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Role of Learning Process in Capability Development and Business Performance of East Java Manufacturing Firms: Resources as Moderator

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ABSTRACT

The purpose of this research is to analyze how the influence of internal learning of employees, external learning obtained from suppliers and consumers, and ownership of processes and equipment, on the performance of the company. This research also examines the role of human resources as moderator in the relationship between process ownership and equipment with performance. The research population that became the object of this research covers all manufacturing companies operating in Indonesia. The population is a manufacturing company registered by the Manufacturing Company Directory published by the Statistics Centre Bureau of, 2010. The sample is determined by using purposive sampling technique, and the sample selected is a manufacturing company with criteria that have medium and large scale. From the results of hypothesis testing then some of the main findings are presented in this section. First, internal learning positively affects technological capabilities, indicating that ownership of tools and technologies is encouraged or enhanced by improving the internal learning process. The main findings of both studies indicate that external learning will encourage companies to increase their ownership of equipment and technology. Humans are recognized as controllers in the use and utilization of technology. This study is the first step to undertake the development of empirical studies by considering further factors that determine success in resource management and technology primarily through organizational learning. Furthermore, the findings of this study also indicate the factors of operating strategy that moderate ownership of tools and technology companies to performance.

Keywords: *Internal Learning, External Learning, Capability Development and Performance*

INTRODUCTION

Continuous competitive advantage is the goal all companies aim to achieve in a dynamic and unpredictable competitive environment. In an effort to achieve these goals, the company faced the challenge of increasingly critical consumers to get personalized service, fulfilling specific product needs with short waiting time and high quality. To respond to the changes that occur requires the company's willingness to change the perspective in the manufacturing process and the willingness to apply new regulations by changing the concept of corporate management into individual self management and from process content of strategy into day to day operations.

To achieve this competitive advantage, companies need to apply flexible strategies to developments and changes that occur. Companies must have the capability to create competitive advantage with limited resources. A resource-based view of strategy provides a solution for companies to achieve a continuous competitive advantage through a unique set of resources owned by the company. Resource-based strategies focus on firm specific resources more than industrial structures, and show competitive advantages and strategies to exploit competitive

advantage (Hart, 1995). Resource-based in the concept of strategy is defined as the resources and capabilities of different companies with other companies and has a special advantage over the long term (Barney, 1991; Chuang, 2004).

The importance of the role of resource-based strategies for the improvement of corporate performance and the achievement of competitive advantage, attracts both researchers and practitioners to research and implement resource-based strategies and their impact on corporate performance. Various researches on manufacturing strategy and company performance have been done by several researchers. Hayes and Wheelright (1984) found an important role of manufacturing capability in determining the company's competitive position in the market, and the importance of ownership of processes and equipment is a key key that will lead to the achievement of corporate competitive advantage. Swamidass and Newel (1987) concluded that capability and competence are important components of organizational capability in achieving low cost, high flexibility, and high quality. In this case the role of the manufacturing process as a potential resource, the determination of human role in organizational activity and organizational factors is an important factor in achieving the company's competitive advantage. Several previous studies have reported that the influence of corporate resources on business performance is influenced by manufacturing strategy, business strategy (Grant, 1991, Russo & Fouts, 1997). Schroeder, Bates, and Junttila (2002) conducted a study focusing on the production process with the development of a group of company capabilities to achieve improved company performance. Resource-based strategy research was undertaken by Schroeder, Bates, and Junttila (2002) who developed a conceptual model of resource-based manufacturing strategy and suggested that the concept of learning within a company is developed based on a resource-based view that focuses on causal knowledge, ambiguity, and social factors complexity. Through internal and external learning processes it is expected that companies have patent rights over processes and equipment that provide a competitive advantage for the company. The company's competitive advantage can be measured or assessed through company performance.

The manufacturing enterprise used as a sample of this research is defined as a unit of business which carries out economic activities aimed at producing goods, situated in a particular building or location, and has its own administrative records concerning the production of the cost structure and there is one or more who is responsible for Such businesses (BPS, 2010). Ellitan (2005) investigated the structure of Indonesian industry, and the results show that manufacturing industries such as chemical and heavy industries have very fragile structures with high import dependency, while raw materials, intermediate and component industries can not meet the needs. Under these conditions, any increase in demand for both domestic and import demand will only increase imports which will further increase the current account deficit. In contrast, light industry in Indonesia is growing quite well, production growth is increasing, export growth is good, industry linkage is big enough and comparative advantage is high enough. Based on the description of the condition of Indonesia's manufacturing industry, this research is conducted to test whether the conceptual model of resource-based manufacturing strategy, is still relevant if applied in different research settings that is in medium and large manufacturing companies in East Java. This research is conducted with the following objectives:

1. To provide empirical evidence that internal learning affects ownership of production processes and equipment.
2. To provide empirical evidence that external learning affects ownership of production processes and equipment.
3. To provide empirical evidence that ownership of processes and equipment affects company performance.
4. To provide empirical evidence that the availability and quality of human resources moderate the ownership relationship of processes and production equipment with performance

LITERATURE REVIEW

2.1. The Importance of Developing Competitive Capability of Companies

Schroeder et al. (2002) developed three factors or types of resources and capabilities in the production functions that are difficult to imitate and transfer, namely proprietary process and equipment, internal learning, and external learning. Manufacturing practices are adopted by imitating "world class manufactures" that can contribute to a competitive balance but not for competitive advantage. The

concept of learning within a company is developed based on a resource-based view that focuses on causal knowledge, ambiguity, and complex social factors. Internal learning includes multifunctional training for workers and empowering workers in production processes and development, so it is hoped that the practice will bring organizations to be more adaptive (Schroeder, et al., 2002). Schroeder, et al. (2002), the learning process is the only source of sustainable competitive advantage. The learning process can occur in unpredictable and risky ways, sometimes even occurring in a way that is difficult to codify, leading to the deployment of resources that have a causally ambiguous impact.

Schroeder, et al (2002) suggests that external learning in the context of manufacturing enterprises is an interorganizational learning process through problem solving that arises in the interaction with consumers and suppliers that can create tacit knowledge that is not easily imitated . External learning can be either supplier input in new products or process design and supplier involvement in quality creation and continuous and routine improvement. Organizational learning capabilities should produce an idiosyncratic manufacturing process, including appropriate process technologies that contribute to the achievement of competitive advantage (Permana, et al., 2017) Ownership of production processes and equipment includes patent-protected equipment and undisclosed equipment, state of the art equipment and processes that have been exclusively developed by the company. The process of coordination in global business is the process of developing corporate capabilities and building a learning organization. The development of core competence cannot be accelerated by investment, not easily imitated and transferred by competing companies, as well as providing a competitive advantage for the company (Schoemaker, 1992). The strategy to gain competitive advantage through the effort to explore and build core competence has been implemented by several companies of Sony, Motorola, NEC, WallMart, and several other global companies.

Competence needs to be managed through a cognitive process, a process that requires understanding and awareness of all the components involved (Jiao, & Alon, & Cui, (2011). This process is very important in building and developing the competence (competence building and leveraging) company next. The success of the establishment of competence depends on the ability of managers to improve the flow of information, knowledge, and ability to estimate the company's conditions such as intensive structure and desired organizational change. In developing core competence for global learning the role of CEO is very important because this strategy requires communication, involvement, and cooperation of every management function both intra and between organizations. In addition, the resources that exist within the company support each other to achieve the goals and the company always follow the development of technology and science more proactive.

2.2 Theoretical Framework and Development of Hypotheses

The Effect of Implementing Strategies On Corporate Performance: Empirical Evidence

Various research on the contribution of strategy to the improvement of company performance has been done by several researchers. Hayes and Wheelright (1984) argue that manufacturing capability plays an important role in how firms compete in the product market and how firms should develop capabilities. Ownership of processes and equipment is a key key that will lead to the achievement of a company's competitive advantage. Swamidass and Newel (1987) concluded that capabilities and competencies based on specific manufacturing innovation processes are important components of organizational capability in achieving low cost, high flexibility, and high quality. In this case the role of the manufacturing process as a potential resource, the determination of human role in organizational activity and organizational factors is an important factor in achieving the company's competitive advantage.

Schroeder, et al. (2002) conducted a study focusing on the production process with the development of a group of company capabilities to achieve improved company performance. While Flynn and Schroeder (1994) suggests a link between quality management practices, JIT, manufacturing strategies, and company performance. These studies are different from the concept of resource-based views because in researches the manufacturing strategy usually investigates the adoption of specialized manufacturing practices and how they affect the firm's performance.
Schroeder, et al., (2002) developed a conceptual model of resource-based manufacturing strategy and

suggested that the concept of learning within a company is developed based on a resource-based view that focuses on causal knowledge, ambiguity, and complex social factors. Paiva et al. (2008), resource-based views are developed based on a combination of internal and external learning perspectives that are closely related to traditional approaches in strategy implementation. This approach emphasizes the company's ability to explain in detail and clearly both in terms of manejerial, pactic, competitiveness development, corporate profitability, and core competencies of the company.

Alegre and Chiva (2008) define organizational learning (organizational learning) as a process undertaken by the company to do the learning. This process is related to changes that occur in the structure and management of the company to maintain or improve the performance of the company as a whole. Not a few empirical studies undertaken emphasize the importance of the learning process in the organization and how the learning process is conducted (Bruton et al., 2004). The importance of the role of the learning process within the organization, in terms of learning orientation, learning capabilities, and learner organizations, in all business activities of enterprise performance data has been documented in strategic management literature, particularly in terms of manufacturing strategy (Calantone et al., 2002; Prieto and Revilla, 2006). Organizational learning has been recognized as a key factor for improving the company's performance and capability, and the ability to learn both through internal as well as external sources (external learning) as a source to create corporate competitive advantage (Jiang and Li, 2008) .

Internal learning includes multifunctional training for workers and empowering workers in production processes and development, so it is hoped that the practice will bring organizations to be more adaptive (Liao et al., 2008). External learning in the context of manufacturing enterprises, is an interorganizational learning process through problem solving that arises in the interaction with consumers and suppliers that can create tacit knowledge that is not easily imitated (Almeida et al., 2003). Through internal and external learning processes it is expected that companies have patent rights over processes and equipment that provide a competitive advantage for the company. The company's competitive advantage can be measured or assessed through company performance.

Model and Hypothesis Research

This study focuses on manufacturing strategies that are defined as capabilities and resources and their relationship to organizational performance. There are three factors or types of resources and capabilities developed in the production function that are difficult to replicate and transfer (Schroeder, et al., (2002) ie proprietary process and equipment, internal learning, and external learning Manufacturing practices are adopted by imitating world class manufactures that can contribute to a competitive balance but not for competitive advantage.The model also emphasizes that the role of learning and knowledge development within the company is to produce processes and equipment created through the process of "path dependent problem Solving "that mediates between the learning process and the company's performance.

Internal and External Learning

The concept of learning within a company is developed based on a resource-based view that focuses on causal knowledge, ambiguity, and complex social factors Internal learning includes multifunctional training for workers and empowering workers in production processes and development, so it is hoped that the practice will bring organizations to be more adaptive (in Schroeder, et. Al., 2002). The focus of learning and company performance has a positive relationship. According Schroeder, et. al., (2002), the learning process is the only source of sustainable competitive advantage. The learning process can occur in unpredictable and risky ways, sometimes even occurring in a way that is difficult to codify, leading to the deployment of resources that have a causally ambiguous impact.

Schroeder, et. al (2002) suggests that external learning in the context of manufacturing enterprises, is an interorganizational learning process through problem solving that arises in the interaction with consumers and suppliers that can create tacit knowledge that is not easy Imitated. External learning can be either supplier input in new products or process design and supplier involvement in quality creation and continuous and routine improvement.

Ownership of Production and Equipment Processes

Schroeder, et. al., (2002) suggest that organizational learning capabilities should produce an idiosyncratic

manufacturing process, including appropriate process technologies that contribute to the achievement of competitive advantage. Therefore, in this research focused on the assessment of the company's production process as a competitive overall, and the level of conformity of the production process. Ownership of production processes and equipment includes patent-protected equipment and undisclosed equipment, state of the art equipment and processes that have been exclusively developed by the company.

Hypothesis 1a: Internal learning affects ownership of production processes & equipment
Hypothesis 1b: External learning affects ownership of production processes & equipment

Company Performance

The manufacturing capability that determines a firm's competitive advantage is measured through company performance. Many of the company's external factors can change the influence of resources in the production process on measures of financial performance such as sales and profitability. In this research used index measurement of some performance variables are the cost of representing the percentage of sales, the appropriate quality, timely delivery percentage of time cycle from acceptance of raw materials to acceptance to consumers, and length of time or production schedule. Hayes and Wheelwright (1984) cited in Schroeder, et. al. (2002) argue that the development of process and equipment ownership leads to competitive advantage through the achievement of good corporate performance. The company's performance variable consists of four dimensions of performance measurement that include quality, delivery, flexibility, and boarding.

Quality focuses on the importance of producing products and services that can satisfy the specifications and needs of consumers. Therefore, companies need to pay attention to the problem of quality improvement so as to reduce the cost of production, because by doing something right when the first goods and services produced can eliminate waste. Quality improvement is one way for organizations to improve business performance (Ward et al., 1995). Flexibility is the ability to respond quickly to changes in products, services, and processes. Manufacturing flexibility is defined as the ability of manufacturing firms to allocate and reallocate their resources effectively in response to changes in the environment and internal conditions (Gordon and Sohal, 2001). While Currie and Seddon (1992) states that flexibility includes the machine, process, product, volume, and lay out.

Delivery includes the ability to respond to customer bookings. Currie and Seddon (1992) defines delivery strategy as delivery capability (by meeting delivery schedule and delivery promise) and speed of delivery (acting fast on customer order). Measurement of delivery performance emphasizes on activities that focus on improving delivery reliability such as on time delivery, accuracy in inventory status, and delivery times. Cost strategy as the production and distribution of products with the lowest cost and minimum waste resources. A quality strategy is defined as a company's activity to produce products that meet specifications or meet consumer needs. Lower prices can increase demand for products or services but also reduce profit margins if the product or service can not be produced at a lower price. In order to compete in a cost-based business environment, an operations manager needs to offer products and services at a low cost per unit of labor, material, scrap and other overhead costs.

Hypothesis 2: Ownership of processes and equipment affects company performance

Effect of Moderation of Human Resources

Human Resources / Labor. Based on the concept of intangible resources and some issues raised by Hall (1993), it can be concluded that human resources (skills, knowledge, talents, etc.) are intangible resources. But until the last few years, little effort has been made to identify and provide structures on the nature and role of intangible resources in strategic management. Human resource capabilities and skills are important to the company. The issues that now arise are related to the acquisition. Human resources can join in a company that has high compensation, career development programs and the like (Ellitan, 2002). According to Hall (1993), human resources can bear functional and cultural capabilities due to experience, ability, values, integration in the company and other factors. Therefore, resource-based theory suggests that human resources can create or sustain competitive advantage through competence development and knowledge transfer. Human resource skills and capabilities affect company performance and alignment between technology and skills and human resource capabilities can improve

the productivity and flexibility of the company (Ellitan, 2003, 2005). Ownership of process and technology equipment will further improve performance if resources are available with high quality and capability.

H3: The effect of ownership of process and equipment on company performance is moderated by the quality and capability of human resources owned by business organization.

2.3. Research Framework

This study focuses on manufacturing strategies that are defined as capabilities and resources and their relationship to organizational performance. There are three factors or types of resources and capabilities developed in the production function that are difficult to replicate and transfer (Schroeder, et.al., (2002) ie proprietary process and equipment, internal learning, and external learning Manufacturing practices are adopted by imitating world class manufactures that can contribute to a competitive balance but not for competitive advantage.The model also emphasizes that the role of learning and knowledge development within the company is to produce processes and equipment created through the process of "path dependent problem Solving "that mediates between the learning process and the company's performance.The research model is illustrated in Figure 1

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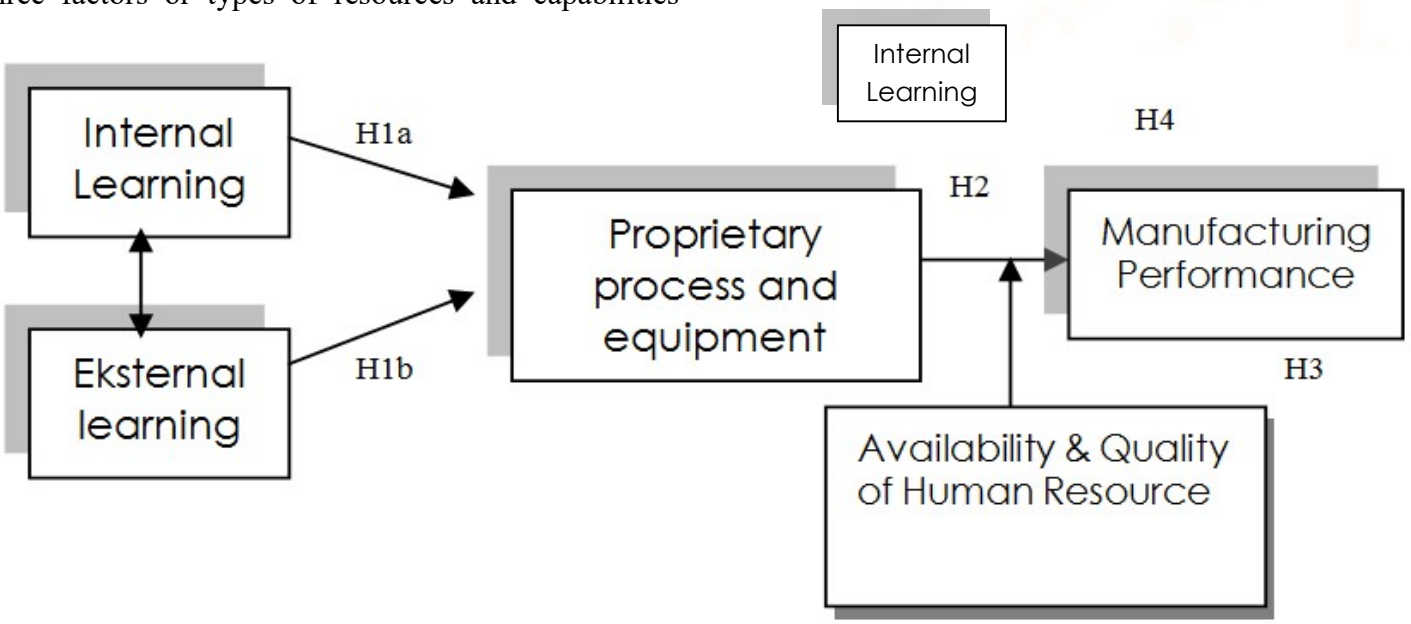

Figure 1. Research Model
Source: Schroeder, Bates, dan Junttila, 2002 (Modified Framework)

RESEARCH METHODS

3.1. Research Design

This research is an empirical study that aims to examine the relationship between several independent variables with some independent variables. The independent variables of this research include internal and external organizational learning levels, while the dependent variable is the company's operational performance relative to its competitors and growth. The level of ownership of production equipment is the intermediate variable in this research and the manufacturing strategy as a moderator variable affecting the relationship of ownership of production equipment and performance. The relationship between the variables of this research was tested by using simple regression model, multiple regression, and multilevel regression.

3.2. Population dan Sample

The purpose of this research is to analyze how the influence of internal learning of employees, external learning obtained from suppliers and consumers, and ownership of processes and equipment, on the

performance of the company. This research also examines the role of HR moderation in the relationship between process ownership and equipment with performance. The research population that became the object of this research covers all manufacturing companies operating in Indonesia. The population is a manufacturing company registered by the Manufacturing Companies Directory published by the Central Bureau of Statistics, 2010. The sample is determined by using purposive sampling technique, and the sample selected is a manufacturing company with criteria that have large scale. The classification of small, medium and large enterprises for this study is based on the number of permanent workers: (1) Small companies: 10-99 employees. (2) Company is: 100-499 employees. (3) Large companies: 500 or more. The company-scale classification based on the number of permanent employees has been done by former researchers Ko, Kinkade, and Brown, (2000) and also Cagliano and Spina (2000). Based on these criteria then taken as sample is a manufacturing company that has a permanent workforce of more than 500 people. In addition, the size of the company classification is also based on assets owned by the company. Since asset ownership data is confidential and often companies do not want to fill in the data, the asset ownership data is only used as a complement and will be listed on the respondent's profile in the measurement instrument, and for the company-scale classification in this research focused on the number of firms.

3.3. Data Collection Technique

The data used in this research include primary data and secondary data. Primary data were obtained through mailed questionnaires and direct survey (to anticipate low response rates if data were only obtained via mail survey) in manufacturing firms, with company leaders as subject targets, tailored to the conditions of manufacturing firms in Indonesia. The distribution of questionnaires was conducted for one month with a six-week return limit. To improve the rate of return of the questionnaires, the researcher tried to follow the suggestions proposed by Issac and Michael (1990) with the system of free postage stamps and sending letters to the respondents (quoted from Thesis Ellitan, 1998). Secondary data is related to data collection of manufacturing companies in Indonesia. The population comprises all manufacturing firms in operation, while the sample is taken by a manufacturing company listed in the Manufacturing Companies Directory published by the Central Bureau of Statistics, 2013.

3.4. Operational Definition and Instrument Testing

Internal Learning

The concept of learning within a company is developed based on a resource-based view that focuses on causal knowledge, ambiguity, and complex social factors. Internal learning includes multifunctional training for workers and empowering workers in production processes and development, so it is hoped that the practice will bring organizations to be more adaptive (in Schroeder, et.al., 2002). Internal learning includes 8 items of questions with Cronbach Alpha value of 0.920.

External Learning

Schroeder, et.al., (2002) suggests that external learning in the context of manufacturing enterprises is an interorganizational learning process through problem solving that arises in the interaction with consumers and suppliers that create tacit knowledge that is not easily imitated . External learning includes 14 questions on interorganizational relationships such as three dimensions that include: trust in business partners, commitment to business partners, and shared-vision among business partners.

Ownership of Production and Equipment Processes

The ownership variables of the production process and equipment include 14 questions about patent-protected equipment and undisclosed equipment, state of the art equipment and processes developed exclusively by the company.

Human Resources. Human resources represent staff and workforce within the company that includes managerial staff, administrative staff, technicians, specialists, and parts of production. Human resource variables are viewed from two perspectives. The first perspective is seen from the level of skill and capability (low and high). The second perspective is seen from the scarcity-abundance of human resources. The five-point semantic differential scale type is used to measure the skill or capability and availability of human resources. Used instruments were developed by Badri et al. (2000).

Operation Performance

Company performance measurement is used index measurement of some performance variable that is

cost representing percentage of sale, appropriate quality, timely delivery percentage of time cycle from acceptance of raw material to acceptance to consumer, and length of time or schedule of production. The company's performance variable consists of four performance measurement dimensions that include quality (2 questions), delivery (3 questions), flexibility (3 questions), and boarding (3 questions). The five-point Likert scale is used to measure the level of approval or disapproval or the level of good or bad (on the measure of company performance) on the statement or statement submitted statement items in the questionnaire.

3.5. Data Analysis Technique

Data analysis procedure to be used is

A. Test validity and reliability. A good measuring instrument or measurement instrument if it meets the criteria of validity and reliability. To find out how well the instrument used, in this case the questionnaire, is needed validity and reliability test. Validity test is done to find out how far the difference obtained through measuring instrument used, the actual wave of difference with the respondents studied.test validity in this study used Test Item Item Analysis (CFA) items on the questionnaire items. Test reliability is done to estimate the extent to which measurement instruments used free of random or unstable errors, said in this reliability testing to determine the results of measurement consistency of respondents' responses. Internal consistency of question items in the questionnaire will be by Cronbach Alpha method. The value of the rule of thumb to be used for the Crobach Alpha value must be greater than 0.7 otherwise 0.6 is also acceptable (Hair, et al., 1998).

B. The classic assumption of violation test includes normality test, homoscedasticity, multicollinearity, and autocorrelation test. The heteroscedasticity assumption test aims to test whether in the regression model there is a variance inequality of the residual one observation to another observation. Multicollinearity test aims to test whether the regression model found a correlation between independent variables using VIF (Variance Inflation Factor) value and the correlation between free variables must be weak. The normality test aims to test whether in the regression model the intruder or residual variable has a normal distribution. In this study the normality test by looking at the histogram graph that compares the observation data with the distribution approaching the normal distribution. The autocorrelation test aims to test whether in the linear regression model there is an autocorrelation between the confounding error in period t with the intruder error in period t-1 (previous). Autocorrelation test in this research using Durbin-Watson test (DW test).

C. Hypothesis testing is conducted to examine the effect of internal and external learning on peroses ownership and the effect of process ownership on company performance. The result of model test using Hierarchycal Regression Analysis method.

This research is done by using research setting at manufacturing company in East Java, with sample of research is big scale manufacturing company, to prove whether the developed model is still relevant if applied in different research setting. The managerial issues that will be discussed in this research are related to how the company integrates resources and capabilities possessed and developed through the process of learning and ownership of processes and equipment, to achieve distinctive manufacturing competence and then applied to improve business performance. Through the explanation of the role framework of the manufacturing process, this research contributes to the manufacturing strategy literature that will be useful for the development of upcoming theories, providing perspective on how internal and external learning can create valuable resources for the company as a basis for achieving competitive advantage.

DATA ANALYSIS

This chapter presents the results of data analysis. First, this chapter describes the profile of the companies participating in the study covering the length of operation (age of company, business field, number of permanent employees, ownership and cooperation Secondly, this chapter presents the analysis of independent variables including goodness of measures, using Test of validity and reliability Third, this chapter presents the results of hypothesis testing and ends with analysis and discussion of the findings.

4.1. Data Overview

4.1.1 Response Level

This research is done by survey By mail (mail-questionare) is a way to test the responses of respondents through the delivery of questionnaires via mail. The advantages of mail-questionare are cost-effective, time-saving, respondents can choose the right time for them to fill in the questionnaire, there is greater anonymity, uniformity, no interviewer bias, and many respondents Can be achieved (compared with sending the interviewer to many places). While the drawbacks are inflexible, there is a tendency for low responses, only recorded verbal behavior, no control over the environment (noisy, disturbed), no control over the sequence of questions, can lead to unanswered questions, Can record answers spontaneously, difficult to distinguish between non-response and wrong address, no control over return time, cannot use complex format, and can get biased samples.

Table 1 presents a summary of the response rates of this study. Twenty-four questionnaires were resubmitted because the company was declared closed or moved to another unknown address. Two companies refused to participate on the grounds of not being able to answer or provide an assessment of the questions raised in the research questionnaire. Furthermore, five companies provide incomplete answers that can not be included in data analysis. Finally, thirty six questionnaires were used for the purposes of this study. Response rate of 11.20% is reasonable considering the respondents in this study are CEOs or top managers within the company and the deadline of data collection is relatively short. Level of response that can be processed by 9.83% Besides, researchers also did not send follow up letters due to budget constraints and research time within six months.

Table 1: Distribution of Questionnaires

The questionnaire is distributed.	400
Unsent / Close / Move Address	24
Refused to participate	2
Return and could be processed.	36
Return and could not be processed.	5
Not return.	366
Response Rate	11.20%
Level of Respond could be processed.	9.83%

4.1.2. Characteristics of Respondents

Profile of respondents of this study are categorized based on company age, business field, cooperation, and number of permanent employees. The data on the profiles or characteristics of the respondents can be seen in Table 2. The majority of respondents have a permanent workforce of 100-500 workers, and 13 respondents who have a fixed workforce of greater than 500 people. More than 80% have been in operation for more than 5 years and there are 6 relatively new companies of the total respondents, 33.33% represents textile, garment and leather industries, and 33.3% operate in handicrafts, rattan, bamboo and furniture. The rest represents the oil and rubber coal industries. More than 85% of respondents do not yet have cooperation with foreign / international entities.

Table 2 General Characteristics of Respondents

Dimensions	Category	Number of respondents	Percentage
Company Age	**Less than five years**	6	16.60
	5-10 year	9	25.00
	>10-20 year	9	25.00
	>20-30 year	11	30.55
Business fields	Textiles, clothing, leather	12	33.33
	Wood, bamboo, rattan, handicrafts, furniture	12	33.33
	Coal, chemical, oil, rubber, plastics industries	6	16.66
	Minerals and metal materials	6	16.66
Cooperation	There is no cooperation with foreign entities	32	88.88
	Exist	4	11.12
Labour	100-500	23	36.8

Test Validity Item is a statistical test used to determine how valid an item question measures the variables studied. Test Reliability item is a statistical test used to determine the reliability of a series of question items in reliability measure a variable. According to Hair, et al. (1998) the quality of data generated from the use of research instruments can be assessed through reliability and validity test. Test each of them to know the consistency and accuracy of data collected from the use of the instrument. This study uses internal consistency test using Cronbach alpha coefficient. Test the homogeneity of data by using correlational test between the score of each item with the total score.

As noted earlier, the reliability of the data can be seen by calculating the Cronbach's alpha coefficients. Multi-item measurements are considered reliable if Cronbach's alpha is higher than 0.7 (Nunnaly, 1978). Measurement validity is also done by conducting homogeneity test data that is using correlation test between score of each item with total score. The higher the homogeneity coefficient the more valid and reliable the measurement. Summary of reliability and validity test can be seen in Table 3. The results of this study show that all measurements have reliability (more than 0.7) and high validity.

Table 3. Test Validity and Reliability

Research variable	Number of Questionnaires	Reliability	Homogeneity item
Internal Learning	11	.9177	.625-.904
External Learning	11	.8766	.531-.839
Ownership of tools and technology	4	.5443	.559-.700
Availability and Quality of Human Resources	12	.8713	.741-.873
Operating performance	10	.8844	.589-.799

4.1.4. Descriptive statistics

Table 4 shows the internal level of learning, the level of external learning, technology capability, manufacturing strategy, human resource competencies of small and medium manufacturing enterprises in Indonesia. In general, the level of internal learning is still at a low level (below moderate 2.5). External learning is at a moderate level and technological capabilities are also at a moderate level.

Table 4: Tingkat Pembelajaran Internal, Pembelajaran Eksternal dan Kepemilikan Teknologi

Variable	Mean	Standard deviation
Internal Learning	2.3486	.88234
External Learning	3.3282	.57774
Ownership of tools and technology	3.6572	.43949

4.2. Internal and External Learning Influence on the Level of Ownership of Equipment and Technology

The following tables 5 and 6 provide a summary of the results of multiple regression and simple regression to see the Influence of Internal and External Learning on the level of equipment and technology ownership and see the effect of equipment and technology ownership levels on performance. Important points to be said about the influence of internal and external learning on the level of equipment and technology ownership: First, overall, multiple regression results show that simultaneously independent variables of internal learning and external learning explain 25.9% variants of equipment and technology ownership. Second, internal learning and external learning have a positive effect on equipment and technology ownership. This indicates that ownership of equipment and technology is influenced by the high level of internal and external learning of the organization. From these findings indicates that the first hypothesis of this study is accepted.

Table 5: Internal and External Learning Influence on Equipment and Technology Ownership Level

Dep Var	Para meter	B	SE	T	Sig	F	Sig	R2
KPA	intercept	1.960	.202	9.723	.000	34.476	.000	.259
	IL	.128	.046	2.788	.006			
	EL	.348	.068	5.089	.000			

Table 6 below presents a summary of simple regression results to see equipment and technology ownership levels on performance. Some important points to be said about this are: First, overall, multiple regression results show that simultaneously independent variables of equipment and technology ownership explain 31.6% variant of company's operational performance. Second, ownership of equipment and technology have a positive effect on operating performance. This indicates that ownership of equipment and technology affect the good performance of operations that can be achieved by the organization. These findings indicate that the second hypothesis of this study is accepted.

Table 6: Influence of Equipment Ownership and Technology Performance Level

Dep Var	Para meter	B	SE	T	Sig	F	Sig	R2
Kin	intercept	1.147	.323	3.554	.000	91.309	.000	.316
	Kap	.881	.092	9.556	.000			

4.3.4. Influence of Moderation of Human Resources

Looking at the linkage of technology with all aspects of life, it can be concluded that the most interacting with technology is human resources. As a technology user it is human beings who control the development of technology. Humans who control the usage and use of technology. Humans will not be separated from technology. Technology existed since civilization emerged, and technology has also been used since civilization and evolved in line with human civilization.

Table 7 presents moderated regression results that analyze the moderating effect of HR to the ownership relationship of production equipment and technology with operating performance. The value of R2 change

and the F-change from stage 1 to 2 and from stage 2 to 3 are significant, indicating that human resources influence the relationship of ownership of production equipment with performance performance. This is further demonstrated by the fact that the interaction term in the model has a significant standardized beta value. This can be explained by the concept of intangible resources and some of the issues put forward by Hall (1993), it can be concluded that human resources (skills, knowledge, talents, etc.) are intangible resources. Human resource capabilities and skills are important to the company. The issues that now arise are related to the acquisition. Human resources can join in a company that has high compensation, career development programs and the like (Ellitan, 2002). According to Hall (1993), human resources can bear functional and cultural capabilities due to experience, ability, values, integration in the company and other factors. Human resource skills and capabilities affect company performance and alignment between technology and skills and human resource capabilities can improve the productivity and flexibility of the company (Ellitan, 2017). Ownership of process and technology equipment will further improve performance if resources are available with high quality and capability.

Table 7: Effects of Human Resources Moderation

Variabel	Step 1	Step 2	Step 3
	Standardized Beta		
KPA	.562***	.510***	.977***
FLEKS		.415*	.675
KPA x FLEKS			.822*
R^2	.316	.341	.352
R^2 change	.316	.024	.011
F change	91.309	.197	.196
Sig. F change	.000	.025	.066
*** : significant at 0.01	** : significant at 0.05	* : significant at 0.1	

CONCLUSIONS AND RECOMMENDATIONS

5.1.Conclusion

From the results of hypothesis testing then some of the main findings are presented in this section. First, internal learning has a positive effect on performance, indicating that ownership of tools and technology is encouraged or enhanced by improving the internal learning process consisting of: (1). Train employees to be able to fill other parts out of their responsibilities where necessary, (2) . Receive useful suggestions in the company, (3). Implementing suggestions for serious improvement of products and processes, (4). Provide training to employees to be able to do more than one task, (5). Recruiting skilled workers, possessing qualified natural resources and applying management practices simultaneously and integrated, (6). Always update equipment maintenance process accordingly / better than industry standard, (7). High commitment to create a conducive working environment through the guarantee of work safety and employee benefits, (8). Implement programs to improve employee knowledge (such as employee empowerment and establishment of autonomuos teams), (9). Improving manufacturing capacity through purchasing new machinery, recruiting new employees, developing production facilities, (10). Reorganize the company through the implementation of e-business and / or e-commerce, (11). Implement production process automation program and implement information and communication technology. The main findings of both studies indicate that external learning will encourage companies to increase their ownership of equipment and technology. The external learning in question includes several factors as follows: (1). Adopted ERP (Enterprise Resource Planning) software (2). Maintaining long-term relationships with suppliers, (3). Maintaining close communications with suppliers about quality considerations and design changes, (4). Provide feedback on delivery quality and performance (5). Actively involves employees and leaders in the product design process (6). Restructure the company's strategy and manage the portfolio associated with suppliers. (7). Focusing on core activities and outsourcing to support operations processes and activities (machine and equipment maintenance, material handling). (8). Restructuring the

manufacturing process and setting the engine layout to support the production process. (9). Implement continuous quality improvement programs (such as integrated quality management, six sigma) (10). Implementing equipment productivity improvement program (such as TPM / Total Productive Maintenance program) (11). Implement programs to improve and speed up the process of developing new products.

Third, the findings of this study show that equipment and technology ownership affects operational performance. Ownership of equipment and technology referred to in this research are: (1). Companies have equipment protected by company patents, (2) companies have equipment and technology help to achieve competitive advantage (3). Adopt process technology and have production equipment at a higher level than competitors in the same industry.

Looking at the linkage of technology with all aspects of life, it can be concluded that the most interacting with technology is human resources. As a technology user it is human beings who control the development of technology. Humans who control the usage and use of technology. Humans will not be separated from technology. Technology existed since civilization emerged, and technology has also been used since civilization and evolved in line with human civilization. Human resources affect the ownership relationship of production equipment with performance performance. This is further demonstrated by the fact that the interaction term in the model has a significant standardized beta value. This can be explained by the concept of intangible resources and some of the issues put forward by Hall (1993), it can be concluded that human resources (skills, knowledge, talents, etc.) are intangible resources. Human resource capabilities and skills are important to the company. The issues that now arise are related to the acquisition. Human resources can join in a company that has high compensation, career development programs and the like (Ellitan, 2002).

5.3. Implication of Research Results

This study has both theoretical and managerial implications. Theoretically this study supports the resources-based theory used as the theoretical basis of technological relations and performance. Ownership of production equipment and technology proves to be resources and capabilities that can be used to achieve competitive advantage. The study's findings add a body of literature on the importance of internal and external learning in developing the capabilities of manufacturing firms, especially in developing countries. This study is the first step to undertake the development of empirical studies by considering further factors that determine success in resource management and technology primarily through organizational learning. Furthermore, the findings of this study also indicate the factors of operating strategy that moderate ownership of tools and technology companies to performance.

5.4. Limitations and Suggestions

However, the authors acknowledge that this study still has many limitations. The results of this study can not be generalized considering that this study is only done at a certain point in Indonesia and the data used is only the CEO's perception. Therefore, the researcher suggests the need for longitudinal study. Involving muliple-respondents in one company will increase the accuracy of the results (eg taking into account the perception of the operational / manufacturing field). In addition, studies of equipment and technology ownership in manufacturing companies are recognized to be biased if perceptions of equipment and technology ownership levels, manufacturing strategies and operating performance vary.

The data were collected based on the respondent's perception, self-rating, and multi-choice questionnaire. This approach is sufficient to obtain much information in a relatively short period of time. It should be considered to treat longitudinal studies, but unfortunately this can not be done in the scope of this study. Finally, the researcher gives some suggestions for future research that can be done to deepen the study of firm's resources: (1). This study can be done also in other developing countries that have similar culture. (2). The same instrument can also be used to examine technology adoption in small and medium enterprises. (3). Conducting a study of organizational learning taking into account the variables of the business environment, organizational context and culture as a moderator in influencing organizational learning and performance relationships, will enrich the knowledge and insight of the management of the company's resources.

REFERENCES

1) Alegre, J., Chiva, R., 2008. Assessing the Impact of Organizational Learning Capability on Product Innovation Performance: an Empirical Test, *Technovation,* 28, 315-326.

2) Almeida, P., Dokko, G., dan Rosenkopf, L., 2003. Startup Size and The Mechanism of External Learning: Increasing Opportunity and decreasing Ability. Research Policy, 32, 301-305.

3) Badri, M.A., Davis, D. & Davis, D. (2000). Operation strategy, environment uncertainty, and performance: a path analytic model of industries in developing country. *Omega, International Journal of Management Science*, 28, pp. 155-173.

4) Barney, J. (1991). Firm's resources and sustained competitive advantage. *Journal of Management,* 17. pp. 791-800.

5) Calantone, R. J., Cavusgil, S. T., dan Zhao, Y., 2002. Learning Orientation, Firm Innovation Capability, and Firm Performance. *Industrial Marketing Management,* 31: 515–524.

6) Cagliano, R & Spina, G., 2000. How Improvement Programs Of Manufacturing Are Selected: The Role Of Strategic Priorities And Past Experience. *International Journal of Production and Operation Management*, Vol. 20 (7), pp. 772-791.

7) Chuang, S.H., 2004. A Resource-based view on Knowledge manufacturing Capability dan Competitive advantage: An Empirical Investigation, 27, 459-465.

8) Currie, W.L. & Seddon, J.M. (1992). Managing AMT in a just in time environment in the UK and Japan. *British Journal of Management*, 3, 123-136.

9) Ellitan, L. 1998. Pengaruh Sumber keunggulan Kompetitif Terhadap Kinerja Industri Manufaktur di Indonesia, Thesis, Universitas Gadjah Mada, Tidak Dipublikasikan.

10) Ellitan, L. 2002. Technology Adoption, technology management and manufacturing performance: a case study from Indonesia, *Journal of Business and Accounting*, Faculty of Economic, Trisakti University, Jakarta ,pp 1-21.

11) Ellitan, L. 2003. Peran Sumber daya dalam Meningkatkan Pengaruh Teknologi Terhadap Produktivitas, Jurnal Manajemen dan Wirausaha, Vol 5 no. 2. Universitas Kristen Petra, Surabaya, September, pp. 155-170.

12) Ellitan, L. 2005. Adopsi Teknologi dan Fleksibilitas Manufaktur: Peran Sumberdaya Sebagai Moderator, Jurnal Manajemen Maranatha, Vol 5 November, pp. 13-34.

13) Ellitan, L. 2017. Resource Management and Evaluation of Competitive Advantage: A Case Study of East Java Menufacturing Companies, *Academic Research International Vol. 8(2) June, pp. 133-141.*

14) Flynn, B.B, Schroeder, R., Sakakibara, S., 1995. The Impact of Quality Management Practices on Performance and Competitive Advantage. *Decision Science*, 26 (5), 659-691.

15) Gordon, G & Sohal, A.S. (2001). Assessing manufacturing plant competitiveness: an empirical field study. *International Journal of Operation and Production Management*, 21(1/2), 233-253.

16) Grant , R.M. (1991). The resources based theory of competitive advantage: implication for strategy formulation*, California Management Review*, vol. 33(3) pp.114-135.

17) Hall. R. 1993. A framework linking intangible resources and capabilities to sustainable competitive advantage, *Strategic Management Journal*, Vo. 14 Issue 8, November, pp.607-618.

18) Hair, J.F., Anderson, R.L., Tatham, dan W.C., Black, 1998. *Multivariate Data Analysis*, 5th ed., Upper Saddle River, New Jersey, Prentice Hall, Inch.

19) Hart, S.L., 1995. a Natural Resources-Based View Of The Firm. *Academy Of management Review.* Vol. 20, No.4, pp. 986-1014.

20) Hayes, R.H., Wheelwright, S.C., 1984. *Restoring Our Competitive Edge: Competing Through Manufacturing*. Wiley, New York.

21) Jiang, X., Li, Y., 2008. The relationship Beetwen Organizational Learving and Financial Performance in Strategic Alliance: A Contingency Approach. Journal of World Business, 43, 365-379.

22) Ko, E; Kincade, D. & Brown, J.R. 2000. Impact of Business Type Upon The Adoption of Quick Response Technologies: The Apparel Industry Experience. *International Journal of Production*

and Operation Management, vol. 20(7), pp. 772-791.

23) Liao, S.H., Fei, W.C., Liu, C.T., 2008. Relationship between Knowledge Inertia, Organizational Learning, and Organizational Innovation. Technovation, 28, 183-195.

24) Paiva, E.L., Roth, A.V., Fensterseifer, J.E., 2008. Organizational Learning Capability on Product Innovation Performance: An Empirical Test. Technolovation, 28, 315-326.

25) Permana, A., Laksmana, A., Ellitan, L. 2017. The Effect of Environmental Dynamism, Dynamic Managerial Capabilities, and Deliberate Organizational Learning on the SMEs Performance with Dynamic Capabilites ad Moderator Variable: A Case Study on Small SMEs in Surabaya, *International Journal of Advances. Research, 5(7), 540-551.*

26) Prieto, I. M., & Revilla, E. 2006. Learning Capability and Business Performance: A non-Financial and Financial Assessment. *The Learning Organization*, 13(2): 166–185.

27) Russo, M.V. & Fouts, P.A. (1997). A resource-based perspective on corporate environmental performance and profitability*, Academy Management Journal*, Vol 40 no. 3, pp 535-559.

28) Schoemaker, P.J.H. 1992. How To Link Strategic Vission to Core Capabilities, *Sloan Management Review.* Fale, p.67-81.

29) Schroeder,R.G., Bates, K.A., dan Junttila, M.A. (2002). A-Resource Based View Of Manufacturing Strategy And The Relationship To Manufacturing Performance. *Strategic Management Journal*,Vol. 23, pp. 105-117.

30) Swamidass, P.M., Newell, W.T., 1987. Manufacturing Strategy, Environmental Uncertainty and Performance: A Path Analytic Model. *Management Science*, 33 (4), 509-524.

31) Ward, P.T., Bickford, D.J., Leong, G.K., 1995. Business Environment, Operation Strategy, and Performance: An Empirical Study of Singapore Manufacturers, *Journal of Operation Management* 13, 2, 99-155