

THE INFLUENCE OF SKILL COMPETITION PARTICIPATION AND TRAINER QUALITY ON EMPLOYEE PERFORMANCE: THE MEDIATING ROLE OF LEARNING MOTIVATION IN THE PAPER MANUFACTURING INDUSTRY

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Abstract

This study aims to examine the influence of participation in skill competition and trainer quality on employee performance, with learning motivation as a mediating variable. The study is grounded in the organizational phenomenon observed at PT Pabrik Kertas Tjiwi Kimia Tbk, where manpower productivity increased despite substantial workforce reduction, raising the need to explore factors that may contribute to improve performance, particularly competency development initiatives delivered through structured skill competitions. A quantitative cross-sectional design was employed, involving 226 employees who participated in a company wide skill competition within the paper manufacturing industry. The data were analysed using PLS-SEM with SmartPLS 4.1.1.4. The results demonstrate that participation in skill competition and the trainer quality have a positive and significant influence on the both motivation and employee performance. Learning motivation was also found to partially mediate the effects of both variables on performance. This motivation was also found to partially mediate the effect of both variables on performance. These findings indicate that competition based learning activities and high quality instructional facilitation are essential drivers of intrinsic motivation and performance improvement. Moreover, the result strengthen the relevance of Self-Determination Theory (SDT), Transfer of Training theory, and provide empirical support for the Resource-Based View (RBV) within industrial settings. Future research opportunities include exploring long term dynamics and broader organizational factors that may further shape these relationships.

Keywords: Skill Competition, Trainer Quality, Learning Motivation, Employee Performance, Manufacturing Industry

INTRODUCTION

The development of the manufacturing industry requires companies to increase productivity through strengthening workforce competencies, performance-based learning systems, and sustainable operational efficiency. In the context of modern human resource management, the competency approach is starting to shift from traditional training methods to experiential learning, including skills competitions as a means of challenge-based learning. A number of previous studies have shown that skill competitions can encourage motivation to learn, improve technical mastery, and strengthen job readiness (Kurmankulov et al., 2020; Li et al., 2019). On the other hand, the quality of trainers as learning facilitators plays a key role in the effectiveness of training, especially in meeting the psychological needs of participants as described by Self-Determination Theory (SDT) (Deci et al., 2017) as well as in supporting the transfer of training to the work environment (Baldwin et al., 2012). This emphasizes that learning motivation and competition effectiveness are important determinants in achieving employee performance in the manufacturing industry sector.

Although skills competitions have been widely studied in the fields of education, sports and the public sector, their use as a model of human resource development in the manufacturing industry is almost untouched in the current literature (Andaryanto & Noviarkahman Zagladi, 2024). The majority of studies focus on student participation in skills competitions, so they have not provided adequate empirical evidence regarding the effectiveness of competition in improving employee motivation and performance in the industrial world. In addition, there have not been many studies integrating the role of trainer quality as a direct or indirect predictor variable on employee performance through learning motivation. The model of mediating learning motivation in the context of skill competition has also not been widely tested simultaneously using the PLS-SEM approach in manufacturing companies. Furthermore, the phenomenon of increasing manpower productivity in companies that are reducing employees, such as what happened at PT Pabrik Kertas Tjiwi Kimia Tbk, has never been scientifically studied using the skill competition approach as a possible explanatory factor. This gap shows the need for research that is able to connect competition dynamics, coach quality, learning motivation, and employee performance in one integrated theoretical framework.

This study aims to analyze the direct and indirect influence between participation in skill competitions and trainer quality on employee performance, with learning motivation as a mediating variable. Specifically, this study aims to (1) examine the effect of participation in skills competitions on learning motivation and employee performance. (2) assessing the influence of trainer quality on learning motivation and employee performance. As well as (3) analyzing the role of learning motivation as a mediator in the relationship between participation in skill competitions and the quality of trainers on employee performance. This research model is designed to answer the research gap related to the effectiveness of participation in skills competitions in the context of the modern manufacturing industry and to provide an empirical understanding of the psychological mechanisms that drive individual performance.

This research makes both theoretical and practical contributions. Theoretically, this study expands the application of Self-Determination Theory (SDT), Resources-Based View (RBV) and Transfer of Training in the context of manufacturing industry skills competition, which is still rarely researched. The integration of trainer quality as a direct predictor of

performance and learning motivation also provides novelty for the competition-based competency development model. Practically, this study provides empirical evidence that participation in the competition of skills and quality trainers is an effective human resource development strategy in improving performance and productivity, especially for companies facing labor efficiency such as PT Pabrik Kertas Tjiwi Kimia Tbk. Thus this study builds a new conceptual basis for the competition model as a performance improvement strategy in the manufacturing industry. So that it can be the basis for companies to design training and competition programs that are more structured, effective and oriented towards increasing employee motivation and performance.

REVIEW OF LITERATURE

Research on competency development through skills competitions shows that challenge-based activities can improve an individual's technical ability, learning motivation and job readiness. In the context of vocational education, skill competitions have been proven to provide experiential learning that strengthens mastery experience, self-efficacy and readiness to face the demands of the world of work (Burguillo, 2010; Kurmankulov et al., 2020; Li et al., 2019). These studies are consistent with the Experiential Learning framework (Kolb, 1984) which emphasizes that real experience and reflection are the main foundations of effective learning. In the industrial sector, recent studies confirm that internal competition can serve as a strategic mechanism to improve human resource capabilities and work creativity (Martini et al., 2024; Smith et al., 2017), although empirical evidence is still limited.

However, most skills competition studies still focus on vocational education, the public sector, or sports, so they do not provide much of a strong empirical framework in the manufacturing industry environment. In the industrial sector, training focuses more on conventional technical training and has not examined competition as a mechanism for developing human resources systematically (Aguinis & Kraiger, 2009; Baldwin et al., 2012). This creates a theoretical gap related to how participation in competitions affects employee work behavior, particularly in the context of productivity, technical mastery, adaptability and multidimensional work performance as described in individual performance frameworks (Campbell & Wiernik, 2015; Rotundo, 2002). This gap is even more relevant when associated with the phenomenon of organizations experiencing a reduction in labor but increased productivity, as happened to PT Pabrik Kertas Tjiwi Kimia Tbk. This condition raises allegations that competency development activities through skill competitions can be one of the supporting factors that encourage increased employee motivation and performance.

Learning motivation is a major psychological factor in the success of training and individual performance. Based on Self-Determination Theory (SDT), intrinsic motivation arises when three basic needs, namely autonomy, competence, and relatedness, are fulfilled in the learning process (Deci, 1972; Deci & Ryan, 2000; Gagné & Deci, 2005; Ryan & Deci, 2000). On a psychometric scale, the Motivated Strategies for Learning Questionnaire (MSLQ) emphasizes that intrinsic motivation and task value are strongly related to self-regulation, learning strategies, and academic and work performance (Apriandi et al., 2022; Garcia & Pintrich, 1996). In the work environment, learning motivation has been shown to

be an important mediator in the relationship between training support, instructional quality and employee performance (Nguyen & Ha, 2023; Oktobisono et al., 2021). Studies in the context of industrial motivation also show that learning motivation contributes to learning effectiveness and innovation capabilities (Yu et al., 2017; Zhang & Chen, 2021)

Employee performance as an organizational outcome is largely explained through the Individual Job Performance (IJP) model, which includes task performance, contextual performance, adaptive performance, and counterproductive work behavior (Borman & Motowidlo, 1997; Rotundo, 2002; Campbell & Wiernik, 2015). The Individual Job Performance Questionnaire (IJPQ) instrument has been developed and validated to evaluate performance multidimensionally in various industries (Koopmans et al., 2014; Abbasi et al., 2022). The literature shows that performance is influenced by a combination of competence, motivation, organizational support, and training quality (Aguinis & Kraiger, 2009; Fatmasari Wijayanti & Retno Titi Sari, 2023; Tannenbaum & Yukl, 1992). The Resources-Based View (RBV) perspective emphasizes that human resource capabilities, including technical competence and intrinsic motivation, are competitive advantages that are difficult to replicate and contribute directly to the productivity of the company (Barney, 1991; Wright et al., 2001).

The scientific gap becomes increasingly relevant when associated with the phenomenon of increasing manpower productivity despite the reduction of labor in manufacturing companies such as PT Pabrik Kertas Tjiwi Kimia, Tbk. This condition raises allegations that competition-based learning mechanisms, the quality of trainers and learning motivation can be explanatory factors that have not been comprehensively tested. Therefore, research that integrates participation in skills competitions, trainer quality, learning motivation and employee performance is needed in one integrated theoretical framework to address these gaps.

RESEARCH METHOD

This study uses a quantitative approach with a cross-sectional survey design, which is commonly used to test the causal relationship between latent variables in a single time period. The research population is all employees who participate in an internal skills competition program. The purposive sampling technique is used with the criteria (1) employees who have participated in the skill competition in the last three years, (2) Still actively working as Tjiwi Kimia employees, (3) Coming from various divisions and parts ranging from Maintenance, Stationery Production, Paper Production, QC, Technical Centre, Cardboard Box production, Size Part, Supply Chain and Co-Gen. Respondents who met the criteria were 406 and by using a sample size calculator based on statistical formulas with a confidence level of 95% and a margin of error of 5%.as well as a proportion of the population of 50% so that according to the standard of survey research rules in the PLS-SEM analysis, a sample that must be taken was obtained as many as 226. The samples were then taken proportionally and selected using (Creswell, 2018; Sekaran & Bougie, 2016) (Ali Memon et al., 2020; Sarstedt et al., 2021; Sekaran & Bougie, 2016) <https://randomizer.org> software.

Table 1.
Characteristics of Respondents Based on Work Section

Part	Number (people)	Percentage (%)
Carton Box	4	2%
Co-Gen	3	1%
Maintenance	61	27%
Ops Stationery	109	48%
Paper Factory	12	5%
QC	19	8%
Supply Chain	4	2%
Technical Centre	14	6%
TOTAL	226	100%

Source: Processed by researchers in 2025

This study uses four standardized instruments, namely *the Participation Motivation Questionnaire* (PMQ), *Training Reaction Questionnaire* (TRQ), *Motivated Strategies for Learning Questionnaire* (MSLQ) and *Individual Job Performance Questionnaire* (IJPQ) which have undergone an adaptation process and validity test. Participation in skills competitions was measured using an instrument that adapted the *Participation Motivation Questionnaire* (Dwyer, 1992; GILL, 1983). The quality of the trainers was measured using *the Training Reaction Questionnaire* (Khasawneh and Al-Zawahreh, 2015; Ronald B. Morgan & Wendy J. Casper, 2012). Learning motivation was measured using *the Motivated Strategies for Learning Questionnaire* (DeVellis, 2017; Garcia & Stuart O'Neill, 1996). Employee performance is measured using *the Individual Job Performance Questionnaire* (Abbasi et al., 2022; Koopmans et al., 2014). All items use a Likert scale of 1-5 and have passed a process of testing for reliability, construct validity, and cultural adaptation according to the guidelines. Sekaran & Bougie (2016)

Data collection was carried out online through the distribution of the company's internal questionnaire after the competition activities were completed. Respondents were given an explanation regarding the purpose of the research and the guarantee of data confidentiality. All data is checked for outlier detection, filling consistency, and completeness before further processing.

Data analysis using *Partial Least Squares Structural Equation Modeling* (PLS-SEM) through SmartPLS 4.1.1.4 software. This method was chosen because it is able to analyze complex causal relationships, handle models with reflective indicators, and is suitable for medium-sized samples. The model evaluation is carried out through two stages (1) outer model, which includes reliability tests, convergence validity, and discriminant validity; and (2) inner model, which includes the test of path coefficient, (Hair et al., 2017) *effect size* (f^2), *predictive relevance* (Q^2), and *Goodness of Fit* (GoF). The mediation test was conducted using a *bootstrapping* approach with 5,000 subsamples as recommended (Hair et al., 2017).

Research Hypothesis

This study aims to analyze The Influence of Skill Competition Participation and Trainer Quality on Employee Performance: The Mediating Role of Learning Motivation in the Paper Manufacturing Industry (A Study on the employees of PT. Tjiwi Kimia Paper Factory), the hypothesis proposed in this study is as follows:

- H1 : Skills competition has a positive and significant effect on Employee Learning Motivation
- H2 : The quality of the coach has a positive and significant effect on Employee Learning Motivation
- H3 : Learning motivation has a positive and significant effect on performance employee
- H4 : Skills Competition has a positive and significant effect on employee performance
- H5 : The quality of coaches has a positive and significant effect on performance employee
- H6 : Learning motivation mediates the influence of skill competition on employee performance
- H7 : Learning motivation mediates the influence of trainer quality on employee performance.

Research Model

This approach was chosen because the purpose of the study was to examine the direct and indirect influence of participation in the skills and quality of trainers on learning motivation and employee performance. This method is suitable for photographing actual phenomena at PT Pabrik Kertas Tjiwi Kimia Tbk after the implementation of skill competencies as part of the program to accelerate human resource development.

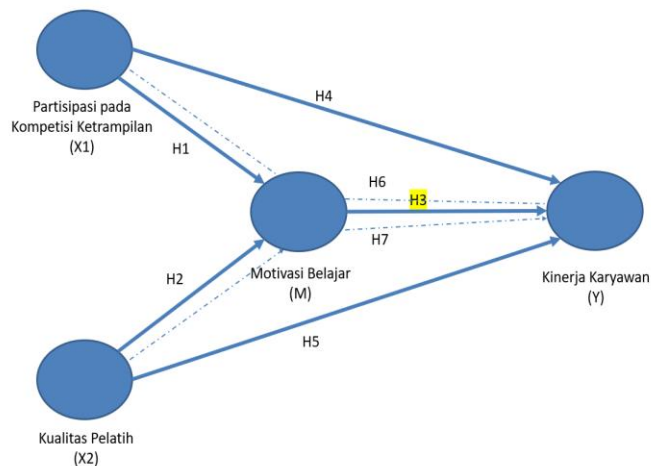


Figure 1.
Conceptual Framework

In this study, participation in the skills competition (X1) acts as an environmental stimulus that can meet the basic psychological needs of autonomy, competence, and connectedness so as to encourage intrinsic motivation according to the principles of Self-Determination Theory (SDT). In addition, the quality of the trainer (X2) is also an

independent variable that creates a supportive training environment; Competent, communicative, and empathetic coaches are able to meet these basic needs, thereby increasing employee motivation to learn. Furthermore, learning motivation (M) acts as a mediating variable that links the influence of skill competition participation and trainer quality on employee performance (Y). Employees with high motivation to learn will be more active in self-development and tend to show improved work performance.

RESULTS AND DISCUSSION

4.1 Reliability Test

The reliability test was conducted using Cronbach's Alpha and Composite Reliability values, with a minimum limit of 0.7. Based on the measurement results in Table 2, all constructs in this study meet the reliability criteria. The variables of participation in the skills competition had Cronbach's Alpha of 0.897 and Composite Reliability of 0.902; the Coach Quality variable was 0.948 and 0.948; the Learning Motivation variable was 0.758 and 0.773 and the employee performance variable was 0.891 and 0.906. These values indicate that all instruments have excellent internal consistency that is suitable for use in structural model analysis.

Table 2.
Reliability test (Cronbach's alpha)

Variable	Cronbach's alpha	Composite reliability (rho a)
X1 (Participation in Skills Competition)	0.897	0.902
X2 (Coach Quality)	0.948	0.948
M (Learning Motivation)	0.758	0.773
Y (Employee Performance)	0.891	0.906

Source: Processed by researchers in 2025

4.2 Validity Test

4.2.1 Convergent Validity

Convergent validity is tested through *outer loading* values and *Average Variance Extracted (AVE)*. An indicator is declared valid if it has a load above 0.70 and the construct is declared valid if the AVE exceeds 0.50. The results showed that all indicators in the four variables had a load greater than 0.70. The AVE value as shown in Table 3 of each construct also met the criteria, namely 0.766 for participation in skill competitions, 0.905 for trainer quality, 0.804 for learning motivation and 0.822 for employee performance. Thus, the entire construct meets the conditions of convergent validity.

Table 3.
Average Variance Extracted (AVE) Test Results

Variable	Average variance extracted (AVE)
X1 (Participation in Skills Competition)	0.766
X2 (Coach Quality)	0.905
M (Learning Motivation)	0.804
Y (Employee Performance)	0.822

Source: Processed by researchers in 2025

4.2.1 Discriminatory Validity

Discriminant validity was tested using cross-loading, latent variable correlation and the Fornell-Larcker Criteria. The results of the study in Table 4 show that all cross-loading values show that the indicator has the highest value on the construct in the construct that should be measured, so that discrimination between constructs is achieved. The latent variable correlation value in Table 5 can be seen that the $\sqrt{\text{AVE}}$ value in all variables is greater than the correlation value between other variables, so it can be concluded to be valid. Likewise, the results of the Fornell-Larcker measurement in Table 6 show that the entire value $\sqrt{\text{AVE}}$ is greater than the correlation value between constructs in other variables, so it can be concluded to be valid.

Table 4.
Discriminant Validity Test Results - Cross-Loading

Indicators (Instruments)	X1 (Participation in Skills Competition)	X2 (Coach Quality)	M (Learning Motivation)	Y (Employee Performance)
X1.1	0.897	0.652	0.717	0.672
X1.2	0.873	0.609	0.684	0.671
X1.3	0.791	0.593	0.649	0.626
X1.4	0.933	0.655	0.770	0.735
X2.1	0.675	0.947	0.661	0.657
X2.2	0.669	0.966	0.670	0.674
X2.3	0.703	0.941	0.647	0.688
M1	0.809	0.686	0.915	0.750
M2	0.626	0.548	0.879	0.691
Y1	0.770	0.708	0.813	0.937
Y2	0.720	0.644	0.723	0.934
Y4	0.603	0.561	0.641	0.847

Source: Processed by researchers in 2025

Table 5.
Value of Latent Variable Correlation, AVE, and $\sqrt{\text{AVE}}$

Variable	X1 (Participation in Skills Competition)	X2 (Coach Quality)	M (Learning Motivation)	Y (Work Performance)	AVE	$\sqrt{\text{AVE}}$
X1 (Participation in Skills Competition)	1.000	0.717	0.807	0.774	0.76 6	0.875 3
X2 (Coach Quality)	0.717	1.000	0.693	0.707	0.90 5	0.951 3
M (Learning Motivation)	0.807	0.693	1.000	0.805	0.80 4	0.896 6
Y (Employee Performance)	0.774	0.707	0.805	1.000	0.82 2	0.906 6

Source: Processed by researchers in 2025

Table 6.
Fornell-Larcker

Variable	M (Learning Motivation)	X1 (Participation in Skills Competition)	X2 (Coach Quality)	Y (Employee Performance)
M (Learning Motivation)	0.897			
X1 (Participation in Skills Competition)	0.807	0.875		
X2 (Coach Quality)	0.693	0.717	0.952	
Y (Employee Performance)	0.805	0.774	0.707	0.907

Source: Processed by researchers in 2025

4.3 Evaluation of Measurement Models (Outer Model)

The outer loading measurement model in Table 7 shows that the indicators used in this study are valid and reliable. The variables of participation in skill competitions, trainer quality, learning motivation, and employee performance all have an outer loading value above 0.70. This confirms that each indicator has a strong contribution in measuring latent constructs.

Table 7.
Outer Loading Results

Indicators (Instruments)	X1 (Participation in Skills Competition)	X2 (Coach Quality)	M (Learning Motivation)	Y (Employee Performance)	Info
X1.1	0.897				Valid
X1.2	0.873				Valid
X1.3	0.791				Valid
X1.4	0.933				Valid
X2.1		0.947			Valid
X2.2		0.966			Valid
X2.3		0.941			Valid
M1			0.915		Valid
M2			0.879		Valid
Y1				0.937	Valid
Y2				0.934	Valid
Y4				0.847	Valid

Source: Processed by researchers in 2025

4.4 Evaluation of Structural Models (Inner Model)

The structural model is evaluated through the R-square value (R^2). As a result, the R^2 value for learning motivation was 0.679, indicating that 67.9% of the variation in learning motivation was explained by participation in skills competitions and trainer quality. Meanwhile, an R^2 value for employee performance of 0.712, suggests that 71.2% of performance variation can be explained by participation in skills competitions, trainer quality and learning motivation. This value indicates the strength of the model that is in the moderate-strong category.

Table 8.
Test Results R Square (R²)

Variable	R-square	R-square adjusted
M (Learning Motivation)	0.679	0.676
Y (Employee Performance)	0.712	0.708

Source: Processed by researchers in 2025

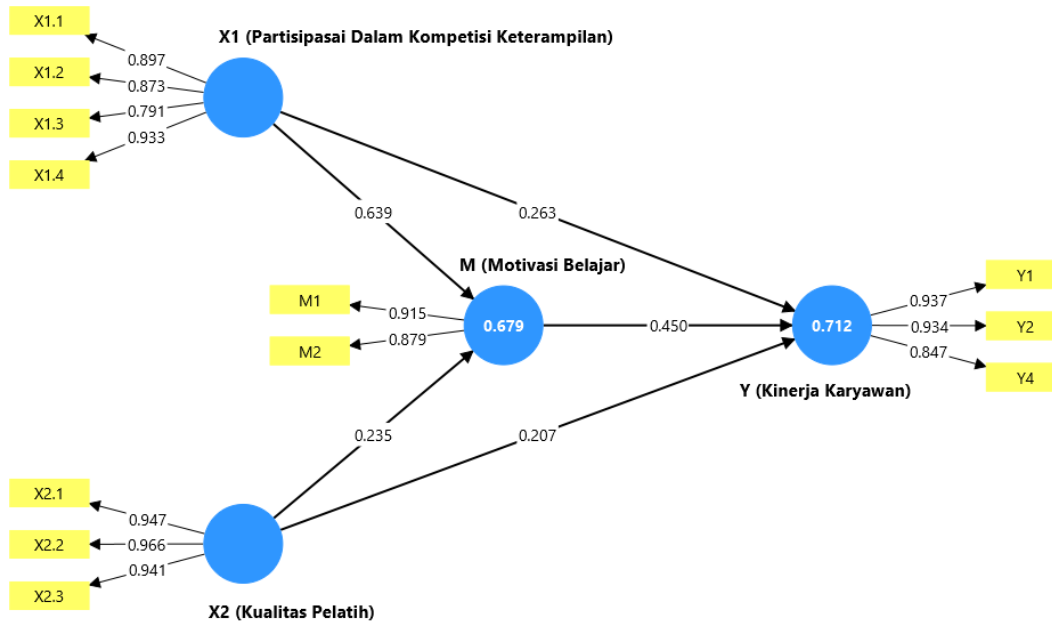


Figure 2.

Output model PLS SEM Algorithm

Source: Processed by researchers in 2025

4.5 Hypothesis Testing

Hypothesis tests were carried out to find out whether the relationships between latent variables in the structural model are statistically significant. The test was conducted using the bootstrapping method on SmartPLS 4.1.1.4 with a significance level of 0.05. The decision to accept or reject the hypothesis is determined based on T-statistical values (>1.96) and P-values (<0.05). The test results are shown in Table 9 and Table 10

Table 9.

Path Coefficient Bootstrapping

Path Coefficients	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	Hypothesis Conclusion
X1 (Participation in Skills Competition) -> M (Learning Motivation)	0.639	0.636	0.078	8.173	0.000	Accepted

X2 (Coach Quality) -> M (Learning Motivation)	0.235	0.239	0.087	2.697	0.004	Accepted
X1 (Participation in Skills Competition) -> Y (Employee Performance)	0.263	0.259	0.075	3.496	0.000	Accepted
X2 (Coach Quality) -> Y (Employee Performance)	0.207	0.208	0.062	3.326	0.000	Accepted
M (Learning Motivation) -> Y (Employee Performance)	0.450	0.452	0.070	6.463	0.000	Accepted

Source: Processed by researchers in 2025

Table 10.
Specific Indirect Effect

Path Coefficients	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	Hypothesis Conclusion
X1 (Participation in Skills Competition) -> M (Learning Motivation) -> Y (Employee Performance)	0.287	0.288	0.058	4.953	0.000	Accepted
X2 (Coach Quality) -> M (Learning Motivation) -> Y (Employee Performance)	0.106	0.109	0.044	2.396	0.008	Accepted

Source: Processed by researchers in 2025

Table 11.
Effect size (f²) Test Results

Variable	X1 (Participation in Skills Competition)	X2 (Trainer Quality)	M (Learning Motivation)	Y (Employee Performance)
X1 (Participation in Skills Competition)			0.617 (large)	0.072 (small)
X2 (Trainer Quality)			0.083 (small)	0.067 (Small)

M (Learning Motivation)	0.226
Y (Employee Performance)	(medium)

Source: Processed by researchers in 2025

a. The Effect of Participation in Skill Competitions on Learning Motivation

The results of the analysis showed that participation in skill competitions had a positive and significant effect on learning motivation (path coefficient = 0.639; T statistics = 8,173; P values = 0.000). This means that the higher the employee's involvement in the skills competition, the higher their motivation to learn and develop competencies.

These findings indicate that competitions designed based on real challenges and experiential learning serve as an intrinsic stimulus that encourages employees to master new skills and sharpen problem-solving skills in the workplace. This is in line with descriptive data, where the participation indicator with the highest mean is "acquiring new knowledge and experience" while in the learning motivation variable the highest indicator is "desire to improve one's abilities". This condition supports the Self-Determination Theory (SDT), that activities that provide autonomy, challenges and opportunities to demonstrate competence will strengthen intrinsic motivation. In line with that, studies (Deci et al., 2017; Deci & Ryan, 1985, 2000) Li et al. (2019) and also found that skills competitions improve participants' motivation to learn and job readiness through challenging experiences and performance-based tasks. Kurmankulov et al. (2020)

b. The Influence of Trainer Quality on Learning Motivation

The results of the analysis showed that the quality of the trainer had a positive and significant effect on learning motivation (path coefficient = 0.235; T statistics = 2,697; P values = 0.004). Thus, the higher the quality of the trainer in mastering the material, explaining clearly and providing constructive feedback, and building positive interpersonal relationships, the higher the learning motivation of the competition participants.

Theoretically, these results support the Self-Determination Theory (SDT) which places the trainer as a social factor that can meet the needs of the participants' competence and relatedness. A coach who is supportive, clear in instructions, and responsive in feedback will increase participants' sense of ability and psychological closeness, thus encouraging the birth of intrinsic motivation (Deci & Ryan, 1985; Won Scott, 2005; Ryan & Deci, 2000). Empirically, the indicator "trainer is able to explain the material clearly and easily understandable" has the highest mean in the trainer quality variable, a very high loading factor, reinforcing the importance of instructional clarity aspects. These findings are in line with Kirkpatrick's model at the reaction level, which places participant satisfaction with the trainer as a prerequisite for training success, and is supported by studies and which shows that the competence and support of the trainer contribute to increased motivation to learn (Donald L. Kirkpatrick & James D. Kirkpatrick, 2006) Escandell & Chu (2023) Wuttke et al. (2024)

c. The Influence of Learning Motivation on Employee Performance

The results of the analysis showed that learning motivation had a positive and significant effect on employee performance (path coefficient = 0.450; T statistics = 6,463; P values = 0.000). These findings confirm that the greater the motivation of employees to learn, the greater the performance of individuals in the manufacturing industry environment.

Within the framework of SDT, intrinsic motivation encourages higher engagement, perseverance and better quality of performance in work activities (Dec et al., 1999; Deci et al., 2017; Won Scott, 2005). Employees who are motivated to learn will be faster in mastering skills and improving weaknesses, and strive to achieve high standards of work. This is reflected in its high performance scores in the aspects of task performance and contextual performance, such as compliance with procedures, problem-solving skills and teamwork. From the perspective of transfer of training, learning motivation is a critical characteristic of participants to ensure that the skills of the training results are actually applied in the job (. The effect size value (f^2 (Baldwin et al., 2012) = 0.226) also showed that learning motivation was one of the strongest predictors of performance in this model. These results are in line with the findings and that learning motivation improves learning effectiveness, innovation ability and ultimately work performance. Odyssey et al. (2021) Zhang & Chen. (2021)

d. The Effect of Participation in Skill Competitions on Employee Performance

The results of the analysis showed that participation in the skills competition had a positive and significant effect on Employee Performance (path coefficient = 0.263; T statistics = 3,496; P values = 0.004). This shows that participation in competitions contributes quite strongly to improving employee performance.

Real task-based skills competitions, teamwork and performance evaluations encourage employees to actualize knowledge and skills in their work. This is reflected in the highest scores of performance indicators such as "compliance with regulations", "confidence in carrying out tasks", and "teamwork". In the perspective of SDT and Transfer of Training theory, competitions provide a context that strengthens competence and engagement, while hands-on practical experience and real-time feedback facilitate the transfer of skills to everyday work. Studies and also show that internal competition in organizations improves technical ability, adaptability and productivity. However, variations in occupational health-related indicators (e.g. overtime and fatigue complaints) indicate the need for workload management so that performance improvements do not pose a long-term risk to employee well-being. (Baldwin et al., 2012; Deci & Ryan, 1985; Ryan & Reeve, 2024) Smith et al. (2017) Kurmankulov et al. (2020)

e. The Influence of Trainer Quality on Employee Performance

The results of the analysis showed that the quality of trainers had a positive and significant effect on employee performance (path coefficient = 0.207; T statistics = 3.326; P values = 0.000). This shows that the higher the employee's perception of the quality of the trainer, the better the performance they will perform in the workplace.

Coaches who master the material, are able to explain clearly, provide specific and constructive feedback, and establish positive interpersonal relationships, help employees understand work standards, internalize best practices, and increase confidence in performing tasks. The Kirkpatrick model confirms that the quality of trainers affects learning and transfer, thus impacting changes in work behavior. In the perspective of RBV, competent trainers are part of strategic human capital that transfers tacit knowledge and competencies that are difficult to replicate. These findings support research and show that the quality of training and coaching is positively correlated with performance and career development. Although the effect size on performance is relatively small (0.067), the role of coaches is still crucial as a reinforcement of the effectiveness of competition and training programs in

companies. (Donald L. Kirkpatrick & James D. Kirkpatrick, 2006) (Barney, 1991) Singh et al.(2023) Wuttke et al. (2024)

f. The Role of Learning Motivation Mediation on the Effect of Participation in Skill Competitions on Employee Performance

The results of the analysis showed that learning motivation was shown to partially mediate the effect of participation in skill competitions on employee performance (indirect path coefficient = 0.287; T statistics = 4.953; P values = 0.000). This means that, skills competition not only improves performance directly but also through increased motivation to learn.

Theoretically, competitions that challenge and give space for autonomy strengthen the perception of participants' competencies, thereby triggering intrinsic motivation (. Higher motivation encourages employees to practice learning outcomes in daily tasks, from technical skills, work planning, problem-solving to teamwork, which in turn improves performance. In the transfer framework of training, it is shown that participation alone is not enough, learning motivation is a key mechanism that transforms the experience of competition into real performance, These findings are in line with studies finding that competition increases confidence, motivation, and skill mastery which then impacts performance, as well as research that confirms the mediating role of learning motivation in the relationship between training and performance. (Ryan & Deci, 2000) (Baldwin et al., 2012) Ricardo Stuart O'Neill Sifuentes et al. (2025) Odyssey et al. (2021)

g. The Role of Learning Motivation Mediation on the Influence of Trainer Quality on Employee Performance

The results of the analysis also showed that learning motivation partially mediated the influence of trainer quality on employee performance (path coefficient = 0.106; T statistics = 2,396; P values = 0.008). This indicates that learning motivation has a mediating role in the relationship between trainer quality and employee performance.

In the SDT perspective, a coach who is supportive, clear instructionally, and warmly interpersonally, helps meet the competency and connectedness needs of participants. The fulfillment of these needs strengthens intrinsic motivation, so that participants are encouraged to apply new skills in the work. These findings are in line with the transfer model of training that places coach quality as an important condition for transfer success. Empirically, these results are consistent with research that found that the quality of trainers affects the quality and outcomes of training through motivation, as well as findings that confirm the role of motivation in linking the quality of trainers to work outcomes. This strengthens the argument that investment in coach development will have a double impact, namely improving work performance directly while strengthening learning motivation as the foundation of long-term performance. (Ryan & Reeve, 2024) (Baldwin et al., 2012) Wuttke et al.(2024) (Nguyen & Ha, 2023)

CONCLUSION

This study concludes that participation in skills competitions and trainer quality are two strategic factors in improving employee motivation and performance in the manufacturing industry. Empirically, skills competition exerts the strongest influence on learning motivation, followed by the quality of the trainer. Learning motivation has been proven to be a psychological mechanism that bridges the relationship between these two

variables and employee performance. These findings show that competition-based learning and quality instruction can strengthen intrinsic motivation, accelerate the transfer of skills to work, and significantly improve work performance.

In addition to making an empirical contribution at the company level, the results of this study also have broader theoretical implications. First, this study strengthens the Self-Determination Theory (SDT) with evidence that structured competitions and coach support can meet the needs of employee autonomy, competence and relatedness. Second, this study provides reinforcement for the theory of Transfer of Training by showing that learning motivation is the main prerequisite for skill transfer to real work performance. Third, the results of the study add evidence to the Resource-Based View (RBV) theory that technical competence, superior coaches and learning motivation are strategic resources that support the competitive advantage of the organization.

This conclusion also has relevance in the context of organizational phenomena facing labor efficiency pressures. The findings that motivation and performance can be improved through skill competition provide a scientific explanation for why companies such as PT Pabrik Kertas Tjiwi Kimia Tbk can increase manpower productivity despite a reduction in the number of employees. These findings open up opportunities for other companies to use skills competition as a cost-effective but impactful HR development strategy.

Thus, this research not only solves the research gap related to skill competition in the industrial sector, but also provides a new basis for the development of competition-based training models that can be adopted in various other job domains. Follow-up questions that need to be explored in future research include how the effects of competition develop over the long term, how motivational dynamics change in the next cycle of competition, and how organizational factors such as work culture or leadership play a role in reinforcing the effects of competition on performance.

Practical Recommendations

- Develop a more structured and learning-oriented skills competition design, not just a competition. This can be combined with internal technical certification activities so that participants who take part in the certification can be more motivated and can accelerate the learning process. The competition design includes the provision of coaching clinics, reflection sessions and standardized feedback.
- Strengthening the trainer development program. The main focus is on pedagogical skills, micro-teaching, coaching, effective communication and dynamic management of training classrooms.
- Integrating the results of competitions and training into Key Performance Indicators (KPIs), thereby strengthening productive work behavior and continuous learning.
- Strengthening occupational health management during the competition, considering the findings of work pressure and potential fatigue in some participants.
- Expanding the area and level of skill competition not only to Tjiwi Kimia mill but to other mills in one group. So that participants are more motivated and can compare their skill levels with other subsidiaries.

Recommendations for further research

- Using the mixed methods method, Ags gained a deeper understanding of the dynamics of motivation and experience of competition participants

- Add new variables such as self-efficacy, job engagement, or organizational support to see how other psychological dynamics play a role.
- Extend the research object to other manufacturing companies to test the generalization of the model.
- Combine performance objective data (e.g. OEE, reject rate, productivity index) to strengthen the analysis of work behavior.

REFERENCES

- Abbasi, M., Monazzam, M. R., Karanika-Murray, M., Shamsipour, M., & Arabalibeik, H. (2022). *Development and validation of an individual job performance questionnaire (IJPQ)*. *Work*, 73(1), 309–320. <https://doi.org/10.3233/WOR-211004>
- Aguinis, H., & Kraiger, K. (2009). *Benefits of training and development for individuals and teams, organizations, and society*. In *Annual Review of Psychology* (Vol. 60, pp. 451–474). <https://doi.org/10.1146/annurev.psych.60.110707.163505>
- Ali Memon, M., Ting, H., Cheah, J.-H., Thurasamy, R., Chuah, F., & Huei Cham, T. (2020). *Journal of Applied Structural Equation Modeling SAMPLE SIZE FOR SURVEY RESEARCH: REVIEW AND RECOMMENDATIONS*. In *Journal of Applied Structural Equation Modeling* (Vol. 4, Issue 2).
- Andaryanto, & Noviarkahman Zagladi, A. (2024). *The Effect of Skill Competition on Employee Learning Motivation in Manufacturing Companies with Coach Quality as a Moderator Variable*. *International Journal Of Humanities Education And Social Sciences (IJHESS)*, 4(4). <https://ijhess.com/index.php/ijhess/>
- Apriandi, D., Retnawati, H., & Abadi, A. M. (2022). *Construct Validity and Reliability of the Learning Motivation Questionnaire*. *TEM Journal*, 11(4), 1494–1499. <https://doi.org/10.18421/TEM114-09>
- Baldwin, T. T., Ford, J. K., & Blume, B. D. (2012). *Transfer of Training 1988-2008: An Updated Review and Agenda for Future Research*. In *International Review of Industrial and Organizational Psychology 2009* (Vol. 24, pp. 41–70). John Wiley and Sons Ltd. <https://doi.org/10.1002/9780470745267.ch2>
- Barney, J. (1991). *Barney, J.* <https://doi.org/https://doi.org/10.1177/014920639101700108>
- Borman, W. C., & Motowidlo, S. J. (1997). *Task performance and contextual performance: The meaning for personnel selection research*. *Human Performance*, 10(2), 99–109. https://doi.org/10.1207/s15327043hup1002_3
- Burguillo, J. C. (2010). *Using game theory and Competition-based Learning to stimulate student motivation and performance*. *Computers and Education*, 55(2), 566–575. <https://doi.org/10.1016/j.compedu.2010.02.018>
- Campbell, J. P., & Wiernik, B. M. (2015). *The Modeling and Assessment of Work Performance*. In *Annual Review of Organizational Psychology and Organizational Behavior* (Vol. 2, pp. 47–74). Annual Reviews Inc. <https://doi.org/10.1146/annurev-orgpsych-032414-111427>
- Creswell, J. W. (2018). *Research design* (Fifth Edition).
- Dec, E. L., Ryan, R. M., & Deci, E. L. (1999). *A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation*. In *Psychological Bulletin* (Vol. 125, Issue 6).

- Dice, E. L. (1972). *The Effects of Contingent and Noncontingent Rewards and Controls on Intrinsic Motivation*. In *AI-CE (Vol. 8)*.
- Deci, E. L., Olafsen, A. H., & Ryan, R. M. (2017). *Self-Determination Theory in Work Organizations: The State of a Science*. Downloaded from *Www.Annualreviews.Org*. Guest, 4, 40. <https://doi.org/10.1146/annurev-orgpsych>
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic Motivation and Self-Determination in Human Behavior*.
- Deci, E. L., & Ryan, R. M. (2000). *The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior*. *Psychological Inquiry*, 11(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01
- DeVellis. (2017). *DeVellis, R. F. (2017). Scale development Theory and applications (4th ed.)*. SAGE Publications.
- Donald L. Kirkpatrick, & James D. Kirkpatrick. (2006). *EVALUATING TRAINING PROGRAMS*.
- Dwyer, J. J. M. (1992). *INTERNAL STRUCTURE OF PARTICIPATION MOTIVATION QUESTIONNAIRE COMPLETED BY UNDERGRADUATES*. In *O Psychological Reports (vol. 70)*.
- Escandell, S., & Chu, T. L. (2023). *Implementing Relatedness-Supportive Teaching Strategies to Promote Learning in the College Classroom*. *Teaching of Psychology*, 50(4), 441–447. <https://doi.org/10.1177/00986283211046873>
- Fatmasari Wijayanti, & Retno Titi Sari. (2023). *THE INFLUENCE OF COMPETENCY ON EMPLOYEE PERFORMANCE: (A LITERATURE REVIEW)*. *International Journal of Accounting, Management, Economics and Social Sciences (IJAMESC)*, 1(6), 920–931. <https://doi.org/10.61990/ijamesc.v1i6.118>
- Gagné, M., & Deci, E. L. (2005). *Self-determination theory and work motivation*. *Journal of Organizational Behavior*, 26(4), 331–362. <https://doi.org/10.1002/job.322>
- Garcia, T., & Pintrich, P. R. (1996). *Assessing Students' Motivation and Learning Strategies in the Classroom Context: The Motivated Strategies for Learning Questionnaire*. In *Alternatives in Assessment of Achievements, Learning Processes and Prior Knowledge (pp. 319–339)*. Springer Netherlands. https://doi.org/10.1007/978-94-011-0657-3_12
- GILL, D. L. , G. J. B. , & H. (1983). *Participation motivation in youth sports*. *International Journal of Sport Psychology*, 1–14.
- Hair, J. F. ., Hult, G. T. M. ., Ringle, C. M. ., & Sarstedt, Marko. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage.
- Isbahi, M. B., Zuana, M. M. M., & Toha, M. (2024). *The Multi-Social Relation of the Cattle Industry in the Plaosan Subdistrict Animal Market of Magetan Regency*. *Malacca: Journal of Management and Business Development*, 1(1), 31–46. <https://doi.org/10.69965/malacca.v1i1.51>
- Khasawneh, S., & Al-Zawahreh, A. (2015). *Using the training reactions questionnaire to analyze the reactions of university students undergoing career-related training in Jordan: A prospective human resource development approach*. *International Journal of Training and Development*, 19(1), 53–68. <https://doi.org/10.1111/ijtd.12047>
- Kolb, D. A. (1984). *Experiential Learning: Experience As The Source Of Learning And Development*. <http://www.learningfromexperience.com/images/uploads/process-of-experiential-learning.pdf>

- Koopmans, L., Bernaards, C. M., Hildebrandt, V. H., De Vet, H. C. W., & Van der Beek, A. J. (2014). *Construct validity of the individual work performance questionnaire*. *Journal of Occupational and Environmental Medicine*, 56(3), 331–337. <https://doi.org/10.1097/JOM.000000000000113>
- Kurmankulov, A., Ramatullayev, S., & Sidorov, D. (2020). *Development of young engineers in a company through organization of internal competitions*. <https://www.scopus.com/record/display.uri?eid=2-s2.0-85096560070&origin=scopusAI>
- Li, C., Huang, J., Wang, J., Yang, J., & Tian, G. (2019). *Study and Practice on Skills Competition Help Vocational Education Students Growing up*. *IOP Conference Series: Materials Science and Engineering*, 573(1). <https://doi.org/10.1088/1757-899X/573/1/012073>
- Martini, I. A. O., Gorda, A. A. N. E. S., Gorda, A. A. N. O. S., Sari, D. M. F. P., & Antara, M. E. Y. (2024). *Impact of competence development, on work creativity, employee performance, and competitiveness of woven products*. *Cogent Business and Management*, 11(1). <https://doi.org/10.1080/23311975.2024.2353136>
- Nguyen, C. M. A., & Ha, M. T. (2023). *The interplay between internal communication, employee engagement, job satisfaction, and employee loyalty in higher education institutions in Vietnam*. *Humanities and Social Sciences Communications*, 10(1). <https://doi.org/10.1057/s41599-023-01806-8>
- Oktobisono, A., Eryanto, H., Ketut, I., & Sudiardhita, R. (2021). *The Effect of Training and Competence on the Performance of PT Triputra Agro Persada Employees Through Motivation As A Mediation Variable*.
- Ricardo Ipina Sifuentes, Guillermo M. Chans, & Vianney Lara-Prieto. (2025). *Enhancing STEM Student Learning: Exploring the Impact of International Science Competitions*.
- Ronald B. Morgan, & Wendy J. Casper. (2012). *Examining the factor structure of participant reactions to training: A multidimensional approach*. *Human Resource Development Quarterly*. [https://doi.org/https://doi.org/10.1002/1532-1096\(200023\)11:3<301::AID-HRDQ7>3.0.CO;2-P](https://doi.org/https://doi.org/10.1002/1532-1096(200023)11:3<301::AID-HRDQ7>3.0.CO;2-P)
- Rotundo, M. (2002). *The relative importance of task, citizenship, and counterproductive performance to global ratings of job performance: a policy-capturing approach*. *The Journal of Applied Psychology*, 87(1), 66–80. <https://doi.org/10.1037/0021-9010.87.1.66>
- Ryan, R. M., & Deci, E. L. (2000). *Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being self-determination theory*. Ryan. <https://doi.org/https://doi.org/10.1037/0003-066X.55.1.68>
- Ryan, R. M., & Reeve, J. (2024). *Intrinsic motivation, psychological needs, and competition: a self-determination theory analysis*. In *The Oxford handbook of the psychology of competition*. (pp. 240–283). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780190060800.001.0001>
- Sarstedt, M., Ringle, C. M., & Hair, J. F. (2021). *Partial Least Squares Structural Equation Modeling*. In *Handbook of Market Research* (pp. 1–47). Springer International Publishing. https://doi.org/10.1007/978-3-319-05542-8_15-2
- Sekaran, U., & Bougie, R. (2016). *Research methods for business*. www.wileypluslearningspace.com

- Singh, I., Kumar, S., & Panchal, J. J. (2023). *Employee Training and Development Enhancing Employee Performance-A Study*. <https://www.researchgate.net/publication/373775939>
- Smith, C., Fixson, S. K., Paniagua-Ferrari, C., & Parise, S. (2017). *The evolution of an innovation capability: Making internal idea competitions work in a large enterprise*. *Research Technology Management*, 60(2), 26–34. <https://doi.org/10.1080/08956308.2017.1276388>
- Tannenbaum, S. I., & Yukl, G. (1992). *Training and development in work organizations*. *Annual Review of Psychology*, 43(1), 399–441. <https://doi.org/10.1146/annurev.ps.43.020192.002151>
- Wright, P. M., Dunford, B. B., & Snell, S. A. (2001). *Human resources and the resource based view of the firm*. *Journal of Management*, 27(6), 701–721. <https://doi.org/10.1177/014920630102700607>
- Wuttke, E., Heinrichs, K., Koegler, K., & Just, A. (2024). *How training quality, trainer competence, and satisfaction with training affect vocational identification of apprentices in vocational education programs*. *Frontiers in Psychology*, 15. <https://doi.org/10.3389/fpsyg.2024.1200279>
- Yu, C. P., Zhang, Z. G., & Shen, H. (2017). *The effect of organizational learning and knowledge management innovation on SMEs' technological capability*. *Eurasia Journal of Mathematics, Science and Technology Education*, 13(8), 5475–5487. <https://doi.org/10.12973/eurasia.2017.00842a>
- Zhang, G., & Chen, C. (2021). *A study on the relationship between learning motivation and learning effectiveness of personnel based on innovation capability*. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.772904>