FIRM’S RESOURCES AND FIRM’S PERFORMANCE OF INDONESIAN MANUFACTURING FIRMS: THE ROLE OF emerging MARKET AND FIRM CHARACTERISTICS

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Abstract

The broad objective of this study is to investigate the effects of firm’s resources on performance. The specific objectives are as follows: (1) to investigate relationship between firm resources and firm performance; (2) to investigate relationship between firm resource and firm growth; (3) to analyze sensitivity of the resource-growth relationship on country’s characteristics (regulation of resource flow); (4) to analyze sensitivity of the resource-performance relationship on firm’s characteristics (including business relationships, business strategy, firm orientation, and type of ownership); (5) to examine inter-relationship between performance and growth.

This study formulates seven propositions: (1) More power in acquiring and controlling critical resources leads higher firm performance. (2) The impact of firm’s resources on performance is greater in a stable economic environment, compared to an uncertain one. (3) The impact of firm’s resources on performance is greater in a more hostile environment. (4) More power in acquiring and controlling critical resources leads higher performance of the firm especially due to the differentiation of firm. (5) More power in acquiring and controlling critical resources leads higher performance of the firm especially due to the quality, flexibility and dependability strategy and lead to the lower performance due to cost strategy. (6) More power in acquiring and controlling critical resources leads higher performance of the firm especially due to the business partnerships. (7) There is causal inter-relationship between firm’s performance and firm’s growth.

This study is expected to contribute to the theory and practice in strategic management, operation management, and resources-based theory, particularly in the Indonesian manufacturing sector. It attempts to provide a framework for managing the resources and the policies, in organizations by developing practical guidelines for practitioners.

Keywords: emerging market, firm’s resources, firm’s performance, Indonesian manufacture

Justification of The Study

Introduction

There were numerous articles analyzing the relationship between resources and performance (Wernerfelt, 1984; Barney, 1991; Grant, 1991; Harrison et al, 1993; Russo & Fauts, 1997, Olala.1999). The theory behind the role of resources on organizational performance in creating competitive advantage was attributed to Barney (1991) and early researchers who argue for the resource-based theory of competitive advantage. The theory upheld that firm’s resources were the key determinants of performance and competitive advantage. Firms can then develop this

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competitive advantage by creating value which obstruct from imitating. Issues rise on the relationship between resources and performance was whether this relationship applies for all organizations in all environments.

Several prior researches have reported that the impact of resources on performance was affected by economic uncertainty and environmental hostility (Spital and Bicford, 1992; Badri et al, 2000, Zahra & Covin, 1993). This relationship is also affected by the business relationship, (Chisea et al, 2000), manufacturing strategy, business strategy (Wernerfelt, 1984; Grant, 1991; Russo & Fouts, 1997), and types of partnership (Ellitan, 2006). Thus, this study therefore seeks to investigate the moderating role of emerging economy characteristic (economic uncertainty and environmental hostility) and firm’s characteristics (business strategy, manufacturing strategy and business relationship) on the resources-performance relationship. This study also aimed to find out the impact of resources on performance in the Indonesian manufacturers.

**Scope of the Study**

This study focuses on the manufacturing industries, specifically medium and large manufacturing firms in Indonesia. Firm Resources cover the technology, organizational, material, people, and new management practices. The contingencies to resources-performance relationship are limited to emerging economic characteristic (environmental uncertainty and hostility) and firm’s characteristics (business strategy, manufacturing strategy and business relationship).

**Significance of the Study**

This study is expected to contribute to the theory and practice in strategic management, operation management, and resources-based theory, particularly in the manufacturing sector. In terms of theoretical significance, this study intends to improve upon existing literature by addressing the following issues: First, to investigate the role of firm resources with the firm performance and its growth. Second, this study comprehensively investigates whether emerging market characteristic (environmental uncertainty and hostility) and firm’s characteristics (business relationship, business strategy and the partnership) moderate the relationship between the firm resources and performance relationship.

The practical significance of this study lies in its attempt to provide a framework for managing the firm resources and the contextual factors, in organizations by developing practical guidelines for practitioners. For practicing managers, the evidence from this empirical research may be useful to make decisions in managing the firm’s resources and resources flows as well as identifying the contextual factors involved.

**Objectives of The Study and Analytical Framework**

The broad objectives of this study are to investigate the effects of resources flow on performance in Indonesian manufacturing firms. The specific objectives are as follows:

1. To investigates relationship between firm resource and firm performance.
2. To analyze sensitivity of the resource-performance relationship on economic uncertainty and environmental hostility
3. To analyze sensitivity of the resource-performance relationship on firm’s characteristics (including business relationships, business strategy, and manufacturing strategy).
4. To examines inter-relationship between performance and growth.
Based on these objectives, this study offers an alternative model stemming from the resource-based perspective with regard to firm characteristics and country's characteristics of resource management. Resource-based perspective examines one or more composition of firm resources of the firm that it must be valuable, rare or unique among a firm's competitors, and imperfectly imitable (Barney, 1991). Firms attempt to find fit strategy and pattern of business relationship in acquiring and dominating the critical resources.

Figure 1 shows the general research framework. There are four major resources composition of firms; those are technology, labor, material, and management practices. The figure shows the effects of major resources on firm's performance are moderated by firm's characteristics and country's emerging market characteristics (environmental uncertainty and environmental hostility). The model also provides inter-relationship between firm's performance and firm’s growth.
Figure 1: Conceptual Framework of the Research
Propositions Based on The Previous Studies

The proposed conceptual framework of this study is synthesized from several previous studies by the author (since 2000 to 2006) and the supporting articles. This section is devoted to discuss the main propositions based on the findings of the previous studies related to the resources-performance relationship and the role of some contextual factors.

Critical resources and Firms Performance

A theory that may explain why technology adoption, resources and management practices may increase organizational performance and creates competitive advantage is put forth by Barney (1991) and others (Grant, 1991, Lado & Wilson, 1994, Wernerfelt, 1984) who argue for resource based theory of competitive advantage. Under this theory, the firm's resources are key determinants of performance and competitive advantage. Based on the resource-based theory, AMT, material, capital, labor, and management practices are considered as resource and capabilities of the firms.

Technology. Technological adoption and technological innovation are powerful forces for industrialization, increasing productivity, supporting growth and improving the standard of living (Abernathy & Clark, 1985). Technological strength has affected manufacturing cost and other competitive drivers (Harisson & Samson, 1997, Ellitan, 2004a). Schroeder (1990) found that technology adoption (innovation) creates competitive opportunities and threats for those who adopt them and for those who did not. Numerous studies (such as Youseff, 1993; Mechling et al., 1995; and McGregor & Gomes, 1999, Ellitan, 2003b; 2005a) have emphasized the potential strategic benefit of flexibility responsiveness and improved productivity through purposeful adoption of advanced manufacturing technology. The literatures provide evidences that the benefits of AMT are not only to large firms but also to small firms (Mechling et al., 1995; Rishel & Burn, 1997; Ignance, et al. 1998; McGregor & Gomes, 1999). Most of the studies found that AMTs positively influence firms' performance (Youseff, 1993; Zammuto & O'Connor, 1992; Rishel & Burn, 1997; McGregor & Gomes, 1999). However, some of the studies revealed that hard technology has no significant impact on performance (Burgess et al. 1998; Dean & Snell, 1996). Even Beaumount and Scroeder (1997) found that hard technology has a negative impact on performance. Thus studies relating the impact of AMTs-performance relationship have produced contradictory results. Study in Indonesia, the extent of technology adoption and implementation have a positive impact on all dimension of performance (operational, financial & growth (Ellitan, 2002a, 2002b, 2003a, 2004a). The proper implementation and utilization of hard technology leads to improved manufacturing productivity as measured by efficiency and effectiveness. In turn, this will increase the flexibility in responding customer needs and in meeting customer demands (Ellitan, 2003b, 2005a).

Human Resource/Labor. Bearing in mind the concept of intangible resources and the enumeration issued by Hall (1993), it can be clearly deduced that human resources (skill, know how, talent and so on) are intangible resources. However, until few years ago, little attempt has been made to identify and give structure to the nature and role of intangible resources (human resources) in strategic management. The capabilities and skill of human resources are crucial for a firm's success. A problem now arises from the condition regarding acquisition. Human resources may be attracted to an enterprise which offers higher compensation, career development program, and alike (Ellitan, 2002c). Consider that human resources are able to be strategic resources. According to Hall
(1993), human resources may generate functional and cultural capabilities due to experience, abilities, values, integration in the company and so forth. Thus, the resource-based theory suggests that human resources may create or sustain a competitive advantage through competency development and knowledge transfer. Human resources skill and capabilities affect firm performance, and the alignment between technology and human resources skill and capabilities may improve firm productivity and flexibility (Ellitan, 2003b, 2005a).

Material. Material covers raw material, utilities and other supporting material in production process (Heizer & Render, 2000). Material resources are considered as those assets that create competitive advantage if they ‘outperform’ equivalent assets within competitor (Badri, et al, 2000; Ellitan, 2003b, 2005a). The availability and the sourcing of material also determine the business survival. Harrison et al. (1993) found that the firms that engage in raw material extraction and primary manufacturing are more capital-intensive than company that produce and market finished product. Ellitan, (2004c) found that the availability of material increase the impact of technology on firm performance. Import of raw material and capital goods are usually very high in countries attempting to develop. Thus, it can be concluded that the availability of material resources is one of the key success factors to increase firm’s performance.

Management Practices. There are abundant articles and empirical studies that investigated the impact of management practices (e.g. TQM, JIT, TPM, MRP and benchmarking) on a firm’s performance (Beaumont and Schroeder, 1997; Sakakibara, et al., 1997; Sohal & Terziiovky, 2000; Tzang and Chan, 2000; Sim, 2001; Ellitan, 2002d, 2002e; 2004d). Sohal and Terziiovky (2000) argued that the effective implementation of quality improvement practices (TQM, benchmarking, process reengineering) lead to improvements in organizational performance in terms of both productivity and profitability, along with improved customer satisfaction. Beaumont and Schroeder (1997) suggested that achieving competitive cost and quality may not be possible without some sophisticated technologies and modern management practices. Sim (2001) investigated the impact of TQM, JIT and AMT on performance. Successive incremental technique could streamline the production process through the elimination of non-value added activities (Ellitan, 2002d; Ellitan 2006a). On the other hand, capital investment in advanced manufacturing technology is often associated with a ‘quantum leap’ in performance. Most of the studies have showed that management practices have a positive impact on large or SME firm’s performance (Ellitan, 2002d; 2004d, 2004f, 2006a). However, some researchers found contradictory results. For example Dean and Snell (1996) found that JIT has no impact on firms’ performance. The finding of Burgess et al. (1998) revealed that there is no significant relationship between soft technology (TQM, JIT, MRP) on sales and market shares. It is also surprising that Beaumont and Schroeder (1997) found that TQM increase the cost of quality.

P1: More power in acquiring and controlling critical resources leads higher firm performance.

Moderating Role of Environmental Uncertainty and Hostility
Spital and Bickford (1992) argued that environmental uncertainty (caused by the rapid changes in product and process technology) resulted in differing competitive and technology strategies. In the environment in which there was high product technology dynamism, the firms tend to have a high level of investment in R&D, deep technical competence and followed a strategy of product innovation. In firms that had low product technology dynamism, the organizations had a lower level of investment in R&D, smaller
breath of knowledge of product technology (as opposed to deep product technology know-how) and followed a strategy of product differentiation.

Moreover, in a more uncertain environment, firms were subjected to greater uncertainty, that either posed greater threats or provided opportunities. Firms with technology competencies and resources would be able to capitalize on these opportunities or were able to reduce these threats and outperformed its rival (Ellitan, 2003c, 2005b). When the environment was uncertain, and the environment changed rapidly and the customer needs fluctuated, the more innovative firms would get more benefit. Therefore, one can expect that the impact of resources on performance would be greater in a dynamic environment as opposed to a stable one. Thus, we proposed the following proposition.

\[ P2: \text{The impact of firm's resources on performance is greater in a stable economic environment, compared to an uncertain one.} \]

Environmental hostility refers to the degree of competition, degree of pressure and number of dimensions or sources of competition (Miller, 1988). Hostility also reflects the keenness of competition market place (Badri et al., 2000). Technological innovation was needed more when the competition was more intense to achieve competitive advantage (Zahra & Covin, 1993). Thus, the more hostile the environment the greater the need to adopt new technology, management practices, and increase human resources skills/capabilities and the firms were more likely to be more innovative.

Ellitan (2004g; 2005b) found that a hostile environment would open the windows of opportunities to exploit technology for greater returns to the more innovative and risk taker firms. In hostile environment, firms with high technology competencies and human resources capabilities would be able to overcome the pressures and threats. These firms would successfully differentiate themselves and perform better than its competitors, thus gaining competitive advantage. In sum, this study formulated the following proposition.

\[ P3: \text{The impact of firm's resources on performance is greater in a more hostile environment, compared to a benign one.} \]

Moderating Effect of Business Strategy

Critical resources have an important strategic potential in achieving competitive advantage (Wernerfelt, 1984; Grant, 1991; Russo & Fouts, 1997; Olala, 1999; Goldfrey & Gressen, 1999). In order to understand the relationship between resources and performance, we must consider an important aspect of the context in what situation technology and management practices are implemented, and the availability and the flow of other resources such as human resources, material resources and capital. Specifically, the impact of critical resources on performance depends on firms’ choice of business strategy.

The role of critical resources in supporting the competitive advantage of firms is well recognized in classic management literatures such as Ansoff and Steward (1967), Kantrow (1980), Porter (1983) and Frohman (1985). For example, technology makes firms more profitable if it is managed well and if the technology strategy is formulated systematically (Ansoft & Steward, 1967). While, Kantrow (1980) and Frohman (1985) argued that technology can create competitive advantage, if it is integrated into the firm’s strategic planning.

In addition, the result of integrating critical resources into strategy can improve a company’s list of priorities among technology options, identify the technical resources needed to achieve business goal, and to make the movement of ideas into products and
processes faster (Buttler, 1988). Schroeder et al. (1995) focused on the strategy-technology link. Further, literature on resources based theory documented that the critical resources will produce sustainable competitive advantage when a company focus and put emphasize on diversification strategy (Barney, 1991; Harrison et al., 1991, Wernerfelt, 1984, Harrison, et al. 1993). Importantly, in case of Indonesia Ellitan (2004h), investigates the links between competitive business strategy and manufacturing technology of Indonesian large firms. The study revealed that: (1) The appropriate technology adoption for firms within a given competitive situation are often dictated by customer demand and market forces. (2) The competitive advantage of technology can be exploited when technology is aligned with the firm’s strategy. (3) The failure to adopt appropriate new technology or failure to align strategy to the new technology will weaken the competitive position of the firms.

P4: More power in acquiring and controlling critical resources lead to higher performance of the firm especially due to the differentiation of firm.

The Moderating Effect of Manufacturing Strategy

The literature also suggested that resources should be aligned with manufacturing strategy and their competitive priorities (Skinner, 1974; Buffa, 1984; Burgess, et al., 1998; Cagliano & Spigna, 2000; Gordon & Sohal, 2001, Ellitan, 2004i). Skinner (1969) asserted that a wider variety of strategic priorities could only be achieved by the use of manufacturing technologies. Buffa (1984) argued that Japanese firms have gained the lead in many industries through integrating manufacturing strategies with appropriate technologies. Firms need to take action to improve process performance through the adoption of process innovation which fit with their competitive priorities (Ellitan, 2004i; Cagliano & Spina, 2000; Burgess, et al., 1998). Ellitan (2004i) also found that companies having established competitive priorities, adopt and implement both hard (computer-based technology, advance manufacturing technology, and manufacturing equipments) and soft technology (adoption of time reduction practice, quality management practices, and process development technique), are more successful.

Currie and Seddon (1993) argued that the absence of manufacturing strategy in the production processes will not guarantee the success of the company’s operation. Ellitan (2004i) argued that technology alone cannot provide competitive advantage because it is readily available to all companies in the industry. Companies must then compensate by developing an integrative mechanism that is unique to each organization. Dean and Snell (1996) found that the fit between a firm’s strategic priority and its use of advanced manufacturing technology, availability of material and human resources, and management practices determined whether these resources had a positive impact or negative impact on performance. For example: AMT are best suited to flexibility strategy, but not with cost strategy (Jaikumar, 1986; Parasarthy & Sethi 1992, Ellitan, 2003d). They argued that if company emphasizes more on cost strategy AMT will not be used to its potential because its capability to create flexible production will be underutilized. On the other hand, Corbett and Van Wassenhove (1993) argued that in some case AMT must be accompanied an effort to reduce fixed manufacturing cost. It means that AMT adoption is fit with cost strategy, and the high emphasize on cost strategy will strengthen the impact of AMT on performance. Thus, there is only partial consensus on the strategies that complement AMT.

Management practices will be most effective when accompanied by a manufacturing strategy that emphasis quality and flexibility. It is possible to argue that management practices can simultaneously improve both quality and flexibility of operations. These positions imply that multiple strategic approach may take advantage of
and thus be consistent with the potential of soft technology. Based on existing literatures, manufacturing strategy should be viewed as a potential moderator on the resources-performance relationship. Study done by Ellitan (2002d) proved that the alignment between technology and manufacturing strategy is needed to achieve the maximum performance. The appropriate manufacturing strategy will strengthen the impact of technology on performance (Ellitan, 2004a). Thus, this study formulate the following propositions:

- More power in acquiring and controlling critical resources leads higher performance of the firm especially due to the quality, flexibility and dependability strategy and lead to the lower performance due to cost strategy.

Moderating Effect of Partnership/Business Relationship
Chisea et al. (2000) argued that foreign owned and joint venture companies have a greater access to sources of technology and other resources. The greater the access to such sources of technology and other resources create greater opportunities for foreign and joint venture companies to adopt more advanced technologies. It is also supported by the availability of skilled workers to operate the advanced technology in foreign and joint venture companies. In case of Indonesia, foreign and joint venture companies tend to adopt a higher level of AMTs compared to locally owned company (Ellitan, 2006a). On the other hand, implementation of management practices is not significantly different between locally and foreign owned companies. It can be attributed to the nature of the modern management practices, which are easier to adopt and implement by locally owned companies. Further, the level of AMT adoption also varies in terms of the extent of partnership (Ellitan, 2003a). Companies having partnership with foreign counterparts tend to adopt more AMTs and implement new management practices. This phenomenon reflects that companies that have cooperative arrangement with foreign entities seem to be more proactive and have greater access to AMTs, new management practices, and other resources (skill workers, material, and capital).

- More power in acquiring and controlling critical resources leads higher performance of the firm especially due to the partnerships and the business relationship.

The Relationship between Firm Performance and Firm Growth
Numerous variables influence firm's performance. However, this study focuses on the impact of critical resource on firm's performance. Swamidas and Newell (1987) described the difficulty in selecting performance measures. The appropriateness of the performance measurement used may depend on the circumstances and the uniqueness of the study (Badri et al. 2000). Measuring performance by comparing firm performance with average performance in industry, major competitor, and growth are frequently used as a perspective to measure firm's performance (Dess & Byard, 1984; Vickery et al. 1993). The use of growth has special appeal for previous research and this study due to the firms are faced with recession and increasing competition from abroad. Under these circumstances, growth provide a more rigorous test of performance rather than only measure the performance by comparing to average performance in industry or major competitor. Vickery et al. (1993) stated that there is interrelationship between firm's performance and firm's growth. Thus, we postulate the following propositions.

- There is causal inter-relationship between firm's performance and firm's growth.
Research Output and Policy Relevance

Several implications will advanced from the outcomes of this research. This study contributes to the development of resources management theory by adding to the existing body of literature on the subject. It takes an important step in the direction of the empirical development. This study provides a brief description of the resources management by manufacturing companies in fast developing countries, such as Indonesia. This study shows that for the manufacturing firms in Indonesia to survive and grow, they should not only improve its production capacities but also the resource management of their company. The process of acquiring the critical resources and managing them are not simple and effortless. Developing, maintaining, and managing these resources require both conscious efforts by the organizations and also support from other institutions and government, in terms of partnership programme and government policy that encourage technological development and resources flow regulation.

Proper management of resources and implementation of management practices are very important to achieve the objective and gain the benefits of the flow of resources. Resources should be integrated with all functional capabilities of the company, thus they can be used as a strategic tools. In summary, resources should be managed wisely. This study provides important insight toward this end, particularly for the manufacturing sector in Indonesia. The effects of resources on performance depend on contextual factors such as firms’ characteristic (business relationship, partnership, and the operational strategy) and emerging country characteristic (economic uncertainty and environmental hostility). Of greater significance is the contribution of this study in understanding the alignment of resources required to support business strategies and operational strategy in achieving the firm performance. Further, this study contributes significantly to the understanding of the resources–performance relationship in an environment of developing nations.

It is important for the government to take a more positive stand towards the dissemination of information about the matters related to technical program and technological innovation, resources flows (i.e. transfer of technology and knowledge) that were formulated for the manufacturing enterprises. Furthermore, the government should direct the manufacturing enterprises to solve their problem related to technical and financial risks in their effort to develop their resources capabilities.

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