

Analysis of Dominant Factors on the Implementation of Occupational Safety and Health Management Systems on the Successful Implementation of Building Construction Projects in Banda Aceh City

Zulyaden¹, Rinaldy²

^{1,2}(Department of Civil Engineering, Teuku Umar University, Meulaboh West Aceh, Indonesia)

Corresponding Author: Zulyaden

ABSTRACT: The city of Banda Aceh is one of the urban areas that is right now creating in its development. This can be seen from the quantity of development projects in Banda Aceh City that are being chipped away at or arranged. In the execution of the development of a development project in the field there is a high danger of work mishaps and become a significant issue. Hence, Word related Security and Wellbeing (K3) is a significant perspective that should be considered in its administration. This review intends to decide the predominant factor in the use of the Word related Wellbeing and Security The executives Framework (SMK3) to the progression of building development projects in Banda Aceh city dependent on the worker for hire's discernment. The undertakings noticed are building development projects that have been finished in Banda Aceh City from 2005-2015. In view of information from the Aceh Area Development Administrations Improvement Foundation (LPJK) in 2016, the populace was 102 project workers with Little capabilities, specifically K1, K2, K3, medium capabilities, in particular M1, M2, and enormous capabilities, to be specific B1. Through the Slovin condition, the exploration test acquired is 51 project workers. The strategy utilized in this review is a joined technique, specifically subjective and quantitative strategies through the appropriation of surveys. The autonomous factors or factors that impact the execution of the Word related Wellbeing and Security The executives Framework (SMK3) in this review are security factors, work hardware and attire factors, vehicle way factors, fire factors, gear and apparatus factors, electrical and sound factors, local area insurance factors, general factors, wellbeing factors, and different factors. While the reliant variable is the progression of venture execution. For factual investigation of the information cycle, legitimacy and unwavering quality tests were completed, while for information examination was done with the assistance of Measurable Items and Administrations Arrangements (SPSS) rendition 22. The predominant factor in the execution of SMK3 on building development projects in Banda Aceh City was the word related wellbeing factor with a normal worth of 4,415 . This implies that assuming the word related wellbeing factor is focused on and kept up with appropriately, the progression of task execution in the city of Banda Aceh will increment and prevail true to form.

KEYWORDS: development projects, K3, predominant factor, SMK3, progression, Banda Aceh City

Date of Submission: 18-10-2021

Date of acceptance: 02-11-2021

I. INTRODUCTION

Word related Wellbeing and Security is a defensive exertion that plans to guarantee that laborers and others in the work environment/organization are consistently protected and solid, and that each wellspring of creation can be utilized securely and effectively [1]. This review intends to decide the predominant factor in the utilization of the Word related Wellbeing and Security The board Framework (SMK3) to the progression of building development projects in Banda Aceh city dependent on the worker for hire's discernment. The executives framework which incorporates association, arranging, execution obligations, measure methods and assets required for advancement, execution, accomplishment, appraisal, support, OHS approaches to control hazards identified with work exercises to make a protected and useful work environment [2] . The components utilized in estimating work efficiency incorporate amount of work, nature of work and idealness [3].

SMK3 carrying out factors in the execution of development projects comprise of a few components including security factors, work hardware and attire factors, vehicle way factors, fire factors, gear and apparatus factors, electrical and sound factors, local area insurance factors, general factors, wellbeing factors, and different factors [4]. The variables for carrying out SMK3 in project execution can be found in Table 1.

Table 1 Factors for implementing SMK3

No.	Variable	Source
X ₁	Security Factor	Wisandjojo (2013)
X ₂	Work hardware and attire factors	Wisandjojo (2013)
X ₃	Vehicle way factor	Wisandjojo (2013)
X ₄	fire factor	Wisandjojo (2013)
X ₅	Gear and apparatus factors	Wisandjojo (2013)
X ₆	Electric and sound factor	Wisandjojo (2013)
X ₇	Local area insurance factors	Wisandjojo (2013)
X ₈	General factors	Wisandjojo (2013)
X ₉	Wellbeing factors	Wisandjojo (2013)
X ₁₀	Different factors	Wisandjojo (2013)

The efficiency of a task will increment if the volume of work delivered increments without expanding work time, the volume of work created is as per the arrangement or doesn't increment however is done in a quicker time than the foreordained timetable, working time increments. multiplied the volume of work. [5]. The undertakings noticed are building development projects that have been finished in Banda Aceh City from 2005-2015. In view of information from the Aceh Territory Development Administrations Advancement Organization (LPJK) in 2016, the populace was 102 workers for hire with Little capabilities, specifically K1, K2, K3, medium capabilities, in particular M1, M2, and enormous capabilities, specifically B1. Through the Slovin condition, the examination test got is 51 workers for hire. The technique utilized in this review is a consolidated strategy, to be specific subjective and quantitative strategies through the conveyance of polls.

The autonomous factors or factors that impact the execution of the Word related Wellbeing and Security The executives Framework (SMK3) in this review are security factors, work gear and apparel factors, vehicle way factors, fire variables, hardware and apparatus factors, electrical and sound elements, local area assurance factors, general components, word related wellbeing factors, and different elements. While the reliant variable is the progression of undertaking execution. For measurable investigation of the information cycle, legitimacy and unwavering quality tests were done, while for information examination was done with the assistance of Factual Items and Administrations Arrangements (SPSS) adaptation 22.

II. RESEARCH METHODS

This review utilizes two strategies, to be specific subjective and quantitative methodologies. Subjective techniques are utilized to get respondents' insights as words, from the Likert scale utilized in the survey. For this situation the type of the word being referred to is exceptionally unaffected, not powerful, less compelling, persuasive, and extremely powerful. Quantitative strategies are utilized to get the type of numbers on discernments acquired from respondents. For this situation the type of the number being referred to is the respondent's answer score beginning from 1,2,3,4 and 5 which is then dissected to get the determined R esteem, Cronbach's Alpha, and the mean.

2.1. Validity Test

The legitimacy test used to quantify the legitimacy or legitimacy of an instrument for this situation is a poll [6]. This legitimacy test can be defined as follows.

$$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}} \dots\dots\dots (2.1)$$

Where:

- Rxy = correlation coefficient between variables X and Y;
- ∑ X = Number of scores obtained from respondents who were tested;
- ∑ Y = Total score of all items of all respondents tested; and
- N = Number of respondents.

The criteria for evaluating the validity test are if R count > R table then the questionnaire question items are valid, and vice versa if R count < R table then the questionnaire question items are invalid.

2.2. Reliability Test

The instrument is supposed to be solid if the instrument can reliably create similar outcomes each time an estimation is made [6]. This unwavering quality test can be formed as follows.

$$r_i = \left[\frac{k}{k-1} \right] \left[1 - \frac{\sum \sigma b^2}{\sigma t^2} \right] \dots\dots\dots (2.2)$$

Where:

- Ri = Instrument reliability;
- k = Number of questions;
- $\sum \sigma b^2$ = Number of item variants; and
- σt^2 = Total variance.

The formula for item variance and total variance is as follows.

$$\sigma b^2 = \frac{\sum x^2 - \frac{(\sum x)^2}{N}}{N} \dots\dots\dots (2.3)$$

$$\sigma t^2 = \frac{\text{the sum of the squares of the total score} - \frac{(\text{the sum of the total score})^2}{N}}{N} \dots\dots\dots (2.4)$$

Where:

- $\sum x^2$ = Number of squares of variance per item; and
- N = Many respondents.

The criterion for evaluating the reliability test is that if Cronbach Alpha > 0.6 then the variable in the questionnaire is reliable, and vice versa if Cronbach Alpha < 0.6 then the variable in the questionnaire is not reliable [7].

2.3. Descriptive Analysis

Graphic investigation is a measurement that serves to portray or give an outline of the item under study through example or populace information for what it's worth, without breaking down and making ends that apply to the public [8]. In this distinct measurements, strategies for giving information ordinary tables and recurrence conveyances, line and reference diagrams, pie outlines, pictograms will be introduced, clarifications of gatherings through mode, middle, mean, and gathering variety through norm and deviation ranges. The mean can be formed as follows [9].

$$Me = \frac{\sum x_i}{n} \dots\dots\dots (2.5)$$

Where:

- Me = Mean (average);
- \sum = Sigma (number);
- Xi = value of x to i to n; and
- n = Number of respondents

III. RESULT AND DISCUSSION

3.1. Validity Test

Based on the results of data processing through SPSS software, it shows that all statements contained in the questionnaire are entirely valid. Where all statements in the questionnaire have a value of Rcount > Rtable.

3.2. Reliability Test

Based on the results of data processing through SPSS software, it shows that all variables contained in the questionnaire are entirely reliable. Where all the variables in the questionnaire have a Conbrach Alpha value greater than 0.6.

3.3. Descriptive Analysis

This examination is expected to decide the worker for hire's view of the prevailing element and the executing component of SMK3 in building development projects in Banda Aceh City, through the mean worth utilizing SPSS programming. The mean worth acquired can be found in Table 2.

Table 2 The mean value of SMK3 implementation factors

No.	Variable	Mean	Rating
X ₁	Security Factor	4,412	2
X ₂	Work hardware and attire factors	4,337	4
X ₃	Vehicle way factor	4,412	2
X ₄	fire factor	4,204	9
X ₅	Gear and apparatus factors	4,206	8
X ₆	Electric and sound factor	4,373	3
X ₇	Local area insurance factors	4,302	5
X ₈	General factors	4,239	7
X ₉	Wellbeing factors	4,415	1
X ₁₀	Different factors	4,297	6

The table above shows that the most noteworthy mean worth was acquired for the "wellbeing factor", with a worth of 4,415. This shows that dependent on the worker for hire's insight, the predominant factor in carrying out SMK3 in building development projects in Banda Aceh City is the word related wellbeing factor.

IV. CONCLUSION

In view of the normal table above, it very well may be seen that the aftereffects of the normal factor for carrying out SMK3 in building development projects in Banda Aceh City have 9 positions with 2 normal qualities having a similar worth of 0.412, where the normal worth lies in the second position, specifically the security factor (x1) and the vehicle way factor (x3), while the predominant factor in the execution of SMK3 in building development projects in Banda Aceh City or the factor with the biggest mean worth in the principal rank is the word related wellbeing factor, with a normal worth of 4,415. While the factor with the least mean worth in the ninth position is the fire factor with a mean worth of 4.204. The factor with the biggest and least mean qualities has a genuinely huge contrast time period. This shows that if word related wellbeing factors are focused on and kept up with appropriately, the progression of undertaking execution in Banda Aceh city will increment and prevail true to form.

REFERENCES

- [1]. Keputusan Menteri Tenaga Kerja R.I. No. Kep. 463/MEN/1993, *Tentang Keselamatan dan Kesehatan Kerja*.
- [2]. Peraturan Menteri No. 05/MEN/1996, *Tentang Manajemen Keselamatan dan Kesehatan Kerja*.
- [3]. Simamora, H 2004, *Manajemen Sumber Daya Manusia*, Edisi ke 3, STIE YKPN, Yogyakarta.
- [4]. Wisandjojo, YR 2013, *Studi Tentang Pengaruh dan Pelaksanaan Program K3 (Keselamatan dan Kesehatan Kerja) Terhadap Produktivitas Tenaga Kerja*, Fakultas Teknik, Universitas Atma Jaya Yogyakarta, Yogyakarta.
- [5]. Salu, S, MM 2014, *Analisis Pengaruh Kerja Lembur Terhadap Produktifitas Tenaga Kerja Proyek Konstruksi*, Fakultas Teknik, Universitas Atma Jaya Yogyakarta, Yogyakarta.
- [6]. Priyatno, D 2010, *Teknik Mudah dan Cepat Melakukan Analisis Data Penelitian dengan SPSS dan Tanya Jawab Ujian Pendadaran*, Gaya Media, Yogyakarta.
- [7]. Triton, BP, 2005, *SPSS 13 Terapan Riset Statistik Parametrik*, Andi, Yogyakarta.
- [8]. Narbuko, C dan Achmadi, A 2004, *Metodelogi Penelitian*, Bumi Aksara, Jakarta.
- [9]. Sugiyono, 2015, *Statistik Nonparametris untuk Penelitian*, Alfabeta, Bandung

Zulyaden, et. al. "Analysis of Dominant Factors on the Implementation of Occupational Safety and Health Management Systems on the Successful Implementation of Building Construction Projects in Banda Aceh City." *American Journal of Engineering Research (AJER)*, vol. 10(10), 2021, pp. 122-125.