

THE EFFECT OF HUMAN RESOURCE DEVELOPMENT ON EMPLOYEE WORK PRODUCTIVITY IN MEDAN CITY

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ABSTRACT

This study examines the effect of human resource development on employee work productivity in Medan City. A quantitative explanatory design was employed. Human resource development was measured through education, training, career development, and organizational learning, while work productivity was measured through output quantity, quality, timeliness, efficiency, and work effectiveness. For manuscript-development purposes, the statistical results use an illustrative dataset of 160 employees selected through proportional purposive sampling. Data were analyzed using validity and reliability tests, classical assumption tests, simple linear regression, t-test, and coefficient of determination. The illustrative results show that human resource development has a positive and significant effect on work productivity ($\beta = 0.693$; $t = 11.71$; $p < 0.001$) and explains 47.7% of productivity variance. Training relevance, equal access to development, career clarity, and continuous learning are the main managerial priorities. The statistical values must be replaced with verified field-survey results before journal submission.

Keywords: Employee Productivity; Human Resource Development; Medan; Quantitative Research; Training

INTRODUCTION

The city of Medan is the center of trade, service, transportation, accommodation, and industry activities in North Sumatra. Economic growth and technological changes in 2024 will increase companies' demands on productivity, service quality, and the ability of employees to adapt. In these conditions, the company's excellence is not only determined by capital and technology, but also by the ability of the organization to develop the knowledge and skills of its workforce. Work productivity shows a comparison between the results achieved and the resources used. Productivity is reflected in the quantity and quality of output, punctuality, efficiency, and work effectiveness. Competency gaps, irrelevant training, unclear career paths, and limited learning in the workplace can reduce employees' ability to achieve targets. Therefore, human resource development needs to be placed as a strategic investment.

HR development includes education, training, career development, coaching, and organizational learning. Human capital theory explains that investment in knowledge and skills increases the productive capacity of individuals. Previous research has also shown that HR development practices are positively related to performance and productivity through increased competence and job satisfaction (Siddique et al., 2022; Abdullahi et al., 2024). This study aims to analyze the influence of human resource development on employee work productivity in companies in Medan City in 2024. The research makes a practical contribution in the form of a basis for determining the priorities of development programs that can be linked to productivity indicators.

LITERATURE REVIEW

Human Resource Development

Human resource development is a planned process to improve employee competence, capabilities, and readiness through education, training, career development, and organizational learning. An effective program begins with a needs analysis, is designed according to the work, is implemented inclusively, and is evaluated based on changes in behavior and work outcomes. Human capital theory views development costs as investments that generate economic value through increasing productive capacity (Becker, 1993).

Employee Work Productivity

Work productivity is the ability to produce outputs effectively and efficiently by paying attention to quantity, quality, timeliness, and resource use. Productivity differs from just work intensity because it emphasizes the value of output relative to input. In this study, productivity is measured through the quantity of results, quality, timeliness, efficiency, and work effectiveness.

Relationship between Human Resource Development and Work Productivity

Education strengthens the foundation of knowledge, training enhances relevant skills, career development encourages motivation to learn, and organizational learning accelerates the dissemination of best practices. When these programs are tailored to the needs of the job, employees can reduce errors, speed up processes, improve quality, and use resources more efficiently. Empirical evidence shows employee competence is an important mechanism in the relationship between HR practices and company performance (Siddique et al., 2022).

Based on theoretical foundations and empirical evidence, the research hypothesis is formulated as follows:

H1: Human resource development has a positive and significant effect on the work productivity of employees in the city of Medan.

METHOD

The study uses an explanatory quantitative approach with a cross-sectional design. The analysis unit is an employee of companies in the trade, services, transportation, accommodation, and industrial sectors in the city of Medan. Respondents were assigned as many as 160 permanent employees with a minimum working period of one year through proportional purposive sampling. Since raw survey data is not provided, respondent numbers and statistical results in this manuscript are consistent simulation data to demonstrate the format of the analysis; All figures must be replaced with field output prior to publication.

The instrument uses a Likert scale of 1–5. Human resource development (X) is measured by 16 statements on the dimensions of education, training, career development, and organizational learning. Work productivity (Y) is measured by 10 statements regarding quantity, quality, punctuality, efficiency, and effectiveness. Validity using corrected item-total correlation > 0.30 and reliability using Cronbach's alpha > 0.70 . The analysis included descriptive statistics, validity tests, reliability, residual normality, heteroscedasticity, simple linear regression, t-test, and determination coefficients. The research model is $Y = \alpha + \beta X + \varepsilon$. The hypothesis is accepted if the significance value < 0.05 .

Table 1. Operational Definition of Variables

Variable	Dimensions	Indicators	Scale
HRD (X)	Education	Knowledge and job-related insight	Likert 1–5
	Training	Needs, relevance, application	Likert 1–5
	Career development	Career clarity, mentoring, promotion	Likert 1–5
	Organizational learning	Knowledge sharing, continuous learning	Likert 1–5
Work Productivity (Y)	Output and efficiency	Quantity, quality, timeliness, efficiency, effectiveness	Likert 1–5
Employee Performance (Y)	Task and contextual performance	Quality, quantity, timeliness, effectiveness, teamwork	Likert 1–5

RESULTS AND DISCUSSION

Respondent Characteristics

The illustrative data consisted of 160 respondents from several company sectors in Medan City. The majority of respondents are in the productive age group and have a working period of 1-5 years, so they are considered able to evaluate development programs and changes in productivity in their work.

Table 2. Illustrative Respondent Profile

Characteristic	Category	Frequency	Percentage
Gender	Male	83	51.9
	Female	77	48.1
Age	≤25 years	31	19.4
	26–35 years	73	45.6
	36–45 years	40	25.0
	>45 years	16	10.0
Tenure	1–5 years	88	55.0
	6–10 years	48	30.0
	>10 years	24	15.0

Instrument Quality and Descriptive Statistics

All items in the illustrative data have a corrected item-total correlation of 0.401–0.776. Cronbach's alpha of human resource development is 0.924 and work productivity is 0.881. The average human resource development is 3.76, while work productivity is 3.85. The career development dimension has the lowest average, which shows the need for clearer career paths and promotion criteria.

Table 3. Reliability and Descriptive Statistics (Illustrative)

Variable	Items	Cronbach's Alpha	Mean	Std. Deviation
Human Resource Development	16	0.924	3.76	0.58
Work Productivity	10	0.881	3.85	0.54

Regression and Hypothesis Testing

The residual model met the normality assumption (Kolmogorov–Smirnov $p = 0.200$) and did not show a pattern of heteroscedasticity. The regression coefficient of human resource development has a positive value of 0.715. The value of $t = 11.71$ with $p < 0.001$ showed a significant influence. Adjusted R^2 of 0.477 means that human resource development explains 47.7% variation in work productivity; The rest is influenced by technology, leadership, work environment, motivation, and individual characteristics.

Table 4. Simple Linear Regression Results (Illustrative)

Predictor	B	Std. Error	Beta	t	Sig.
Constant	1.167	0.226	–	5.16	<0.001
Human Resource Development	0.715	0.061	0.693	11.71	<0.001

Model Summary: $R = 0.693$; $R^2 = 0.480$; Adjusted $R^2 = 0.477$; $F = 137.12$; Sig. < 0.001.

Discussion

Illustrative findings support H1 that human resource development has a positive and significant effect on work productivity. Development programs enhance knowledge and skills that help employees complete work faster, more accurately, and more resource-efficiently. These results are in line with human resource development research that shows a positive relationship with performance through increased competence and job satisfaction (Abdullahi et al., 2024).

Companies in Medan City need to start from mapping competency gaps, compiling training based on position needs, and evaluating the implementation of training results. Access to development must be equitable, while career development needs to be equipped with competency standards, promotion mechanisms, mentoring, and feedback. The use of digital learning can expand access, but it needs to be combined with work practices, coaching, and process improvement projects. Program effectiveness should be monitored through productivity indicators such as hourly output, error rate, turnaround time, costs, and internal and external customer satisfaction.

CONCLUSION

Research concludes that human resource development has a positive and significant effect on the work productivity of employees in the city of Medan. Illustrative data yielded $\beta = 0.693$, $t = 11.71$, $p < 0.001$, and Adjusted $R^2 = 0.477$. Integrated education, training, career development, and organizational learning have the potential to increase the quantity, quality, timeliness, efficiency, and effectiveness of work. Companies are advised to conduct competency needs analysis, prioritize relevant training, clarify career paths, and measure the impact of the program on productivity. The main limitation of the manuscript is the use of simulation data. The next study needs to use actual surveys, probability sampling, longitudinal design, and mediating variables such as competence or job satisfaction.

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