

INDICATOR OF TECHNOLOGY PROGRESS OF MANUFACTURING INDUSTRY IN KEDAH DARULAMAN

ABSTRACT

Manufacturing industry plays an important role in Malaysian business systems. This is because it contributes to the national economic growth by creating jobs. However, this industry in small and medium scale has generated a lot of job opportunities to the citizen of Malaysia. Thus, this study approaches small and medium scale business focusing in manufacturing industry to examine their productivity and efficiency in Malaysia. The measurement of productivity and efficiency are among the important indicator that are capable in showing the technology progress of manufacturing industry and being done in Kedah. This study has involving 40 manufacturing enterprises in Kedah. The information needed is gained through structural interview with the owner of the business. The data for measuring productivity and efficiency has been collected within the period of 2004 – 2007, which comprised of five main variables – one output and four inputs. The output variable of the study is sales, while the inputs are the employee salary, capital, material cost and cost of energy consumption. Both, parametric and non-parametric is used in the measurement. For the parametric approach, the Cobb-Douglas model that has been trans-log is being adapted to get the technology efficiency of the industry. On the other hand, the non-parametric approach is utilized in measuring 1) partial and total productivity, 2) the efficiency for each of the business unit via Data Envelopment Analysis (DEA). This study finds that the productivity progress for partial and total indicated the positive achievement for the period 2004 – 2007. The highest productivity level is 14.7%, coming from the employee productivity. While the lowest is the productivity based from capital, only around 1.5% for year 2007. The measurement of technology efficiency, that also known as technical progress has achieved 15% for that year. Also being found out is the percentage of business unit that get 100% score or one, which are 15%, illustrating that 85% of the research business unit are not efficient. It is also shown by the average of total efficiency score which is below 50%, only 0.42. These findings illustrated that, even though the productivity measurement always positive and the ratio is bigger than one, but the efficiency level of the business unit still need the good management in order to optimize their utilization of resources.