OSMS) is tightened. nconstruction cannot be far from protectionntowards workers and development service providers, Management Systemnconstruction safety isnThe core is to reduce and avoid the risk of major and minor problems in the work environment.' (Kurnia 2020) One of the construction projects that has a high level of accident risk is a building project (MartiwI, R., Koesyanto, H., & Pawenang, ET 2017).

The addition of a new building/room at the Abang II Community Health Center in Karangasem Regency, which was carried out during the Covid-19 pandemic, has a very important role, namely improving health facilities and infrastructure so that it can support improving public health during the Covid-19 pandemic (Karo MB, et al. 2020). When detecting all potential hazards of work accidents during the Covid-19 pandemic during the work of adding a new building/room at the Abang II Community Health Center in Karangasem Regency, it is necessary to identify each activity of the work process by identifying a hazard in the work. (Marfiana, Ritonga, and Salsabiela 2019)

Therefore, research is needed on the implementation of SMKK (Vocational Health and Safety Management System) in these workplaces during the COVID-19 pandemic to prevent workplace accidents and achieve a zero-accident rate. It is hoped that the effective implementation of SMKK will have a positive impact on preventing COVID-19 transmission and ensuring a safe and comfortable construction project for workers.

## LITERATURE REVIEW

The Construction Safety Management System (SMKK) is a system designed to ensure work safety in the implementation of construction projects through risk control and the implementation of safety procedures at the project site. The implementation of SMKK aims to prevent work accidents that can cause casualties, material losses, and disrupt the smooth implementation of projects. In this study, the implementation of SMKK refers to the Regulation of the Minister of Public Works and Public Housing Number 21 of 2019 concerning Construction

Safety Management Systems which is relevant to the implementation of the project in 2020.

Juridically, the implementation of occupational safety in Indonesia is based on Law Number 1 of 1970 concerning Occupational Safety which affirms that every worker has the right to receive protection for safety in carrying out work. This protection applies not only to the workforce, but also to everyone in a potentially hazardous work environment. Therefore, occupational safety provisions apply to all workplaces, both on land, underground, water, and airspace within the jurisdiction of the Republic of Indonesia.

The regulation also regulates various safety requirements that must be met at each stage of work, from planning, manufacturing, transportation, installation, use, to maintenance of equipment or workpieces. Along with the development of industrialization and technological advances that increase the complexity of construction work, the potential risk of accidents is also increasing. Therefore, the implementation of SMKK is very important to protect the workforce, improve the efficiency of project implementation, and create a safe and productive construction work environment.

## **METHODOLOGY**

The method used in this study is descriptive qualitative. Descriptive means that the data collected is qualitative. So descriptive qualitative means data collection in the form of interviews, questionnaires, oral and written data that are processed statically. In this study, the data collection process was carried out on 30 respondents consisting of laborers, and contractor staff (implementers, head of implementation, K3 officers, administration) involved in the New Building/Room Addition Project for the Abang II Health Center in Karangasem Regency.

The data sources used in this study were primary data and secondary data as supporting data. In qualitative descriptive analysis, the researcher sought to identify patterns or relationships between factors influencing the implementation of SMKK. The results of this analysis were then compiled into a narrative that explained the main findings and provided in-depth insight into the implementation of SMKK in the project under study. The variables used to identify factors influencing the implementation of SMKK are as follows:

Table 1. SMK Questionnaire Indicators

No	Variables	Indic	Reference
1.	Cost	<ol style="list-style-type: none"> <li>1. Use of project funding sources</li> <li>2. Funding cuts for Covid-19</li> <li>3. Lack of project cost allocation</li> <li>4. Unexpected/sudden costs</li> </ol>	(Habir, 2018) (Frengky et al., 2018)
2.	Equipment	<ol style="list-style-type: none"> <li>1. Availability of safety equipment Work</li> <li>2. Work equipment is in good condition for use</li> <li>3. Complete work equipment</li> <li>4. Mobilization of equipment</li> <li>5. Use of work aids</li> </ol>	(BUnial, Muttaqin and Rauzana 2018) (Government Regulation of the Republic of Indonesia, (2017)
3.	Manage	<ol style="list-style-type: none"> <li>1. Training for the workforce</li> <li>2. Use of PPE</li> <li>3. Cooperation between workers</li> <li>4. Understanding of the work at hand</li> <li>5. Staff who are experts in their</li> </ol>	(Djoko Murjanto, 2012) (Ir. Kusumo Dradjad S, Msi, CSP, 2018) (Bunial, Muttaqin, and Ra
4.	Materials	<ol style="list-style-type: none"> <li>1. Materials used</li> <li>2. Handling of the materials used</li> <li>3. Mobilization of materials</li> <li>4. Test the materials to be used</li> </ol>	(Habir, 2018)
5.	Method	<ol style="list-style-type: none"> <li>1. Implementation of the method used by company</li> <li>2. Mismatch of work methods</li> <li>3. Work based on SOP Work</li> <li>4. Supervision of workers</li> <li>5. Implementation of work in accordance with health protocol standards</li> </ol>	(Ranciduranium Governmenth RI, 2017) (Djoko Murjanto, 2012) (Habir, 2018)
6.	Time	<ol style="list-style-type: none"> <li>1. Weather conditions</li> <li>2. Workers work according to the regulations</li> </ol>	(Ilmansyah Yahdi, 2020)
7.	Technical	<ol style="list-style-type: none"> <li>1. Land subsidence occurred at the location Work</li> <li>2. Constraints in the project environment</li> <li>3. There is a Covid-19 task force at</li> </ol>	(Habir, 2018)

Table 2. SMKK Success Scoring Classification

No	Average value	Indicator	Keterdram
1	$x \geq 95$	Sanvery precise	SMKK project was very successful and effective
2	$75 \leq x \leq 95$	TePat	SMKK project is quite good and effective
3	$50 \leq x \leq 75$	Knot quite right	SMKK project is not good
4	$x \leq 50$	Nok right	SMKK project has not been successful / failed

Source: Juliantina Ika, 2013

## RESEARCH RESULTS AND DISCUSSION

### Factors Influencing SMKK

Factors influencing the Occupational Safety and Health Management System (SMKK) in the New Building/Room Addition Project for the Abang II Community Health Center in Karangasem Regency encompass various aspects that play a crucial role in its successful implementation. The results of a questionnaire conducted with contractors and consultants on the Kerta Mandala State Kindergarten classroom rehabilitation project are as follows:

Table 3. Questionnaire Results of Factors Influencing SMKK

No	Question	Yes	No
A. Cost Section			
1	Is the use of project resources remaining efficient during the COVID-19 period?	30	
2	Are there any project funding cuts due to the COVID-19 pandemic?	30	
3	Is the project cost allocation sufficient for occupational safety and health needs during the pandemic?	29	1
B. Equipment Section			
1	Is the availability of work safety equipment adequate at the project site?	30	
2	Is the work equipment in good condition and well maintained during the COVID19 period?	30	
3	Is the completeness of the work equipment in accordance with the project requirements?	29	1
4	Did the mobilization of equipment during the project go well?	25	5
C. Labor			
1	Have workers received training related to occupational safety during the pandemic?	30	
2	Is the use of Personal Protective Equipment (PPE) carried out properly by the workforce?	26	4

3	Is there cooperation between workers in implementing health protocols at the project site?	30	
4	Do workers understand their duties and responsibilities regarding occupational safety during the pandemic?	28	2
5	Are the experts involved in this project appropriate for their field?	30	
D. Materials			
1	Do the materials used during the project meet safety standards?	30	
2	Is the handling of materials in the field carried out properly?	28	2
3	How is the mobilization of materials during the project?	25	5
E. Method			
1	Does the implementation of the work methods used comply with safety standards during the pandemic?	27	3
2	Are there any discrepancies between work methods and applicable safety protocols?	2	28
3	Is the work carried out based on the established work SOP?	29	1
4	Is there supervision of the implementation of work methods in the field?	30	
F. Time			
1	Do weather conditions affect project implementation during the pandemic?	30	
2	Do workers work according to the hours stipulated in the regulations during the pandemic?	30	
G. Technical			
1	Is there any land subsidence at the work site that is affecting the smooth running of the project?		30
2	Are there any constraints in the project environment that affect the implementation of the work?	1	29
3	Is there a COVID-19 Task Force that plays an active role at the project site?	30	

*Source: Researcher Data Processing, 2024*

Based on the results of the questionnaire that has been conducted, the factors that influence (SMKK) include:

- a. Costs include budget allocation for safety, which affects the provision of equipment and training.
- b. Equipment involves the availability and condition of safety equipment as well as maintenance and mobilization.
- c. Workforce related to training, use of PPE, cooperation, and understanding of risks.
- d. Materials include the quality and handling of materials, as well as proper mobilization.



## **CONCLUSIONS AND RECOMMENDATIONS**

This study concludes that the implementation of the Construction Safety Management System (CSMKK) in the Abang II Community Health Center Building/New Room Addition Project in Karangasem Regency has demonstrated a good level of effectiveness with an average percentage score of 84%. Factors influencing the CSMKK, including costs, equipment, labor, materials, methods, time, and technical aspects, have been implemented quite effectively, but there are still several areas that require further attention. Safety budget management, compliance with the use of Personal Protective Equipment (PPE), and handling of hazardous materials are aspects that need to be strengthened. In addition, effective time management, adjustment to weather conditions, and supervision of work methods are also important to ensure safety in the field. The presence of the COVID-19 Task Force has played a positive role in implementing health protocols, but this study recommends further evaluation to improve the implementation of health strategies in crisis situations. Overall, although the CSMKK in this project has been well implemented, continued improvement in critical areas can further enhance occupational safety and the effectiveness of the CSMKK in the future.

## **ADVANCED RESEARCH**

This study indicates that the implementation of the Construction Safety Management System (CSMKK) in the Abang II Community Health Center Building/New Room Addition Project in Karangasem Regency has achieved a relatively high level of effectiveness, with an average score of 84%. The findings show that key influencing factors—such as cost management, equipment availability, labor, materials, work methods, time allocation, and technical aspects—have generally been implemented effectively. However, several critical aspects still require further improvement, particularly in safety budget allocation, compliance with the use of Personal Protective Equipment (PPE), and the management of hazardous materials. In addition, optimization of time management, adaptation to weather conditions, and stricter supervision of work methods are necessary to strengthen safety practices in the field. The involvement of the COVID-19 Task Force also contributed positively to the enforcement of health protocols, although further evaluation is recommended to enhance preparedness and health management strategies during crisis situations. Overall, while the CSMKK implementation demonstrates satisfactory performance, continuous improvements in these strategic areas are essential to ensure higher occupational safety standards and the long-term effectiveness of construction safety management.

## REFERENCES

- Dwicahtyaningsih, K. N. (2023). Studi Empiris Upaya-Upaya Pemilik Proyek Dalam Menentukan Keberhasilan Manajemen Proyek Konstruksi Di Masa Pandemi.
- Henong, Sebastianus Baki. 2022. "Dampak Pandemi Covid-19 Terhadap Penyelesaian Proyek Konstruksi: Tinjauan Literatur Sistematis." *Journal of Sustainable Construction* 2 (1): 23-29. <https://doi.org/10.26593/josc.v2i1.6018>
- Karo, M. B., Meilyana, E., Indrawati, L., & Peraten, A. M. (2020). Edukasi pemanfaatan pelayanan posyandu pasca pandemik Covid-19 memasuki masa new normal dalam peningkatan kesehatan masyarakat. *LOGISTA-Jurnal Ilmiah Pengabdian kepada Masyarakat*, 4(2), 604-610.
- Kurnia, Muhammad Bagja. 2020. "Faktor-Faktor Penyebab Rendahnya Penerapan Sistem Manajemen Keselamatan Dan Kesehatan Kerja (SMK3) Pada Perusahaan Bidang Pekerjaan Konstruksi." *Jurnal Student Teknik Sipil* 2 (2): 141-46.
- Luthfi Parinduri<sup>1</sup>), Taufik Parinduri<sup>2</sup>). 2020. "Implementasi Manajemen Keselamatan Konstruksi Dalam Pandemi Covid 19." *Buletin Utama Teknik* 15 (3): 222-28. <https://jurnal.uisu.ac.id/index.php/but/article/view/2836>.
- Marfiana, Pipit, Hadi Kurniawan Ritonga, and Mutiara Salsabiela. 2019. "Implementasi Job Safety Analysis (JSA) Sebagai Upaya Pencegahan Kecelakaan Kerja." *Jurnal Migasian* 3 (2): 25-32.
- Martiwi, R., Koesyanto, H., & Pawenang, E. T. (2017). Faktor Risiko Kecelakaan Kerja pada Pembangunan Gedung. *HIGEIA (Journal of Public Health Research and Development)*, 1(4), 61-71.
- Menteri, Peraturan, Pekerjaan Umum, Dan Perumahan, Republik Indonesia, Pedoman Sistem, Manajemen Keselamatan, Dengan Rahmat, et al. 2019. "Berita Negara," no. 1690
- Purnomo, Bambang Hari. 2011. "Metode Dan Teknik Pengumpulan Data Dalam Penelitian Tindakan Kelas (Classroom Action Research)." *Pengembangan Pendidikan* 8 (1): 251-56.

Sari, Anggi Nidya, and Viktor Suryan. 2021. "Pandemi Covid-19: Dampak Terhadap Pekerjaan Konstruksi." *Jurnal Talenta Sipil* 4 (2): 214. <https://doi.org/10.33087/talentasipil.v4i2.77>.