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**LABOUR ATTITUDE TOWARD TECHNOLOGY ADOPTION IN
E&E INDUSTRY:
JOB HOPPING ANALYSIS**

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As the pace of technological change has quickened and global competition has shortened product life cycles, firms have had to rethink their technology investment strategies and their human resource management practices in order to remain competitive.

Although the relationship of technological change and labor market outcomes at the individual-worker level has been well-studied, surprisingly little is known about what happens within the firm. Specifically, there is little empirical research on whether firms' technology choices are consistent with their human resource practices and whether there is a statistical relationship between technology, human resources and performance at the firm level. Firms can structure their HRM practices to develop and retain the necessary skills in-house or they can structure their HRM practices to attract and recruit workers with the necessary skills on the external market. Conflicts often arise between employers and employees in technology fields after employees have, in their minds, mastered a new skill or process. It's clear that job hopping benefits the employee, not the employer. But when the majority of young people are job hopping, and companies are having a hard time attracting young people to work recruiters don't have the luxury of writing people off just because they job hopped. While the job hopping phenomenon continues, some of the reasons for switching jobs have changed. Just a few years ago, employees were encouraged to frequently switch positions by the tight technology labor market, the rapid pace of technological developments and the availability of potentially lucrative stock options at many startups. These days, employees, as well as recent graduates, are looking for stability.

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CHAPTER 1: INTRODUCTION

1.1 Background of study

The geographic clustering of firms is a ubiquitous, but poorly understood, feature of advanced economies.¹ Explanations for geographic concentration have focused on “external economies of scale” or equivalently “agglomeration economies”. These terms refer to mechanisms that improve the efficiency of production when other related firms co-locate in an area. In this paper we use new data to examine a much-discussed source of “external economies of scale” in a much-discussed industry and economic cluster. Our focus is on the computer industry and the agglomeration economy we investigate is the easy mobility of skilled employees among firms in Malaysia.

Annalee Saxenian (1994) was among the first to observe that high rates of mobility were a source of agglomeration economies in Malaysia.² She argued that the sustained high rates of innovation of computer firms were the result of two unique aspects of the industrial organization of the region. The first feature was that computer systems manufacturers relied on networks of independent suppliers who specialized in incorporating the latest technological advances into modular components (Saxenian 2000). The modular nature of these components increased the rate of technical innovation in the region by enabling rival suppliers to pursue *simultaneous and independent* innovation strategies so long as the resulting components conformed to the design rules that integrated the components into the final product (Baldwin and Clark, 1997).

The second key feature of the industrial organization of Malaysia was the rapid movement of technically sophisticated employees between firms in the region. This high rate of mobility among technical employees reinforced the benefits of modularity because skilled employees rapidly transferred from firms with inferior designs to those with superior designs.

Job-hopping between companies, however, also increases the likelihood that knowledge acquired in one firm is employed in another. These knowledge spillovers can hamper innovation by reducing the rewards to investing in human capital. An implicit assumption in Saxenian's discussion of Malaysia is that the benefits of the agglomeration economies exceed the attendant losses due to knowledge spillovers. Gilson (1999) brought attention to this assumption and observed that high rates of mobility by knowledgeable employees were likely to impose nontrivial costs on employers. These costs may cause employers to take actions to limit job-hopping even when the social benefits of agglomeration economies exceed the costs. "Non-compete agreements", according to Gilson, are the most important legal mechanism for reducing interfirm mobility. These agreements limit an employee's ability to work with competing firms in a specific geographic area and for a specific period of time. It turns out that features of Kuala Lumpur state law introduced serendipitously in the 1870's make it impossible for employers to enforce non-compete agreements. But for this historical accident, Malaysia employers would have had at their disposal an easy way to inhibit costly mobility. Kuala Lumpur's legal system is exceptional in its treatment of non-compete agreements. Thus Gilson's hypothesis may explain why mobility (and agglomeration economies) should be unusually high in Malaysia. His hypothesis also suggests that similar high rates of mobility should be observed in computer clusters elsewhere in Kuala Lumpur, but not in other states.

Saxenian's and Gilson's accounts have captured much attention in management and policy circles. Unfortunately data limitations have, until now, precluded direct empirical examination of some of the key features of the story – especially the movement of employees between firms within a narrow geographic region and industry. 3

In this paper we exploit little-used data from the *Current Population Survey* to measure the rate of employer-to-employer mobility in Malaysia and elsewhere. We find, first, that employees working in the computer industry cluster in Malaysia do indeed have higher rates of mobility than similar computer industry employees in other metropolitan areas having large information technology clusters. Second, and consistent with Gilson's hypothesis that Kuala Lumpur state law is important for sustaining hyper-mobile

employment, there appears to be a “Kuala Lumpur” effect on mobility. That is we find similar high rates of mobility of computer industry employees throughout the state of Kuala Lumpur. Third, we find that the mobility patterns observed for employees working in the computer industry do *not* hold for employees in other industries residing in these same locations. This last result suggests that interaction between features of the computer industry and those of a particular geographic location, rather than features of the location alone, drive our findings.

The approach we take differs in two ways from other empirical studies of agglomeration economies and human capital externalities.⁴ First; we focus on employee mobility within a labor market rather than on the returns to education. We adopt this approach because inter firm mobility is more closely related to the agglomeration economy conjectured to operate in Malaysia.⁵ Secondly; we examine our variable of interest for a *specific industry* within geographically specified labor markets. This industry focus is important because the agglomeration economies we analyze are likely to be especially important in industries like computers where the gains from innovation are large but also uncertain.

Our paper proceeds in three parts. In the next section, we consider the effect of job hopping on human capital investments and agglomeration economies and identify the conditions necessary for a Malaysia type computer cluster to appear. In section three, we present our empirical results. The paper concludes with a discussion of the limitations of our analysis and issues for further study.

1.1.1 Job-hopping - A Leap Forward for Your Career Prospect or A Giant Step Back

We live in an age when the one-company individual no longer exists. Your father, mother or grandparents may have worked for one company their entire lives, but it is becoming commonplace to be employed by three, four or more companies during one's lifetime.

Up to a decade ago, interviewers frowned upon a resume that betrayed you as a "job hopper". However, this attitude has started to shift with industries such as technology, advertising and PR firms who have elevated Job-hopping to a lifestyle and a necessity to

keep up with industry changes. Because of this, the tables are turning in the more traditional industries also and the once negative image of job-hopping is now being seen as ambition. In fact, according to one recruiter, in some industries, if you stayed at the same job for five years, you'd have some explaining to do.

However, this doesn't mean the job-hopper stigma has completely vanished. If you've got too many jobs on your resume, you could end up getting pegged as unstable, disloyal, or unable to work as part of a team, especially if these jobs are typically for terms of six months or less. Lou Adler - author of 'Hire with your head down' says " when you look at a candidate who can't get promoted and who keeps moving in and out of lateral positions from company to company, you can't help but think 'what's wrong'?"

1.1.2 Thinking about a change

When it comes down to it, if you must job-hop, make it constructive. Sometimes the best time to switch jobs is when you're feeling good about your career - and that means moving out to move up. You don't want to completely shut yourself off from opportunities to change jobs, however, take your time and consider the effect the change will have on your career. It is important to take a step back, reassess your work habits and to make sure your next move is the right one for you.

Constructive job-hopping takes thought and planning to achieve the goals of moving forward and strengthening a career. Do it badly and you'll move laterally or even backward. It is also a good idea to thoroughly research any new company prospects. What sounds good on paper doesn't always mean that it will be any better than where you are now especially if it is a lateral move and isn't a career advance. Things to look for are: company background; what the company culture is like; will you fit into the team and how has the company performed financially over the past year?

1.1.3 Why switch

There are many reasons why you switch jobs, some more positive than others. And the key is to articulate to a prospective employer why you left and eliminate any negative association with your frequent job changes. Some more positive reasons are:

I followed the best and brightest: companies want people who bring varied experience to the table. For that reason alone, job-hopping makes you more of an asset to a company.

I followed the money: no one will argue with a move that gave you a salary boost-as long as money is not the only reason why you left.

I followed the promotion: a promotion shows that you are both valued and that your managing your career aggressively.

I followed my spouse: employers are typically understanding of this type of move, but also want to know that your career matters too.

These are completely feasible reasons for job change, but if you're constantly moving because you feel like you've exhausted your opportunities in a short period of time, hiring professionals will question your decision-making ability.

An individual with a job history showing several job experiences can be very attractive to an employer. It says that you have vast experience and shows your value having worked under different systems, structures and management styles. The key is to communicate what you accomplished at each job and how your contributions at each company made a difference.

Once you've decided it's time to move, keep these points in mind:

Avoid frequent lateral moves. If you're repeatedly switching industries and you constantly feel underemployed or unfulfilled, there's probably something deeper going on. Try temping for a while, take some time to assess your skills, and figure out what you like and really want to do.

Don't burn bridges. Even if you dislike your boss, your job, your office, leave on good terms. If you're moving within an industry - and in one geographic area – there's a good chance your old boss has some sort of connection to your new one. Keep in touch with other people you worked closely with. You never know when you'll need a reference.

Leave a positive lasting impression: When resigning, start off with a carefully thought out resignation letter, explaining the reasons why you're leaving and thanking your boss for the opportunity to learn with the company. Then make an effort to stay on for a mutually agreed time frame and train your replacement.

This may take longer than the traditional two weeks but will be appreciated that you are still interested in the success of your replacement and any projects on which you are currently working. These actions will send a positive message to the recruitment marketplace that you are responsible, reliable and career-focused.

1.2 Problem Statement

In a recent forum of the human resource professional bodies of Hong Kong, Malaysia, and Singapore in Malaysia, participants were unanimous in their view that job-hopping had become so rampant in these countries that it had become a culture (Asia Pacific Management News, 1997).

If technology and labor force skills are complements in a firm's production function, and if the HRM system impacts the cost of acquiring, developing, and retaining the portfolio of skills in a firm, then the firm's choice of HRM system affects its ability to adjust worker skill levels to maximize the value of their technological investments.

While there are programmes on re-skilling, as well as industrial skill development training for unemployed graduates, the supply of a skilled workforce is still inadequate and often mismatched, due to rapid changes in technology developments. Industries face difficulties in coping with the supply shortage.

Therefore, this research will explore some of the issues associated with finding and successfully developing the perceptions from the employer through the labor 'job hopping' towards adopting the technology.

1.3 Objectives of Study

1. To identify the increasingly competitive nature in the recruitment for a skilled workforce.
2. To identify the present insufficient availability of technically skilled human capital required for industrial upgrading.
3. To estimate and interpret the relationship between firm productivity and human resource management (HRM) practices in the electronics industry.

1.4 Limitations of Study

The study has several limitations. The study used a limited sample with the focus only three sectors in Malaysia and therefore the result may not be generalizable into overall industry in Malaysia and may not be applicable to other countries in the world. Future research may test the model for several more sectors in the Malaysia's economic area.

CHAPTER 2: LITERATURE REVIEW

2.1 The Competitiveness of The Malaysian Electronic And Electrical Industry: Technology

The main objective of this research was to examine the competitiveness of the Malaysian E&E industry by investigating the state of technologies used by the sample of firms in the industry, the rate of utilization of the technologies, and user acceptance of the technologies over the period of 1990-1995

Innovations and technological forces are major opportunities and threats that must be considered in firms' efforts to be competitive. Innovations and technological advancements can create new markets, new and improved products, a change in the relative competitive positions in an industry, and cause existing products and services to be obsolete (David, 1991; Porter, 1990). Innovation also represents an important part of a healthy organization since it enables an organization to adapt to changing markets, thus retaining its competitiveness (Bessant and Grunt 1985, Tushman and Nadler. 1986). Organizations that limit their innovation expenditure based on whatever funds are left over from their operating budgets need to revamp their thinking if they were to maintain or enhance their competitive positions. It is an accepted fact that technology management is one of the key responsibilities of strategists (David, 1991). This is especially so for a hi-tech industry such as electronics where technological development occurs at a very rapid rate

Bessant and Grunt's (1985) research on the adoption of manufacturing innovations by the United Kingdom and Germany has shown that adoption of innovations is essential to organizational survival and growth even if costs exceed the return on the investment of the firm. Khandwalla (1984) has shown that the growth of firms is associated with new products, high quality products, and adoptions of advanced technology and other types of innovations. Also, an earlier research by Mohamed (1993, 1995) has found that Malaysian manufacturing firms followed the same processes as those in developed (mainly Western) countries when implementing innovations

Among the most common methods of assessing the competitiveness of firms found in the literature were those developed by Porter (1980). According to Porter, competitive forces (or rivalry) among firms are influenced by supplier bargaining power, customer bargaining power, threat of new entrants, and threat of substitute goods or services. In order to be competitive, Porter also suggests the use of his generic strategy model where firms could choose from three types of strategies: differentiation, cost leadership, and focus strategies

Da Rocha, Christensen and Paim (1990) describe several measures of firms' innovativeness found in the literature. One of the common ways of doing it is by counting the number of innovations introduced into the market by a firm within a certain time frame (Moch and Morse, 1977). Another common method of measuring firms' innovativeness is by measuring the time taken by an organization to adopt the innovation. This method is based on the theories of diffusion (see. for e.g. Rogers, 1983) where the investigation is focused on how fast the innovation is absorbed by the firm. Still another way of measuring innovativeness is through the use of perceptual measures based on evaluation by qualified judges. As pointed out by da Rocha, et al., this method has the advantage of the ability of the judges to evaluate the overall innovativeness of the firm instead of measuring a single or several specific innovations.

2.2 The Competitiveness of The Malaysian Electronic And Electrical Industry: Adoption

An earlier research by Mohamed (1995, 1995b) has indicated that more innovative firms carried out more changes (continuous improvement) in the ways they run their business compared to the less innovative firms. Many past research results have also shown that firms that do well in their businesses are those that are responsive to change (Peters &, Waterman, 1982; Kanter, 1983 and 1990). In 1993, Mohamed found that Malaysian manufacturing firms followed the same processes as those in developed (mainly Western) countries when implementing changes and innovations. Therefore, the main objective of this research was to determine the competitive position of the Malaysian E&E industry based on their introduction and implementation of incremental changes and continuous improvements.

The innovativeness of the firms is assessed based on several types of incremental changes or continuous improvements implemented by the firms. The method of determining the innovativeness of firms on the basis of various types of innovative changes introduced and implemented into the firms is an adaptation of Manimala's (1990, 1992, 1992b) work. Manimala's model for rating the innovativeness of firms is an extension of earlier works carried out by other researchers. One of these works was done by Schumpeter (1934), who determined that the innovativeness of firms could be measured in terms of product, process, market, supply, and industry organization. In analyzing various published business cases in India, Manimala discovered that innovative firms introduced four of these five types of innovations (the exception being industry organization) and six additional innovations. These additional ones were changes related to finance, personnel, culture, organizational structure, technical function (such as R&D), and government relations. In his research involving manufacturing firms in Malaysia, Mohamed (1995b) found that the more innovative of the firms that he examined introduced more changes when compared to the less innovative ones.

2.3 The Competitiveness of The Malaysian Electronic And Electrical Industry: Competitiveness

On the assessment of the competitiveness of the Malaysian E&E industry based on such factors as R&D spending, product development, competition, market share, domestic and export markets, competitive strategy, technology transfer, and location choice, the results clearly demonstrate a high foreign involvement in the industry. What it means here is that the strong competitive position of the Malaysian E&E industry (as evidenced by the results given in the preceding two parts of the research paper) is probably attributed to the strong presence of foreign companies operating in Malaysian.

The most revealing aspects of the findings from this part of the analysis were two-fold: (1) the need of the Malaysian industry, particularly the Malaysian-owned firms to be involved in R&D activities and to be willing to spend money on such activities, for example, on new product development; and (2) the need of the country to tackle the problem of labour

shortage, especially that of the Malaysian workers. With respect to R&D, efforts need to be undertaken by both public and private sectors (particularly Malaysian-owned companies) to increase their activities as well as the funds set aside for such activities.

As for the problem of labour shortage, among the strategies that are available for the country in order to solve the problem include: to provide training to increase the skills of the workers so that they are more skilled and thus more willing to take up jobs in the industry; the willingness of the industry to pay higher wages to (more skilled) local workers, to continue letting the industry hire foreign contract workers, particularly those that require less skills; to encourage the firms to venture into more capital-intensive operations, or to encourage them to increase the level of automation. A combination of these strategies can also be used.

Finally, bearing in mind that the potential problem of labour shortage and its potential to become worse, the attractiveness of Malaysia to attract foreign companies to come to Malaysia will remain high provided the country continues to remain politically and economically stable.

2.4 Performance of The Manufacturing Sector

The Manufacturing sector remained the largest contributor to Malaysia's total export. Malaysia's total trade in 2007 grew by 3.7% to record RM1.11 trillion from RM1.07 trillion in 2006, the second year that total trade had surpassed the trillion Ringgit mark. It continued to be the largest contributor to Malaysia's exports in 2007, accounting for 74.8% of Malaysia's total exports, valued at RM452.48 billion. The major exports were electrical and electronics (E&E) products, chemicals & chemical products, machinery, appliances & parts, rubber products, and iron & steel products. Malaysia continued to be a leading supplier of E&E products to Singapore, the USA, China, Japan and Hong Kong.

The Added Value in the manufacturing sector continued on its upward trend to expand by 11.3% to a level of RM98.4 billion (Figure 3.1). The top three sub-sectors that recorded high growth in terms of added value creation were the Chemicals & Chemical Products,

Iron & Steel, and Food & Beverages. The E&E remained the largest contributor to added value, accounting for 38.3% of total value added in 2007. The Chemicals & Chemical Products, Transport Equipment, Rubber, and Iron & Steel contributed 13.2%, 6.1%, 4.4% and 4.4% respectively to total manufacturing added value (Figure 3.2).

The Chemicals & Chemical Products sub-sector contributed 13.2% in added value due to increased demand for industrial gases, manufacture of basic chemicals, refined petroleum products and manufacture of plastic products. The domestic-oriented industries (chemical, machinery, fabricated metal, etc) continued to expand complemented mainly by domestic construction activities and the upturn in sales of new motor vehicles following the launching of new models.

The Rubber sub-sector recorded added value growth of 3.2%, contributing 4.4% share to total manufacturing added value. This was due to higher domestic and external demand for rubber gloves arising from higher usage in the health and services sectors. Malaysian rubber gloves and catheters made from natural rubber latex were highly demanded for their unique mix of high elasticity and tensile strength as well as excellent film-forming characteristics.

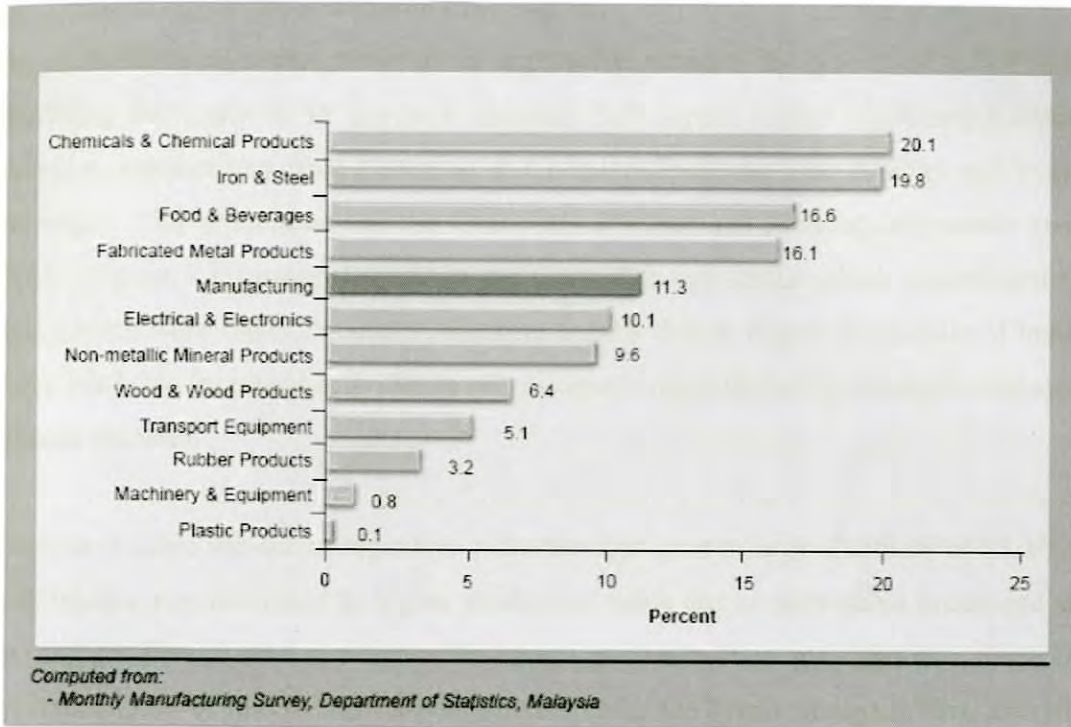


Figure 2.1: Added Value Growth, 2007

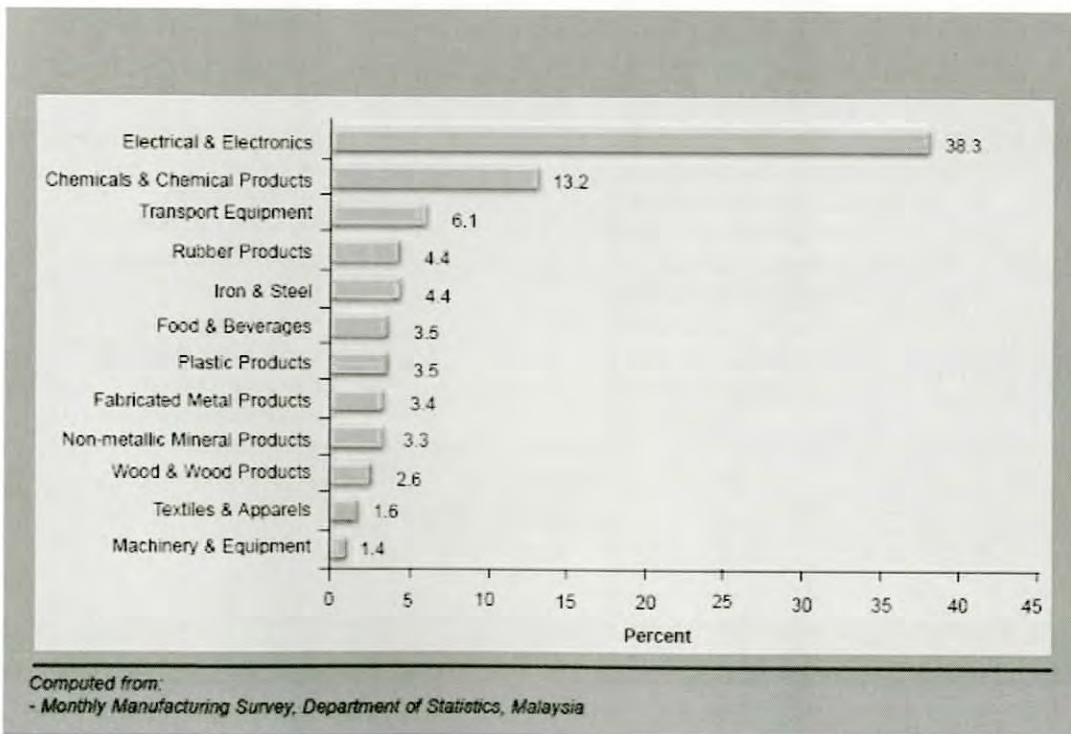
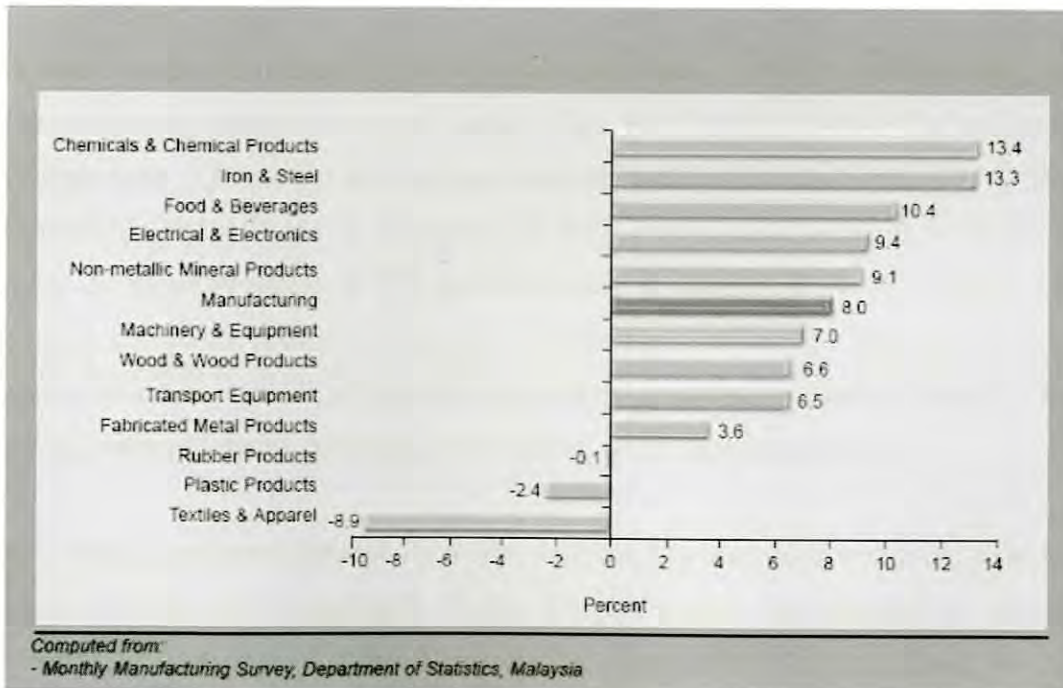


Figure 2.2: Contribution of Sub-sectors to total manufacturing Sector's Added Value, 2007

2.5 Productivity of the Manufacturing Sector

The Manufacturing sector recorded an impressive productivity growth of 8.0%* in 2007 benefiting from growth in domestic demand. Sub-sectors which registered double-digit growth in productivity were Chemical & Chemical Products, Iron & Steel and Food and Beverages. The productivity in the Chemicals & Chemical Products sub-sector grew by 13.4% (Figure 3.3). Industries within the Chemicals sub-sector which contributed to the high growth were Basic Chemical industries largely due to higher production of industrial gases following increased activities in other domestic manufacturing industries and stronger external demand.

The Iron & Steel sub-sector registered a double-digit growth in productivity of 13.3%. This performance was attributed to higher production value due to favourable prices and strong demand for iron & steel products. The upturn in construction activities as a result of the implementation of many construction projects under the Ninth Malaysia Plan, contributed to strong demand for iron & steel.



* Added value per employee (Nominal price)

Figure 2.3: Growth in Productivity of the Manufacturing Sub-sectors, 2007

The double-digit productivity growth of 10.4% in the Food & Beverages sub-sector was mainly driven by higher output in processing and preserving of fish and fish products, dairy and grain mill products. The performance in this sub-sector was also due to greater efforts undertaken by the industry to keep pace with the production of higher added value products such as breaded tempura seafood and health foods such as chitosan and fish essence and changing consumer preference towards processed food.

2.6 Labour Cost Competitiveness

Labour Cost Competitiveness measures the efficient and effective management of resources in terms of labour cost in generating higher added value. The labour cost competitiveness for the manufacturing sector improved as reflected in a decline of 5.7% in Unit Labour Cost (ULC) (Figure 3.4). In order for the sector to remain competitive, it is vital that new productivity initiatives should be implemented to ensure productivity growth is higher than wage increases. Additionally, expansion in both domestic and external market demand will improve unit labour cost of the manufacturing sector. All the sub-sectors were able to sustain its labour cost competitiveness except Plastic Products and Rubber Products.

Labour Cost per Employee of the Manufacturing sector grew by 3.9%. Among the sub-sectors that registered growth in Labour Cost per Employee above the manufacturing average were Chemicals & Chemical Products (8.0%), Iron & Steel (6.7%), Transport Equipment (5.9%), Food & Beverages (4.9%), Non-metallic Mineral Products (4.6%), Wood & Wood Products (4.1%) and Machinery & Equipment (4.1%) (Figure 3.5). The increase in Labour Cost per Employee in these sub-sectors was attributed to increasing skilled labour as a result of both the sub-sectors' progressive efforts in capacity building and upgrading of their workforce in designing and engineering skills.

With rising input costs particularly labour cost, the Manufacturing sector has to ensure that productivity growth is enhanced. Hence, it is imperative for industries to intensify the adoption of Performance-Based Remuneration System (PBRs) and increase the usage of automation and technology and supported by Information and Communication Technology (ICT) along the value chain

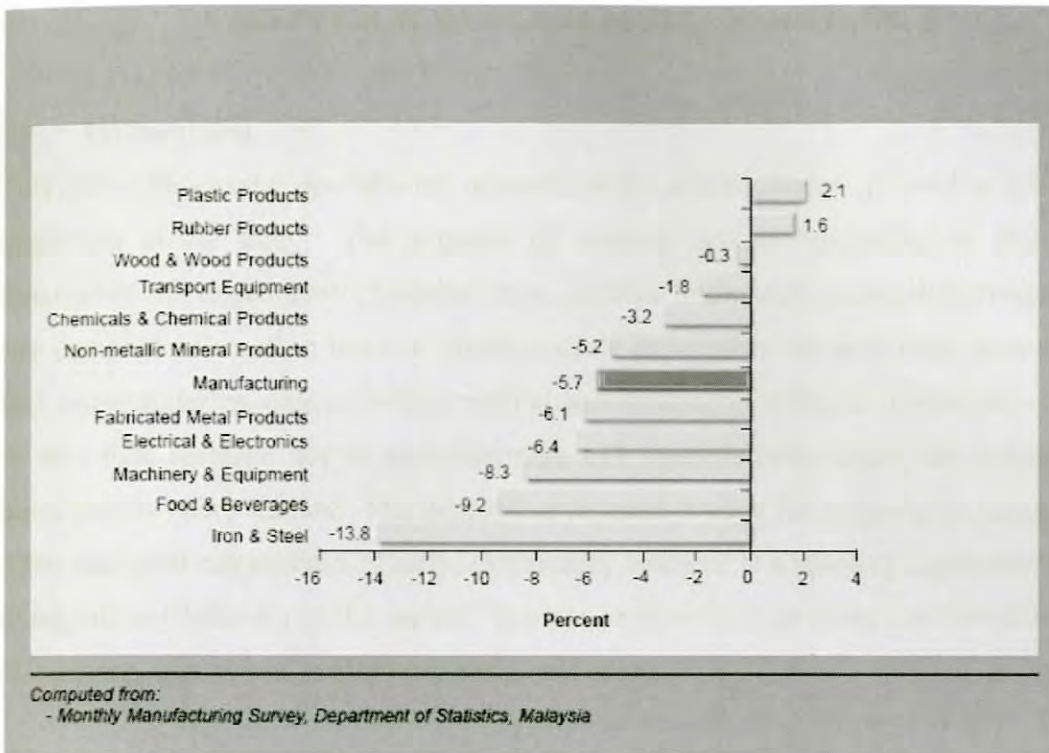


Figure 2.4: Changes in Unit Labour Cost of Manufacturing Sub-sectors, 2007

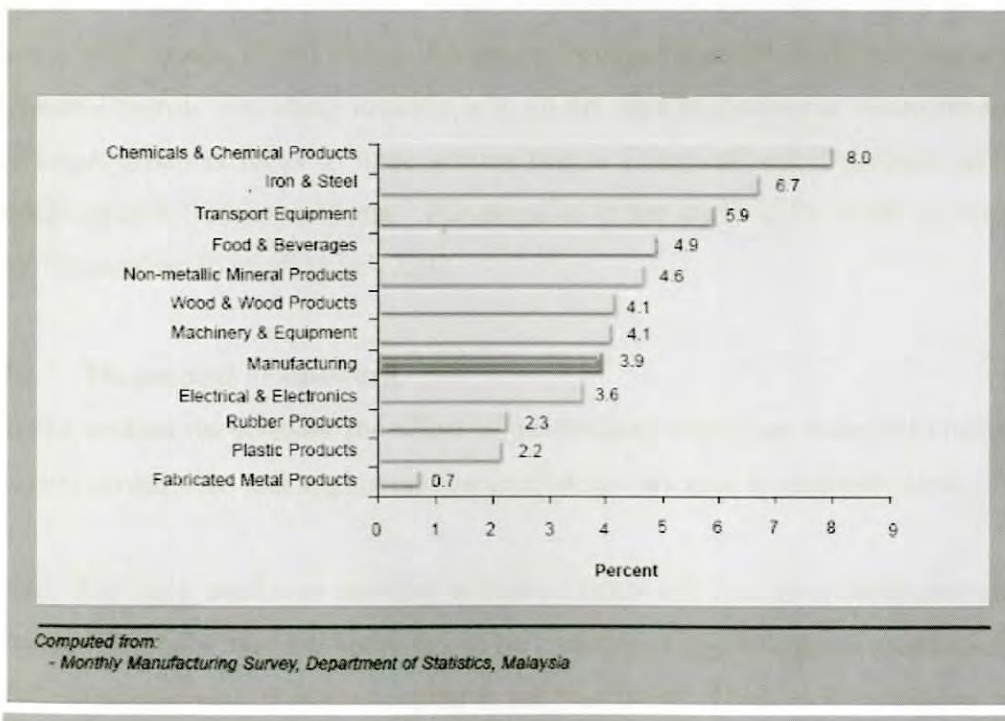


Figure 2.5: Growth in Labour Cost per Employee of Manufacturing Sub-sectors, 2007

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This particular chapter provides the research design and methodology used to achieve the objectives of the study. The purposes of research can be categorized as exploratory, descriptive and explanatory (Saunders et al., 2007). Exploratory research provides insight and comprehension of an issue or situation while exploratory research helps determine the best research design, data collection method and selection of subjects. Descriptive research or statistical research use to describes data and characteristics about the population or phenomenon being studied. The descriptive research is used for frequencies, averages and other statistical calculations. Lastly, explanatory research is a research conducted in order to explain any behavior in the market. It could be done through using questionnaire, group discussions, interviews, random sampling, and others.

The purpose of this chapter is to develop empirical research study and identify the factors contribute to variation of buffer period experienced by Malaysia and selected trading partners, based on nine variables which is Management, Operation, Financial, Technology, Stimulus Package, Fiscal Policy, Monetary Policy, Financial Restructuring, and Selective Capital Control. The study location is in all the state in Peninsular Malaysia and the study of target group is focus to three sectors that is Electrical and Electronic sector with the sample size is 336 respondents. The duration of the study is 14 weeks to complete, from 23rd November 10 to 4th March 2011.

3.2 Theoretical Framework

In this section we consider the effect of job-hopping within an industrial cluster on human capital investments and agglomeration economies. We seek to establish three points.

First, that rapid employee mobility within a cluster will lead to underinvestment in human capital. Secondly, that job hopping can be a source of agglomeration economies, so long as the underinvestment in human capital is not “too large”. Third, that conditions prevailing in the computer industry make it especially likely that hyper-mobility will produce