

The role of clustering in the growth of new technology-based firms

Elicia M. Maine · Daniel M. Shapiro · Aidan R. Vining

Accepted: 7 February 2008
© Springer Science+Business Media, LLC. 2008

Abstract This study analyses the relationship between clusters and the growth performance of new U.S. technology-based firms. It is argued that firms benefit because clustering provides access to specialized resources that cannot be developed internally. The empirical results indicate that distance from a cluster is negatively related to growth, but clustering has a greater positive impact on biotech firms. Proximity to a cluster within a diverse metropolitan area is associated with superior growth performance only for firms that rely heavily on broad, downstream supply chain effects (that is, for information and communications technology firms).

Keywords Clusters · Small firm growth · New technology-based firms · Gibrat's Law · Economic geography

JEL Classifications R1 · L2 · L26 · M2

1 Introduction

Many high-technology firms co-locate, or cluster, spatially (Audretsch and Feldman 1996; Porter 2000).

A plausible inference is that firm founders or executives often believe that co-location will enhance the firm's expected performance (Feldman et al. 2005). Despite the plausibility of this argument, there is little hard evidence that co-location is positively related to firm performance. In particular, there is relatively little evidence concerning the impact of location or co-location on the performance of high-tech firms: "few systematic empirical studies analyze spatial heterogeneity in new venture creation in high-technology industries, and even fewer document the effect of geographic location on organizational viability" (Stuart and Sorenson 2003, p. 230). Accordingly, our research examines the effect of clustering on the growth performance of a sample of successful "new technology-based firms" (NTBFs) in the United States.¹ Almost all of these NTBFs are in either biotechnology or information and communications technology (ICT).

The primary empirical research question addressed here is whether location in, or near, a specialized industry cluster affects the growth performance of these firms. In order to consider why NTBFs might benefit from location within or near a relevant cluster, we draw upon the resource-based view (RBV) of the firm which emphasizes that a firm is a heterogeneous bundle of resources both in its initial resources

E. M. Maine · D. M. Shapiro (✉) · A. R. Vining
Segal Graduate School of Business, Simon Fraser
University, Vancouver, BC, Canada V6B 5K3
e-mail: dshapiro@sfu.ca

¹ We define NTBFs as young and initially small firms operating in research and development (R&D)-intensive sectors.