INTERNATIONAL JOURNAL OF MANAGEMENT AND EDUCATION IN HUMAN DEVELOPMENT

International J. of Management & Education in Human Development

ISSN: 2775 - 7765
web link: http://www.ijmehd.com

The Influence of Project Manager Competency and Construction Worker Competence toward Performance of Construction Workers Medicated Variables of the Application of Occupational Health and Safety (OHS) Management System

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Received: 12/08/2020 Accepted: 24/09/2020 Published: 03/04/2021

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ABSTRACT

Performance in the field of infrastructure, especially construction has a high risk as a result many work accidents are found so there needs to be a competency application (manager and worker) in the project to avoid work accidents and achieve the quality of construction performance. The purpose of this study was to analyze the influence between the potential of construction managers and the potential of construction workers on the success of construction work performance by implementing the Occupational Safety and Health Management System (SMK3) as a mediating variable. The object of this research is the construction work of the Bahteramas-Kendari Bay bridge construction in Kendari City, Southeast Sulawesi Province, Indonesia. This study uses a quantitative approach. Respondents were 100 people, 85 construction workers and 15 manager-level people. The sample is determined by random sampling stratification technique. Data were analyzed using smart PLS. The analysis shows that the competence of construction managers (X1) has a positive and significant effect on the occupational safety and health management system (Z) where the t-statistic value of 27.723 is greater than 5.4129 (t-table). Construction manager competency (X1) has a positive and significant effect on the success of construction worker performance (Y) where the t-statistic value of 5.8998 is greater than 1.965 (t-table). Construction worker competency (X2) has a positive and significant effect on occupational safety and health management systems (Z) where the t-statistic value of 10.4948 is greater than 1.965 (t-table). Construction workers competency (X2) has a positive and significant effect on the success of construction workers performance (Y) with a t-statistic value of 4.0056 greater than 1.965 (t-table). Occupational health and safety management system (Z) has a positive and significant effect on the success of construction worker performance (Y) where the t-statistic value of 2.0909 is greater than 1.965 (t-table). Occupational safety and health management system (Z) as a mediator between construction manager competencies (X1) to the success of construction workers performance (Y) is significantly positive where the t-statistic value of 2.52 is greater than t-table 1.965, and mediates the competence of construction workers (X2) on the success of construction workers performance (Y) is significantly positive with a t-statistic value of 4.858.

Keywords: *Competence, Occupational Health and Safety, Performance*

I. INTRODUCTION

Performance in the infrastructure sector, especially construction, carries a high risk, as a result of which there are many work accidents. Fargnoli et.al (2011) stated that Occupational Health and Safety is still a critical problem in Indonesia's construction industry. Therefore, it is of particular concern to the government regarding occupational health and safety known as the Occupational Safety and Health Management System (SMK3) as regulated in Law Number 1 of 1970 concerning Work Safety, Law Number 36 of 2009 concerning Health and Law Number 13 of 2004 concerning Manpower.

Occupational Health and Safety which is used as an aspect of labor protection as well as protecting company assets with the aim of providing guaranteed safe and healthy conditions for every employee and to protect Human Resources (HR). Occupational Health and Safety aims to reduce the number of work accidents (Elphiana, et.al, 2017).
The construction of the Bahteramas bridge in Kendari City is currently underway with a length of about 1,348 meters. This project has a high risk of work accidents, because the construction of the foot of the bridge is above the sea, public buildings and settlements that are around / near the construction may have cracks, accidents for fishermen, or accidents in container port activities and inter-island crossings. Meanwhile, heavy equipment and sophisticated machines require

the correct procedure to use it. For this reason, a good competency of resources (knowledge / skills, expertise, work commitment, top management or management skills) is needed and experience and the application of an occupational health and safety system (/OHS/SMK3) so that the construction of the Bahteramas bridge will have zero fatal incidents without causing any harm. for workers, employees, and visitors or the surrounding community.

Performance is closely related to human resource capabilities. in the world of contortion, performance has a correlation with the ability or competence that is owned. Therefore there needs to be the application of project competencies (managers and workers) to be able to avoid work accidents and to achieve the quality of construction performance, especially in the Bahteramas-Kendari Bay bridge construction project in Kendari City. In the research of Khusnul, et.al (2012) that the variables of knowledge, expertise, work commitment and top management have a significant effect on project success. Elphiana, et.al, (2017) stated that the implementation of occupational safety and health has a positive and significant effect on performance.

In the research, Tomy et.al (2018) stated that the implementation of occupational safety and health has not been maximally implemented which has an impact on the quality of construction project work. Setiawan, et.al (2019) stated that there is no significant influence between occupational health and safety (OHS) system variables related to management systems, personal protection of equipment, facilities and infrastructure, risks to construction worker behavior which in turn can reduce the quality of construction work.

Related to that, Fargnoli et.al (2011) suggested that for the implementation of occupational health and safety (K3), the most important factors are experience, knowledge and industry competence, including individual knowledge of K3. The model developed is an effort to provide the right solution for occupational health and safety which has implications for the quality of company performance, carried out by: 1) Implementing a dynamic risk management approach for safety compliance and improvement, reduction as well as corporate cost efficiency efforts; 2) Increasing the knowledge transfer process within the company to support worker training and technical education; and 3) increasing the diffusion of company-wide safety procedures.

On the basis of this phenomenon and previous research, it is necessary to study the influence of the competence of project managers and the competence of construction workers on the performance of construction workers which is mediated by the variable implementation of the Occupational Safety and Health Management System (OHS/SMK3).

The purpose of this study was to analyze the effect of construction manager competence and construction worker competence on the success of construction work performance by applying the Occupational Health and Safety Management System (/OHS/SMK3) as a mediating variable.

II. LITERATURE REVIEW

2.1. Definition of Performance

The word performance is a translation from English, performance. The meaning of performance actually comes from the word job performance and is also called actual performance or work performance or actual achievement that has been achieved by an employee (Moeheriono, 2012). Performance is the work achieved by a person or group of people in an organization in accordance with their respective authorities and responsibilities in order to achieve the goals of the organization concerned legally, does not violate the law and is in accordance with morals and ethics (Nawawi, 2013).

2.2. Performance Assessment (Indicator)

Cheter I. Barnard and Robert E. Quinn argued that performance indicators, namely: effectiveness and efficiency, authority and responsibility, discipline, and initiative (Prawirosentono, 2008). The performance elements assessed by each organization are not always the same, but basically the elements that are assessed include the things above. Six primary criteria that can be used to measure employee performance, namely (Ruky, 2002: 340):

1) Quality, is the extent to which the process or results of the work are close to perfection or close to the expected goals,
2) Quantity, is the amount generated, for example the amount of rupiah, the number of units or the number of activity cycles completed,
3) Timeliness, is the length of time an activity is completed at the desired time, by taking into account the number of other outputs and the time available for other activities,
4) Cost effectiveness, the amount of use of organizational resources in order to achieve maximum results or reduce losses at each unit of resource use,
5) Need for supervision, the ability of employees to be able to carry out job functions without requiring supervision of a supervisor to prevent unwanted actions, and
6) Interpersonal impact, the ability of an employee to maintain self-esteem, good name and the ability to work together among colleagues and subordinates.

According to Bangun (2012), performance indicators can be measured through the following: a). Number of jobs, this dimension shows the number of jobs produced by individuals or groups as a requirement to become a standard job; b). Quality of work, every job in the company must meet certain requirements to be able to produce work according to the quality demanded by a particular job; c). Timeliness, each job has different characteristics, for certain types of work must be completed on time because it is dependent on other jobs. So, if the work is not completed on time, it will hamper work in other parts, thus affecting the number and quality of the work; d). Attendance, a certain type of work requires the presence of employees in doing it according to the specified time. Employee performance is determined by

the level of employee attendance in a company; and e). The ability to work together, not all work can be completed by just one employee, so cooperation is needed. Employee performance can be judged by their ability to work with other colleagues.

2.3. Competence

Competence is a basic characteristic of someone that allows employees to produce superior performance in their work (Rosidah, 2003: 11). Competence contains a deep and inherent part of a person's personality with predictable behavior in a variety of job situations and tasks. The prediction of who will perform well and who will not perform well can be measured from the criteria or standards used.

Competence is a characteristic that underlies a person related to the effectiveness of individual performance in their work or the basic characteristics of individuals who have a causal relationship or as a cause-and-effect with criteria that are used as references, are effective or have excellent or superior performance at work or in certain situations (Moeheriono, 2009: 3).

Spencer and Spencer classify three levels of competence, namely (Wibowo, 2013: 96): 1). Behavioral tools, including: a) Knowledge is information used by people in certain fields, for example distinguishing between senior and junior accountants; and b) Skill is the ability of people to do something well. For example, interviewing effectively, and accepting good applicants; 2). Image Attribute, including: a) Social role is a pattern of people's behavior reinforced by a social group or organization; and b) Self Image is a person's view of himself, his identity, personality, and self-worth; and 3). Personal Characteristics, including: a) Traits are typical aspects of behavior, for example, being a good listener; and b) Motivation is what drives one's behavior in a certain area (achievement, affiliation, power).

According to Boulter et.al. (2003: 11) competency levels are Skill, Knowledge, Social Role, Self Image, Trait and Motivation. Furthermore, according to Moeheriono (2009: 15), there are five dimensions of competence that must be possessed by all individuals, namely: 1) Task-skills; 2) Task management skills; 3) Skills to take action (Contingency management skills); 4) Skills to work together (Job role environment skills); and 5) Skills to adapt (Transfer skills).

2.4. Work Safety

Work safety is efforts that aim to ensure the condition, integrity and perfection of the workforce (both physical and spiritual), along with the work and tools of work in the workplace. These efforts must be carried out by all elements involved in the work process, namely the workers themselves, supervisors or heads of work groups, companies, government, and society in general (Husein, 2010). Without good cooperation of all these elements, the goal of work safety may not be maximally achieved.

2.5. Work Accidents

Accident (work) is an unexpected and unexpected adverse event and there is no element of intent. Work accidents are intended as accidents that occur in the workplace, suffered by workers and / or work tools in a work relationship (Bangun, 2016). Work accidents can be caused by two groups of causes; 1) an act of human action that does not fulfill safety (unsafe human acts); and 2. Unsafe conditions (Endroyo, 2013). Even though humans have been careful, if the environment is not supportive (unsafe), then accidents can also occur. Therefore, guidelines for how to work are needed that meet safety principles (Endroyo, 2013).

2.6. Occupational Health and Safety Management System (SMK3)

The Occupational Safety and Health Management System called SMK3 is part of the overall management system which includes organizational structure, planning, responsibilities, implementation, procedures, processes and resources needed for the development, implementation, achievement, review and maintenance of OSH policies in order to risk control related to work in order to create a safe, efficient and productive workplace (Regulation of the Minister of Public Works Number. 09 / PER / M / 2008).

The benefits of implementing an Occupational Health and Safety Management System (OHS-MS/SMK3) for companies according to Tarwaka (2008) are as follows: 1). Management can find out the weaknesses of the operational system elements before operational disruptions, accidents, incidents, and other losses arise; 2). Can be known a clear and complete picture of OHS performance in the company; 3). Can improve compliance with laws and regulations in the field of K3; 4). Can increase knowledge, skills and awareness about OHS, especially for employees involved in conducting audits; and 5). Can increase work productivity (Tarwaka, 2008).

2.7. SMK3 at the Project Implementation Stage

At the implementation stage, the implementation of SMK3 includes aspects; risk management, construction activities and building project activities. Risk management is a structured approach to managing uncertainty related to threats (risk assessment), developing strategies (dealing with risks), and reducing risk (Sutanto, 2010). The OHS-MS guideline for construction in the public works (PU) sector states the stages that must be carried out by service providers, namely: commitment and policies, OHS planning, implementation and operation of activities, measurement or evaluation, and management review and improvement.

OHS-MS stages at the time of building implementation are; understand the implementation provisions, understand the violation provisions, fulfill the administrative requirements, coordinate / cooperate as best as possible with the OHS party, supervise the implementation of the OHS program, make reports on the implementation of the OHS program, train and explain the K3, and provide and use of the facilities supporting the OHS program (Sutanto, 2010).

III. METHODOLOGY

The object of this research is the construction work of the Bahteramas-Kendari Bay bridge in Kendari City, Southeast Sulawesi Province, Indonesia. This study uses a quantitative approach. Respondents were 100 people, 85 construction workers and 15 people at manager level. The sample was determined by stratification random sampling technique. Data were analyzed using smart PLS.

Research variable:

1) Successful Construction Worker Performance (Y). The indicators are (Bangun (2012., and Ruky, 2002): Cost, Quality, and Time.
2) Construction Manager Competency (X1). The indicators are (Wibowo, 2013., and Boulter et.al., 2003): Knowledge, Skills, Work Commitment, Management Ability and Experience.
3) Construction Worker Potential (X2). The indicators are (Wibowo, 2013., and Boulter et.al., 2003): Knowledge, Expertise, Work Commitment, and Experience.
4) Occupational Health and Safety Management System/OHS-MS (X3 / Z). The indicators are (Law Number 13 Year 2004): Work safety, work accidents and implementation guidelines.

Hypothesis:

1. Construction Manager's potential (X1) has a positive and significant effect on the Occupational Health and Safety Management System/OHS-MS (H1)
2. Construction Manager Competency (X1) has a positive and significant effect on the Success of Construction Worker Performance (Y) (H2)
3. Construction Worker Competency (X2) has a positive and significant effect on the Occupational Health and Safety Management System/OHS-MS (H3)
4. Construction Worker Competency (X2) has a positive and significant effect on the Success of Construction Worker Performance (Y) (H4)
5. Occupational Health and Safety Management System/OHS-MS (X3) has a positive and significant effect on the Success of Construction Worker Performance (Y) (H5)
6. Occupational Health and Safety Management System/OHS-MS (X3) as a mediation of the influence between Construction Manager Competency (X1) on the Success of Construction Worker Performance (Y) (H6).
7. Occupational Health and Safety Management System/OHS-MS (X3) as a mediation of the influence of Construction Worker Competency (X2) (X1) on the Success of Construction Worker Performance (Y) (H7).

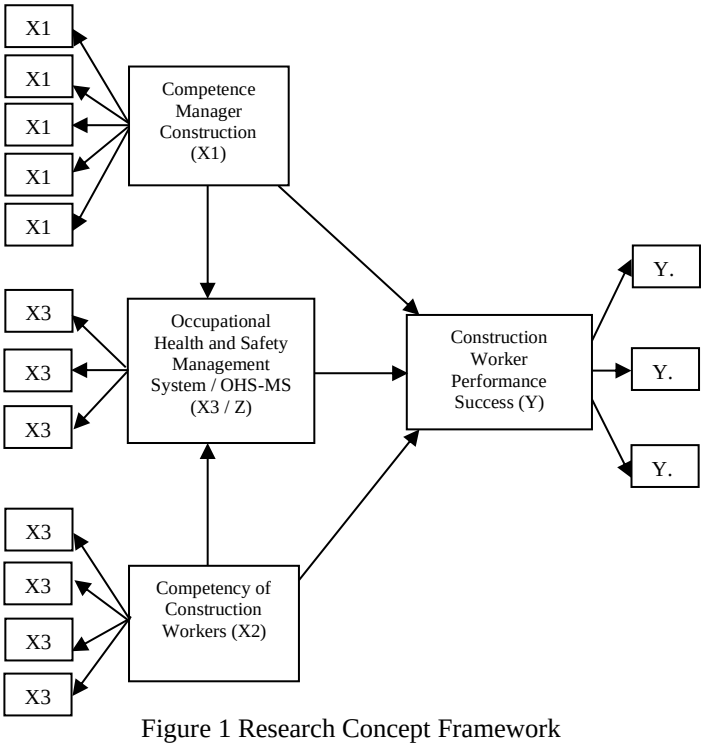

Figure 1 Research Concept Framework

IV. DISCUSSION

4.1. Structural Model Testing and Research Hypotheses

The structural model (inner model) is evaluated by looking at the coefficient value of the relationship path parameter between latent variables. The purpose of testing the structural relationship model is to determine the relationship between the latent variables designed in this study. From the PLS model output, structural model testing and hypotheses were carried out by looking at the estimated value of the path coefficient and critical point value (t-statistic) which were significant at $\alpha = 0.05$. The results of the complete data analysis can be seen in the PLS model output.

Based on the conceptual framework of this study, testing the relationship model and hypothesis between variables can be carried out in two stages, namely: (1) testing the direct effect path coefficient, and (2) testing the mediation effect path coefficient. The description of the results of testing the relationship between the variables of this study can be explained as follows:

a) Hypothesis Testing and Partial or Direct Effect Path Coefficients

Hypothesis testing and path coefficient of direct influence between the variables of construction manager competency, construction worker competency and occupational safety and health management systems on the success of construction worker performance. The results of testing the influence between variables can be seen from the value of the path coefficient and critical point (t-statistic) which are presented in Table 6.

Table 6. Path Coefficient and Hypothesis Testing

Direct influence between variables				Path Coefficient	t- statistics	t-table	Result
H_1.	CMC	→	SMK3	0,3323	5,4129	1,965	accepted
H_2.	CMC	→	CWPS	0,5763	5,8998	1,965	accepted
H_3.	CCW	→	SMK3	0,6379	10,4948	1,965	accepted
H_4	CCW	→	CWPS	0,505	4,0056	1,965	accepted
H_5	SMK3	→	CWPS	0,2827	2,0909	1,965	accepted

Testing the Effect of Mediation								
Eksogenous		Mediation		Endogenous		Path Coefficient	Nature of Mediation	Result
H_6.	CMC	→	OHS-MS	→	CWPS	0.0939	Partial Mediation	accepted
H_7	CCW	→	OHS-MS	→	CWPS	0,1803	Partial Mediation	accepted

The test results are in Table 6, the direct effect path coefficient testing and the research hypothesis aims to answer whether the proposed hypothesis can be accepted or rejected. The results of data analysis in Table 6, then hypothesis testing can be explained as follows:

- *Hypothesis 1 (H1), Construction Manager's Compotency (X1) has a positive and significant effect on OHS-MS*

Direct Effect of Construction Manager Compotency (X1) on Occupational Health and Safety Management System/OHS-MS with a value of 0.860 and t-statistic 27.723. t-statistic is greater than 5.4129 (t table), then hypothesis 1 which states that the Construction Manager's Compotency (X1) has a positive and significant effect on the Occupational Health and Safety Management System/SMK3 is accepted.

- *Hypothesis 2 (H2) Construction Manager Compotency (X1) has a positive and significant effect on the Success of Construction Worker Performance (Y)*

Direct Effect of Construction Manager Compotency on the Success of Construction Worker Performance (Y) with a value of 0.5763 and t-statistic 5.8998. t-statistic is greater than 1,965 (t table), then hypothesis 2 which states that the Construction Manager's Compotency (X1) has a positive and significant effect on the Success of Construction Worker Performance (Y) is accepted.

- *Hypothesis 3 (H3) Construction Worker Potential (X2) has a positive and significant effect on the Occupational Health and Safety Management System /OHS-MS*

The direct effect of construction worker potential (X2) on the Occupational Health and Safety Management System / SMK3 with a value of 0.6379 and t-statistic of 10.4948. The t-statistic is greater than 1,965 (t table), so hypothesis 3 which states that the Construction Worker Compotency (X2) has a positive and significant effect on the Occupational Safety and Health Management System/OHS is accepted.

- *Hypothesis 4 (H4) Construction Worker Potential (X2) has a positive and significant effect on the Success of Construction Worker Performance (Y)*

The direct effect of construction worker potential (X2) on the success of construction worker performance (Y) with a value of 0.505 and t-statistic of 4.0056. T-statistic is greater than 1,965 (t table), so hypothesis 3 which states that Construction Worker Compotency (X2) has a positive and significant effect on the Success of Construction Worker Performance (Y) is accepted.

- *Hypothesis 5 (H5) Occupational Health and Safety Management System/OHS-MS (X3) has a positive and significant effect on the Success of Construction Worker Performance (Y)*

The direct effect of the Occupational Health and Safety Management System/OHS-MS (X3) on Occupational Health with a value of 0.2827 and t-statistic 2.0909. The t-statistic is greater than 1,965 (t table), so hypothesis 3 which states that the Occupational Safety and Health Management System/OHS-MS has a positive and significant effect on the Success of Construction Worker Performance (Y) is accepted.

b) Hypothesis Testing and Indirect Path Coefficient (Variable Compensation/Z)

This method is applied by Hair, et al. (2010) to examine the mediation effect between variables. Methods of Hair et al. is carried out through four steps, including: (1) Checking the effect of the independent variable on the dependent variable in the model by involving the mediating variable (effect A), (2) Checking the effect of the independent variable on the dependent variable in the model without involving the mediating variable (effect B), (3) Examining the effect of the independent variable on the mediating variable in the model (effect C), (4) Examining the effect of the mediating variable on the dependent variable in the model (effect D). Based on the results of examining the four effects (effects A, B, C, and D), then it can be proven that the intervention of the mediating variable is based on the following criteria: (1) If effects C and D are significant, but effect A is not significant, then the mediation is fully proven. Or it can be said that there is full mediation in the model (fully mediated), (2) If the effects of C, D, and A are significant, then the mediation is partially proven or there is partial mediation in the model (partially mediated), (3) If the effects C, D , and A is significant, but the path coefficient (standardized) effect A is almost the same as the path coefficient on effect B, then mediation is not proven in the model (unmediated), (4) If either effect C or D is not significant, then mediation is not proven in the model (unmediated). Ghozali, (2015) said that a variable is called an intervening variable if the variable affects the relationship between endogenous and exogenous variables. The test was carried out with a procedure developed by Sobel. To test the significance of the indirect effect, calculate the t value of the coefficient ab with the formula: t=ab/Sab.

The t value is compared with the t table and if the t value is greater than the t table value (> 1.985) it can be concluded that there is a significant effect of mediation.

- *Hypothesis 6 (H6) Occupational Health and Safety Management System/OHS-MS (X3) as a mediation of the influence between Construction Manager Compotency (X1) on the Success of Construction Worker Performance (Y)*

P_1 = 0, 3323, Se_1= 0, 0614, P_2 = 0,5763
Se_2= 0, 0977

P_{12} = $P_1.P_2$

= (0, 3323) **(**0, 3323**)**

= 0, 1915

Se $=\sqrt{P_1^2.Se_2^2.+P_2^2.Se_1^2+.Se_1^2.Se_2^2}$

$=\sqrt{0{,}0040+0{,}00125+0{,}000489}$

= 0, 07588

Thus the t test value is obtained as follows:

t= $\frac{P_{12}}{S_{e12}} = \frac{0{,}1915}{0{,}07588}$ = 2, 52

The t value of 2.52, the value is greater than 1.965, which means that the mediation parameter is significant. So the model of the influence of the Occupational Safety and Health Management System/OHS-MS (X3) as a mediating influence between the Construction Manager's Compotency (X1) on the Success of Construction Worker Performance (Y) as a mediating variable is acceptable.

- *Hypothesis 7 (H7) Occupational Health and Safety Management System/OHS-MS (X3) as a mediating influence between Construction Worker Compotency (X2) (X1) on the Success of Construction Worker Performance (Y)*

P_1 = 0, 6379, Se_1= 0, 0608
P_2 = 0, 5763, Se_2= 0, 0977
P_{12} = $P_1.P_2$
= (0, 6379) **(**0, 3323**)**
= 0, 3676
Se $=\sqrt{P_1^2.Se_2^2.+P_2^2.Se_1^2+.Se_1^2.Se_2^2}$
$=\sqrt{0{,}00402+0{,}00123+0{,}000479}$
= 0, 07566
Thus the t test value is obtained as follows:
t= $\frac{P_{12}}{S_{e12}} = \frac{0{,}3676}{0{,}07566}$ = 4,858

The t value of 4.858, the value is greater than 1.965, which means that the mediation parameter is significant. So the model of the influence of the Occupational Health and Safety Management System/OHS-MS (X3) as a mediating influence between the Construction Manager's Compotency (X1) on the Success of Construction Worker Performance (Y) as a mediating variable is acceptable.

Based on the research findings, the competence of construction managers, the competence of construction workers, and the implementation of the Occupational Health and Safety Management System (OHS-MS/SMK3) directly shows a positive and significant relationship to the performance of construction work. Furthermore, the indirect

relationship of construction manager competence, construction worker competence mediated (Z) by the Occupational Health and Safety Management System (OHS-MS/SMK3) shows a positive and significant relationship with construction work performance.

The research findings support previous research by Khusnul, et.al (2012) that the variables of knowledge, expertise, work commitment and top management have a significant effect on project success. Furthermore, research by Elphiana, et.al, (2017) states that the implementation of occupational safety and health has a positive and significant impact on performance and supports the research of Fargnoli et.al (2011) that industrial and construction performance must be able to implement occupational health and safety (OHS) aspects in addition to from other important factors such as experience, knowledge and competence. The findings of this study also do not support the results of the research of Setiawan, et.al (2019) that there is no significant influence between occupational safety and health (OHS) variables related to management systems, personal protection of equipment, facilities and infrastructure, risks to the behavior of construction workers at ultimately can reduce the quality of construction work.

Thus, in an effort to improve the performance of workers on construction projects or other industrial sectors that have the risk of work accidents, pay attention to aspects of manager competence, employee competence and can apply Occupational Health and Safety Management Systems (OHS-MS/SMK3).

VI. CONCLUSION

1. Construction manager competence (X1) has a positive and significant effect on the Occupational Health and Safety Management Systems (Z) where the t-statistic value is 27.723 greater than 5.4129 (t-table).
2. Construction manager competence (X1) has a positive and significant effect on the success of construction worker performance (Y) where the t-statistic value of 5.8998 is greater than 1.965 (t-table).
3. The competence of construction workers (X2) has a positive and significant effect on the Occupational Health and Safety Management Systems (Z) where the t-statistic value of 10.4948 is greater than 1.965 (t-table).
4. Construction worker competence (X2) has a positive and significant effect on the success of construction worker performance (Y) with a t-statistic value of 4.0056 greater than 1.965 (t-table).
5. The Occupational Health and Safety Management Systems (Z) has a positive and significant effect on the successful performance of construction workers (Y) where the t-statistic value of 2.0909 is greater than 1.965 (t-table).
6. The Occupational Health and Safety Management Systems (Z) as a mediation between the competence of construction managers (X1) on the successful performance of construction workers (Y) is significantly positive where the t-statistic value of 2.52 is greater than the t-table 1.965, and
7. The Occupational Health and Safety Management Systems mediates (Z) the competence of construction workers (X2) on the successful performance of construction workers (Y) is positive and significant with a t-statistic value of 4.858.

Strengths, Limitations and Future Research

There is no similar research that analyzes the effect of construction manager competence and construction worker competence on the success of construction work performance by implementing the Occupational Health and Safety Management Systems (OHS-MS/SMK3) as a mediating variable, both in Kendari City and in other areas in Indonesia, and few of these studies have been conducted in other countries.

The limitation of the research is that in the research process other factors that influence the quality of work are found, namely work discipline and accuracy, where these two aspects are not the variables analyzed. Thus, it is suggested that future research needs to include disciplinary variables and work accuracy in construction work in an effort to improve the quality of work.

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