

Metropolitan innovation, firm size, and business survival in a high-tech industry

Small Business Economics

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Abstract

This paper contributes to the growing body of business survival literature that focuses on regional determinants of the hazard faced by firms. Using parametric survival analysis, we test the effects of regional innovation on exit likelihood in the US computer and electronic product manufacturing during the 1992–2008 period. The novelty of our approach is in conditioning the effects of metropolitan innovation on firm size. Estimation results suggest a negative relationship between metropolitan patenting activity and survival of firms that started with 1–3 employees. This effect decreases if companies grow. Establishments with more than 4 employees at start-up are insensitive to metropolitan innovation, although size of firms that started with 4–9 employees improves their survival chances. These findings indicate that local knowledge spillovers do not translate into lower hazard. The negative relationship indicates either a creative destruction regime or decisions of entrepreneurs to shut down existing ventures in order to pursue other opportunities.

Keywords

Business survival Metropolitan innovation Survival analysis Computer and electronic product manufacturing

JEL Classifications

C41 L26 L63 R1

Notes

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References

Acs, Z. J., Anselin, L., & Varga, A. (2002). Patents and innovation counts as measures of regional production of new knowledge. *Research Policy*, *31*, 1069–1085.

<u>Google Scholar</u> (http://scholar.google.com/scholar_lookup?

title=Patents%20and%20innovation%20counts%20as%20measures%20of%20regional %20production%20of%20new%20knowledge&author=ZJ.%20Acs&author=L.%20Ansel in&author=A.%20Varga&journal=Research%20Policy&volume=31&pages=1069-1085&publication_year=2002)

Acs, Z. J., & Armington, C. (2004). Employment growth and entrepreneurial activity in cities. *Regional Studies*, *38*(8), 911–927.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Employment%20growth%20and%20entrepreneurial%20activity%20in%20cities&author=ZJ.%20Acs&author=C.%20Armington&journal=Regional%20Studies&volume=38&issue=8&pages=911-927&publication_year=2004)

Acs, Z. J., Armington, C., & Zhang, T. (2007). The determinants of new-firm survival across regional economies. *Papers in Regional Science*, 86(3), 367–391.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=The%20determinants%20of%20new-

firm%20survival%20across%20regional%20economies&author=ZJ.%20Acs&author=C. %20Armington&author=T.%20Zhang&journal=Papers%20in%20Regional%20Science&volume=86&issue=3&pages=367-391&publication_year=2007)

Acs, Z. J., & Plummer, L. (2005). Penetrating the "knowledge filter" in regional economies. *The Annals of Regional Science*, *39*(3), 439–456.

Google Scholar (http://scholar.google.com/scholar_lookup?

 $title=Penetrating\%20 the\%20\%E2\%80\%9Cknowledge\%20 filter\%E2\%80\%99\%E2\%80\%99\%20 in\%20 regional\%20 economies\&author=ZJ.\%20Acs\&author=L.\%20 Plummer\&journ al=The\%20 Annals\%20 of\%20 Regional\%20 Science\&volume=39\&issue=3\&pages=439-456\&publication_year=2005)$

Adams, J. D., & Jaffe, A. (1996). Bounding the effects of R&D: An investigation using matched establishment-firm data. *RAND Journal of Economics*, *27*(4), 700–721.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Bounding%20the%20effects%20of%20R%26D%3A%20An%20investigation%20us

ing%20matched%20establishment-

firm%20data&author=JD.%20Adams&author=A.%20Jaffe&journal=RAND%20Journal %20of%20Economics&volume=27&issue=4&pages=700-721&publication_year=1996)

Agarwal, R. (1997). Survival of firms over the product life cycle. *Southern Economic Journal*, 63(3), 571-585.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Survival%20of%20firms%20over%20the%20product%20life%20cycle&author=R. %20Agarwal&journal=Southern%20Economic%20Journal&volume=63&issue=3&pages =571-585&publication_year=1997)

Agarwal, R., & Audretsch, D. (2001). Does entry size matter? The impact of the life cycle and technology on firm survival. *Journal of Industrial Economics*, 49(1), 21–43.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Does%20entry%20size%20matter%3F%20The%20impact%20of%20the%20life%20cycle%20and%20technology%20on%20firm%20survival&author=R.%20Agarwal&author=D.%20Audretsch&journal=Journal%20of%20Industrial%20Economics&volume=49&issue=1&pages=21-43&publication_year=2001)

Agarwal, R., & Gort, M. (2002). Products and firm life cycles and firm survival. *American Economic Review*, 92(2), 184–190.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Products%20and%20firm%20life%20cycles%20and%20firm%20survival&author=R.%20Agarwal&author=M.%20Gort&journal=American%20Economic%20Review&volume=92&issue=2&pages=184-190&publication_year=2002)

Agarwal, R., Sarkar, M., & Echambadi, R. (2002). The conditioning effect of time on firm survival: An industry life cycle approach. *Academy of Management Journal*, *45*(5), 971–994.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=The%20conditioning%20effect%20of%20time%20on%20firm%20survival%3A%2 oAn%20industry%20life%20cycle%20approach&author=R.%20Agarwal&author=M.%2 oSarkar&author=R.%20Echambadi&journal=Academy%20of%20Management%20Journal&volume=45&issue=5&pages=971-994&publication_year=2002)

Allison, P. D. (2010). Survival analysis. In G. R. Hancock & R. O. Mueller (Eds.), *The reviewer's guide to quantitative methods in the social sciences* (pp. 413–425). New York: Routledge.

Google Scholar (http://scholar.google.com/scholar_lookup? title=Survival%20analysis&author=PD.%20Allison&pages=413-425&publication_year=2010)

Arribas, I., & Vila, J. E. (2007). Human capital determinants of the survival of entrepreneurial service firms in Spain. *The International Entrepreneurship and Management Journal*, *3*, 309–322.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Human%20capital%20determinants%20of%20the%20survival%20of%20entrepre neurial%20service%20firms%20in%20Spain&author=I.%20Arribas&author=JE.%20Vil a&journal=The%20International%20Entrepreneurship%20and%20Management%20Journal&volume=3&pages=309-322&publication_year=2007)

Arvanitis, S., & Stucki, T. (2013). How Swiss small and medium-sized firms assess the performance impact of mergers and acquisitions. *Small Business Economics*. doi:10.1007/s11187-013-9482-z (https://doi.org/10.1007/s11187-013-9482-z).

Aspelund, A., Berg-Utbya, T., & Skjevdal, R. (2005). Initial resources' influence on new venture survival: A longitudinal study of new technology-based firms. *Technovation*, *25*, 1337–1347.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Initial%20resources%E2%80%99%20influence%20on%20new%20venture%20survival%3A%20A%20longitudinal%20study%20of%20new%20technology-

based%20firms&author=A.%20Aspelund&author=T.%20Berg-

Utbya&author=R.%20Skjevdal&journal=Technovation&volume=25&pages=1337-1347&publication_year=2005)

Audretsch, D. (1991). New-firm survival and the technological regime. *The Review of Economics and Statistics*, 73(3), 441–450.

Google Scholar (http://scholar.google.com/scholar_lookup?title=New-

firm%20survival%20and%20the%20technological%20regime&author=D.%20Audretsch &journal=The%20Review%20of%20Economics%20and%20Statistics&volume=73&issue =3&pages=441-450&publication_year=1991)

Audretsch, D. (1995). Innovation, growth and survival. *International Journal of Industrial Organization*, *13*, 441–457.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Innovation%2C%20growth%20and%20survival&author=D.%20Audretsch&journal =International%20Journal%20of%20Industrial%20Organization&volume=13&pages=441-457&publication_year=1995)

Audretsch, D., Houweling, P., & Thurik, R. (2000). Firm survival in the Netherlands. *Review of Industrial Organization*, *16*(1), 1–11.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Firm%20survival%20in%20the%20Netherlands&author=D.%20Audretsch&author=P.%20Houweling&author=R.%20Thurik&journal=Review%20of%20Industrial%20Org anization&volume=16&issue=1&pages=1-11&publication_year=2000)

Audretsch, D., & Mahmood, T. (1995). New firm survival: New results using a hazard function. *The Review of Economics and Statistics*, 77(1), 97–103.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=New%20firm%20survival%3A%20New%20results%20using%20a%20hazard%20f unction&author=D.%20Audretsch&author=T.%20Mahmood&journal=The%20Review% 20of%20Economics%20and%20Statistics&volume=77&issue=1&pages=97-103&publication_year=1995)

Audretsch, D., & Vivarelli, M. (1996). Firm size & R&D spillovers: Evidence from Italy. *Small Business Economics*, *8*(3), 249–258.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Firm%20size%20%26%20R%26D%20spillovers%3A%20Evidence%20from%20Italy&author=D.%20Audretsch&author=M.%20Vivarelli&journal=Small%20Business%20Economics&volume=8&issue=3&pages=249-258&publication_year=1996)

Bates, T. (2005). Analysis of young, small firms that have closed: Delineating successful from unsuccessful closures. *Journal of Business Venturing*, *20*(3), 343–358.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Analysis%20of%20young%2C%20small%20firms%20that%20have%20closed%3A %20Delineating%20successful%20from%20unsuccessful%20closures&author=T.%20Ba tes&journal=Journal%20of%20Business%20Venturing&volume=20&issue=3&pages=34 3-358&publication_year=2005)

Bayus, B. L., & Agarwal, R. (2007). The role of pre-entry experience, entry timing, and product technology strategies in explaining firm survival. *Management Science*, *53*(12), 1887–1902.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=The%20role%20of%20pre-

entry%20experience%2C%20entry%20timing%2C%20and%20product%20technology%20strategies%20in%20explaining%20firm%20survival&author=BL.%20Bayus&author=R.%20Agarwal&journal=Management%20Science&volume=53&issue=12&pages=1887-1902&publication_year=2007)

Bellone, F., Musso, P., Nesta, L., & Quéré, M. (2008). Market selection along the firm life cycle. *Industrial and Corporate Change*, *17*(4), 753–777.

Google Scholar (http://scholar.google.com/scholar_lookup?

 $title=Market\%20 selection\%20 along\%20 the\%20 firm\%20 life\%20 cycle\&author=F.\%20 Bellone\&author=P.\%20 Musso\&author=L.\%20 Nesta\&author=M.\%20 Qu\%C3\%A9r\%C3\%A9\&journal=Industrial\%20 and \%20 Corporate\%20 Change\&volume=17\&issue=4\&pages=753-777\&publication_year=2008)$

BLS. (2009). *Career guide to industries*, 2008–2009 edition. Washington, DC: US Department of Labor.

BLS. (2011). *Career guide to industries, 2010–2011 edition*. Washington, DC: US Department of Labor.

Google Scholar (http://scholar.google.com/scholar_lookup? title=Career%20guide%20to%20industries%2C%202010%E2%80%932011%20edition&publication_year=2011)

Bottazzi, L., & Peri, G. (2003). Innovation and spillovers in regions: Evidence from European patent data. *European Economic Review*, *47*(4), 687–710.

Google Scholar (http://scholar.google.com/scholar lookup?

title=Innovation%20and%20spillovers%20in%20regions%3A%20Evidence%20from%2 oEuropean%20patent%20data&author=L.%20Bottazzi&author=G.%20Peri&journal=European%20Economic%20Review&volume=47&issue=4&pages=687-710&publication_year=2003)

Box, M. (2008). The death of firms: Exploring the effects of environment and birth cohort on firm survival in Sweden. *Small Business Economics*, *31*, 379–393.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=The%20death%20of%20firms%3A%20Exploring%20the%20effects%20of%20environment%20and%20birth%20cohort%20on%20firm%20survival%20in%20Sweden&author=M.%20Box&journal=Small%20Business%20Economics&volume=31&pages=379-393&publication_year=2008)

Boyer, T., & Blazy, R. (2013). Born to be alive? The survival of innovative and non-innovative French micro-start-ups. *Small Business Economics*. doi:10.1007/s11187-013-9522-8 (https://doi.org/10.1007/s11187-013-9522-8).

Bridges, S., & Guariglia, A. (2008). Financial constraints, global engagement, and firm survival In the United Kingdom: Evidence from micro data. *Scottish Journal of Political Economy*, *55*(4), 444–464.

 $title=Financial\%20 constraints\%2C\%20 global\%20 engagement\%2C\%20 and\%20 firm\%20 survival\%20 In\%20 the\%20 United\%20 Kingdom\%3A\%20 Evidence\%20 from\%20 micro\%20 data\&author=S.\%20 Bridges\&author=A.\%20 Guariglia&journal=Scottish\%20 Journal\%20 oof\%20 Political\%20 Economy&volume=55 & issue=4 & pages=444-464 & publication_year=2008)$

Brixy, U., & Grotz, R. (2007). Regional patterns and determinants of birth and survival of new firms in Western Germany. *Entrepreneurship & Regional Development: An International Journal*, 19(4), 293–312.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Regional%20patterns%20and%20determinants%20of%20birth%20and%20surviv al%20of%20new%20firms%20in%20Western%20Germany&author=U.%20Brixy&author=R.%20Grotz&journal=Entrepreneurship%20%26%20Regional%20Development%3A%20An%20International%20Journal&volume=19&issue=4&pages=293-312&publication_year=2007)

Buddelmeyer, H., Jensen, P. H., & Webster, E. (2010). Innovation and the determinants of company survival. *Oxford Economic Papers*, *62*(2), 261–285.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Innovation%20and%20the%20determinants%20of%20company%20survival&auth or=H.%20Buddelmeyer&author=PH.%20Jensen&author=E.%20Webster&journal=Oxfo rd%20Economic%20Papers&volume=62&issue=2&pages=261-285&publication_year=2010)

Buehler, S., Kaiser, C., & Jaeger, F. (2012). The geographic determinants of bankruptcy: Evidence from Switzerland. *Small Business Economics*, *39*(1), 231–251.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=The%20geographic%20determinants%20of%20bankruptcy%3A%20Evidence%20f rom%20Switzerland&author=S.%20Buehler&author=C.%20Kaiser&author=F.%20Jaege r&journal=Small%20Business%20Economics&volume=39&issue=1&pages=231-251&publication_year=2012)

Buenstorf, G. (2007). Creation and pursuit of entrepreneurial opportunities: an evolutionary economics perspective. *Small Business Economics*, *28*, 323–337.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Creation%20and%20pursuit%20of%20entrepreneurial%20opportunities%3A%20an%20evolutionary%20economics%20perspective&author=G..%20Buenstorf&journal=Small%20Business%20Economics&volume=28&pages=323-337&publication_year=2007)

Christensen, C. M. (1997). *The innovator's dilemma: When new technologies cause great firms to fail.* Boston: Harvard Graduate School of Business Press.

Google Scholar (http://scholar.google.com/scholar_lookup?

 $title=The \%20 innovator \%E2\%80\%99s\%20 dilemma \%3A\%20 When\%20 new\%20 technologies\%20 cause\%20 great\%20 firms\%20 to\%20 fail\&author=CM.\%20 Christensen\&publication_year=1997)$

Colombo, M. G., & Grilli, L. (2007). Young firm growth in high-tech sectors: The role of founders' human capital *Innovation*. *Industrial Dynamics and Structural Transformation*, *Part*, *2*, 67–86.

<u>Google Scholar</u> (http://scholar.google.com/scholar_lookup?

title=Young%20firm%20growth%20in%20high-

tech %20 sectors %3 A %20 The %20 role %20 of %20 founders % E2 %80 %99 %20 human %20 cannot be also be a simple of the first of the

Dahl, M. S., & Reichstein, T. (2005). Are you experienced? Prior experience and the survival of new organizations. *DRUID Working Papers* (Vol. 05-01). Copenhagen: DRUID, Copenhagen Business School, Department of Industrial Economics and Strategy/Aalborg University, Department of Business Studies.

Google Scholar (https://scholar.google.com/scholar?

q=Dahl%2C%20M.%20S.%2C%20%26%20Reichstein%2C%20T.%20%282005%29.%20 Are%20you%20experienced%3F%20Prior%20experience%20and%20the%20survival%2 oof%20new%20organizations.%20DRUID%20Working%20Papers%20%28Vol.%2005-01%29.%20Copenhagen%3A%20DRUID%2C%20Copenhagen%20Business%20School%2C%20Department%20of%20Industrial%20Economics%20and%20Strategy%2FAalborg%20University%2C%20Department%20of%20Business%20Studies.)

DeVol, R., Wong, P., Bedroussian, A., Hynek, C. F., & Rice, D. (2009). *Manufacturing* 2.0: A more prosperous California. Santa Monica, CA: Milken Institute.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Manufacturing%202.0%3A%20A%20more%20prosperous%20California&author=R.%20DeVol&author=P.%20Wong&author=A.%20Bedroussian&author=CF.%20Hynek&author=D.%20Rice&publication_year=2009)

Doms, M., Dunne, T., & Roberts, M. J. (1995). The role of technology use in the survival and growth of manufacturing plants. *International Journal of Industrial Organization*, 13(4), 523–542.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=The%20role%20of%20technology%20use%20in%20the%20survival%20and%20gr owth%20of%20manufacturing%20plants&author=M.%20Doms&author=T.%20Dunne&author=MJ.%20Roberts&journal=International%20Journal%20of%20Industrial%20Or ganization&volume=13&issue=4&pages=523-542&publication_year=1995)

Dunne, T., Roberts, M., & Samuelson, L. (1989). The growth and failure of US manufacturing plants. *The Quarterly Journal of Economics*, 104(4), 671–698.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=The%20growth%20and%20failure%20of%20US%20manufacturing%20plants&author=T.%20Dunne&author=M.%20Roberts&author=L.%20Samuelson&journal=The%20Quarterly%20Journal%20of%20Economics&volume=104&issue=4&pages=671-698&publication_year=1989)

Esteve-Pérez, S., & Mañez-Castillejo, J. (2008). The resource-based theory of the firm and firm survival. *Small Business Economics*, *30*(3), 231–249.

<u>Google Scholar</u> (http://scholar.google.com/scholar_lookup?title=The%20resource-based%20theory%20of%20the%20firm%20and%20firm%20survival&author=S.%20Est eve-P%C3%A9rez&author=J.%20Ma%C3%B1ez-

Castillejo&journal=Small%20Business%20Economics&volume=30&issue=3&pages=231-249&publication_year=2008)

Esteve-Perez, S., Sanchis-Llopis, A., & Sanchis-Llopis, J. A. (2004). The determinants of survival of Spanish manufacturing firms. *Review of Industrial Organization*, *25*, 251–273.

<u>Google Scholar</u> (http://scholar.google.com/scholar_lookup? title=The%20determinants%20of%20survival%20of%20Spanish%20manufacturing%20

firms&author=S.%20Esteve-Perez&author=A.%20Sanchis-

Llopis&author=JA.%20Sanchis-

Llopis&journal=Review%20of%20Industrial%20Organization&volume=25&pages=251-273&publication_year=2004)

Esteve-Perez, S., Sanchis-Llopis, A., & Sanchis-Llopis, J. A. (2010). A competing risks analysis of firms' exit. *Empirical Economics*, *38*(2), 281–304.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=A%20competing%20risks%20analysis%20of%20firms%E2%80%99%20exit&author=S.%20Esteve-Perez&author=A.%20Sanchis-Llopis&author=JA.%20Sanchis-Llopis&journal=Empirical%20Economics&volume=38&issue=2&pages=281-304&publication_year=2010)

Fabrizio, K. R. (2009). Absorptive capacity and the search for innovation. *Research Policy*, *38*(2), 255–267.

Google Scholar (http://scholar.google.com/scholar lookup?

title=Absorptive%20capacity%20and%20the%20search%20for%20innovation&author= K.%20R..%20Fabrizio&journal=Research%20Policy&volume=38&issue=2&pages=255-267&publication_year=2009)

Fackler, D., Schnabel, C., & Wagner, J. (2013). Establishment exits in Germany: The role of size and age. *Small Business Economics*, *41*(3), 683–700.

 $\underline{Google\ Scholar}\ \ (http://scholar.google.com/scholar_lookup?$

title=Establishment%20exits%20in%20Germany%3A%20The%20role%20of%20size%2 oand%20age&author=D.%20Fackler&author=C.%20Schnabel&author=J.%20Wagner&journal=Small%20Business%20Economics&volume=41&issue=3&pages=683-700&publication_year=2013)

Feldman, M. P., & Audretsch, D. (1999). Innovation in cities: Science-based diversity, specialization and localized competition. *European Economic Review*, *43*(2), 409–429.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Innovation%20in%20cities%3A%20Science-

based%20diversity%2C%20specialization%20and%20localized%20competition&author =MP.%20Feldman&author=D.%20Audretsch&journal=European%20Economic%20Rev iew&volume=43&issue=2&pages=409-429&publication_year=1999)

Feser, E. J. (2002). Tracing the sources of local external economies. *Urban Studies*, 39(13), 2485–2506.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Tracing%20the%20sources%20of%20local%20external%20economies&author=EJ .%20Feser&journal=Urban%20Studies&volume=39&issue=13&pages=2485-2506&publication_year=2002)

Fontana, R., & Nesta, L. (2010). Pre-entry experience, post-entry learning and firm survival: Evidence from the local area networking switch industry. *Structural Change and Economic Dynamics*, *21*(1), 41–49.

<u>Google Scholar</u> (http://scholar.google.com/scholar_lookup?title=Pre-entry%20experience%2C%20post-

entry%20learning%20and%20firm%20survival%3A%20Evidence%20from%20the%20l ocal%20area%20networking%20switch%20industry&author=R.%20Fontana&author=L.%20Nesta&journal=Structural%20Change%20and%20Economic%20Dynamics&volume =21&issue=1&pages=41-49&publication_year=2010)

Fotopoulos, G., & Louri, H. (2000). Location and survival of new entry. *Small Business Economics*, *14*, 311–321.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Location%20and%20survival%20of%20new%20entry&author=G.%20Fotopoulos&author=H.%20Louri&journal=Small%20Business%20Economics&volume=14&pages=311-321&publication_year=2000)

Fritsch, M., Brixy, U., & Falck, O. (2006). The effect of industry, region, and time on new business survival—A multi-dimensional analysis. *Review of Industrial Organization*, *28*, 285–306.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=The%20effect%20of%20industry%2C%20region%2C%20and%20time%20on%20new%20business%20survival%E2%80%94A%20multi-

dimensional%20analysis&author=M.%20Fritsch&author=U.%20Brixy&author=O.%20Falck&journal=Review%20of%20Industrial%20Organization&volume=28&pages=285-306&publication_year=2006)

Fritsch, M., & Mueller, P. (2004). Effects of new business formation on regional development over time. *Regional Studies*, *38*(8), 961–975.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Effects%20of%20new%20business%20formation%20on%20regional%20development%20over%20time&author=M.%20Fritsch&author=P.%20Mueller&journal=Regional%20Studies&volume=38&issue=8&pages=961-975&publication_year=2004)

Fujita, M., & Krugman, P. (2004). The new economic geography: Past, present and the future. *Papers in Regional Science*, *83*, 139–164.

Google Scholar (http://scholar.google.com/scholar_lookup?

 $title=The\%20new\%20economic\%20geography\%3A\%20Past\%2C\%20present\%20and\%20the\%20future\&author=M.\%20Fujita\&author=P.\%20Krugman\&journal=Papers\%20in\%20Regional\%20Science\&volume=83\&pages=139-164\&publication_year=2004)$

Fujita, M., Krugman, P., & Venables, A. J. (1999). *The spatial economy: Cities, regions, and international trade*. Cambridge, MA: MIT Press.

Google Scholar (http://scholar.google.com/scholar_lookup?

 $title=The\%20 spatial\%20 economy\%3A\%20 Cities\%2C\%20 regions\%2C\%20 and\%20 international\%20 trade\&author=M.\%20 Fujita\&author=P.\%20 Krugman\&author=AJ.\%20 Venables\&publication_year=1999)$

Fujita, M., & Thisse, J.-F. (2009). New economic geography: An appraisal on the occasion of Paul Krugman's 2008 Nobel Prize in Economic Sciences. *Regional Science and Urban Economics*, 39(2), 109–119.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=New%20economic%20geography%3A%20An%20appraisal%20on%20the%20occa sion%20of%20Paul%20Krugman%E2%80%99s%202008%20Nobel%20Prize%20in%20 Economic%20Sciences&author=M.%20Fujita&author=J-

F.%20Thisse&journal=Regional%20Science%20and%20Urban%20Economics&volume=39&issue=2&pages=109-119&publication_year=2009)

Funke, M., & Niebuhr, A. (2005). Regional geographic research and development spillovers and economic growth: Evidence from West Germany. *Regional Studies*, *39*(1), 143–153.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Regional%20geographic%20research%20and%20development%20spillovers%20and%20economic%20growth%3A%20Evidence%20from%20West%20Germany&author=

M.%20Funke&author=A.%20Niebuhr&journal=Regional%20Studies&volume=39&issue =1&pages=143-153&publication_year=2005)

Glaeser, E. L., Kallal, H. D., Scheinkman, J. A., & Shleifer, A. (1992). Growth in cities. *Journal of Political Economy*, 100(1), 125–152.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Growth%20in%20cities&author=EL.%20Glaeser&author=HD.%20Kallal&author=JA.%20Scheinkman&author=A.%20Shleifer&journal=Journal%20of%20Political%20Ec onomy&volume=100&issue=1&pages=125-152&publication_year=1992)

Griliches, Z. (1990). Patent statistics as economic indicators: A survey. *Journal of Economic Literature*, 28(4), 1661–1707.

<u>Google Scholar</u> (http://scholar.google.com/scholar_lookup?

title=Patent%20statistics%20as%20economic%20indicators%3A%20A%20survey&auth or=Z.%20Griliches&journal=Journal%20of%20Economic%20Literature&volume=28&is sue=4&pages=1661-1707&publication_year=1990)

Griliches, Z. (1992). The search for R&D spillovers. *Scandinavian Journal of Economics*, 94, S29–S47.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=The%20search%20for%20R%26D%20spillovers&author=Z.%20Griliches&journal =Scandinavian%20Journal%20of%20Economics&volume=94&pages=S29-S47&publication_year=1992)

Gutierrez, R. (2002). Parametric frailty and shared frailty survival models. *The Stata Journal*, *2*(1), 22–44.

Google Scholar (http://scholar.google.com/scholar_lookup?

 $title=Parametric\%20 frailty\%20 and\%20 shared\%20 frailty\%20 survival\%20 models\&author=R.\%20 Gutierrez\&journal=The\%20 Stata\%20 Journal\&volume=2\&issue=1\&pages=22-44\&publication_year=2002)$

Hall, B. H., Jaffe, A., & Trajtenberg, M. (2005). Market value and patent citations. *RAND Journal of Economics*, *36*(1), 16–38.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Market%20value%20and%20patent%20citations&author=BH.%20Hall&author=A. %20Jaffe&author=M.%20Trajtenberg&journal=RAND%20Journal%20of%20Economics &volume=36&issue=1&pages=16-38&publication_year=2005)

Headd, B. (2003). Redefining business success: Distinguishing between closure and failure. *Small Business Economics*, *21*, 51–61.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Redefining%20business%20success%3A%20Distinguishing%20between%20closure%20and%20failure&author=B.%20Headd&journal=Small%20Business%20Economics&volume=21&pages=51-61&publication_year=2003)

Helper, S., Krueger, T., & Wial, H. (2012). Why does manufacturing matter? Which manufacturing matters? A policy framework. Washington, DC: Brookings Institutions.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Why%20does%20manufacturing%20matter%3F%20Which%20manufacturing%20matters%3F%20A%20policy%20framework&author=S.%20Helper&author=T.%20Krueger&author=H.%20Wial&publication_year=2012)

Hougaard, P. (1995). Frailty models for survival data. *Lifetime Data Analysis*, 1(3), 255–273.

title=Frailty%20models%20for%20survival%20data&author=P.%20Hougaard&journal=Lifetime%20Data%20Analysis&volume=1&issue=3&pages=255-273&publication_year=1995)

Huergo, E., & Jaumandreu, J. (2004). Firms' age, process innovation and productivity growth. *International Journal of Industrial Organization*, *22*(4), 541–559.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Firms%E2%80%99%20age%2C%20process%20innovation%20and%20productivit y%20growth&author=E.%20Huergo&author=J.%20Jaumandreu&journal=International %20Journal%20of%20Industrial%20Organization&volume=22&issue=4&pages=541-559&publication_year=2004)

Jaffe, A., & Trajtenberg, M. (1996). Flows of knowledge from universities and federal laboratories: Modeling the flow of patent citations over time and across institutional and geographic boundaries. *Proceedings of the National Academy of Sciences of the United States of America*, 93, 12671–12677.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Flows%20of%20knowledge%20from%20universities%20and%20federal%20labora tories%3A%20Modeling%20the%20flow%20of%20patent%20citations%20over%20time %20and%20across%20institutional%20and%20geographic%20boundaries&author=A.% 20Jaffe&author=M.%20Trajtenberg&journal=Proceedings%20of%20the%20National% 20Academy%20of%20Sciences%20of%20the%20United%20States%20of%20America&volume=93&pages=12671-12677&publication_year=1996)

Jaffe, A., Trajtenberg, M., & Henderson, R. (1993). Geographic localization of knowledge spillovers as evidenced by patent citations. *The Quarterly Journal of Economics*, 108(3), 577–598.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Geographic%20localization%20of%20knowledge%20spillovers%20as%20evidenced%20by%20patent%20citations&author=A.%20Jaffe&author=M.%20Trajtenberg&author=R.%20Henderson&journal=The%20Quarterly%20Journal%20of%20Economics&volume=108&issue=3&pages=577-598&publication_year=1993)

Jain, B. A., & Kini, O. (2000). Does the presence of venture capitalists improve the survival profile of IPO firms? *Journal of Business Finance and Accounting*, *27*, 1139–1176.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Does%20the%20presence%20of%20venture%20capitalists%20improve%20the%2 osurvival%20profile%20of%20IPO%20firms%3F&author=BA.%20Jain&author=O.%20 Kini&journal=Journal%20of%20Business%20Finance%20and%20Accounting&volume=27&pages=1139-1176&publication_year=2000)

Jensen, P. H., Webster, E., & Buddelmeyer, H. (2008). Innovation, technological conditions and new firm survival. *The Economic Record*, *84*, 434–448.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Innovation%2C%20technological%20conditions%20and%20new%20firm%20survival&author=PH.%20Jensen&author=E.%20Webster&author=H.%20Buddelmeyer&journal=The%20Economic%20Record&volume=84&pages=434-448&publication_year=2008)

Johnson, P. (2005). Targeting firm births and economic regeneration in a lagging region. *Small Business Economics*, *24*(5), 451–464.

title=Targeting%20firm%20births%20and%20economic%20regeneration%20in%20a%20lagging%20region&author=P.%20Johnson&journal=Small%20Business%20Economics&volume=24&issue=5&pages=451-464&publication_year=2005)

Jovanovic, B. (1982). Selection and the evolution of industry. *Econometrica*, *50*(3), 649–670.

 $\underline{Google\ Scholar}\ \ (http://scholar.google.com/scholar_lookup?$

title=Selection%20and%20the%20evolution%20of%20industry&author=B.%20Jovanovi c&journal=Econometrica&volume=50&issue=3&pages=649-670&publication_year=1982)

Kaniovski, S., & Peneder, M. (2008). Determinants of firm survival: A duration analysis using the generalized gamma distribution. *Empirica*, *35*(1), 41–58.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Determinants%20of%20firm%20survival%3A%20A%20duration%20analysis%20u sing%20the%20generalized%20gamma%20distribution&author=S.%20Kaniovski&author=M.%20Peneder&journal=Empirica&volume=35&issue=1&pages=41-58&publication_year=2008)

Koo, J. (2005a). Agglomeration and spillovers in a simultaneous framework. *Annals of Regional Science*, *39*(1), 35–47.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Agglomeration%20and%20spillovers%20in%20a%20simultaneous%20framework &author=J.%20Koo&journal=Annals%20of%20Regional%20Science&volume=39&issue =1&pages=35-47&publication_year=2005)

Koo, J. (2005b). Technology spillovers, agglomeration, and regional economic development. *Journal of Planning Literature*, *20*, 99–115.

Google Scholar (http://scholar.google.com/scholar_lookup?

 $title=Technology\%20spillovers\%2C\%20agglomeration\%2C\%20and\%20regional\%20economic\%20development\&author=J.\%20Koo\&journal=Journal\%20of\%20Planning\%20Literature\&volume=20\&pages=99-115\&publication_year=2005)$

Krugman, P. (1991). Geography and trade. Cambridge: MIT Press.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Geography%20and%20trade&author=P.%20Krugman&publication_year=1991)

Lehto, E. (2007). Regional impact of research and development on productivity. *Regional Studies*, *41*(5), 623–638.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Regional%20impact%20of%20research%20and%20development%20on%20productivity&author=E.%20Lehto&journal=Regional%20Studies&volume=41&issue=5&pages=623-638&publication_year=2007)

Levitas, E. A., McFadyen, M. A., & Loree, D. (2006). Survival and the introduction of new technology. *Journal of Engineering and Technology Management*, *23*, 182–201.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Survival%20and%20the%20introduction%20of%20new%20technology&author=E A.%20Levitas&author=MA.%20McFadyen&author=D.%20Loree&journal=Journal%20of%20Engineering%20and%20Technology%20Management&volume=23&pages=182-201&publication_year=2006)

Lin, P.-C., & Huang, D.-S. (2008). Technological regimes and firm survival: Evidence across sectors and over time. *Small Business Economics*, *30*(2), 175–186.

title=Technological % 20 regimes % 20 and % 20 firm % 20 survival % 3A % 20 Evidence % 20 across % 20 sectors % 20 and % 20 over % 20 time & author=P-C. % 20 Lin & author=D-C. % 20

S.%20Huang&journal=Small%20Business%20Economics&volume=30&issue=2&pages=175-186&publication_year=2008)

Littunen, H. (2000). Networks and local environmental characteristics in the survival of new firms. *Small Business Economics*, *15*, 59–71.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Networks%20and%20local%20environmental%20characteristics%20in%20the%2 osurvival%20of%20new%20firms&author=H.%20Littunen&journal=Small%20Business %20Economics&volume=15&pages=59-71&publication_year=2000)

López-Bazo, E., Vayá, E., & Artís, M. (2004). Regional externalities and growth: Evidence from European regions. *Journal of Regional Science*, 44(1), 43–73.

Google Scholar (http://scholar.google.com/scholar lookup?

title=Regional%20externalities%20and%20growth%3A%20Evidence%20from%20European%20regions&author=E.%20L%C3%B3pez-

Bazo&author=E.%20Vay%C3%A1&author=M.%20Art%C3%ADs&journal=Journal%20of %20Regional%20Science&volume=44&issue=1&pages=43-73&publication_year=2004)

Manjon-Antolin, M. C., & Arauzo-Carod, J.-M. (2008). Firm survival: Methods and evidence. *Empirica*, 35, 1–24.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Firm%20survival%3A%20Methods%20and%20evidence&author=MC.%20Manjon-Antol%C4%B1n&author=J-M.%20Arauzo-

Carod&journal=Empirica&volume=35&pages=1-24&publication_year=2008)

Marshall, A. (1920 [1890]). Principles of economics. London: Macmillan.

Google Scholar (https://scholar.google.com/scholar?

 $\label{eq:marshall} $$q=Marshall $$2C\%20A.\%20\%281920\%20\%5B1890\%5D\%29.\%20Principles $$200f\%20ec onomics.\%20London\%3A\%20Macmillan.)$

Mata, J., Portugal, P., & Guimaraes, P. (1995). The survival of new plants: Start-up conditions and post-entry evolution. *International Journal of Industrial Organization*, 13(4), 459–481.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=The%20survival%20of%20new%20plants%3A%20Start-

up%20conditions%20and%20post-

entry%20evolution&author=J.%20Mata&author=P.%20Portugal&author=P.%20Guimar aes&journal=International%20Journal%20of%20Industrial%20Organization&volume=1 3&issue=4&pages=459-481&publication_year=1995)

Musso, P., & Schiavo, S. (2008). The impact of financial constraints on firm survival and growth. *Journal of Evolutionary Economics*, *18*(2), 135–149.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=The%20impact%20of%20financial%20constraints%20on%20firm%20survival%20 and%20growth&author=P.%20Musso&author=S.%20Schiavo&journal=Journal%20of% 20Evolutionary%20Economics&volume=18&issue=2&pages=135-149&publication_year=2008)

Nafziger, E. W., & Terrell, D. (1996). Entrepreneurial human capital and the long-run survival of firms in India. *World Development*, *24*, 689–696.

title=Entrepreneurial%20human%20capital%20and%20the%20long-

run%20survival%20of%20firms%20in%20India&author=EW.%20Nafziger&author=D.

%20Terrell&journal=World%20Development&volume=24&pages=689-696&publication_year=1996)

Nikolaeva, R. (2007). The dynamic nature of survival determinants in E-commerce. *Journal of the Academy of Marketing Science*, *35*, 560–571.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=The%20dynamic%20nature%20ofsurvival%20determinants%20in%20E-commerce&author=R..%20Nikolaeva&journal=Journal%20of%20the%20Academy%20o

f%20Marketing%20Science&volume=35&pages=560-571&publication year=2007)

Palazuelos, M. (2005). Clusters: Myth or realistic ambition for policy-makers? *Local Economy*, *20*(2), 131–140.

Google Scholar (http://scholar.google.com/scholar lookup?

title=Clusters%3A%20Myth%20or%20realistic%20ambition%20for%20policy-

makers%3F&author=M.%20Palazuelos&journal=Local%20Economy&volume=20&issue =2&pages=131-140&publication_year=2005)

Persson, H. (2004). The survival and growth of new establishments in Sweden, 1987–1995. *Small Business Economics*, 23(5), 423–440.

 $\underline{Google\ Scholar}\ \ (http://scholar.google.com/scholar_lookup?$

title=The%20survival%20and%20growth%20of%20new%20establishments%20in%20S weden%2C%201987%E2%80%931995&author=H.%20Persson&journal=Small%20Business%20Economics&volume=23&issue=5&pages=423-440&publication_year=2004)

Porter, M. (1990). The competitive advantage of nations. New York: Free Press.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=The%20competitive%20advantage%20of%20nations&author=M.%20Porter&publication_year=1990)

Porter, M. (1998a). The Adam Smith address: Location, clusters, and the 'new' microeconomics of competition. *Business Economics*, 33(1), 7–13.

Google Scholar (http://scholar.google.com/scholar_lookup?

 $title=The\%20Adam\%20Smith\%20address\%3A\%20Location\%2C\%20clusters\%2C\%20and\%20the\%20\%E2\%80\%98new\%E2\%80\%99\%20microeconomics\%20of\%20competition&author=M.\%20Porter&journal=Business\%20Economics&volume=33&issue=1&pages=7-13&publication_year=1998)$

Porter, M. (1998b). Clusters and the new economics of competition. *Harvard Business Review*, 76, 77–90.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Clusters%20and%20the%20new%20economics%20of%20competition&author=M. %20Porter&journal=Harvard%20Business%20Review&volume=76&pages=77-90&publication_year=1998)

Reid, G., & Smith, J. (2000). What makes a new business start-up successful? *Small Business Economics*, *14*(3), 165–182.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=What%20makes%20a%20new%20business%20start-

up%20successful%3F&author=G.%20Reid&author=J.%20Smith&journal=Small%20Bus iness%20Economics&volume=14&issue=3&pages=165-182&publication_year=2000)

Renski, H. (2011). External economies of localization, urbanization and industrial diversity and new firm survival. *Papers in Regional Science*, 90(3), 473–502.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=External%20economies%20of%20localization%2C%20urbanization%20and%20in dustrial%20diversity%20and%20new%20firm%20survival&author=H.%20Renski&jour nal=Papers%20in%20Regional%20Science&volume=90&issue=3&pages=473-502&publication_year=2011)

Rodriguez-Pose, A., & Comptour, F. (2012). Do clusters generate greater innovation and growth? An analysis of European regions. *The Professional Geographer*, 64(2), 211–231.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Do%20clusters%20generate%20greater%20innovation%20and%20growth%3F%2 oAn%20analysis%20of%20European%20regions&author=A.%20Rodriguez-

Pose&author=F.%20Comptour&journal=The%20Professional%20Geographer&volume=64&issue=2&pages=211-231&publication_year=2012)

Rodriguez-Pose, A., & Crescenzi, R. (2008). Research and development, spillovers, innovation systems, and the genesis of regional growth in Europe. *Regional Studies*, 42(1), 51–67.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Research%20 and%20 development%2C%20 spillovers%2C%20 innovation%20 systems%2C%20 and%20 the%20 genesis%20 of%20 regional%20 growth%20 in%20 Europe&author=A.%20 Rodriguez-

Pose&author=R.%20Crescenzi&journal=Regional%20Studies&volume=42&issue=1&pag es=51-67&publication year=2008)

Romer, P. M. (1990). Endogenous technological change. *The Journal of Political Economy*, *98*(5, Part 2: the problem of development: A conference of the institute for the study of free enterprise systems), S71–S102.

Google Scholar (https://scholar.google.com/scholar?

 $\label{eq:comer} $$q=Romer\%2C\%20P.\%20M.\%20\%281990\%29.\%20Endogenous\%20technological\%20ch ange.\%20The\%20Journal\%20of\%20Political\%20Economy\%2C\%2098\%285\%2C\%20Part\%202\%3A\%20the\%20problem\%20of\%20development\%3A\%20A\%20conference\%20of \%20the\%20institute\%20for\%20the\%20study\%20of\%20free%20enterprise%20systems \%29\%2C\%20S71\%E2\%80\%93S102.)$

Rosenthal, S. S., & Strange, W. (2003). Geography, industrial organization, and agglomeration. *The Review of Economic and Statistics*, *85*(2), 377–393.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Geography%2C%20industrial%20organization%2C%20and%20agglomeration&aut hor=SS.%20Rosenthal&author=W.%20Strange&journal=The%20Review%20of%20Eco nomic%20and%20Statistics&volume=85&issue=2&pages=377-393&publication_year=2003)

Santarelli, E., Carree, M., & Verheul, I. (2009). Unemployment and firm entry and exit: An update on a controversial relationship. *Regional Studies*, *43*(8), 1061–1073.

Google Scholar (http://scholar.google.com/scholar_lookup?

 $title=Unemployment\%20 and\%20 firm\%20 entry\%20 and\%20 exit\%3A\%20 An\%20 update \%20 on\%20 a\%20 controversial\%20 relationship\&author=E.\%20 Santarelli&author=M.\%20 Carree&author=I.\%20 Verheul&journal=Regional\%20 Studies&volume=43&issue=8&pages=1061-1073&publication_year=2009)$

Santarelli, E., & Vivarelli, M. (2007). Entrepreneurship and the process of firms' entry, survival and growth. *Industrial and Corporate Change*, *16*(3), 455–488.

title=Entrepreneurship%20and%20the%20process%20of%20firms%E2%80%99%20ent ry%2C%20survival%20and%20growth&author=E.%20Santarelli&author=M.%20Vivarel li&journal=Industrial%20and%20Corporate%20Change&volume=16&issue=3&pages=455-488&publication year=2007)

Saridakis, G., Mole, K., & Storey, D. (2008). New small firm survival in England. *Empirica*, *35*(1), 25–39.

Google Scholar (http://scholar.google.com/scholar_lookup?

 $title=New\%20small\%20firm\%20survival\%20in\%20England\&author=G.\%20Saridakis\&author=K.\%20Mole\&author=D.\%20Storey\&journal=Empirica\&volume=35\&issue=1\&pages=25-39\&publication_year=2008)$

Schumpeter, J. (1942). *Capitalism, socialism and democracy*. New York: Harper and Row.

 $\underline{Google\ Scholar}\ \ (http://scholar.google.com/scholar_lookup?$

 $title=Capitalism \% 2C\% 20 socialism \% 20 and \% 20 democracy \& author=J.\% 20 Schumpeter \& publication_year=1942)$

Segarra, A., & Callejón, M. (2002). New firms' survival and market turbulence: New evidence from Spain. *Review of Industrial Organization*, *20*(1), 1–14.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=New%20firms%E2%80%99%20survival%20and%20market%20turbulence%3A%2 oNew%20evidence%20from%20Spain&author=A.%20Segarra&author=M.%20Callej%C 3%B3n&journal=Review%20of%20Industrial%20Organization&volume=20&issue=1&p ages=1-14&publication_year=2002)

Spender, J. C. (1996). Making knowledge the basis of a dynamic theory of the firm. *Strategic Management Journal*, *17*, 45–62.

Google Scholar (http://scholar.google.com/scholar_lookup?

 $title=Making\%20knowledge\%20the\%20basis\%20of\%20a\%20dynamic\%20theory\%20of\%20the\%20firm\&author=JC.\%20Spender\&journal=Strategic\%20Management\%20Journal\&volume=17\&pages=45-62\&publication_year=1996)$

Strotmann, H. (2005). Zur Gründungs- und Schließungsdynamik im verarbeitenden Gewerbe-Erkenntnisse aus Betriebspaneldaten der Industriestatistik in Baden-Württemberg. Schmollers Jahrbuch: Journal of Applied Social Science Studies, 125(4), 451–474.

 $\underline{\textbf{Google Scholar}} \hspace{0.2cm} \textbf{(http://scholar.google.com/scholar_lookup?}$

title=Zur%20Gr%C3%BCndungs-

%20 und %20 Schlie% C3%9 Fungsdynamik%20 im%20 verarbeitenden%20 Gewerbe% E2%80%93 Erkenntnisse%20 aus%20 Betriebspaneldaten%20 der%20 Industriestatistik%20 in %20 Baden-

W%C3%BCrttemberg&author=H.%2oStrotmann&journal=Schmollers%2oJahrbuch%3A %2oJournal%2oof%2oApplied%2oSocial%2oScience%2oStudies&volume=125&issue=4 &pages=451-474&publication_year=2005)

Strotmann, H. (2007). Entrepreneurial survival. *Small Business Economics*, 28(1), 87–104.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Entrepreneurial%20survival&author=H.%20Strotmann&journal=Small%20Busine ss%20Economics&volume=28&issue=1&pages=87-104&publication_year=2007)

Tsvetkova, A., Thill, J.-C., & Strumsky, D. (2014). External effects of metropolitan innovation on firm survival: Non-parametric evidence from computer and electronic product manufacturing, and healthcare. In K. Kourtit, P. Nijkamp, & R. Stimson (Eds.), *Applied regional growth and innovation models* (pp. 83–106). Berlin: Springer.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=External%20effects%20of%20metropolitan%20innovation%20on%20firm%20survival%3A%20Non-

parametric%20evidence%20from%20computer%20and%20electronic%20product%20 manufacturing%2C%20and%20healthcare&author=A.%20Tsvetkova&author=J-C.%20Thill&author=D.%20Strumsky&publication_year=2014)

Uhlaner, L. M., van Stel, A., Duplat, V., & Zhou, H. (2013). Disentangling the effects of organizational capabilities, innovation and firm size on SME sales growth. *Small Business Economics*, *41*(3), 581–607.

Google Scholar (http://scholar.google.com/scholar_lookup?

 $title=Disentangling\%20 the\%20 effects\%20 of\%20 organizational\%20 capabilities\%2C\%20 innovation\%20 and\%20 firm\%20 size\%20 on\%20 SME\%20 sales\%20 growth\&author=LM.\%20 Uhlaner\&author=A.\%20 Stel\&author=V.\%20 Duplat\&author=H.\%20 Zhou\&journal=Small\%20 Business\%20 Economics\&volume=41 \& issue=3 \& pages=581-607 \& publication_year=2013)$

Uyarra, E. (2010). What is evolutionary about 'regional systems of innovation'? Implications for regional policy. *Journal of Evolutionary Economics*, *20*(1), 115–137.

Google Scholar (http://scholar.google.com/scholar_lookup?

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van Praag, C. M. (2003). Business survival and success of young small business owners. *Small Business Economics*, *21*(1), 1–17.

Google Scholar (http://scholar.google.com/scholar lookup?

title=Business%20survival%20and%20success%20of%20young%20small%20business%20owners&author=CM.%20Praag&journal=Small%20Business%20Economics&volume=21&issue=1&pages=1-17&publication_year=2003)

Wang, Z., Ma, C., Weng, G., & Wang, Y. (2004). A study on temporal and regional process of knowledge spillover. *The Annals of Regional Science*, 38(4), 595–606.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=A%20study%20on%20temporal%20and%20regional%20process%20of%20knowle dge%20spillover&author=Z.%20Wang&author=C.%20Ma&author=G.%20Weng&author=Y.%20Wang&journal=The%20Annals%20of%20Regional%20Science&volume=38&iss ue=4&pages=595-606&publication_year=2004)

Wennberg, K., & Lindqvist, G. (2010). The effect of clusters on the survival and performance of new firms. *Small Business Economics*, *34*(4), 221–241.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=The%20effect%20of%20clusters%20on%20the%20survival%20and%20performan ce%20of%20new%20firms&author=K.%20Wennberg&author=G.%20Lindqvist&journal =Small%20Business%20Economics&volume=34&issue=4&pages=221-241&publication_year=2010)

Wilbon, A. D. (2002). Predicting survival of high-tech initial public offering firms. *Journal of High Technology Management Research*, *13*, 127–141.

title=Predicting%20survival%20of%20high-

tech%20initial%20public%20offering%20firms&author=AD.%20Wilbon&journal=Journal%20of%20High%20Technology%20Management%20Research&volume=13&pages=127-141&publication_year=2002)

Zahra, S. A. (1996). Technology strategy and new venture performance: A study of corporate sponsored and independent biotechnology ventures. *Journal of Business Venturing*, 11(4), 289–321.

Google Scholar (http://scholar.google.com/scholar_lookup?

title=Technology%20strategy%20and%20new%20venture%20performance%3A%20A%20study%20of%20corporate%20sponsored%20and%20independent%20biotechnology%20ventures&author=SA.%20Zahra&journal=Journal%20of%20Business%20Venturing&volume=11&issue=4&pages=289-321&publication_year=1996)

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