

The Effect of Implementation Integrated Management System ISO 9001, ISO 14001, ISO 22000 and ISO 45001 on Indonesian Food Industries Performance

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Abstract: *The purpose of this study was to determine the effect of the implementation of the Integrated Management System (IMAS) particularly the ISO 9001:2015 (Quality), ISO 14001:2015 (Environment), ISO 22000:2018 (Food Safety) and ISO 45001:2018 (Safety) on business Performance of Indonesian Food Industry. The research motivation is due to the inadequate research and works of literature on the impacts of ISO 9001:2015, ISO 14001:2015, ISO 22000:2018 and ISO 45001:2018 on business performance after their implementation in Indonesia. This research was conducted in several food industry companies in Indonesia as many as 426 respondents, who are the employees from 44 food industry companies that have implemented an Integrated Management System in their respective organizations for at least 3 years were recruited using Stratified Random Sampling. Data was collected via electronic questionnaires and analyzed using the Structural Equation Model (SEM) and Linear Structural Model (LISREL) version 8.70. The results of the analyses showed that the implementation of IMAS has significantly influenced the business performance of the selected companies. Interestingly, it is also found that IMAS has contributed to the increase of employee awareness, improvement of the company's image, improvement of quality and safety of the food products, the enlargement of new customers pool and facilitate access to new markets. Moreover, IMAS also has proven an important system that managed to increased customer satisfaction, contributed to the improvement of internal organizational, improve communication culture in the companies, increased employees' productivity as well as reduced the non-compliant products. This research novelty is essential as it outlines a strategic model that could be adapted and adopted by other industries in Indonesia or in other regions in improving their business performance through the implementation of Integrated Management System (IMAS) particularly the ISO 9001: 2015, ISO 22000, ISO 14001 and ISO 45001.*

Keywords: Business Performance, Integrated Management System, ISO 9001: 2015, ISO 22000, ISO 14001, ISO 45001.

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I. Introduction

In the industrial era 4.0, business competition is getting stringent, forcing many manufacturing companies in the world to seek innovations to improve the competitiveness and performance of their companies. In order to improve the competitiveness, survive in keeping and, even more, increase the market share, some companies have implemented an Integrated Management System (Georgiev & Georgiev, 2015), such as the ISO 9001: 2015 Quality Management System and the ISO 22000: 2018 Food Safety Management System which has just been published by the International Standardization Agency.

Research by Wilcock and Boys (2017) found that ISO 9001 Quality Management System provides benefits to supply chain management, improves planning, delivery efficiency, improves their customer and supplier relationships. They also claimed that ISO 9001 increases customer satisfaction, market share and inventory turnover, and reduce waiting times, rework, waste, and reduce customer complaints. Wilcock and Boys believe that ISO 9001 Quality Management System serves as a tool to monitor external performance processes. A similar study by Ismyrlis and Moschidis (2015) concluded that the benefits of implementing ISO 9001 were an increase in profits, costs, and market share. Another study by Nabavi, Azizi, and Faezipour (2014) concludes that the application of ISO 9001 has a significant impact on customer satisfaction, competitiveness, and it increases the customer satisfaction index. An earlier study by Feng, Terziowski, and Samson (2008) suggests four benefits of implementing ISO 9001. The benefits are: improving product or service quality, improving the market, increasing financial performance, and as a result, bringing a positive effect on business and operational performance. Supporting the findings of Feng, Terziowski, and Samson, Fotopoulos and Psomas (2010) found that the application of ISO 9001 affects company performance concerning their internal procedures, customers, market share, and the natural and social environment.

A positive and significant relationship between the application of ISO 9001 and ISO 22000 and the company competitive performance was reported in several studies on the ISO 22000 Food Safety Management System conducted by Kafetzopoulos, Gotzamani, and Psomas (2013) showed. Similarly, Vlachos (2014) lists out the benefits of applying ISO 22000, namely compliance with quality assurance standards, modernization of processing facilities, applications of legislation, credibility, experience, and reputation, better performance in terms of supply chain costs, food quality, and customer satisfaction. Research on Management Systems Integration has also been carried out by many researchers such as Ferreira Rebelo, Santos, and Silva (2014). They state that the application of integrated management systems results in the elimination of conflicts between individual systems by optimizing resources, creating added value for businesses by eliminating several types of waste, integrating management of components of sustainability in the global market, increasing partnerships with suppliers of goods and services, and reducing the number of internal and external audits. Around a decade before their study, several integrated system applications, such as cost savings, better utilization of resources, and improved communication throughout the organization were identified by Zutshi and Sohal (2005). These findings are supported by Khanna, Laroia, and Sharma (2010), whose study concludes that perceived benefits of implementing an integrated management system are reductions in duplication of policies, procedures and work instructions, cost reduction, higher transparency and time savings. According to Zeng (2011), the benefits of implementing an integrated management system include reducing document loss, reducing management costs, decreasing the complexity of internal management, simplifying the certification process, and above all, facilitating continuous improvement.

While the benefits of ISO 9001 and ISO 22000 have been proven through the studies mentioned earlier, those researches discuss the old version of the management system namely ISO 9001: 2008 and ISO 22000: 2005; while any research on the

new version ISO 9001: 2015 and ISO 22000: 2018 has never been conducted yet. Many companies in the province of Banten, Indonesia, especially food packaging companies, have implemented a new version of the Integrated Management System, ISO 9001: 2015 and ISO 22000: 2018, and the Integrated Management System. Since research on this subject has not been conducted, the benefits of implementing the most updated management systems are unknown yet. The purpose of this study was to find out the influence of the IMAS integrated management system ISO 9001: 2015, ISO 14001: 2015, ISO 22000: 2018, and ISO 45001: 2018 on business performance.

II. Literature and Method

2.1. Quality Management Systems

2.1.1. ISO 9001: 2015 Quality Management System

According to the International Accreditation Forum (2015), risk-based thinking becomes the main difference between the earlier version of ISO 9001: 2008 to ISO 9001: 2015. Other updates include fewer document requirements and less emphasis on documents, improved service, increased emphasis on organizational context and leadership requirements, and greater emphasis on achieving desired outcomes to increase customer satisfaction. Requirements for processes such as error proofing, change management, and risk management, which are not part of the previous version, are reinforced in the new ISO 9001: 2015 standard (Hampton, 2014). Sanders (2013) shows that the new standards go beyond the quality management system to a contemporary business management system. Reid (2014) summarizes that the change in the standards provides an opportunity to apply the standards more effectively and add value to the organization, rather than implementation due to external factor such as because customers want it. Besides, the new version is more appealing to non-manufacturing sectors (Reid 2014), such as the service industry. Reid believes that ISO 9001: 2015 will become a major force for process improvement and excellence in organizations with

the fact that it is generic and stable for the next ten years. He adds that the updated ISO 9001 uses more understandable terminology than the earlier version. Besides, risk-based sensitivity and greater flexibility to meet business needs are incorporated in the Quality Management System (QMS), making it easy to fit into the overall business strategy (Hampton, 2014). This new version ISO 9001: 2015 provides certifications for different functions or departments in an organization (Reid, 2015). For example, an engineering department can obtain its own certification apart from the manufacturing company where it is part of. Customers may ask for certificates from an organization to examine if the functions/departments have received a third-party certification and are trustworthy for business. A new format called "high-level structure is used in the new standard structure. This structure reflects strategic choices that will gradually be applied to all ISO management system standards. As such, ISO aims to help businesses and organizations more easily integrate all or parts of their various management systems and ultimately achieve true unity.

Mangula (2013) also has the same perspective. He concludes that ISO 9001: 2015 certified organizations show many improvements in performance in terms of quality and quantity of products. His findings show that supplier orientation, mediated by stakeholder satisfaction, is an essential tool for the lasting success of ISO 9001 certified organizations, brought by the awareness and understanding of the relevance of Supply Chain Management for the satisfaction of their stakeholders and long-term business achievement.

The ISO 9001: 2015 standard brings some enhancement compared to the previous ISO 9001: 2008 standards. Greater leadership involvement, simplified terms and language, structured risks and organizational opportunities are more effectively defined in the new version (International Organization for Standardization, 2015). Documents that are user-friendly and supply chain management are also part of the update. Additionally, ISO 9001: 2015 standards are more risk-oriented compared to previous editions. Sari, Wibisono, Wahyudi, and Lio (2017) note that this QMS applies a risk-based

approach. It means that in their efforts to minimize the negative impacts of ISO 9001: 2015, organizations may formulate their implementation strategies in such a way that they deem appropriate. Like other matters related to the management of an organization, risk management is the responsibility of top management (Rybski, Jochem, & Homma, 2017).

Ochieng et al. (2015) state that ISO 9001 certification influences return on net assets of the organizations, and thereby influencing their performance. It was reported that the net asset value among organizations with ISO 9001 certification was significantly higher than those that do not possess the certification. On the other hand, on profit and revenue, there are no significant differences between the ISO 9001 certified and non-certified organizations. Ismyrlis et al. (2015), who examine the same subjects, state that the least significant benefits observed were mostly in business performance, such as profits, costs, and market share. A noticeable difference was observed between the level of performance and certain demographic variables as the result of the ISO (International Organization for Standardisation) implementation itself, size, and years of certification. In general, certified companies have benefited from ISO implementation. Chiarini et al. (2016) add that ISO 9001 can improve performance in terms of effectiveness, for instance: citizens' satisfaction, less defects and claims, as well as staff awareness of citizen needs. On the other hand, negative effects on citizens' participation, internal communication, teamwork, and cost reduction are likely to happen in the implementation of ISO 9001. Some controversial issues describe documentation bureaucracy and the external auditing process.

Dick et al. (2000) claim that quality certification (ISO 9000) has a positive relationship with improved business performance. The findings lead to the conclusion that ISO 9000 standard quality certification is not consistently associated with having a quality assurance system that delivers improved process control or better quality. In brief, Psomas et al. (2015) suggest that the benefits of ISO 9001 cover the aspect of product or service quality, operational, market, and

financial performance. Furthermore, Terziovski et al. (2007) have reported what is considered a major findings. They found that organizations seeking ISO 9000 certification with a proactive approach driven by a continuous improvement strategy are more likely to derive significant business benefits as a result. ISO certification can serve as a means of promoting and facilitating a quality culture, with the involvement of quality auditors as key players in the process. Above all, although profit-oriented companies are convinced of the result that certifications bring, their main concern is still about how much benefit they gained. The benefits of ISO 9000 certification should exceed the costs of attaining the standards. Take, as an example, some manufacturing companies in Saudi Arabia. The firms acknowledged that they were satisfied with the benefits gained from the certification, which exceed the cost of attaining the certification and, even, has positively contributed to the organizations' survival and success (Magd et al., 2003).

2.1.2. ISO 22000: 2018 Food Safety Management System

Food Safety Management System Standard ISO 2200: 2018 covers the prevention, elimination, and control of food safety hazards, from the location of the production to the point of consumption. Since food safety hazards can occur at each stage of the process, companies involved in the food supply chain must apply adequate hazard control. Maintaining food safety is made possible only with a combined effort of all parties involved, including producers, retailers, end consumers, and government as the policymaker and regulator.

ISO 22000: 2018 is a food safety management system containing requirements for the food chain organizations. The system translates food safety management into a process that is continually improved. This standard focuses on a preventive approach to food safety includes identifying, preventing, and reducing food safety hazards in the food and feed chain. ISO 22000: 2018 applies

a new approach to risk as an essential concept in the food business. In its attempt to define risk as a new concept, ISO 22000: 2018 proposes distinctions between operational-level risk and the strategic-level risk of the management system (ISO.org, 2018).

With the introduction of ISO 22000: 2018, the ISO 22000: 2005 is obsolete. ISO.org defines ISO 22000: 2018 as a standard offering dynamic control of food safety hazards. The standard combines generally recognized key elements, namely: interactive communication, system management, Pre-requisite Programs (PRP), and the principles of Hazard Analysis and Critical Control Points (HACCP). Food Safety Management System (FSMS) provides guidelines for an organization to create a plan, design implementation, operate, maintain as well as update their FSMS to increase its effectiveness. With the implementation of FSMS, an organization gains more customers' trust for their product safety and increase customer satisfaction as a result. Meeting the requirements of FSMS communicates to interested parties in the food chain that the organization complies with food safety requirements following applicable laws and regulations. FSMS also guides an organization to evaluate and meet the mutually-agreed requirements of customer food safety.

The generic nature of the ISO 22000: 2018 requirements makes the standard applicable to all organizations in the food chain, regardless of their size and complexity. The standard is applicable to organizations directly or indirectly involved in food chains. To mention some, such organizations may include feed producers, pet food producers, crop harvesters and wild animals, farmers, material producers, food producers, retailers, and organizations that provide food services, catering services. The standard also provides applicable guidance for cleaning and sanitation services, cleaning and disinfecting, transportation, storage and services distribution, equipment suppliers, packaging materials, and other food contact materials (ISO.org, 2018). The research conducted by Kakouris et al. (2018) found that certified companies in the F&B industry have gained internal and external benefits including quality awareness, increased productivity and personnel participation, and increased efficiency. Moreover,

to the satisfaction of a profit-oriented organization, the certification improves the organization image and extend its market share. In contrast, the financial benefits of certification are less significant. While some companies reported no financial benefits, the others reported indirect and intangible financial benefits. Vladimirov et al., 2011 conclude that the company's information capacity and the information environment become the key factors for the adoption of efficient food safety and quality management system. Overall company development and location, expected benefits, and improvement of the working conditions are another set of consideration factors for food producers or retailers to adopt the system. Vladimirov also suggests that customer satisfaction, the capacity of consultants, inspection frequency, size, and environment protection pose other points of consideration for adoption. The implementation is hindered by some infrastructural difficulties and consequently perceived adverse effects of the official control. Similarly, Escanciano et al. (2014) suggest that ISO 22000 is adopted by firms operating in all links of the food chain industry (FC) regardless of their size, for this factor does not determine its implementation. Obviously, the potential benefits resulting from ISO 22000 certification become a compelling factor for firms exporting their products. Mostly, the benefits contributing strongly to organizations' satisfaction are more internal, primarily related to improved efficiency and food safety. The contribution of Kafetzopoulos et al. (2013) identifies a positive and significant relationship between the combined effective implementation of both ISO 9001 and ISO 22000 standards and the competitive performance of certified food companies, with a significant proportion of variance in their performance.

2.1.3. ISO 14001: 2015 Environmental Management System

According to Poksinska et al. (2019), the highest perceived benefits from implementing ISO 9000 and 14000 lie in marketing leverage and the improved relationship with stakeholders. Since the standard asks companies to set their environmental policy and objectives themselves, the identification of environmental aspects is

obviously the key factor requiring intense effort. In general, organizations expect their suppliers to apply ISO 9000 than ISO 14000. Psomas et al. (2011) find that it is the internal motives that significantly influence a company's decision to obtain ISO 14001 certification. The ISO 14001 requirements and the company's issues with environmental performance are among the two common reasons for the implementation of this environmental management standard. The company's market leverage, the transition from conventional to sustainable practices, the improved relationship with the community resulting from better environmental performance, and the improvement of waste processing are a set of contributing factors from which companies derive their interest in implementing the standard. Psomas et al. (2019) add that internal benefits have become a more influential factor than the external benefits although the gap between these two factors is not relatively significant. Similarly, through their trend analysis, To et al. (2014) find out that the top motivating factors for adoption of the Environmental Management Standard are to promote environmental awareness among employees of environmental regulations, increase compliance to environmental regulatory, and improving efficiency. The top significant perceived benefit is in enhancing employees' awareness of environmental regulations. In the second place, companies believe that by enhancing employees' environmental awareness, organizational image is enhanced. Lastly, working with the management in dealing with environmental issues becomes the other drive for the adoption of the ISO 14001. Orcos et al. (2019) argue that the diffusion of ISO 14001 is influenced by both performance orientation and institutional collectivism. While performance orientation slows down the diffusion of ISO 14001, institutional collectivism speeds it up. Over time, performance orientation decreases in strength while the accelerating effect of institutional collectivism becomes stronger.

2.1.4. ISO 45001: 2018 Safety Management System

The number of companies adopted and certified with the Occupational Health and Safety (OHS)

management system is expected to grow significantly with the introduction of ISO 45001 (Campaila et al., 2019). Guided by the requirements of the standard, companies employ the Deming Cycle to create continual improvement of OHS performance. The process starts with leadership and commitment, followed by planning involving context analysis, operational planning, risk assessment, and control. In this case, the planning of the support processes takes into account communication and participation, documentation management, competence resources and awareness of resources/ Lastly, monitoring, auditing, and management review form the processes of performance evaluation. Full control of compliance obligations makes it worthwhile to implement the safety management system. Like the other management standards mentioned earlier, a better corporate image is reported along with a significant reduction in the injury indexes and a reduction in the associated costs.

2.2. Method

The research was conducted as a response to the limited research in Indonesia on ISO 9001: 2015, ISO 14001: 2015, ISO 22000: 2018, and ISO 45001: 2018. The whole research processes, from the first contact with involved companies to the final data compilation, took place between August 2019 and December 2019.

Conducted in several food industry companies in Indonesia, this research involved 426 respondents, who were employees of 44 food industry companies that had been implementing an Integrated Management System for at least three years. To present and explain the survey, before sending the questionnaire, each company was phone called. The questionnaire was sent electronically via e-mail and WhatsApp to the employee responsible for the management system department at the selected companies. The questionnaires were effectively responded by 89% of the sample population. For data analysis and processing, Linear Structural Model (LISREL) version 8.70 was used in Structural Equation Model (SEM).

Table 1 Profile of 426 Respondents

Job Title	Man	Woman	Total
Top Management	35	16	51
Management Representative	25	18	43
Manager	32	24	56
Supervisor	97	47	144
Staff	87	45	132
Total	276	150	426

Based on previous studies and the purpose of this study, the following research model was constructed.

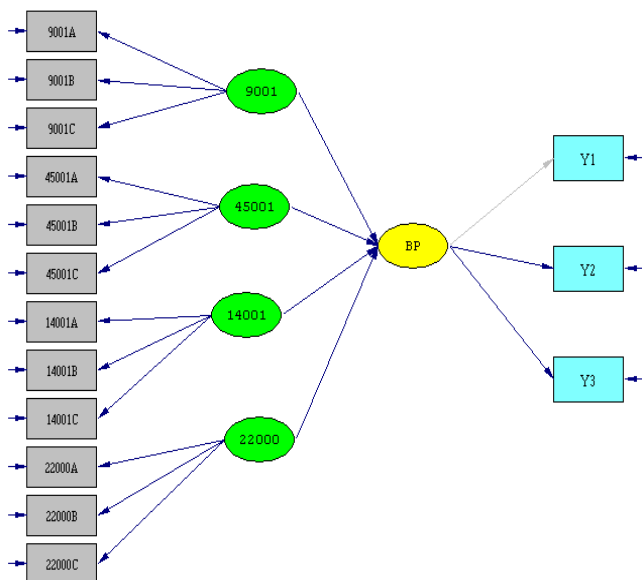


Figure 1 Research Model

Based on the research model, the following hypotheses were formulated:

1. There is a significant and positive relationship between the implementation of the ISO 9001: 2015 (X1) Quality Management System and Business Performance (Y).
2. There is a significant and positive relationship between the implementation of the ISO 22000: 2018 (X2) Food Safety Management System to Business Performance (Y)
3. There is a significant and positive relationship between the implementation of the ISO 14001: 2015 (X1) Environmental Management System and Business Performance (Y).

4. There is a significant and positive relationship between the implementation of the ISO 45001: 2018 (X2) Safety Management System to Business Performance. (Y)

Based on the hypothesis, the indicators in the variables used in this study are:

1. Dependent indicator of ISO 9001: 2015 (X1) Dependent Variables, namely leadership, documentation, internal audit, management review, and Quality Risk Assessment (ISO.org, 2015)
2. Dependent Indicator of ISO 22000: 2018 (X2) Dependent Variables, namely leadership, Hazard Analysis Critical Control Points (HACCP), pre-requisite programs, internal audits, management reviews and Food Safety Risk Assessment (ISO.org, 2018).
3. Dependent Indicator of ISO 14001: 2015 (X3) Dependent Variables, namely leadership, management review, internal audits, management reviews and Environmental Risk Assessment (ISO.org, 2018).
4. Dependent Indicator of ISO 45001: 2018 (X2) Dependent Variables, namely leadership, management review, internal audits, management reviews and Safety Risk Assessment (ISO.org, 2018).
5. Independent indicator, business performance, Integration Management System which significantly influences business performance such as awareness of employees, improvement of company's image, quality and safety of the products, new customers and access to new markets, increased customer satisfaction, improvement of internal organizational and communication, increased productivity, less non-compliant products. (Cantanhede et al., 2018)

III. Result and Discussion

3.1. Result

Data analysis of this study was carried out with Structural Equation Model (SEM) using Linear Structural Model (LISREL) version 8.70 from Joreskog and Sorbom (2008) and the results are shown in the following figure:

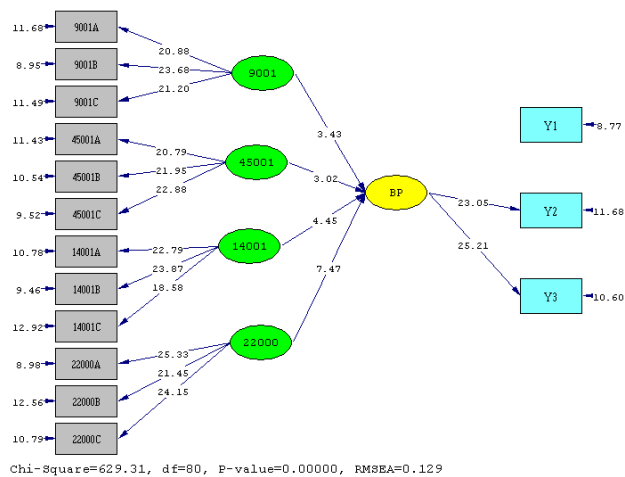
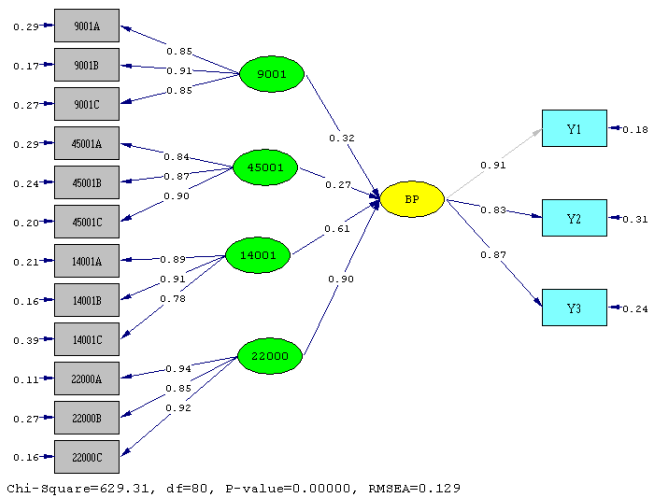


Figure 3 t- Value Indicators

Based on Figure 2 and Figure 3, it can be concluded that there is all of t value is positive and no negative error variance value, and all of loading factor indicator value is above 0.5 (> 0.5) and for the loading factor value <0.5 will be issued. All of t values to test the significance of the factor loading value are greater than 1.96 (> 1.96). All of indicators are valid and significant. A summary of the results of analysis can be seen in table 2.

Table 2 Indicators Validity Analysis Results

Variabel	Indikator	Loading Factor	T-Value	Remark
ISO	X11	0.85	20.88	Valid & Sig

9001:2015 (X1)	X12	0.91	23.08	Valid & Sig
	X13	0.85	21.20	Valid & Sig
ISO 22000:2018 (X2)	X21	0.84	20.79	Valid & Sig
	X22	0.87	21.95	Valid & Sig
	X23	0.90	22.88	Valid & Sig
ISO 14001:2015 (X3)	X31	0.89	22.79	Valid & Sig
	X32	0.91	23.97	Valid & Sig
	X33	0.78	10.88	Valid & Sig
ISO 45001:2018 (X4)	X41	0.94	26.33	Valid & Sig
	X42	0.85	21.40	Valid & Sig
	X43	0.92	24.10	Valid & Sig
Business Performance (Y)	Y1	0.91		
	Y2	0.83	35.05	Valid & Sig
	Y3	0.87	25.21	Valid & Sig

Based on the test results in table 2, it was found that the value of all loading factors is above 0.5 (> 0.5) and all of the t value is greater than 1.96 (> 1.96), so it can be concluded that all indicators on each variable are valid and significant. The summary of the analysis result is shown in table 3.

Tabel 3 CFA Construct Validity

Variable	Loading Factor	T-Value	Remark
ISO 9001:2015 (X1) → BP (Y)	0.32	3.43	Valid & Significant
ISO 22000:2018 (X2) → BP (Y)	0.27	3.02	Valid & Significant
ISO 14001:2015 (X3) → BP (Y)	0.61	4.53	Valid & Significant
ISO 45001:2018 (X4) → BP (Y)	0.90	7.41	Valid & Significant

The data analysis shows that all variables of *ISO 9001: 2015 (X1)* and *ISO 22000: 2018 (X2)*, *ISO 14001: 2015 (X3)*, and *ISO 45001: 2018 (X4)* are valid and significant. The validity is also reconfirmed by the value of *Chi-Square (r)*, which shows a value of 629.31. The subsequent analysis is to calculate the value of Construct Reliability (CR) and Value of Variance Extracted (VE).

Table 4 Construct Reliability Analysis Result

Indicator	Loading Factor	Loading Factor2	1-Loading Factor2	CR	VE
X11	0.85	0.72	0.28	0.81	0.56
X12	0.91	0.83	0.17		
X13	0.85	0.72	0.28		
X21	0.84	0.71	0.29	0.79	0.57
X22	0.87	0.76	0.24		
X23	0.90	0.81	0.19		
X31	0.89	0.79	0.21	0.73	0.55
X32	0.91	0.83	0.17		
X33	0.78	0.61	0.39		
X41	0.94	0.88	0.12	0.75	0.52
X42	0.85	0.72	0.28		
X43	0.92	0.85	0.15		
Y1	0.91	0.83	0.17	0.71	0.52
Y2	0.83	0.69	0.31		
Y3	0.87	0.76	0.24		

Based on the table of construct reliability analysis, the results of CR and VE for *ISO 9001: 2015 (X1)* indicators are 0.81 (CR) \geq 0.70 and 0.56 (VE) \geq 0.50. Thus, the *ISO 9001: 2015* variable has good reliability, and its construct value has good reliability. *ISO 22000: 2018 (X2)* indicators are 0.79 (CR) \geq 0.70 and 0.57 (VE) \geq 0.50. Thus, the *ISO 22000: 2018* variable has good reliability and its construct value has good reliability. *ISO 14001: 2015 (X3)* indicators are 0.73 (CR) \geq 0.70 and 0.55 (VE) \geq 0.50. Thus, the *ISO 14001: 2015* variable has good reliability and its construct value has good reliability. *ISO 45001: 2018 (X4)* indicators are 0.75 (CR) \geq 0.70 and 0.52 (VE) \geq 0.50. Thus, the *ISO 45001: 2018* variable has

good reliability and its construct value has good reliability. Business Performance (Y) indicators are 0.71 (CR) \geq 0.70 and 0.52 (VE) \geq 0.50. It means that the Business Performance variable has good reliability, and the construct value has good reliability. In summary, the analysis result confirms that the reliability of all indicators is good, and the research has met the requirements of all testing stages.

Goodness of Fit (GOF) Analysis

The overall model fit is related to the analysis of the GOF statistical value generated by the Lisrel program. For the suitability of the model (model fit), the result shows that the model is good enough and meets the model fit criteria, as seen in table 5.

Table 5 GOF (Goodness Of Fit)

Fit Index	Value	Value Standard	Remark
Chi Square	629.31	>0.5	Good
Root Mean Square Error of Approximation (RMSEA)	0.04	<0.08	Good
Index of Normed Fit (NFI)	0.96	>0.90	Good
Index of Non-Normed Fit (NNFI)	0.97	>0.90	Good
Index of Comparative Fit (CFI)	0.95	>0.90	Good
Index of Incremental Fit (IFI)	0.93	>0.90	Good
Index of Incremental Fit (GFI)	0.93	>0.90	Good
Index of Adjusted Goodness Fit (AGFI)	0.94	>0.90	Good
Index of Relative Fit (RFI)	0.95	>0.90	Good

Based on the analysis result, the entire fit index confirms that the model is fit. The result indicates that all variables are declared valid and reliable. It means the overall fit of the model is still good. The linear structural equation model of the LISREL 8.70 software produced the following results:

BP = 0.32*9001 + 0.61*14001 + 0.90*22000 + 0.27*45001, Error = 0.21, R ² = 0.79
(0.094) (0.14) (0.12) (0.089) (0.031)
3.43 4.45 7.47 3.02 6.75

Figure 4 Structural Equations

3.2. Discussion

Based on the analysis results in figure 4, the implementation of ISO 9001: 2015 (X1) has a positive and significant effect on business performance with value 0.32 and t value 3.43. The implementation of ISO 14001: 2015 also has a positive and significant effect on Business Performance with value 0.61 and t value 4.45 > 1.96. Likewise, the implementation of ISO 22000: 2018 also has a positive and significant effect on Business Performance with value 0.90 and t value obtained of 7.47 > 1.96. The implementation of ISO 45001: 2018 also has a positive and significant effect on Business Performance with value 0.27, and t value obtained 3.02 > 1.96. The *Goodness of Fit* model shows a chi-square value of 629.31, meaning that it meets the requirement. The other *Goodness of Fit criteria* also meets the required requirements. R Square value shows 0.79, meaning that the implementation of the Integrated Management system affects the Business Performance by 79%, while other factors influence 21%. The implementation of IMAS Integrated Management System, namely ISO 9001: 2015, ISO 14001: 2015, ISO 22000: 2018 and ISO 45001: 2018, has significantly influenced business performance. The areas affected positively are: employee awareness, company image, quality and safety of the products, internal organizational, communication, productivity, new customers and access to new markets, customer satisfaction. The implementation is also said to reduce the number of non-compliant products.

Relationship between the implementation of the ISO 9001: 2015 (X1) Quality Management System and Business Performance (Y).

Based on the analysis results in figure 4, the implementation of ISO 9001: 2015 (X1) has a positive and significant effect on business performance with value 0.32 and t value 3.43. According to Ochieng et al. (2015) state that ISO 9001 certification influences return on net assets of the organizations, and thereby influencing their performance. It was reported that the net asset value among organizations with ISO 9001 certification was significantly higher than those that do not possess the certification. On the other hand, on profit and revenue, there are no significant differences between the ISO 9001

certified and non-certified organizations. Ismyrlis et al. (2015), who examine the same subjects, state that the least significant benefits observed were mostly in business performance, such as profits, costs, and market share. A noticeable difference was observed between the level of performance and certain demographic variables as the result of the ISO (International Organization for Standardisation) implementation itself, size, and years of certification. In general, certified companies have benefited from ISO implementation. Chiarini et al. (2016) add that ISO 9001 can improve performance in terms of effectiveness, for instance: citizens' satisfaction, less defects and claims, as well as staff awareness of citizen needs. On the other hand, negative effects on citizens' participation, internal communication, teamwork, and cost reduction are likely to happen in the implementation of ISO 9001. Some controversial issues describe documentation bureaucracy and the external auditing process.

Dick et al. (2000) claim that quality certification (ISO 9000) has a positive relationship with improved business performance. The findings lead to the conclusion that ISO 9000 standard quality certification is not consistently associated with having a quality assurance system that delivers improved process control or better quality. In brief, Psomas et al. (2015) suggest that the benefits of ISO 9001 cover the aspect of product or service quality, operational, market, and financial performance. Furthermore, Terziovski et al. (2007) have reported what is considered a major findings. They found that organizations seeking ISO 9000 certification with a proactive approach driven by a continuous improvement strategy are more likely to derive significant business benefits as a result. ISO certification can serve as a means of promoting and facilitating a quality culture, with the involvement of quality auditors as key players in the process. Above all, although profit-oriented companies are convinced of the result that certifications bring, their main concern is still about how much benefit they gained. The benefits of ISO 9000 certification should exceed the costs of attaining the standards. Take, as an example, some manufacturing companies in Saudi Arabia. The firms acknowledged that they were satisfied with the

benefits gained from the certification, which exceed the cost of attaining the certification and, even, has positively contributed to the organizations' survival and success (Magd et al., 2003).

Relationship between the implementation of the ISO 22000: 2018 (X2) Food Safety Management System to Business Performance (Y)

Likewise, the implementation of ISO 22000: 2018 also has a positive and significant effect on Business Performance with value 0.90 and t value obtained of $7.47 > 1.96$. According to Vladimirov et al., 2011 conclude that ISO 22000 increase the company's information capacity and the information environment become the key factors for the adoption of efficient food safety and quality management system. Overall company development and location, expected benefits, and improvement of the working conditions are another set of consideration factors for food producers or retailers to adopt the system. Vladimirov also suggests that customer satisfaction, the capacity of consultants, inspection frequency, size, and environment protection pose other points of consideration for adoption. The implementation is hindered by some infrastructural difficulties and consequently perceived adverse effects of the official control.

Similarly, Escanciano et al. (2014) suggest that ISO 22000 is adopted by firms operating in all links of the food chain industry (FC) regardless of their size, for this factor does not determine its implementation. Obviously, the potential benefits resulting from ISO 22000 certification become a compelling factor for firms exporting their products. Mostly, the benefits contributing strongly to organizations' satisfaction are more internal, primarily related to improved efficiency and food safety. The contribution of Kafetzopoulos et al. (2013) identifies a positive and significant relationship between the combined effective implementation of both ISO 9001 and ISO 22000 standards and the competitive performance of certified food companies, with a significant proportion of variance in their performance.

Relationship between the implementation of the ISO 14001: 2015 (X1) Environmental Management System and Business Performance (Y).

The implementation of ISO 14001: 2015 also has a positive and significant effect on Business Performance with value 0.61 and t value $4.45 > 1.96$. According to Poksinska et al. (2019), the highest perceived benefits from implementing ISO 9000 and 14000 lie in marketing leverage and the improved relationship with stakeholders. Since the standard asks companies to set their environmental policy and objectives themselves, the identification of environmental aspects is obviously the key factor requiring intense effort. In general, organizations expect their suppliers to apply ISO 9000 than ISO 14000. Psomas et al. (2011) find that it is the internal motives that significantly influence a company's decision to obtain ISO 14001 certification. The ISO 14001 requirements and the company's issues with environmental performance are among the two common reasons for the implementation of this environmental management standard. The company's market leverage, the transition from conventional to sustainable practices, the improved relationship with the community resulting from better environmental performance, and the improvement of waste processing are a set of contributing factors from which companies derive their interest in implementing the standard. Psomas et al. (2019) add that internal benefits have become a more influential factor than the external benefits although the gap between these two factors is not relatively significant.

Similarly, through their trend analysis, To et al. (2014) find out that the top motivating factors for adoption of the Environmental Management Standard are to promote environmental awareness among employees of environmental regulations, increase compliance to environmental regulatory, and improve efficiency. The top significant perceived benefit is in enhancing employees' awareness of environmental regulations. In the second place, companies believe that by enhancing employees' environmental awareness, organizational image is enhanced. Lastly, working with the management in dealing with environmental issues becomes the other drive for the adoption of the ISO 14001. Orcos et al. (2019) argue that the diffusion of ISO 14001 is

influenced by both performance orientation and institutional collectivism. While performance orientation slows down the diffusion of ISO 14001, institutional collectivism speeds it up. Over time, performance orientation decreases in strength while the accelerating effect of institutional collectivism becomes stronger.

Relationship between the implementation of the ISO 45001: 2018 (X2) Safety Management System to Business Performance (Y)

The implementation of ISO 45001: 2018 also has a positive and significant effect on Business Performance with value 0.27, and t value obtained $3.02 > 1.96$. The number of companies adopted and certified with the Occupational Health and Safety (OHS) management system is expected to grow significantly with the introduction of ISO 45001 (Campaila et al., 2019). Guided by the requirements of the standard, companies employ the Deming Cycle to create continual improvement of OHS performance. The process starts with leadership and commitment, followed by planning involving context analysis, operational planning, risk assessment, and control. In this case, the planning of the support processes takes into account communication and participation, documentation management, competence resources and awareness of resources. Lastly, monitoring, auditing, and management review forms the processes of performance evaluation. Full control of compliance obligations makes it worthwhile to implement the safety management system. Like the other management standards mentioned earlier, a better corporate image is reported along with a significant reduction in the injury indexes and a reduction in the associated costs.

The implementation of ISO 45001: 2018 also has a positive and significant effect on Business Performance with value 0.27, and t value obtained $3.02 > 1.96$. The *Goodness of Fit* model shows a chi-square value of 629.31, meaning that it meets the requirement. The other *Goodness of Fit* criteria also meets the required requirements. R Square value shows 0.79, meaning that the implementation of the Integrated Management system affects the Business Performance by 79%, while other factors influence 21 %. The implementation of IMAS Integrated Management

System, namely ISO 9001: 2015, ISO 14001: 2015, ISO 22000: 2018 and ISO 45001: 2018, has significantly influenced business performance. The areas affected positively are: employee awareness, company image, quality and safety of the products, internal organizational, communication, productivity, new customers and access to new markets, and customer satisfaction. The implementation is also said to reduce the number of non-compliant products.

The results of this study reinforce some of the results of previous studies on Integrated Management Systems. Like what was found in the previous studies, this study has discovered that the most considerable difficulty in the implementation of the Integrated Management System (IMAS) is related to personnel. This challenge was noticeable in the technical and behavioral issues. On the other side, overall benefits like increase satisfaction derived from after-certification benefits are also noticeable. Some benefits found in this process significantly contribute to their competitiveness, such as higher employee awareness, improved company image, and market expansion (Cantanhede, 2018). The company motivations for certification can lead to different results depending on several factors. Ivanova et al. (2014) claims that the commitment level of senior management plays a key role. In addition, the awareness of the existing business weaknesses, and the availability of financial, physical as well as human resources (Maekawa et al., 2013) determine the result. Zeng (2011) mentions that implementing IMAS integrated management systems result in less paperwork, decreasing the complexity of internal management, and simplified certification process. As a matter of fact, the synergy among different management systems minimizes duplication of policies and procedures. In turn, this leads to higher transparency, time-saving, and what makes it more appealing to organizations, it lowers management cost (Lopez, 2010; Khanna et al., 2010). On top of that, the implementation facilitates continuous improvement (Khanna et al., 2010).

Lopez, Dahlin, and Khanna (Lopez, 2010; Dahlin et al. 2017; Khanna et al., 2010; Manzanera et al., 2014), affirm tangible and intangible benefits

from operating an Integrated Management System. They list out cost savings, better use of human and material resources (Manzanera et al., 2014; To et al., 2014), boosts in both internal and external communication, stronger customer orientation resulting in higher customer satisfaction (Dahlin et al., 2017; Khanna et al., 2010; Manzanera et al., 2014; Psomas et al., 2014), and employee motivation as part of the benefits. To et al. (2014) adds a positive influence on differentiation positions and the development of hard- to- imitate capabilities in the long list of the benefits. However, to realize them, several critical factors must be taken into account and organizations are suggested to be aware of the challenges accompanying the integration of management systems (Lopez, 2010).

The study by Ferreira et al. (2014) observes that resources optimization eliminates conflicts between individual systems. On the other hand, the creation of added value to the business becomes the focus of Sartor et al. (2019). Sartor focuses on the elimination of several types of waste as a contribution of the integrated management. Sartor et al. (2019) add that the certification is connected to the increase in process productivity and control and the improved quality of products/processes. Psomas et al. (2014) identify interesting findings that the "hard" TQM elements produce indirect impact, instead of direct impact, on quality management through their significant correlation with the "soft" TQM elements.

A different perspective on the benefits can be found in Odigie's contribution (Odigie et al., 2017), which examines the following keywords: risk, safety, incident, injury, hazards, preventive action, corrective action, rework, repair, and scrap. Odigie mentions a plan-do-check-act type work-flow for effective use of the quality function, hazard prevention, and operability analysis. The design of the system around existing processes, use of information technology, and, most importantly, employees' usage of the system are some of the vital factors affecting implementation effectiveness (Ivanova et al., 2014).

Hasan's contribution (Hassan et al., 2019) identifies the differences between the implementation of the internal audit process across different firms. While experiencing the same challenges in implementing IMAS, all firms demonstrate high motivation and resource management, and enjoy similar benefits. Kakouris et al. (2019) make a distinction between primary and secondary motives in the application of ISO 9000. The study explains that once companies driven by externally-driven motives to pursue ISO 9000 certification realize the full potential of the standard, they appreciate other benefits, and it leads to higher motivation. Marti et al. (2017) offer an answer related to motivation. Basically, the benefits of the integration level of management system documentation and the integration level of management system procedures outweigh the significant negative effect of the difficulties of integration. Zaramdini et al. (2007) suggest that certified companies show more concern to internal reasons like improving processes or products than by external reasons like pressure from customers or the imitation of competitors. As a matter of fact, compared to external benefits, the certification process has generated more internal benefits. Reviewing the benefits of ISO 9000, Gamboa et al. (2012) suggest the need for international and national quality bodies to tailor the interpretation guides to address the specific needs of educational institutions. Moreover, schools are encouraged to be more proactive in showing the benefits of quality concepts and the certification to stakeholders. The application of best practice in the industrial world in education undoubtedly brings about a fresh approach worth considering both by quality bodies and by schools.

IV. CONCLUSIONS

Based on the result analysis, this study confirms that the implementation of Integrated Management System (IMAS) ISO 9001: 2015 (X1) has a positive and significant effect on business performance. Similarly, implementation of ISO 14001: 2015 has a positive and significant effect on business performance. The implementation of ISO 22000: 2018 shows a positive and significant effect on business

performance. Likewise, the implementation of ISO 45001: 2018 shows a positive and significant effect on business performance. This study has proved that the Integrated Management System (IMAS) significantly influenced business performance, such as employee awareness, improved company image, higher quality and safety of the products, increased customer satisfaction, growth of market share in terms of the number of new customers and access to new markets, improved internal organizational and communication, higher productivity, and lower number of non-compliant products.

The primary challenges in implementing a new management standard, which is also reported in the related literature, are the lack of knowledge and the resistance of employees. The difficulty in developing the quality culture and high costs (Silva et al. 2013) pose more challenges to company management initiating the implementation of the quality standard. In general, major hindrances include difficulties during the implementation process, short deadline, access to documentation, inadequate of organizational infrastructure, and inadequate of top management commitment. Further research aiming to examine the effect of implementing a management system can investigate other variables like the ISO 14001 Environmental Management System and the ISO 45001 Occupational Safety Management System. Besides, similar research can be conducted in different types of industries other than the food industries or in different locations.

V. RESEARCH LIMITATION

This study has several limitations. First, with the limited time and cost, a relatively small number of samples is used, making it less representative of the target population. Secondly, the object of this study is the packaging industry only, although many other industries have implemented an Integrated Management System (IMAS). Thirdly, many peoples are not familiar with Lisrel as the software used for data analysis. Fourthly, the data analysis in this study uses the Structural Equation Model (SEM). The results will be more valid if the analysis includes the Key Performance Indicator trend of quality performance. Lastly, the research was limited to companies in Indonesia,

so that findings may not be the same when applied to other countries and/ or other industries.

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