

Technology Acquisition and Innovations in Kenya's Informal Sector

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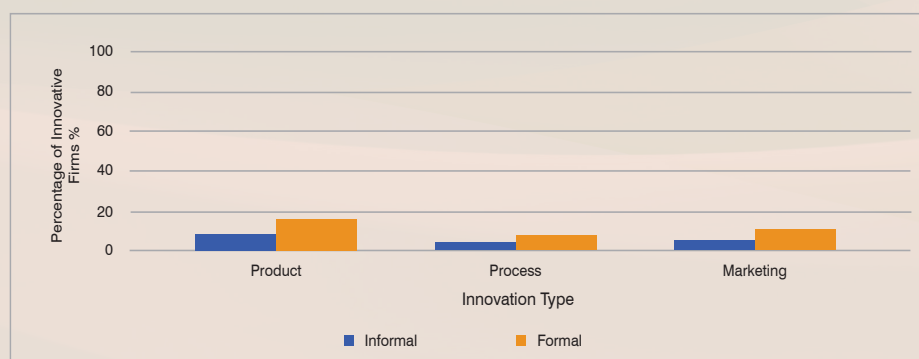
The informal sector accounts for about 75 per cent of Micro, Small and Medium Enterprises (MSMEs) according to the Kenya National Bureau of Statistics (KNBS). The sector is hampered by slow growth rate, lack of finances and low productivity. In addition, majority of the workers are women and youth with low educational attainment. Despite the notable informality in the sector, technological advances and innovation have been witnessed across the board. According to the Global Competitive Report, Kenya was ranked third in Africa in the 2018 Global Innovation Index and the second most innovative country in Africa in 2017. According to the Oslo manual done by the Organization for Economic Cooperation and Development (OECD), innovation is defined as the application of an advanced marketing approach, significantly improved procedure, or product (good or service). This definition includes market, process and product innovations.

The role and importance of technology and innovations as key drivers in accelerating economic growth and development in economies worldwide is evident as witnessed in the industrial revolution era. The Sustainable Development Goal (SDG) 9 aims at promoting innovations and technology in developing countries. The attainment of SDG 9 in Kenya is important as she aspires to become an industrialized upper middle-income country by 2030. Over the years, Kenya has endeavoured to promote Science, Technology and Innovations (STIs) through formulation of relevant policies and implementation of various national development agenda. These efforts have

led to the formation of national institutions such as: National Commission for Science, Technology and Innovation (NACOSTI), Kenya Industrial Research and Development Institute (KIRDI), National Innovation Agency (KENIA), and the National Research Fund (NRF). In addition, the Kenya Vision 2030 has STI as its foundation in making Kenya a knowledge-based economy. The affordable housing programme under the "Big Four Agenda" seeks to implement innovative ways of closing the deficit in housing, currently standing at 200,000. For example, it advocates for use of new technology and innovations to design cheap construction materials. The Medium-Term Plan 3 (MTP 3) has placed emphasis on the importance of Science, Technology, Engineering and Mathematics (STEM) in Kenya's educational institutions to help build the STI capacity in the country.

Despite Kenya's comprehensive policy and institutional framework, the use of innovations and technology is seldom applied in firms. This situation is worse in the informal sector compared to the formal (Figure1). The effectiveness of the current policy innovation and technological intervention is inadequate in many ways, particularly with regard to the informal sector. For instance, the informal sector is lacking in: exclusive innovation and technology policies to guide the sector; clearly identified non-governmental interventions to nurture innovations or source technology; and recognition of the existing different types of innovations. Given this background, it is important to look into the

Figure 1: Innovation levels in formal and informal sectors



Source: Author's construction using MSMEs Survey by KNBS (2016)

acquisition of technology, types of innovations and factors affecting innovation in the informal sector.

Key Findings

About 98 per cent of informal firms use machines and equipment. Most of these firms got their machines and equipment from MSMEs. Other sources include: non-MSMEs, importation, inheritance, manufacturing themselves and through business transactions.

From the sample, 82 per cent of the informal firms do not have access to technological advice. Among those firms that received technological advice, their main sources include: the government, NGOs, MSMEs, publications, salesmen and research institutions. This form of support is likely to motivate the proprietors to acquire technology or engage in innovations.

In terms of innovations, the number of innovative firms varies across a range of factors. These include: sector of work, ownership structure, education level, gender of owner(s), firm age and presence of technological advice. Looking at the distribution, sole proprietorships have the highest levels of innovations across board. For instance, process innovation is highest (76%) followed by product (71%) and marketing (67%) innovations. Most innovative firm owners had acquired at least secondary education. Firms owned by male-only proprietors were more likely to be innovative – product (42%), process (48%) and marketing (41%) than female-only proprietors – product (31%), process (30%) and marketing (31%). Product and marketing innovations were mostly common in the trade sector, both at 53%, whereas process innovation was present in the services sector (41%). The younger firms were more innovative than the older ones with 0–5-year-old firms being the most innovative with product (45%), process (40%) and marketing (43%) innovations. Similarly, micro firms were more innovative than small and medium-sized firms, with 93%, 90% and 90% of firms practicing product, process and marketing innovations, respectively.

In summary, there were more male-owned innovative firms than female-owned. A greater number of sole proprietors were innovative compared to family and group-owned firms. When looking into the sectors (trade, manufacturing, agri-business and services), the trade sector had the highest number of innovations. Firms that were young (0-5 years old) whose owners had attained education up to secondary level and had not received technological advice had most innovations.

Further analysis indicates that sector of work does influence innovations, with firms in a certain sector being more likely to engage in a specific type of innovation than others. A firm in the manufacturing sector is more likely to engage in process innovation compared to a firm in the trade or services sector. Owners with formal education are more likely to engage in product, process and marketing innovations than those without education; the more educated the owner of a firm is, the higher the likelihood that they would be innovative. This can be explained by the fact that education exposes the firm owner to better ways of maximizing profit, increasing sales and making better products using efficient processes. Gender of the owner(s) was also found to significantly influence innovation in a firm. Firm age, size and whether or not they get technological advice also influence innovations. Firms that receive technological advice are more likely to engage in innovation compared to firms that do not.

Recommendations

There is need for the Government to promote more interactions within the informal sector that may encourage the exchange of ideas and nurturing of innovation and technology. This can be achieved through annual regional exhibitions and trainings where firms can learn from each other, like the annual *EAC Jua Kali-Nguvu Kazi* Exhibition.

Incentives such as government sponsorships can be offered to encourage businesses to be more innovative.

There is need to encourage more women to own firms in the informal sector and be innovative. This form of ownership has the potential of closing the gender-gap in innovation. As a way of promoting female innovation and entrepreneurship, there ought to be more pro-women (marginalized groups) innovations and technology programmes and policies. Part of the National Research Fund could be targeted to research on MSMEs that women and/or marginalized groups mostly engage in or own.

Development of policies and programmes that spell out specific types of innovation (product, process and marketing) could go a long way in promoting these innovations. For example, programmes can be set up to identify and nurture marketing and product innovations in the trade sector and process in services, where they thrive most, and help in spreading out these innovations across the country.

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KIPPRA Policy Briefs are aimed at a wide dissemination of the Institute's policy research findings. The findings are expected to stimulate discussion and also build capacity in the public policy making process in Kenya.

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