Remaining Competitive: Issues in Enhancing Productivity, Energy Efficiency and Innovation in the Manufacturing Sector

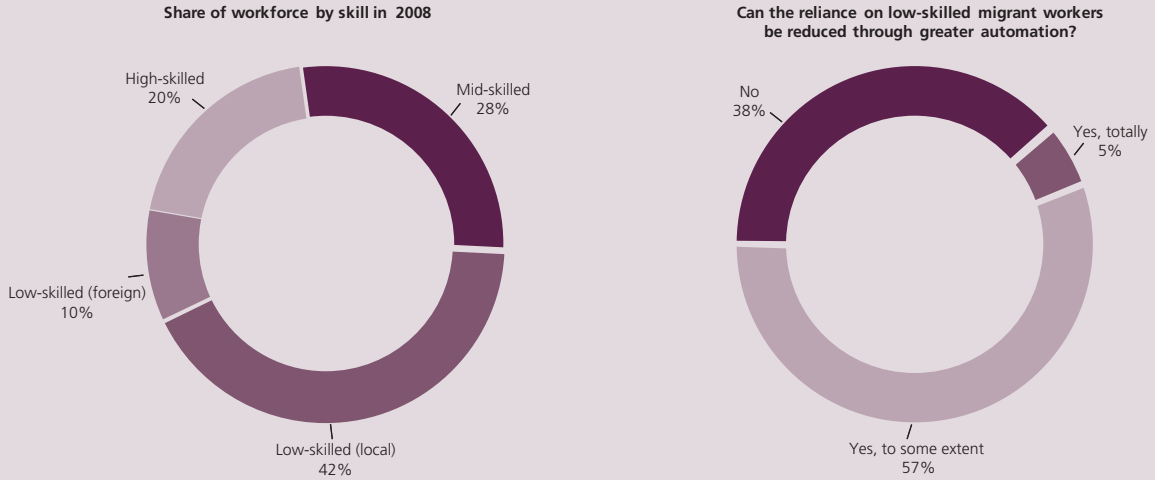
Introduction

As Malaysia advances towards becoming a high value-added economy, productivity, energy efficiency and innovation will increasingly gain importance for the economy to remain competitive and to move up the value-added chain. The manufacturing sector is no exception, where the reliance on cost competitiveness will not be sustainable in the longer term. This article discusses the various efforts undertaken and constraints faced by Malaysian manufacturers in enhancing productivity, energy efficiency and innovation amidst an increasingly challenging global environment. The analysis draws on the BNM Biennial Manufacturing Survey 2008[1].

Productivity

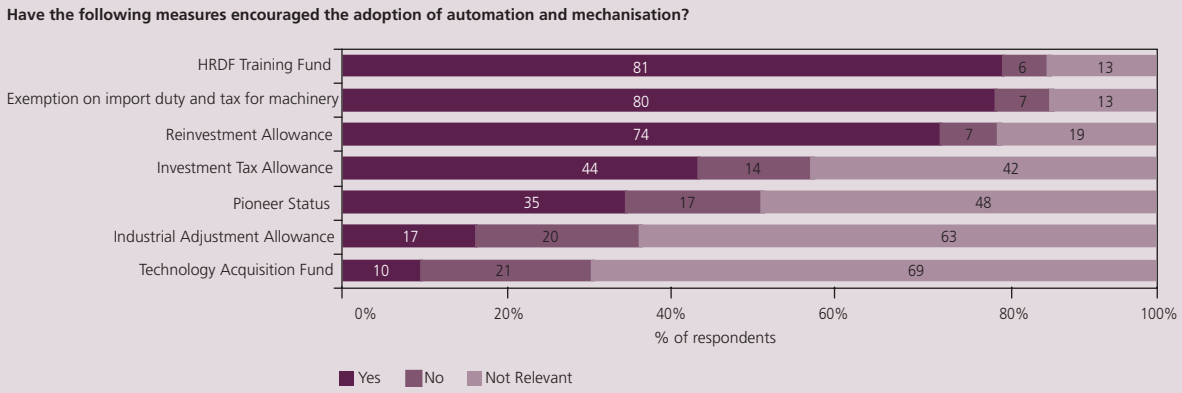
Improving the skills of the workforce and increasing automation in the existing production lines are the most common strategies adopted by manufacturers in enhancing productivity. **Upskilling** is vital as about 80% of the manufacturing workforce is low to mid-skilled, and less than half of the workers have received formal training. Training and retraining opportunities focus mainly on improving technical skills, with about half of the training budget allocated for this. To enhance **automation**, manufacturers continue to face several impediments, particularly in terms of the high cost of machinery and equipment as well as an insufficient scale of production to justify extensive automation. In addition, the presence of easily available and relatively cheap low-skilled workers potentially further hinders the adoption of greater automation, as the survey result indicates that about 60% of the jobs currently undertaken by low-skilled foreign workers can to some extent, be replaced by automation (Chart 1). Manufacturers also highlight the importance of Government incentives in supporting automation, identifying the Human Resource Development Fund (HRDF) training fund, exemption on import duty and tax for machinery, and Reinvestment Allowance as the three most effective measures (Chart 2).

Chart 1
Large presence of low cost, low-skilled workers potentially hinders greater adoption of automation



[1] The BNM Biennial Manufacturing Survey 2008 was conducted in December 2008, covering 301 manufacturing companies in 17 industries, categorised into four clusters: electronics and electrical products (E&E): 90 companies; primary-related: 119 companies; consumer-related: 47 companies and construction-related: 45 companies. The response rate was at 56% at the close of the survey on 30 April 2009.

Chart 2
Exemption on import duty and tax on machinery and Reinvestment Allowance are effective in encouraging automation



Innovation

Innovation, proxied by the extent of **research and development (R&D**) **activity**, is fundamental for manufacturers to move up the value chain. About 57% of the manufacturing firms surveyed undertook R&D activity in 2008. A major constraint to greater R&D activity that has been identified by manufacturers is the quality of the workforce. At present, only about 20% of the manufacturing workforce consists of **high-skilled labour**, while manufacturers face difficulties in the hiring of high and semi-skilled workers, to the extent that there is currently a critical shortage of engineers, technicians, supervisors and quality control experts. This situation is expected to remain for at least the next three years (Chart 3). Meanwhile, only about 10% of the respondents that undertook R&D activity in 2008 utilised the available Government incentives, citing heavy administrative burdens as discouraging application (Chart 4). Most respondents suggested that easing the application process and the eligibility criteria for the Government incentives would enhance accessibility to these incentives.

Chart 3
Difficulties faced in hiring skilled workers with critical shortages of engineers and technicians

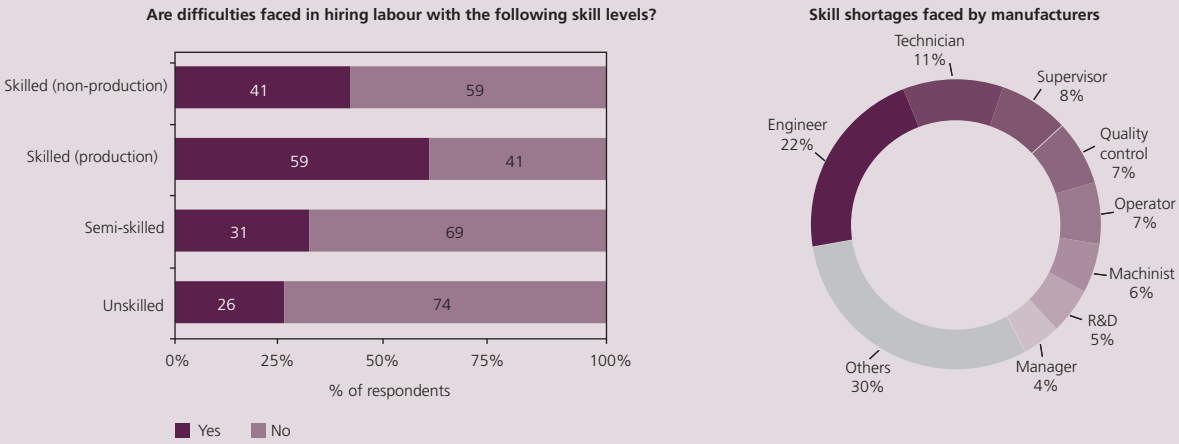
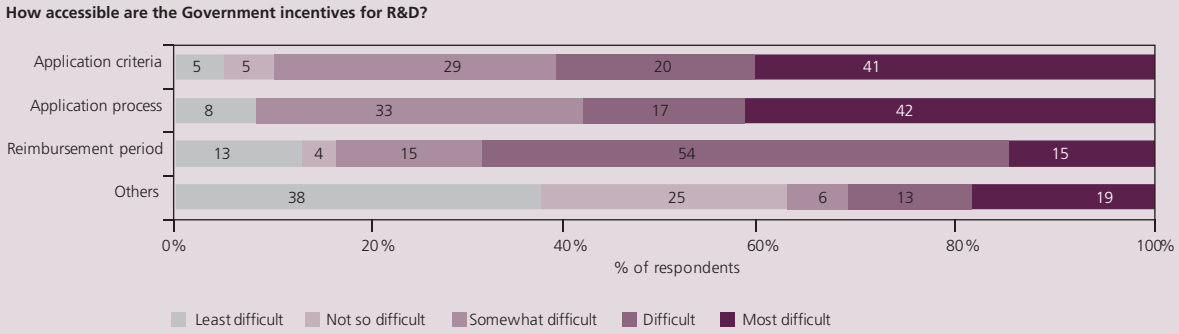


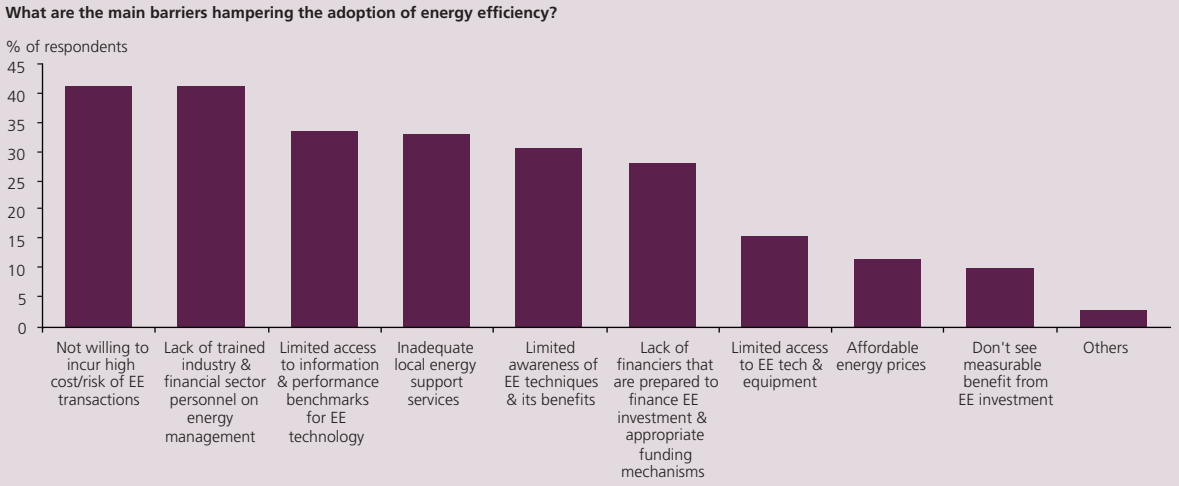
Chart 4
Heavy administrative burdens discourage application for Government incentives on R&D



Energy Efficiency

Given the high energy consumption in the manufacturing sector and the rise in utility costs since 2005, **energy efficiency** (EE) constitutes an important component of enhancing the overall efficiency of the sector. However, despite the importance of energy management and due, in part, to different levels of awareness of the benefits of EE, less than 30% of the firms surveyed have a full-time energy manager, while only about 40% have conducted an energy audit since 2005. Furthermore, less than 20% of the respondents had utilised the various Government incentives available for EE. The key challenges reported to be faced in the adoption of EE include the unwillingness to incur additional costs from the significant capital outlays to adopt EE, especially given uncertain potential returns, and the lack of trained human capital and information specific to EE (Chart 5).

Chart 5
Significant barriers exist against the adoption of energy efficiency



Conclusion

The Malaysian manufacturing sector has, in varying degrees, employed strategies, such as upskilling, increasing automation, undertaking R&D activities and conducting energy audits, to enhance productivity, improve energy efficiency and strengthen innovation, so as to remain competitive in an increasingly challenging global environment. However, there remain challenges and constraints in these endeavours that need to be promptly addressed for the successful movement up the value chain. Of significance are the issues of human capital, high initial investment costs and administrative burden in gaining access to the incentives and funding programmes.