Research Article

The Effect of Competence and Job Training on the Employees' Performance in the West Java Crab Meat Agro-Industry

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ABSTRACT

The demand for world crab meat increases from year to year, but Indonesia can only partially fulfill it due to problems in fulfilling the resulting product quality. The crab meat agro-industry must have human resources with quality and effectiveness to work by international standards to meet export demand. The problem is that not all agro-industry can fulfil this. One way that can be taken to increase competence is through training so that employee performance increases at the same time; this is set as a research objective. The study's results indicate that training significantly improves employee competence and performance, either directly or indirectly, improving performance through increasing competence. The training must be systematic, starting from the materials required, the methods used and the instructors' abilities. Competencies that increase are essential skills, self-concept, experience and knowledge. Employee performance improved in quality, quantity, timeliness, effectiveness, initiative, and independence.

KEYWORD
agro-industry, competency, employees, performance, training

1. INTRODUCTION

The world's demand for crabs is worth USD5.4 billion, but Indonesia's exports are only about 6.8% or, if converted, are worth USD367.5 million (Mulyana, 2021). The demand for crabs has grown by 5% since 2016, and from data on the export value of Indonesian fishery products in 2021, Indonesian crabs products have a portion of 11% (Ministry of Marine Affairs and Fisheries, 2021). The leading importers come from the United States, Japan, China, South Korea, and Canada; the market niche in these countries is still below 17%, which indicates that exports of crabs products still have the potential to be increased (Khasanah et al., 2019).

The increasing export of crabs has encouraged the establishment of several agro-industrial factories for processing crab meat in the West Java area, which of course, has a positive impact on the absorption of regional labour. Crab meat is one foodstuff that is easily damaged and rotten (Sharma et al., 2020). One of the most widely used methods for preserving crab

meat is canning techniques to prevent contamination of bacteria, fungi, moulds, and other microorganisms (Tapia et al., 2020).

The competence of employees of the crab meat processing agro-industry company that does not meet the standards is undoubtedly a problem that will have a broad impact on the business. The first impact is the practice of processing crab meat not by national and even international standards, causing unfulfilled food product quality and distrust of consumers from within and outside the country (Meijer et al., 2021). Second, the declining competitiveness of processed crab products resulted in a decrease in selling prices (Widihastuti and Purnomo, 2021). Third, is the decline in the potential income of agro-industry companies (Bukhori, 2021). Fourth, declining company performance can threaten termination of employment and the welfare of other employees (Haryati, 2021).

The way that action can be taken to improve employee performance is through training organized by the company or from outside. The training carried out aims to improve the skills in crab meat processing. The first problem related to training is what materials can be provided to improve employee competence and performance (Rebele and Pierre, 2019). The second problem is related to what method is appropriate to use so that employees can follow the dynamics of export quality standards of crab meat that change from time to time; food safety regulations in export destination countries, which tend to be trade politics; and the increasing demand for environmentally friendly products (Iqbal et al., 2021). The third problem is the ability of the imported instructors to have certification and understand the quality that can encourage the improvement of employee competencies that meet the quality standards of human resources required by small crab meat agro-industry companies (Gardas et al., 2019).

Based on the problems that have been mentioned previously, the formulation of the problem is proposed through two questions, namely: a) how is the effect of training on employee competence, b) how is the effect of training on employee performance, c) how is the effect of competence on employee performance, and d) how is the effect of training through competence on employee performance in the crab meat processing agro-industry in West Java.

2. METHODOLOGY

This research uses basic descriptive, quantitative, verification, and analytical methods. The data sources used in this study are primary and secondary data. Primary data was obtained from direct surveys in the field using research instruments such as questionnaires to respondents. In contrast, secondary data was obtained from organizational data, the internet, and scientific journals. The determination of the research location was carried out purposively in five crab meat processing companies.

Table 1. Research location

No	Company name	Regency
1	PT Pan Putera Samudera	Cirebon
2	PT Kelola Mina Laut	Cirebon
3	PT Tonga Tiur Putra	Cirebon
4	PT Total Samudera Sejahtera	Purwakarta
5	PT Rajungan Sapta Nusa	Indramayu

Source : Ministry of Industry 2022

The study was conducted from January to May 2022; the sample was determined using the proportional random sampling method with a total sample of 150 respondents from all levels of employee positions. Before analyzing the data, the data was tested on the instrument in the form of validity and reliability tests. After testing the validity and reliability, the next step is to do a descriptive analysis of each variable, and the last step is to test the hypothesis using path analysis.

The formulation of the research model framework can be arranged as follows:
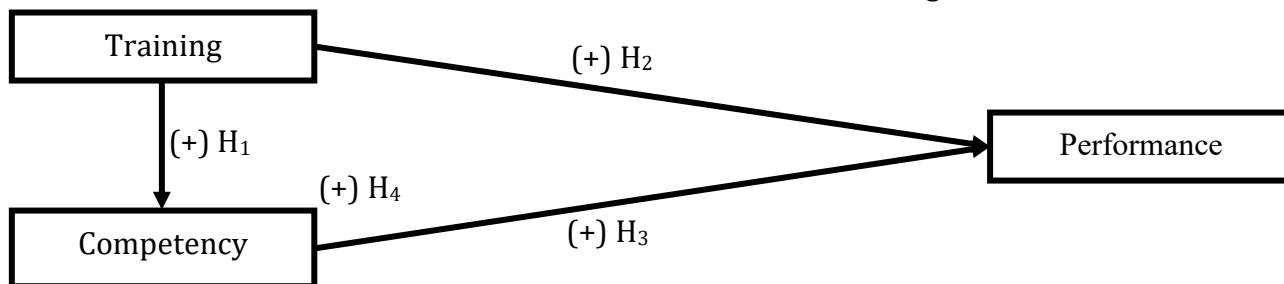

Figure 1. Research model framework

The hypotheses used in this study are:

H_1 : Training has an impact on employee competency
H_2 : Training has an impact on employee performance
H_3 : Competence has an impact on employee performance
H_4 : Training has an impact on employee performance through competence

This study uses a causality or influence relationship model. The data analysis technique used is SEM (Structural Equation Modeling) with SmartPLS software. The steps taken in data analysis to answer the research hypothesis are: 1) Designing a measurement model (outer model) with the tests used to include: a) Convergent Validity; b) Discriminant Validity; and c) Composite Reliability. 2) Test the inner model (structural model) with test equipment, namely: a) T-Statistics and b) R-Square.

3. RESULTS

The step to test the model according to Figure 1 is to design the outer model measurement with the following results :
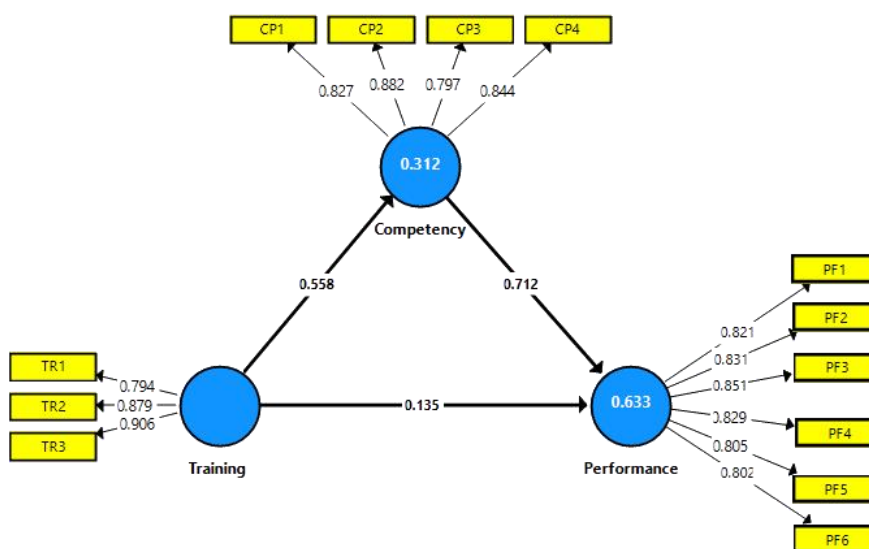
Figure 2. Analysis of the outer model

The convergent validity test aims to measure the validity of the indicators used in this study. The researcher uses a factor loading limit of 0.7 so that the results of the estimated indicators on the latent variables of training, competence, and performance pass the validity test when the value is more significant than 0.7. At the same time, the loading value below the value is deleted and is not included in this paper.

Discriminant validity (DV) aims to test to what extent the latent construct is different from other constructs. A high DV value indicates that a construct is unique and can explain the phenomenon being measured. A construct is said to be valid by comparing the root value of the AVE with the correlation value between latent variables. The AVE root value must be greater than the correlation between latent variables.

Table 1. Discriminant validity, contruct reliability, and validity

Variable	Indicator	Cross Loading			CA	rho_A	CR	AVE
		TR	CP	PF				
Training (TR)	TR1	**0.794**	0.354	0.420	**0.826**	**0.846**	**0.896**	**0.742**
	TR2	**0.879**	0.576	0.475				
	TR3	**0.906**	0.483	0.478				
Competency (CP)	CP1	0.407	**0.827**	0.547	**0.859**	**0.863**	**0.904**	**0.702**
	CP2	0.409	**0.882**	0.650				
	CP3	0.570	**0.797**	0.683				
	CP4	0.459	**0.844**	0.729				
Performance (PF)	PF1	0.387	0.633	**0.821**	0.905	0.907	0.927	0.678
	PF2	0.513	0.677	**0.831**				
	PF3	0.371	0.636	**0.851**				
	PF4	0.405	0.577	**0.829**				
	PF5	0.634	0.576	**0.805**				
	PF6	0.330	0.759	**0.802**				

Source : SmartPLS output
Note   : TR (Training); CP (Competency); PF (Performance); CA (Cronbach's Alpha); CR (Composite Reliability) and AVE (Average Variance Extracted)

Information from table 1 of the results of the validity calculation shows that the cross-loading value of the indicators of each variable is greater than the loading value of other variable indicators, so it can be stated that all indicators meet the validity criteria. Then the AVE value has a value of more than 0.50. Furthermore, the reliability test that can be seen from Cronbach's Alpha (CA) and Composite Reliability (CR) is declared reliable because it has a value above 0.60 (CA) and more than 0.70 (CR).

Tabel 2. Goodness fit test results

Variable	R Square	R Square Adjusted
Competency (CP)	0.312	0.307
Performance (PF)	0.633	0.628

Source : SmartPLS output

Information from table 2 shows the value of R-Square (R2), the work competence variable is worth 0.312 (low category), and employee performance is worth 0.633 (medium category). Work competence is influenced by 31.2%, while other variables outside the model influence the remaining 68.8%. Likewise, the employee performance variable looks to get a value of 0.633 which means that employee performance is influenced by 63.3%, while other variables outside the model influence the remaining 36.7%.

Table 3. Direct and indirect effect path coefficient and hypothesis testing

Variable	Original Sample (O)	T Statistics	P Values	Sig.
Direct effect				
Training → Competency	0.558	7.692	**0.000**	***
Training → Performance	0.135	2.455	**0.014**	**
Competency → Performance	0.712	28.952	**0.000**	***
Indirect effect				
Training → Competency → Performance	0.397	7.926	**0.000**	***

Source : SmartPLS output

Significance level : *** = 99%; ** = 95%

3.1. Training effect on employee competence

Information from table 3 shows that training has a significant effect on employee competence, this is evidenced by the path coefficient value (original sample estimate) of 0.558 and a significant level of the p-value 0.000 (p ≥ 0.05) so that the first hypothesis is accepted. The results of this significance test indicate that good training by providing materials that are by the needs of agro-industrial companies (TR1), the latest method used (TR2), and the ability of instructors who have the capability (TR3) will greatly encourage employee improvement competence.

3.2. Training effect on employee performance

Information from table 3 shows that training has a significant effect on employee performance, this is evidenced by the path coefficient value (original sample estimate) of 0.135 and a significant level of the p-value 0.014 (p ≥ 0.05) so that the second hypothesis is accepted. Training is sufficient to help improve employee performance in terms of quality (PF1), quantity (PF2), timeliness (PF3), effectiveness (PF4), initiative (PF5), and independence at work (PF6).

3.3. Competence effect on employee performance

Information from table 3 shows that competence has a significant effect on employee performance, this is evidenced by the path coefficient value (original sample estimate) of 0.712 and a significant level of the p-value 0.000 (p ≥ 0.05) so that the third hypothesis is accepted. Competencies consisting of basic skills (CP1), self-concept (CP2), experience (CP3), and knowledge (CP4) greatly help improve employee performance.

3.4. Training effect on performance through employee competence

Information from table 3 shows that training has a significant effect on performance through employee competence, this is evidenced by the path coefficient value (original sample estimate) of 0.397 and a significant level of the p-value 0.000 (p > = 0.05) so that the fourth hypothesis is accepted. Systematic and quality training greatly encourages increased competence in crab meat processing, so employee performance also increases.

4. DISCUSSION

Processing of agro-industrial products, such as crab meat, certainly has unique characteristics that must be understood, such as seasonality, perishability, and variability (Vastolo et al., 2022). The nature of the product requires the competence of human resources by the output characteristics of export-scale companies (Freixanet et al., 2018). Training is needed to improve employee competencies tailored to market needs, specifically in the canning and advanced processing of crab meat (Veile et al., 2019). Competency improvement aims to give employees a competitive advantage (Brown et al., 2018). Their expertise is continually

upgraded so that it becomes dynamic, up-to-date, and influenced by the development of science and the latest international regulations (Akyazi et al., 2020).

Crab canning is one of the most widely applied food preservation techniques, namely preservation at high temperatures (Singh et al., 2022). Canning is a form of processing and preserving crab meat that is done in a modern way where the packaging is done hermetically and then sterilized (Nadeeshani et al., 2020). Canning crab meat is a preservation action by putting it in a closed and heated container, which aims to kill or inhibit the growth of microorganisms such as bacteria, fungi, and moulds, as well as enzymatic decomposition (Gumienna and Górna, 2021).

Through training, competencies will be obtained in the form of modern skills needed to reduce errors at work (Hernandez-de-Menendez et al., 2020). Competencies from the training are knowledge, skills, and abilities that will be mastered by employees who have become part of themselves to perform cognitive, affective, and psychomotor behaviours as well as possible (Maryanti et al., 2020). Competence encourages employee performance so that they can describe quality standards based on skills obtained from training, while at the same time encouraging practical work by achieving professional quality standards of work to produce quantity products on time (Manzoor et al., 2019).

One of the quality standards that employees master must be following the recommendations and rules from the Indonesian National Standardization Agency has also released four Indonesian National Standards (SNI) as follows: SNI 3231.1:2010; SNI 7560.1:2010; SNI 4225.1:2010; SNI 6929.1:2010 (Mahadewi and Banjarani, 2020) and these standards are related to crab commodities, including small crabs (Portunus pelagicus) and small crabs (Scylla serrata) (Gumilar et al., 2020). The quality standards that are mastered are related to quality assurance, food safety, and protect all consumer rights (Chammem et al., 2018). Equivalent training is related to the guidance and quality control system of fishery products implemented in Indonesia to protect consumers (Tsironi and Taoukis, 2018). Good quality management of crab meat is needed to maintain the quality by canning quality standards, starting from fresh raw materials from fishers, peeled crab meat in mini-plants, to crab agro-industry (Nanda et al., 2021). Crab meat processing for raw material needs, especially pasteurized crab meat, requires prime quality crab meat raw materials (Khaliq et al., 2021).

5. CONCLUSION

First, training has a significant effect on employee competence. Employees' training will encourage the improvement of basic skills, self-concept, experience, and knowledge. Second, training has a significant effect on employee performance. The training materials provided, the methods used, and the instructors' abilities will encourage employee performance improvements. Third, competence has a significant effect on employee performance. Last, systematic and quality training greatly encourages increasing the competence of crab meat processing so that employee performance such as quality, production quantity, timeliness, effectiveness, initiative, and independence in work also increases.

REFERENCES

Akyazi, T., Goti, A., Oyarbide, A., Alberdi, E., & Bayon, F. (2020). A guide for the food industry to meet the future skills requirements emerging with industry 4.0. Foods, 9(4), 492. https://doi.org/10.3390/foods9040492

Brown, L., George, B., & Mehaffey-Kultgen, C. (2018). The development of a competency model and its implementation in a power utility cooperative: an action research study. Industrial and Commercial Training. https://doi.org/10.1108/ict-11-2017-0087

Bukhori, S. (2020). Serious Game Supply Chain Management Agribusiness as a Production Planning using Cournot Model. In Journal of Physics: Conference Series (Vol. 1500, No. 1, p. 012093). IOP Publishing. https://doi.org/10.1088/1742-6596/1500/1/012093

Chammem, N., Issaoui, M., De Almeida, A. I. D., & Delgado, A. M. (2018). Food crises and food safety incidents in European Union, United States, and Maghreb Area: current risk communication strategies and new approaches. Journal of AOAC International, 101(4), 923-938. https://doi.org/10.5740/jaoacint.17-0446

Freixanet, J., Renart, G., & Rialp-Criado, A. (2018). The impact of managers' global orientation on SME export and economic performance. Management International Review, 58(4), 571-604. https://doi.org/10.1007/s11575-018-0358-y

Gardas, B., Raut, R., Jagtap, A. H., & Narkhede, B. (2019). Exploring the key performance indicators of green supply chain management in agro-industry. Journal of modelling in management. https://doi.org/10.1108/jm2-12-2017-0139

Gumienna, M., & Górna, B. (2021). Antimicrobial food packaging with biodegradable polymers and bacteriocins. Molecules, 26(12), 3735. https://doi.org/10.3390/molecules26123735

Gumilar, I., Supriadi, D., Shabrina, N., & Khan, A. M. (2020). Proportion and total of commodities blue swimming crab (Portunus pelagicus Linnaeus, 1758) catches in Gebang Mekar Village, Cirebon Regency, West Java using crab gillnet and collapsible crab trap. Asian Journal of Fisheries and Aquatic Research, 8(September 2019), 28-33. https://doi.org/10.9734/ajfar/2020/v8i330141

Haryati, N. (2021). Business model analysis of mushroom agroindustry and its sustainable development strategy in Covid-19 pandemic. In IOP Conference Series: Earth and Environmental Science (Vol. 733, No. 1, p. 012125). IOP Publishing. https://doi.org/10.1088/1755-1315/733/1/012125

Hernandez-de-Menendez, M., Morales-Menendez, R., Escobar, C. A., & McGovern, M. (2020). Competencies for industry 4.0. International Journal on Interactive Design and Manufacturing (IJIDeM), 14(4), 1511-1524. https://doi.org/10.1007/s12008-020-00716-2

Iqbal, N., Abbasi, K. R., Shinwari, R., Guangcai, W., Ahmad, M., & Tang, K. (2021). Does exports diversification and environmental innovation achieve carbon neutrality target of OECD economies?. Journal of Environmental Management, 291, 112648. https://doi.org/10.1016/j.jenvman.2021.112648

Khaliq, A., Chughtai, M. F. J., Mehmood, T., Ahsan, S., Liaqat, A., Nadeem, M., ... & Ali, A. (2021). High-Pressure Processing; Principle, Applications, Impact, and Future Prospective. In Sustainable Food Processing and Engineering Challenges (pp. 75-108). Academic Press. https://doi.org/10.1016/b978-0-12-822714-5.00003-6

Khasanah, U., Huang, W. C., & Asmara, R. (2019). Indonesian frozen and processed crab export performance and competitiveness analysis. Agricultural Socio-Economics Journal, 19(3), 165-171. https://doi.org/10.21776/ub.agrise.2019.019.3.5

Mahdewi, R., & Banjarani, D. R. (2020). Food safety of genetically modified organism according to international law and its implementation in Indonesia. Lampung Journal of International Law, 2(1), 41-56. https://doi.org/10.25041/lajil.v2i1.2031

Manzoor, F., Wei, L., Bányai, T., Nurunnabi, M., & Subhan, Q. A. (2019). An examination of sustainable HRM practices on job performance: An application of training as a moderator. Sustainability, 11(8), 2263. https://doi.org/10.3390/su11082263

Maryanti, N., Rohana, R., & Kristiawan, M. (2020). The principal's strategy in preparing students ready to face the industrial revolution 4.0. International Journal of Educational Review, 2(1), 54-69. https://doi.org/10.33369/ijer.v2i1.10628

Meijer, G. W., Detzel, P., Grunert, K. G., Robert, M. C., & Stancu, V. (2021). Towards effective labelling of foods. An international perspective on safety and nutrition. Trends in Food Science & Technology, 118, 45-56. https://doi.org/10.1016/j.tifs.2021.09.003

Ministry of Industry. (2022). Direktori Perusahaan Industri. https://kemenperin.go.id/direktori-perusahaan?what=rajungan&prov=32&hal=1. Accessed June 20, 2022.

Ministry of Marine Affairs and Fisheries. (2021). Permintaan Meningkat, KKP Lepas 40 Ton Daging Rajungan ke Pasar Amerika Utara. https://kkp.go.id/djpdspkp/artikel/36372-permintaan-meningkat-kkp-lepas-40-ton-daging-rajungan-ke-pasar-amerika-utara. Accessed June 20, 2022.

Mulyana, K.E. (2021). Rajungan dan Kepiting Jadi Komoditas Ekspor Perikanan Utama Indonesia. https://www.kompas.tv/article/235340/rajungan-dan-kepiting-jadi-komoditas-ekspor-perikanan-utama-indonesia. Accessed June 20, 2022.

Nadeeshani, H., Rajapakse, N., & Kim, S. K. (2020). Traditional and novel seafood processing techniques targeting human health promotion. Encyclopedia of Marine Biotechnology, 3041-3084. https://doi.org/10.1002/9781119143802.ch136

Nanda, P. K., Das, A. K., Dandapat, P., Dhar, P., Bandyopadhyay, S., Dib, A. L., ... & Gagaoua, M. (2021). Nutritional aspects, flavour profile and health benefits of crab meat based novel food products and valorisation of processing waste to wealth: A review. Trends in Food Science & Technology, 112, 252-267. https://doi.org/10.1016/j.tifs.2021.03.059

Rebele, J. E., & Pierre, E. K. S. (2019). A commentary on learning objectives for accounting education programs: The importance of soft skills and technical knowledge. Journal of Accounting Education, 48, 71-79. https://doi.org/10.1016/j.jaccedu.2019.07.002

Sharma, P., Gaur, V. K., Kim, S. H., & Pandey, A. (2020). Microbial strategies for bio-transforming food waste into resources. Bioresource technology, 299, 122580. https://doi.org/10.1016/j.biortech.2019.122580

Singh, M. V. P., Sanjuvikasini, V., Shruthi, S., Rajamehala, M., & Chozhavendhan, S. (2022). Value-added seafood products processing through novel enzyme. In Value-Addition in Food Products and Processing Through Enzyme Technology (pp. 309-320). Academic Press. https://doi.org/10.1016/B978-0-323-89929-1.00013-5

Tapia, M. S., Alzamora, S. M., & Chirife, J. (2020). Effects of water activity (aw) on microbial stability as a hurdle in food preservation. Water activity in foods: Fundamentals and applications, 323-355. https://doi.org/10.1002/9780470376454.ch10

Tsironi, T. N., & Taoukis, P. S. (2018). Current practice and innovations in fish packaging. Journal of Aquatic Food Product Technology, 27(10), 1024-1047. https://doi.org/10.1080/10498850.2018.1532479

Vastolo, A., Calabrò, S., & Cutrignelli, M. I. (2022). A review on the use of agro-industrial CO-products in animals' diets. Italian Journal of Animal Science, 21(1), 577-594. https://doi.org/10.1080/1828051x.2022.2039562

Veile, J. W., Kiel, D., Müller, J. M., & Voigt, K. I. (2019). Lessons learned from Industry 4.0 implementation in the German manufacturing industry. Journal of Manufacturing Technology Management. https://doi.org/10.1108/jmtm-08-2018-0270

Widihastuti, R., & Purnomo, A. H. (2021). Dynamic of behavior of the small and medium scale fisheries traders in Cilincing District, North Jakarta encountered the pandemic of Covid-19. In IOP Conference Series: Earth and Environmental Science (Vol. 674, No. 1, p. 012105). IOP Publishing. https://doi.org/10.1088/1755-1315/674/1/012105