

6-12-2010

DOES A CLUSTERED LOCATION MATTER FOR HIGH-TECHNOLOGY COMPANIES' SURVIVAL AND GROWTH? THE CASE OF BIO-TECHNOLOGY IN GERMANY (SUMMARY)

Vartuhí Tonoyan

University of Mannheim, tonoyan@ifm.uni-mannheim.de

Robert Strohmeyer

University of Mannheim

Michael Woywode

University of Mannheim

Recommended Citation

Tonoyan, Vartuhí; Strohmeyer, Robert; and Woywode, Michael (2010) "DOES A CLUSTERED LOCATION MATTER FOR HIGH-TECHNOLOGY COMPANIES' SURVIVAL AND GROWTH? THE CASE OF BIO-TECHNOLOGY IN GERMANY (SUMMARY)," *Frontiers of Entrepreneurship Research*: Vol. 30: Iss. 7, Article 8.

Available at: <http://digitalknowledge.babson.edu/fer/vol30/iss7/8>

This Summary is brought to you for free and open access by the Entrepreneurship at Babson at Digital Knowledge at Babson. It has been accepted for inclusion in Frontiers of Entrepreneurship Research by an authorized administrator of Digital Knowledge at Babson. For more information, please contact digitalknowledge@babson.edu.

SUMMARY

DOES A CLUSTERED LOCATION MATTER FOR HIGH-TECHNOLOGY COMPANIES' SURVIVAL AND GROWTH? THE CASE OF BIO-TECHNOLOGY IN GERMANY

Vartuhí Tonoyan, University of Mannheim, Germany
Robert Strohmeier, University of Mannheim, Germany
Michael Woywode, University of Mannheim, Germany

Principal Topic

Young research-intensive high-technology firms tend to cluster in regions, by establishing their companies nearby public scientific institutes, large industrial companies and venture capitalists. It is suggested that various factors such as low transaction costs, knowledge spillovers, and tacit knowledge flows which result from the spatial proximity and networking in clusters might contribute to a better performance of clustered firms. Yet, studies are largely missing in which these theoretical claims are evaluated on basis of a *longitudinal analysis* (Geenhuizen & Reyes-Gonzalez, 2007, p. 1683).

We aim at filling this gap and addressing following questions: Does cluster embeddedness result in a better performance of high-technology firms, and if so, what are the mechanisms behind this? Are all high-technology clusters equally good, or is there heterogeneity among clusters in terms of their efficiency? If the latter is the case, what makes some high-technology clusters more successful than others?

This study lens on several theoretical perspectives, such as industrial economics, organizational ecology, organizational learning, and sociological neo-institutionalism, to explain how industry contexts as well as organizational and network characteristics may impact survival ability and success of high-technology firms.

Method

We utilize a unique panel data (1998-2009) comprised of 1,064 bio-technology firms in Germany. Our dependent variables are firm survival ability and success. Firm success is operationalized via (i) growth in employment and sales and (ii) the likelihood of innovation (measured via patents). We employ *panel econometrics* and *survival analysis* (Cox-hazard rates model) to control for firm unobserved heterogeneity and omitted variables bias.

Results and Implications

First, clustered biotechnology firms tend to *outperform* non-clustered firms with regard to the most performance indicators. As for *within-cluster heterogeneity* in firm performance, those firms are found to be more successful, which have a higher number of contacts to the central actors (big pharma companies). Second, there is *strong heterogeneity* among *biotechnology clusters* in Germany. Those clusters are more successful which obtain public R&D subsidies more often, have a higher density of public research institutes, a higher level of within-cluster competition, and which are more strongly involved in networks with international clusters.

CONTACT: Vartuhí Tonoyan; tonoyan@ifm.uni-mannheim.de; (T): +49-621-181-2895; Institute for SME Research; University of Mannheim; L9, 1-2, 68161 Mannheim, Germany.