

# The Effect of Human Resource Competency Development on The Productivity of Salted Fish UMKM Centers in Pulau Pasaran Lampung

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## ABSTRACT

National economic growth is supported by micro, small, and medium enterprises (MSMEs). To meet community needs, this study analyses the influence of human resource (HR) competency development on the productivity of salted fish MSMEs in Pasaran Island, which is known as a traditional fish processing centre in Bandar Lampung, Indonesia. The research focuses on four key indicators of HR competency: technical skills training, improvement of managerial abilities, mastery of simple technology, and participation in certification or quality improvement programs. A quantitative associative approach was employed, involving 100 respondents selected through purposive sampling. Data were analysed using Partial Least Squares-Structural Equation Modelling (PLS-SEM) with SmartPLS 3.2.9. The results show that all four variables significantly affect MSME productivity, with certification or quality improvement programs having the strongest influence. These findings highlight the importance of structured HR development strategies in enhancing production efficiency, product quality, and business sustainability. This study provides theoretical contributions to HR management science and practical recommendations for MSME actors and policymakers in improving the competitiveness of traditional fish processing industries at both local and national levels. The finding that certification or quality improvement programs have the strongest influence provides new empirical evidence that formal legitimacy (certification) and quality standardisation are integral to HR development. The results also emphasize the importance of participating in technical training, improving managerial abilities, mastering simple technology, and actively participating in certification programs to enhance productivity and product quality.

**Keywords:** MSME Productivity, Salted Fish Industry, Technical Skills Training, Improvement of Managerial Abilities, Mastery of Simple Technology, Certification or Quality Improvement Programs

## Introduction

Micro, Small, and Medium Enterprises (MSMEs) support national economic growth, create employment opportunities, increase community income, and contribute to regional development. One MSME sector with significant potential is the fishery processing industry, such as salted fish production, widespread in various coastal areas of Indonesia [1], [2]. Pasaran Island, located in Bandar Lampung, is among the well-known salted fish production centres. This area has long been a hub for traditional MSME activities focused on salted fish processing. However, the productivity of salted fish MSMEs on Pasaran Island still faces several challenges, including technical, managerial, and human resource (HR) quality issues. According to [3], [4], low productivity is reflected in stagnant production volumes, inefficient use of working time, inconsistent product quality, and fluctuating business profits. In this context, HR competency development becomes a strategic factor with the potential to improve overall productivity significantly. According to this study, HR competency development includes several key aspects: technical skills training, enhancement of managerial capabilities, mastery of simple technologies (such as packaging and digital marketing), and participation in certification or quality improvement programs. These competencies are essential

prerequisites for improving production processes and MSME business management. Developing human resource competencies is critical for increasing MSME productivity, especially in the marine product processing sector, such as salted fish. Many salted fish entrepreneurs on Pasaran Island, Lampung Province still rely on traditional, inherited methods. This has resulted in low efficiency and poor product competitiveness. Therefore, improving the skills and knowledge of MSME actors is urgently needed.

A crucial first step is technical skills training, which includes methods for processing salted fish in a clean, efficient, and environmentally friendly manner. With proper training, product quality improves, production errors decrease, and waste is minimized [5], [6], [7]. In addition, managerial abilities also need improvement. Many MSME actors still lack knowledge in managing finances, inventory, pricing, and marketing. These skills are highly influential in making sound business decisions [8], [9]. Technology adoption is equally important. Tools like dryers, modern packaging, and digital marketing can help increase production capacity and market reach. Unfortunately, many MSME actors are still unfamiliar with these technologies [3], [6], [10]. Moreover, quality certifications such as SNI (Indonesian National Standard) and halal certification are essential for guaranteeing product quality and gaining access to wider markets, including export markets. Certification also increases consumer trust [7], [11]. By strengthening these four aspects—technical training, managerial skills, technology usage, and accreditation—HR development can directly enhance the productivity of salted fish MSMEs on Pasaran Island. This research is important in providing concrete solutions to strengthen MSMEs based on local potential.

On the other hand, MSME productivity, as the dependent variable in this study, is measured through several indicators: production volume per period, work time efficiency, quality of processed products, and increase in business turnover or profit. Accordingly, this study aims to analyze how human resource (HR) competency development influences the productivity improvement of salted fish MSMEs on Pasaran Island. This research employs a quantitative approach with an associative research type, aiming to identify the relationship and influence between variables objectively and measurably. The results of this study are expected to provide theoretical contributions to the development of human resource management science as well as practical implications for MSME actors and policymakers in enhancing the competitiveness of the salted fish processing sector, both locally and nationally. Most existing studies on MSME productivity tend to focus more on access to capital, marketing strategies, product innovation, or technology utilization. According to [12], [13], [14], HR competency development—whether in terms of knowledge, technical skills, or work ethic—is the fundamental foundation for sustainably improving productivity. Furthermore, previous studies often focus on urban areas or modern industrial centres, while traditional fisheries-based MSMEs like those on Pasaran Island have not been deeply explored. The HR development approaches used are often general and do not consider the local characteristics of coastal communities, which may have different work cultures, educational levels, and access to information compared to other regions. The urgency of this research is high, considering the current conditions of MSME actors on Pasaran Island, where most still rely on inherited skills without formal learning or capacity-building processes [9], [15]. The challenges in the salted fish industry are growing more complex—including climate change, market fluctuations, and product competition from other regions—which require a high level of adaptability from business actors [16], [17]. Through structured HR competency development, MSME actors can become more efficient in production, improve product quality, and be better prepared to face market dynamics. This increase in productivity will not only boost business income but also contribute to family welfare and the overall local economy. Moreover, this study aligns with the government's efforts to strengthen the MSME sector as the backbone of the national economy, including through vocational training programs, entrepreneurship development, and local product competitiveness enhancement. Therefore, the results of this research are expected to serve as practical recommendations for designing HR development models tailored to the local context and bridging the gap between policy, field needs, and MSME productivity enhancement.

## Literature Review

Human resource (HR) competency development systematically enhances individual capabilities to support organisational goals. According to [19], competency refers to an individual's fundamental characteristics directly related to effective or superior job performance. In the context of MSMEs (Micro, Small, and Medium Enterprises), developing HR competency is crucial in addressing increasingly dynamic operational and market challenges.

There are four main indicators commonly used to measure HR competency development:

1. **Technical Skills Training**

Technical training aims to improve the practical skills required in the production process. It helps workers better understand work procedures and reduces production errors.

2. **Improvement of Managerial Abilities**

Managerial competencies include planning, organising, directing, and controlling business operations.

Enhancing managerial abilities is essential for strategic decision-making and operational efficiency in MSMEs.

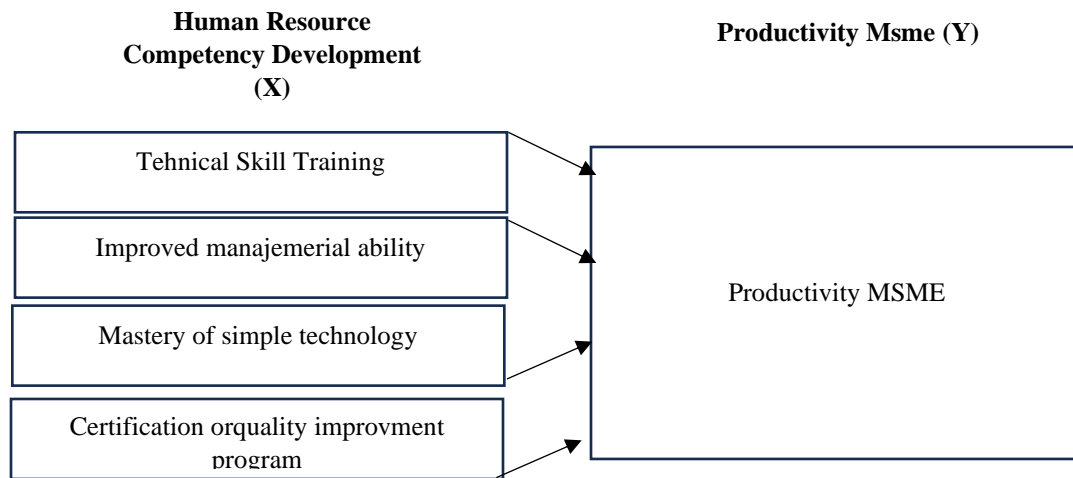
### 3. **Mastery of Simple Technology**

Simple technologies, such as digital marketing tools and packaging techniques, help add value to products. Mastery of technology in MSMEs is positively correlated with product competitiveness in the market.

### 4. **Certification or Quality Improvement Programs**

Quality certification is a tool for guaranteeing product quality and building customer trust. Certified small business owners tend to implement higher and more consistent production standards.

Productivity refers to a business's efficiency in generating output from the input. In MSMEs, productivity is a key indicator in evaluating business performance and sustainability. According to [20] and [21], productivity is viewed in terms of the quantity of products produced and includes quality, time efficiency, and contribution to business profitability.



**Figure 1.** Framework of Thought

## **Research Hypothesis**

- H1: Technical skills training positively affects the productivity of MSMEs.  
H2: Improved managerial abilities have a positive effect on the productivity of MSMEs.  
H3: Mastery of simple technology has a positive effect on the productivity of MSMEs.  
H4: Certification or quality improvement programs positively affect the productivity of MSMEs.

## **Research Methods**

This research was conducted on Pasaran Island using a quantitative method approach. A Likert scale was employed as the measurement tool to assess the influence and perceptions of individuals or groups toward a particular phenomenon [22]. The sample was selected using purposive sampling, a technique where the sample is determined based on specific criteria set by the researcher. The population size refers to the 1,900 residents of Pasaran Island, as recorded in BPS (Central Bureau of Statistics) data. Based on the Slovin formula, the sample size was calculated as follows:

$$n = \frac{1900}{1 + 1900(e)^2} = 99.9 / \approx 100.$$

Thus, the total number of respondents used in this study was 100. This technique is non-random, as the sample was selected based on particular criteria relevant to the research objectives [22]. The data analysis method used was Structural Equation Modelling (SEM) with the Partial Least Squares (PLS) approach. According to [23], SEM is a statistical technique used to construct and test statistical models descriptively. SEM-PLS was chosen because it is suitable for both theory development and prediction of the phenomenon under study. Additionally, this research employed descriptive methods to obtain a more comprehensive and accurate overview of the research object. Using a

5-point Likert scale allowed for a more structured measurement of perception. Data processing was carried out using SmartPLS software version 3.2.9.

## Results And Discussion

The researcher employed a descriptive analysis method to illustrate the characteristics of the respondents. This approach provided a clear and in-depth explanation of the conditions or situations being studied. The characteristics analysed include gender, age range, length of employment in the MSME sector, and other aspects relevant to the focus of the study.

**Table 1.** Descriptive analysis of data

Gender	Frekuensi	Persentase
MALE	65	70.50%
FEMALE	35	29.50%
QUANTITY	100	100%
AGE	Frekuensi	Persentase
18-20 YEARS	5	2%
20-23 YEARS	30	21%
23-26 YEARS	20	15%
26 Years and Above	45	62%
QUANTITY	100	100%
Employment In The MSME Sector	Frekuensi	Persentase
> 6 Years	65	55.70%
4-6 Years	25	42.60%
1-3 Years	10	1.60%
QUANTITY	100	100%

Based on the data, most respondents are male, totaling 65 individuals or 70.5%. Meanwhile, female respondents account for 35 individuals or 29.5%. This indicates that male participation in MSME activities in this study is more dominant than that of females. This difference in proportion suggests that the MSME sector under study is largely driven by male workers, possibly due to the nature of the work or underlying social and cultural factors. In terms of age, most respondents fall within the productive age group. The 26 years and above category dominates with 45 individuals (62%), followed by the 20–23 years group with 30 individuals (21%), the 23–26 years group with 20 individuals (15%), and only five individuals (2%) in the 18–20 years group. This composition indicates that most respondents are in their adult phase and likely have adequate experience conducting MSME activities. Older age tends to be associated with stability, maturity in business decision-making, and a deeper understanding of work dynamics. Regarding length of employment, respondents who have worked for more than 6 years make up the majority, with 65 individuals or 55.7%. Additionally, 25 respondents (42.6%) have worked for 4–6 years, while only 10 individuals (1.6%) have worked for 1–3 years. These findings indicate that most respondents have relatively long experience in the MSME sector, significantly contributing to their business management knowledge and skills. Longer work experience also reflects the sustainability and resilience of business actors in facing entrepreneurial challenges.

**Table 2.** Validity And Reliability Tests

Item	Outer Loading	Composite Reliability	Average Variance Extracted (Ave)	Informations
X1.1	0.756	0.906	0.763	Valid Dan Reliabel
X1.2	0.874			Valid Dan Reliabel
X1.3	0.829			Valid Dan Reliabel
X1.4	0.846			Valid Dan Reliabel
X1.5	0.753			Valid Dan Reliabel
X2.1	0.732	0.839	0.569	Valid Dan Reliabel
X2.2	0.802			Valid Dan Reliabel
X2.3	0.833			Valid Dan Reliabel
X2.4	0.632			Valid Dan Reliabel
X3.1	0.86	0.882	0.715	Valid Dan Reliabel
X3.2	0.765			Valid Dan Reliabel

X3.3	0.905			Valid Dan Reliabel
X4.1	0.787			Valid Dan Reliabel
X4.2	0.915	0.907	0.661	Valid Dan Reliabel
X4.3	0.912			Valid Dan Reliabel
Y1.3	0.872	0.741	0.594	Valid Dan Reliabel
Y1.5	0.654			Valid Dan Reliabel

Source: SMART PLS 3.0

Validity and reliability testing are crucial in quantitative research to ensure that the instruments used can accurately and consistently measure the intended constructs. Based on the test results, all indicators (items) in this study are declared valid and reliable, as indicated by the values of outer loading, composite reliability, and average variance extracted (AVE) that meet the required criteria. The outer loading value indicates each item's contribution to its construct. In general, a good outer loading value is above 0.70. In the presented data, all items have outer loading values above 0.70, such as X1.2 (0.874), X3.3 (0.905), and X4.2 (0.915), which demonstrate that these items strongly reflect their respective constructs. Even the items with the lowest values, such as X2.4 (0.632) and Y1.5 (0.654), are still acceptable because the minimum tolerable value is above 0.60. Composite reliability assesses the internal consistency among items within a single construct. The recommended value is above 0.70. Based on the table, all constructs—X1 (0.906), X2 (0.839), X3 (0.882), X4 (0.907), and Y1 (0.741)—exceed this threshold, indicating that the constructs in this study have very good reliability. AVE represents the variance that the construct explains in relation to its items. A good AVE value is above 0.50. The data shows that all constructs have AVE values above this threshold, such as X1 (0.763), X3 (0.715), and X4 (0.661), indicating that most of the variance in the indicators is successfully explained by the construct. Although Y1 has the lowest AVE value (0.594), it still meets the acceptable standard.

This study applied covariance-based structural equation modelling (sem) to test the proposed research model using Smart PLS software. The validity and reliability of the model were evaluated through factor loadings, which should be greater than 0.5, Average Variance Extracted (AVE), whose value should be greater than 0.5, and Cronbach's alpha and composite reliability. The predictive values table shows that all these values meet the recommended standards.

After analysing the measurement model, the next step is to test the proposed hypothesis using the structural model. This study applied Path Coefficient as a model within the acceptable range. All four predicted paths show significant results. Thus, H1, H2, H3, and H4 have all been proven to support this study.

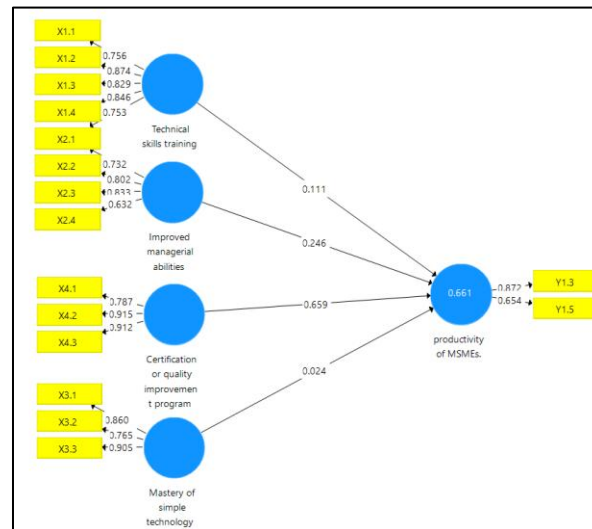


Figure 2. SEM (Structural Equations Model)

Table 3. Test of Path Analysis

Informations	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
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Certification or quality improvement program -> productivity of MSMEs.	0.659	0.652	0.082	8.032	0.000
Improved managerial abilities -> productivity of MSMEs.	0.246	0.234	0.111	2.203	0.000
Mastery of simple technology -> productivity of MSMEs.	0.224	0.228	0.296	2.246	0.000
Technical skills training -> productivity of MSMEs.	0.111	0.122	0.111	2.999	0.000

Source: SMART PLS 3.0

This study analyses the influence of four independent variables on the productivity of micro, small, and medium enterprises (MSMEs): certification or quality improvement programs, managerial abilities, mastery of simple technology, and technical skills training. The analysis used the Partial Least Squares (PLS) approach, which produced values for the original sample, sample mean, standard deviation, t-statistics, and p-values. A t-statistic value greater than 1.96 and a p-value less than 0.05 indicate a statistically significant effect.

1. The Influence of Certification or Quality Improvement Programs on MSME Productivity

The analysis results show that certification or quality improvement programs strongly influence MSME productivity, with an original sample value of 0.659 and a t-statistic of 8.032 (p-value = 0.000). This indicates a highly significant and positive relationship. In other words, the more actively MSME actors engage in certification or quality improvement programs, the higher their business productivity. These programs will likely provide better work standards, increase consumer trust, and help MSMEs comprehensively enhance their production systems and product quality.[3], [9], [10], [24], [25], [26]

2. The Influence of Managerial Abilities on MSME Productivity

Managerial abilities are also proven to have a significant impact on MSME productivity. With an original sample value of 0.246 and a t-statistic of 2.203 (p-value = 0.000), it can be concluded that improving managerial capacity—such as financial management, strategic planning, and human resource management—contributes significantly to increasing productivity. This highlights the importance of training and mentoring in management for MSME actors to sustain and grow in a competitive business environment.[15];[27], [28]

3. The Influence of Mastery of Simple Technology on MSME Productivity

The variable of mastering simple technology also significantly affects MSME productivity, with an original sample value of 0.224 and a t-statistic of 2.246 (p-value = 0.000). This indicates that even though the technology is simple, it can improve work efficiency, accelerate production processes, and reduce operational costs when well-mastered. Utilising production tools, basic digital systems, or local technologies that suit MSME needs is essential for improving business performance.[7];[29]

4. The Influence of Technical Skills Training on MSME Productivity

Furthermore, technical skills training has also significantly impacted MSME productivity. With an original sample value of 0.111, a t-statistic of 2.999, and a p-value of 0.000, technical training helps enhance MSME actors' capacity to understand production processes practically, reduce work errors, and improve product quality. This demonstrates that investment in technical training can yield concrete results in productivity, especially when it is continuous and tailored to field needs.[4];[30]. Technical training is often not carried out sustainably. Many MSME actors only receive training once or twice without any follow-up in the form of monitoring or evaluation. As a result, the skills acquired are not always deeply internalised and may even fade if not practised consistently. This differs from certification or quality improvement programs, which usually require standard maintenance and periodic audits, providing a stronger incentive to maintain quality and productivity.

## Conclusion

The analysis results show that all four independent variables—namely certification or quality improvement programs, managerial abilities, mastery of simple technology, and technical skills training—significantly influence MSME productivity. Among them, certification or quality improvement programs have the strongest and most significant effect ( $O = 0.659$ ;  $t = 8.032$ ;  $p = 0.000$ ), indicating that participation in such programs directly enhances work standards, product quality, and consumer trust, thereby boosting overall business performance. Managerial abilities also play a critical role ( $O = 0.246$ ;  $t = 2.203$ ;  $p = 0.000$ ), as improvements in planning, financial management, and organizational skills help MSME actors make more accurate and efficient decisions. Similarly, mastery of simple

technology significantly contributes to productivity ( $O = 0.224$ ;  $t = 2.246$ ;  $p = 0.000$ ), since even basic technologies can accelerate production processes, reduce costs, and increase efficiency when properly utilized. Finally, technical skills training provides a significant positive impact ( $O = 0.111$ ;  $t = 2.999$ ;  $p = 0.000$ ) by equipping MSME actors with practical knowledge of production processes, minimizing errors, and improving product quality and consistency.

This research strengthens human resource management (HRM) theory, which emphasises that HR competencies strategically improve organisational productivity, including within traditional MSMEs. The finding that certification or quality improvement programs exert the strongest influence provides new empirical evidence that formal legitimacy through certification and quality standardisation is an integral aspect of HR development. Furthermore, the PLS-SEM analytical model can serve as a methodological reference for other researchers in examining causal relationships between HR competency development and business performance, particularly in underexplored traditional sectors. In addition, this study expands the literature on the interconnectedness of technical, managerial, and simple technological competencies with business sustainability, thereby enriching theoretical perspectives on locally based MSME management.

For MSME actors, the results underscore the importance of participating in technical training, improving managerial capabilities, mastering simple technology, and actively engaging in certification programs to strengthen productivity and product quality. For government and policymakers, the findings provide a foundation for designing more structured HR development programs, such as continuous training, certification subsidies, and initiatives to improve access to simple technology for fish processing MSMEs. The study offers insights for educational and training institutions that can guide the development of curricula or training programs tailored to the real needs of MSMEs in the traditional sector. Finally, for MSME associations and communities, the results highlight the need to foster collaboration among business actors to share best practices in certification, business management, and technology adoption, ultimately enhancing collective competitiveness.

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