

Research.

## ANALYSIS THE IMPACT OF THE IMPLEMENTATION OF QUALITY MANAGEMENT SYSTEM (QMS) AND SAFETY AND HEALTHY AT WORK MANAGEMENT SYSTEM (SHWMS / SMK3) ON THE JOB PERFORMANCE OF EMPLOYEES

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**Abstract.** *Recently, the evolvement of globalization era has been the global challenges that cannot be avoided either by private or government sectors, and they are requested to be survived encountering such the condition. The implementation of Quality Management System (QMS) in the operational company is the way how to guarantee the quality of products or services offered to the people. One of the purposes of QMS implementation is to provide a prime satisfaction to the customers. The impact of QMS implementation is expected to increase job performance of the employees. Besides the implementation of Quality Management System (QMS), the impact of global challenges has been increasing the competitive efforts to execute more effective production process. However, it has required manpower protection accordingly. This research aims to find out whether the implementation of quality management system and safety and healthy at work management system have impacted on the job performance of employees. Objects of this research are the employees in the production department at PT Guna Senaputra Sejahtera Plant 1 Bogor. Data analysis technique of this research has applied software Smart PLS (Partial Least Square). PLS has estimated a model of correlation among the latent variables and correlation between latent variables and its indicators. Result of data processing has indicated that the implementation of Quality Management System (QMS) and system of safety and healthy at work have positively and significantly impacted job performance of employees.*

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**Keywords :** Quality Management System (QMS), Safety and Healthy at Work System ( SHWS / SMK3), and Job Performance of Employees

### INTRODUCTION

Recent globalization era development has been a global challenge that cannot be avoided either by private or government sector, it has requested all parties are obliged to be able to survive facing this condition. Quality Management System (QMS) is prior issue within global challenge accordingly. Either private sector or government sector is obliged to prepare the Quality Management System which should be in line with the mission and vision of each related sector.

Employees are the primary resources of QMS implementation. Employees have been planning, implementing and evaluating the efficacy of QMS implementation. It has

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given positive impact to the individual attitude of an employee which is job performance of employee.

Besides of QMS implementation, the impact of global challenge has developed strong competitive efforts for the company to execute more effective production process. This condition has insisted on the availability of manpower protection refers to the Regulations No.13 year 2003 chapter 86 article 1 regarding the manpower, it has defined that every manpower or worker has his own right to get the protection of : 1) Safety and Healthy at Work, 2) Ethics and Moral value; and 3) Fair treatment which is in accordance with human dignity and religious values.

Based on the survey of International Labour Organization (ILO), it has indicated that Safety and Healthy at Work implementation in Indonesia has been less satisfied. ILO identified that Indonesia has been at number two of the worst countries which is number 152 of 153 countries in the world implementing K3/SHWMS. It has indicated that only 317 huge companies over 15,043 huge companies have implemented Safety and Healthy at Work Management System which is only 2.1%, and the standard of safety at work in Indonesia is the worst one comparing with other countries in South East Asia. It is related to big total of accident at work in Indonesia (Herlina, 2016).

Implementation SHWMS is a factor that could affect the job performance of employee. When the employees have felt safe and secure at work, they will be working well. Therefore, the company can support the employees to work more maximum to finish their job in order to improve their job performance obviously.

## **THEORY BASIS AND HYPOTHESIS**

### **A. Quality Management System (QMS)**

Quality is the customers' perception about the product or service which has met their need and made them satisfied and it has provided a complete specification. Quality in an organization can be achieved by the management role that has established Quality Management System (QMS). Quality Management System (QMS) is a complete documented procedures and standard practices of the management system which has guaranteed the compliance of the process and product within a certain requirement. This kind of requirements and needs has been determined or specified by the customers and organization. QMS has defined how an organization has implemented quality management practices consistently to meet the customers and market requirement. There are ten QMS characteristic developed by Goetsch and Davis mentioned on Nasution (2015): (1) Focus to the customers, (2) Obsession with Quality, (3) Scientifically approach, (4) Long-term Commitment, (5) Teamwork, (6) Systems Continuous Improvement, (7) Education and Training, (8) Controlled Autonomy, (9) Integrated Objective and (10) Employees involvement and Development. QMS characteristics studied in this research are only as follows: (1) Focus to the Customers. (2) Obsession with Quality, (3) Continuous Improvement of the System), (4) Employees involvement and development.

### **B. Management System of Safety and Healthy at Work (SMK3 / SHSWM))**

Mangkunegara (2009) mentioned on Anjani, et. al. (2014) Safety at work has indicated a safe condition or escaped from problem, damage or losses at work. Based on the Regulation of the Republic Indonesia No. 50 year of 2012, chapter 1, "Management System of Safety and Healthy at Work (SMK3 / SHSWM) is a part of company management system which is completely controlling the risks related to job activity to establish a safe, efficient and productive environment at work".

According to J. B. Miner (1992), solving K3 (Safety and Healthy at Work) problems can be done by Safety Psychology and Industrial Clinical Psychology approach. Safety Psychology is focusing on accident prevention by studying why and

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how an accident is happened. Industrial Clinical Psychology is focusing on the decreasing of job performance of employees why it has been happened and how to solve it. According to Mangkunegara (2009) Safety Psychology consists of five factors: (1) Training, (2) Work Environment Control, (3) Supervision and Discipline, (4) Safety at Work Publishing and (5) Awareness of Safety and Healthy at work Evolvement (SHW).

### C. Job Performance

Referring to Sedarmayanti (2011), job performance is the output of an employee's work, management process of an organization completely where the output of the related job should have to be identified absolutely and measured by an applicable standard. Indicators of job performance that have been applied by companies are varied. It is depending on the applicable approach used by related company. According to Hasibuan (2008), job performance indicators are as follows: (1) Initiative, (2) Responsibility, (3) Teamwork, (4) Careful and (5) Disciplines.

### C. Hypothesis formulation

Hypothesis 1 : Quality System Implementation has impacted on the Job Performance of Employee.

Hypothesis 2 : Implementation of Management System of Safety and Healthy at Work has impacted the Job Performance of Employee.

## RESEARCH METHODOLOGY

### A. Sampling Method

Population of the research is all employees in the production department at PT Guna Senaputra Sejahtera Plant 1 in Bogor. Total of the samples refers to SEM and PLS analysis method is about 30 – 100. Since the population is all employees in the production department which is 186 persons, however in order to define the size of the samples of the related population , it has applied Slovin equation, as follows:

$$n = \frac{Z^2}{4e^2} = \frac{1,96}{4 \cdot (0,1)^2} = 96,6 \approx 100$$

(Source: Sugiyono 2007)

Description

n = Total of the samples

Z = Level of normal distribution at significance of 5% (1.96)

e = Margin of max error is a degree of maximum sampling error which is still tolerated about 10%.

### B. Data Analysis Technique

Data analysis technique of this research is using Structural Equation Modelling (SEM) and software Smart PLS (Partial Least Square). PLS Path Modelling is having 2 models, outer model and inner model. Test of the criteria has been using those two models, as follows:

1. **Outer Model (Model Measurement)**, this model has specified the correlation of inter latent variables with its indicators or it could say that outer model has defined how each indicator has connected with other latent variables. Test that has been done on the outer model:

**a. Convergent Validity**

Value of convergent validity is a loading factor value of latent variables and its indicators. Expected value is > 0.07, however, to begin the research, the value of loading scale which is about 0.50 up to 0.60 is considered sufficient. (Chin, 1998 in Ghozali, 2008).

**b. Discriminant Validity.**

This value is the value of loading cross factor which is useful to figure out whether the construct is having proper discriminant value or not by indicating the loading value of intended constructs that should be bigger than loading value of other construct.

**c. Composite Reliability.**

Data which is having composite reliability > 0.8, it means it is having big reliability.

2. Inner Model (Structural Model). Structural Model test is to examine inter-correlation of latent constructs. Some test of structural model, as follows:

a. **R Square** of endogen construct. R Square value is determinant coefficient of endogen construct. Referring to Ghozali (2008) R square value of 0.67 (strong), 0.33 (moderate) and 0.19 (weak).

b. **Estimate for Path Coefficients** is a path coefficient value or size of the correlation or latent construct effect which has been done by using bootstrapping procedure.

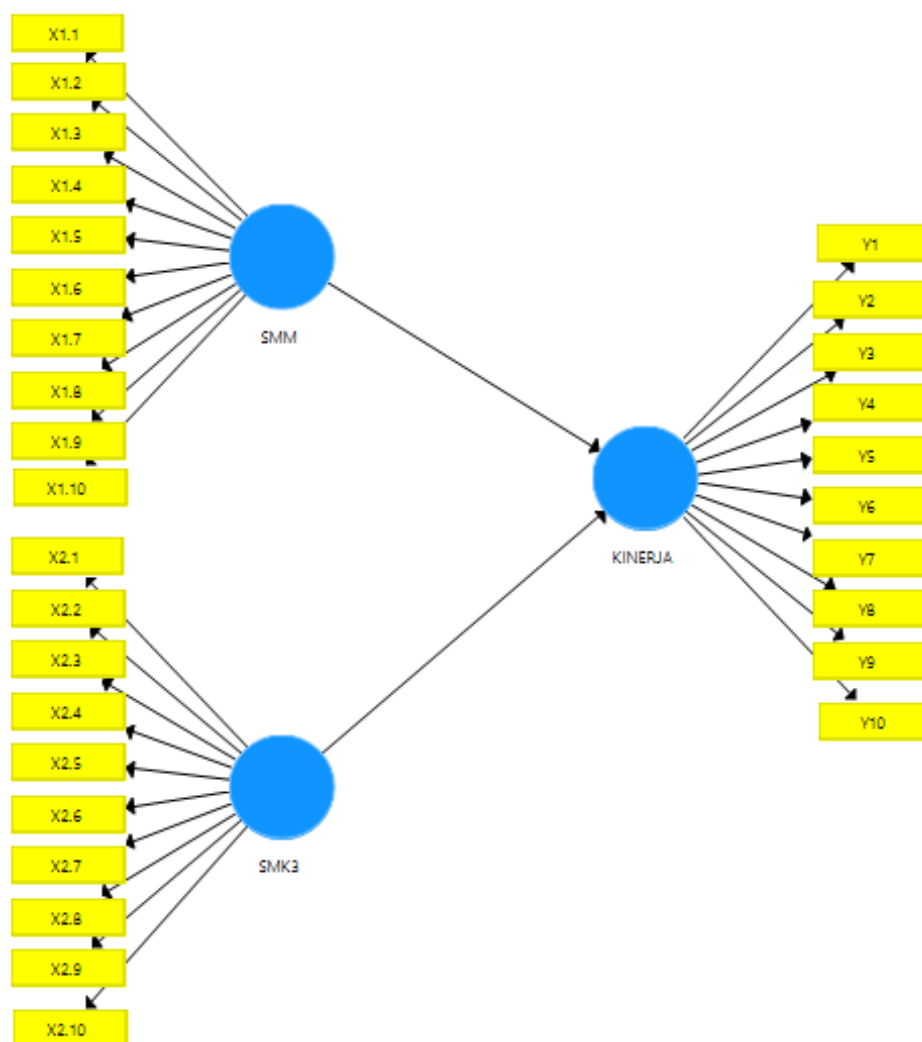
Table 1. Latent Construct and Research Indicators

Latent Construct		Indicator	
Exogen Variable	Quality Management System (X1)	X1.1	Improving the quality of finished product to meet customers requirement.
		X1.2	Rapid customer complaint handling.
		X1.3	Customer is an important asset of the company
		X1.4	Implementation of product quality management system
		X1.5	Implementation of Quality Management System of Production Process.
		X1.6	Implementation of evaluation method of product quality
		X1.7	Compliance of product delivery with customer expectation
		X1.8	Continuous improvement of company system
		X1.9	Involvement of employees in the establishment of company policy.
		X1.10	Involvement of employees in the improvement of quality management system of company.
		X2.1	Training how to use safety

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Latent Construct		Indicator	
	System of Safety and Healthy at Work Management (X2)		equipments at work.
		X2.2	K3 / SHWM training has given a lot of information about dangerous things at work and the importance of safety at work.
		X2.3	All dangerous equipments have been identified as a warning accordingly.
		X2.4	Regular check-up of the employees and provide insurance benefit.
		X2.5	Company has requested all the employees to use individual safety equipment at work.
		X2.6	Strict regulation related to safety at work.
		X2.7	Socialization of individual safety equipment (APD) and fire extinguishers.
		X2.8	Installing danger warning signs at strategic place.
		X2.9	K3 (Safety and Health at Work) as the priority at work
		X2.10	Involvement of employees in the implementation of K3 program at work.
Endogen Variable	Job Performance (Y)	Y1	I have always asked my colleagues when they have encountered any difficulty to do their job.
		Y2	I have always been able to communicate an idea effectively
		Y3	Job tasks given to me are in accordance with my duty and responsibility
		Y4	I have always provided excellent result of my job.
		Y5	I have always been able to work together with others to finish the jobs within one department.
		Y6	The company has emphasized me that it is very important to work together with other departments as a teamwork.
		Y7	According to my opinion, this job needs an accuracy and prudence effort absolutely.
		Y8	I have always been checking the

Latent Construct		Indicator	
			machines and the equipments being used.
		Y9	I have always been following all the regulations stated by the company.
		Y10	I have always been avoiding using communication equipment when I am working.



Description :  
 SMM = Quality Management System  
 SMK3 = System of Health and Safety at Work Management  
 Kinerja = Performance

Figure 1. Model of Structural Equation

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## RESULT AND DESCRIPTION

### A. Outer Model Evaluation

#### 1. Convergent Validity (Reliability Indicator)

Reliability indicator has been identified by the value of loading factor reflecting strong inter-correlation of latent variables upon each indicator variable. The value of loading factor has been identifying either high or low ability of indicators explaining the variables being studied, the higher the value of loading factor, the higher ability describing variables measured. In PLS model, convergent validity is valid if loading value is within 0.5 to 0.6 (Ghozali, 2008). This research has determined loading value of 0.5

Table 2 : Value of Loading Factor of Latent Variables

No	Latent Variables	Indicator	Loading Value	Description
1	Quality Management System	X1.1	<b>0,357</b>	Non compliance with convergent validity
		X1.2	0,589	Compliance with convergent validity
		X1.3	0,560	Compliance with convergent validity
		X1.4	0,528	Compliance with convergent validity
		X1.5	0,698	Compliance with convergent validity
		X1.6	0,749	Compliance with convergent validity
		X1.7	0,757	Compliance with convergent validity
		X1.8	0,849	Compliance with convergent validity
		X1.9	0,538	Compliance with convergent validity
		X1.10	<b>0,459</b>	Non compliance with convergent validity
2	System of Safety and Healthy at Work Management	X2.1	0,574	Compliance with convergent validity
		X2.2	0,514	Compliance with convergent validity
		X2.3	0,583	Compliance with convergent validity
		X2.4	0,700	Compliance with convergent validity
		X2.5	0,743	Compliance with convergent validity
		X2.6	0,603	Compliance with convergent

No	Latent Variables	Indicator	Loading Value	Description
				validity
		X2.7	0,529	Compliance with convergent validity
		X2.8	0,578	Compliance with convergent validity
		X2.9	0,636	Compliance with convergent validity
		X2.10	0,555	Compliance with convergent validity
3	Job Performance	Y1	0,589	Compliance with convergent validity
		Y2	0,602	Compliance with convergent validity
		Y3	0,595	Compliance with convergent validity
		Y4	0,586	Compliance with convergent validity
		Y5	0,560	Compliance with convergent validity
		Y6	0,542	Compliance with convergent validity
		Y7	0,605	Compliance with convergent validity
		Y8	0,725	Compliance with convergent validity
		Y9	0,661	Compliance with convergent validity
		Y10	0,657	Compliance with convergent validity

Indicators X1.1 and X1.10 are having the value of loading factor less than 0.05, it has indicated the lowest QMS. Indicators which are having low loading value have to be dropped- out.

## 2. Discriminant Validity

Table 3 has indicated the correlation of value of latent variables with each indicators. If QMS indicators have been identifying the reflection of QMS, the value of the correlation of indicators upon QMS should have to be bigger than the correlation of the indicators with other latent variables. The table of cross loading (Table 3) has indicated that all forming constructs have been determined having good discriminant.



Table 3. Discriminant Validity (Value of Cross Loading)

Indicator	JOB PERFORMANCE	SHWM	QMS
X1.2	0,401	0,146	<b>0,589</b>
X1.3	0,365	0,219	<b>0,560</b>
X1.4	0,388	0,241	<b>0,528</b>
X1.5	0,359	0,283	<b>0,698</b>
X1.6	0,397	0,396	<b>0,749</b>
X1.7	0,424	0,407	<b>0,757</b>
X1.8	0,539	0,496	<b>0,849</b>
X1.9	0,351	0,275	<b>0,538</b>
X2.1	0,281	<b>0,574</b>	0,274
X2.10	0,320	<b>0,555</b>	0,275
X2.2	0,322	<b>0,514</b>	0,120
X2.3	0,215	<b>0,583</b>	0,116
X2.4	0,203	<b>0,700</b>	0,343
X2.5	0,241	<b>0,743</b>	0,333
X2.6	0,220	<b>0,603</b>	0,276
X2.7	0,292	<b>0,529</b>	0,296
X2.8	0,230	<b>0,578</b>	0,322
X2.9	0,411	<b>0,636</b>	0,428
Y1	<b>0,589</b>	0,171	0,266
Y10	<b>0,657</b>	0,478	0,464
Y2	<b>0,602</b>	0,168	0,349
Y3	<b>0,595</b>	0,286	0,302
Y4	<b>0,586</b>	0,316	0,343
Y5	<b>0,560</b>	0,345	0,295
Y6	<b>0,542</b>	0,242	0,296
Y7	<b>0,605</b>	0,293	0,364
Y8	<b>0,725</b>	0,307	0,515
Y9	<b>0,661</b>	0,252	0,453

### 3. Composite Reliability

Composite reliability is measuring internal consistency and the value should have to be more than 0.6 (Ghozali, 2008). The result of composite reliability has indicated on Table 3. Based on the table below, it has explained that the value of composite reliability is good for job performance constructs of SHWM/K3 and QMS which is more than 0.60. It is concluded that the constructs are having good reliability.

Tabel 4. Value of Composite Reliability

Construct	Composite Reliability
Job Performance	0,858
System of Safety and Healthy at Work Management	0,851
Quality Management System	0,862

## B. Inner Model Evaluation

Structural model has been evaluated by using R-square for endogen variable and compared  $t_{count}$  with  $t_{table}$  ( $t_{table}$  at trustworthy level of 95% is 1.96). Based on the data process, it has gained the value of R-square at job performance construct of 0.422, it means that the implementation of Quality Management System and the System of Safety and Healthy at Work Management have affected job performance of employees of 42.2 %.

According to Chin (1998) in Ghozali (2008), result of R-square of 0.67, 0.33 and 0.19 for endogen latent variables in the structural model, each one has indicated that the model is 'good', 'moderate', and 'weak'. Based on the related theory and the value of R-square of latent variables, this research has indicated that model category described is within 'moderate' one.

Hypothesis test which has been done by looking at bootstrapping analysis on path coefficients which is by comparing the value of  $t_{count}$  with  $t_{table}$ . If the value of  $T_{count}$  is bigger than  $T_{table}$  which is 1.96, and the hypothesis is accepted (Table 5).

Tabel 5. Analisis Path Coefficient

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistik	P-Value
QMS → Performance	0,496	0,505	0,081	6,125	0,000
SMK3--> KINERJA SHWM -> Job Performance	0,246	0,263	0,095	2,594	0,010

Resource : Primary data processing – Bootstrapping smartPLS, 2018

### Hypothesis 1 : Impact of The Implementation of Quality Management System upon The Job Performance.

Result of Analysis has indicated that the implementation of Quality Management System has positively impacted on the job performance of employees. On the analysis of path coefficient, it has indicated that parameter coefficient between QMS variable and Job Performance of employee variable is 0.496. It has explained that the better the implementation of QMS will increase the job performance of employee. It has been strengthened by the result of hypothesis which is accepted, and referred to the result of analysis obtaining  $t_{count} = 6.125$  which is bigger than  $t_{table} = 1.96$ . It has been indicating that QMS implementation at PT Guna Senaputra Sejahtera Plant 1 Bogor has impacted on the Performance of employees in the production obviously.

**Hypothesis 2 : The Impact of The Implementation of System of Safety and Healthy at Work Management (SHWM / SMK3) upon The Job Performance**

Result of analysis has indicated that the implementation of the System of Safety and Healthy at Work Management (SHWM / SMK3) has positively impacted on the increasing of employees' job performance. Path coefficient analysis has indicated that parameter coefficient between SHWM / SMK3 variable and employees' job performance is 0.246. It means that excellent implementation of SMK3 will increase job performance of employees. It has been strengthened by the hypothesis evaluation result which is accepted, indicated on the result of analysis which has obtained  $t_{count} = 2.594$  is bigger than  $t_{table} = 1.96$ . It has been indicating that the implementation of SMK3 at PT Guna Senaputra Sejahtera Plant 1 Bogor has impacted significantly on the Job Performance of employees in the production.

**C. Discussion**

**1. The Impact of Quality Management System Implementation upon The Job Performance of Employees.**

Based on the result of the research, it has been figured out that the implementation of Quality Management System (QMS) at the company has impacted positively on the job performance of employees. This result has been supported by the result of Debbie Tiur J. Purba et.al research (2014), Quality Management System ISO 9001: 2008 has affected significantly the job performance of employees, hence, the increasing of employees' job performance can be done thru the evaluation and improvement of quality management system ISO 9001:2008.

Continuous improvement of employees' job performance can be achieved by thru good implementation of quality management system. Vincent Gaspersz (2001) defined that Quality Management System (QMS) is a pile of documented procedure and standard practices of management system to guarantee that the process of a product has been complied with the product required or particular requirement. QMS implementation is very useful either for the company itself or the customers. Benefit of QMS for the company is to control the quality of product or service, motivate employees, improve job productivity, reduce production cost due to decreasing of rejected product as well as technical problems that can be solved immediately,

**2. The Impact of Quality Management System Implementation upon The Job Performance of Employees.**

Based on the result of research, it has identified that the implementation of Safety and Healthy at Work Management System (HSWMS) at the company has been positively affecting the job performance of employees. This research has been in line with the research of Rafita Sari, et. al (2014) indicated that the implementation of Safety and Healthy at Work Management System has affected the job performance of employees at PT Daruma Mitra Alam Palembang.

Management System of Safety and Healthy at Work (SMK3) is a part of the company management system completely in order to control the risks related to job activity in order to achieve safety, efficiency and productivity at work. Referring to Mathis (2006) Healthy and Safety at Work (K3 / HSW) is an activity that can guarantee having a safety at work, getting rid of physically and mentally disturbance thru education and training, direction, and controlling job execution of the employees as well as providing assistance which in accordance with the applicable regulation, either provided by the government or the company where they are working for.

## CONCLUSION

Based on the result of this research which has been described previously, it can be concluded as follows:

1. The Implementation of Quality Management System (QMS) has positively and significantly impacted on the job performance of employees.
2. The Implementation of the Management System of Safety and Healthy at Work has positively and significantly impacted on the job performance of employees.

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