

The Impact of Human Resource Management Practices in Manufacturing Organizations in Taiwan

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Abstract

Attempts to explore empirically the linkage between HRM and firm performance are numerous. The purpose of the present study is to discuss how HRM affects performance in manufacturing firms in Taiwan. In Taiwan, many of the products manufactured today are similar to the products from thirty years ago. This research raised the question how do these manufacturing organizations survive? The study purposed that the main reason is they adopted a low cost manufacturing strategy and improved their organizational systems to improve their use of human resources. I used a conceptual framework based on resource based economic to demonstrate how the current cost manufacturing strategies and HRM activities affect the firm performance of those survival manufacturing firms in Taiwan.

I. Introduction

1. Introduction

The traditional concept of strategy (Andrew, 1971) is phrased in terms of the resource position (strengths and weakness) of the firm, whereas most of our formal economic tools operate on the product-market side. Shapiro (1989) argued that the primary focus of strategy is to understand the type of competition and the ability to make reliable predictions concerning a firm and how firms are affected by exogenous or structural change. According to Caves, Porter, and Spence's (1980) framework, effective business strategies can be classified as either cost leadership strategies or differentiation strategies (Dess and David, 1984). For manufacturing firms, adoption of cost leadership is a main strategy used in order to save costs in every possible way, in an attempt to be more productive than their competitors. Since the purpose of any firm is to make the most profits possible, the way in which a firm manages its human capital

is increasingly recognized as centrally important to the execution of its strategy (Hambrick et al., 1989).

In the 1990s, it became a widely held premise that people provide organizations with an important source of sustainable competitive advantage (Prahalad, 1983; Pfeffer, 1994; Wright, McMahan, & McWilliams, 1994) and that the effective management of human capital, not physical capital, may be the ultimate determinant of organizational performance (cf. Adler, 1998; Reich, 1991). The value of human capital may be especially apparent in modern manufacturing organizations that have invested heavily in production innovations such as advanced manufacturing technology, statistical process control, and computer numerically controlled machine tools. Such initiatives tend to depend heavily on employee skills and commitment as key components in the value creation process (cf. Snell & Dean, 1992). Accordingly, it is instrumental for manufacturing firms to harness the productive potential of their employees in order to achieve superior performance.

In most manufacturing firms, cost-based manufacturing strategies tend to focus on internal effectiveness of capital equipment, thereby reducing the impact of human capital on performance. This is in line with the economic thinking of substituting capital for labor. Accordingly, administrative approaches to human resource that focus on standardized policies and procedures would likely be most appropriate. On the other hand, manufacturing strategies that emphasize quality and flexibility tend to require the increase of skills of employees thereby necessitating a human-capital-enhancing approach to human resource that focus on skill acquisition and development. In this study, the HR practices are defined as the traditional view of the HR functions still done today by the HR department. The administrative policies are defined as processes and procedures used in HR practices. The human-capital-enhancing practices are defined as the processes and procedures that are an emerging area of HR and are becoming an important part of the firm's strategy. These human-capital enhancing practices are among the critical elements that develop organizational capability that in turn provide sustainable competitive advantage. In order to understand the broad concepts that are present in this paper, it is important to explain the distinction between administrative activities, human capital enhancing, and human resource practices (Table 1). Table 1 summarizes the distinctions between the common human resource practices, administrative human resource activities, and those designed to enhance the level of human capital within firms.

As noted in Table 1, I select five central dimensions of HRM practices as outcomes of HR, administrative, and Human-Capital-Enhancing practices. These five dimensions of strategic

TABLE 1 Distinction between Administrative, Human-Capital-Enhancing, and Human Resource Practices

HR Practices	Administrative polices	Human-Capital-Enhancing	Strategic HR Processes
Staffing	Physical/ technical Skills Selection	Selective Staffing on Technical Skills And Attitude	Employees Motivation And Creativity
Training	Job Based Training Policies And Procedures	Comprehensive Training And Problem-Solving Skills	Manufacturing Processes Innovation
Compensation	Hourly Individual incentives	Salary Skill-Based Group Incentives	Improvements in Communications Between Employees And Management Turnover Rate Retained Tacit Manufacturing Knowledge

HR process are: (1) Employees motivation and creativity; (2) Manufacturing process innovations; (3) Improvements in communications between employees and management; (4) Turnover rate; (5) Retained tacit manufacturing knowledge. And a sixth is the resulting firm performance. The HRM practices themselves will be discussed below.

2. Situations in Taiwan

In Taiwan, technology-intensive industries have expanded from 30% of the total industrial structure in 1987 to 43% today, while labor-intensive industries have declined to 25%. In fact, manufacturing was the main productive force in Taiwan, without exception, it also raised the economy of Taiwan. In other words, important changes have occurred in Taiwan's industry structure over the last decades. Making Taiwan a 'high-tech island' has been the most prominent feature of the industrial policy direction of both the government and industries. Accordingly, the development of science-based industrial parks will help to pool resources, cluster high-tech firms together, and facilitate R & D activities. For various reasons, there were 25% who could not adopt high-tech product innovations. This 25% of manufacturers are composed of numbers of manufacturing firms that still produce essentially the same manufactured products as thirty years ago, which means they are producing without product innovations but still are profitable and able to survive. These firms try to find alternative ways to compete and to make themselves more profitable. One alternative was an ethos of industry migration from Taiwan to China in 1990s. Also, the lack of product innovation is the main factor for product standardizations for many years. In the 1980s, Taiwan was a low cost of living country, but this had changed now. In addition, the competitive landscape of this industry has not allowed these

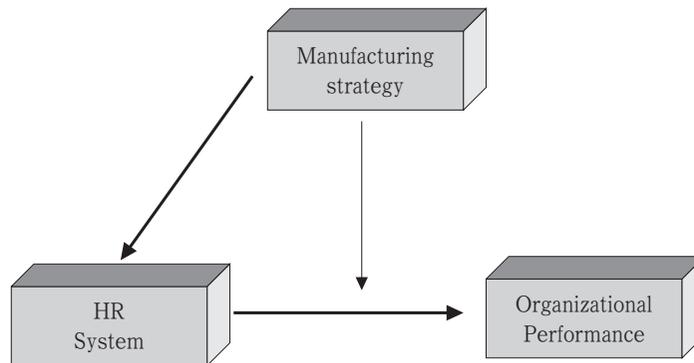
firms to pass on the cost increase resulting from the increases in standard of living to their customers, thus the benefit to the firm has become lower and has lessened their competitive advantages. An alternative way was the development of human resource capabilities linked to a low cost manufacturing strategy. Among the firms that survive, one reason for their success is that they have better HRM practices to retain their employee, higher product standardizations for their customers, and lower costs to compete with their competitors. Therefore, although they are still producing essentially the same products as thirty years ago, they have lowered the costs in order to keep surviving in this violently competitive market. According to Budhwar's (2004) statement, he argued that the development of HRM systems in Taiwan can be divided into three different stages (Yao, 1999). The first stage was during the mid-1960s, and coincided with the country's focus on the agricultural industry. In this stage, Negandhi (1973) found that the HRM systems used by local Taiwanese enterprises were less developed than those of US and Japanese subsidiaries.

The second stage was the learning period (1965-1985). During this period of time, many multinational companies (mainly from the USA and Japan) set up their manufacturing line in Taiwan and also made Taiwan adopt labor-intensive manufacturing by focusing on the manufacturing industry. Yeh (1991) conducted his study in 1984-1985 and found that local companies had learned quickly from their Japanese and US competitors, mainly on manufacturing and recruitment.

The third stage started in the mid-1980s. It was also the time that US organizations started to focus on the idea that business strategy was important to the HRM systems. At the same time, Taiwanese organizations imitated and started to bring the HRM practices into the boardroom. It was also the time that Taiwan's industry became more service-oriented and more focused on IT, with many IT firms, such as Acer and Mitac, being set up. Wu (1990) examined the role of HR managers in the top 500 manufacturing firms in Taiwan. She found that 88% of the firms had a formal personnel department and 80% of the heads of the HRM function bore the title manager. More recently, Huang (2001) found that 44% of companies in Taiwan have HRM practices linked closely to a firm's strategic function. The role of HRM in many companies had transformed from an administrative role to a strategic role smoothly. In this case, I will use my five central dimensions to discover the current situation in manufacturing firms in Taiwan.

Unfortunately, the areas of HRM activities are not well examined and discussed by Taiwanese scholars in Taiwan. I have found only limited research which has examined this topic. This

Figure 1 Human Resource Management, Manufacturing strategy, and Performance



is also the reason that I choose this area to examine. In general, the areas of HRM activities are very well examined in the west and Japan. As noted earlier, many scholars have suggested that the best HRM practice is contingent on the competitive strategy of a firm. Achieving competitive advantage success through people involves fundamentally altering how we think about the workforce and the employee relationship. It also means achieving success by working with people, not by replacing them or limiting the scope of their activities. It entails seeing the workforce as a resource of strategic advantage, not just as a cost to be minimized or avoided (Preffer, 1995). Moreover, Barney & Wright (1998) argued that the role of the HR executive as a strategic partner in developing and maintain competitive advantage can positively influence the firm and its performance. With those issues I have mentioned in mind, I purpose this study with three overall objectives: (1) Determine the extent to which HR systems directly enhance the firm performance; (2) Analyze the moderating effects of manufacturing strategy on the relationship between HR systems and operational performance in Taiwan's manufacturing; (3) assess the extent to which particular manufacturing strategies and HR systems are actually used in conjunction with one another. Figure 1 summarizes my research general model.

This research paper is divided into three sections. First is a review of the empirical research literatures. The second is the definition of the central conceptual framework. The third is the central theories and hypotheses. The hypotheses are focusing on the relationships between HM practices and firm performance.

II. Empirical HRM Research Literatures Review

Human resource activities are frequently acknowledged to play a central role in linking

employee capability with the performance requirements of a firm, however, the specific form of this relationship is still an open debate. To date, two primary perspectives—a universal approach and a contingency approach—have been used to describe the link between human resource management and firm performance (Youndt, Snell, Dean, & Lepak, 1996). The universal approach perspective implies a direct relationship between particular approaches to human resources and performance. For instance, many scholars who used universal approach have argued that increasing the investment in employee skills, knowledge, and capabilities can increase the firm performance (Duncan & Hoffman, 1981; Rumberger, 1987; Tsang, 1987). Moreover, Becker (1976) and Parnes (1984) also argued that the way to increase productivity and firm performance is to invest in human capital (through the HRM practices). Brooks and Nafukho (2006) also stated that human resource development and organization performance is highly integrated.

The contingency approach posits that an organization's strategic posture either augments or diminishes the impact of human resource practices on performance. According to the findings of Wright and his colleagues (1995), organizations exhibited higher performance when they recruited and acquired employees possessing competencies consistent with the organizations' current strategies. Moreover, they also found that organizations exhibited higher performance when they sought out a strategy that matched their current employees' competencies (cf. Snow & Snell, 1993). This work applies empirical support for the general assumption that a tighter fit between human resource competencies and strategy leads to a higher level of firm performance (Baird & Meshoulam, 1988; Miles & Snow, 1984, 1994). Analytically, this distinction has been operationally defined as main effects for the universal perspective and as interaction (or moderation) effects for the contingency perspective.

“Theoretically, the universal approach helps researchers document the benefits of HR across all contexts, *ceteris paribus*, and the contingency approach helps researchers look more deeply into organizational phenomena to derive more situationally specific theories and prescriptions for management practices” (Youndt, Snell, Dean, & Lepak, 1996: 837). In this research, I am focusing on the relationship between human resource activities and organization performance, so I choose to use the contingency approach since I am examining the traditional manufacturing firms who have chosen a low cost strategy and will examine the influence of their HR practices on their firm performance.

Over the years, researchers have amassed a fair amount of empirical evidence that certain HR practices can directly affect firm performance. In 1980s, it was recognized that since firm

investments to increase employee skills, knowledge, and abilities carry both out of pocket and opportunity costs, they are only justified if they produce future performance increases via increased productivity (Duncan & Hoffman, 1981; Rumberger, 1987; Tsang, 1987). Moreover, there were some studies that showed that comprehensive selection and training activities are frequently correlated with both productivity and firm performance (Kleiner et al., 1987; Russell et al., 1985). In other words, increased productivity derived from human capital investment depends on the contribution of employees to a firm. Therefore, the higher the potential for employee contribution in a firm, the more likely it is that the firm will invest in human capital (via human resource management activities) and that these investments will lead to higher individual productivity and firm performance (Becker, 1976; Parnes, 1984). As many contemporary manufacturers are said to be increasing the potential for employee contribution in their production equations (Walton & Susman, 1987), human capital theory would suggest that human resource practices can directly influence firm performance.

From 1990s, a good deal of empirical evidence showed that individual HR practices, put together as internally consistent systems or bundles of HR practices, can directly influence organizational performance (e.g., Arthur, 1994; Huselid, 1995; Freund & Epstein, 1984; MacDuffie, 1995; Kleiner, Block, Roomkin, & Salsburg, 1987; Kochan & Osterman, 1994; MacDuffie, 1995; Osterman, 1994; Pfeffer, 1994; Russell, Terborg, & Powers, 1985; Terpstra & Rozell, 1993) (Table 2 summarized the best HR practices of those above empirical issues). For supporting the HR systems and internal fit perspective, Arthur (1992, 1994) showed that certain HR practices that focused on enhancing employee commitment (e.g. decentralized decision making, comprehensive training, salaried compensation, employee participation) generated higher performance. Conversely, HR practices that focused on control, efficiency and the reduction of employee skills and discretion often increased turnover and resulted in poorer manufacturing performance. Similarly, in a different study of what are called high performance work practices, Huselid (1995) indicated that when firms invested in HR activities such as incentive compensation, selective staffing techniques, and employee participation they gained the result of lower turnover, greater productivity, and increased organizational performance. Huselid also indicated that these positive performance results come through their impact on employee skill development and motivation.

Research done more recently has indicated a deepening of the understanding of HRM and firm strategy. Bendoly and Prietula (2008) considered that training for a given operational task and experiential learning could heighten the individual skill in order to heighten organizational

productivity. In another study, organization performance was described as a potential function of individual skill and associated organizational learning (Carrillo & Gaimon, 2004). Also, numerous scholars argued that motivation and skill both clearly interact to raise organizational performance (MacCarthy & Atthirawong, 2003; Yeo & Neal, 2004). Furthermore, some scholars have recognized that skill and motivation can not only interact to affect organization performance but also exist in a synergistic relationship, so that skill may drive motivation and motivation may be active in the development of skills (Bendoly & Hur, 2007).

Going beyond these direct HR-performance relationship, however, other evidence indicates that the impact of HR practice are strongest when matched with the competitive requirements inherent in a firm's strategy (e.g., Cappelli & Singh, 1992; Jackson, Schuler, & Rivero, 1989; Miles & Snow, 1984; Wright, Smart, & McMahan, 1995; Burton, Lauridsen, & Obel, 2004). Delaney & Huselid (1996) looked at the effect of certain individual HRM practices (e.g. comprehensive selection and training activities) and they found positive effects on firm performance. More recently, Ichniowski et al. (1999) derived specific prototypical bundles of HRM practices that they explored as determinations of firm performance.

For HRM activities, Huelid (1995) found in his investigation of investment in HRM activities which included incentive compensation, selective staffing techniques, and employee participations that these resulted in lower turnover, greater productivity, and increased organizational performance. MacDuffie (1995) found that bundles of inter-related HRM practices had more influence on performance than individual practices working in isolation. Barney and Wright (1998) argued that the relation between developments in the HR Department and firm performance is positive. Each of these strategies with differentiation or cost leadership implies something different about the potential role of HRM practices in improving firm performance. In Table 2, I show selective representative studies that provide a list of empirically examined HR practices to provide a potential list of HR practices that I will use in this research. At their root, most of the studies focus on enhancing the skill base of the employee via HR practices such as selective staffing, comprehensive training, and broad developmental efforts like job rotation and cross-utilization. Further those studies tend to promote empowerment, participative problem solving, and teamwork with job redesign, group-based incentives, and a transition from hourly to salaried compensation for production workers.

With those HR practices in mind, I will apply them to my five central dimensions of HRM strategic factors to conduct this study from the perspectives of cost strategies and the resource based view of the firm to the current HRM in manufacturing firms in Taiwan. From the above

TABLE 2 Summary of Best Practices in Human Resources

Freund & Epstein (1984)	Arthur (1992)	Pfeffer (1994)	Huselid (1995)	MacDuffie (1995)
Job enlargement	Broadly defined jobs	Employment security	Personnel selection	Work teams
Job rotation	Employee participation	Selective recruiting	Performance appraisal	Problem-solving groups
Job design	Formal dispute resolution	High wages		Employee suggestions
Formal training	Information sharing	Incentive pay	Incentive compensation	Job rotation
Personalized work hours	Highly skilled workers	Employee ownership	Job design	Decentralization
Suggestion systems	Self-managed teams	Information sharing	Grievance procedures	Recruitment and hiring
Quality circles	Extensive skills training	Participation	Information sharing	Contingent compensation
Salary for blue-collar workers	Extensive benefits	Empowerment	Information sharing	Status differentiation
Attitude surveys	High wages	Job redesign/teams	Attitude assessment	Training of new employees
Production teams	Salaried workers	Training and skill development	Labor/management participation	Training of experienced employees
Labor/management committees	Stock ownership	Cross-utilization	Recruiting intensity	
Group productivity incentives		Cross-training	Training hours	
Profit sharing		Symbolic egalitarianism	Promotion criteria	
Stock purchase plan		Wage compression	(seniority vs. merit)	
		Promotion from within		

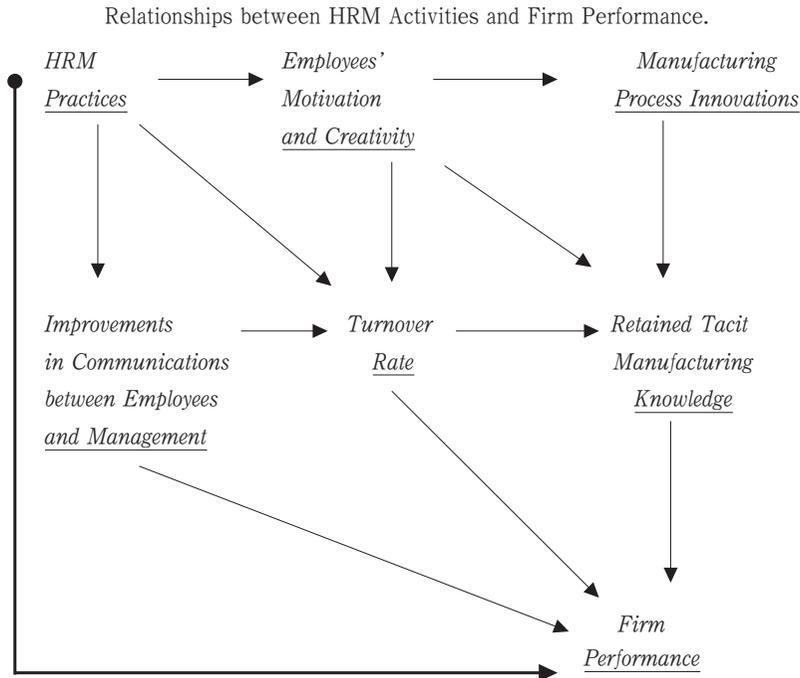
scholars' research, I selected the HR practices of Arthur (1992), Pfeffer (1994), and Huselid (1995). These will be applied to the five central dimensions of HRM practices outcomes: (1) Employees motivation and creativity; (2) Manufacturing process innovations; (3) Improvements in communications between employees and management; (4) Turnover rate; (5) Retained tacit manufacturing knowledge to determine their hypothesized relationships.

III. Central Conceptual Framework

1. Five Dimensions of HRM Practices

In order to do this research, I use a conceptual framework (Figure 2) derived from the studies discussed above as the core framework that explain the relationship between HRM practices and firm performance. I divide the first five dimensions into two categories: (1) Employee related factors; (2) Manufacturing knowledge & skill factors. In this model, I examine the impact of HRM practices on six dimensions: (1) Employees' motivation and creativity; (2) Manufacturing process innovations; (3) Improvements in communications between employees and management; (4) Turnover rate; (5) Retained tacit manufacturing knowledge; (6) Firm performance. In this central conceptual framework, each dimension is derived from the HRM practices. Moreover, each elements has connections with each other, we leave to later a discussion of whether the relationship is positive or negative. We focus here on the direct or indirect characteristics of the relationships of the HRM practices and five dimensions

Figure 2 : General Conceptual Framework



on firm performance. In addition, for these five dimensions, we can also divide them in terms of their locus of activity in the firm. The (1) Employees' motivation and creativity; (2) Manufacturing process innovations; (4) Turnover rate; (5) Retained tacit manufacturing knowledge locus of activity can be defined as emerging from the employees' themselves. The other (6) Firm performance and (3) Improvements in communications between employees and management can be defined as emerging from the locus of activity by managerially chosen organizational strategy.

For these dissensions, some scholars have classified these as organizational component or individual component. In order to run this study, dimensions 1, 2, 4 and 5 are defined as individual components here. For the dimension of employees' motivation and creativity, it is assumed that the motivation of employees, and their creativity will occur or originate within the employees themselves. For the dimension of manufacturing process innovation, since the firm strategy is fixed on low cost with the manufacturing process innovation will occur from the activities of employees in order to increase the efficiency of the plant. Thus, I make a distinction between efforts to introduce new equipment which is firm strategy driven and efforts to learn how to more efficiently use equipment, as employee driven. For the improvements in

communications between employees and management, it is only one dimension that is defined as a practice coming from the organizational strategy. For this dimension, the strategy of the firm is seen as the primary influence of the communication ease and quickness of execution of the instruction of management. For the dimension of turnover rate, it is considered that both the employees may want to leave by themselves and that the firm strategy may force them. For the dimension of retained tacit manufacturing knowledge, it is defined as the in-house manufacturing knowledge that can be well known by those employees.

2. Two Categories of Five Dimensions of HRM Practices

Moreover, in order to minimize the scale and maximize the effect that how these five dimensions affect the firm performance and affected each other, it is important to understand and divide these five dimensions into two categories of HRM practices which are employee considerations and manufacturing know & skill. For the Improvements in communications between employees and management, Turnover rate and Employees motivation and creativity are categorized in employee considerations. The other two, Manufacturing process innovations, and Retained tacit manufacturing knowledge are categorized in manufacturing knowledge & skill. These five dimensions are what I am going to use to hypothesize and examine the relationships between these and how they affect the firm performance in Taiwan's manufacturing positively or negatively.

IV. Central Theories and Hypotheses

1. Central Conceptual Views

Resource Based View (RBV). "The attributes that make the firm a significant entity, worthy of theoretical attention, are its existing patterns of routine activity, its tangible and intangible assets, its recent history, the repertoires of action available to the individual involved - as any of these attributes change- the firm itself changes" (Winter, 1968: 12). By this, a routine activity can be viewed as a resource is meant anything which could be thought of as a strength or weakness of a given firm. More formally, a firm's resources at a certain given time can be defined as those (tangible and intangible) assets which are tied closely to the firm (Caves, Porter, and Spence, 1980). Examples of resources are: brand names, in-house knowledge of technology, employment of skilled personnel, trade contacts, machinery, efficient procedures, capital, and HRM practices etc. "For the firms, resources and products are the two sides of the

same coin. Most products require the services of several resources and most resources can be used in several products. By specifying the size of the firm's activity in different product markets, it is possible to infer the minimum necessary resource commitments. Conversely, by specifying a resource profile for a firm, it is possible to find the optimal product-market activities" (Wernerfelt, 1984: 171). "Looking at economic units in terms of their resource endowment has a long tradition in economics. The analysis is typically confined, however, to categories such as labor, capital, and perhaps land. The idea of looking at firms as a border set of resources goes back to the seminal work of Penrose (1959), but, apart from Rubin (1973), has received relative little formal attention, the reason, no doubt, is the unpleasant properties (for modeling purpose) of some key examples of resources, such as technological skills" (Wernerfelt, 1984: 171).

From the views of strategic management and organizational economics, the resource based theory of competitive advantage focus on what the role of internal resources like employees play in developing and maintaining a firm's competitive capabilities (Barney, 1991; Wright & McMahan, 1992; Wright et al., 1994). In fact, numerous researchers have recently noted that people may be the ultimate source of sustained competitive advantage since traditional sources related to markets, financial capital and scale economies have been weakened by globalization and other environmental changes (Reich, 1991; Ulrich & Lake, 1991). Pfeffer (1994), in particular, has made the case that in order to succeed in today's global business markets must invest the appropriate human resource practices to acquire and build employees within better skill and capabilities than their competitors. Moreover, in recent years, strategy scholars have increasingly agreed that non-imitable and non-substitutable organizational capabilities (and resources) are the main source of higher level firm performance (Barney, 1991; Dosi, Nelson, and Winter, 2000; Rumelt, 1974; Wernerfelt, 1984). Although there are a number of theoretical arguments about the characteristics of resources or capabilities that emerge competitive advantage (Barney, 1991) and also keep their non-imitation (Dierickx and Cool, 1989; Peteraf, 1993).

In short, through the RBV theory, human capital is seen as the most important resource of an organization, it controls the standardize production procedures, R & D developments, manufacturers, and strategic management. Each department has its own responsibility to maintain or increase profitability and organized the organization running so that it can continue to go forward. Barney and Wright (1998) argued through the value, rareness, imitability, and organizational framework, that the human resource function plays an important role in developing a

sustainable competitive advantage in an organization.

Cost Strategies. The role of cost strategy played in this research is that the majority of Taiwanese traditional manufacturing firms adopted the cost strategy as their major strategy. The reason for doing this is because it is the easiest way to cut cost and can also increase the firm financial performance. Performance appraisal would also need to concentrate on areas such as errors reduction and process standardization in order to reduce costs and improve efficiency (Majchrzak, 1988). Organizations can directly and immediately create for their customers and themselves, value by reducing costs provided other characteristic of the products, such as quality, are held content. Since people are one of the most costly and uncontrollable resources affecting this equation, the approach used most often in manufacturing to control costs is to diminish the amount of human capital needed in the production process by substituting capital equipment for people. Since capital equipment embodies technological advances, this substitution not only have the potential to reduce costs by eliminating people, but can also lower the wage levels for the remaining employees. This is especially the case if the new production systems require lower skill levels and decision-making capabilities from those remaining employees (Majchrzak, 1988). It has been found that programmed production systems and highly structured jobs are used as a method for deskilling manufacturing workers, and resulting in the reduction of discretion in decision-making in their jobs (Helfgott, 1988). Moreover, administrative HR systems (i.e., selection for manual skills, policies and procedures training, resulted-based performance appraisal, hourly pay, and individual incentives) are consistent with the requirements of a cost strategy focused on standardizing process, reducing errors, and maximizing production efficiency. This cost reduction strategy is usually adopted by lower technological and skill organizations. These firms have one common characteristic which is old manufacturing equipment. They are limited in their ability to invest in their R & D, in term of capital expense, they turn to focus on their productivity and quality while maintain the same cost in order to keep their profits.

In this study, I adopted the Resource Based View (RBV) and cost strategy as my central conceptual perspectives. The RBV offers a quite useful conceptual basis for understanding why HRM can make a potential contribution to performance at the level of the firm directly. Moreover, both the RBV and HRM are focused on the employee and on how to make the firm profitable through contingency administration. From the cost strategy view, it explains how these low skill manufacturing can still survival and keep their profits and compete with their competitors. It can also explain why the current Taiwan manufacturing industries can keep their

competitive advantage from decades ago. In this study, I conclude the conceptual framework as seen in Figure 2 to analyze these phenomenon.

2. Hypotheses

(1). HRM Practices and Firm Performance

In the past years, there are many research studies that discussed how HRM elements successfully affected an organizational performance. Pfeffer (1998) argued a set of seven practices for the successful organization, which are (1) Employment security; (2) Selective hiring of new personnel; (3) Self-managed teams and decentralization of decision making as the basic principles of organizational design; (4) Comparatively high compensation contingent on organizational performance; (5) Extensive training; (6) Reduced status distinctions and barriers, including dress, language, office arrangements, and wage differences across levels; (7) Extensive sharing of financial and performance information throughout the organization. Similarly, following the work of Ichniowski and Shaw (1999), Chang and Chen (2002) combined the HRM practices into eight elements: human resource planning, recruiting and selection, training, incentive pay, performance appraisal, teamwork, job flexibility, and employee security. They argued that various HRM systems have an effect on firm performance and this argument leads to hypothesis one:

Hypothesis 1: HRM practices are positively associated with firm performance.

(2). HRM Practices, Turnover Rate, Employees Motivation and Creativity, and Improvements in Communications between Employees and Management

Arthur (1992, 1994) found that HR practice focused on enhancing employee commitment (e.g. decentralized decision making, comprehensive training, salaried compensation, employ participation) was related to higher performance by reducing turnover rate. In other word, I hypothesize these four training and development factors of HRM activities will affect the turnover rate, employee motivation and creativity, and improvements in communications between employee and management positively: (1) Formal training programs for new employee; (2) Amount of money spent on training; (3) Formal on-the-job training to enhance capability; (4) Formal off-the-job training to increase capability. These result in my hypothesis Two a, b, and c:

Hypothesis 2a: With the stronger intensities of HRM practices, the proportion of turnover rate will decrease.

Hypothesis 2b: With the stronger intensities of HRM practices, the amounts of employees' motivation and creativity will raise.

Hypothesis 2c: With the stronger intensities of HRM practices, the amounts of improvements in communications between employees and management will raise.

(3). Turnover Rate, Retained Tacit Manufacturing Knowledge, and Firm Performance

“Happy employees are productive employees.” “Happy employees are not productive employees.” People hear these conflicting statements made by HR professionals and managers in organizations. There is confusion and debate among practitioners on the topic of employee attitudes and job satisfaction, even at a time when employees are increasingly important for organizational success and competitiveness. Saari and Judge (2004) suggested to practitioners methods covering how to close three gaps in knowledge and for evaluating implemented practices in order to reduce the turnover rate. Those three gaps were: (1) The cause of employee attitudes; (2) the results of positive or negative job satisfactions; (3) How to measure and influence employee attitudes. This lead to my hypothesis Three a :

Hypothesis 3a: Turnover rate is negatively associated with firm performance.

For an organization, the lower proportion of turnover rate of employees, the more tacit knowledge can be kept in the organization. As mentioned earlier, the intra-tacit knowledge (well known knowledge of an organization that is generated inside the organization) came from the training program that the organization offered. Consequently, when with the employee leaves the firm, it also means they have to increase the cost of training new recruitments, and the time to integrate them into the production routines also. In this situation, this will also decrease the productivity of the firm. Nonaka, Toyama, and Konno (2000) identified that the organization is not only an information processing machine, but a place that can create knowledge by its action and interactions with its environment and through the synthesis of organization

capabilities. March (1991) argued that moderate amounts of turnover rate can improve the organizational knowledge but only if more knowledge was generated in the environment. However, if the source of new knowledge is from intra-tacit activities then low turnover is preferred. These arguments result in my hypothesis Three b:

Hypothesis 3b: With the less proportion of turnover rate, the amounts of retained tacit manufacturing knowledge will raise.

(4). Employees' Motivation and Creativity, Manufacturing Process Innovations, Retained Tacit Manufacturing Knowledge, and Turnover Rate

Employee surveys regarding the importance of various factors in motivation generally produce results that are inconsistent with studies of actual employee behavior and also the firm performance (Rynes, Gerhart, & Minette, 2004). However, when the HRM practices truly affected or concentrated on increasing the employees' motivation, these practices also affected the employees' creativity. Nonaka (1991) indicated that creativity is not just a matter of processing objective information, but depends on tapping the tacit and often highly subjective insights, intuitions, and ideals of employees. Furthermore, organizations enable different kinds of motivations and have different capabilities to generate and transfer tacit knowledge in the firms. In other word, in-house knowledge generation and transfer are essential for an organizational competitive advantage. Consequently, the more motivated the employee the more it will be showed by their work performance. In another way, it also has an obvious growth effect on the working efficiency of the firm. This indicates in my hypothesis Four a and b:

Hypothesis 4a: With the stronger intensities of employees' motivation and creativity, the amounts of manufacturing process innovations will raise.

Hypothesis 4b: With the stronger intensities of employees' motivation and creativity, the amounts of retained tacit manufacturing knowledge will raise.

An increasingly numbers of organizations have showed how rewards, particularly salaries, could be related to desired behavior and/or performance outcomes to improve employee productivity (Gerhart & Rynes, 2003; Preffer, 1998; Rigby, 2001). In other words, salary is one of the extrinsic motivators for employee. In an organization, when the employee is fully

motivated, they would focus on their current job and furthermore decrease the turnover rate. This result in my hypothesis Four c:

Hypothesis 4c: With the stronger intensities of employees' motivation and creativity, the turnover rate will decrease.

(5). Manufacturing Process Innovations and Retained Tacit Manufacturing Knowledge

Today's complicated systems for products and services require the combinations of knowledge from diverse national, disciplinary, and personnel skill-based perspective. Leonard and Sensiper (1998) determined that innovation whether it is revealed in new products and services, new process, or new organizational forms, it is rarely an individual undertaking. Nonaka (1991) argued that creating knowledge of an organization emerges through middle managers systemically incorporating tacit knowledge from both frontline employees and senior executives, making it explicit, and driving it into new technologies and products. Training and development continues to be a valued component in the modern management of human resources. Emerging research show that investment in human capital, including training, are positively related to organizational performance (Kraiger, McLinden, & Casper, 2004). Moreover, in modern day, firms must consider flexibility, quality, worker demands, and resource scarcity simultaneously. The purpose of training programs for an organization is to develop the efficiency, the quality, productivity, and creativity of workers. Firms need to improve themselves by any means to maintain their competitive advantage. Indeed, training programs can increase the capability of workers and manufacturing processes. This results in my hypothesis Five:

Hypothesis 5: With the stronger intensities of manufacturing process innovations, the retained tacit manufacturing knowledge will raise.

(6). Retained Tacit Manufacturing Knowledge and Firm Performance

Every senior employee of a manufacturing firm has intangible knowledge derived from the culture and experience of their career life in the organization. This intangible knowledge also is called tacit knowledge because it is difficult to write down but can be taught through learning by doing or on the job training. According to Wagner and Sternberg (1985), tacit knowledge is defined as worked related practical knowledge learned informally through experience on the

job. They also defined that it is an intellectual and cognitive process that is neither expressed nor declared openly but rather implied or simply understood. The main source of tacit manufacturing knowledge always comes with the internal training programs, new recruitment socialization, and practical experience. Brockmann and Anthony (2002) defined tacit knowledge as the work-related know-how that is acquired through direct experience and instrumental in achieving goals important to the holder. Huselid (1995) found that the implementation of high-performance work system (rigorous recruitment, selection, compensation, and training functions) had higher employee productivity and better corporate financial performance. The tacit manufacturing knowledge usually came through training programs. Thereby tacit manufacturing knowledge can influence the efficiency of an organization. It is also indicated that maintaining the tacit knowledge which an organization creates can influence the organization performance (Nonaka, Toyama, & Konno, 2000). In this study, tacit manufacturing knowledge means the knowledge that the employees usually know and realize how to practice. In other words, the more tacit manufacturing knowledge the employees have, the more efficiency and productivity will appear in an organization. This results in my hypothesis Six:

Hypothesis 6: With the stronger intensities of retained tacit manufacturing knowledge, the amount of firm performance will raise.

(7). Improvements in Communications between Employees and Management, Turnover Rate, and Firm Performance

Time is money especially for manufacturing firms. In manufacturing firms, in order to maximum the productivity and benefit firms must keep producing their product without communication problems. Time is a crucial corporate resource; communication technologies improve organizations to avoid delays and apply immediate feedback (Opper & Fersko, 1992). Organizations are relying more heavily on virtual teams due to a more competitive global market, the benefit of integrating the work of specialized employees who might be geographically dispersed, and the need to save time and travel expenses is increasing (Kock, 2000; Mohrman, 1999; Townsend, Demarine, & Hendrickson, 1998). Moreover, communication tools also authorized the team members to work on projects at a h quicker path than if it is necessary meet their customers face-to-face and allow organizations to use “relay race” procedures to accomplish tasks, resulting in a continuous workflow (Cascio, 1999). These issues result in my hypothesis Seven a, and b:

Hypothesis 7a: With the stronger intensities of improvements in communications between employees and management, the amounts of firm performance will raise.

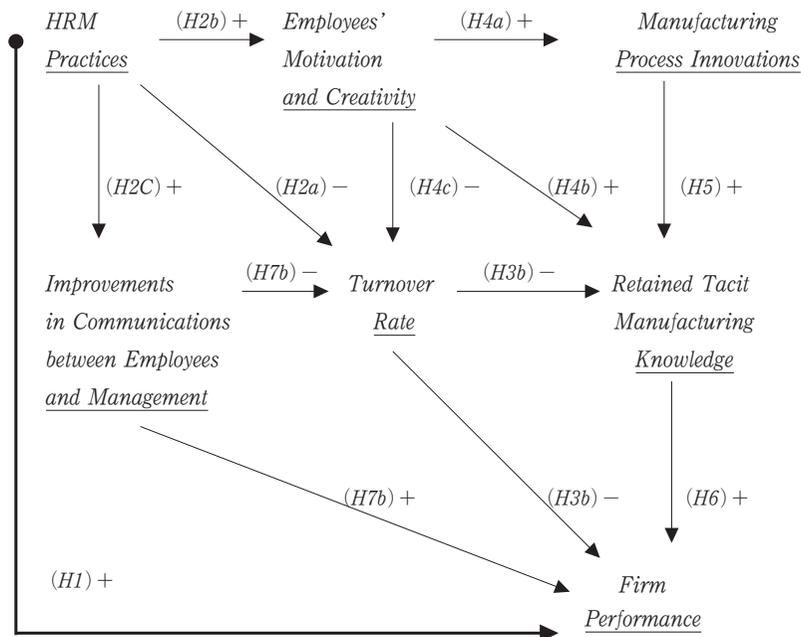
Hypothesis 7b: With the stronger intensities of improvements in communications between employees and management, the proportion of turnover rate will reduce.

3. The Positive or Negative Relationships between HRM Activities and Firm Performance.

From those above hypotheses, it is not difficult to discover that each dimension have the alternative positive or negative relationships and are affected with each other (Figure 3). From the hypothesis 1, it can be easily observed that the HRM practices are positively related with firm performance. From the hypothesis 2b and 2c, the HRM practices have positive relation-

Figure 3 : General Conceptual Framework with Hypotheses

The Hypothesized Positive or Negative Relationships between HRM Activities and Firm Performance.



Symbol Explanation: (1) +: Positively related; (2) -: Negatively relate.

ships with both employees' motivation and creativity, and improvements in communications between employees and management. However, for the hypothesis 2a, HRM practices are negatively related with turnover rate. From both the hypothesis 3a and 3b, the turnover rate has a negative relationship with both retained tacit manufacturing knowledge, and firm performance. From hypotheses 4a and 4b, the employees' motivation and creativity have a positive relationship with manufacturing process innovations, and retained tacit manufacturing knowledge. Conversely, from hypothesis 4c, the dimension of employees' motivation and creativity is negatively related with turnover rate. From the hypothesis 5, the manufacturing process innovations are positively related with retained tacit manufacturing knowledge. From the hypothesis 6, the retained tacit manufacturing knowledge is positively related with firm performance. From the Hypothesis 7a, the improvements in communications between employees and management are positively related with firm performance. From the hypothesis 7b, the improvements in communications between employees and management are negatively related with turnover rate.

Conclusion

From the above discussions of my study, I am proposing that one of the reasons that traditional Taiwanese manufacturing organizations can survive and be profitable results from improvements in their HRM activities that influences one of their most important resources is the employee.

Organizational tacit knowledge has a very great influence in knowledge-base industry. For the Taiwanese manufacturing, the strategy that they cared about and made is to increase the quality of product, productivity of labors, and tacit knowledge of employees. In other words, a firm's tacit knowledge is related to a firm's organizational capability. As outlined in figure 3, it is important to understand that the issue of tacit knowledge is crucial for Taiwanese manufacturing and should be well examined.

Central to my thinking is the importance of the relationship between a firm's overall strategy and its HRM practices. From this key relationship, I posit that when a firm tends to increase the intensity of their HRM practices, it will also increase both the intensity of both employees' motivation and creativity, and will generate improvements in communication between employees and management. As a result, the proportion of turnover rate will decrease. Moreover, with the higher intensity of employees' motivation and creativity, the intensity of manufacturing process innovation will also increase. In addition, if the intensity of manufacturing process

innovation goes up, the retained tacit manufacturing knowledge will increase, too. Also, if the intensity of improvements in communication between employees' and management increase, the proportion of turnover rate will decrease. With the resulting proportion of turnover rate decrease, I expect that the intensity of retained tacit manufacturing knowledge will increase. Consequently, the firm performance will go up.

In this study, I choose to adopt the RBV and cost strategy to help understand and explain on how these Taiwanese traditional manufacturing organizations have survived up to now and how they will meet future challenge.

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