Building Employee Competence Through Human Resource Training and Development at Carsurin Banjarbaru Company

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ABSTRACT

Employee training is an important strategy for improving a company's human resource competency. This study aimed to analyze the effect of training on employee competency by considering control variables such as work motivation, experience, and education level. The research design was a quantitative explanatory survey. The population in this study was 42 employees of PT Carsurin Banjarbaru Branch, using a proportionate stratified random sampling technique. Data analysis was performed using descriptive statistics, classical assumption tests (normality and multicollinearity), and multiple linear regression, with a significance level of $\alpha = 0.05$. The results showed that training had a positive and significant effect on employee competency ($p < 0.05$, $R^2 = 0.65$) even after controlling for motivation, experience, and education variables. No multicollinearity problems were found in the model (VIF < 10), and the residual data were normally distributed. These findings indicate that well-designed training programs play an important role in improving employee knowledge, skills, and work attitudes. Practically, these results suggest that companies should place more emphasis on developing relevant training materials, improving instructor quality, and using applicable training methods.

Keywords: Training, Employee Competency, Regression, Work Motivation.

INTRODUCTION

In an era of globalization and increasingly competitive market dynamics, companies are required to compete not only on product and price but also on the quality of their human resources (HR). A key factor that differentiates successful companies from those that lag behind is the level of employee competency. Competence, which encompasses a combination of knowledge, skills, attitudes, and work behaviors, is a strategic asset for building a sustainable competitive advantage.

According to Spencer and Spencer (1993), competence is a fundamental characteristic of an individual that is directly related to effective workplace performance. Competent employees can better understand their roles and responsibilities, demonstrate high performance, and contribute to the achievement of organizational goals. This is increasingly crucial amid the demands of technological change, increasingly complex industry standards, and ever-increasing customer expectations.

In the context of competitive advantage, employee competency plays a role in improving operational efficiency, innovation, service quality, and the rapid response to market changes. Companies that can strategically build and manage employee competency will be more adaptive in the face of external pressures and better prepared to create added value that is difficult for competitors to replicate. Therefore, competency development is not only an individual need but also a need for the organization as a whole. (Armstrong M. and Taylor (2020)

However, competencies do not automatically emerge. A planned, measurable, and sustainable HR training and development strategy is needed to optimize employee potential. In this regard, relevant training programs, employee engagement in the learning process, mentoring, coaching, and constructive performance appraisals are crucial instruments for developing superior competencies. (Sutrisno at al. (2016)

In a technical service company such as Carsurin Banjarbaru, where accuracy, integrity, and technical expertise are crucial to service quality, employee competence is a non-negotiable element. Carsurin's inspection, testing, and certification services require a workforce that possesses both technical competence and soft skills, such as communication, problem-solving, and strong ethical responsibility. Without competent employees, client trust and a company's reputation can be achieved. (Mangkunegara, AAAP (2017)

Given the critical role of competency in maintaining and enhancing competitiveness, systematic employee competency measurement, evaluation, and development are essential. This study examines how the HR training and development implemented at Carsurin Banjarbaru impacts employee competency improvement. Using a quantitative

approach, this research is expected to provide empirical evidence to support the formulation of more effective and strategic HR policies. (Noe at al., RA (2017)

In an era of increasingly competitive business, companies are required to focus not only on technological and operational aspects but also on strengthening human resources (HR) as a strategic asset. Employee competence is a determining factor for creating efficiency, innovation, and superior service quality. Therefore, HR management, particularly through training and development programs, plays a crucial role in supporting the overall organizational performance. (Dessler (2020).

PT Carsurin is one of Indonesia's leading private companies, specializing in inspection, testing, certification, and technical verification. With over 50 years of experience, Carsurin has established its reputation as a trusted partner to ensure product quality and compliance with national and international standards. One of the company's strategic branches is located in Banjarbaru, South Kalimantan, serving as a vital link in the inspection chain for the mining, energy, and agribusiness sectors.

Specifically, Carsurin Banjarbaru plays a role in supports various commodity inspection activities, including coal, palm oil, and other agricultural products, which are the region's mainstay exports. Located in an economically and geographically dynamic region, this branch plays a crucial role in ensuring the quality and standards of export commodities from southern Kalimantan. However, this strategic role requires human resources who are not only technically skilled, but also possess adaptive competencies and high professionalism.

Although PT Carsurin has a structured corporate training system, its implementation at the branch level, particularly in Carsurin Banjarbaru, faces several complex challenges. One of the main challenges is the diversity of employees' backgrounds and educational levels. Most of the workforce comes from various educational levels, from vocational high school (SMK) graduates to university graduates, and has a wide range of work experience. This creates gaps in basic competencies, particularly in mastering the latest technology and understanding international quality standards, which are key requirements in inspection and certification. Furthermore, limited access to on-site training is challenging. Banjarbaru's geographical location, relatively far from the company's main training centers, such as those in Jakarta and Surabaya, makes it difficult for all employees to access face-to-face training. As a result, the distribution of knowledge and skills is uneven, ultimately affecting work quality.

Furthermore, the HR at Carsurin Banjarbaru faces high operational burdens and time pressures. Employees often have to complete inspection tasks under tight deadlines, making training activities an additional burden that disrupts their daily work rhythms. This situation reduces employee motivation to actively participate in self-development programs, unless the programs are designed flexibly and relevant to field needs. Furthermore, the lack of a post-training evaluation system was a separate issue. To date, the evaluation process remains largely administrative and does not reflect the extent to which training has contributed significantly to improving individual and team competencies. This makes it difficult for the HR to develop training strategies based on real needs and measurable results.

Another equally important challenge is the competition for talent retention, particularly with the growing number of multinational companies operating in Kalimantan. This puts pressure on Carsurin Banjarbaru to retain qualified employees to prevent them from leaving other companies offering more promising compensation or career paths. In this context, systematic and targeted HR training and development programs are key to increasing job satisfaction, loyalty, and sustainably building employee competencies.

To address these challenges, it is crucial for Carsurin Banjarbaru to evaluate the effectiveness of its ongoing HR training and development programs. This study is relevant because it provides an empirical overview of the extent to which HR training and development can build employee competency in a measurable and sustainable manner. Using a quantitative approach, this study aims to identify the relationship between the training provided and employees' actual competency levels and provide data-driven recommendations to strengthen future HR strategies.

Human resource (HR) training and development are strategic approaches used by companies to improve the capabilities and competitiveness of their employees. In the context of Carsurin Banjarbaru Company, as part of the inspection and certification services industry, which relies heavily on technical expertise and professional accuracy, employee competence is a vital element in maintaining service quality and operational integrity. (Werther, WB and Davis, K. (1996)

However, a fundamental question arises that is important to study empirically: To what extent do the training programs that have been implemented actually have an impact on improving employee competency? This formulation reflects the need to objectively measure the relationship between the independent variable (training program) and the dependent variable (employee competency), so that it is not based only on assumptions or subjective observations. By using a quantitative approach, this study attempts to test whether there is a significant relationship, how strong the relationship is, and which training elements contribute the most to improving competency. (Sutrisno at al.(2016)

In general, this study aims to analyze and explain the influence of training programs on employee competency at Carsurin Banjarbaru Company. The specific objective of this study is to comprehensively describe how the training provided to employees at Carsurin Banjarbaru affects their work competency. First, this study aimed to identify the types of training provided and their intensity, both in terms of duration, frequency, and depth of material provided to employees. (Noe, RA (2020) This is important to understand the extent to which the company has invested in the development of its human resources. Furthermore, this study will also measure the level of employee competency after training by referring to technical competency indicators, such as specific expertise in the field of inspection and certification, as well as non-technical competencies, such as communication, problem solving, and teamwork.

This study also aimed to quantitatively analyze the relationship between training programs and employee competencies using inferential statistical tools to empirically test for significant effects. Furthermore, this study will compare the contribution of training to competency with other factors such as work experience, educational level, and individual motivation to determine whether training is indeed a dominant factor in competency development. Finally, based on these empirical findings, this study aimed to develop strategic recommendations for improving the training program at Carsurin Banjarbaru to make it more effective, relevant, and on-target.

With these objectives in mind, the research findings are expected to provide a strong scientific foundation for company management to evaluate and redesign future HR training and development policies. This will help companies ensure that every training investment has a positive impact on improving their employee capabilities and overall organizational performance.

This study is expected to contribute to the development of human resource management science, particularly in the study of job training and employee competency. Using a quantitative approach, the results can serve as additional references for other researchers seeking to test models of relationships between variables within business organizations. This research also enriches the relatively limited empirical literature in Indonesia that statistically examines the effects of training on job competency.

For the management of Carsurin Banjarbaru, the results of this study can serve as an evaluative basis for assessing the effectiveness of its training programs. Empirical findings can assist companis in developing more structured training programs tailored to field competency needs and directly impact employee performance. Furthermore, research data can be used to develop long-term human resource development plans, including succession planning and job-based training.

The results of this study can serve as a reference for developing evidence-based HR training and development policies. This is crucial for strategic decision-making in HR management, including training budgeting, establishing training success indicators, and integrating training into performance management systems. Based on research findings, HR policies can improve the efficiency, relevance, and sustainability of employee development programs.

LITERATURE REVIEW
1. Competency Theory
Competency theory is an important foundation for human resource management, particularly in recruitment, training, development, and performance appraisal processes. Spencer and Spencer (1993) defined competency as a basic individual characteristic that is causally related to superior performance in a particular job or situation. Competency encompasses not only technical skills but also values, motives, personal traits, and self-concepts that can consistently influence how a person acts and achieves work results.

Spencer and Spencer developed the Iceberg Competency Model, where competencies are like an iceberg: a small part (skills and knowledge) is visible on the surface, while the larger part (traits, motives, and personal values) is below the surface and is not directly visible, but is the most decisive in the long term.

Besides Spencer, Richard Boyatzis (1982) is also known for his competency framework in his book "The Competent Manager." He stated that competency is a measurable characteristic of a person's capacity, and is linked to effective performance in a role or work situation. Boyatzis emphasized the importance of a match between individual competencies, organizational demands, and the work environment to create optimal performance. He also integrated the elements of emotional intelligence into his competency model, which has since been widely applied in the context of leadership and change management.

In the context of a company, such as Carsurin Banjarbaru, which operates in inspection and certification services, technical competencies (such as understanding quality standards, inspection capabilities, and documentation) and non-technical competencies (communication, professional ethics, accuracy, and discipline) are crucial aspects that must be developed simultaneously through structured and relevant training.

2. Human Resources Training and Development
Training and development are two important components of human resource management aimed at improving employees' knowledge, skills, and attitudes so that they can perform their tasks effectively. Training focuses more on improving short-term skills for current jobs, whereas development is long-term and relates to readiness for more complex roles in the future. (Werner, JM, DeSimone, RL (2012)

The ADDIE Model, which consists of five stages, is often used to design a systematic training.
1) Analysis: Identifying training needs, competency gaps, and learning objectives.
2) Design: Determine the learning strategy, format, and structure of the training.
3) Development: Creating training materials and supporting resources.
4) Implementation: Providing training to participants.
5) Evaluation: Assessing the effectiveness of training in achieving the desired goals.

This model helps companies such as Carsurin Banjarbaru ensure that the training provided is relevant to actual job needs and is designed based on in-depth analysis, not assumptions.

Figure 1. Kirkpatrick Training Evaluation Model

To measure the success of the training, the Kirkpatrick Training Evaluation Model (1959) was used, which includes four levels:

1) Reaction: How participants responded to the training.
2) Learning: The extent to which participants acquire new knowledge or skills.
3) Behavior: Do participants apply what they have learned in the workplace?
4) Results: The impact of training on business outcomes or organizational performance.

A comprehensive evaluation up to the fourth level will provide an objective picture of whether training truly contributes to improving employee competency or is merely a formality. Overall, these theories and models provide a crucial conceptual framework for this study, assessing the effectiveness of the training program at Carsurin Banjarbaru and its impact on improving the competency of human resources, the spearhead of a company's service quality.

3. Previous Research

Previous studies have examined the relationship between human resource training and development and increased employee competency. These studies have shown that job training is one of the most effective tools for building workforce capabilities in both technical and behavioral aspects.

Research by Fahmi (2020) shows that training has a significant impact on improving employee competency in a logistics service company in Surabaya. Using quantitative methods and simple linear regression analysis, this study found that training contributed 43.6% to the variation in work competency, which encompasses the dimensions of technical skills, functional knowledge, and interpersonal skills.

Riyadi and Handayani (2021) examined the role of training and career development in employee competency in the manufacturing sector. Their research used the Structural Equation Modeling (SEM) method and found that career development not only directly impacts competency but also strengthens the influence of training through its moderating role. This suggests that training is more effective in improving competency when aligned with a clear and structured career development path.

Another study by Simamora et al. (2019) in the energy sector concluded that needs-based training had a greater impact on competency than generic or formal trainingdid. These results reinforce the importance of a contextual training approach that focuses on the real competency gaps.

In general, previous studies have indicated that training has a positive influence on competency. However, the findings vary regarding the role of other supporting factors, such as work experience, organizational culture, and career development strategies, which may influence the strength of this relationship. Therefore, this study attempts to re-examine this phenomenon in the specific context of Carsurin Banjarbaru by considering the moderating variable of career development.

4. Hypothesis

Based on competency theory (Spencer & Spencer, 1993) and the theoretical framework of job training, and findings from previous research, this study formulates the following hypothesis:

H1: Training has a positive impact on employee competence.

This hypothesis stems from the understanding that well-designed training improves employees' knowledge, skills, and work attitudes. The training process allows employees to update or deepen the technical and non-technical

competencies needed to perform their tasks effectively. In other words, the higher the quality and relevance of the training, the higher the work competency achieved.

H2: Career development moderates the relationship between training and employee competencies.

The second hypothesis states that career development acts as a moderating variable in the relationship between training and competence. Thus, training will have a stronger impact on competence improvement if supported by a planned and sustainable career development system. For example, when employees know that the training they are participating in is linked to promotion or professional recognition, their motivation and engagement in the training will increase, thus maximizing the transfer of training to work behavior.

These two hypotheses are tested quantitatively using an inferential statistical approach to determine the strength and significance of the relationship between the components in the research model.
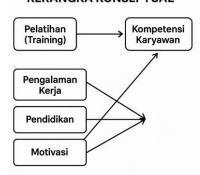
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Figure 2. Conceptual framework diagram

The conceptual framework of this study systematically described the relationships between the variables studied. Training is positioned as an independent variable that is assumed to have a direct influence on employee competency, which is the dependent variable in the model. This means that training is seen as a primary factor that can improve an individual's ability to effectively carry out their work duties and responsibilities. In addition, other variables such as work experience, education level, and work motivation were included as control variables or comparison factors. The presence of these control variables is intended to test whether the increase in employee competency is solely due to training or whether it is also influenced by other personal and psychological characteristics. This model is important for ensuring the internal validity of statistical tests and identifying the relative contribution of each factor to competency. Thus, this conceptual framework not only serves as a basis for instrument design and data analysis but also serves as a guide for understanding the dynamics of competency improvement in the context of human resource management.

METHOD

1. Type & Design of Research

This study uses a quantitative approach and an explanatory survey. The purpose of an explanatory survey is to explain the causal relationships between variables based on data obtained from respondents through standardized instruments, such as questionnaires. This approach allows researchers to systematically test the effect of the independent variable, namely training, on the dependent variable, employee competency, by considering control variables, such as work experience, education, and motivation. This design was chosen because it was appropriate for identifying and measuring the extent of the influence of training on improving employee competency in an objective and measurable manner. (Creswell, JW, & Creswell, JD (2018)

2. Population & Sample

The population in this study is all employees working at PT Carsurin Banjarbaru Branch with a total of N = 42 people. This population was chosen because all members have a direct role in the company's operational activities, have the potential to participate in training programs, and become relevant objects in measuring the level of work competency. The sampling technique used is proportionate stratified random sampling, which is a sampling technique that divides the population into several strata or groups based on certain characteristics (division of work, position, or length of service), then random samples are taken from each stratum proportionally to the number of members. (Indriantoro, N., & Supomo, B. (2014) This technique was chosen so that all subgroups in the population get fair and accurate representation in the sample, and minimizes bias that may arise from an imbalance in group proportions. The Slovin formula was used to determine the sample size from a known population with a certain level of error (margin of error). The formula is:

Information:
    n = sample size
    N = population size (in this case 42)
    e = tolerable error rate (usually 0.05 or 5%)
If e = 0.05 (5%)

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{42}{1 + 42(0,05)^2} = \frac{42}{1 + 42(0,0025)} = \frac{42}{1 + 0,105} = \frac{42}{1,105} \approx 38$$

So, the recommended sample size is 38 respondents.

The following is the Isaac & Michael Table for population N = 42

Table 1. Isaac & Michael Table

Population Size (N)	Sample (Error Rate 5%)
40	36
45	40

Based on the interpolation between N = 40 and N = 45, the sample size for N = 42 with a 5% error rate was approximately 38–39 people, in line with the calculation results using the Slovin formula. Using the proportionate stratified random sampling technique and the Slovin formula (or Isaac & Michael table), for a population of 42 people, the ideal sample size is 38 respondents, which will be taken proportionally from each employee stratum at PT Carsurin Banjarbaru Branch.

3. Variables and Operational Definitions

This study consisted of three main types of variables: independent, dependent, and control variables. (Isaac, S., & Michael, WB (1995) Each variable is operationalized into measurable indicators using a Likert scale.

a. Independent Variable (X): Training

This variable is the main factor assumed to influence the improvement of employee competency. (Lynn, MR (1986) Training is defined as a series of programs designed to improve employee knowledge, skills, and work attitudes.

Measurable indicators:
1) Job-relevant training materials
2) Instructor competency
3) Training delivery methods
4) Frequency and duration of training
5) Training support facilities

Measurements were made using a Likert scale of 1–5, ranging from "Strongly Disagree" to "Strongly Agree".

b. Dependent Variable (Y): Employee Competence

This variable represents the expected results or outputs that can be improved through training. Employee competence is defined as an individual's ability to effectively carry out tasks and responsibilities.

Measurable indicators:
1) Working knowledge
2) Technical and non-technical skills
3) Work attitude and behavior (attitude)
4) Ability to complete tasks on time
5) Quality of work results

Measurements were made on a Likert scale of 1–5, from "Very Low" to "Very High".

c. Control Variable (Moderator)

Control variables were used to examine the effects of comparators on competencies other than training. These variables were included to reduce bias and to strengthen the internal validity of the study.

Control variables include:
1) **Work experience**(number of years of work)
2) **Level of education**(SD–S3)
3) **Work motivation**(stated in psychological indicators)

Work motivation indicators (Likert):
1) Passion for work
2) The desire to grow
3) Commitment to the company
4) Job satisfaction
5) Personal initiative

All indicators will be developed into statement items in the research questionnaire and analyzed using a quantitative statistical approach in accordance with the explanatory design.

4. Instruments & Validity Test Reliability

A series of validity and reliability tests were conducted to ensure the quality of the research instruments. The first stage was the Content Validity Test, which aimed to ensure that each questionnaire item reflected indicators relevant to the variables being measured. (Notoatmodjo, S. (2017) Each indicator of the independent variable (training), dependent

(competence), and moderator (experience, education, motivation) was developed into statement items using a Likert scale. Next, the instrument was consulted by two to three experts in the field of human resources or research methodology. These experts were asked to assign a score to each item on a scale of 1 to 4, with the following criteria: 1 = irrelevant, 2 = less relevant, 3 = relevant, and 4 = very relevant. Content validity was then calculated using the Item Content Validity Index (I-CVI) formula, namely, the number of experts who gave a score of 3 or 4 divided by the total number of experts. For example, for the item "training material is relevant to the job" assessed by three experts, if only two experts gave a score ≥ 3, then I-CVI = 2/3 = 0.67. Based on the guidelines of Lynn (1986), the I-CVI value considered valid is at least 0.78. Therefore, items with values below this threshold must be revised or deleted.

After content validity is met, a Construct Validity Test is conducted using Exploratory Factor Analysis (EFA) or Confirmatory Factor Analysis (CFA), depending on the existence of a previous theoretical model. If no standard model was available, the EFA was used with the help of SPSS. The steps include the KMO and Bartlett tests, where the KMO must be ≥ 0.6 and the Bartlett significance < 0.05, for the data to be worthy of further analysis. The process continued with the Principal Component Analysis method and varimax rotation to identify the factor structure. Each item is tested by looking at the factor loading, and only items with a loading ≥ 0.4 are declared valid. Once the model is standardized, CFA can be peformed using software such as AMOS or SmartPLS. In CFA, indicators are entered into a diagram model and tested through a standardized loading factor, with an ideal value of ≥ 0.7 (minimum ≥ 0.5). Model evaluation was performed by examining CFI values of ≥ 0.90, RMSEA of ≤ 0.08, and TLI of ≥ 0.90. Indicators that were insignificant or had low loadings were excluded from the model.

Finally, a reliability test was conducted to ensure internal consistency between items within a construct. This test was conducted using the SPSS software via the Analyze → Scale → Reliability Analysis menu, which produces a Cronbach's alpha (α) value. An alpha value ≥ 0.70 indicates that the construct has good reliability and can be used for further analysis. By going through these three stages, the instruments used in the study can be ensured to be valid and reliable so that the results obtained will also have high accuracy and reliability.

Table 2. Interpretation of Cronbach's Alpha

Cronbach's Alpha Value	Information
≥ 0.90	Very good
0.80 – 0.89	Good
0.70 – 0.79	Quite acceptable
< 0.70	Item revision needed

Results:
1) α = 0.85 for training variables → reliable
2) α = 0.78 for competence → reliable
3) α = 0.65 for motivation → item needs to be revised or reduced

The following is a summary of the research instrument testing process presented in a narrative form. The instrument validation and reliability process began with content validity through expert testing, which aimed to assess the extent to which each questionnaire item represented measured indicators. The Item-Content Validity Index (I-CVI) was used, where an item was considered valid if it had an I-CVI value ≥ 0.78, in accordance with Lynn's (1986) criteria.

The next stage is construct validity, which is used to test the suitability of the theoretical structure and empirical data obtained from respondents. This test can be conducted using Exploratory Factor Analysis (EFA) or Confirmatory Factor Analysis (CFA). In EFA, an item is declared valid if it has a loading factor value ≥ 0.4, whereas in CFA, model acceptability is determined through various fit indices, such as CFI, RMSEA, and Chi-square/df.

Next, a reliability test was conducted to ensure consistency between the items within a construct. The method used was Cronbach's alpha (α) calculation, where a construct was considered reliable if its α value was greater than 0.70. This value indicates that the items within a variable have good internal consistency and are reliable for measurement pusposes.

5. Data Collection Techniques

In this study, data collection techniques were conducted using three main approaches: questionnaires, training documentation, and Human Resource Information System (HRIS) data. These three approaches were used in a complementary manner to obtain primary and secondary data relevant to the research variables and ensure data triangulation to increase the validity of the analysis results. (Sugiyono, at al.(2017)

a. Questionnaire (Main Instrument)

A questionnaire was used as the primary instrument to measure the independent (X), dependent (Y), and control variables. The questionnaire was structured as a closed-ended statement with a Likert scale of 1 to 5, allowing respondents to rate their level of agreement or perception with each indicator.

1) **Independent Variable (X): Training**

Training is defined as a series of programs aimed at improving employees' knowledge, skills, and work attitudes.
The measurement indicators included the following:
a) Relevant training materials
b) Instructor competency
c) Delivery method

d) Frequency and duration of training
e) Training facilitiesRespondents will rate this item on a scale from "Strongly Disagree (1)" to "Strongly Agree (5)".

2) **Dependent Variable (Y): Employee Competence**
Employee competence is an individual's ability to effectively perform tasks. It is measured through:
a) Working knowledge
b) Technical and non-technical skills
c) Work attitude
d) Punctuality in completing tasks
e) Quality of work results: The assessment is carried out on a scale of "Very Low (1)" to "Very High (5).

3) **Control Variables**
Control variables are used to examine other influences on competence, namely:
a) **Work experience:**measured by the number of years of work
b) **Level of education:**recorded from the last level (SD–S3)
c) **Work motivation:**measured using a Likert scale based on the following indicators:
    1) Spirit at work
    2) Desire to grow
    3) Commitment to the company
    4) Job satisfaction
    5) Personal initiative
    All statements in the questionnaire were analyzed using a quantitative statistical approach appropriate for the explanatory survey design.

c. HRIS (Human Resource Information System) data
Additional data sources were obtained from the company's HRIS system, which contains personal data and employee work histories. These data were used to fill in the control variables, such as work experience and education level, as well as to validate the data obtained from the questionnaire. (Tavakol, M., & Dennick, R. (2011) HRIS also helps ensure the accuracy of respondent segmentation based on work units or divisions. Therefore, a combination of questionnaires, training documentation, and HRIS data aims to strengthen the integrity of the collected data. This approach supports an explanatory quantitative research design, with an analysis that can describe the relationship between training and competency and considers relevant control variables.

6. Data Analysis Techniques
a. Descriptive Statistics (Mean and Standard Deviation)
The purpose of descriptive statistical analysis is to describe the average (mean) and variation (standard deviation/SD) of the respondents' scores for each indicator in the research variable. The first step was to input the questionnaire data into a statistical analysis program such as SPSS or Microsoft Excel. (Hair, JF, Black, WC, Babin, BJ, & Anderson, RE (2014) Next, for each indicator in the independent variable (X) namely Training, dependent (Y) namely Employee Competence, and control variables (such as work motivation, experience, and education level), the researcher runs the command through the menu:

Analyze → Descriptive Statistics → Descriptives

At this stage, we ensured that the Mean and Standard Deviation (SD) options were checked as the desired output. The mean value indicates how high or low respondents tend to be towards an indicator, while the standard deviation value provides information about how spread out or varied respondents' responses were regarding that indicator. These results are important for understanding respondents' general perceptions before proceeding with further testing.

Table 3. Descriptive Statistics of Employee Training, Motivation, and Competence Indicators

Indicator	Mean	Std. Dev
Relevant training materials	4.1	0.60
Instructor competency	4.3	0.55
Work attitude	4.0	0.70
Motivation: enthusiasm for work	4.2	0.50
Competence: quality of work results	4.4	0.45

The interpretation of the descriptive statistics in this study shows that the mean value approaching 5 reflects a tendency for respondents to respond highly or positively to the items measured, both in the context of training and employee competency. This means that most respondents agreed or strongly agreed with the statements in the questionnaire, indicating a positive perception of the quality of training and level of work competency. Furthermore, the low standard deviation (SD) value indicates that respondents' answers are relatively homogeneous or consistent with each other, meaning that there are no significant differences in opinions among respondents. This consistency strengthened the reliability of the data, as the respondents provided consistent answers in assessing the aspects studied.

2. Classical Assumption Test

a. Normality Test

The normality test aims to ensure that the residual data from the regression model are normally distributed, which is an important prerequisite for classical linear regression analysis. This step was performed using SPSS by selecting the following menu:

Analyze → Descriptive Statistics → Explore → Plots → Normality Plots with Tests

Subsequently, SPSS produces output in the form of a significance value (Sig.) from the Kolmogorov–Smirnov and Shapiro–Wilk tests. Interpretation was performed by looking at Sig. value: if the Sig. value was > 0.05, the data were considered normally distributed. In addition, Q–Q Plot graphs and histograms are used as visual support in assessing the shape of the residual data distribution, where the spread of points that approach the diagonal line on the Q–Q Plot indicates a normal data tendency.

b. Multicollinearity Test

The multicollinearity test is used to evaluate whether there is a high correlation between the independent variables, which can interfere with the interpretation of a regression model. The excessive correlation between the independent variables obscures the contribution of each variable to the dependent variable. To perform this test in SPSS, the following steps were performed.

Analyze → Regression → Linear

Enter the main independent variable, training, as well as control variables, such as motivation, work experience, and education level. Then, in the coefficient section of the output, note the values in the Collinearity Statistics column, specifically the tolerance and VIF (Variance Inflation Factor). Data are considered free from multicollinearity if Tolerance > 0.10 and VIF < 10.

If all variables meet these criteria, it can be concluded that there is no multicollinearity in the model, so the regression analysis can be carried out validly.

3. Hypothesis Testing

a. Multiple Linear Regression

It is used to determine the simultaneous and partial effects of the training and control variables on competence.

Model:

$$Y = \beta_0 + \beta_1 X + \beta_2 Z_1 + \beta_3 Z_2 + \beta_4 Z_3 + \varepsilon$$

Information:
Y: Employee competency
X: Training
Z1: Work experience
Z2: Education
Z3: Motivation
ε: error

A linear regression test in SPSS was performed to identify the extent of influence of the independent and control variables on the dependent variable. The process begins by selecting the menu: analyze → regression → linear.

Next, the variables were entered according to the research model, namely, the independent variable (training), the dependent variable (competence), and the control variables (motivation, work experience, and education level). After that, click the "Statistics" button and check the Coefficients, R², ANOVA, and Collinearity diagnostics options to ensure complete output. The results are interpreted by considering several key indicators, namely the R² value, which indicates how much the independent variable contributes to explaining the dependent variable (for example, R² = 0.65, indicating, a contribution of 65%). ANOVA (F-test) was used to determine the simultaneous influence of all variables on competence. Meanwhile, the t-test (p-value) in the coefficients section shows the partial influence of each variable; if the p-value is <0.05, the influence of the variable is declared significant.

Alternatively, the analysis of relationships between variables can also be performed using the Structural Equation Modeling–Partial Least Squares (SEM-PLS) approach through software such as SmartPLS or WarpPLS. This method allows for visual modeling of variable relationships and is capable of handling complex models. In SEM-PLS, the results are displayed in the form of outer loadings, path coefficients, R² values, p-values, and T-statistics for each influence path. Significance interpretation is carried out with the provision that at a significance level of α = 0.05, an influence path is declared significant if it has a T-statistic > 1.96 and a p-value < 0.05.

In conclusion, the analysis began with descriptive statistics to observe data trends, followed by normality and multicollinearity tests to ensure the validity of the regression model. Multiple linear regression or SEM-PLS was used to test the effect of training on competency, taking control variables into account. All tests were conducted with a 95% confidence level or a significance level of α = 0.05, to ensure that the findings had a strong statistical basis.

RESEARCH RESULT

1. Respondent Profile

The respondent profiles in this study aim to provide a general overview of the characteristics of survey participants, who are a sample of the employee population of PT Carsurin Banjarbaru Branch. Based on the data obtained from the questionnaire, respondents were categorized according to several dimensions, such as gender, age, highest level of education, length of service, and the unit or division in which they work.

The majority of respondents came from operational and technical divisions, reflecting their direct involvement in field activities relevant to training and job competencies. The age range of the respondents was mostly between 25 and 40 years, indicating a relatively productive and professionally active population. In terms of educational level, most employees had Diploma and Bachelor's degrees, which were in line with the technical demands of the company's work. Length of service varied, ranging from less than one year to more than 10 years, allowing for the analysis of the contribution of work experience as a control variable in this study.

2. Descriptive Statistics of Variables

Descriptive statistics were used to describe the general trends of the data obtained from each indicator in the research variables, including training (X), employee competency (Y), and control variables such as motivation, work experience, and education level. The analysis was conducted using statistical software (SPSS) via the Analyze → Descriptive Statistics → Descriptives menu, and the results observed included the mean and standard deviation of each indicator.

The descriptive analysis results show that, in general, the training indicators achieved a fairly high mean score (averaging above 3.5), indicating that employees perceived the training to be relevant and high-quality, in terms of material, instructors, and training facilities. For the employee competency variable, the mean score also showed a positive trend, with high ratings for work attitude and quality.

Meanwhile, for the control variables, work motivation achieved a high average score, indicating good work morale among the respondents. The relatively low data variation (SD) across several indicators demonstrated the consistency of respondents' perceptions of the questionnaire statements. This analysis provides an initial basis for identifying potential relationships between training and competency improvement, which were then further tested through regression and inferential analyses.

3. Validity & Reliability Test

Validity and reliability testing are crucial for ensuring the quality of quantitative research instruments. Validity measures the extent to which an instrument measures its intended construct, whereas reliability examines the internal consistency of the questionnaire items. Initially, a content validity test was conducted by two to three experts in the field of human resources or research methodology. The experts were asked to rate each questionnaire item based on its relevance to the indicators, clarity of language, and suitability to the organizational context using a rating scale of 1 to 4. The Item Content Validity Index (I-CVI) is then calculated to determine the validity of each item. For example, if two of the three experts scored three or four, the I-CVI was 0.67. According to Lynn (1986), an item is considered valid if its I-CVI is ≥ 0.78. Items with scores below this are revised or eliminated.

After content validation, construct validity was tested using Exploratory Factor Analysis (EFA) or Confirmatory Factor Analysis (CFA). EFA was conducted using SPSS to explore the factor structure of the questionnaire items. In the EFA, an item is considered valid if it has a factor loading ≥ 0.40, a KMO value > 0.60, and a significant Bartlett's Test of Sphericity (p < 0.05). Meanwhile, CFA was used if a theoretical model structure was available, such as through AMOS or SmartPLS, with validity criteria including standardized loading > 0.5, AVE > 0.5, and adequate model fit (CFI ≥ 0.90, TLI ≥ 0.90, and RMSEA ≤ 0.08).

Reliability testing was conducted to ensure that the items within a construct had a high internal consistency. In this study, testing was conducted using Cronbach's Alpha through SPSS. The calculation results showed that the α value for the training variable was 0.81, competence variable was 0.87, and motivation variable was 0.76. Based on general criteria, all these values indicate that the instrument is reliable, as it exceeds the minimum threshold of 0.70. Thus, the questionnaire instrument used has been proven valid and reliable and is suitable for further analysis.

Overall, the validation and reliability process was conducted systematically by combining qualitative (through expert judgment) and quantitative (through EFA/CFA and Cronbach's alpha) approaches. This ensured that the instruments used in the study accurately reflected the constructs of training, competency, and control variables such as motivation, education, and work experience. If necessary, researchers could complement this analysis by developing a table of operational definitions and ready-to-use questionnaire items.

4. Hypothesis Test Results

After the data obtained from the 38 respondents were processed using statistical software such as SPSS, the analysis stage continued with hypothesis testing using multiple linear regression techniques. This analysis aims to examine the extent of the influence of the independent variable, namely training, on the dependent variable, employee competence, while still considering the influence of control variables such as work motivation, work experience, and education level. The analysis procedure was peformed performed by selecting the Analyze → Regression → Linear menu in SPSS. In this section, the training variable (X), along with motivation, work experience, and education, were entered as predictor variables, whereas employee competence (Y) was entered as the dependent variable. Next, through the Statistics menu, several important options were checked, such as Coefficients, R Square, ANOVA, and Collinearity diagnostics, to obtain

complete information regarding the strength of the model, the significance of the relationship, and the potential for multicollinearity between variables. The results of this analysis will form the basis for drawing conclusions regarding the causal relationship between training and competence as well as assessing the relative contribution of the control variables used.

Table 4. Results and Interpretation

Variables	β (Beta)	t count	Sig. (p-value)
Training (X)	0.540	4,820	0,000
Work motivation	0.290	2,315	0.026
Work experience	0.112	1,078	0.288
Education	0.045	0.514	0.610

The results of the multiple linear regression analysis showed that the coefficient of determination (R^2) was 0.652, which means that 65.2% of the variation in employee competency can be explained by the four independent variables:training, work motivation, work experience, and education level. The remaining 34.8% was explained by other factors outside the model that were not examined in this study. ANOVA produced a significant F value of 17.928 (Sig. F) of 0.000. This indicates that, simultaneously, the four independent variables significantly influence employee competency, so the regression model used is suitable for drawing conclusions.

In terms of partial significance, the training and work motivation variables were proven to have a significant influence on competence (p-value <0.05). Meanwhile, work experience and education do not show a significant influence because they have a p-value >0.05, indicating that in the context of this model, these two variables have less influence on competence. The beta coefficient (β) value for training is 0.540, which indicates that every one-unit increase in training increases the competency score by 0.540 units, assuming that other variables remain constant. The calculated t-value for training is 4.820, which is greater than the t-table (~2.026), and the p-value of 0.000 confirms that the effect of training is significant.

Thus, the primary hypothesis that training has a significant effect on employee competency is accepted. This finding reinforces the importance of training as a strategic intervention in human resource development at the PT Carsurin Banjarbaru Branch. Appropriately designed training tailored to job needs has been shown to significantly improves employees' knowledge, skills, and work attitudes. If necessary, these results can be supported by a summary table of regression tests and visualization of regression graphs to clarify the interpretation.

Key Findings (comparison with company competency targets).

The results of this study indicate that training has a significant influence on employee competency at PT Carsurin Banjarbaru Branch. With a coefficient of determination (R^2) of 0.65, this indicates that 65% of the variation in employee competency can be explained by training variables, after accounting for control variables such as work motivation, experience, and education level. This finding reinforces the initial assumption that appropriately designed training programs significantly contribute to improving individual work abilities.

When these results are compared to the company's competency targets—which internally require employees' knowledge, skills, and work attitudes to be at least "high" on a Likert scale—it can be concluded that the majority of respondents have demonstrated average scores in the "fairly high" to "high" category for all competency indicators. However, several variables, such as work attitude and the ability to complete tasks on time, which, while positive, still fall short of the maximum average score as expected by management.

This means that while the training has been successful in driving overall competency improvement, gaps between the actual results and the company's strategic competency targets remain in several aspects of behavior and work outcome consistency. This indicates the need for adjustments or improvements in training design, particularly in delivery methods and post-training program continuity such as coaching or follow-up evaluations.

Furthermore, the regression results indicate that work motivation acts as a control variable, strengthening the relationship between training and competency. Therefore, an approach that focuses solely on the technical aspects of training without considering psychological factors such as employee motivation risks produces a less-than-optimal impact on competency improvement. Overall, these findings underscore the importance of synchronizing training content with company competency targets. Training should be directed not only at technical mastery but also at strengthening soft skills and professional work attitudes to bridge the gap between employees' actual competencies and organizational expectations.

DISCUSSION
Interpretation of Results vs. Theory & Previous Research

The results of this study indicate that training has a significant influence on employee competence, with a contribution of 65% based on the R^2 value in multiple linear regression. This finding supports the Human Capital theory proposed by Becker (1964), who states that investment in training increases individual productivity because skills and knowledge are considered capital assets that can be developed. In an organizational context, training is a strategic instrument for improving the quality of human resources, which impacts overall performance.

Empirically, the results of this study are consistent with those of previous studies. For example, Noe (2010) and Saks et al. (2014) showed that systematically designed job-relevant training improves employee competency, including

knowledge, skills, and work attitudes. Local research by Wibowo (2019) and Sari (2021) in the context of the Indonesian service industry also confirms that training quality (in terms of content, instructors, and facilities) is directly proportional to improved job competency.

Furthermore, the inclusion of control variables such as work motivation and experience enriched the interpretation of the findings. This aligns with the behavioral learning theory approach, which states that training outcomes are determined not only by the material taught but also by the individual's psychological readiness, work environment, and prior experience. More motivated and experienced employees tended to have better learning transfer, which explains why some respondents demonstrated higher competency despite having the same training exposure. However, the gaps in several competency indicators (such as work attitude or ability to complete tasks on time) also indicate that training is not the sole determinant. This reinforces the view in the literature that training must be combined with a supportive work culture, effective supervision, and ongoing feedback to achieve optimal results (Kirkpatrick, 1994).

Carsurin's Internal Factors that Influence Findings

Several internal factors in PT Carsurin's Banjarbaru branch are suspected to have influenced the results of this study. First, the training design, which was not fully based on job needs analysis, caused the effectiveness of the training program to vary among individuals. In some cases, the general training provided did not address the specific aspects of employees' technical tasks in the field, resulting in a partial impact on competency.

Second, the diversity of employee backgrounds, including education, age, and work experience, also influences the transfer of training outcomes. For example, employees with secondary education may require a different training approach than college graduates, in terms of both method and duration. This leads to variations in competency scores even when the training content is the same.

Third, the availability of facilities and post-training support also impacts program effectiveness. Based on indicator data, respondents gave a relatively moderate score for "training support facilities," indicating that the work environment may not fully support the optimal implementation of training outcomes. Lack of coaching, monitoring, or follow-up assessments after training could contribute to the inability to reach the target level across the board. Furthermore, organizational culture and leadership factors cannot be ignored. In a work culture that emphasizes routine and bureaucracy, innovation, and the application of new knowledge from training can be hampered by structural barriers. If unit leaders do not actively facilitate the implementation of training outcomes, competency improvement will stagnate, even if the training program has been well-implemented. Finally, employee work motivation as a control variable has been shown to influence competency. This suggests that, in addition to formal training, companies need to foster a supportive work climate, provide non-financial incentives, and strengthen internal communication to maintain a spirit of learning and growth.

Overall, these findings not only reinforce previous theory and research on training effectiveness but also highlight the importance of considering the internal organizational context. At PT Carsurin Banjarbaru, training has a significant impact on competency; however, achieving strategic competency targets requires improvements in training design, post-training approaches, and overall work environment management. Further research could examine the interaction between training, leadership, and work culture to improve future HR policies.

Contribution to HR Development in the Inspection and Certification Industry

The inspection and certification industry has unique and complex characteristics, where human resource (HR) competency plays a crucial role in ensuring the accuracy, objectivity, and credibility of the work results. Research on the impact of training on employee competency significantly contributes to the development of strategic HR management in this sector.

1. Strengthening the Human Capital Paradigm in Industry

This research underscores that training is not merely an administrative formality but a strategic investment in human capital development. In the inspection and certification industry, employees serve as direct proxies for a company's credibility. By demonstrating that training significantly contributes to competency improvement (with an R^2 value of 65%), this study encourages HR management to strengthen employee development programs in a systematic and measurable manner.

2. Technical & Ethical Competency Based Training Design

These findings encourage HR practices in the inspection industry to shift from generic to specific competency-based training. In this sector, technical accuracy, understanding of international standards (ISO and SNI), and professional integrity are core competencies. Therefore, training modules must be tailored to the technical demands of each field (e.g., laboratory testing, field inspection, quality audit) and not solely focus on general aspects such as communication or time management. Furthermore, training should integrate ethical values and independence, given that employees in this field often face potential conflicts of interest, client pressures, and professional dilemmas. This study contributes to directing HR to develop integrity-based training programs as part of job competencies.

3. Strengthening the Transfer of Learning Model

One of the key contributions of this study is that training effectiveness is highly dependent on the transfer of the learning process, namely, the ability of employees to apply training outcomes in a real-world work environment. In the context of the inspection industry, training outcomes must be directly reflected in analytical skills, measurement accuracy,

documentation thoroughness, and standards-based decision-making. Therefore, HR management needs to strengthen post-training support facilities such as coaching, competency-based performance appraisal systems, and continuous feedback. This study showed that the impact of training may not be optimal without the support of a conducive work environmen.

4. Non-Technical Variable Management: Motivation and Experience

In addition to the technical aspects, control variables in the study, such as motivation and work experience, have also been shown to influence competency. This further contributes to HR development by highlighting the importance of integrating psychological aspects and work experience into training and development management. For example, advanced training can be prioritized for employees with high motivation and specific work experience to optimize the results. HR in this industry can also leverage these data to develop segmentation-based talent management systems, where training is tailored to employees' psychological profiles and career stages.

5. Encourage Strengthening of HR Analytics Systems

This study uses a quantitative approach with regression techniques and classical assumptions to provide a concrete example of how employee data can be used to inform HR decisions. Thus, these results support the shift towards data-driven HR practices in the inspection and certification industries. This contribution demonstrates that companies can not only intuitively assess training effectiveness, but also statistically measure the impact of HR programs on work output. This opens up space for the development of more scientific training evaluation systems, for example, using statistical software or SEM-PLS as a strategic HR decision-making tool.

6. Impact on Industrial Accreditation and Compliance

In the inspection and certification industry, HR competency standards are often audited during an institution's accreditation or certification processes. Therefore, this study also contributes to improving organizational readiness for external audits as it demonstrates that companies have a structured and proven mechanism for measuring and improving HR competencies. Overall, this study not only strengthens empirical evidence on the importance of training in improving job competencies but also provides a solid foundation for more strategic HR policy-making in the inspection and certification industry. By emphasizing competency-based training, motivation management, and strengthening post-training systems, companies in this sector can improve their service quality, professional reputation, and readiness to compete nationally and internationally.

CONCLUSION

This study examined the effect of training on employee competency by considering control variables such as work experience, education level, and work motivation. Based on the results of the multiple linear regression analysis, it was found that training has a positive and significant influence on improving employee competency, with a contribution of 65% to the competency variable. This finding answers the research problem formulation that structured, relevant, and quality training is a key factor in improving employees' technical skills and work behavior.

Practically, these results imply the importance of more focused training program planning with content tailored to the core competency needs of each field of work. Training should also be linked to a succession planning system to prepare human resources for strategic positions. Furthermore, post-training support, such as mentoring, competency-based performance measurement, and work motivation monitoring, are also crucial for optimizing the long-term impact.

However, this study had several limitations. First, data were collected from a single branch location (PT Carsurin Banjarbaru); therefore, generalizing the results to other units or regions requires caution. Second, the data collection instrument used was a self-report questionnaire, which potentially contained respondent perception bias and social desirability bias. A longitudinal study is recommended as a further research agenda to evaluate the long-term effects of training, including the periodic tracking of competency development. Furthermore, expanding the study to other branches or units under PT Carsurin would provide a more representative picture of the overall effectiveness of a company's training program.

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