Contemporary Journal of Applied Sciences (CJAS)
Vol. 4, No. 5 April 2026: 319-336

# Analysis of the Implementation and Integration of Quality, Environmental, Occupational Safety and Health Management Systems on Company Productivity

Atika Ayu Fitri[1*], Edison C. Sembiring[2], Soehatman Ramli[3]
Master of Management Study Program, Graduate School of Sahid University, Jakarta, Indonesia
**Corresponding Author:** Atika Ayu : atikaayufitri@gmail.com

A R T I C L E I N F O

*Keywords:* Quality Management System, Environment, Occupational Safety and Health (SMMK3L), Productivity, Implementation, Understanding

*Received: 7, February*
*Revised: 28, March*
*Accepted: 20, April*



A B S T R A C T

Along with the development of industrialization and globalization, as well as advances in science and technology, the implementation of an integrated management system (IMS) that combines ISO 9001, ISO 14001, and ISO 45001 standards has become very important. This integrated management system aims to improve operational efficiency, reduce risks, and create a safe and sustainable work environment. This study aims to analyze the implementation and integration of the Quality, Environment, Safety, and Occupational Health Management System (SMMK3L) on company productivity. The implementation of SMMK3L according to management was recorded well with a score of 68.5%, while according to employees, the implementation was very good with a score of 82.2%. In terms of work productivity, management has good productivity (68.1%), while employees show excellent productivity (83.5%). This study also reveals a significant relationship between the understanding of SMMK3L by management and employees and the implementation of the system, as well as a significant relationship between the understanding and implementation of SMMK3L and work productivity.

**INTRODUCTIO**

Along with the development of industrialization, globalization, and advances in science and technology, companies in Indonesia face major challenges in managing safety, occupational health (K3), and effective environmental management. Various regulations such as Law No. 1 of 1970 concerning Occupational Safety, Government Regulation No. 50 of 2012 concerning the implementation of the K3 Management System (SMK3), and Regulation of the Minister of Environment No. 32 of 2009 concerning environmental management, have provided the legal framework that underlies the implementation of a good management system. The implementation of K3 Management Systems, Quality Management (SMM), and Environmental Management (SML) that focus on risk reduction and good quality management is increasingly important, especially in an effort to maintain operational sustainability and reduce negative impacts on the environment.

Strong OSH regulations and environmental management provide a foundation for companies to implement more effective practices in maintaining the safety, health and sustainability of the work environment. However, companies today face increasingly complex challenges in managing and mitigating risks in every aspect of their business. The uncertainty of the business environment requires organizations to not only survive but also adapt quickly and appropriately to change.

Failure to manage these risks can lead to financial losses, damage to the company's reputation, and legal consequences (Nugroho, 2023) Therefore, the implementation of a structured risk management system and integration with K3 regulations and environmental management standards are very important elements in achieving sustainable performance, avoiding potential negative impacts, and maintaining the Company's legal compliance.

ISO is a non-governmental organization, its ability to set standards that often become law through national approvals or standards makes it more influential than most other non-governmental organizations. This standard is a means to achieve quality goals that are expected to be able to answer the challenges of globalization where the ultimate goal is to achieve organizational effectiveness and efficiency. The role of ISO standards is to formulate tasks and systems to achieve uniformity of services according to customer specifications (Ma'sumah & Layaman, 2019).

The concept of integrated management in a quality, environment, and K3 (Occupational Safety and Health) system refers to an approach that combines these three aspects in one comprehensive and mutually supportive system. The goal is to create synergies between product or service quality, environmental protection and safety, and worker health, so that all of these goals can be achieved effectively and efficiently. Integrated Management System (IMS) is an approach that combines various management systems within an organization, such as Quality Management System (ISO 9001), Environmental Management System (ISO 14001), and Occupational Safety and Health Management System (ISO 45001), into one integrated framework (Bala et al., 2022).

Conflicts in the Company can arise due to different management standards – integrating management systems can reduce conflicts that will arise (Santos et al., 2012). With a good understanding of the principles of integrated management, employees can be more aware of their responsibilities in creating high-quality products and services. An integrated management system is expected to cause a system to focus more on continuous improvement and minimize conflicts between management systems (Francisco et al., 2024a). The application of management system standards in an organization requires human resources, finances, and time, so the implementation of two or more management system standards will increase the organization's ineffectiveness (Vadastreanu et al., 2015). Integrated management is a new strategy for several organizations based on transparency, efficiency, and integrity. Many companies implement quality, environmental, and work risk control management systems to ensure the profitability and reliability of something produced (Sanz-Calcedo et al., 2015).

In the face of the ever-growing challenges in the era of globalization, companies need to adopt an integrated management approach to better manage risks that do not escape the role of the organization. By implementing an effective and integrated management system, companies can not only improve the quality of products and services, but also create a safe and sustainable work environment. Through these efforts, it is hoped that the company can achieve optimal performance and survive in increasingly fierce competition.

The complexity in implementing more than one quality management system often has the potential to result in replication and duplication of operations and tends to be biased and only focuses on the fulfillment of documented information, so that the benefits of the substance of the systems implemented cannot be obtained or felt. The success and benefits of implementing integration have been widely informed, including being able to improve the Company's performance (Intan Mayasari, 2007), being able to provide services that exceed actual customer expectations (Ma'sumah & Layaman, 2019), saving regular meetings by 13.4% and reducing operational costs by 18.8% and being able to reduce the number of non-conformities in 3rd party audits (Ivada et al., 2015).

The implementation of integrated management has a significant relationship with the company's productivity. Through operational efficiency, improved quality, improved work safety, employee engagement, and the ability to adapt to change, companies can achieve higher levels of productivity. Therefore, companies need to consider investing in integrated management systems as a strategy to improve performance and competitiveness.

Through an in-depth analysis of the implementation and integration of the Quality, Environment, Safety, and Occupational Health Management System (SMMK3L), this study aims to evaluate the extent to which the implementation of an integrated management system can affect the company's productivity. This research will also explore the relationship between understanding and implementing a good management system and improving the company's operational performance, as well as how companies can maximize the existing potential to improve their competitiveness and operational sustainability in an

increasingly competitive market. It is hoped that the results of this research can make a significant contribution to companies in improving and optimizing the implementation of integrated management systems to achieve higher and sustainable productivity goals.

**Literary Watchtower**

**Research Ideas**

According to experts, paradigm is a basis of a belief that can lead a researcher to find facts through his research. There are several types of research paradigms, according to Lincoln and Guba stated that there are three types of research paradigms, namely, postpositivism, constructivism and critical theory. In this study, the paradigm used is a combination of postpositivism and constructivism. Postpositivism views that reality can be known, but not completely objective due to human bias. Research focuses on testing hypotheses through an empirical approach with quantitative methods. Constructivism focuses on the interpretation of reality based on the experiences and perceptions of individuals or groups.

The researcher argues that the implementation and integration of the quality, environmental, safety, and occupational health management system (SMMK3L) has significant potential to increase company productivity. By integrating these three systems, companies can create synergies that support operational efficiency, risk reduction, and improved product and service quality. Integrated systems allow for more holistic process management, minimize resource wastage, and create a safe and healthy work environment, which in turn contributes to improved employee performance and customer satisfaction. This research aims to examine the extent to which such integration can have a positive impact on company productivity, as well as the challenges faced in its implementation.

**Theory of Continuous Improvement**

The concept of sustainable development was first introduced by the World Commission on Environment and Development (WCED) in 1987. Sustainable development is defined as an effort to meet the needs of the current generation without sacrificing the ability of future generations to meet their own needs (United Nations, 1987). In Law Number 32 of 2009 concerning Environmental Protection and Management, sustainable development is defined as efforts that are carried out consciously and planned, by integrating environmental, social, and economic aspects into development strategies, in order to maintain environmental sustainability and ensure the safety, capacity, welfare, and quality of life of current and future generations. In its implementation, sustainable development is based on three main pillars, namely environmental, social, and economic aspects, which are interrelated. The sustainable development approach is comprehensive, including environmental, social, and economic aspects. Natural resource management is carried out wisely by considering social welfare and economic benefits for the company. To achieve this goal, healthy employee conditions and a safe workplace are important elements, as this can increase motivation and commitment to work efficiently. The implementation of the Environmental Management System (SML) and the Occupational Safety and

Health Management System (SMK3) aims to be in line with sustainable development, although using different approaches. SML and SMK3 begin by ensuring that workers are in a safe and healthy work environment, free from potential hazards that can threaten employee health. In addition, the company's assets and the surrounding environment must be protected and protected from the risk of pollution. Such a work environment will improve performance, motivation, effectiveness, productivity, and quality of work results. This has a positive impact not only on the company's reputation, but also on reducing production costs, increasing sales, and increasing revenue in the long run. The quality of the products produced will affect public health and have a significant impact on the environment (Molamohamadi, 2014). In addition, the implementation of the Quality Management System (SMM) also has an important role in ensuring that the products produced have good and consistent quality. To achieve customer satisfaction, so as to increase the company's revenue and reputation. The implementation of SMM, SML and SMK supports the realization of sustainable development.

**Legal Basis for the Implementation of Management Systems**

The laws and regulations that guide the implementation of SMM in Indonesia are not directly regulated in one special invitation, one of which is government regulation number 102 of 2000 concerning national standardization. ISO 9001 is a standard that contains requirements for a quality management system that helps companies or organizations to be more efficient and increase consumer satisfaction (International Organization for Standardization, 2015). said ISO 9001 has undergone four changes, namely in 1994, 2000, 2008, and finally in 2015 which is valid until now.

The laws and regulations that guide the implementation of SMK3 in Industry in Indonesia are Government Regulation of the Republic of Indonesia No. 50 of 2012 concerning the implementation of SMK3 The legislation states that SMK3 includes K3 policies, K3 planning, operation control, K3 performance and K3 review.

The legal regulation that serves as a guideline for the implementation of the Environment in Indonesian industry is the Regulation of the Minister of Environment No. 32 of 2009 concerning the Environment which implements ISO 14001: 2004. Based on this Regulation of the Minister of the State for the Environment, the scope of the Environment includes implementation, coaching, monitoring, evaluation, action, and sustainable evaluation.

**Quality Management System (SMM)**

The Indonesian National Standard (SNI) ISO 9000:2008 is about the basics of a quality management system and uses the same method as ISO 9000:2005. SNI ISO 9000:2008 describes a management system as a collection of elements. These elements interact to set policies and objectives and achieve quality goals. The quality management system (SMM) based on SNI ISO 9000: 2008 is a management system to manage and control an organization regarding quality. The quality management system aims to improve customer satisfaction by implementing an effective system (SNI ISO 9000, 2008).

**Occupational Safety and Health Management System (SMK3)**

Increasing global trade is creating new health and safety challenges and increasing the need for international OSH management system standards. Enabling global benchmarks and improving workplace health and safety standards. Therefore, ISO is developing international standards that can be applied to organizations of all sizes, in all sectors, and in any location (Yoshana et al., 2019).

According to OHSAS 18001 (Ramli, 2013), a management system is a set of interrelated elements to set policies and goals in achieving these objectives. It consists of two main elements, namely the management process and the implementation elements. Where the SMK3 process explains how the management system is run or driven, while the elements are key components that are integrated with each other to form the unity of the management system.

These elements include, among others, responsibilities, authority, relationships between functions, activities, processes, practices, procedures and resources. These elements are used to determine K3 policies, planning, objectives and K3 programs (Marthinus et al., 2019). The SMK3 process uses the PDCA (Plan – Do – Check – Action) approach, starting from planning, implementation, inspection, and improvement actions.

**Environmental Management System (SML)**

SNI ISO 14001:2015 is an international standard that sets the requirements for an environmental management system (SML). SML helps organizations improve environmental performance through more efficient use of resources and waste reduction, thereby gaining a competitive advantage and the trust of stakeholders (Arocena et al., 2023).

Environmental Management Systems enable organizations to identify, manage, monitor, and control environmental issues holistically. Like other management systems issued by ISO, such as the occupational health and safety quality management system, SML also uses a "High Level Structure," which facilitates integration with other management systems (Francisco et al., 2024a) SML can be applied by various types and sizes of organizations, both private, non-profit, and government.

**Integrated Management System**

The concept of an integrated management system was first introduced by Alderman at the International Conference on Health, Safety, & Environment in Oil and Gas Exploration Production II, the conference was held in Jakarta, Indonesia, on January 25-27, 1994. In his conference he mentioned that the integrated management system is a development of Total Quality Management (TQM), TQM combines three quality management systems, namely the Social System pioneered by Deming, the Engineering System developed by Juran, and the Management System proposed by Juse (Kadir et al., n.d.)

An Integrated Management System (IMS) is an approach that combines and unifies the various management systems in an organization into a single coordinated and mutually supportive framework. The main goal of IMS is to optimize managerial processes by integrating different management standards, such as ISO 9001 (quality management), ISO 14001 (environmental

management), and ISO 45001 (occupational health and safety management), into a more efficient and effective system.

**Work Productivity**

According to Ramli (2015), technically productivity is a comparison between the results achieved and the total resources used, labor productivity is a unity of time and as a benchmark if the expansion and activity of the attitude of the source used during productivity takes place by comparing the amount produced with each resource used. So work productivity is a measure that shows the consideration between the inputs and outputs that the company produces and the role of labor that the union of time has. Or in other words, measuring efficiency requires the identification of performance results.

According to Sunyoto, technically productivity is a comparison between the results achieved and the total resources used, labor productivity is a unity of time and as a benchmark if the expansion and activity of the attitude of the sources used during productivity takes place by comparing the amount produced with each source used (Sunyoto, 2012 quoted in Hadiyanti & Setiawardani, 2017). So work productivity is a measure that shows the consideration between the inputs and outputs issued by the company and the role of labor that the union of time has. Or in other words, measuring efficiency requires the identification of performance results. This productivity is an important aspect for the company, because if the workforce in the company has high work, the company will make a profit and the company's life will be guaranteed. Efforts to increase productivity must be well planned and systematically, so that they are successful when applied to a company (Hameed & Amjad, 2009 quoted in Hadiyanti & Setiawardani, 2017). Meanwhile, according to (Tryono, 2012 quoted in Hadiyanti & Setiawardani, 2017) productivity is a comparison between the results achieved with the total resources used or the comparison of the amount of production (output) with the resources used (input).

## RESEARCH METHODS

This study uses a quantitative method with a descriptive approach. The research population consists of management and employees of companies that have implemented the SMMK3L system. The research sample was taken by purposive sampling technique, where respondents were selected based on their involvement in the implementation of an integrated management system in the company.

Data was collected through questionnaires that covered three main aspects: understanding of SMMK3L, the level of system implementation, and its impact on productivity. The questionnaire was compiled using a Likert scale with a range of 1-5 to measure the level of understanding, implementation, and impact of the system on employee and management performance.

In addition to questionnaires, secondary data was also collected from company reports, internal audits, and policies related to the implementation of SMMK3L. The analysis techniques used included Pearson correlation tests to see

the relationship between the variables of understanding, implementation, and productivity. In addition, linear regression analysis was used to measure the extent to which the understanding and implementation of the system affected the company's productivity.

Before the main analysis is performed, validity and reliability tests are applied to ensure that the research instrument has a good level of accuracy. Multicollinearity tests are also used to avoid bias in the regression model used.

## RESULTS AND DISCUSSION

### Management & Employee Understanding Questionnaire Results

The results showed that the average total value of management's understanding of the Quality Management System, Environment, Occupational Health and Safety (SMMK3L) was 34.4 or 76.4%, while the average value of employee understanding of the quality management system, Occupational Environment and Safety (SMMK3L) was 160.6 or 80.3%. The largest percentage of management respondents, namely 52.9%, answered the level of understanding of the quality management system, Occupational Environment and Safety was very good. At the employee level, the largest percentage of respondents was 53.4% answering the level of understanding of the management system, the quality management system, Environment and Occupational Safety was good.

### SMMK3L Integration Implementation Questionnaire Results

The results showed that the average total value of the integration of the quality, environment, safety and occupational health management system (SMMK3L) according to management was 30.8 or 68.5%, while the average value of the integration of the SMMK3L quality, environment, safety and occupational health management system according to employees was 164.5 or 82.2%. The largest percentage of respondents from management, namely 50.4%, answered the level of implementation of the integration of the SMMK3L quality management system, environment, safety and occupational health was good. At the employee level, the largest percentage of respondents was 56.3% answering the level of implementation of the integration of the SMMK3L quality, environment, safety and occupational health management system was good.

### Productivity Questionnaire Results

The results showed that the average total productivity score according to management was 168.9 or 85.2%, while the average productivity score according to employees was 167.3 or 83.6%. The largest percentage of respondents in management was 58%, which was very good. At the employee level, the largest percentage of respondents was 57%, answering the level of understanding of productivity was good.

### Employee Understanding Analysis

Employees' understanding of the Integrated Management System (SMMK3L) is a crucial factor in the successful implementation of this system in an organization. Based on the results of the analysis, the average value of management's understanding of SMMK3L is 34.4 or 76.4%, while the average value of employee understanding is higher, which is 160.6 or 80.3%. This shows that overall, employees' understanding of SMMK3L is slightly better than

management. This difference can be caused by an unbalanced number of respondents, where the number of management participating is only 8 people, while employees are 40 people. In addition, employees have a more active role in carrying out daily operational procedures, while management focuses more on supervision and implementation strategies of SMMK3L.

An average score of 52.9% of respondents from management rated their understanding of SMMK3L in the category of very good, while 53.4% of respondents from employees rated their understanding in the "good" category. This indicates that even though employees have a fairly good understanding of SMMK3L, there is still a need to improve their understanding to achieve a very good level. On the other hand, management who have a higher level of confidence in understanding SMMK3L tend to focus more on strategic and policy aspects, while employees are more involved in technical implementation.

**SMMK3L Integration Implementation Analysis**

The implementation of the integration of the Quality, Environment, Safety, and Occupational Health Management System (SMMK3L) is a crucial aspect in increasing operational effectiveness and efficiency in various industrial sectors. This integration aims to ensure that all policies, procedures, and work practices not only support productivity but also maintain environmental sustainability and worker safety. Based on the analyzed data, the implementation of SMMK3L reflects a fairly high level of awareness and compliance from management and employees with applicable standards. The average compliance score reached more than 80%, indicating that most respondents understood and applied the principles of SMMK3L in their daily activities. However, there are still several aspects that need improvement to achieve a more optimal level of implementation.

Evaluation and monitoring are important elements in maintaining the effectiveness of the implementation of SMMK3L. From these results, it was found that the monitoring and analysis methods applied are quite effective in ensuring compliance with the standards that have been set. However, the validation of the results of the methods used is still a challenge that needs to be improved. The use of clear performance indicators and a strong internal audit system can help identify weaknesses and provide more targeted improvement recommendations. Continuous evaluation also allows organizations to adapt strategies to the needs and changes that occur in the external and internal environment.

**Work Productivity Analysis**

The results of the analysis on productivity show that there is a not significant difference between management and employees. In general, employees have a higher level of performance than management, with an average employee score of 83.6% while management is only 68.1%. This shows that employees have a better understanding of the productivity aspect in the organization, which can be caused by their direct involvement in daily operations. Meanwhile, management has a more varied level of understanding, which can be caused by different perspectives in looking at productivity. Employees tend to have a higher level of understanding of the implementation of international standards, operational efficiency, and customer service systems,

which indicates that they are more involved in the direct implementation of productivity policies. On the other hand, management has a lower understanding of some key aspects such as the application of technology and resource management. This indicates that there is a gap in the understanding of productivity that needs to be improved through training or capacity building programs.

**Analysis of the Relationship between Employee Understanding, Implementation of Quality Management System Integration, Environment, Occupational Safety and Health and Work Productivity.**

The analysis was used to determine the relationship between employee understanding and management system implementation using the Spearman Rank correlation test. The processing of questionnaire results in the form of tabulation was used as data to conduct the Spearman Rank correlation test. In this study, the correlation test was carried out on:

**1) Results of the Correlation Test of SMMK3L Management Knowledge with the implementation of SMMK3L Management**

The results of the correlation test showed that there was a significant relationship between the understanding of the integrated management system and the implementation of the integrated system of quality, environment, safety, and occupational health management of SMMK3L with a value of sig. (2-tailed) of 0.0009. Meanwhile, the value of the correlation coefficient of 0.843 showed that the relationship between these two variables was strong and positive. This means that the higher the management's understanding of the integrated management system, the implementation of SMMK3L also tends to increase.

The strong relationship between these two variables shows that companies that have a better understanding of the integrated management system tend to be more effective in implementing the SMMK3L integrated management system. This is due to the alignment of principles that both emphasize continuous improvement, compliance with standards, and increased operational efficiency. Therefore, increasing understanding of the SMMK3L integrated management system can be an effective strategy in strengthening the implementation of the SMMK3L integrated management system.

These findings indicate that companies need to improve training and education for management to better understand. With this increased understanding, the implementation of SMMLK3 is expected to run more optimally. A systematically designed training program can help management understand how the integration of SMMK3L contributes to the effectiveness and efficiency of the company's operations. In addition, the results of the study show that the successful implementation of SMMLK3 depends not only on company regulations or policies, but also on the understanding of individuals in management. Therefore, in addition to technical training, companies need to adopt an organizational culture-based approach that instills awareness of work quality and safety. Thus, the implementation of SMMLK3 is not only a formal obligation, but also part of a work culture that is consistently applied.

**2) Correlation Test Results of Management Understanding with Management Work Productivity**

The results of the correlation test showed that there was a significant relationship between the integrated management system and the productivity of the management work with a value of sig. (2-tailed) of 0.031. Meanwhile, the correlation coefficient of 0.755 indicated a strong relationship between the two variables. In the correlation analysis, the value of the coefficient ranged from -1 to 1, where the closer the number 1 indicated the stronger the relationship. In this case, the value of 0.755 indicates that the understanding of the integrated management system contributes positively to the increase in work productivity, meaning that when the understanding of the integrated management system increases, the implementation of strategies that increase work efficiency and effectiveness can be carried out better.

These results are in line with the concept that an integrated management system plays an important role in improving the working standards of an organization. An integrated management system aims to create more systematic work procedures, reduce operational errors, and increase consistency in the execution of tasks. Thus, a good understanding of the integrated management system allows for the implementation of more effective policies and procedures in improving overall work productivity.

The significant relationship between an integrated management system and productivity shows that the implementation of an optimal quality management system can contribute to the achievement of organizational targets. A good understanding of quality principles makes it easier to monitor and evaluate employee performance and ensure that every operational process runs according to standards. In other words, the higher the understanding of the integrated management system, the better the performance will be in organizational management. Companies can implement various strategies to strengthen their understanding of the integrated management system, such as conducting regular training, providing clear work guidelines, and improving communication between management and employees regarding operational standards.

**3) Results of the Correlation Test of Employee Understanding with the implementation of SMMLK3 Employee integration**

The results of the correlation test between the understanding of the integrated management system and the implementation of the integrated management system of quality, environment, health, and occupational safety (SMMK3L) showed a significant relationship. With a correlation coefficient of 0.860 and a significance value (Sig. 2-tailed) of 0.000, this result shows that the higher the employee's understanding of the integrated management system, the better the implementation of the SMMK3L integrated management system in the work environment.

The implementation of a good integrated management system helps to understand the importance of compliance with regulations and safe work procedures. In many cases, failures in the implementation of SMMK3L are often caused by a lack of understanding of quality, environmental and occupational

safety standards. Therefore, continuous training can be an effective strategy to improve the implementation of SMMK3L in the company. The better the understanding of the integrated management system, the more likely it is that occupational safety and health practices are implemented consistently. A good understanding of quality management contributes to the correct implementation of safety procedures, reduces the risk of work accidents, and increases productivity. With a well-integrated quality management system, a more disciplined and responsible work culture can be formed more optimally.

**4) Correlation Test Results of Employee Understanding with Employee Work Productivity**

The results of the correlation test between the understanding of the integrated management system and employee work productivity showed a significant relationship. The value of the correlation coefficient of 0.376 with a significance level of 0.017 showed that the relationship between these two variables was positive and significant at the 95% confidence level. This means that the better the employee's understanding of the SMMK3L integrated management system, the work productivity tends to increase. A better understanding can help employees work more efficiently, follow established procedures, and reduce the rate of errors at work. There are no work accidents, no customer complaints. Thus, employees who have a better understanding tend to show higher work productivity than those who have a lower understanding.

In addition to improving understanding, companies also need to evaluate the extent to which the integrated management system implemented is in accordance with the needs and working conditions of employees. If the system is too complex or difficult to implement, its effectiveness in increasing work productivity can be reduced. Therefore, a more flexible and adaptive approach is needed in implementing an integrated management system so that the results obtained are more optimal and can be easily implemented by all employees. In addition, it is important for companies to ensure that the implementation is supported by policies that are in line with the company's work culture. Systems that are too rigid or irrelevant to operational conditions can hinder employee performance instead of increasing productivity. Therefore, regular evaluation and adjustment of the SMMK3L policy is a strategic step that can help the company achieve higher productivity goals.

**5) Correlation Test Results of the Implementation of SMMK3L Integration with Management Work Productivity**

The results of the correlation analysis showed that the significance value (Sig. 2-tailed) was 0.005, which was smaller than the significance limit of 0.05. This indicates a significant relationship between the implementation of the integration of Management System, Environmental Quality, Safety, and Occupational Health (SMMK3L) and management work productivity. In addition, the correlation coefficient value of 0.874 indicates a very strong and positive relationship, which means that the better the implementation of SMMK3L, the higher the work productivity produced.

These findings reinforce the view that the implementation of an optimal quality, environmental and occupational safety management system can improve work efficiency and effectiveness in organizations. With the integration of this system, management can work in a safer, structured, and in accordance with established standards, so that their productivity increases. In addition, a good implementation of SMMK3L also helps reduce the risk of work accidents and operational disruptions that can negatively impact employee performance.

**6) Correlation Test Results of the Implementation of SMMK3L Integration with Work Productivity According to Employees**

The results of the analysis showed that the correlation significance value (Sig.2-tailed) was 0.026, which was smaller than the alpha 0.05. This means that there is a significant relationship between the implementation of the SMMK3L Quality, Environmental, Safety, and Occupational Health Management System Integration with employee work productivity. In addition, the correlation coefficient value of 0.351 shows that the relationship between the two variables is at a moderate correlation level, which means that the better the implementation of SMMK3L in a company, the more employee work productivity tends to increase.

The results of this study provide empirical evidence that the implementation of SMMK3L is not only a policy of compliance with regulations, but also has a direct impact on work productivity. Therefore, companies need to make the integration of this system part of a broader business strategy. By prioritizing environmental, safety, and occupational health aspects, companies can create a better work environment.

## CONCLUSION

The conclusion of the general objective of this study is that the integration of the Quality, Environment, Safety and Health Management System (SMMK3L) can be done by combining the general requirements of the standard clauses of the Quality Management System (SMM), Environmental Management System (SML), and Occupational Safety and Health Management System (SMK3) and adding specific requirements from the standard clauses of SMM, SML, and SMK3.

1. The understanding of SMMK3L by management and employees is as follows:
   a. Management has a good understanding (76.4%), that is, management understands guidelines and procedures and can implement them with small mistakes.
   b. Employees have a very good understanding of SMMK3L (80.3%), i.e. employees understand SMM guidelines and procedures and can implement them with minor errors.
2. The implementation of SMMK3L by management and employees is as follows:
   a. The implementation of SMMK3L is good (68.5%) according to management, namely SMMK3L already has guidelines and procedures that can be mostly implemented.

   b. The implementation of SMMK3L is very good (82.2%) according to employees, namely SMMK3L already has guidelines and procedures that can be mostly implemented.
3. Work Productivity by management and employees as follows:
   a. Management has good work productivity (68.1%), that is, management understands its duties and responsibilities in working
   b. Employees have excellent work productivity (83.5%), i.e. employees understand and complete assigned tasks on time and correctly.
4. The relationship between employee understanding, management system implementation and work productivity is as follows:
   a. There is a significant relationship between the understanding of SMM by management and employees and the implementation of SMM by management and employees.
   b. There is a significant relationship between the understanding of SMM by management and employees and Work Productivity according to management and employees
   c. There is a significant relationship between the implementation of SMLK3 by management and employees and Work productivity according to management and employees
5. It was found that there was no Personnel Competency procedure in the 7th Support.

**ADVICE**

Based on the research that has been conducted, the suggestions that can be conveyed to Company X are:

1. Improve management and employee understanding of SMMK3L by:
   a. Provide the same information by providing SMMK3L documents for management and employees.
   b. Provide training for management and employees about SMMK3L, especially regarding clauses with sub-average values.
   c. Conducting multi-level supervision in the implementation of activities.
2. Improve the implementation of the management system
3. Increase management commitment
4. Convey to companies to carry out Integration Management System (SMMK3L) certification

**REFERENCES**

Aji Hafid Laksana. (2024). Integrasi Sistem Manajemen Mutu, Keselamatan Dan Kesehatan Kerja, dan Lingkungan. *See Discussions, Stats, and Author Profiles for This Publication at: Https://Www.Researchgate.Net/Publication/383265645*. https://doi.org/DOI:10.13140/RG.2.2.19222.77123

Akademia Baru, P., Kadir, A. A., Sarip, S., Nik Mahmood, N. H., Yusof, S. M., Hassan, M. Z., Daud, M. Y. M., Abdul Aziz, S., Sultan, J., Petra, Y., & Lumpur Malaysia, K. (n.d.). A Review of Integrated Management System in the Offshore Oil and Gas Industry. In *Journal of Advanced Review on Scientific Research ISSN* (Vol. 12, Issue 1).

Arocena, P., Orcos, R., & Zouaghi, F. (2023). The scope of implementation of ISO 14001 by multinational enterprises: The role of liabilities of origin. *Journal of Environmental Management*, *327*. https://doi.org/10.1016/j.jenvman.2022.116844

Aulia Ramadhan, S. Tr. Kes. (2024). *Sistem Manajemen Lingkungan*.

Bala, D., Ferroukhi, A., & Chibani, R. (2022). Contribution to the Implementation of an Integrated Management System in Accordance with ISO 9001: 2015, ISO 14001: 2015 and ISO 45001, 2018 Standards: A Case Study of AMENHYD Company in Algeria. *International Journal of Finance, Insurance and Risk Management*, *12*(Issue 4), 175–192. https://doi.org/10.35808/ijfirm/340

Bernardo, M., Simon, A., Tarí, J. J., & Molina-Azorín, J. F. (2015). Benefits of management systems integration: A literature review. *Journal of Cleaner Production*, *94*, 260–267. https://doi.org/10.1016/j.jclepro.2015.01.075

Campailla, C., Martini, A., Minini, F., & Sartor, M. (2019). ISO 45001. In *Quality Management: Tools, Methods and Standards* (pp. 217–243). Emerald Group Publishing Ltd. https://doi.org/10.1108/978-1-78769-801-720191014

Collazos-Garzón, C., García, M. I., Martha, &, & García, I. (2024). Challenges for the Implementation of the Integrated Management System Under the Quality Principles and the ChallengesfortheImplementationoftheIntegratedManagementSystemUnder th eQualityPrinciplesand theISO90012015ISO140012015andISO450012018Standards1. In *ISO* (Vol.

9001). https://orcid.org/0000-0003-0676-8128.

Dalling, I. D. (2012). *Management Integration: Benefits, Challenges and Solutions*. https://www.researchgate.net/publication/271906687

M., & Aris Dwi Cahyanto, B. (2016). Studi Kasus Kawasan Industri Jababeka, Pengembangan Kebijakan Integrasi Sistem Manajemen. In *Journal of Env.*

*Engineering & Waste Management* (Vol. 1, Issue 1). Journal of Env. Engineering & Waste Management, Vol. 1, No. 1, April 2016: 1-14

De Oliveira, O. J. (2013). Guidelines for the integration of certifiable management systems in industrial companies. *Journal of Cleaner Production*, *57*, 124–133. https://doi.org/10.1016/j.jclepro.2013.06.037

Francisco, F. E., Costa, A. C. F., Alexandre Costa Araújo Sampaio, P., Domingues, P., & de Oliveira, O. J. (2024a). Implementation and improvement of Integrated Management Systems: recommendations for their adaptation to the ISO High-Level structure. *Cleaner Environmental Systems*, *15*. https://doi.org/10.1016/j.cesys.2024.100227

Francisco, F. E., Costa, A. C. F., Alexandre Costa Araújo Sampaio, P., Domingues, P., & de Oliveira, O. J. (2024b). Implementation and improvement of Integrated Management Systems: recommendations for their adaptation to the ISO High-Level structure. *Cleaner Environmental Systems*, *15*. https://doi.org/10.1016/j.cesys.2024.100227

Intan Mayasari. (2007).

ISO 9001. (2015). Quality management systems – Requirements.

ISO 14004 (2004). Environmental management systems – General guidelines on principles, system and supporting techniques.

ISO 14001, 2015. Environmental management systems – Requirements with guidance for use.

ISO/DIS 45001. (2016). Occupational health and safety management systems – Requirements with guidance for use

Ivada, P. A., Hermanianto, J., & Kusnandar, F. (2015). Integrasi Sistem Manajemen ISO 9001, ISO 22000 dan HAS 23000 dan Penerapannya di Industri Pengolahan Susu Integrated Management System of ISO 9001, ISO 22000 and HAS 23000 and its Application in Dairy Processing Industry. *Jurnal Mutu Pangan*, *2*(1), 66–73.

Klute-Wenig, S., & Refflinghaus, R. (2015). Integrating sustainability aspects into an integrated management system. *TQM Journal*, *27*(3), 303–315. https://doi.org/10.1108/TQM-12-2013-0128

Lahuta, P., Kardoš, P., & Hudáková, M. (2021). Integrated Risk Management System in Transport. *Transportation Research Procedia*, *55*, 1530–1537. https://doi.org/10.1016/j.trpro.2021.07.142

M. ROFI' UDIN. (2017). Pengembangan Model Integrasi Proses Sistem Manajemen Untuk Mencapai Peningkatan Berkelanjutan Pada Penerapan Sistemn Manajemen Mutu, Keselamatan, Kesehatan Kerja dan Lingkungan Dalam Pengelolaan Proyek Konstruksi.

PUJI HARTOYO. (2015) S., Edisi kelima, P. *Quality* management systems requirements Standar International ISO Translated Diterjemahkan Into Dari Indonesian Bahasa Inggris

Marthinus, A. P., Manoppo, F. J., & Lumeno, S. S. (2019). Model Penerapan Sistem Manajemen Keselamatan dan Kesehatan Kerja Pada Proyek Infrastruktur Jalan Tol Manado-Bitung. *Jurnal Sipil Statik*, *7*(4), 433–448.

Ma'sumah, E. N., & Layaman, L. (2019). Pengaruh Implementasi Sistem Manajemen Mutu ISO 9001:2015 Terhadap Kepuasan Peserta (Pelanggan) Dengan Mediasi Kualitas Layanan. *Esensi: Jurnal Bisnis Dan Manajemen*, *9*(1), 69–78. https://doi.org/10.15408/ess.v9i1.12430

*Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif dan R&D*. (n.d.).

Michael Christian Willem. (2016). Integrasi Sistem Manajemen Mutu, Lingkungan, Keselamatan dan Kesehatan Kerja.

Nugroho, L. (n.d.). *Penerapan Manajemen Risiko pada perusahaan*. https://www.researchgate.net/publication/370580567

Pangkey, F., Malingkas, G. Y., & Walangitan, D. (2012). Penerapan Sistem Manajemen Keselamatan Dan Kesehatan Kerja (Smk3) Pada Proyek Konstruksi Di Indonesia (Studi Kasus:

Pembangunan Jembatan Dr. Ir. Soekarno-Manado). In *Jurnal Ilmiah MEDIA ENGINEERING* (Vol. 2, Issue 2).

Purwanto, A., Ahmad, A. H., & Asbari, M. (n.d.). *The impact of Integrated Management System (IMAS) Implementation on Business Performance: A Strategic Analyses of ISO 9001 Quality, ISO 14001 Environment, ISO 22000 Food Safety and*. https://doi.org/10.13140/RG.2.2.28878.82247

Ramos, D., Afonso, P., & Rodrigues, M. A. (2020). Integrated management systems as a key facilitator of occupational health and safety risk management: A case study in a medium sized waste management firm. *Journal of Cleaner Production*, *262*. https://doi.org/10.1016/j.jclepro.2020.121346

Renita Hadiyanti 1* dan Maya Setiawardani 2. (2017). Pengaruh Pelaksanaan Program Keselamatan dan Kesehatan Kerja Terhadap Produktivitas Kerja Karyawan. *Jurnal Riset Bisnis & Investasi, Vol. 3, No. 3*.

Santos, G., Rebelo, M., Barros, S., & Pereir, M. (2012). Certification and Integration of Environment with Quality and Safety - A Path to Sustained Success. In *Sustainable Development - Authoritative and Leading Edge Content for Environmental Management*. InTech. https://doi.org/10.5772/48414

Sanz-Calcedo, J. G., González, A. G., López, O., Salgado, D. R., Cambero, I., & Herrera, J. M. (2015). Analysis on Integrated Management of the Quality,

Environment and Safety on the Industrial Projects. *Procedia Engineering*, *132*, 140–145. https://doi.org/10.1016/j.proeng.2015.12.490

Vadastreanu, A., Bot, A., Dorin, M., Maier, A., Mariana Vadastreanu, A., & Maier,

D. (2015). Environment and Health Integrated Management Systems: A Literature Review. *Article in Journal of Investment and Management*, *4*(6), 348–356. https://doi.org/10.11648/j.jim.20150406.18

Yoshana, A., Fidiandri Putra, M., Santoso, H., & Hartini, S. (2019). Penerapan Sistem Manajemen Mutu Iso 45001:2018 Smk3 Di Pt Petrindo Semesta Untuk Mengurangi Kecelakaan Kerja Dan Menciptaan Lingkungan Kerja Yang Sehat. *Jurnal Anadara*

*Pengabdian Kepada Masyarakat*, *1*(2), 2657–0351.

Yuni Praktikno, K. (2020). The Advantages Of Implementation Of Integrated Management System On Iso45001, And Iso14001 Manufacturing Industry. *Tinggi Manajemen IMMI Jakarta, Sekolah*, *1*(3).https://doi.org/10.31933/DIJ