

CHAPTER 1
INTRODUCTION

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1.1 Background of the study

Manufacturing sector plays a vital role in the Malaysian economy. Today, it can be considered as a major source in income, employment and foreign exchange for the country. The share of manufacturing sector in Gross Domestic Product (GDP) has increased tremendously for the past few years. In 1980, its share in GDP was 19.6 percent while during 1999, its share was 31.5 percent. Subsequently, in 2000, the share of GDP rose to 31.6 percent and employment by 25.07 percent. However, in 2001, the share of GDP has decreased to 30.2 percent and employment share at 26.7 percent. This can be reflected in the tables below.

Table 1.1: Gross Domestic Product by Sector (in 1987 prices) 2001-2003

	Change (%)			Contribution to GDP Growth (%)			Share of GDP (%)		
	2001	2002 ^e	2003 ^f	2001	2002 ^e	2003 ^f	2001	2002 ^e	2003 ^f
Agriculture, forestry And fishing	1.8	1.1	3.4	0.2	0.1	0.3	8.7	8.4	8.2
Mining	1.6	2.0	2.5	0.1	0.2	0.2	7.6	7.4	7.2
Manufacturing	-6.2	5.1	8.5	-2.0	1.6	2.6	30.2	30.4	31.2
Construction	2.3	3.8	4.5	0.1	0.1	0.2	3.4	3.4	3.3
Services	5.7	5.3	5.9	3.1	3.0	3.3	56.4	57.0	57.0
Less imputed bank Service charges	12.8	11.9	10.6	1.0	1.0	1.0	8.5	9.1	9.5
Plus import duties	0.4	12.8	14.6	0.0	0.3	0.4	2.3	2.4	2.7
GDP	0.4	4.0-5.0	6.0-5.0	0.4	4.0-5.0	6.0-6.5	100.0	100.0	100.0

^e Estimate

^f Forecast

Source: Economic Report 2002/2003, Ministry of Finance, Malaysia.

Table 1. 2: Employment by Sector

	('000)		Share %		Change (%)	
	2001	2002 ¹	2001	2002 ¹	2001	2002 ¹
Agriculture, forestry And fishing	1406.3	1,398	14.7	14.2	-0.1	-0.6
Mining	41.8	41.9	0.5	0.4	1.5	0.2
Manufacturing	2,546.8	2,670.2	26.7	27.2	-0.4	4.8
Construction	771.7	789.6	8.1	8.0	2.2	2.3
Services	4768.5	4,94.3	50.0	50.2	5.8	3.7
Total	9,535.1	9,843.2	100.0	100.0	2.8	3.2

¹ Estimate

Source: Economic Planning Unit Malaysia

The increasing trend in the share of this industry over the years signifies that the economy has undergone structural transformation from agriculture- based to industrial- based. Furthermore, in 1997, the manufacturing sector constitutes 34 percent of total GDP and 81 percent of total exports. In contrast, this sector contributed only 12 percent of GDP and 11 percent of exports in 1970.¹ Therefore, it is no doubt that this transformation has a major contribution to Malaysia's high labor productivity and growth for the country. In addition, the standard of living in the society has improved within these years. As this sector is considered as the main component in GDP, the issue of obtaining higher value added is crucial in this sector. In order to increase the number of the value added in this industry, one way is to examine its labor productivity.

¹ National Economic Recovery Plan, Chapter 7, pg.1

1.2 Justification for selecting the research problem

The importance of productivity and economic growth in the long run fortunes of nations was well captured by Stanford's Paul Krugman: "Productivity isn't everything, but in the long run it is almost everything." A country's ability to improve its living standard over time depends almost entirely on its ability to raise its output per worker.²

In other words, the above statement reflected the crucial part of labour productivity in the study of economics. The focus on the labour productivity for the manufacturing sector is done based on the following grounds. First and foremost, labour productivity can be considered as the gist of economic growth. The main reason to concentrate on manufacturing industry is due to its being the major component of GDP nowadays. As labour is considered as a factor of production, by improving the performance of the labour will lead to higher production. Indirectly, this will lead to higher economic growth and better living standard for the society at large.

Secondly, more emphasize has been given on the issue of labour productivity nowadays. Based on several studies of labour productivity in the Malaysian manufacturing sector, there has been an increase of 14 percent in sales value per employee in 1999 over the 1998 level. Consequently, wage rates rose 6.5 percent

² Samuelson and Nourdhaus, 1995:650

manufacturing sector, there has been an increase of 14 percent in sales value per employee in 1999 over the 1998 level. Consequently, wage rates rose 6.5 percent and unit labour cost declined by 6.7 percent over the previous years. This signified improvement in the labour productivity in 1999.³

However, in the third quarter of 2001, wages in the manufacturing sector increased by 0.6 percent while productivity declined by 12.2 percent which later lead to a sharp increase in the unit labour cost of 14.6 percent. When the wage increases faster than productivity growth, higher unit labour cost occurred. This will affect the competitiveness of the manufacturing sector as it become more expensive to produce one unit of product.⁴ Thus, the question of giving wages and compensation to the employees that will commensurate with the increase in the productivity is crucial. By enhancing the labour productivity in the manufacturing sector, only then competitiveness and profitability can be maintained in this sector and the whole economy at large.

Finally, based on our experience during the 1997 financial crisis, we have realized that the economic growth beforehand was accelerated by input driven rather than productivity driven. Thus, as the manufacturing process are moving towards higher technology, additional capital investment per se will not enhance productivity alone. Therefore, the skills of human resources should be enhanced so

³ MITI Annual Dialogue, 2000

⁴ Productivity Report 2001, NPC, p. 175

that these skilled workers can utilize the new technology and process efficiently and maintain the highest standard and quality of output as well. Thus, it is crucial to look at the importance of measuring productivity followed by the relationship between productivity and quality.

1.3 The importance of productivity measurement

Among the reasons to measure productivity are:

- 1) Productivity measurement provides a database in an organization for goal setting and monitoring the performance. Through productivity measurement, vital information can be obtained which later can lead us towards our goal setting which we want to achieve.
- 2) It also helps to reveal problem areas that would otherwise be overlooked.
- 3) Productivity measurement can be utilized as the standards to assess the performance of all the jobs and economic activities.
- 4) It provides opportunity for learning and participation and also helps to cultivate the habits of monitoring all human resource within an organization.

1.4 Relationship between productivity and quality

Generally, productivity can be defined as the relationship between two variables (i.e. output and input). It can be denoted as:

$$\text{Productivity} = \frac{\text{Output}}{\text{Input}}$$

Here, in order for us to increase productivity, we have to increase output, keeping input constant and vice-versa. On the other hand, if both output and input increase, mathematically, the rate of increase of output should be higher than the rate of increase of input if productivity to be raised. Besides, the output which is produced has to meet the customer's satisfaction. Thus, in order to denote that the good has achieved a certain quality approved by the customer, it can be defined using this relationship:

$$\text{Productivity} = \frac{(\text{Goods And Services})}{(\text{Human} + \text{Material Resources})}$$

Here, output can be in the form of goods or services. On the other hand, the input can be classified as either human part or material part. The material part can be in the form of raw materials, equipment or capital which are fixed. The human material can be in the form of workers or employees in the

organization. Therefore, the issue of improving productivity performance and quality relationship is usually focusing on the human resource factor. (i.e. labour productivity).

In order to explain the productivity and quality relationship, the next figure will demonstrate in what ways can the output and input variables are related to the people who are responsible for them as well as the people who are to be satisfied.⁵

⁵ Seang G.S, 1994

to someone which is the customer. The customer can be referred as someone within or outside the organization. Next, the outputs produced which can reach the customers' expectation are considered to attain the minimum quality level. In other words, the quality has reached the Q expectations.

Input in the system can be in the form of human and non-human resources in the organization. Every worker in the each level of the organization held certain amount of effort, responsibility or authority in the production process. However, all these resources have to be used at the optimal level. Otherwise, it can result to wastages in the system. Effective usage will later lead to efficiency in the production process. The combination of efficient production process and Q expectations will enhance total quality. This can result to customer's satisfaction. Here, the main aim is to boost productivity.

In short, to increase productivity, there must be efficiency in the production process as well as quality in the final output produced.

1.5 Measurement used in this study

In this paper, three measurements have been used to calculate the real labour productivity, real wage and unit labour cost.

1.5.1 Measurement of the real labour productivity

In general, labour productivity can be defined as;

$$\begin{aligned} \text{LP} &= \frac{\text{Total Output}}{\text{Total Labour Input}} \\ &= \frac{\text{Total Income Generated}}{\text{Total Labour Input}} \end{aligned}$$

However, in this study, the total income generated refers to total annual sales of final output produced in the manufacturing sector. On the other hand, the total labour input refers to total employment in the manufacturing sector. A high ratio denotes good marketing strategy and vice versa.

Therefore, in this paper, labour productivity (LP) can be computed as:

$$\text{LP} = \frac{\text{Total Annual Sales}}{\text{Total Employment}}$$

The unit of measurement is Ringgit Malaysia per employee.

To convert the value into real, the nominal value obtained will be adjusted to Price Producer Index (PPI) which used 1993 as the base year.

1.5.2 Measurement of the real wage

Real wage (RW) can be defined as the real wage obtained by each employee.

A high ratio indicates high returns obtained by each employee and vice versa.

The real wage is computed by:

$$\text{RW} = \frac{\text{Wage and Salaries}}{\text{Employment}}$$

The unit of measurement is Ringgit Malaysia per employee.

The nominal value obtained will later convert to real value using PPI=1993 as the constant price.

1.5.3 Measurement of the unit labour cost

Unit labour cost is the labour cost incurred in producing one Ringgit Malaysia worth of output. Thus, a high ratio indicates high labour cost.

The unit labour cost (ULC) can be computed as:

$$\text{ULC} = \frac{\text{Labour Cost}}{\text{Total Annual Sales}}$$

Here, labour cost refers to wage and salaries.

The unit of measurement is pure numbers.

1.6 Objectives of the study

The **main** objective of this study is to examine the labour productivity performance in the manufacturing sector in Malaysia.

The **specific** objectives of this study are:

- 1) To evaluate the economic impact of unit labour cost and wage per employee on labour productivity in manufacturing sector based on data taken for the period of 25 years i.e. 1978-2002.
- 2) To suggest improvements to the present strategies undertaken in order to achieve higher development.

1.7 Hypothesis of the study

This study wishes to hypothesize the impact of real wage and unit labour cost on the real labour productivity of the Malaysian manufacturing sector.

1) According to the economic theory, the real wage (RW) is expected to have positive relationship with the real labour productivity (LP). Therefore, a realistic set of hypothesis would be as follows;

Null Hypothesis, $H_0: b_2 = 0$

Alternative Hypothesis, $H_1: b_2 > 0$

If the empirical result conforms to the economic theory, we do not reject the null hypothesis and vice-versa.

2) According to the economic theory, the unit labour cost (ULC) is expected to have negative relationship with the real labour productivity. Thus, a realistic set of hypothesis would be as follows;

Null Hypothesis, $H_0 : b_3 = 0$

Alternative Hypothesis, $H_1 : b_3 < 0$

If the empirical result conforms to the economic theory, we do not reject the null hypothesis and vice versa.

1.8 Organization of the study

This study consists of 5 chapters. Chapter 1 consists of the background scenario, justification of research problem, the importance of productivity measurement, the measurement used in this study, the relationship between productivity and quality, objectives and limitations of the study as well as organization of the chapters. Chapter 2 is the literature review which has two sections namely overview of the manufacturing sector and the empirical studies. The overview consists of its overall development and the profile of the labour utilization and its productivity. The empirical evidence presents evidence from Malaysia and other countries. Chapter 3 discusses the research methodology used in this study. Chapter 4 analyzes the results of the hypothesis testing. Chapter 5

concludes the summary of the findings and recommendations to meet the future challenges.

1.9 Limitation And Problems

The results of the research have been acquired through the data collection obtained from various published and unpublished sources. However, some of the values for the analysis are in the form of proxies. Thus, there are few limitations and problems which have been faced in order to achieve the acquired result. Among those is time constraint as well as the limitation of sources in gaining the information.