

DOES E-INNOVATION INFLUENCE PERFORMANCE DIFFERENTLY? THE CASE OF VARYING LEVELS OF SMALL AND MEDIUM ENTERPRISES IN REGIONAL AUSTRALIA

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Purpose of your paper: Previous studies on the performance-innovation nexus among small and medium enterprises (SMEs) did not disaggregate, but generalized the same results to all levels of performance. Researchers implicitly assumed that the performance-innovation relationship is uniform across the relationship continuum for high, mid-level and low performing SMEs. In this study, we disaggregated performance into the lower, median and upper percentiles by employing quantile regression. Our findings indicated that the factors influencing performance differ from one level of performance to the other. Digital readiness did not significantly impact on the firms irrespective of their performance level but the best performers were influenced by e-business index. It was interesting to note that firms with ICT strategy, predominantly in the non-agricultural industry, scored lower on the index. The major contributions of this study are that the performance-innovation relationship differ by levels of performance and Solow's productivity paradox exists at the firm level. We recommend that rural policies should target low performing firms and researchers should adopt quantile regression in elucidating the differences in the performance-innovation nexus.

Key words: Performance–innovation nexus, Quantile regression, ICT strategy, productivity paradox

Introduction

Innovative business practices, particularly e-commerce facilitated by ICT and Internet services, have revolutionized the global economy but little is known about its impact on performance (Fillis et al., 2004; Sawhney and Zabin 2001). Consequently, the Internet and ICT in general are now major drivers of economic globalisation and a source of innovation with significant investment in related infrastructures and human capital (Gereffi 2001). There has been diverse uptake of digital technology in different industries with the agricultural sector being among the laggards (ABS 2014). However, the investment may not be sufficiently justified by the output. This little or negative return to ICT investment is referred to as Solow's productivity paradox (Dehning et al., 2005).

In Australia, SMEs account for 60% of employment and they constitute 99.7% of Australian firms but their startups have been declining with a consequent implication for job creation (Australian Government, 2015). Brody and Pureswaran (2015) noted that the potential impact of digital technology is enormous in the agricultural sector but farmers spend only about 1% of capital expenditure on it in contrast to their counterparts in other industries. Despite the fact that SMEs are major sources of economic growth, researchers are yet to sufficiently focus on the performance-innovation nexus as it relates to investments in ICT, Internet and innovation (e-innovation) in regional Australia (Gadenne and Sharma 2009; Xayavong et al., 2015). Where such studies exist, the outcomes are mixed and they focus on high-tech sectors at macro-scale (Parida et al., 2012).

Coad and Rao (2008), in a previous edition of this journal, examined R & D innovation in high-tech firms and concluded that innovation may have a positive or negative impact on performance and that the minor contribution of innovation to firm growth may result from the difficulties in measuring innovation. The issue of measurement challenges in performance-innovation studies have been well recognised by other researchers (Brynjolfsson, 1993).