

Modern technology adoption trends of small and medium electrical/electronics manufacturing enterprises registered in Nairobi

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Abstract

Growth in the manufacturing sector is widely considered a great vehicle for economic development, a fact taken up by Kenyan policy makers by setting a policy of ensuring industrialization by the year 2020. However, as evidenced by the case of newly developed countries, meaningful industrial development is preceded by technological advancement. In Kenya, performance of the manufacturing sector has been on a decline in the last decade. This has been attributed to lack of adequate technical and entrepreneurial skills coupled with inadequate research and development, which constrained technological advancement. In the Electric and Electronic sub-sector, most of the enterprises have engaged in production of traditional electrical products such as electric cables, lamps, electrodes and fans. Only a few have been involved in the manufacture of the more modern and high growth potential products such as computation, automation and communication equipment. Yet, studies in more successful economies, such as USA and South Korea, have shown manufacture of modern and dynamic electric and electronic products to be the growth vessel in the subsector. This study focused on modern technology adoption efforts by the Small and Medium Electrical and Electronics Manufacturing Enterprises (SMEEMEs) in Nairobi. The main objective was to find out how the SMEEMEs in Nairobi, and by extension, Kenya, can build up their technological capabilities which would in turn raise their product quality, productivity, product variety and engage in production of the modern high growth potential products. The study was carried out between May and December 2004, in Nairobi industrial area, Parklands and Baba Dogo road, among fourteen electric and electronic manufacturers that employed between 10 and 249 workers. The researcher, through face-to-face interviews, conducted data collection with the entrepreneurs, using interview guides. Descriptive statistics were used for data analysis and presentations. All the SMEEMEs were found to be engaged in the manufacture of the earlier generation products, except 14% who were also manufacturing the modern generation products. Though some firms in the manufacture of the earlier generation products were equally doing well as those in both the earlier and the modern generation, it came out clearly that those firms that were encroaching on modern technology practices as indicated in the status of their machinery, their new products, their product development methods and their skills upgrading approaches, were thriving and had high plans and hopes for future growth. However, 43% of SMEEMEs showed little or no tendency towards improved technological activity and were just coping and others struggling in the globalized market where 'survival for the fittest'

bluntly applies. Of the constraints facing the SMEEMEs, competition from imports was cited as the number one most severe constraint by 85.7% of the SMEEMEs, while lack of adequate financial resources was ranked second by a similar percentage. Poor utilities were ranked third by 71.43% of the firms. However, 14% of the SMEEMEs that were more technologically advanced highlighted the problems of lack of markets for the high technology products and lack of trained manpower. Taking the sub-sector as a whole, the study found out that the technology upgrading methods that had spurred tremendous growth in the sub-sector in the newly developed countries, such as joint ventures, foreign direct investment and hire of technical licenses/contracts, were hardly exploited. Most of the firms emphasized on research and development, and acquisition of hardware for their new technology requirements, which were in turn limited by the constraints mentioned above. Recommendations from the study were that, first, further improvement of the enabling environment be done, especially through macro-economic interventions, and establishment of more deliberate technology upgrading initiatives such as a national technology foresight programme and establishment of technology parks. Secondly, individual firm initiatives are required to take advantage of the enabling environment and following conventional best manufacturing practices such as new product development and agility.