

INNOVATION IN NIGERIAN SMES: TYPES AND IMPACT

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The importance of Small and Medium-sized Enterprises (SMEs) to national economies has been widely recognised. The general argument is that by their very nature, SMEs are highly innovative. However, the knowledge about what types of innovation SMEs undertake and how they actually do it remains limited (Oke et al, 2004) especially in the developing countries (Bala-Subrahmanya, 2005). Several informative studies have explored innovation management in SMEs (e.g. Motwani et al, 1999; Cosh and Hughes, 2000; Oliver et al, 2000 and Keizer et al, 2002) but within the developed country context. Also, studies that explore the types of innovation that SMEs pursue are few and based in the developed country context (e.g. Oke et al, 2004; Rizoni, 1991). Main findings revolve around the facts that product innovations are predominant in SMEs and that there is a significant impact of these on growth of firm turnover. The results on whether or not these firms focus on incremental/radical innovations are inconclusive and other dimensions of firm performance apart from turnover have been largely unexplored (see for instance, Oke et al, 2004; Kanter, 1985).

However, given the resource constraints and weak/unstructured National Innovation Systems (NIS) that characterise developing economies, it makes sense to assume that SMEs therein would focus on incremental innovations and that these would have some positive impact on firm performance. Therefore, the objective of this paper, based on an industry-wide innovation survey in Nigeria, is to explore the types of innovation that are predominant in SMEs in developing countries and to investigate the impact of these innovations on different dimensions of firm performance. Using a quantitative empirical approach (to ensure consistency with previous research and enable hypothesis testing), we address the following research questions:

1. What types of innovation are predominant in Nigerian SMEs?
2. How do these innovations impact on firm performance?

Following Mytelka (2000), we define innovation within our developing country context as the process by which firms master and implement the design and production of goods and

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services that are new to them irrespective of whether they are new to their competitors, their customers or the world. Two types of innovation were identified: product and process innovations. We also distinguished between radical innovation (depicted by the introduction of a completely new product or process) and incremental innovation (depicted by improvements to existing products or processes).

Based on the definition by Nigeria's National Council on Industry; an SME was defined in this study in terms of employment as one with between 10 and 300 employees (Udechukwu, 2003). 54 of these – including a few micro enterprises with less than 10 workers - completed and returned the survey instrument, giving a response rate of over 50%. The survey instrument asked firms directly whether or not they had embarked on introducing or improving a product or process between 2003 and 2006. Different dimensions of firm performance were captured by asking firms to indicate whether their profit, product quality – as evidenced in returns/rejection, employment and market share had increased, decreased or remained unchanged. Wilcoxon test as well as regression analyses were used to test the following hypotheses:

H1: SMEs tend to focus more on product innovations than process innovations.

H2: SMEs tend to focus more on incremental than radical innovations.

H3: The types of innovations that SMEs focus on will have a significant impact on their performance

Our results are illuminating. Contrary to the results of previous studies, we found no significant difference in the focus on product and process innovations ($z = -0.1633$; $p > 0.05$); H1 was therefore rejected. However, we found a significant difference between radical and incremental product innovations ($z = -3.541$; $p < 0.001$), and between radical and incremental process innovations ($z = -4.490$; $p < 0.001$) in favour of incremental innovations. These figures suggest a greater focus on incremental innovations thus H2 was accepted. This result contends the results of some previous studies (e.g. Kanter, 1985) and confirms others (e.g. Oke et al, 2004; Bala-Subrahmanya, 2005).

The results of the regression analyses to test H3 yielded interesting results because it showed, to a good extent, that innovations – particularly of an incremental nature - really matter for product quality. At the 0.1 confidence level, product and process innovation were not significant predictors of performance, both when regressed together or independently against each of the dimensions of performance. However, the results of regression with the degree of novelty of the innovations lead us to partially accept H3 with a 90% level of confidence. The pursuit of incremental innovations in SMEs has a significant impact on their product quality, shown in significantly reduced rejection and return of their products ($R^2 = 0.217$; $p < 0.05$).

The foregoing results hold important implications for managers and policy makers. Incremental innovations have been brought forward as very important for Nigerian SMEs and it is a significant predictor of product quality though not of revenue. First, it points out that a focus on the firm's existing core market through a deep understanding of the needs of customers and the ability to continuously improve products/processes to meet those needs is very important. Second, the importance of innovation is confirmed and empirical support is provided for the encouragement of innovation in SMEs by policy makers. However, the call for extensive new product development and the desire to enter new geographic markets (e.g. through exports) are not exactly supported by the highlighting of the importance of incremental innovation.

This study is a very early attempt to investigate the types and impact of innovation on developing country SMEs in general, and African as well as Nigerian SMEs in particular. Further studies with larger samples and in different countries would be very useful in facilitating cross-country comparisons. Also, cross-sectoral studies would help in throwing light on how sectoral characteristics influence the types of innovation that SMEs pursue.