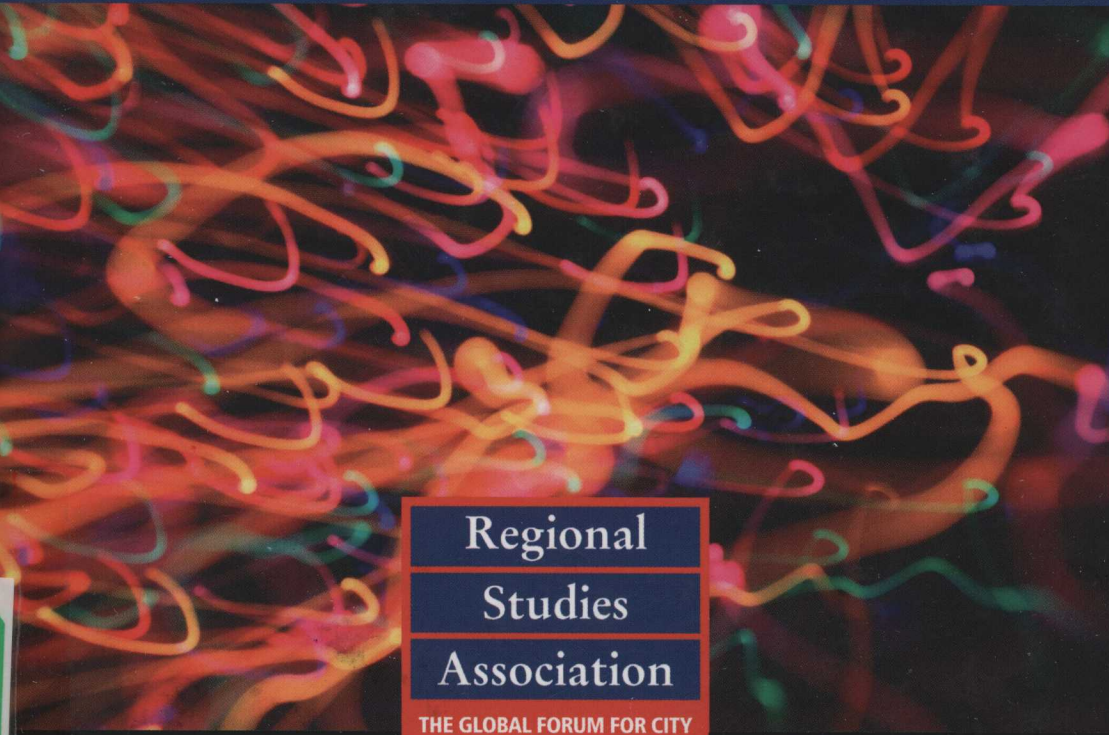


ENTREPRENEURIAL KNOWLEDGE, TECHNOLOGY AND THE TRANSFORMATION OF REGIONS



Regional
Studies
Association

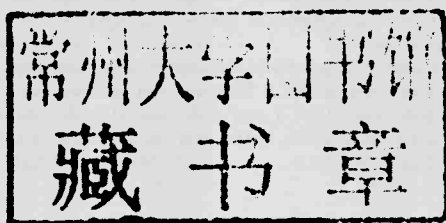
THE GLOBAL FORUM FOR CITY
AND REGIONAL RESEARCH,
DEVELOPMENT AND POLICY

REGIONS AND CITIES

EDITED BY CHARLIE KARLSSON,
BÖRJE JOHANSSON AND ROGER STOUGH

Entrepreneurial Knowledge, Technology and the Transformation of Regions

Charlie Karlsson, Börje Johansson
and Roger Stough



First published 2013
by Routledge
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

Simultaneously published in the USA and Canada
by Routledge
711 Third Avenue, New York, NY 10017

*Routledge is an imprint of the Taylor & Francis Group, an
informa business*

© 2013 selection and editorial material, Charlie Karlsson, Börje Johansson
and Roger Stough; individual chapters, the contributors

The right of Charlie Karlsson, Börje Johansson and Roger Stough to be
identified as the author of the editorial material, and of the authors
for their individual chapters, has been asserted in accordance
with sections 77 and 78 of the Copyright, Designs and Patents Act 1988.

All rights reserved. No part of this book may be reprinted or reproduced
or utilized in any form or by any electronic, mechanical or other means,
now known or hereafter invented, including photocopying and recording,
or in any information storage or retrieval system, without permission in
writing from the publishers.

Trademark notice: Product or corporate names may be trademarks or
registered trademarks, and are used only for identification and explanation
without intent to infringe.

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

Library of Congress Cataloging in Publication Data
Entrepreneurial knowledge, technology and the transformation of regions/
edited by Charlie Karlsson, Börje Johansson and Roger Stough.

pages cm

Includes bibliographical references and index.

1. Entrepreneurship. 2. Technological innovations—Economic aspects.
3. Industrial policy. 4. Regional planning.

I. Karlsson, Charlie, 1945–

HB615.E59744 2013

338'.04—dc23

2012047934

ISBN: 978-0-415-65845-4 (hbk)

ISBN: 978-0-203-48663-4 (ebk)

Typeset in Times New Roman
by Sunrise Setting Ltd, Paignton, UK



Printed and bound by CPI Group (UK) Ltd, Croydon, CR0 4YY

Entrepreneurial Knowledge, Technology and the Transformation of Regions

In recent years, policy makers have given much credence to the role of entrepreneurship in the transformation of regions. As a result, a new set of policy responses have emerged that focus on the support of new venture creation, small business growth and idea generation and commercialization.

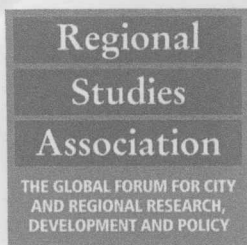
While there is a wealth of research about entrepreneurship in general, less attention has been given to the development of new tools and programs in support of entrepreneurial activities, and to the ways in which the emergence, the character and the types of entrepreneurship policies might differ between countries. In particular, the transatlantic perspective is of special interest because of the pioneering role of the United States in this area, and also due to the European Union's focus on economic competitiveness.

The contributions included in this book explore the emergence of entrepreneurship policies from a transatlantic comparative perspective and address different aspects of entrepreneurship policies including local entrepreneurship policies and the relationship between knowledge-based industries and entrepreneurship policies.

Charlie Karlsson is Professor of the Economics of Technological Change at Jönköping International Business School, Sweden. He is also President of the European Regional Science Association.

Börje Johansson is Professor of Economics at Jönköping International Business School, Sweden, and Professor of Infrastructure Economics at the Royal Institute of Technology, Sweden.

Roger Stough is NOVA Endowed Chair and Professor of Public Policy in the School of Public Policy, and Vice President for Research and Economic Development at George Mason University, USA.



Routledge
Taylor & Francis Group

Regions and Cities

Managing Editor:

Gillian Bristow, *University of Cardiff, UK.*

Editors:

Maryann Feldman, *University of Georgia, USA*

Gernot Grabher, *HafenCity University Hamburg, Germany*

Ron Martin, *University of Cambridge, UK*

Martin Perry, *Massey University, New Zealand*

In today's globalized, knowledge-driven and networked world, regions and cities have assumed heightened significance as the interconnected nodes of economic, social and cultural production, and as sites of new modes of economic and territorial governance and policy experimentation. This book series brings together incisive and critically engaged international and interdisciplinary research on this resurgence of regions and cities, and should be of interest to geographers, economists, sociologists, political scientists and cultural scholars, as well as to policymakers involved in regional and urban development. For more information on the Regional Studies Association visit www.regionalstudies.org.

There is a **30 per cent discount** available to RSA members on books in the *Regions and Cities* series, and other subject related Taylor & Francis books and e-books including Routledge titles. To order just e-mail alex.robinson@tandf.co.uk, or phone on +44 (0) 20 7017 6924 and declare your RSA membership. You can also visit www.routledge.com and use the discount code: **RSA0901**.

- | | |
|---|---|
| <p>1. Beyond Green Belts
Managing urban growth in the 21st century
<i>Edited by John Herington</i></p> <p>2. Retreat from the Regions
Corporate change and the closure of factories
<i>Stephen Fothergill and Nigel Guy</i></p> | <p>3. Regional Development in the 1990s
The British Isles in transition
<i>Edited by Ron Martin and Peter Townroe</i></p> <p>4. Spatial Policy in a Divided Nation
<i>Edited by Richard T. Harrison and Mark Hart</i></p> |
|---|---|

5. **An Enlarged Europe**
Regions in competition?
*Edited by Louis Albrechts,
Sally Hardy, Mark Hart and
Anastasios Katos*
6. **The Regional Imperative**
Regional planning and
governance in Britain, Europe
and the United States
Urlan A. Wannop
7. **The Determinants of Small
Firm Growth**
An inter-regional study in the
United Kingdom 1986–1990
*Richard Barkham,
Graham Gudgin, Mark Hart and
Eric Hanvey*
8. **The Regional Dimension of
Transformation in Central
Europe**
Grzegorz Gorzelak
9. **Union Retreat and the
Regions**
The shrinking landscape of
organised labour
*Ron Martin, Peter Sunley
and Jane Wills*
10. **Regional Development
Strategies**
A European perspective
*Edited by Jeremy Alden and
Philip Boland*
11. **British Regionalism and
Devolution**
The challenges of state reform
and European integration
*Edited by Jonathan Bradbury
and John Mawson*
12. **Innovation Networks and
Learning Regions?**
James Simmie
13. **Regional Policy in Europe**
S. S. Artobolevskiy
14. **New Institutional Spaces**
TECs and the remaking of
economic governance
*Edited by Martin Jones and
Jamie Peck*
15. **The Coherence of EU Regional
Policy**
Contrasting perspectives on the
structural funds
*Edited by John Bachtler and
Ivan Turok*
16. **Multinationals and European
Integration**
Trade, investment and regional
development
Edited by Nicholas A. Phelps
17. **Unemployment and Social
Exclusion**
Landscapes of labour inequality
and social exclusion
*Edited by Sally Hardy,
Paul Lawless and Ron Martin*
18. **Metropolitan Planning in
Britain**
A comparative study
*Edited by Peter Roberts,
Kevin Thomas and
Gwyndaf Williams*
19. **Social Exclusion in European
Cities**
Processes, experiences and
responses
*Edited by Judith Allen,
Goran Cars and
Ali Madanipour*
20. **Regional Development
Agencies in Europe**
*Edited by Charlotte Damborg,
Mike Danson and Henrik
Halkier*

21. **Community Economic Development**
Edited by Graham Haughton
22. **Foreign Direct Investment and the Global Economy**
Corporate and institutional dynamics of global-localisation
Edited by Jeremy Alden and Nicholas F. Phelps
23. **Restructuring Industry and Territory**
The experience of Europe's regions
Edited by Anna Giunta, Arnoud Lagendijk and Andy Pike
24. **Out of the Ashes?**
The social impact of industrial contraction and regeneration on Britain's mining communities
Chas Critcher, Bella Dicks, David Parry and David Waddington
25. **Regional Innovation Strategies**
The challenge for less-favoured regions
Edited by Kevin Morgan and Claire Nauwelaers
26. **Geographies of Labour Market Inequality**
Edited by Ron Martin and Philip S. Morrison
27. **Sustainable Cities**
Graham Haughton and Colin Hunter
28. **Regions, Spatial Strategies and Sustainable Development**
David Counsell and Graham Haughton
29. **Clusters and Regional Development**
Critical reflections and explorations
Edited by Bjørn Asheim, Philip Cooke and Ron Martin
30. **Regional Competitiveness**
Edited by Ron Martin, Michael Kitson and Peter Tyler
31. **Regional Development in the Knowledge Economy**
Edited by Philip Cooke and Andrea Piccaluga
32. **The Rise of the English Regions?**
Edited by Irene Hardill, Paul Benneworth, Mark Baker and Leslie Budd
33. **Geographies of the New Economy**
Critical reflections
Edited by Peter W. Daniels, Andrew Leyshon, Michael J. Bradshaw and Jonathan Beaverstock
34. **European Cohesion Policy**
Willem Molle
35. **Creative Regions**
Technology, culture and knowledge entrepreneurship
Edited by Philip Cooke and Dafna Schwartz
36. **Devolution, Regionalism and Regional Development**
The UK experience
Edited by Jonathan Bradbury
37. **Intelligent Cities and Globalisation of Innovation Networks**
Nicos Komninos

38. **Whither Regional Studies?**
Edited by Andy Pike
39. **Business Networks in Clusters and Industrial Districts**
The governance of the global value chain
Edited by Fiorenza Belussi and Alessia Sammarra
40. **China and Europe**
The implications of the rise of China as a global economic power for Europe
Edited by Klaus Kunzmann, Willy A Schmid and Martina Koll-Schretzenmayr
41. **Globalizing Regional Development in East Asia**
Production networks, clusters, and entrepreneurship
Edited by Henry Wai-chung Yeung
42. **Manufacturing in the New Urban Economy**
Willem van Winden, Leo van den Berg, Luis de Carvalho and Erwin van Tuijl
43. **The Impacts of Automotive Plant Closures**
A tale of two cities
Edited by Andrew Beer and Holli Evans
44. **The Futures of the City Region**
Edited by Michael Neuman and Angela Hull
45. **Migration in the 21st Century**
Rights, outcomes, and policy
Kim Korinek and Thomas Maloney
46. **Leadership and Place**
Edited by Chris Collinge, John Gibney and Chris Mabey
47. **Beyond Territory**
Edited by Harald Bathelt, Maryann Feldman and Dieter F. Kogler
48. **The Recession and Beyond**
Local and regional responses to the downturn
Edited by David Bailey and Caroline Chapain
49. **Cultural Political Economy of Small Cities**
Edited by Anne Lorentzen and Bas van Heur
50. **Just Growth**
Inclusion and prosperity in America's metropolitan regions
Chris Benner and Manuel Pastor
51. **Industrial Policy Beyond the Crisis**
Regional, national and international perspectives
Edited by David Bailey, Helena Lenihan and Josep-Maria Arauzo-Carod
52. **Promoting Silicon Valleys in Latin America**
Luciano Ciravegna
53. **Regional Development in Northern Europe**
Peripherality, marginality and border issues
Edited by Mike Danson and Peter De Souza
54. **Creating Knowledge Locations in Cities**
Innovation and integration challenges
Willem van Winden, Luis de Carvalho, Erwin van Tuijl, Jeroen van Haaren and Leo van den Berg

55. **Complex Adaptive Innovation Systems**
Relatedness and transversality in the evolving region
Philip Cooke
56. **Innovation Governance in an Open Economy**
Shaping regional nodes in a globalized world
Edited by Annika Rickne, Staffan Laestadius and Henry Etzkowitz
57. **Creative Industries and Innovation in Europe**
Concepts, measures and comparative case studies
Edited by Luciana Lazzeretti
58. **Community-based Entrepreneurship and Rural Development**
Creating favourable conditions for small businesses in Central Europe
Matthias Fink, Stephan Loidl and Richard Lang
59. **Regional Development Agencies: The Next Generation?**
Networking, knowledge and regional policies
Edited by Nicola Bellini, Mike Danson and Henrik Halkier
60. **Leadership and Change in Sustainable Regional Development**
Edited by Markku Sotarauta, Ina Horlings and Joyce Liddle
61. **Networking Regionalised Innovative Labour Markets**
Edited by Ulrich Hilpert and Helen Lawton Smith
62. **Re-framing Regional Development**
Evolution, innovation and transition
Edited by Philip Cooke
63. **The University and the City**
John Goddard and Paul Vallance
64. **The Value of Arts and Culture for Regional Development**
A Scandinavian perspective
Edited by Lisbeth Lindeborg and Lars Lindkvist
65. **Europe's Changing Geography**
The impact of inter-regional networks
Edited by Nicola Bellini and Ulrich Hilpert
66. **Working Regions**
Reconnecting innovation and production in the knowledge economy
Jennifer Clark
67. **The Economic Geography of the IT Industry in the Asia Pacific Region**
Edited by Philip Cooke, Glen Searle and Kevin O'Connor
68. **Entrepreneurial Knowledge, Technology and the Transformation of Regions**
Edited by Charlie Karlsson, Börje Johansson and Roger Stough

Contributors

Zoltan J. Acs is a university professor and Director of the Center for Entrepreneurship and Public Policy, George Mason University, Virginia, USA.

Antonios Angelakis, PhD, is a research associate in Innovation and Regional Development in the Centre for Technology Transfer and Development, University of Crete, Greece.

Roberto Antonietti is Assistant Professor of Economics in the Department of Economics and Management 'Marco Fanno', University of Padova, Italy.

Giulio Cainelli is Professor of Economics in the Department of Economics and Management 'Marco Fanno', University of Padova, and an associate research fellow at CERIS-CNR, Milan, Italy.

Nunzia Carbonara is Associate Professor of Organization and Strategy at the Polytechnic University of Bari, Italy.

Mattia Cattaneo is a PhD student in Economics and Technology Management in the Department of Engineering, University of Bergamo, and at the CISAlpino Institute for Comparative Studies in Europe (CCSE), University of Bergamo and University of Augsburg.

Andreas P. Cornett is Professor of Regional Economics and Development in the Department of Border Region Studies, University of Southern Denmark, Sønderborg, Denmark.

Maria Crema is a PhD student in Innovation Management in the Department of Management and Engineering, University of Padova, Vicenza, Italy.

Maria Manuela Nêveda DaCosta is Professor of Economics in the Department of Economics, University of Wisconsin-Eau Claire, Wisconsin, USA.

Soogwan Doh is Assistant Professor in the Department of Public Administration, Catholic University of Daegu, South Korea.

Urban Gråsjö is a researcher in regional development at University West, Trollhättan, and at the Centre of Excellence for Science and Innovation Studies (CESIS), Royal Institute of Technology, Stockholm, Sweden.

Darrene Hackler is a professor in the Department of Public and International Affairs, George Mason University, Fairfax, Virginia, USA.

Robert Huggins is Chair of Economic Geography at Cardiff University and Director of its Centre for Advanced Studies.

Mads Bruun Ingstrup is a PhD student in Business Administration and Economic Geography in the Department of Entrepreneurship and Relationship Management, University of Southern Denmark, Kolding, Denmark.

Florian Johannsen is a PhD student in International Economics and a researcher in the Department of Economics, Georg-August Universität, Göttingen, Germany.

Börje Johansson is Professor of Economics at Jönköping International Business School, Sweden, and Professor of Infrastructure Economics at the Royal Institute of Technology, Sweden.

Charlie Karlsson is Professor of the Economics of Technological Change at Jönköping International Business School, Sweden. He is also President of the European Regional Science Association.

Byungkyu Kim is Assistant Professor in the Department of Public Administration, Andong National University, South Korea.

Sangji Kim is Research Associate in Gyeongbuk Technopark, South Korea.

Johan P. Larsson is a PhD candidate in Economics at the Centre for Entrepreneurship and Spatial Economics (CEnSE), Jönköping International Business School, Jönköping, Sweden.

Helen Lawton Smith is Professor of Entrepreneurship and Director of the Centre for Innovation Management Research, Birkbeck, University of London, UK.

Laura Márquez-Ramos is Professor in Applied Economics and a member of the Institute of International Economics at the University Jaume I, Spain.

Inmaculada Martínez-Zarzoso is Professor in Applied Economics, a member of the Institute of International Economics at the University Jaume I, Spain, and a researcher in the Ibero-America Institute and the Centre of Statistics, University of Göttingen, Germany.

Michele Meoli, PhD, is Assistant Professor of Corporate Finance in the Department of Engineering, University of Bergamo, and a board member of the CISAlpino Institute for Comparative Studies in Europe (CCSE), University of Bergamo and University of Augsburg.

Stefano Paleari is Rector of the University of Bergamo; General Secretary of the CRUI (Conference of Italian University Rectors); Professor of Finance in the Department of Engineering, University of Bergamo; and President of the CISAlpino Institute for Comparative Studies in Europe (CCSE), University of Bergamo and University of Augsburg.

Amy Rader Olsson is a researcher in the Division of Urban and Regional Studies at KTH, Royal Institute of Technology, Stockholm, Sweden.

Saverio Romeo is a research fellow at the Centre for Innovation Management Research, Birkbeck, University of London, UK.

Roger Stough is NOVA Endowed Chair and Professor of Public Policy in the School of Public Policy, and Vice President for Research and Economic Development at George Mason University, USA.

Mohammad Tavassoli is a PhD candidate in Industrial Economics in the School of Management, Blekinge Institute of Technology, Sweden.

Karen Venturini is an assistant professor in the Department of Economics and Technology, University of San Marino, Montegiardino, Italy.

Chiara Verbano is an associate professor in Innovation Management in the Department of Management and Engineering, University of Padova, Vicenza, Italy.

Silvio Vismara, PhD, is an associate professor of Corporate Finance in the Department of Engineering, University of Bergamo, and Director of the CISAlpino Institute for Comparative Studies in Europe (CCSE), University of Bergamo and University of Augsburg.

Peter Warda is a doctoral candidate in Economics at Jönköping International Business School, Sweden. His research focus is attributed to how structural changes impact the labour composition of firms as competitive markets push firms to organizational changes.

Hans Westlund is Professor of Regional Planning at KTH, Royal Institute of Technology, Stockholm, Sweden; Professor of Entrepreneurship at JIBS, Jönköping International Business School, Jönköping, Sweden; and Professor at IRSA, Institute for Developmental and Strategic Analysis, Ljubljana, Slovenia.

Nick Williams is a lecturer in Entrepreneurship in the Centre for Regional Economic and Enterprise Development, University of Sheffield, UK.

Preface

The contributions forming the different chapters in this book were selected through a referee process from papers that were presented and discussed at the fourteenth Uddevalla Symposium and the third International Symposium of Entrepreneurship of E-Lab, 16–18 June 2011,¹ held at the University of Bergamo, Italy. The overall theme was ‘Entrepreneurial Knowledge, Technology and Transformation of Regions’. The purpose of the symposium was to contribute to an increased understanding of the role of entrepreneurial knowledge and technology for the transformation of regions by means of the entry, growth and exit of firms.

The organizers of this fourteenth Uddevalla Symposium were the University West, Trollhättan, Sweden, and the E-Lab at the University of Bergamo, in co-operation with the School of Public Policy, George Mason University, Fairfax, Virginia, USA. The symposium was also financially supported by the Centre for Entrepreneurship and Spatial Economics (CEnSE), Jönköping International Business School, Jönköping, Sweden; the Centre of Excellence for Science and Innovations Studies (CESIS), Royal Institute of Technology, Stockholm, Sweden; and Jönköping International Business School, Jönköping, Sweden. The organizers of the symposium also thank the Municipality of Uddevalla, Sweden, for sponsoring the Best Paper Awards.

The authors and the editors thank the symposium co-ordinator, Ms Iréne Bernhard, University West, Trollhättan, Sweden, for valuable editorial assistance.

**Charlie Karlsson
Börje Johansson
Roger Stough**

Jönköping, Sweden, and Fairfax, Virginia,
6 November 2012

Note

- 1 Uddevalla Symposium is an international scientific symposium established in 1998 in Uddevalla, Sweden. The primary objective is to foster research collaboration and bring together leading-edge views between experts, researchers and insightful practitioners

from various fields of regional science, international business, economics, entrepreneurship and small business economics as well as from regional economics, regional planning, economic geography/economic history/political science and sociology in order to increase our knowledge as regards research questions related to 'Entrepreneurship and Regional Development'. For further information on the Uddevalla Symposium, use the link: [http:// www.symposium.hv.se](http://www.symposium.hv.se).

Contents

<i>List of figures</i>	xi
<i>List of tables</i>	xiii
<i>List of contributors</i>	xvi
<i>Preface</i>	xix
1 Entrepreneurial knowledge, technology and the transformation of regions: An introduction	1
CHARLIE KARLSSON AND URBAN GRÄSJÖ	
2 The global entrepreneurship and development index across stages of development	19
ZOLTAN J. ACS	
3 Startups and their effects on local development: The case of Sweden	51
HANS WESTLUND, AMY RADER OLSSON AND JOHAN P. LARSSON	
4 Open innovation profiles in Italian manufacturing companies	68
MARIA CREMA, CHIARA VERBANO AND KAREN VENTURINI	
5 Business networking in Oxfordshire: Scope and regional dynamics	97
HELEN LAWTON SMITH AND SAVERIO ROMEO	
6 Trends and patterns in offshoring in the European automotive industry	118
PETER WARDA	
7 The role of knowledge heterogeneity on the innovative capability of industrial districts	144
NUNZIA CARBONARA AND MOHAMMAD TAVASSOLI	

8 Absorptive capacity and exporting and importing decisions: An application for developing economies	167
LAURA MÁRQUEZ-RAMOS, INMACULADA MARTÍNEZ-ZARZOSO AND FLORIAN JOHANNSEN	
9 The M&A exit from science-based firms	178
MATTIA CATTANEO, MICHELE MEOLI, STEFANO PALEARI AND SILVIO VISMARA	
10 Geographic concentration and vertical disintegration in KIBS: Evidence from the metropolitan area of Milan	194
ROBERTO ANTONIETTI AND GIULIO CAINELLI	
11 The comprehensive role of knowledge and institutional endowments on regional transformation: Evidence from Skåne, Sweden	215
ANTONIOS ANGELAKIS	
12 Unlocking the potential of innovation and entrepreneurship: The role of local policy in cities	238
DARRENE HACKLER	
13 Implementation of a cluster based local development strategy: A comparative analysis of Danish and American experiences based on the medium sized town regions of Eau Claire (WI) and Sønderborg	260
ANDREAS P. CORNETT, MARIA DACOSTA AND MADs BRUUN INGSTRUP	
14 Impact of government support policy on the performance of SMEs in the regional industries in Korea	287
SOOGWAN DOH, SANGJI KIM AND BYUNGKYU KIM	
15 Enterprise support in deprived urban neighbourhoods: Some challenges and lessons for government intervention	308
ROBERT HUGGINS AND NICK WILLIAMS	
<i>Index</i>	325

Figures

2.1	The relationship between entrepreneurship and economic development and the corresponding stages of development as found in Porter <i>et al.</i> (2002)	26
2.2	Structure of the global entrepreneurship and development index (GEDI)	29
2.3	The average values of institutional and individual variables	32
4.1	Theoretical framework	71
4.2	Profiles of the clusters obtained	88
5.1	Relative importance of business networks	109
5.2	Expected objectives in participating in business networks	109
5.3	Outcomes from participation in business networks	110
5.4	Suggestions for improving business networks in Oxford	113
6.1	Number employed in production of motor vehicles in the EU, 2001–07	130
6.2	Turnover share of foreign affiliates in production of motor vehicles in Europe for 2007	132
6.3	Share of EU exports and imports of road vehicles (SITC78) per country in 2009	133
6.4	Export specialization in the European automotive industry, 1968–2008	137
9.1	Kaplan Meyer Survival estimates by affiliation	189
10.1	The purchase of intermediate inputs by manufacturing and service industries, 2005	195
10.2	The metropolitan area of Milan	196
10.3	Population density in Italy, 2001	197
10.4	KIBS spatial distribution, by neighbouring industry	205
12.1	Product innovation lifecycle	247
12.2	A case of a regional approach	253
13.1	Cluster entities and relations	264
13.2	Advantages and disadvantages of clustered industries	265
13.3	Strong and weak industries in Eau Claire MSA (2001–09) in terms of changes in employment	267
13.4	Industry concentrations in West Central Wisconsin in 2007	269