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The Impact of Japanese Management Practices on Firm's Resource – Performance Relationship

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Abstract

The factors that motivated this study include (1). Empirical studies that examine the role of overall major resources (organizational, technological, financial, and human resources) on a firm's performance and growth are lacking, (2). The dearth of empirical research has analyzed the role of Japanese management practices (operational and human resources) in a resource-performance relationship. Data collection involved distributing mail questionnaires to the CEOs of large manufacturing companies in Indonesia. Eighty-two large manufacturing companies participated in this study. From the hypothesis testing, this study highlights five main findings. First, the firm's resources positively influence the five performance indicators. This indicates that performance could be improved by utilizing advanced technology, natural resources, a skilled workforce, and adopting quality management practices. Second, operation-related practices moderate the influence of HR and organizational resources on financial performance. However, the influence of human resources on both performance indicators will be higher if the company emphasizes operation-related practices less. However, a higher emphasis on operation-related practices increases the influence of advanced manufacturing technology (AMT) and material resources on financial and operational performance. Third, human resource practices moderate AMTs, HR, and organizational resources in terms of financial performance, operational performance, and growth.

Keywords: Japanese management practices, firm's resources-performance relationship, Indonesian manufacturing companies

Background of the Study

Indonesian companies have experienced difficulties maintaining business sustainability since the Covid-19 pandemic happened in early March 2020 and resulted in many companies going bankrupt and requiring more time to fully recover fully (Tosepu et al., 2020). Furthermore, companies face other challenges such as limited resources that lead to difficulties in acquiring sufficient high-quality material resources. Some suppliers may have low or high-quality materials, causing uncertainties in product and service quality. Moreover, developing countries, such as Indonesia experience a lack of skilled and expert employees and insufficient sophisticated technologies, affecting the company's competitiveness. Insufficient knowledge, business management literature, and studies on problems in the manufacturing sector caused these issues to be unresolved (Nambiar et al., 2019). It is evidenced by resource management, strategies, and environmental issues.

Indonesia has a close relationship with foreign entities in many areas. From economic and business perspectives, Indonesia is a potential market for Japanese, European, ASEAN, Asian, and American companies. For example, many Japanese products can be found in almost any place in Indonesia, such as automobiles, electronics, machinery, animation films, and other advanced technologies used in house and business activities. Some Japanese firms (subsidiaries) and joint ventures also operate their businesses

geographically in Indonesia. Japan also imports commodities from Indonesia and vice versa. Commodity flow relationships between Japan and Indonesia significantly contribute to the economic development of both countries.

Commodities from Korea, China, and Taiwan have entered the Indonesian market. Although they have a small market share, they are inhibitors of Japanese commodities. Therefore, it is interesting to investigate how Japanese, other Asian countries, European, American, and Indonesian firms maintain their relationships in the long run. Many Indonesian firms have adopted modern management styles and techniques. Modern management styles and techniques enrich management practices in Indonesian businesses. However, no study has investigated whether modern management styles and techniques are superior to other techniques and practices for improving companies' performance. One of the most interesting aspects of Japanese management is how the decisions are made (Ali & Rana, 2017; Connioglu, 2020). In addition to the previous issues, the law regulations in Indonesia and other countries also significantly impact the resource-performance relationship. For example, the more vague the laws and regulations, the higher the cost of economics, which leads to a decrease in companies' performance. This phenomenon often appears in taxes and fees during customs duties.

The research gap in this study can be explained that in the logic of resource-based thinking, an organization's dynamic capabilities (DC) are a powerful collection of specific resources and activities, and as a consequence, the understanding of

strategy changes from a long-term plan to a process that shapes the organization's ongoing development ((Sprafke et al., 2012)). DC is a positive function of the appropriate dynamic capabilities of individual and collective roles in the organization ((Teece et al., 1997)). This can be reduced to a managerial practice that includes managerial perception, rationality, and proactivity as factors that influence the deployment of DC which in turn will create a competitive advantage (Ambrosini & Bowman, 2009).

Regarding managerial practices in this study, the focus is on Japanese managerial practices which are widely implemented in several countries such as Total Quality Management, Just In Time System, and Total Productive Maintenance which are categorized as practices related to operating systems and practices, related to HR management related to leadership and employee participation. So far, studies related to the role of organizational resources have been carried out partially, such as studies regarding the role of technology in improving unit performance (Ezuma et al., 2019; Do et al., 2023). Hossain, 2020; Owusu et al., 2021), as well as the role of human resources on performance (Marsal, 2020; Jeet & Aspal, 2021). where the results show are inconclusive.

This research seeks to narrow the gap by building a more comprehensive framework by examining various organizational resources (financial, technological, and human resources) as well as considering Japanese managerial practices adopted, both practices related to operations and related practices. with Japanese management style. The main research questions that will be investigated in this study are: Do the Japanese management style and techniques relevant to improving the company's resource-performance relationship?

Concept of The Research Project

The Basic Theory of the Study

In terms of dynamic change, companies need to respond to environmental changes quickly and efficiently. This concept leads to the dynamic notion of capabilities. Dynamic capabilities refer to a company's ability to integrate, build, and reorganize internal and external competencies to address a rapidly changing environment. This theory also involves developing strategies for businesses to deal with extreme changes while keeping capability standards minimum to ensure competitive viability ((Teece et al., 1997)).

According to (Teece et al., 1997), dynamic capabilities consist of three components: 1) sensing (which includes recognizing and assessing opportunities outside the organization), 2) adapting (which means mobilizing resources to exploit those opportunity resources), and 3) change (continuous renewal). Companies can use dynamic capabilities to adapt and achieve strategic goals by reorganizing internal and external resources and capabilities to develop technology, adapt to changing customer behavior, and ultimately, outperform competitors.

(Mrugalska & Ahmed, 2021) analyze how dynamic capabilities consist of adaptive, absorptive, and innovative skills. These three elements are skills that businesses today must have. Companies can build and enhance dynamic capabilities of competitive advantage in a rapidly changing environment.

The Motivation of the Research

This study is encouraged by the following factors:

Empirical studies that investigate the role of overall major resources (organizational, technological, financial, and human resources) on a firm's performance and growth are lacking.

The dearth of empirical research analyzes the role of Japanese management practices (operational and human resources) in resource-performance relationships.

Research Significance

This study is expected to contribute to theoretical and practical strategic, human resources, operation management, and resource-based theory in the manufacturing industry. In line with its theoretical significance, this study aimed to enhance the current literature by addressing three issues. First, it investigates the role of Japanese management practices (techniques) in increasing firm performance and growth. Second, it investigates the impact of resources (technology, human resources, and organizational resources) on a firm's performance and growth. In addition, this study document firm's resources, the extent of Japanese management practices, and the activities of manufacturing firms in Indonesia. This study aims to provide a framework for Japanese management techniques concerning firms' resources in business organizations. The results may facilitate practicing managers to formulate management decisions concerning Japanese management techniques and firms' resources, and identify contextual factors.

Literature Review

Firm's Resources-Performance Relationship

Financial Resources. These are sources of funds, including short-and long-term debt, bonds, stocks, and hybrid financing. Fund sources are important in developing countries that require capital to exploit new products, processes, and technologies awarded by markets. Generating new competitive advantages may be a key to long-term prosperity (Hossain, 2020; Owusu et al., 2021).

Technology. In this study, technology is concentrated on computer-based and advanced manufacturing technologies. These types of technologies have been confirmed to positively impact the manufacturing performance of the business unit (Ezuma et al., 2019; Do et al., 2023). Computer-based and AMT are classified into (1) product design; (2) advanced manufacturing; and (3) planning, administering, and controlling activities. This means that hardware-based technology is used to design, manufacture, and administer all activities required to create a product or supply service (Taank&Jarial, 2020).

Adopting new and advanced technology (AMT) is important for current business expansion and market globalization. Manufacturing companies and highly competitive sectors must be aware of and adopt innovations. This includes adopting innovation changes, such as AMT, which is important for a company's competitiveness and survival (Díaz-Reza et al., 2019). Furthermore, firms could lose their competitive advantage when they lack commitment and do not invest in R&D.

The literature proves that AMT is beneficial for both large

and small firms. Small and medium-sized firms become more competitive by affecting technological changes in planning and product improvement (Taank&Janial, 2020). Customer needs in global markets are responded to by manufacturing firms adopting AMT, it may help small firms become competitive by meeting increasing customer demands using new tools and techniques. Furthermore, firms using AMT are different from traditional technology firms because their product and process precision is higher, and they can easily adopt advanced production technologies and management techniques.

Organizational Resources. Organizational resources comprise a companies' internal reporting, coordination, and relationships with other firms (Sabourin, 2020). Several studies have shown that internal relationships can significantly impact company's performance (Chigara, 2021; Hidayat et al., 2022). Internal employee relationships range from highly formalized to highly coordinative. Formalized relationships are inflexible, hierarchical, and tightly controlled, as opposed to informal, flexible, and decentralized coordinative relations. According to previous studies, informal internal relationships are positively related to a firm's performance. Management can learn and work collaboratively and effectively in a coordinated environment. Since the business environment in Indonesia is rapidly changing, companies need informal and coordinative relationships to exchange market information and adjust to-changing needs quickly. Flexible structures and connections allow firms to react rapidly to dynamic conditions (Braganca et al., 2020). Therefore, a flexible internal relationship may help a company to respond to-changing conditions and achieve superior performance.

A firm's growth and success depend on external relationships that help offset internal weaknesses (Ellitan, 2017a). Good external relationships with suppliers, distributors, and customers are connected to cooperation and the company's performance. Relationships and networks are important for business success and long-term organizational cooperation.

Human Resource/Labor. The intangible resources concept and enumeration indicate that human skills, know-how, and talent are intangible resources. However, the intangible role of human resources in strategic management has rarely been identified and hardly structured. The abilities and skills of human resources are essential for a firm's success, however, they encounter acquisition (Marsal, 2020; Jeet &Aspal, 2021). An enterprise that offers higher compensation and career growth programs may attract human resources because they are strategic. Human resources might generate functional and cultural capabilities because of capabilities, values, experience, and company integration (Urban, 2022). Therefore, human resources can construct or maintain a competitive benefit through competency growth and knowledge transfer, appropriate for resource-based theory.

H1: A company's resources have a positive impact on its performance.

Moderating Impact of Japanese Practices and Activities Related to Japan Operational related practices (Japanese Management Techniques).

Japanese management refers to the practical characteristics of Japanese companies (Diefenbach, 2015; Westney, 2020). Many empirical studies have investigated the impact of management practices, such as Total Quality Management (TQM), Total Productive Maintenance (TPM),

Manufacturing Resource Planning (MRP), Just In Time (JIT), and benchmarking on a firm's performance. Effective practices, such as TQM, benchmarking, and process reengineering, improve organizational productivity, profitability, and customer satisfaction (Ito, 2021; Fujimoto et al., 2022; Endo & Kamei, 2022).

Competitive costs and quality might not be realized without advanced technologies and the adoption of modern management. It was found that JIT and TQM were not strongly powerfully associated with cost reduction and dependability. However, these technologies increase employees' morale and flexibility by reducing new product development time. Pan et al (2022) investigate the effect of TQM, JIT, and AMT on performance. Production can be streamlined using successive incremental techniques by eliminating non-value-added activities. In advanced manufacturing technology, capital investment is linked to performance quantum leap. According to most studies, management practices positively influence companies' performance practices, although some studies show contradictory findings. For instance (Ghazi et al., 2020) found that companies performance is not affected by JIT as well as study conducted by (Rasit et al., 2018), while Burgess et al. (1998) cited in (Turkmen, 2016) showed no significant relationship between soft technology, such as TQM, JIT, and MRP, sales, and market shares. TQM increases the cost of quality (Ghakarani et al., 2013), which means that the cost of correcting the poor is more explicit and tangible.

H2: The higher the extent of Japanese management technique implementation, the higher the resource effect on companies' performance.

Human resource-related practices (Japanese management style).

Human capital is an important part of a firm's resources and is considered key component ingredient of organizational success and failure (Dash & Roy, 2020; Balian et al., 2020; Ullah et al., 2022), including company innovation performance. It is necessary to understand the role of human capital in supporting innovation and resource management (HRM) practices that improve performance. Although human resources are considered the most important asset, few organizations harness their potential (Dahlah, 2023).

There are three major human resource management practices that reflect the Japanese management style: leadership, employee commitment, and reward system. (i) Leadership. Japanese management system recognizes how top management creates the goals, values, and systems that navigate continuous performance progress (Wahjudono, Ellitan, and Widjanarko, 2013). The Japanese management literature shows that top management's strong commitment is vital, and lack of commitment is a reason for a firm's failure. The Japanese management style is characterized by high management commitment and involvement in enhancing the quality of management and strongly encouraging employee involvement. (ii) Employee participation. When employees participate in management improvement, they learn and realize management benefits and obtain a sense of accomplishment through problem-solving. Participation inspires management improvement (Anis et al., 2018) through improved capabilities, increased self-respect, and commitment to organizational success. Higher employee participation reflects the Japanese management style. Participation contributes to the establishment of a culture of company-wide involvement. (iii)

Recognition and Reward. Management improvement programs involve improving performance recognition by an individual, section, department, or division within the company. The te and individuals were identified and awarded for their excellent performance. To effectively sustain organizations' management improvement steps in Japanese management practices, companies need to implement a clear employee compensation system. Employee commitment to management improvement is effectively stimulated by recognition and reward activities. Improving working conditions, salary, monetary and non-monetary compensation, promotion, and financial awards for outstanding recommendations are good recognition and reward methods.

H3: The higher the extent of Japanese management style implementation, the higher the impact of a firm's resources on the company's performance.

The Relationship between Firm Performance and Firm Growth

This study examines the effect of critical resources on company's performance. Many studies described the problem of choosing performance measures (Herciu&Serban, 2018; Stroehle et al., 2020; Siepel&Dejardin, 2020). Firm performance is measured by comparing its average performance in the industry, major competitors, and. Growth was also used since firms encountered recession and increased competition from abroad. Therefore, growth provides a more rigorous performance test than the average performance in the industry or major competitors. Tudose (2021) find an interrelationship between a firm's performance and growth. Therefore, the following hypothesis was proposed:

H4: There is a positive inter-relationship exists between company's performance and growth.

Research Method

This section is devoted to the research methodology, covering the population and sample, the analysis unit, variables, and measurements. This concludes ended with the techniques and statistical analyses used.

Population and Sample

This study used the organization as the analysis unit and obtained large companies from the Directory of the Manufacturing Industry, published by the Statistic Center Bureau (Indonesia). The firms were classified according to the number of employees: (1) A total 10-99 were small, (2) 100-599 were medium, and (3) over 500 were large. Classification techniques have also been used by (Bastas & Liyanage, 2019). Based on these criteria, manufacturing firms with more than 500 full-time employees were selected. Additionally, random sampling was used to minimize bias and generalizability. Data were gathered using mail questionnaires distributed to the company CEO.

This study classifies samples into five types of samples, those are:

Indonesian firms that have related to Japan in commodities trading.

Indonesian firms that have related to Japan both in management style-technique.

Indonesian firms related to Japan both in commodities trading and management style-technique.

Indonesian firms that are related to Japanese firms.

The reason samples for classifying samples into five categories or types is based on the logic that these five types of samples are assumed to understand and can directly assess Japanese management practices in the process of interaction in business.

Variables and Measures

Study variables required several measures adopted or modified from different sources.

Firm's Resources

Financial Resources. Financial resources refer to the fund sources. The fund sources include bonds, long-term debt, stocks, and hybrid financing. This variable was estimated by applying a semantic differential scale from the Indonesian financial market to the Japanese market sourcing.

Technology. In this study, technology refers to advanced manufacturing and computer-based technologies, including the 17 hard types. A 5-point Likert-type scale (1 = not adopted to 5 = very high) was used to estimate the hard technology adoption level. This scale was designed by (Che Ruhana Isa & Soon-Yau Foong, 2005) (Castellani et al., 2022).

Organizational Resources. Organizational resources refer to a firm's internal reporting, coordination, and relationships with other firms (Barney, 1991). A firm's internal relationships include internal flexibility relationships, decentralization of authority, formality, and coordinative relationships (informality) (Lee & Edmondson, 2017). An external relationship is the intensity of a relationship with a business partner such as suppliers, distributors, and customers (Ariesty, 2016). Internal and external relationships were measured using a 5-point semantic differential type scale ranging from 1 to 5 (very low to very high).

Human Resource. Human resources comprise the company's staff and workers, including managerial and administrative staff, technicians, clerical and production workers, and specialists (Abunaila&Kadhim, 2022). The human resource variable was measured based on its availability, as well as skills and capabilities, using the 5-point semantic differential type scales (1 to 5).

Firm's Japanese Practices and Activities

Operation-related practices (Japanese management techniques). Management practices are systems that control an organization's technical processes. Examples include just-in-time (JIT), total quality management (TQM), total productive maintenance (TPM), concurrent engineering, quality function deployment (QFD), manufacturing resource planning (MRP), benchmarking, and teamwork. This study used TQM measures changed from a 5-point Likert scale, where 1 denoted 'not practiced' and 5 represented 'very highly.' This scale was used to estimate the level of soft technology adoption. The instruments used were modified from Diefenbach, (2015),

Westney, (2020), Ito, (2021), Fujimoto et al., (2022) and Endo & Kamei, (2022)

Human resource-related practices (Japanese management style). Human resource management-related practices refer to practices implemented in the human resource management system within the organization, such as leadership style, employee involvement, and recognition/reward systems. The leadership measures were obtained and modified from (Gifford et al., 2017). For employee involvement, the components from (Obiekwe et al., 2019) were modified according to the study objective. To measure reward system practices, the instrument developed by Omolawai and Bawalla (2017) was adopted. A 5-point Likert scale anchored by 1 (not practiced) to 5 (very high) was used to estimate Japanese HR management-related practices.

Performance

This study examined performance compared to the major competitors in the industry and changes measured by comparing the current and the earlier year's performance. A firm's performance includes financial performance, human resources-related performance, and operational performance. Return on investment (ROI), return on assets (ROA), return on equity (ROE), and return on sales (ROS) were used to measure financial performance (Mamorena Lucia Matsoso&AlumideHenrie Benedict, 2016). Operational performance covers five manufacturing dimensions: productivity, quality, flexibility, cost, and delivery ((Azim et al., 2015); Elyazid, 2016). We used labor turnover, working accidents, and absenteeism as proxies for human resources-related performance (Brown et al. 1994). 5-point Likert-Likert scale ranging from 1 (much lower) to 5 (much higher) measured firm performance by comparing the average industries and previous performance.

Growth

Growth refers to a firm's capability to sustain long-term operations and survival. This study uses medium growth based on financial and non-financial reports over for last three years. Growth proxies were measured according to sales and assets (Van Looy&Shafagatova, 2016) and overall productivity (Azim et al., 2015) Companies' growth was measured using a 7-point Likert scale ranging from 1 (decrease more than 10%) to 7 (increase more than 10%). The growth measures applied included sales, assets, and overall productivity.

Statistical Techniques

For data analysis and hypothesis testing, several statistical tools and methods were applied using SPSS software as follows:

Validity and Reliability Analysis

Descriptive statistics to explain the respondents' characteristics.

Simultaneous Regression

Multiple regressions to test the firm's resources' impact on the firm's performance

Hierarchical regressions to test the moderating effect of business strategy, environmental uncertainty, and degree of competition on the relationship between a company's resources and its performance.

Reliability Analysis

Furthermore, the instrument's internal consistency was measured by conducting a reliability analysis of the factors extracted using the recommendations of (Bonnet & Wright, 2015). A minimum reliability (Cronbach's Alpha) value of .60 was set in line with (Bonnet & Wright, 2015). A Cronbach's alpha values were less than 0.60, unsuitable, 0.70 is low, moderate between 0.80 and 0.90 is moderate, and above 0.90 is high.

Descriptive Statistics

This study obtained descriptive statistics for the mean and standard deviation of all variables of interest. Descriptive analysis was conducted to transform the raw data for better understanding and interpretation.

Multiple Regression Analysis

Multiple regression analysis is used to examine the relationship between a single dependent (criterion) variable and several independent (predictor) variables (Uyanik & Güler, 2013). It was used to test the hypotheses and determine that the variance of each performance dimension is explained by a set of resources (technology, human resources, organizational resources, and financial resources) adopted, acquired, and implemented by Indonesian manufacturing companies.

Four basic assumptions were met in the multiple regression analysis ((Uyanik & Güler, 2013) (1) phenomenon linearity measured illustrates range in the dependent variable is linked with the independent variable); (2) the error terms' constant variance (homoscedasticity); (3) the error terms' independence (the predicted value is not related to other predictions); and (4) the error term distribution normality.

The regression validity was tested by examining the degree of multicollinearity and its impact on the results. Variance inflation factors (VIF) were compared with tolerance values. VIF and condition indices should be equal to or less than 0.10 and 0.30, respectively. A check was performed to determine whether the cases fall within the outlier ranges of the distribution. A threshold of 3 standard deviations was used for 57 samples (Uyanik & Güler, 2013). Therefore, the regression excluded all observations outside this range, because they were considered outliers.

Hierarchical Regression Analysis

The moderating effect on the relationship between resources and performance was tested using hierarchical regression analysis. The anticipated regression effects using moderated regression model. Similarly, all assumptions in multiple regression must be met. The reasons for using moderated regression analyses are as follows (Richardson et al., 2015)

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It is the most suitable method for testing a contingency hypothesis in which interactions are implied.

It tests the interaction effect since the interaction term cannot be tested for significance until the main effects of the independent variable are entered into the regression equation.

Three linear regression steps were conducted to examine the effects of the moderator variables. The first step involves running independent and dependent variables to explain their relationships. In the second step, the moderator was added to examine whether it changed the relationship between the dependent and independent variables. This step helps to determine whether the moderator variable behaves as a predictor of the dependent variable. The third step tested the interaction effect between the predictor and moderator on the dependent variable. This helps to determine whether the moderator variable acts as a pure moderator. The first, second,

and third steps were dimensions of the manufacturing strategy and environmental variables.

Data Analysis

Response Rate

Table 1 outlines the response rate, where 48 questionnaires were returned sent due to the company closing or moving to an unidentified address. Fourteen companies refused to participate because they could not answer the questions. 34 companies supply incomplete answers that could not be included in the data analysis, and 41 responses were finally used. The response rate of 8.61% indicates that is reasonable because the respondents comprised CEO sortop company top managers.

Questionnaires were distributed.	1000
Unsent / Close / Change of address.	48
refused to participate	14
Back and bias processed.	82
Back and unbiased processed.	34
Not return.	822
Response Rate.	12.18%
Respond level that can be processed.	8.61%

Table 1. Distribution of Questionnaires

Non-response bias testing was conducted to determine whether there were differences between the response characteristics of the respondents who answered the questionnaires and those respondents who did not. Owing to the unavailability of secondary data collected regarding the characteristics of companies that can be used to measure non-response bias, we then used assumptions based on the length of time the questionnaire was returned. The returned questionnaires were grouped into two parts: those that came early (before the deadline) and those that came late (after the deadline). Of the 82 questionnaires, 61 returned questionnaires were categorized as the initial questionnaire, and 21 questionnaires were categorized as coming late and assumed to be the non-response group. Using an independent sample t-test, all variables in this study were tested for response bias. The test results revealed that there was no significant difference between the two groups that gave early and late responses; therefore, it was concluded that there was no problem response bias in this study. This also indicates that the data in the study (sample) are representative.

are presented in Table 2. The majority of respondents have a permanent workforce of between 1000 and 2500 workers, and only 12 had a fixed amount of labor greater than 5000 workers. One hundred percent of the respondents had assets worth more than 25 billion dollars (1 USD worth 9,850 Rupiahs). More than 95% have been operating for more than ten years, and only two (2.4%) are relatively new companies.

Of the total respondents, 39.1% came from the metal industry, machining of automotive and electronics, and 17.1% from the food, beverage, and tobacco industries. Meanwhile, 17.1% represented the chemical industry, coal, and plastics; 17.1% represented the textile, garment, and leather industries; and the rest operate in crafts, rattan, bamboo, and furniture.

According to its ownership, approximately 70% of respondents are owned by the people of Indonesia, while the rests are joint venture companies and foreign companies. However, 100% of the respondents cooperated with foreign companies or had a collaborative relationship with a foreign entity or international. Because the data collected during the global crisis is still being felt, it is not surprising that more than 30% of respondents experienced a decrease in performance or a state of stagnation.

Respondent Profiles

The data on the respondents' profiles and characteristics

	Categories	Number of Respondents	Percentage
Length of Operations		2	2.4
	Less than five years	14	17.1
	5-10 years	22	26.8
	> 10-20 years	30	36.6
	> 20-30 years	14	17.1
Business Categories	Food, beverages, and tobacco.	14	17.1
	Textiles, apparel, leather.	14	17.1

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	Wood, bamboo, rattan, handicraft, furniture.	6	7.3
	Chemical industry, oil, coal, rubber, and plastic.	14	17.1
	Nonmetallic goods, minerals, except coal.	10	2.4
	Metal goods, machinery, automotive, electronic, and computer.	32	39.0
Owners	Local	58	70.7
	Foreign Companies	20	24.4
	Joint venture	4	4.9
Cooperation	Japan	40	48.8
	Hongkong, Taiwan, Korea, and other Asian countries	14	17.1
	ASEAN	2	2.4
	The USA and Europe	10	12.2
	Others	16	19.5
Labors	500-1000	12	14.6
	>1000-2500	50	61.0
	>2500-5000	14	17.1
	>5000-10000	2	2.4
	>10000	4	4.9
Performance For the last three years	Decreased > 15%	20	24.4
	Decreased <15%	8	9.8
	No changes	8	9.8
	Increase <15%	20	24.4
	Increased by > 15%	26	31.7
Asset	Lessthan25billion	0	0
	25-50billion	6	7.3
	>50-75billion	40	48.8
	>75-100Billion	14	17.1
	>100 Billion	22	26.8

Table 2. Respondents' Characteristics

Goodness of Measures

According to Hair et al. (1998), reliability and validity tests evaluate the quality of collected data. The consistency and accuracy of the data were tested using two procedures: (a). Test construct validity by factor analysis of the scores of each item with varimax rotation(b). Internal consistency was tested using Cronbach's alpha coefficient. Homogeneity test data were obtained by applying a correlation test between each item scores and the total score.

Reliability Test (Cronbach Alpha)

Cronbach's coefficient alpha was calculated to evaluate the data's reliability, and when its value was higher than 0.7, it implied implies that multi-item measurement was reliable (Bonett & Wright (2014)). The validity of the measurement is also assessed by using a test of homogeneity of data that correlates the test scores of each item with the total score. A higher homogeneity coefficient indicated that means the measurements were valid and reliable. The test results in Table 3 show that all measurements have reliability above 0.7, indicating that meaning they are valid.

Variables	Number of Items in Questionnaire	Reliability	Item homogeneity
Technological Resources	13	.9379	.494-.809
Skill and Availability Human Resources	12	.9004	.576-.804
Organizational Resources	7	.9034	.735-.882
Capital Resources	4	.9458	.645-.872
Operation Related Practices	21	.8538	.701-.899
Human Resources Related Practices.	10	.8349	.650-.893
Government law and Regulation	9	.8311	.474-.777
Resource Flow	4	.7709	.573-.764
Financial Performance	3	.8934	.777-.895
Human Resources Performance	3	.9267	.775-.928
Operation Performance	8	.8660	.420-.826
Performance Growth	3	.8990	.694-.837

Table 3. Reliability and Validity Test

Results Of The Study

Firm's Resources and Performance

Table 4 summarizes the multiple regression analysis used to examine the relationship between resources and performance. Some essential things that need to be raised about the influence of advanced manufacturing technology, skill, and availability of human resources, quality, and availability of organizational resources and capital of the performance are: First, overall, the results of multiple regression showed that simultaneous independent variables explain 25.4% variance of financial performance, 15.8% performance of human resources, 23.5% growth in operating performance, 37.3% and 32.4% growth performance of the overall performance. Second, the positive resource effect on the five performance indicators indicates that the performance can be enhanced by applying advanced manufacturing technology (Ezuma et al., 2019; Do et al., 2023), having a professional workforce, natural resources, and quality that have been adequately capitalized.

Third, resources simultaneously have a better operational performance than financial performance. This is because resource directly affects the company's operational processes. The translation of operating performance to financial performance, especially financial performance growth, involves a time lag and disturbances during the adoption, implementation, and empowerment of resources (Hossain, 2020; Owusu et al., 2021).

Fourth, uniquely obtained organizational resources negatively impact human resource performance. Careful management of natural resources, especially in the long term, is required. Furthermore, human and natural resources do not affect the growth of manufacturing performance. This indicates that the long-term ownership of natural resources and the quality of competent human resources no longer determine the growth performance of manufacturing. The growth in operating performance depends on reliable technology, and modern management practices evolve continuously (Chigara, 2021; Hidayat et al., 2022).

These results partially support the first hypothesis. Ellitan (2017a) explains the resource-based theory of competition by highlighting some things that are consistent with these findings. First, resources are organized for the company's superior performance. Second, the company's financial, physical, organizational, informational, and relational resources, competence, and capabilities are needed to achieve a competitive advantage. Because heterogeneous resources and mobility are imperfect, the impact on performance relies on how resource management is integrated into performance improvement (Marsal, 2020; Jeet & Aspal, 2021).

Maximum performance is achieved when management understands selecting, implementing, and modifying resource management strategies. Furthermore, these findings support Urban (2022) finding that resources include capital, labor, and intangible resources, such as culture and competence. Resources are also considered heterogeneous and mobile with implications for trading difficulty of trading.

Independent Variables	FinPerf	HRPerf	OprPerf	Growth	Ovperf
R2	.254	.188	.235	.373	.324
Adjusted R2	.248	.181	.229	.368	.319
Sig. F	.000	.000	.000	.000	.000
Standardized Coefficients (β)					
TR	.052	.139***	.075*	.086*	.123***
HRM	.113*	.300***	.114*	.022	.216***
OR	.157**	-.263***	.119*	.021	.232
CAP	.260***	.267***	.262***	.545***	.392***
*** : significant at 0.01 ** : significant at 0.05 * : Sig. at 0.1					
Note:					
TR: Technological Resources CAP: Capital Resources					
OR: Organizational Resources HRM: Human Resources Management					
FinPerf: Financial Performance					
HRPerf: Human Resources Performance					
OprPerf: Operational Performance					
Growth: Performance Growth					
Ovperf: Overall Performance					

Table 4. Impact of Resources on Performance

Moderating Impact of Japanese Practices and Activities Related to Japan

Based on theory, Japanese management practices are Japanese companies' characteristics, which are different from those of non-Japanese (Helper & Henderson, 2014). Studies have examined how management practices, including TQM, TPM, MRP, JIT, and benchmarking, impact firm performance. According to Sohal and Terziovy (2000), benchmarking, process reengineering, and TQM increase organizational productivity, profitability, and customer satisfaction.

Human resource management practices reflect the Japanese management style, namely, leadership, employee commitment, and the reward system (Diefenbach, 2015; Westney, 2020). (i) Leadership. The Japanese management system identifies the essential role of top management in designing objectives, values, and systems that direct the pursuit of continuous performance improvement. (ii) Employee participation. Participating in management improvement activities enables employees to acquire new knowledge and realize the advantages of management disciplines (Fujimoto et al., 2022; Endo & Kamei, 2022). They also acquired a sense of accomplishment by solving quality problems. Participation

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inspires action on management improvement recognition, and rewards. Management improvement programs involve recognition of performance improvement by individuals, sections, and departments within the company.

Operational-related Practices (Japanese management techniques).

Table 5 displays the results of the moderated regression analysis practices related to operations, moderating the relationship between resources and performance. The R² values change, and the F-change from phase 1 to phase 2 and from phase 2 to phase 3 are significant, meaning that operation-related resource practices influence performance. This is further established by the fact that most of the interaction terms in the model have a significant standardized beta value.

In more detail, the findings related to the moderating

influence of operation practices related to the relationship between resources and performance are as follows: First, operation-related practices moderate the influence of technological resources, human resources, and organizational resources on financial performance and human resource performance. However, the influence of human resources against both these performance indicators will be higher if the company places less emphasis on practice-related operations; otherwise, will increase the influence of technological and organizational resources on financial performance and operational performance. This finding is in line with previous researchs done by Ezuma et al., 2019; Do et al., 2023 and also Ghazi et al., 2020. Second, the application of practice-related operations is low, which weakens the influence of organizational resources on resource growth, and the influence of capital resources on growth. Third, the emphasis on the related operational practices will increase the influence of technological and capital resources on overall performance, however, will reduce the influence of HR on overall performance.

Variables	FinPerf	HRPerf	OprPerf	Growth	Ovperf
R ² 1	.255	.188	.235	.390	.324
R ² 2	.313	.286	.289	.462	.394
F Change	10.307	16.710	9.243	16.380	13.524
Sig. F change	.000	.000	.000	.000	.000
Remark	Sig.	Sig.	Sig.	Sig.	Sig.
Standardized Coefficients (β)					
TR	.049	.136***	.073	.069*	.117***
HRM	.108*	.295***	.111*	-.009	.203***
OR	.173**	-.249***	.129*	.108*	-.039
CAP	.258***	.265***	.260***	.531***	.386***
ORP	-.026	-.023	-.017	-.143***	-.057
TR	-.738***	.421*	-.769***	-.699***	-.282
HRM	2.382***	.603	2.268***	.282	1.425***
OR	-	1.666***	-1.295***	1.013***	.538
CAP	1.381***	-1.434***	-.058	-.244	-.877***
ORP	-.183	.557***	.367*	-.301***	.367**
TRxOPR	.280	-.261	1.015***	.969***	.533**
HRMxOPR	.943***	-	-3.637***	-.563	-2.123***
ORxOPR	3.815***	-.613	-.586	-1.347***	-.814
CAPxOPR	2.474***	-2.898***	2.271***	1.178***	1.948***
	.784	2.546***			

*** : significant at 0.01 ** : significant at 0.05 * : Sig. at 0.1

Note:

TR: Technological Resources

CAP: Capital Resources

OR: Organizational Resources

HRM: Human Resources Management

ORP: Operation-related practices

TRxOPR: Interaction between Technological Resources and Operation related practices

HRMxOPR: Interaction between Human Resources Management and Operation related practices

ORxOPR: Interaction between Organizational Resources and Operation related practices

CAPxOPR: Interaction between Capital resources and Operation related practices

FinPerf: Financial Performance

HRPerf: Human Resources Performance

OprPerf: Operational Performance

Growth: Performance Growth

Ovperf: Overall Performance

Table 5: Moderating Impact of Operation-related Practices

Human resource-related practices (Japanese management style)

Table 6 presents the moderated regression analysis of the

moderating impact of human resources practices related to the relationship between resources and performance. The R² values change, and the F-change from phase 1 to phase 2 and from phase 2 to phase 3 are significant, showing that resources affect performance. It is further established by the

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fact that the majority interaction term in the model has a significant standardized beta value.

In more detail, the findings related to the moderating influence of human resources practices related the relationship between resources and performance are as follows: First, human resources practices have a moderate influence on technological, human, and organizational resources on financial, and operational growth performance. When viewed closely, the effect of technological and organizational resources on the three performance indicators will increase the company's priorities for human resources-related practices;

otherwise, human resources will decline against the three performance indicators. Second, human resource practice-related resources moderate the relationship between human resource performance and overall performance. The influence of technological and organizational resources is greater in companies that emphasize related human resource practices. However, the influence of human and capital resources will be lower if the company prioritizes implementing human resources-related practices. The findings of this study supported by Anis et al., (2018) and Dahliah, (2023). The results of this analysis partially Hypothesis 4.

Variables	FinPerf	HRPerf	OprPerf	Growth	Overperf
R ² 1	.255	.208	.236	.373	.333
R ² 2	.362	.362	.344	.493	.473
F Change	20.590	29.468	20.039	28.839	32.477
Sig. F change	.000	.000	.000	.000	.000
Remark	Sig.	Sig.	Sig.	Sig.	Sig.
Standardized Coefficients (β)					
TR	.057	.161***	.081*	.087**	.138***
HRM	.116*	.311***	.117*	.023	.223***
OR	.151**	-.289***	.113*	.020	-.090
CAP	.280***	.354***	.284***	.549***	.448***
HRRP	-.038	-.167***	-.043	-.008	-.109
TR	-	-1.199***	-1.630***	-.464**	-1.476***
HRM	1.625***	1.627***	2.506***	2.740***	2.675***
OR	-	-2.097***	-1.586***	-1.227***	-2.157***
CAP	1.741***	3.181***	.765**	.436	2.125***
HRRP	.699**	1.354***	.411*	1.230***	1.187***
TRxHRRP	.338	1.918***	2.280***	.823***	2.225***
HRMxHRRP	2.225***	-	-4.101***	-4.761***	-4.163***
ORxHRRP	4.289***	-2.129***	-	-	-
CAPxHRRP	2.824***	2.843***	2.502***	1.798***	3.138***
CAPxHRRP	-.631	-4.918***	-.704	.421	-2.812***
*** : significant at 0.01 ** : significant at 0.05 * : Sig. at 0.1					
Note: TR: Technological Resources CAP: Capital Resources OR: Organizational Resources HRM: Human Resources Management HRRP: Human Resources-related practices TRxHRRP: Interaction between Technological Resources and Human resource-related practices HRMxHRRP: Interaction between Human Resources Management and Human resource-related practices ORxHRRP: Interaction between Organizational Resources and Human resource-related practices CAPxHRRP: Interaction between Capital resources and Human resource-related practices FinPerf: Financial Performance HRPerf: Human Resources Performance OprPerf: Operational Performance Growth: Performance Growth Overperf: Overall Performance					

Table 6: Moderating Impact of Human Resource-Related Practices

The interrelationship between Dependent Variables

The study's uniqueness may determine the suitability of the performance measurement applied. Firm performance is frequently measured by comparing with average industry performance, major competitors, and growth. Growth was used in this and previous studies since firms face recessions and increased competition abroad. Therefore, growth provides a more rigorous test than comparing the average performance in

an industry or major competitors.

The latter hypothesis suggests a causal relationship between corporate growth and growth performance. This study conducted a correlation analysis to determine the interrelationship between the dependent variables. Table 7 illustrates the correlation results between all performance dimensions, including profitability, profitability growth, operating performance, growth, and overall operating performance.

The findings of this study show the correlation between the performance of including: (1). Financial performance was

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positively correlated with all dimensions of performance measurement. (2). Human resource performance does not correlate with operation performance. This shows that there is no direct relationship between human resources performance and the company's operating performance. (3). Operating performance has no relationship with any of the dimensions of performance measurement. (4). Growth in operating performance is not related to operating performance (5).

Overall performance correlates with financial performance, human resource performance, and growth performance. These results indicate that performance measurements from various perspectives are indispensable. These findings are consistent with (Mamorena Lucia Matsoso & AlamideHenrie Benedict, 2016), (Azim et al., 2015); and Elyazid, (2016). Thus, hypothesis 6 of this study was partially accepted.

	Financial Performance	Human Resources Performance	Operations Performance	Growth	Overall Performance
Financial Performance	1	.510(**)	.124(**)	.477(**)	.735(**)
Human Resources Performance	.510(**)	1	.019	.740(**)	.884(**)
Operations Performance	.124(**)	.019	1	.017	.061
Growth	.477(**)	.740(**)	.017	1	.883(**)
Overall Performance	.735(**)	.884(**)	.061	.883(**)	1

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 7: Correlation amongst Dependent Variables

Discussion

This study aims to investigate and discuss the findings according to the study objectives: (1). To examine the relationship between resource companies and company performance. (2). To examine the relationship between resources and growth companies. (3). To examine the sensitivity of the company resources and the company's performance operation-related practices. (4). To analyze the sensitivity of the relationship between a company's resources and its performance in relation to human resources (5). To test the relationship between performance and growth. The implications of the finding are also examined, followed by the limitations and suggestions for future studies.

This section presents the hypothesis test and other main findings. First, resources positively affect the five performance indicators. This means that advanced technology, a professional workforce, natural resources, and quality management practices improve performance. Power sources simultaneously have a better operational performance than financial performance. It can be explained that resources directly affect the company's operational processes. The translation of operating performance to financial performance, especially financial performance growth, involves a time lag and disturbances during the adoption, implementation, and empowerment of resources. Individually obtained material resources negatively affect performance. Detailed management is needed to apply natural resources, especially in the long term, to the performance of human resources. Furthermore, human and natural resources do not affect growth performance. This indicates that the long-term ownership of natural resources and the quality of competent human resources no longer determine growth performance. Growth performance depends entirely on reliable technology, and modern management practices constantly evolve. These results partially support the first hypothesis.

The resource-based theory of competition by highlighting some things appropriate to this study. First, resource management helps companies realize superior performance. The company achieves a competitive advantage by utilizing financial, organizational, physical, informational, and relational resources as well as competence and capabilities. Since the characteristics of heterogeneous resources and mobility are not perfect, their effect on performance depends on resource management and how it helps improve performance. These sources include capital, labor, and intangible resources, including culture and competence. They are also considered heterogeneous and mobile, with implications for trading difficulty to be traded.

Second, the moderating influence of operational practices related to the relationship between resources and performance is as follows: Operation-related practices moderate the influence of HR and organizational resources on financial performance. However, the impact of human resources on these performance indicators will be greater if the company emphasizes practice-related operations. Otherwise, an emphasis on practice operations will increase the influence of AMT and material resources on financial and operational performance. Low operation-related practices weaken the influence of material resources on growth, however, strengthen capital growth. The emphasis on practice-related operations will increase the influence of AMT and capital on overall performance but will reduce the influence of HR on overall performance.

Third, related human resource practices affect performance. Human resource practices moderate the influence of AMT, HR, and organizational resources on financial performance, operating performance, and growth. When viewed closely, the effect of AMT and organizational resources on the three performance indicators will increase with the company's priorities in human resource-related practices; otherwise, the influence of HR will decline. Human

resource-related practices moderate the relationship between human resources and overall performance. AMT influence and material resources are higher in companies that emphasize related human resource practices; however, the human resources and capital impact will be lower if the company prioritizes human resource practices. The results of this analysis partially support the third hypothesis.

Finally, the correlation between the performance measurement obtained in this study and the profit obtained was positive for all dimensions of the performance measurement. The HR performance was not correlated with the operation performance. This implies that there is no direct relationship between human resources performance and the company's operating performance. Operating performance has no relationship with any of the dimensions of performance measurement. The growth in the operating performance is not related to the operating performance. Overall performance is correlated with financial performance, human resource performance, and growth performance. These results show that performance measurements from various perspectives are indispensable. Thus, Hypothesis 6 was partially supported.

Conclusion, Implication and Limitation

Conclusion

The findings of this study show that resources have a positive effect on all five performance indicators, indicating that ownership and implementation of advanced technology, professional workforce, natural resources, and quality management practices improve performance. Furthermore, the moderating role of operational practices related to the relationship between resources and performance shows that operations-related practices moderate the influence of human resources and organizational resources on financial performance. The impact of human resources on these performance indicators will be greater if the company emphasizes operations related to practices. Low operations-related practices weaken the influence of material resources on growth, but instead strengthen capital growth. Human resource practices moderate the influence of AMT, HR, and organizational resources on financial performance, operational performance, and growth. Human resource-related practices moderate the relationship between human capital and overall performance. The influence of AMT and material resources is higher in firms that emphasize related human resource practices. This study also provides evidence that there is a positive correlation between the performance measurements obtained in this research and the profits obtained for all performance measurement dimensions.

Implications of The Study

This study theoretically sustains theory-based resources as the basis for the relationship between technology and performance. This shows that enterprise resources and capabilities can gain a competitive advantage. These results contribute to the literature on resource management and enterprise capabilities, especially in developing countries. This is the first study to examine the factors determining the successful management of resources and other factors that moderate the effect of a company's resources' effect on performance. This study also provides managerial implications, among others (1). This shows that management is important for improving performance, particularly in Indonesia's

manufacturing sector. (2). Companies must align resources with the adopted strategy and external factors (business environment and collaboration) to achieve maximum performance.

Limitations and Suggestions

This study had many limitations. The results cannot be generalized because the research was only carried out at one point in Indonesia, and the data were only for a perceived CEO. Thus, a longitudinal analysis applying multiple respondents is required to increase the results' accuracy of the results by considering field operations or manufacturing. Studies found bias when the technology adoption level, manufacturing, business strategy, and performance vary. Additionally, these results do not consider how long the technology has been applied.

Data collection was based on the respondents' perceptions, self-ratings, and a multi-choice questionnaire. This approach obtains large amounts of data in a short time for longitudinal studies but was not used because of the scope of this study. The questionnaire was distributed only to company leaders to collect resource management and strategy responses. Other responses include cooperation with external parties, competition levels, and business uncertainty. This increased the potential for mono-response bias, whether the operations or other managers that implement strategy and development cooperation for coping with the business environment have the same views of company leadership. However, company leadership was selected as the study subject, with access to information for all variables.

Confidential data made the respondents cautious, limiting information collection, as some of them refused to answer the questions. Furthermore, the sample selection was restricted to medium and large-scale manufacturing companies with possibly various views in setting strategies and business environments. This study was also conducted only in Indonesia and may not be generalizable to other countries.

There are some suggestions for future studies, including (1) it could be conducted in other countries with comparable cultures; (2) it can use the same instrument to explore technology applications in SMEs; and (3) environmental variables, organizational context, and culture as moderators in resource management and performance should be added. This contributes to the insights and knowledge of enterprise resource management.

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