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RESEARCH FOR SUSTAINABLE
DEVELOPMENT

Innovation Practices of Large-Scale Manufacturing Organizations Located in Industrial Estates in the Western Province of Sri Lanka

S. Ranaweera* and V. Sivalogathasan

Department of Management Studies, Open University of Sri Lanka, Nugegoda, Sri Lanka

**Corresponding author: Email: sajeeva@inergic.com*

1 INTRODUCTION

Innovation management is a growing area of academic research. Though it is accepted that innovation leads to growth and success of individual industries and entire economies, Sri Lanka is ranked 85th out of 142 countries in the Global Innovation Index 2015 provision (Cornell University, INSEAD, WIPO, 2015). This is despite Sri Lanka being a country with a high level of literacy as well as secondary education compared to many other developing countries.

As Sri Lanka is currently utilizing almost full labour according to the Central Bank (Central Bank of Sri Lanka, 2016), with industries reporting a shortage of labour, value addition (an outcome of innovation) is the key to economic success of individual workers, companies and the country as a whole. Although a few studies on innovation management has been carried out in Sri Lanka, studies to obtain an overall view of innovation management in large scale industries are lacking.

1.1 Objectives of the study

The objectives of this study are the analysis of current innovation practices in large-scale manufacturing organizations located in the Industrial Estates in the Western Province of Sri Lanka, to identify the current gaps in innovation management practices in such selected industries and to identify internal and external barriers to innovations of these organizations.

1.2 Literature Review

The conceptual framework for the Global Innovation Index, which has been developed and fine-tuned since 2004, provides a comprehensive view of macro-level factors that contribute to innovation (Cornell University, INSEAD, WIPO, 2015).

Different paths to innovation have been identified by Dosi and Nelson (Dosi and Nelson, 1994), Michael Porter, (Porter, 1990), Rogers (Rogers, 2003) and (Hamel, 2006). Different models of innovation at organizational level have been identified by Goffin and Mitchell - Innovation Pentathlon Framework (Goffin and Mitchell, 2010). Hanson and Birkinshaw - Innovation Value Chain (Hanson and Birkinshaw, 2007), and Kline and Rosenburg - Chain-Linked Innovation Model (Kline and Rosenburg, 1986).

The Organization for Economic Cooperation and Development (OECD) has developed a manual for measuring innovation in individual organizations (Organization for Economic Coorportation and Development,

Statistical Office of the European Communities, 2005). It is based on a framework that has been incrementally developed. Wu and Sivalogathasan have developed a model and conducted a study on organizational performance in the apparel sector in Sri Lanka, based on intellectual capability and innovation (Wu and Sivalogathasan, 2013), and also a study on intellectual capital and innovation in Sri Lanka, was carried out in the textile and apparel sector in Sri Lanka. (Sivalogathasan and Wu, 2015).

2 METHODOLOGY

This is a qualitative, cross-sectional analytical study with purposive sampling, using the case-study approach, which used a study framework developed following an extensive literature review. The highest levels of the management were interviewed, which frequently was the Chairman / Managing Director. Deductive qualitative analysis was carried out though group and coding, based on the interview guide developed. This method was chosen over the inductive method used in qualitative research as the factors relating to innovation are widely known.

The sampling frame was obtained from the Ministry of Industries which operate these Industrial Estates. In this study, the size of the firm (Large - over 100 Employees) and the sector "Manufacturing", as defined by International Standard Industrial Classification - ISIC Classification Level 1 Code "C" was selected (Organization for Economic Coorportation and Development, Statistical Office of the European Communities, 2005). The geographical location, Western Province was predetermined, as the largest number of industries was located in this Province. Within the ISIC Level 2, six sectors were chosen from the manufacturing sectors established in the Industrial Estates in the Western Province, based on the their contribution to industrial output of Sri Lanka as specified in the Factory Industry Production Index (Central Bank of Sri Lanka, 2016).

3 RESULTS AND DISCUSSION

The findings of this study are consistent with models of different aspects of innovation proposed by Cooper and Edgett (Cooper and Edgett, 2000), Innovation Pentathlon Framework (Goffin and Mitchell, 2010), Innovation Value Chain (Hanson and Birkinshaw, 2007) and Chain-Linked Innovation Model (Kline and Rosenburg, 1986).

All organizations studied had implemented more than one type of innovation (organizational, process, product or service) during the last three years. The findings strongly suggest that the external macro factors had a significant impact on the organization level factors related to innovation. Though most organizations were constantly engaged in innovating processes and products, formal research units were available only in three firms. Reverse-engineering of products was the commonest method of acquisition of knowledge. The firms felt that there was an overwhelmingly negative attitude of officials towards manufacturing organizations at both policy making and policy implementation levels that impacted negatively on innovative practices as well as on investments for innovation. This was a significant aspect brought into focus in this study. None of the companies reported significant marketing innovations they had undertaken during the last three years. All firms indicated that funding was not an issue for innovation. No company purchased or obtained research or licenses from external sources, domestically or internationally.

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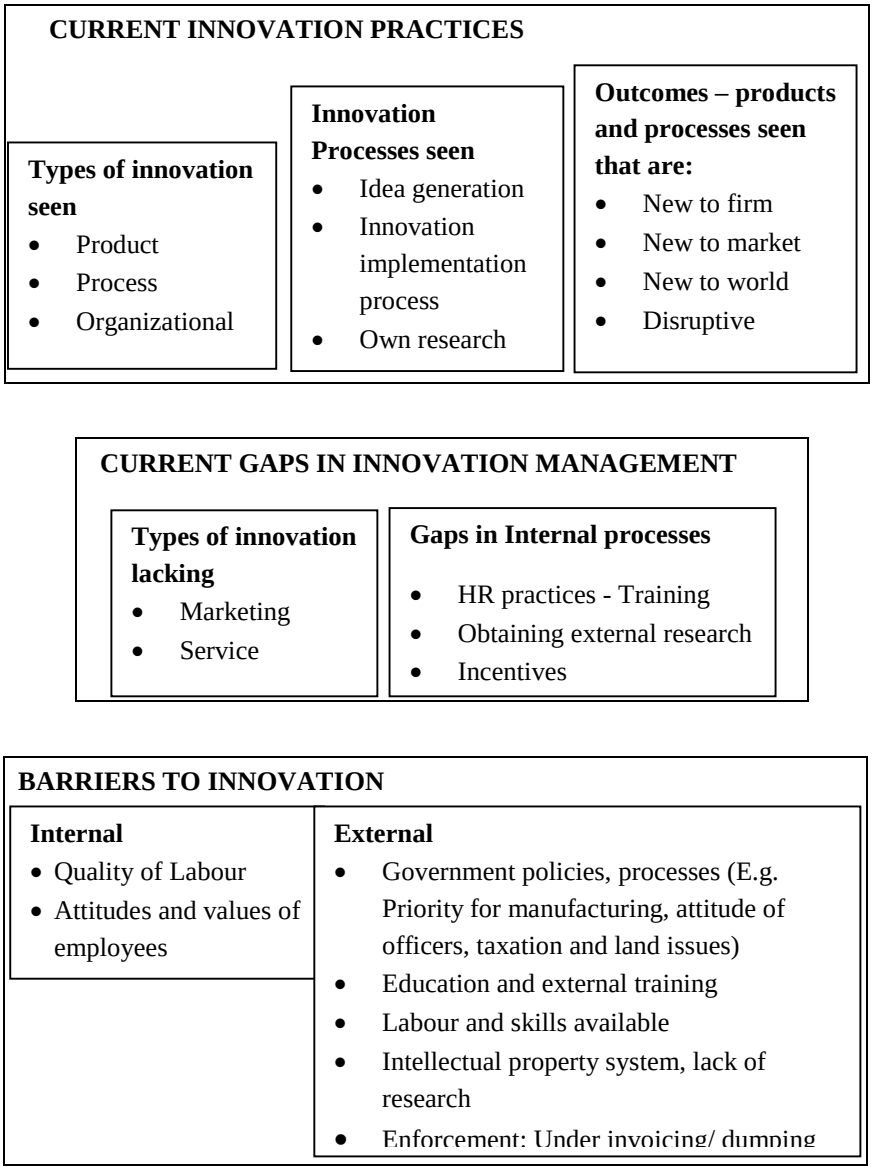

Figure 2: Findings in relation to objectives of the study

4 CONCLUSIONS AND RECOMMENDATIONS

The government should give clear and sustained signals as to the priority given to local manufacturing to address the uncertainty of the policy environment. It should also ensure that the field level officials of agencies such as the Departments of Labour, Inland Revenue, Local Authorities and the Central Environment Authority are aware of the contexts and requirements of the manufacturing sectors and work with objective facilitation rather than enforcement. Priority consideration should be given to establish a system of helping start-up companies and

concurrently, steps should be taken to forage a closer link between the intellectual property authorities and the large scale manufactures.

The government agencies should prioritize their research, on the basis of the needs of different industries. As internal research was lacking in most companies, a need for specific assessment to address this is required. Optimum, equitable taxation methodologies which enhance government revenue without negative consequences to innovation and growth of the industries should be developed. Similar analyses must be undertaken to adjust the price of electricity to strike a balance between the electricity production costs and the benefits for local manufacturing. Provision of adequate space for expansion of the manufacturing firms should also be a priority consideration as the availability, costs of land and the tedious procedures and time required to address land issues has had negative effects on innovation through delaying installation of new machinery as well as expansion of industries.

To improve innovation at national level, an in depth analysis of the indicators used for measurement of countries in the Global Innovation Index should be undertaken by the government and steps taken to improve each one of them to improve innovation in Sri Lanka.

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