

Abstract

Since the 2010s, Kenya has embraced and invested in Science, Technology, and Innovation as the key driver of economic development and firm productivity. The strategies include establishing a National Innovation System in 2013, education reforms, and incorporating Science, Technology, and Innovation in policy goals like the Kenya vision 2030. Subsequently, efforts by Kenya to invest in Science, Technology, and Innovation have led to its categorization among the leading innovation hub in Sub-Saharan Africa. Even with these innovation efforts and achievements, Gross Domestic Product growth and the performance of manufacturing and services remained below the 2022 target. This notwithstanding, manufacturing and services firms' Research and Development spending and innovation remained low during the 2015-2017 study period. In the context of this inconsistency, this study investigated the drivers of a firm's Research and Development expenditure intensity, the impact of firm-level innovation on firms' productivity, and productivity growth of the Kenya National Innovation System (2010-2018). The study utilized secondary cross-sectional data from the 2018 World Bank Kenya Enterprise Surveys and balanced panel data (2010-2018) from the World Development Indicators Data. Sample selection model, treatment effects models, and Data Envelopment Analysis were used as estimation methodologies. The results revealed that usage of innovation labs/hubs would increase propensity by 27.7% and reduce intensity by KES 27. Employee training on the innovation process increased propensity by 52% and reduced intensity by KES 29. Innovation partnership increased propensity by 45% and reduced intensity by KES 36. Further results indicated that only product/service innovation significantly impacted the firms' productivity out of the four measures of firm-level innovation considered. Process innovation, Research and Development propensity, and Intellectual Property Rights ownership did not matter significantly to a firm's productivity. Lastly, the results indicated that Kenya's National Innovation System was among Africa's most productive and efficient National Innovation Systems. However, it lagged in terms of technical progress. These results indicate that, at the firm level, the total gain from innovation was not realized, and at the national level, innovation was more profound. These results imply that the institutions in charge of Kenya National Innovation System, i.e., KENIA, NRF, and NACOSTI, need to re-evaluate firm-level innovation strategies to ensure maximum innovation gains are realized. Second, monitor and evaluate knowledge flow and sharing among the government industry and academia. Lastly, encourage innovation partnerships, training of employees on the innovation process, and champion for the establishment of innovation hubs to enhance firm-level research and development expenditure and innovation.