



Univerza v Mariboru

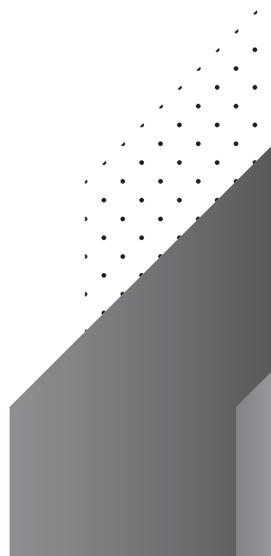
Building an Entrepreneurial Society

25 Years of Entrepreneurship at FEB UM

Edited by: Karin Širec



Univerzitetna založba
Univerze v Mariboru

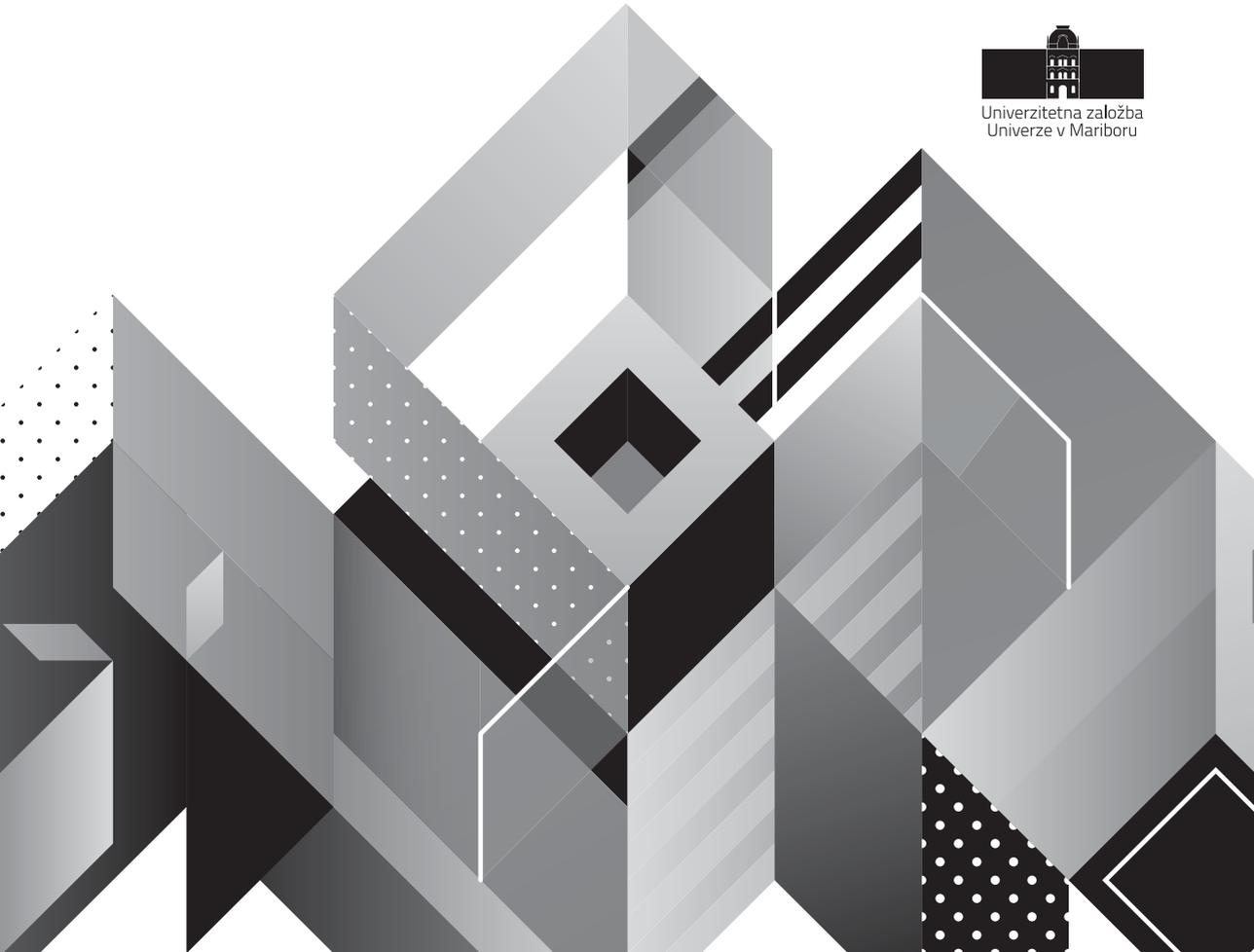




Building an Entrepreneurial Society

25 Years of Entrepreneurship at FEB UM

Edited by: Karin Širec



Series: Slovenian Entrepreneurship Observatory

ISSN: 1854-8040

Title: Building an Entrepreneurial Society

Subtitle: 25 Years of Entrepreneurship at FEB UM

Editor: Karin Širec, Ph.D., Associate Professor (University of Maribor, Faculty of Economics and Business)

Authors: Miroslav Rebernik, Ph.D., Professor, Barbara Bradač Hojnik, Ph.D., Associate Professor, Katja Crnogaj, Ph.D., Assistant Professor, Jožica Knez-Riedl, Ph.D., Professor, Tadej Krošlin, MSc., Dijana Močnik, Ph.D., Professor, Matjaž Mulej, Double Ph.D., Professor, Ksenja Pušnik[†], Ph.D., Assistant Professor, Matej Rus, MSc., Karin Širec, Ph.D., Associate Professor, Polona Tominc, Ph.D., Professor

Reviewers: Boštjan Antončič Ph.D., Professor (University of Ljubljana, Faculty of Economics), Mitja Ruzzier, Ph.D., Professor (University of Primorska, Faculty of Management)

Translator: Teja Rebernik, MA

Design and layout: Nebia, d.o.o.

Graphic attachments: Authors.

Publisher: University of Maribor, Faculty of Economics and Business, Razlagova ulica 14, 2000 Maribor, Slovenia, <http://www.epf.um.si>, epf@mb.si

Publisher: University of Maribor Press, Slomškov trg 15, 2000 Maribor, Slovenia <http://press.um.si>, zalozba@um.si

Edition: First Edition.

Type: Electronic Book.

Available at: <http://press.um.si/index.php/ump/catalog/book/325>

Outcome: Maribor, March 2018

© University of Maribor Press

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 publisher.

Published in book series "Slovenian Entrepreneurship Observatory".

CIP - Kataložni zapis o publikaciji

Univerzitetna knjižnica Maribor

334.7(497.4)(082)(0.034.2)

BUILDING an Entrepreneurial Society [Elektronski vir] : 25 years of entrepreneurship at FEB UM / edited by Karin Širec ; [authors Miroslav Rebernik ... et al.] - 1st ed. - El. knjiga. - Maribor : University of Maribor Press, 2018. - (Slovenian entrepreneurship observatory, ISSN 1854-8040)

Način dostopa (URL): <http://press.um.si/index.php/ump/catalog/book/325>

ISBN 978-961-286-144-5 (pdf)

doi: 10.18690/978-961-286-144-5

1. Rebernik, Miroslav 2. Širec, Karin

COBISS.SI-ID 94160641

ISBN: 978-961-286-144-5 (PDF)

DOI: <https://doi.org/10.18690/978-961-286-144-5>

Price: Free copy.

Responsible publisher's person: Jan Žan Oplotnik, Ph.D., Professor, Vice-rector of the University of Maribor

Building an Entrepreneurial Society

25 Years of Entrepreneurship at FEB UM

Miroslav Rebernik, Barbara Bradač Hojnik, Katja Crnogaj, Jožica Knez-Riedl, Tadej Krošlin, Dijana Močnik, Matjaž Mulej, Ksenja Pušnik[†], Matej Rus, Karin Širec, Polona Tominc

Abstract: The present scientific monograph was formed on the occasion of the anniversary celebrated in the academic year 2017/2018 by current and former members of the Department of Entrepreneurship and Business Economics, and the members of the Institute of Entrepreneurship and Small Business Management at the University of Maribor. Twenty-five years – a quarter of a century – is a period after which it is worth looking back on the past and summing up the memories of the achievements and milestones that have marked it. The monograph is also an acknowledgment and tribute to the initiator and founder of the first study track for entrepreneurship education, and the head of the Department and Institute, Professor Doctor Miroslav Rebernik. The collection of selected scientific contributions is thus put together in such a way that he is the co-author of all of them, with individual members of the Department. A collection was created that chronologically presents some of the most visible contributions of the 25-year period. We would like to thank all publishing houses that approved the reprint of the contributions.

Keywords: Faculty of Economics and Business, entrepreneurship education, entrepreneurship research, entrepreneurship ecosystem, entrepreneurial society

Correspondence Addresses:

Miroslav Rebernik, Ph.D., Professor, University of Maribor, Faculty of Economics and Business, Razlagova ulica 14, 2000 Maribor, Slovenia, email: miroslav.rebernik@um.si.

Barbara Bradač Hojnik, Ph.D., Associate Professor, University of Maribor, Faculty of Economics and Business, Razlagova ulica 14, 2000 Maribor, Slovenia, email: barbara.bradac@um.si.

Katja Crnogaj, Ph.D., Assistant Professor, University of Maribor, Faculty of Economics and Business, Razlagova ulica 14, 2000 Maribor, Slovenia, email: katja.crnogaj@um.si.

Jožica Knez-Riedl, Ph.D., Professor, University of Maribor, Faculty of Economics and Business, Razlagova ulica 14, 2000 Maribor, Slovenia, email: jusa.riedl@gmail.com.

Tadej Krošlin, M.Sc., Chief Business Development Officer, IIC - International Insurance Consortium AG, Konrad-Zuse-Plaz 8, Munchen, Germany, email: tadej.kroslin@gmail.com

Dijana Močnik, Ph.D., Professor, University of Maribor, Faculty of Electrical Engineering and Computer Science, Koroška cesta 46, 2000 Maribor, Slovenia, email: dijana.mocnik@um.si.

Matjaž Mulej, Double Ph.D., Emeritus Professor, University of Maribor, Faculty of Economics and Business, Razlagova ulica 14, 2000 Maribor, Slovenia, email: matjaz.mulej@um.si.

Matej Rus, M.Sc., Senior Lecturer, University of Maribor, Faculty of Economics and Business, Razlagova ulica 14, 2000 Maribor, Slovenia, email: matej.rus@um.si.

Karin Širec, Ph.D., Associate Professor, University of Maribor, Faculty of Economics and Business, Razlagova ulica 14, 2000 Maribor, Slovenia, email: karin.sirec@um.si.

Polona Tominc, Ph.D., Professor, University of Maribor, Faculty of Economics and Business, Razlagova ulica 14, 2000 Maribor, Slovenia, email: polona.tominc@um.si.

TABLE OF CONTENTS

ABSTRACT.....	3
FOREWORD.....	6
25 YEARS OF ENTREPRENEURSHIP AT FEB UM..... Karin Širec	7
A LOOK AT BUSINESS ECONOMICS IN TERMS OF SYSTEMS THINKING..... Miroslav Rebernik, Jožica Knez-Riedl, Diana Močnik and Matjaž Mulej	21
ENTREPRENEURSHIP AND SMALL BUSINESS RESEARCH IN SLOVENIA..... Miroslav Rebernik and Dijana Močnik	33
THE ABSORPTIVE CAPACITY OF SMEs AS A BARRIER TO REGIONAL DEVELOPMENT..... Miroslav Rebernik, Tadej Krošlin and Barbara Bradač	43
FOSTERING INNOVATION BY UNLEARNING TACIT KNOWLEDGE..... Miroslav Rebernik and Karin Širec	59
GROWTH ASPIRATIONS AND CULTURAL SUPPORT FOR ENTREPRENEURSHIP: A COMPARISON OF POST-SOCIALIST COUNTRIES..... Polona Tominc and Miroslav Rebernik	75
INTERNATIONALIZATION OF SLOVENIAN SMEs AS LEARNING AND UNLEARNING PROCESS..... Miroslav Rebernik and Ksenja Pušnik ¹	97

MODELLING THE INNOVATIVE NEW VENTURING PROCESS IN TERMS OF DIALECTICAL SYSTEMIC THINKING.....	119
Matjaž Mulej and Miroslav Rebernik	
BUILDING ENTREPRENEURSHIP CAREERS VIA ENTREPRENEURSHIP EDUCATION: THE CASE FROM SLOVENIA.....	133
Miroslav Rebernik and Karin Širec	
SUPPORTING ECONOMIC GROWTH WITH INNOVATION-ORIENTED ENTREPRENEURSHIP.....	159
Katja Crnogaj, Miroslav Rebernik and Barbara Bradač Hojnik	
BUILDING THE STARTUP ECOSYSTEM IN SLOVENIA.....	173
Matej Rus and Miroslav Rebernik	
SELECTED BIBLIOGRAPHY FOR THE PERIOD 1993-2018.....	183
Miroslav Rebernik, Barbara Bradač Hojnik, Katja Crnogaj, Blaž Frešer, Jožica Knez-Riedl, Tadej Krošlin, Dijana Močnik, Matjaž Mulej, Ksenja Pušnik ¹ , Matej Rus, Karin Širec, Polona Tominc, Zdenka Ženko	
REVIEWS.....	251
DEPARTMENT'S COLLEAGUES.....	252

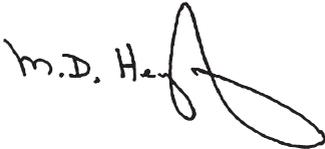
FOREWORD

Having read this publication which is a series of papers written by various authors I cannot stress the importance of this work sufficiently.

The world of entrepreneurship and business is changing so rapidly in this fast moving world that keeping up with the latest trends and developments has never been more important than it is today. Technology is moving forward at an exponential rate and we need to keep abreast. Hence, entrepreneurial research into small business development is vital if we are to rapidly promote the economy of any country which in turn plays a vital role in the reduction of unemployment and the alleviation of poverty.

In more and more countries teaching entrepreneurship at all levels of society is becoming increasingly important as over the years GEM has clearly shown that the higher the level of education attained then the more likely a person is to start a new venture and the more likely that business is to remain sustainable and survive beyond the initial stage of nascent development. Education plays such a vital role that entrepreneurship training and teaching should be mandatory at all levels of education. Only then will we be able to transform society and improve the standard of living for all concerned.

Mike Herrington

A handwritten signature in black ink that reads "M.D. H." followed by a large, stylized flourish.

Executive Director: GEM Global

25 YEARS OF ENTREPRENEURSHIP AT FEB UM

Karin Širec

Translated by Teja Rebernik, MA

Twenty-five years – a quarter of a century – is a period after which it is worth looking back on the past and summing up the memories of the achievements and milestones that have marked it. The present scientific monograph was thus formed on the occasion of the anniversary celebrated in the academic year 2017/2018 by current and former members of the Department of Entrepreneurship and Business Economics, and the members of the Institute of Entrepreneurship and Small Business Management. The monograph is also an acknowledgment and tribute to the initiator and founder of the first study track for entrepreneurship education, and the head of the Department and Institute, Professor Doctor Miroslav Rebernik. The collection of selected scientific contributions is thus put together in such a way that he is the co-author of all of them, with individual members of the Department. A collection was created that chronologically presents some of the most visible contributions of the 25-year period. We would like to thank all publishing houses that approved the reprint of the contributions and, of course, the colleagues who helped edit the texts.

How it started

Prof. Dr. Rebernik once said that, much like any good entrepreneurship project, entrepreneurship at the Faculty of Economics and Business (FEB) also started with a good idea, in 1992. He wanted to solve the problem of the increasing gap between the need for business knowledge, adapted to the specifics of small companies, and the then-prevalent ways of business education, focused primarily on training for employment in large business systems. *Small Business Management*, as the first entrepreneurship track was originally called, was designed based on the understanding that the prosperity of modern developed countries is based on the success of numerous small and medium-sized companies, and that education needs to be adapted to the changes and trends in the modern world. The study track came to existence with a project financed by the Tempus

programme and was based on the experience of the Swedish educational model of this type. The participants in the project were *University College of Borås* (Sweden), *School of Economics and Commercial Law – University of Gothenburg* (Sweden), *De Vlerick School of Management – University of Ghent* (Belgium) and the *Faculty of Economics and Banking – University of Udine* (Italy), as well as, of course, the *Faculty of Economics and Business – University of Maribor*. With a dedicated team of professors from four faculties from Maribor, Kranj and Ljubljana, and colleagues from abroad, a breakthrough study programme was born. The first generation had 13 enrolled students who studied by spending two days a week for two years at the faculty, and two days a week up until graduation in carefully chosen mentoring companies (Širec, 2008).

In this case, a basic business truth prevailed once again, namely that the implementation is more important than the idea itself. Students wanted to take part in entrepreneurship, they proved themselves to be entrepreneurial and useful co-workers in companies, and they were very perceptive as graduates. The professors were willing to adapt to new needs and research the entrepreneurial reality, and mentors in companies were prepared to share their wealth of experience with the students. Once again, it turned out that nothing can stop an idea whose time has come. But another truth was confirmed, namely that without simultaneously engaging in research, social engagement and collaboration with companies, it is not possible to truly teach entrepreneurship. The quality of the study programme was also recognized in the international environment, when it was nominated for the prestigious *1998 Academy of Management – McGraw Hill Irwin Pedagogy Award* due to its innovativeness.

After the project ended and European financing ran out, the *Small Business Management* programme was redesigned, and in 1996 the study track *Entrepreneurship* was established as the successor. It was redesigned to run on two levels, namely the university study programme “Economics” and the professional higher education study programme “Business Economics”, both of which were accredited in accordance with the Higher Education Act (1993). In the academic year 2006/2007, the Bologna Reform followed, bringing radical content changes. The *Entrepreneurship* track remained in both bachelor programmes, the university study programme “Economics and Business Sciences” and the professional higher education study programme “Business Administration”. In the master’s study programme “Economics and Business Sciences”, it was renamed the *Entrepreneurship and Innovation* track.

Miroslav Rebernik – Trail blazing and leading

Prof. Dr. Miroslav Rebernik is the idea leader behind the beginnings of entrepreneurship education and research at the University of Maribor, and his contributions are clearly recognizable in the Slovenian as well as the international context of entrepreneurship studies. Below, we present some of his research as well as his pedagogical and applicative achievements. He graduated in 1978 at the Higher Economic and Commercial School in Maribor, where he also finished his master’s studies in 1983 with honours and then completed his doctorate in 1990 at the FEB. He started his

career in the Electropower Corporation of Slovenia and was employed at the FEB in 1985. During his long career, he has established himself as an excellent researcher in the field of entrepreneurship. According to SICRIS, his bibliography includes 758 bibliographic units. Amongst them are 51 original scientific articles, 10 review articles, 26 independent scientific components or chapters in a monograph, 20 coauthorships in scientific monographs, and mentorship to five doctoral candidates. He is the author or co-author of 14 reviewed university or higher-education textbooks and 20 units of other study materials. He was the recipient of the Fulbright research scholarship (1995–1996), and his contributions were published in respected global journals and by world-known publishers such as Edward Elgar, Routledge, Springer, Linde etc.

For a long time, Prof. Dr. Rebernik has been the head of the Institute of Entrepreneurship and Small Company Management at the FEB, which was founded on his initiative in 1992 and established itself as the leading institute for researching entrepreneurship in Slovenia and abroad under his leadership. Prof. Dr. Rebernik succeeded in integrating the work of the Institute in some very influential and fruitful European and global research networks, such as the *European Network for Social and Economic Research (ENSR)*, *Global Entrepreneurship Research Association (GERA)*, *European Council for Small Business and Entrepreneurship (ECSB)*, and the *network of women's entrepreneurship researchers (DIANA)*, with which he ensured that the researchers would be strongly included in international research streams. The most resounding longitudinal studies he leads include the *Slovenian Entrepreneurship Observatory*, which Prof. Dr. Rebernik started in 1998, and the *Global Entrepreneurship Monitor* for Slovenia, which he began in 2002. The results of these studies and others are frequently disseminated and used in many articles, books, textbooks and in designing different strategic documents in the Republic of Slovenia.

He led the research programme *Entrepreneurship for an Innovative Society* for two programme periods, and led targeted and basic research projects, applied research programmes, projects for companies, and many projects in which the Institute was the subcontractor of European projects. In the past 10 years there have been more than 30 such projects. He was also active as programme leader or co-organizer of several consultations and scientific and academic conferences. He is a reviewer for several esteemed science journals, and participates in editorial and review committees of the journals *Naše gospodarstvo/Our Economy*, *Business & Economics Review*, *Journal of Small Business Management*, and the *International Journal of Entrepreneurial Venturing*.

Prof. Rebernik is the coordinator of many courses in bachelor's and master's studies, most of which he developed himself: Business Economics, Entrepreneurship, Managerial Economics, Theories of the Firm, Entrepreneurship Theories, Entrepreneurship Research, International Entrepreneurship etc. For many years, he was also head of the study track *Small Business Management* and the study track *Entrepreneurship*. Since 2004, he has been head of the Department of Entrepreneurship and Business Economics. As a member of the FEB senate committee for preparing new study programmes, he strongly co-designed entrepreneurship programmes, and helped establish entrepreneurship education in the

wider Slovenian context as a member of the workgroup for preparing the educational strategy for entrepreneurship on a national level.

It is also important to highlight his engagement in establishing creative entrepreneurship and transfer of novelties into entrepreneurship practice. In the period 1992–2002, he was a member of the committee for choosing the Slovenian *Entrepreneur of the Year* (organized by Podjetnik magazine); later he was on the committee for choosing the *Best Business Idea* (organized by the Finance Daily newspaper). From 2007–2015 he was president of the evaluation committee for choosing the *Slovenian Startup of the Year* (organized by IRP and SPIRIT). He is the cofounder of *Venture Factory* – business incubator of the University of Maribor – and has chaired its Science and Technology Committee. He was also one of the initiators behind the project *Science Park of the University of Maribor*, for which he prepared the conceptual part of the project design.

In 1979, the University of Maribor awarded him the Silver Badge of Recognition for “dedicated involvement in university life” and in 2010, the Golden Badge for “excellent research and teaching”.

Department of Entrepreneurship and Business Economics and its team

Members of the Department of Entrepreneurship and Business Economics are individuals who don't only teach about entrepreneurial drive, creativity and innovation – they also practice it. The innovativeness and entrepreneurial drive and creativity are evident primarily in the continuous enrichment of the course content and by introducing new and modern teaching methods into the pedagogic process. We unite teachers and researchers with diverse knowledge and rich experience in different fields of economic and business reality. The monograph displays a combination of scientific research and the pedagogical and applied achievements of former and current members of the Department of Entrepreneurship and Business Economics and the Institute of Entrepreneurship and Small Business Management:

- Prof. Dr. Miroslav Rebernik (Head)
- Prof. Dr. Jožica Knez-Riedl (retired since 2010)
- Prof. Dr. em. Matjaž Mulej (retired since 2001)
- Prof. Dr. Dijana Močnik (external member of the Department since 2001)
- Prof. Dr. Polona Tominc (Institute member)
- Assoc. Prof. Dr. Karin Širec
- Prof. Dr. Zdenka Ženko
- Assoc. Prof. Dr. Barbara Bradač Hojnik
- Assist. Prof. Dr. Ksenja Pušnik (deceased since 2011)
- Assist. Prof. Dr. Katja Crnogaj
- Matej Rus, MSc
- Tadej Krošlin, MSc (external member of the Department since 2008)
- Blaž Frešer, MSc

FEB Entrepreneurship study programmes and pedagogical portfolio

Today at the FEB we teach entrepreneurship on four levels. We carry out higher-education (BV) and university (BU) study track *Entrepreneurship*, master's study track *Entrepreneurship and Innovation* (BM), and doctoral entrepreneurship study, which gives students the opportunity for academic collaboration at one of the universities within the *International Center of Entrepreneurship Studies* (ICES). 123 students are studying in the bachelor's and master's tracks *Entrepreneurship* in the academic year 2017/2018. In the past 25 years, 856 graduates have finished the bachelor's programme *Entrepreneurship*, and 92 students the master's programme. Table I contains a more detailed overview of the programmes.

Table I: *Entrepreneurship graduates from 1. 1. 1993 to 14. 2. 2018*

Professional higher education study programme '96 "Business Economics" – <i>Entrepreneurship</i>	133
University study programme '96 "Economics" – <i>Entrepreneurship</i>	409
Master study programme – <i>Innovation management</i>	42
Bologna professional higher education study programme "Business Administration" – <i>Entrepreneurship</i>	198
Bologna university study programme "Economic and Business Sciences" – <i>Entrepreneurship</i>	116
Bologna Master study programme "Economic and Business Sciences" – <i>Entrepreneurship and Innovation</i>	50

In 25 years of entrepreneurship teaching, we can be proud of the rich pedagogic productivity of our Department's co-workers, as seen in Table II. A total of 68 textbooks and other study materials were written, while members of the Department also carried out 37 lectures at universities abroad. In all these years, we have been mentors to 637 graduates in bachelor's and master's study programmes (including 24 Doctors of Science), and co-mentors to 103 graduates.

Table II: *Statistic overview of pedagogic productivity of the Department's colleagues from 1. 1. 1993 to 14. 2. 2018*

Type of publication	1993–1998	1999–2003	2004–2008	2009–2013	2014–2018	Total
2.03 Reviewed textbook	8	6	9	4	1	28
2.05 Other study materials	19	11	5	5		40
3.14 Lecture at a university abroad	9	9	11	3	5	37
PhD Thesis mentorship	4	3	6	2	9	24
MA thesis mentorship	3	11	19	10	15	58
BA thesis mentorship	13	86	98	67	20	284
MA thesis mentorship (Bologna studies)			1	19	37	57
BA thesis mentorship (Bologna studies)				133	81	214
PhD thesis co-mentorship			3	11	8	22
MA thesis co-mentorship		4	17	5	11	37
BA thesis co-mentorship		10	15	6	4	35
MA thesis co-mentorship (Bologna studies)				3	6	9
Together	56	140	184	268	197	845

Source: SICRIS. <http://www.sicris.si> (14. 2. 2018)

Our vision for the future is clearly outlined: we wish to attract ambitious, creative and entrepreneurial individuals who wish for something different and innovative. We realize business education cannot be effective if students don't have contact with business practice. That is why many excellent entrepreneurs, innovators and CEOs of successful Slovenian and international companies participate in the pedagogical process, presenting to students their methods of work, best practice examples and experiences (Rebernik et al., 2013).

Academic research excellence – The basis for entrepreneurship education

Members of the Department of Entrepreneurship and Business Economics research, teach and consult in the field of entrepreneurship within the Institute of Entrepreneurship and Small Business Management at the FEB. We convey the knowledge of entrepreneurship and innovation to students, entrepreneurs, different organizations, the public, and economic policy makers. This way, we contribute towards the creation of an entrepreneurial, compassionate and knowledge-based society (Širec and Rebernik, 2011).

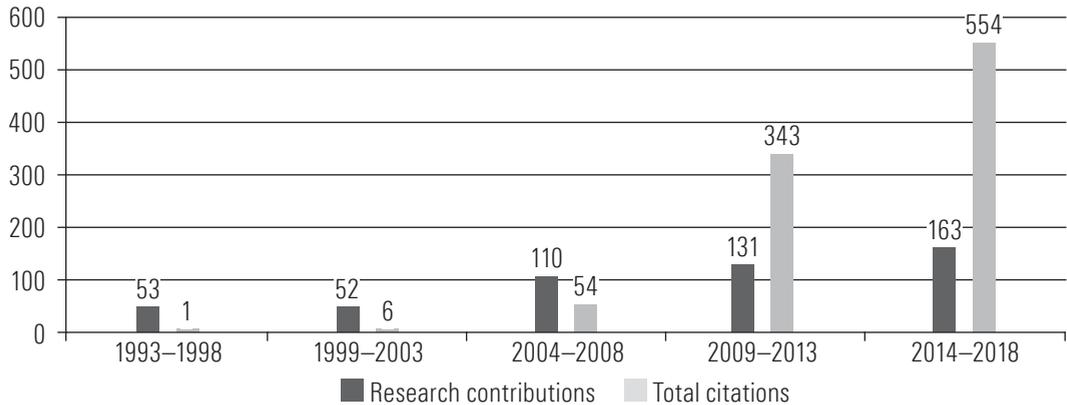
Academic excellence is reflected in the published works of the members, and their quality. Below, we present a 25-year overview of the research work of all Department members. The joint number of bibliographic units in the period from 1. 1. 1993 to 14. 2. 2018 amounts to an enviable 3,383 units. The highest-quality publications, including original and review scientific articles, independent scientific component parts or chapters in monographs as well as scientific monographs are presented for five five-year periods (1993-1998, 1999-2003, 2004-2008, 2009-2013, 2014-2018) in Table III. From the information presented, it is possible to see incredible progress in the observed period, both from the aspect of the quantity and quality as well as from the aspect of the visibility of the scientific activity of the members. There have been 958 pure citations so far, and their number has grown significantly in the last five-year period.

Table III: Statistic overview of scientific productivity of the Department's colleagues from 1. 1. 1993 to 14. 2. 2018

Type of publication	1993–1998	1999–2003	2004–2008	2009–2013	2014–2018	Total
1.01 Original scientific articles						292
– 1.01 Publications in category A	10	12	40	38	48	148
– 1.01 Other publications	18	21	26	39	40	144
1.02 Review articles						29
– 1.02 Publications in category A	1	1	3	3	0	8
– 1.02 Other publications	5	4	2	9	1	21
1.16 Independent scientific component parts or a chapter in a monograph	19	11	32	33	60	155
2.01 Scientific monographs		3	7	9	14	33
Total	53	52	110	131	163	509
Joint number of pure citations						958
WoS	1	2	15	121	220	359
Scopus		4	39	222	334	599

Source: SICRIS. <http://www.sicris.si> (14. 2. 2018)

Figure I: Growth of scientific research productivity and international visibility



Source: SICRIS. <http://www.sicris.si> (14. 2. 2018)

We have been actively working on entrepreneurship research since 1998 when we joined the *European Network for SME Research (ENSR)*. That same year, we followed the example of the *Observatory of European SMEs* and started publishing regular annual research reports on the state of entrepreneurship in Slovenia compared to the rest of Europe, and the results have been published in the scientific monograph of the book collection *Slovenian Entrepreneurship Observatory*. In it, we annually present an overview of the state of Slovenian entrepreneurship demographics and do detailed studies to discuss specific current topics from the field of entrepreneurship. The results of the research report are the basis for suggestions for action to government policy makers in various fields (Širec et al., 2018).

Since 2002, we have been carrying out the Slovenian part of the global research study *Global Entrepreneurship Monitor (GEM)*. GEM is a consortium of national teams, cooperating under the umbrella organization *Global Entrepreneurship Research Association (GERA)*, within which the GEM project is carried out. It's a longitudinal research programme that was started in 1997 by the *London Business School* and *Babson College* (Boston, MA, USA). From the 10 countries that started in 1999, the research consortium has grown to almost 100 participating countries and represents a unique and unprecedented global project in entrepreneurship research. The Slovenian research team includes Prof. Dr. Miroslav Rebernik (leader), Prof. Dr. Polona Tominc, Assoc. Prof. Dr. Karin Širec, Assoc. Prof. Dr. Barbara Bradač Hojnik, Assist. Prof. Dr. Katja Crnogaj, and Matej Rus, MSc, and we were joined by the deceased Assist. Prof. Dr. Ksenja Pušnik for a number of years. A wealth of information is available on the website of the GEM consortium (www.gemconsortium.org) and on the Slovenian website <http://ipmmp.um.si/globalni-podjetniski-monitor/>) – from national research studies to databases and an overview of the increasingly rich collection of scientific articles that are coming into existence with the use of data obtained during GEM research (Rebernik et al., 2017).

Throughout all the years we have been financing our research with the help of the resources of the Slovenian Research Agency, with various basic and targeted research

projects, and within the research programme P5-0023 *Entrepreneurship for an innovative society*. Over the past years, both longitudinal research projects, SPO and GEM, have been financed by the Public Agency for Entrepreneurship, Internationalization, Foreign Investments and Technology – SPIRIT, the Ministry of Economic Development and Technology and, of course, the Faculty of Business and Economics of the University of Maribor.

Co-creation of the entrepreneurship ecosystem

Following the example of numerous foreign, especially American, business practices regarding support services for entrepreneurship, Prof. Dr. Miroslav Rebernik and Matej Rus, MSc, founded Venture Factory in 2001 – the university business incubator of the University of Maribor, which first started working in the rented facilities of the Faculty of Electrical Engineering and Computer Science. We wanted to offer our business knowledge primarily to engineers, and this way follow the best practices from abroad. The move turned out to be excellent, because from 2001 to today, the Venture Factory team has supported more than 100 startup companies and kneaded through more than 500 business ideas.

In 2001, the Venture Factory team also took over the organization of the *PODIM Conference*, which was until then successfully led by Prof. em. ddr. Matjaž Mulej within various organizations for a number of years. The annual organization of the event, which we thoroughly renewed and supplemented, demanded a connection with numerous stakeholders of the Slovenian and global entrepreneurship ecosystem. In 2007, based on the experience of participating in the project *Best Business Idea*, which took place under the Finance Daily newspaper, the competition of startup companies called *Start:up Slovenia* came to existence. The same year saw the establishment of the online platform for connecting and promoting key stakeholders of the Slovenian startup ecosystem www.startup.si. The latter meant an expansion of activities outside of the framework of the University of Maribor and the city of Maribor.

Today, Venture Factory is the proud leading partner of the *Initiative Start:up Slovenia*, co-created with the contracting strategic partner Technology Park Ljubljana since 2011. Two public accelerator programmes were developed in this partnership, and implemented in collaboration with the Slovene Enterprise Fund. Both provide companies with a combination of financial sources and supporting services in the form of mentorships, consultations, infrastructure and networking. The first *Start:up GeekHouse* is intended for companies in the startup stage, and the second one, *Go:Global Slovenia*, is intended for startup companies in the stage of growth. More than 60 Slovenian companies have been supported within both programmes.

Through *Initiative Start:up Slovenia*, Venture Factory became a full member of the *European Startup Network* (ESN) in 2016 and, in 2018, obtained the status of an ambassador of the programme *Startup Europe*, led by the European Commission. You can find more about the activities of Venture Factory on the following websites: www.tovarnapodjemov.org, www.startupmaribor.si, www.startup.si and www.podim.org.

A promise for the future

The presented achievements show that in the years of developing entrepreneurship education at the FEB, we not only continuously perfected the pedagogic process, but also invested in excellent research competencies and engaged in the creation of the first university incubator in Slovenia – Venture Factory, which facilitates the implementation of business ideas in practice. We are aware that the ideal environment for entrepreneurship needs to ensure a critical mass of business talents, excellent support services and access to knowledge, technology and capital. All of us in the Department and Institute are strongly committed to continue carrying out the ambitiously set plans for building and developing Slovenian entrepreneurship society.

REFERENCES

1. Rebernik, M., Crnogaj, K., Širec, K., Bradač Hojnik, B., Rus, M., Tominc, P. (2017). *Dinamika podjetniškega potenciala: GEM Slovenija 2016*. Slovenski podjetniški observatorij, Maribor: Univerzitetna založba Univerze.
2. Rebernik, M., Širec, K., Crnogaj, K., Rus, M., Crnogaj, K. (ed) (2013). *Z 20 let podjetniških izkušenj utiramo poti v 2020*, Bilten IPMMP podjetništvo, 9. Maribor: Inštitut za podjetništvo in management malih podjetij, Ekonomsko-poslovna fakulteta.
3. SICRIS. Informacijski sistem o raziskovalni dejavnosti v Sloveniji (Information system on research activity in Slovenia) (2018). Available at: <http://www.sicris.si> (14. 2. 2018)
4. Širec, K. (2008). Diplomanti podjetništva so povedali.... V: ŠIREC, Karin (ur.). *15 let izkušenj za jasen pogled v prihodnost*, Bilten IPMMP Podjetništvo, 7. Maribor: Inštitut za podjetništvo in management malih podjetij, Ekonomsko-poslovna fakulteta, 4-5.
5. Širec, K., Bradač Hojnik, B., Denac, M., Močnik, D., Rebernik, M. (ed), Širec, K. (ed) (2018). *Slovenska podjetja in krožno gospodarstvo: slovenski podjetniški observatorij 2017*. Slovenski podjetniški observatorij, Maribor: Univerzitetna založba Univerze.
6. Širec, K., Rebernik, M. (2011). Izobraževanje za podjetnost in podjetništvo. *Pedagoška obzorja: časopis za didaktiko in metodiko*, 26(4), 129-145.

A LOOK AT BUSINESS ECONOMICS IN TERMS OF SYSTEMS THINKING

Miroslav Rebernik, Jožica Knez-Riedl,
Diana Močnik and Matjaž Mulej

GLANVILLE Ranulph (ed.), ZEEUW Gerard de (ed.)
Problems of Excavating Cybernetics and Systems
[proceedings of a conference held in Amsterdam,
the Netherlands, 17-21 April 1995]
Systemica: Journal of the Dutch Systems Group
Vol. 11 No. 1/6 special issue, 1997
pp. 269-281

Abstract

In terms of systems thinking, traditional business economics is obsolete. Creativity is now-a-days essential, for it creates innovation and hence competitiveness and creditworthiness. The market is not the only co-ordinator of economic activities: responsible persons are equally important. Transaction cost economics and institutional economics may be able to explain situations and trends better, but not yet in a fully systemic way.

Keywords: cybernetics, systems thinking, business economics, transaction cost economics, creditworthiness, market, hierarchy, creativity, dememorising, institutional economics, economics of the firm, social responsibility, economy of sense

Introduction

In the good forty years of their official existence and development, systems theory and cybernetics have not become enough of a mass movement for systems thinking (=wholism and depth by interdisciplinary creative co-operation) to become a general habit (Molander, Sisavic, 1994). Hence its excavating is needed now. Inside the profession of business and economics, business economics theory and the economics of the firm are the disciplines which could and should have made or make a more substantial contribution to systems thinking among economists and business professionals. So long as the science of business economics remains what it has been in previous decades, it will remain obsolete in the scope of its contents, methodological tools and systems thinking.

The recent two decades have proven that the concept of homo economicus is both one-sided and too narrow to be realistic, and hence cannot be scientific and practical. This fact gives rise to our search of business economics for more systemic approaches.

So social responsibility is added to Smith's "invisible hand" (not just through Chandler's "visible hand" of socially responsible management) and the primacy of full one-sidedness is gradually being eroded by the systems approach. The consequences of its failings have become problematic and much more visible than they used to be. They have resulted in both human aspects and wholism becoming scarce resources, and therefore topics which business economics, as a normal science, must deal with.

In such circumstances, caused by the economic, social and market developments in the West after World War II, the enterprise has become a social, and not only a market institution or, even less, a closed system. As a science, business economics researches the working of enterprises as business systems, and defines criteria for professionals and others both to judge it and to suggest future policies and actions. This science can no longer limit itself to pure traditional economic criteria. The demand for systems thinking to be applied comes about also from a new human awareness of the dilemma "wholism v. no survival", emerging inside and outside both the enterprise and business economics.

Research on criteria of the creditworthiness or goodwill of an enterprise is a good example. Its ecological dimension is a part of its wholistic tendency. Its innovation aspect is another part. The dilemma expressed in transaction cost economics is another indication of the same tendency toward wholism. Similar problem can be observed within accounting, where the central principle of complete documentation is only fictitiously wholistic because it looks backward and refuses innovation (Hauschildt, 1993).

In this paper we wish to argue that the development trends of business economics may be good enough, but are not yet systemic enough.

The obsolescence of business economics

Established economics and business economics theory normally taught in business schools (not only in the transitional countries!) still treats human in an extremely narrow sense, only as a production factor, i.e. as labor which is, along with capital and land, required for the production process. Even more, labor—as a production factor—is as a rule considered merely as a physical phenomenon. Words like quality, creativity, co-operation, imagination, emotion, individuality, corporate culture, synergy, even entrepreneurship and innovativeness are not used in traditional business economics, although without them there is no innovation, no innovative business, no quality, no efficiency and no long-term effectiveness of business systems. The science of business economics is still interested in people only as expenses or costs. Unless people are an item in the balance sheet or in the income statement, business economics pays no attention to them (Rebernik, 1990).

We can easily see that mainstream business economics is occupied with a Newtonian, mechanical concept of the functioning of economic activities and economic laws (Mulej et al., 1992, Georgescu-Roegan, 1971). The main reason for the inadequacy and inappropriateness of the dominant business economics for business systems doing business in

turbulent environments, is that the paradigm of economics was created in the entirely different circumstances of a relatively stable environment, where it was enough to take a static look' at the firm. In radically changed circumstances, there is an urgent need to establish a business economics theory able to embrace and explain all essential elements and links of business in today's circumstances. The variety of, for example, transitional countries cannot sensitively be controlled by the variety offered by the worn out business economics, based as it is on obsolete paradigms.

The statement by Fritz Machlup is still valid: already in 1967 he wrote that the model of the firm "is not... designed to serve to explain and predict the behaviour of real firms: instead, it is designed to explain and predict changes in observed prices ... as effects of particular changes in conditions.... In this causal connection the firm is only a theoretical link, a mental construct helping to explain how one gets from the cause to the effect" (Machlup, 1967, in Neale and Haslam, 1989).

Until recently, creativity (outside the frameworks of sociology and psychology) was, as far as the enterprise was concerned, almost exclusively a topic of organisational and management sciences, if it had any place at all. Economics, anchored in the classic and neo-classic micro-economic tradition, did not really know what to do about creativity. With its primary concentration on market and prices, production and cost functions, supply and demand, allocation of production resources and opportunity costs etc., even business economics did not perceive creativity or innovation.

In 1970's and 1980's the situation changed. In order for the enterprise to be able to cope with the growing complexity in its environment, quite a number of economic approaches have evolved which have broken the (neo-classical!) ignoring of creativity and innovativeness of both the individual and the group. The variety of business economics had to be increased to be able to control the increased variety in the companies and in their environment.

The standard (neo-)classic micro-economic analysis mainly concentrates on the way the price mechanism co-ordinates economic decisions in the market. Since the market is only one of the possible ways of co-ordinating economic activities—the other one being the hierarchy (= the firm or the organisation)—the approach of micro-economics turns out to be useless in clarifying creativity, innovation, entrepreneurship and the behaviour of enterprises in a turbulent environment in general, i.e. in the realities of now-a-days.

Business economics is a relatively mature science which carries all the basic characteristics of a Kuhn's "normal science" (Kuhn, 1962; Kuhn, 1974; Popper, 1959; Solo, 1991). We understand it either as a science of economics which deals with laws of the prudent and planned acquisition and use of resources, or simply as a science of scarce resources. Business economics is that part of micro-economics which deals with enterprise and with laws of the behaviour and functioning of enterprises in the market place (cf e.g. Thompson and Formby, 1993; Ricketts, 1987; Putterman, 1986; Nellis and Parker, 1992 or Douma and Schreuder, 1993).

The organic interwovenness of micro-economics and business economics implies that, along with everything else, business economics (as a normal science) shares the suppositions of (neo-)classic micro-economic theory, including its deficiencies and weak points. With the sterility of (neo-)classic economics in mind, a number of alternative approaches have evolved over the last two and a half decades (the behavioural theory of the firm, the agency theory, transaction cost economics, evolutionary economics). They are not yet fully mature and have not yet been able to gain all the attributes of a normal science.

While, for the time being, none of these theories is capable of offering a wholistic view of the enterprise, they are much better suited to investigation into man and his/her creativity than was (neo-)classical economics. This is especially true because they concentrate on research into the hierarchy, i.e. the enterprise, no longer viewing the market as the only possible co-ordination mechanism.

Is the market really the prime co-ordinator of economic activities?

As we know, the division of labor is an elementary result of civilisation and gave rise to unavoidable specialisation. But, whenever individuals, groups or organisations specialise, the consequence is the need for co-ordination of individual, specialised activities. Until Coase's (1937) question about why firms exist, and Williamson's economics of transactional cost, the conventions of economic science allowed only one means of co-ordination of economic activities: prices and the market. The market, with the help of prices, offers producers all the information needed for their economic decisions.

The Nobel Laureate Ronald Coase suggested very clearly in his work that the micro-economic theory of the firm is not adequate for studying the behaviour and functioning of the modern enterprise: it does not consider the transaction cost, i.e. the cost of making and implementing the business contracts and of running the enterprise.

According to transaction cost economics, we understand an enterprise to be a system of mutual relations which comes to life when the arrangement of resources depends on the entrepreneur (Coase, 1937)—and not on the price mechanism. Hence, the firm can justify its existence only by realising its function at a cost smaller than the cost of the market and its price mechanism. See section 7, below.

It is exactly the lack of efficient operation of the entrepreneur's function which is one of the main reasons for the so called X-inefficiency of the firm (Liebenstein, 1966). X-inefficiency surfaces as a consequence of deficiencies in the enterprise's management. It always happens when disposable production factors are used less productively than possible by the enterprise, even if the right product is being produced.

The point lies, therefore, in an efficient combination of the production factors—which is an entrepreneurial function. Some elements or combinations of elements are imposed on the enterprise, i.e. they are determined in advance and cannot be changed. Hence economic efficiency, obviously, is lower than it otherwise would be. This is why one

cannot escape the importance of entrepreneurship and, along with it, of the need for innovation if the enterprise is to be efficient. The enterprise's efficiency cannot be achieved without continuously (re-)new products and services, and these cannot be produced unless the business process elements, as well as their combinations, are new (different). Yet being new is not enough by itself; experience shows that being systemic is equally critical.

This is the point at which we encounter one of the crucially wrong—and also fruitless—approaches in e.g. privatisation measures in EEC countries. The starting point of the privatisation is based on a well-hidden and unquestioned assumption: that the final goal of privatisation is to find an owner of what is currently social and state property. The concept of X-inefficiency states very clearly, on the other hand, that the basic problem does not lie in the management of the property but rather in who owns it.

As every practicing business economist knows, the problem of ownership and the owner sits on the liability side of the balance sheet, and is not a problem of business efficiency. The basic problem which enterprises in EEC countries are facing, where socialism/communism proved historically inefficient, does not result from ownership itself, but rather from the inefficient management of the property. The problem of inefficiency in the EEC economies and their enterprises, therefore, cannot be solved on the liability side of the balance sheet, but by arranging and managing the resources in such a way that business opportunities will be exploited as efficiently as possible. Or as Yarrow (1990, in Foldvary, 1993) pointed out: “In the policy mix of privatisation, demonopolisation, and deregulation, the latter two should be given priority”. Competition prefers novelty and wholism, while, by nature, private owners and the state can and do tend to monopolise.

The concept of X-inefficiency returns the problem to its source, the problem's well-spring: the enterprise. It also demonstrates the finding, enforced by organisational sciences: the efficiency criterion demands that the enterprises accept the most efficient management mechanism in order to stay/become competitive.

Business economics, unable to look beyond the market, encumbered with privatisation policy and measures which desperately chase an owner no matter who this might be, is certainly unable to perceive this.

Man and his/her creativity as a scarce resource

Radical changes in economic reality over the last decades has also demanded a radical rethink of the role of man and his/her creativity. The environment of the enterprise is no longer stable, and so a static approach is no longer adequate: instead of one-sidedness the greatest possible degree of wholism needs to be reinforced. (This is what 'systems thinking' has been trying to achieve for over four decades!) In order to attain a more wholistic perception of economic reality we need paradigmatic shifts in our mentality.

A rather superficial overview of some classifications of the recent past (Rebernik, 1990) shows clearly the increasing importance of knowledge, new ideas and entrepreneurship.

If we take the viewpoint of business economics as a science on the rational use of scarce resources and look at development periods inside the 20th century, we can perceive the following phases:

- (1) Production factors (land, capital, labor) are cheap and easily accessible to entrepreneurial people. This is the time of formation of the basic paradigms of the business economics, making it a 'normal science' in a few decades.
- (2) Resources (production factors) are increasingly scarce, more expensive, and need to be organised so as to be exploited as rationally as possible. That is why the technological and economic principles of rationality are deployed.
- (3) The production potential of the 'hard' production factors (land, capital, physical labor) diminishes, and, becoming more and more scarce, they are expensive. Creative ideas and entrepreneurship which can help ideas give birth to new values and new profits, become increasingly important production factors. It is only fresh, bold and rather systemically conceived ideas—with which business opportunities can be identified and necessary resources can be acquired for their fruitful exploitation—that still assure progress.

We could say that, a decade or two ago, the 'hardware' period in which hard production factors prevailed, died; and man and his/her creativity became the crucial production factor. There is no way back. Humans became a scarce resource, and thus a field that had to be studied in business economics, where they are now an essential part of an enterprises's creditworthiness.

We face the problem of how to de-memorise the obsolete paradigms of business economics theories that pay no attention to human creativity and entrepreneurship. The reasons why business economics can no longer ignore the creative individual are discussed in details elsewhere (Rebernik, 1994), but the bottom line is that the human has become a scarce resource. Therefore, it is not only the ownership of capital, but, even more, the human that is to be changed and transformed in eg. EEC countries. A creative individual, as a member of a creatively cooperating team, and as a person possessing appropriate knowledge and skills, can easily generate enough information and wholism to cope with growing turbulence and uncertainty. Remember what Ross Ashby said: Variety can be destroyed only by variety!

The changing role of enterprise from business entity to the social institution

The changing environment, value systems and ways of thinking have influenced the concept of an enterprise and, at the same time of its success. Behind this altered consideration is the concept of wholism. It views the enterprise as a dynamic entity of numerous and very heterogeneous elements (Ulrich and Probst, 1990). On the other hand, the forces acting on business are interconnected and interdependent as never before (Mitroff, 1994). According to new circumstances, especially the issues caused by interaction between business and its environment, the enterprise can no longer be considered as just a business entity. As a matter of fact, an enterprise does not simply

face economic issues, but, simultaneously, radical changes of non-economic nature. Especially dramatic are ecological issues, which are the subject of extreme polemics, just like ethical issues. In this way, the enterprise has gained the role of a social institution, confronted with several and very different requirements. The new dimension of the enterprise responsibility, its social responsibility, is stressed. This can hardly be attained without systemic thinking, feeling, conduct and behaviour, i.e. systemic culture (Mulej, Cernetic, Drozg, 1995).

Just in order to surviving in such circumstances, enterprises should be aware of these new obligations when setting goals, and of the consequent necessity to develop new skills and the appropriate tools to achieve them. They should be aware of the consequences of their business decisions, of their economic and non-economic impacts. This demands that systemic thinking not be limited to the (top) management, but spread as far as possible down the organisational hierarchy.

For many enterprises a reassessment of their economic goals has become unavoidable, because they need to optimise the economic and non-economic principles of their activity (Gerken, 1993). Profitability is no longer the predominant, let alone the only goal. The successful enterprise is capable of adapting to changes by improvement. This qualitative aspect of growth is directly connected with innovation potential and the learning capability of the enterprise (Ulrich and Probst, 1990). In today's circumstances the successful enterprise is moving towards achieving the capacity for sustainable development, based on the philosophy of an extremely rational use of resources. In this way, it directly initiates the process of integration of environmental criteria into economic practice (Harrison, 1993; Mulej, 1995). It requires the balance of economic with environmental goals. It strikes against some basic economic principles and questions such as economies of scale and mass production; it emphasises the difference between the short-run and long-run cost function; and it warns us about new facts concerning demand, to mention just a few.

It is impossible to achieve desirable goals, which can no longer be purely economic, without new skills, methods and tools. Expert knowledge from different disciplines should be integrated into supporting business decisions. But there is one more thing which must not be forgotten: the values and awareness of people, who are supposed to be willing to do business in such new way. A systemic culture surfaces, again, as a precondition.

Demands for socially responsible enterprises come from several directions. In the background there is an already increased awareness of the individual, and, increasingly, that of the public. These have become more visible, powerful and respected, too. Last, but not least, the awareness of people seen from the viewpoint of enterprises must be mentioned. This is apparently increasing, and not only in regard to environmental risks. This might be viewed as a searching for what makes sense, even at the level of an enterprise. More and more people are searching for a job that is meaningful and meets their need for their individual fulfilment (Gerken, 1993). This is very highly ranked on the scale of requirements, and corresponds to the changeable value systems.

It is evident that systemisation has not just been forced by external circumstances. The need to act systematically emerges from the enterprise itself, from increased awareness and a more demanding need for the so called economy of sense (Gerken, 1993).

The contemporary concept of the firm's creditworthiness and the systemic way of thinking

The economy of sense changes the criteria of what is good or bad. The conceptualisation and the assessment of a firm's creditworthiness could be viewed as typical example, which cannot be based only on economic principles. The modern concept of the firm's creditworthiness can be defined as "the firm's capability to survive and to develop". As such, the firm's creditworthiness is no longer relevant only in the credit business. There is a variety of business situations where such characteristics are decisive. They are becoming very important for already-existing partnerships and, even more so, for potential ones, as a reference point for both business partners and public opinion in general. As such, the concept of creditworthiness has become based more and more on qualitative factors. Among these, the so-called soft factors—ecological awareness, innovation-potential, ethics, and the culture of the firm—are typically of non-economic nature (in the traditional sense). Once, mainly expressed by quantitative factors, and just a minor addition to economic criteria, these qualitative factors are nowadays becoming of equal importance (Knez-Riedl, 1994). The question of which criteria are actually of an economic nature, are changing quite rapidly to be more systemic.

Transaction cost economics

A more systemic approach to the theory of the firm has emerged also under the heading of transaction cost economics. Introduced in Coase's famous 1937 article (Coase, 1937), transaction cost economics insists on the inclusion of the thinking, planning and contracting costs that accompany any transaction, i.e. to costs usually ignored by the (neo-)classical paradigms, as helping define the firm. The idea is that in some situations these costs will be lower if a transaction is carried out within a firm rather than within the market. According to Coase, the main cost of transaction in the market is the cost of learning about and haggling over the terms of trade; and this cost can be particularly large if the transaction is long-term where learning and haggling must be performed repeatedly. Transaction costs can be reduced by giving one party the authority over the terms of trade, at least within limits. But, according to Coase, this authority is precisely what defines a firm: within a firm, transactions occur as a result of instructions or orders issued by a boss, and the price mechanism is suppressed. If the boss is systemic enough, this fact does not cause harm.

In an ideal world, the lack of ex-post market signals would pose no problem, since the parties could always write a long-term contract before their investment, spelling out each agent's rights and obligations and the terms of trade in every conceivable situation. In practice, however, thinking, negotiation and enforcement costs will usually make

such a contract prohibitively expensive. As a result, parties must negotiate many of the terms of the relationship as they go along. Williamson argues that this leads to two sorts of costs. First, there will be costs associated with the ex-post negotiation itself—the parties may engage in collectively wasteful activities to try to increase their own share of the ex-post surplus. Furthermore, asymmetries of information may make some gains from trade difficult to realise (Williamson, 1985). Second, and perhaps more fundamental, since a party's bargaining power and resulting share of the ex-post surplus may bear little relation to his/her ex-ante investment, the parties will have the wrong investment incentives at the ex-ante stage. Williamson, however, leaves the precise nature of these costs unclear. Williamson argues that a major benefit of integration comes from the fact that the party with authority can resolve disputes by fiat (as opposed to litigation), while a major cost comes from the fact that the party with authority cannot commit him- or herself to intervene selectively in the affairs of other parties. Williamson, however, is not very clear about what mechanisms are at work here. What power to intervene does a boss have that an independent contractor does not have? How systemic is either of them?

Coase's ideas, although recognised as highly original, took a long time to catch on. There are probably two reasons for this. First, they remain to this day very hard to formalise. Second, there is a conceptual weakness, pointed out by Alchian and Demsetz (Alchian and Demsetz, 1972) in the theory's dichotomy between the role of authority within the firm and the role of consensual trade within the market. Both need to be systemic, and both tend to be rather one-sided, in the prevalent practice of both the developed market and transitional economies.

The exact nature of transaction costs, however, remained unclear. What lies beyond the learning and haggling costs that, according to Coase, are a major component of market transactions? Oliver Williamson (Williamson, 1975, 1985) has offered the deepest and most far-reaching analysis of these costs. Williamson recognised that transaction costs may assume particular importance in situations where economic actors make relationship-specific investments—investments to some extent specific to a particular set of individuals or assets.

The upshot is that the New Institutional Economics occupies or shares territory that was once thought to be the exclusive domain of sociologists. The “problem” is that it introduces efficiency principles to predict that a whole series of organisational regularities will be observed. Theories of organisation in which advantage is featured must now come to terms with rival theories of organisation that employ an economising framework (Williamson, 1988). Sociologists can respond, with cause, that there is more to the study of economic organisation than efficiency. The real challenge, however, is to demonstrate that the sociological viewpoint adds predictive content and in other respects deepens our understanding of complex organisation (Williamson, 1988). Hence, a systemic creative cooperation of several professions is called in.

Some conclusions concerning excavating cybernetics and systems

The portrayal of the firm in neo-classical economics is a caricature of the modern firm. We introduced some alternative approaches that attempt to develop a more realistic picture. The end product to date is still, in many ways, a caricature, but perhaps not such an unreasonable one. One promising sign is that the different approaches economists have used to address this issue—neo-classical, principal-agent, transaction cost, nexus of contracts, property rights—appear to be converging, it is to be hoped that in the next few years the best aspects of each of these approaches can be drawn on to develop a more comprehensive and realistic theory of the firm. Such a theory would capture the salient features both of modern corporations and of owner-managed firms, and would illuminate the issues for economists and lawyers alike. Again, with no systemic culture a poor success is expectable.

Business economics is, albeit hesitantly, developing toward a tacit consideration of systemic thinking. De-memorising of old habits and consideration of topics which used to be called non-economic ones as essential parts of business economics might be two of the biggest obstacles to making business economics really systemic. The inclusion of a systemic culture in business economics can be well-supported by a modernisation of criteria of creditworthiness as well by the deployment of transaction cost economics and institutional economics. But all three, themselves, may need more elaboration from the viewpoint of systems culture.

REFERENCES

1. Alchian, A and Demsetz, H (1972) "Production, Information Costs, and Economic organisation", *American Economic Review*, 62, 777-795
2. Ashby, R (1956) "Self-Regulation and Requisite Variety", in: Emery, E (ed) (1969) "Systems Thinking", Harmondsworth, Penguin Books
3. Coase, RH (1937) "The Nature of the Firm", *Economica*, 4, November, 386-405
4. Commons, JR (1934) "Institutional Economics", Madison, University of Wisconsin Press
5. Douma, S and Schreuder, H (1992) "Economic Approaches to Organisations", London, Prentice Hall International (UK) Ltd
6. Fama, E and Jensen, M (1983) "Separation of Ownership and Control", *Journal of Law and Economics*, June, 301-326
7. Fisher, S (1977) "Long-Term Contracting, Sticky Prices, and Monetary Policy", *Comment., Journal of Monetary Economics*, 3, 317-324
8. Foldvary, F (1993) "Designing the Preconditions of a Market in Land", ACSP 35 Annual Meeting, Philadelphia, Pennsylvania
9. Foss, NJ (1994) "The Two Coasian Traditions", *Review of Political Economy*, 6.1, 37-61
10. Gerken, G (1993) "Management by love", *ECON*, Duesseldorf, Wien
11. Georgescu-Roegan, N (1971) "The Entropy Law and the Economic Process", Cambridge, Harvard University Press
12. Grossman, SJ and Hart, OD (1986) "The Costs and Benefits of Ownership, A Theory of Vertical and Lateral Integration", *Journal of Political Economy*, 94 (4), August, 691-719

13. Harrison, EB (1993) "Going Green: How to Communicate Your's Company Environmental Commitment", Homewood, Business One Irwin
14. Hart, O (1989) "An Economist's Perspective on the Theory of the Firm", Columbia Law Review, 7, 1757-1774
15. Hauschildt, J (1993) "Innovations-management", Vahlen
16. Jensen, MC, Meckling WH (1976) "Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure", Journal of Financial Economics, 3, 305-360
17. Knez-Riedl, J (1994) "Pomen in problematika kvalitativnih dejavnikov pri presoji bonitete podjetja (The Qualitative Factors Affecting the Firm's Creditworthiness Assessment—their Importance and Problems)", Slovensko Gospodarstvo, Kako naprej, podiplomsko posvetovanje, Maribor, Ekonomsko poslovna fakulteta, 289-298 (in Slovene)
18. Kuhn, T (1974) "The Structure of Scientific Revolution", Nolit, Beograd (in Serbo-Croate).
19. Kuhn, T (1962) "The Structure of Scientific Revolutions", Chicago University Press, Chicago.
20. Liebenstein, H (1966) "Allocative Efficiency versus X-efficiency", American Economic Review, Vol 56
21. Machlup, F (1967) "Theories of the firm: marginalist, behavioural, managerial", American Economic Review, March
22. Mitroff, II (1994) "Crisis Management and Environmentalism: A Natural FiT", California Management Review, Winter 1994, 101
23. Molander, A and Sisavic, MF (1994) "Contrasting Paradigms and Movements: Systems Theory and Total Quality Management", Systems Research, 11, 1
24. Mulej, M and Jan, S (eds) (1995) "Ekoloske inovacije (Ecological Innovations)", PODIM, 15, Nase gospodarstvo, 41, 1-2 (in Slovene)
25. Mulej, M et al. (1992) "Systems Theories", School of Business Economics, Maribor (in Slovene)
26. Mulej, M, Cernetic, J and Drozg, F (1995) "Reinventing the Systems Approach by Interdisciplinary co-operation Integrating the "CLIPS" Plan and "USOMID" Methods", in this volume
27. Neale, A, Haslam, C (1989), "London Economics in a Business Context", Chapman and Hall
28. Nellis, J and Parker, D (1992) "The Essence of Business Economics", Prentice Hall
29. Popper, K (1959) "The Logic of Scientific Discovery", London, Hutchirtson
30. Putterman, L. (ed) (1986) "The Economic Nature of the Firm", Cambridge University Press, Cambridge
31. Rebernik, M (1990) "Economics of the Innovative Firm", Gospodarski vestnik, Ljubljana (in Slovene)
32. Rebernik, M (1994) "Dememorising and changing of mental models as a precondition for TQM", Systems Research, Vol 11, No 1, pp. 101-111
33. Ricketts, M (1987) "The Economics of Business Enterprise; New Approaches to the Firm", Brighton, Wheatsheaf Books
34. Solo, R (1991) "The Philosophy of Science, and Economics", London, MacMillan
35. Tirole, SJ (1988) "The Theory of Industrial Organisation", in Han, O. (1989) "An Economist's Perspective on the Theory of the Firm", Columbia Law Review, 7, 1757-1774
36. Thompson, A and Formby, J (1993) "Economics of the Firm: Theory and Practice", 6th ed., London, Prentice Hall

37. Williamson, OE (1990) "The Firm as a Nexus of Treaties: an Introduction", in Aoki, M., Gustafsson, B and Williamson, OE (eds) "The Firm as a Nexus of Treaties", London, Sage Publications
38. Ulrich, H, Probst, GJB (1990) "Anleitung zum Ganzheitlichen Denken und Handeln: Ein Brevier für Führungskräfte" 2. Auflage, Bern, Stuttgart, Haupt Verlag
39. Williamson, OE (1988) "The Economics and Sociology of Organisation Promoting a Dialogue", in Farkas, G and England, P (eds) "Industries Firms and Jobs", New York, Plenum
40. Williamson, O. (1986) "Transaction-Cost Economics: The Governance of Contractual Relations", in Barney, JB and Ouchi, WG (eds) "Organisational Economics", San Francisco, Jossey-Bass
41. Williamson, OE (1975) "Markets and Hierarchies: Analysis and Antitrust Implications", New York, Free Press

ENTREPRENEURSHIP AND SMALL BUSINESS RESEARCH IN SLOVENIA

Miroslav Rebernik and Dijana Močnik

LANDSTRÖM Hans (ed.), FRANK Hermann (ed.), VECIANA José M. (ed.)

Entrepreneurship and Small Business

Research in Europe: An ECSB Survey

Aldershot (UK) [etc.]: Avebury;

Brookfield (Ver.): Ashgate

Publishing year: 1997

pp. 250-262

Historical overview

Slovenia with its population of 2 million people and approximately 55,000 registered companies in 1995 has reached one digit inflation and GNP per capita in the range between 8,000 and 9,000 US\$. “Small is beautiful” may be valid for the country, but this does not apply to the entrepreneurship and small business research in it.

There are basically no studies on entrepreneurship and small business to be found that were made before the late 1980s. The main reason for this lies in the industrial structure of that time, where Slovenian economy (as a part of the Yugoslavian socialist economy) showed the same lack of small and medium-sized companies, as in the whole of the Eastern block. The structure of the economy and the entrepreneurial demography was predominantly reflected in big social or state owned companies. The “socialist black hole” (Vahčić and Petrin, 1989; Tyson, et al., 1994) influenced the focus on research which was carried out at both Slovenian state universities and a few state owned research institutes.

Prior to the reforms, caused by the transition, the research work was linked to the entrepreneurship worked out and implemented predominantly from the macro-economic aspect. The research projects, financed by the State, dealt with studies helping the State and its officials to create economic policy and to adopt short-range and long-range economic measures. Prior to 1990 much attention in economic research was devoted to inflation, the monetary policy, financial institutions, and macro-economic aggregates, while we were not able to find investigations, studying the economic role of small business and entrepreneurship.

Aleš Vahčić and Tea Petrin from the University of Ljubljana were the first to recognise the importance of small and medium-sized companies for the economic development in Slovenia. They also carried out the first research projects. Before the break-up of socialism

there were no courses on entrepreneurship and/or small business management available at the Slovenian universities. In 1993 Miroslav Rebernik introduced the first undergraduate Small Business Management Studies at the University of Maribor, and Aleš Vahčić and Tea Petrin the first graduate studies in entrepreneurship at the University of Ljubljana.

With establishing Slovenia as an independent state the privatisation process began to take place and new legislation brought reforms. The number of small companies started to grow rapidly (from 6,000 companies in 1990 to 55,000 in 1995). Changes in the industrial structure shifted research focus at universities where more scholars and researchers have recognised the decisive role of the entrepreneurial individuals, small business and entrepreneurship. The attitudes of researchers from other fields started gradually changing, too. In general, one can see a widespread understanding that entrepreneurs and entrepreneurship are in the core of the development of the economy, whilst the State should create the macro-economic framework serving as a base for the development of entrepreneurship.

The leading topics in the majority of entrepreneurship and small business investigations in Slovenia during 1990-1993 were connected to the role of the small business and entrepreneurship in the implementation of transitional processes. During 1994 - 1995 the focus of research work was redirected to more managerial-oriented themes. Special attention was devoted to the willingness of the key participants of the company to implement the transitional processes as well as to the role of management. Particular attention was also focused on the question of the obsolescence of know-how and the need for conscious de-memorizing of obsolete mental models inherited from the pre-transitional times (Rebernik, 1992).

Institutions engaged in entrepreneurship and small business research and education in Slovenia

In Slovenia, the faculties of Economics and Business and of Organisational Sciences, University of Maribor, and the Faculty of Economics, University of Ljubljana are mainly involved in the research of entrepreneurship and small business. In Table 1 an overview of institutions involved in research (R) and education (E) is given.

Table 1: Overview of institutions involved in research and education in Slovenia

Institution	Contact person	Education/Research
Faculty of Economics and Business, Maribor	Miroslav Rebernik	E + R
Faculty of Economics, Ljubljana	Aleš Vahčić	E + R
Institute of Entrepreneurship and Small Business Management, Maribor	Janko Belak	R
Institute for Systems Research, Maribor	Matjaž Mulej	R
Economic Institute Maribor, Maribor	Viljenka Godina	E
Gea College, Ljubljana	Vili Pšeničny	E
Faculty of Organisational Sciences, Kranj	Drago Vuk	R

Two universities deserve to be pointed out among the education institutions:

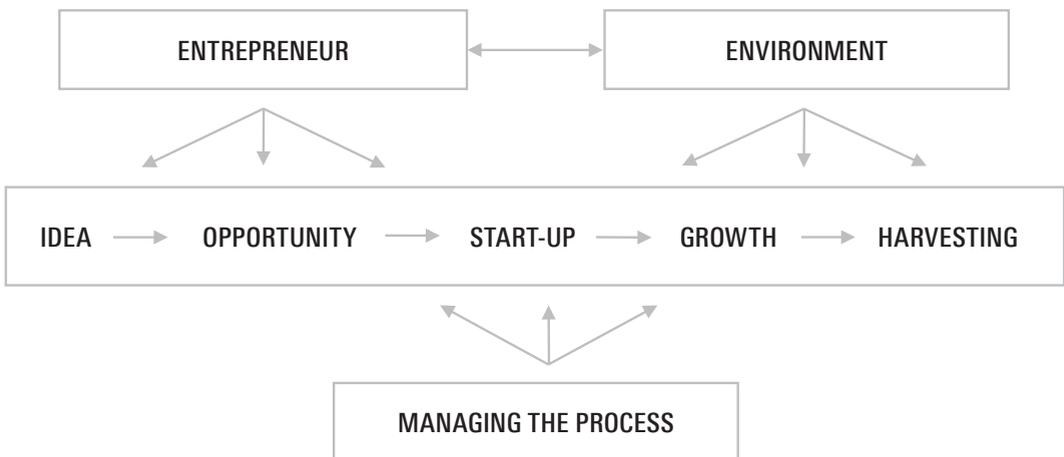
1. University of Maribor, Faculty of Economics and Business which offers
 - Degree course on Small Business Management (BA in Small Business Management)
 - Undergraduate courses on Small Business Management, Entrepreneurship, Business Planning and Business Policy
 - Graduate course on Entrepreneurship
2. University of Ljubljana, Faculty of Economics which offers
 - Graduate studies in Entrepreneurship (MSc, specialisation)
 - Entrepreneurship courses taught in other undergraduate courses

Different non-degree courses, training and skill-building courses for entrepreneurs and small business managers are offered by other training institutions, with the Gea College being by far the biggest, followed by the Economic Institute in Maribor, the Institute of Entrepreneurship and Small Business at the Faculty of Business and Economics, different Entrepreneurship Promotion Agencies, individual consulting companies, etc.

Mainstream themes in the research

To describe the mainstream themes in small business and entrepreneurship research in Slovenia we will develop a basic entrepreneurship process framework (based on Timmons, 1994; Stevenson, et al., 1989; Kao, 1989; Rondstadt, 1984), and group the research in Slovenia according to it (Figure 1).

Figure 1: The basic framework of entrepreneurship process



The environment

Nowadays entrepreneurship and small business research in Slovenia provides us with a transparent picture of Slovenian entrepreneurship demography. The research began to shift from conceptual thinking about the role and importance of entrepreneurship and small and medium-size companies in the economy to more in-field based research of the entrepreneurship development. Whether the question is concerned with the number of companies, the number of jobs provided, the volume of the capital and revenues in these companies, etc., the state of the art of Slovenian entrepreneurship as well as of its development trends, has become relatively clear. There are some studies which, according to various criteria, carry out a comparison of Slovenian companies with similar ones in more developed countries (e.g., Vahčič and Glas, 1995), and some studies dealing with industrial policy issues (e.g., Petrin, 1993).

Some projects which devoted special attention to the macro-level and predominantly to the role of the State as well as of the local community, like the municipality, have been carried out (e.g., Cvetko, 1991). In these studies the institutionalisation of State support, advisory and financial, which is needed to promote the development of small and medium-size enterprises as well as the formation of the support institutions at the level of the individual local community were addressed.

Among other investigations we should mention those related to issues of restructuring of companies and to problems of the regional development of small business. Some are concerned with industrial policy and financial support provided by the State (Pšeničny, 1992), others are related to transformation of the rural areas with the help of entrepreneurship (Korbus, 1992), while still others are related to the role and importance of entrepreneurship as the factor of economic development (Setnikar-Cankar, 1993), and to the impact of the European integration on the development of small-scale economy (e.g., Hrastelj, et al., 1992).

The International Conference on Linking Systems, Thinking, Innovation, Quality and Entrepreneurship (STIQE), which started in 1992 is considered to be especially important. The bi-annual Conference, organised by the Institute of Entrepreneurship and Small Business Management and the Institute of Systems Research at the University of Maribor discusses the linkage between concepts of systems thinking, innovation, management, quality and entrepreneurship. It is of a paradigmatic nature, with explicit international orientation. Conference findings are published in Proceedings, and are partly to be found in *The Journal of Systems Research* (1994).

The research themes on entrepreneurship and small business in Slovenia reflect some of the real problems in this field, i.e., the gradual changing of the state in the competitive environment, and the changing relationship between the national State and the local government. The latter is widely becoming more responsible for the development of the endogenous development potential of the region. The regional development coalition, which associates the experts from both universities, companies and the government, is sometimes formed for the organisation and co-ordination of the development process.

Some of the research themes may seem to be out of the scope of mainstream entrepreneurship and small business research. To understand those particularities of the Slovenian research it should be mentioned that Slovenia is a newly established country and together with the change of a socialist industrial structure and a socialist political system, the State (as an institution) is still solving its own problems of the political constitution of a national State. Accordingly a great deal of the research has dealt with the processes of transition and restructuring of the Slovenian economy due to economic and political changes (e.g., Banič and Faleskini, 1991; Belak, et al., 1993; Kos, 1994; Vahčič and Petrin, 1990).

With a large number of new companies the question about the scope of their business activity and about their impact on employment exists. Few studies (Vahčič, 1993) deal with the dynamic development potential of small-size companies, which should provide a real zeal for economic growth, employment, exports and which should, by the investment of bigger assets, create the development effects of the small-size economy, along with a larger share of the innovative products and services for the world market.

The entrepreneur

Only a few studies on individual characteristics of entrepreneurs in Slovenia exist (e.g., Gajšek-Krajnc, 1993; Kline, 1993). The reason for this can be found in the fact that the time period of the development of entrepreneurship and SMEs in Slovenia is a short one. Not only is there a lack of reliable data but also the entry of Slovenian researchers into this field lagged behind their colleagues in developed countries. They “missed” the euphoria and overproduction of investigating the individual, psychological, gender based, ontological, etc., characteristics of entrepreneurs. Regarding Slovenian entrepreneurship research we do not see any disadvantage in this, as today it is quite clear that there are no “genetic” differences among Slovenian, Chinese, Swedish or American entrepreneurs (Baumol, 1993; Schultz, 1990). What is different is the environment and the rules of the game.

The life cycle of the venture

Looking through the lenses of the venture life cycle (idea - opportunity - start-up - growth - harvesting) only a few studies can be found within the area of start-ups and growth.

The underdevelopment of the business and technological infrastructure of the Slovenian economy triggered an interest in the role of business incubators. Early investigations dealing with this theme basically only reported some foreign experiences. Irrespective of insufficiency these investigations helped start the business incubators and promotional networks for entrepreneurship in Slovenia to get successfully underway.

For the development of the small open economy in Slovenia it is important to have companies that are capable of creating jobs, which can best be provided by fast growing enterprises (Birch, 1987; Kirchoff, 1994). Therefore, from the aspect of entrepreneurship promotion, it is important to know which are the “gazelles” in Slovenian economy.

For this reason, we (along with researchers from Poland, the Czech Republic, Slovakia and Hungary) became involved in the research "Data Base 750", sponsored by the European Foundation for Entrepreneurship Research and the European Venture Capital Association (1994). In this study we identified (method used; individual interviews with entrepreneurs) about 150 potential and rapidly growing enterprises in each of the above mentioned countries. In 1995 and 1996 a follow-up is carried out to establish what is actually happening to the entrepreneurs and the enterprises detected. Because Slovenia is small the sample observed is fairly reliable and enables us to better know the characteristics and trends of growth as well as the development of small enterprises.

A number of diploma works at both universities were also written on this subject, while some local communities made an attempt to identify the dynamic entrepreneurs in their environment, i.e., the owners/managers of companies which have the potential of fast growth, giving the potential of new job creation.

Managing the entrepreneurial process

We still do not have any longitudinal studies on this theme, only partial and incomplete assessment of the field. The majority of investigations are sporadic and lack corresponding quantitative support and background. The studies on intrapreneurship are predominantly descriptive and at the level of textbook case-studies. However, some Slovenian companies were, at least, partially restructured through the intrapreneurship projects (Mulej, et al., 1990; Berginc, 1993).

Some other management related research themes can be found, but unfortunately they do not follow the same research pattern. The findings are very frequently incomparable and consequently, less applicable. However, we have at our disposal some findings in the field of women's entrepreneurship in Slovenia (Rumbak, 1995), as well as in the area of the development strategies used by small and medium-size companies (e.g., Pučko, 1995).

The project named "Entrepreneurship, Business Policy and Management Project" is considered to be a relatively comprehensive research project within the field of management of small and medium-size enterprises. The project is in its third year at the Institute of Entrepreneurship and Small Business Management at the University of Maribor. This project thoroughly deals with the issues of Slovenian entrepreneurship from the aspect of its management. It is a comprehensive, longitudinal project, not only with sound international participation but also with appropriate output in the form of scientific conferences, journal articles and books (Belak, et al., 1993). It lacks, however, certain quantitativity.

We have few investigations in the area of financing of small businesses and of marketing, some themes on innovation in SMEs, few on the connection of innovation and entrepreneurship and creative activity in companies, and some themes about educational models for entrepreneurship.

The strengths and weaknesses of the entrepreneurship and small business research in Slovenia

What concerns us most is the fact that the investigations on entrepreneurship and small business are still not seen from a long-term perspective focusing on the future. They are still, to a great extent, left to the research interest of individual researchers. The unplanned and unorganised behaviour of the State in this field is largely the result of arbitrary decisions about the financing of the research programs within bureaucratic government bodies which cannot understand the entrepreneurial process.

The great variety of approaches of various researchers can also be observed. Firstly, the phenomenon of entrepreneurship or the entrepreneur as its key element, and secondly in what way the environment can have an impact on the development of entrepreneurship (either to promote or hinder it), and especially to what extent the State with its promotional instruments can contribute to an accelerated development.

Since investigations are relatively diverse it is also difficult to talk about common methodological approaches and methodologies. Nevertheless, it must be stated that quite a great deal of data and many facts are already available; many interviews were conducted, some statistics are obtainable and some regression analyses were carried out. What is actually lacking is the synthesis and an appropriate methodology with which a mass of available data could be processed and, in this way, transformed into information adequate for further research studies.

In general, it can be said that the descriptive research, with a great emphasis on qualitative approaches, is still prevailing and that there is not yet close co-operation between Slovenian researchers of entrepreneurship and small business and researchers from other countries.

Table 2: Overview of references considered in bibliographic units

	1990	1991	1992	1993	1994	1995	Total	%
A:								
1. Books	1		1	1			3	6.5
2. Master's theses		1	2	3	1	3	10	22.0
3. Doctoral dissertations			2	1			3	6.5
TOTAL A	1	1	5	5	1	3	16	35.0
B. Chapters in books				1	1		2	4.0
C. Refereed journals	4	1	1	2	2	3	13	29.0
D. Other profess. journ.		1		1	1	1	4	8.0
E. Conference papers		2		3	5		10	24.0
TOTAL A-E	5	5	6	12	10	7	45	100.0

The statistical profile of 45 references (i.e., the ones we considered to be important enough to be investigated for this paper) shows (see Table 2) that 22 per cent of them are Master theses, 37 per cent are articles in journals, and 24 per cent conference papers.

What worries us is not the structure, but the fact that an overwhelming majority of those studies are published (or presented) within Slovenia and in the Slovenian language. This limits the potential for discussion within the international academic community, even though some of the findings of those researches are very relevant and worthwhile.

Strengths that can be noticed in the entrepreneurship and small business research in Slovenia stem from the specifics of entrepreneurship development in Slovenia, which did not begin with the fall of the Berlin Wall. Quite a few years before the introduction of private companies, private craft and private agriculture were well developed in Slovenia. Also, during the last thirty years universities and research institutions have been sufficiently involved in the world research trends within economics, even though before the late eighties they did not deal with entrepreneurship and small business as a research phenomenon in particular.

The strengths also lie in the fact that entrepreneurship and small business are increasingly gaining in respect and status, and thus scientific research interest in this field is increasing. A growing number of young researchers are entering this field, joined by senior researchers.

The fundamental weakness of entrepreneurship and small business research is far from true only for Slovenia; namely, when dealing with new problems researchers often use out-of-date research paradigms and do not co-operate with each other sufficiently. The problem lies in the fact that in many places the fundamental paradigm and the general view on the economic reality, have still remained unchanged just as though nothing had happened in the economic and social system. This, of course, has reduced the possibility of reaching excellent research achievements.

Research projects are still, to a great extent, dependent on the financing tailored by state bodies, where entrepreneurship has not yet acquired enough recognition. Because of the “adolescence” of entrepreneurial development in Slovenia there are no private foundations or private financiers who would be interested in sponsoring entrepreneurship and small business research.

Prospects of entrepreneurship and small business research in Slovenia

Overall, the research into entrepreneurship and small business in Slovenia meets the requirements of practice and themes opened up by the development of entrepreneurship. Apparently, the time of the “historical themes” has run out in the research into entrepreneurship in Slovenia. Research is being focused more and more on topics and problems which companies and their environment encounter. There is a shortage of skilled researchers, especially ones trained in an academic environment where years ago entrepreneurship gained its reputation (USA, Sweden, etc.). In addition, no adequate financial infrastructure for supporting major research projects has yet been developed.

Slovenian researchers of entrepreneurship and small business also lack the appropriate data base infrastructure needed for thorough studies. The State needs to provide

elementary statistical data mechanisms, so that in future researchers will not have to struggle to obtain very basic statistical data.

Slovenian researchers of entrepreneurship and small business should more intensively go for joint European research projects and join the European research area with compatible research themes, approaches and methodologies. Looking from this prospective we see some shifts that should be encouraged within Slovenian entrepreneurship and SME research (Figure 2). It should be more quantitative and more focused on company, opportunity and resources, as well as on the growth and harvesting phases of the entrepreneurial life cycle.

Figure 2: Shifts needed in entrepreneurship and SME research in Slovenia

FROM	TO
Entrepreneur and his/her characteristics	Opportunity and resources
Environment	Managing the company
Macroeconomics	Microeconomics
Start-up phases	Growth and harvesting phases
Qualitative	Quantitative
National	International

There is also a need to carry out more research with international teams of researchers so as to gain the benefits of the two-way flow of information, research skills and methodology development. Research findings should be more extensively reported at international conferences and published in international journals.

REFERENCES

- Banič, I., Faleskini, R. (1991), Nove oblike podjetniških struktur in problemi prilagajanja našega gospodarstva (New Forms of Entrepreneurial Structures and the Problems of Adaptation of Our Economics), *Slovenska ekonomska revija*, Vol. 42, No. 5a, pp. 337-348.
- Baumol, W. (1993), Master Thesis, Faculty for Social Sciences, University of Ljubljana. *Entrepreneurship, Management and the Structure of Payoffs*, MIT Press, Cambridge.
- Belak, J., et al., eds. (1993), *Podjetništvo, politika podjetja in management (Entrepreneurship, Business Policy and Management)*, Založba Obzorja, Maribor.
- Berginc, J. (1993), *Notranje podjetništvo kot način preoblikovanja podjetij (Intrapreneurship as the Mode for the Restructuring of Enterprises)*, Master Thesis, Faculty for Social Sciences, University of Ljubljana.
- Birch, D. (1987), *Job Creation in America: How Our Smallest Companies Put the Most People to Work*, The Free Press, New York.
- Cvetko, A. (1991), *Nadnacionalni vidiki podjetništva (National Aspects of Entrepreneurship)*, Master Thesis, Faculty for Sociology, Political Sciences and Journalism, University of Ljubljana.
- Gajšek-Krajnc, A. (1993), *Značilnosti uspešnega podjetnika (Characteristics of a Successful Entrepreneur)*, Faculty for Social Sciences, Master Thesis of Ljubljana.
- Hrastelj, T., et al., eds. (1992), *Podjetništvo v novih razmerah poslovanja (Entrepreneurship in New Conditions)*, Gospodarski vestnik, Ljubljana.

11. Kao, J. (1989), *Entrepreneurship, Creativity and Organization*, Prentice Hall, Englewood Cliffs.
12. Kirchoff, B. (1994), *Entrepreneurship and Dynamic Capitalism: The Economics of Business Firm Formation and Growth*, Praeger, Westport.
13. Kline, M. (1993), *Osebnostne in situacijske determinante podjetniškega vedenja (Personal and Situational Determinants of Entrepreneurial Behaviour)*, Doctoral dissertation, Faculty of Arts, University of Ljubljana.
14. Kos, M. (1994), Vloga malih zasebnih podjetij, bistvo prestrukturiranja Slovenije (The Role of Small-Sized Private Companies, the Essence of Restructuring in Slovenia), *Teorija in praksa*, Vol. 31, No. 9-10, pp. 864-868.
15. Mulej, M., Rebemik, M., Kajzer, Š. (1990), Centri, podjetništvo in notranje podjetništvo (Centres, Entrepreneurship and Intrapreneurship), *Naše gospodarstvo*, Vol. 35, No. 1-2, pp. 68-75.
16. Petrin, T. (1993), Industrijska politika in podjetništvo (Industrial Policy and Entrepreneurship), *Slovenska ekonomska revija*, Vol. 44, No. 1-2, pp. 140-148.
17. Pšeničny, V. (1992), Kako narediti Slovenijo bogato? (How to Make Slovenia Rich?), *Slovenska ekonomska revija*, Vol. 43, No. 3, pp. 297-311.
18. Pučko, D. (1995), On Strategic Behaviour of Small and Medium Businesses in Slovenia, *Journal of European Business Education*, Vol. 4, No. 2, pp. 57-72.
19. Rebernik, M. (1992), De-memorizing And Changing Of Mental Models, in Rebernik, M. (ed.), *Preliminary Proceedings of the 1st International Meeting on Linking Systems Thinking and Total Quality Management*, University of Maribor, Faculty of Economics and Business, December 10-12, pp. 45-55.
20. Rondstadt, R. (1984), *Entrepreneurship*, Lord Publishing, Dover.
21. Rumbak, A. (1995), *Kako je ženski v podjetništvu? (What it is Like for a Woman to be Entrepreneur?)*, Master Thesis, Faculty of Economics, University of Ljubljana.
22. Schultz, T. (1990), *Restoring Economic Equilibrium: Human Capital in the Modernizing Economics*, 1st ed., Basil Blackwell, Oxford, England.
23. Setnikar-Cankar, S. (1993), *Vloga in pomen podjetništva kot dejavnika gospodarskega razvoja (The Role and Importance of Entrepreneurship as a Factor of Economic Development)*, Doctoral dissertation, Faculty of Economics, University of Ljubljana.
24. Stevenson, H., Roberts, M., Grousbeck, I. (1989), *New Business Ventures and the Entrepreneur*, 3rd ed., Irwin, Homewood, Boston.
25. Timmons, J. (1994), *New Venture Creation: Entrepreneurship for the 21st Century*, Irwin, Homewood, Boston.
26. Tyson, L., Petrin, T., Rogers, F. (1994), Promoting Entrepreneurship in Eastern Europe, *Small Business Economics*, Vol. 6., No. 3, pp. 165-184.
27. Vahčić, A., Glas, M. (1995), Vloga podjetništva pri premagovanju razlik v gospodarski razvitosti v državah v razvoju (The Role of Entrepreneurship in Overcoming the Differences in Economic Growth in Developing Countries), *Slovenska ekonomska revija*, Vol. 46, No. 4, pp. 295-311.
28. Vahčić, A. (1993), Podpora dinamičnemu podjetništvu v državah srednje in vzhodne Evrope (Dynamic Entrepreneurship Support in Countries of Central and Eastern Europe), *IB: Informativni bilten, revija za planiranje*, Vol. 27, No. 8-9-10, pp. 123-127.
29. Vahčić, A., Petrin, T. (1989), Financial Systems for Restructuring the Yugoslav Economics, in Kessides, C., et al. (eds.), *Financial Reforms in Socialist Economies*, EDI of the World Bank and European University Institute, Florence.
30. Venture Capital and Entrepreneurship in Central and Eastern Europe (1994), *750 Central and Eastern European Dynamic Entrepreneurs Database Survey*, EFER, Amsterdam.

THE ABSORPTIVE CAPACITY OF SMEs AS A BARRIER TO REGIONAL DEVELOPMENT

Miroslav Rebernik, Tadej Krošlin and Barbara Bradáč

LAVAREN Eddy (ed.), CRIJNS Hans (ed.)
Entrepreneurship: A Driver for Sustainable growth
in a Global and Knowledge-based Environment
[book of abstracts and CD-ROM papers RENT XX]
Antwerpen; Oxford: Intersentia
Publishing year: 2006
19 pages

Summary

This paper explores absorptive capacity as a barrier to regional development. In the first part we outline concepts of absorptive capacity, unlearning and knowledge exchange. On the basis of Global Entrepreneurship Monitor (GEM) data we argue that the development of absorptive capacity in Slovenia is stagnant because of the low level of internationalization of Slovenian firms, the local market and local employment; path dependency of socialist remnants such as anti-competiveness values or egalitarianism; and a lack of internal and external activation triggers due to low innovativeness. Data from another survey displayed a very low level of cooperation between universities and SMEs. Firms do not develop their absorptive capacity, which would enable them to acquire new knowledge and adapt it to their needs.

Keywords: entrepreneurship, absorptive capacity, regional development, knowledge transfer

Introduction

This paper stands on the classical definition that an entrepreneur is a person capable of recognizing an opportunity and collecting the resources needed for its exploitation, and that economic development is crucially dependent on entrepreneurship (Acs, 2002; Barretto, 1989; Baumol, 1993; Casson, 1982; Hebert and Link, 1989; Kirzner, 1973; Leibenstein, 1968; Von Mises, 1949; Schultz, 1990; Schumpeter, 1934). We understand that the development of any region is grounded in the development of entrepreneurship, while the level of development should be measured by the overall quality of life of people in the area. One way of fostering regional development on the basis of entrepreneurship is to motivate and encourage people in the area to start their own entrepreneurial careers; another way is to stimulate existing entrepreneurs to develop their companies. We take into account the fact that the decision whether a company will grow or remain at the level

of a self-employment cell or micro business is not in the hands of government, regional authorities, municipalities or political parties. It is a decision that the leading entrepreneur or owner of the company has to take, together with his or her team.

Business has globalised, and with ever-increasing globalisation it is very important for local communities to take advantage of the key competencies and skills of local people and companies. Regional communities should cherish core skills and competencies in their locality, and, in cooperation with entrepreneurs and authorities, look for ways to remove the many barriers that hinder the achievement of excellence and capitalising on the region's strengths. Innovations that bring about new combinations of production factors are formed in established firms, as well as in the continuing appearance of new enterprises. Sources of knowledge, such as universities, play a key role in regional development but only in cases where partners in the knowledge transfer process are capable of understanding the need for new knowledge and have developed critical skills for embracing it.

The situation in the whole Central and Eastern Europe confirms that gaining the appropriate level of absorptive capacity is not a by-product. When current knowledge and required new knowledge are closely related, learning is not difficult, and an increase in absorptive capacity is almost automatic. But when there is a wide gap between current knowledge and new knowledge, individuals and organisations have to invest in it. An important part of investment is unlearning obsolete knowledge and values that impede our ability to accept new information and exploit it.

The exchange of knowledge among different agents is critical to the process of learning and creating absorptive capacity. An organisation's absorptive capacity to embrace and implement knowledge in its environment can foster or impede the transfer of knowledge. Improving absorptive capacity makes individuals and organisations more capable of recognising, accepting and exploiting new knowledge and skills. As the process runs within organisations as well as between them, we need to take into account different levels of organisational structure and routines that are embedded in them, as well as the social and economic environment of the organisation.

This paper seeks to enhance the understanding of some barriers to regional development. In this endeavour we use three intellectual scaffolds: absorptive capacity, unlearning and knowledge exchange. First, we outline the said concepts to show a small part of the complexity surrounding the regional development of a transition country lacking experiential knowledge. Second, we analyse some barriers to regional development that originate in absorptive capacity, and, finally, we discuss some implications.

Absorptive capacity

Cohen and Levinthal (1990) coined the term "absorptive capacity" to describe the observation that prior related knowledge enables a recognition of the value of new information, its assimilation and its application to commercial needs. They emphasised that "the ability to assimilate information is a function of the richness of the pre-existing knowledge structure: learning is cumulative, and learning performance is greatest when

the object of learning is related to what is already known” (Cohen and Levinthal, 1990, 131). According to that, learning is more difficult when individuals and organisations are faced with an unfamiliar situation, which was a major case with post-Communist European countries. After the fall of the Berlin Wall and the break-up of Yugoslavia, new states were established and the transition from Communism to capitalism took place. Countries, organisations and individuals were faced with many new areas of knowledge previously unknown to them: democracy, the concept of capital and profit, privately distributed property rights, entrepreneurship etc.

Determinants of absorptive capacity as grouped by Schmidt (2005) are:

- R&D activities, measured by items such as R&D expenditure, continuity of R&D activities or the existence of R&D labs;
- Related prior knowledge and skills, where one should be alert on the path to dependency and the cumulative nature of absorptive capacity, employees' level of education and the presence of “gate keepers” who are capable of creating a common language needed for mutual understanding in the process of knowledge transfer;
- Organisational structure and human resource management practices that enable motivation and the transfer of knowledge among individuals and across organisations.

Absorptive capacity is a dynamic capability that influences the firm's competitive advantage (Zahra and George, 2002). Absorptive capacity differs between *potential* absorptive capacity and *realised* absorptive capacity. The first deals with the acquisition and assimilation of knowledge, and the second is concerned with its transformation and exploitation. *Acquisition* is a firm's capability to identify and acquire externally generated knowledge that is critical to its operations. *Assimilation* refers to the firm's routines and processes that allow understanding and process the information obtained from external sources. *Transformation* indicates the firm's capability to develop and refine the routines that facilitate combining existing knowledge and newly acquired and assimilated knowledge. *Exploitation* is an organisational capability and is based on the routines that allow firms to upgrade existing competencies or to create new ones by incorporating acquired and transformed knowledge into its operations. It reflects a firm's ability to harvest and incorporate knowledge into its operations. The outcomes of systematic exploitation routines are the persistent creation of new goods, systems, processes, knowledge, or new organisational forms (Zahra and George, 2002).

Learning and unlearning

Many definitions of organisational learning and knowledge sharing exist (Hedberg, 1984; Cummings, 2003; Argyris, 2004; Esterby-Smith and Lyles, 2005). According to the definition that “an organisation learns in only two ways: (a) by the learning of its members, or (b) by ingesting new members who have knowledge the organisation didn't previously have” (Simon, 1991, p. 125) we should also pay attention to the individual level, as the learning and unlearning takes place at both levels.

If, according to Johanson and Vahlne (1977), knowledge is stored in the decision-making system, when decision-makers leave the company, that knowledge is lost. During the period 1990-1995 many new companies in Slovenia were formed by managers who had

“dropped out” of large and medium-sized companies. As many managers of previously (big) socialist companies usually formed their own companies as sole proprietorships, the experiential knowledge embedded in organisational routines has been lost. Large and medium-sized companies have lost the expertise gained in international markets, while newly formed (very often one-man band) companies have not had the resources to globalise. They tried to innovate in order to gain competitive advantage, but faced very low success rates on innovation projects (Krošlin, 2004). They may have had the desire, but not the capital and the people.

The hierarchy of routines (Nelson and Winter, 1982) would lead us to conclude that changing the dominant beliefs of top managers could be the answer. But here again, we enter the twilight zone of transitional economies, where institutional arrangements are not built up yet, rules of the game and the structures of payoffs (Baumol, 1990) are not determined, many agency problems exist, false cooperation (Rebernik, 1999) is taking place, and the requisite holism is missing (Rebernik and Mulej, 2000). For unlearning to take place intentional forgetting of some parts of existing individual and organisational knowledge is needed. A firm must “disorganise” some part of its knowledge store (Holan, Phillips and Lawrence, 2004). Similar disorganisation must take place also at individual level.

Transitional economies, such as that of Slovenia, lack, to a greater extent than mature market economies, each type of experiential knowledge: business, institutional and knowledge on how to internationalise. None of them can be obtained without costs, and they are hard to plan in advance (Eriksson, Johanson and Majkgard, 1997). Business knowledge, i.e. the knowledge about customers, competitors and foreign markets, is similar to the knowledge the firm doing business at domestic markets is already exploiting. Institutional knowledge is much harder to obtain. It comprises knowledge of government and institutional frameworks, rules, norms and values in the targeted markets. The third type of knowledge is that related to the process of internationalisation, and is very firm-specific, embedded in the routines, norms and structure of the firm (Blomstermo, Eriksson and Sharma, 2004).

Understanding organisations as information-processing systems, where experiential knowledge is stored in organisational memory (Christensen et al., 2004) brings an important caveat for transitional countries like Slovenia. During their “previous life” in socialism/Communism these countries accumulated much experiential knowledge; this knowledge has grown obsolete and should be disposed of because it has become useless and impedes the accumulation of new knowledge and the creation of absorptive capacity. Any understanding involves both learning new knowledge and discarding obsolete and/or misleading knowledge. Sometimes the unlearning may be as important as the acquisition of new knowledge (Hedberg, 1984; Sinkula, 2002). Nevertheless, until recently, not much research has been devoted to the area of unlearning, even though the presence of certain knowledge may constrain learning or even encourages ineffective learning (Cummings, 2003).

Regional development and knowledge exchange

In general, studies on absorptive capacity by foreign researchers show that the major influences on absorptive capacity come from: (1) R&D expenditure, (2) internal and external

knowledge base, (3) internal and external cooperation (Waalkens et al., 2004). Escribano et al. (2005) examined the impact of absorptive capacity on innovation performance and concluded that firms with higher absorptive capacity were more innovative independent. Many determinants influencing absorptive capacity (Waalkens et al., 2004; Escribano et al., 2005; Schmidt, 2005) are at the same time determinants of innovation potential (Krošlin, 2004). Some authors (Lane, Lubatkin, 1998; Ahuja, Katila, 2001) found that for the effective transfer of knowledge, partners have to equilibrate similarities and diversities in their knowledge base. Zahra and George (2002) observed that the concept of absorptive capacity is often confused with its outcome. Thursby and Thursby (2002) examined the role of faculties in university-industry licensing and concluded that absorptive capacity is important for monitoring when there is no license, but that license terms can deal with the moral hazard problem. As R&D activities are central to the concept of absorptive capacity, the literature typically views R&D partnerships and in-house R&D as complementary strategies, rather than alternatives (Scott, 2002). A research partnership, therefore, can be seen as an alternative source of absorptive capacity. Veugelers and Cassiman (2005) noted that in Europe, a gap exists between high scientific performance and industrial competitiveness. However, in examining the specific characteristics of scientific knowledge, they perceived that R&D cooperation between universities and industry is characterised by high uncertainty, high information asymmetries between partners, and high transaction costs for knowledge exchange requiring the presence of absorptive capacity, high spillovers to other market actors (i.e. a low level of appropriation of benefits from the knowledge acquired), and restrictions for financing knowledge production and exchange activities due to risk-averse and short-term oriented financial markets. Adams, Chiang and Jensen (2000) and Dutta and Weiss (1997) reported the importance of firm size and of a company's own R&D for successful cooperation. On the other hand, Mohnen and Hoareau (2002) did not find R&D intensity to be significantly related to cooperation with universities.

Surveys in Slovenia show poor cooperation between SMEs and universities (Bartlett and Bukvic, 2005; Rebernik et al., 2005, 2006). One of the key problems in connecting universities and SMEs in Slovenia is the lack of technological development of small enterprises. In addition, they have a short research horizon and often lack the knowledge needed for cooperation. Furthermore, academic staff are not particularly interested in cooperating with smaller enterprises, as they generate little or almost no income. Institutional, cultural and infrastructural barriers can all be identified as explanations for the lack of success in knowledge transfer (Rebernik, 2003).

Among *institutional barriers*, the way the Slovenian university system functions is the most influential. It does not direct researchers and staff into the commercialisation of research. Universities are still predominately pedagogical, rather than research institutions. Academics mainly need to teach and research to meet their obligations. To gain promotion and tenure, teaching staff need to publish papers and gain citations, rather than prove the practical applicability of their research.

Considering *cultural barriers*, the prevailing mode of thinking at universities is still mainly administrative. The transfer of innovation into entrepreneurial practice is a

complex process that needs to be dealt with as a whole. The complexity of this process is even greater in the university environment, where public and private interests are combined. Most innovations that can be commercialised come from technical faculties where little business knowledge is available, and where the creators of innovation rarely have any entrepreneurial knowledge or experience. Successful transfer of knowledge can only be made possible if a university is capable of promoting creative teamwork between technical and business knowledge, and establishes cooperation with successful companies, investors and various support institutions. The prevailing system of values at institutions of higher education in Slovenia is not inclined towards entrepreneurship. The peculiarities of Slovenian academic culture, which often sees involvement in commercial tasks as a violation of consecrated research work, makes the transfer and commercialisation of technology even more difficult.

Among *infrastructural barriers* for technology transfer is the relatively underdeveloped economic and business environment surrounding universities, together with a lack of efficient promotional mechanisms and schemes. Universities have no supporting mechanisms to facilitate the weak cooperation that exists between universities and business. The practice of setting up companies stemming from the cooperation between a university and its partners is not valued in Slovenia. None of the Slovenian universities has yet developed business incubators that would facilitate the transfer of research directly into entrepreneurial practice. The entrepreneurial scope of Slovenian universities and research institutes is still limited to single cooperation agreements and rare joint projects with established (larger) firms.

The Slovenian Entrepreneurship Observatory (Rebernik et al., 2006a) and Regional Entrepreneurship Monitor and cultural norms (Rebernik et al., 2006b) have examined cooperation among SMEs in Slovenia and have reported on the low level of cooperation among SMEs. The first research investigated cooperation between SMEs and large companies in Slovenia and found that almost 60% of the respondents did not have any cooperation with large companies, except for buying their products or services. However, the same study found that cooperation has a positive impact on growth aspirations. Among the reasons for cooperation the most frequently used are improvement of business processes (54%) and joint product development (49%). In the same study, the SMEs stated that they did not have enough training and qualifying support. Forty seven percent of SME's are in favour of acquiring knowledge from large companies and 50% are in favour of accessing new technologies through cooperation.

Methodology

The hypothesis that absorptive capacity may be a barrier to regional development was examined in the light of the evidence from two surveys. The first is the Global Entrepreneurship Monitor, in which Slovenia has participated since 2002, and the second is the CrossboR&D 2006 survey in the framework of the project INTERREG III A, Neighbourhood Program Slovenia, Hungary, Croatia.

The Global Entrepreneurship Monitor (GEM) is a large-scale research programme launched in 1997 by leading researchers in the field of entrepreneurship at the London Business School (United Kingdom) and Babson College (United States). In subsequent years a consortium of national teams in participating countries was created and Slovenia joined it in 2002. The methodology has been developed and augmented over the past eight years. GEM seeks to uncover the links between entrepreneurship and economic growth and development. The main aim of the GEM is to provide an annual assessment of entrepreneurial activity across countries. We study numerous factors that potentially affect differences in entrepreneurship rates, and attempt to provide new insights into the extent and significance of the entrepreneurial process in order to better understand how the creation of an appropriate supportive environment can enhance entrepreneurship.

The main aim of the GEM is to identify differences in the level of entrepreneurial activity in different countries and their relationship with national economic growth. It also explores why some countries have a higher level of entrepreneurial activity than others and what can be done to raise the level of national entrepreneurial activity. The basic GEM model is based on the notion that the specific circumstances for conducting entrepreneurial activity in an individual country affect the size and scope of entrepreneurship, which in turn affects economic growth and development. The entrepreneurial process is heavily affected by the entrepreneurial opportunities available to people, and their capacity to pursue new business ventures. All of this affects business churning in the private sector of the economy, where new ventures and firms are born, contributing in turn to economic growth. The model thus assumes that entrepreneurship is a driver of economic growth. In the context of social, cultural, political and economic circumstances in a country, general national framework conditions and entrepreneurial framework conditions affect entrepreneurial activity, which results in economic growth. The linkages between entrepreneurial processes and growth can only be revealed in a global context given data from a large number of countries.

The survey and its methodology are described in detail in Reynolds et al. (2005); global and national surveys are available at www.gemconsortium.org. GEM research employs four basic data collection mechanisms. Three of them provide the primary data collected especially for the GEM, which are then combined with data from secondary sources. The data are obtained from a survey of a sample of the adult population, personal interviews with national experts on particular sets of entrepreneurial framework conditions; a detailed questionnaire completed by national experts and established international sources of standardised data.

The second database was created within the CrossboR&D project, started in 2005 at a cross-border network of three university centres in Maribor (Slovenia), Osijek (Croatia) and Pecs (Hungary). Its main objective was to determine the willingness and ability of SMEs to cooperate with universities and to adopt new knowledge. The project consists of two main parts. In the first part we employed structured interviews to collect data from research institutes and laboratories inside faculties in all three university centres. The second part was focused on the companies. We developed and applied the methodology

to measure the absorptive capacity of SMEs. A survey was conducted among SMEs from the North East region of Slovenia and included all NACE classification industries.

The questionnaires were sent by post and 84 answers from firms located in North East Slovenia were received. The response rate was 4,2%. The same questionnaire was translated into Croatian and Hungarian and also sent by post. While preparing this paper only Slovenian data were available; later on this data will be complemented with data from Croatian and Hungarian partners (approximate sample size 350), and balance sheet and income statement data will be added.

Results

When talking about absorptive capacity Zahra and George (2002: 193-194) made some propositions we want to consider when thinking about barriers to regional development:

- *The impact of external sources and knowledge complementarity*: the greater a firm's exposure to diverse and complementary external sources of knowledge, the greater the opportunity is for the firm to develop its potential absorptive capacity.
- *Experience*: experience will influence the development of a firm's potential absorptive capacity. Specifically, experience influences the locus of search and the development of path-dependent capabilities of acquisition and assimilation of externally generated knowledge.
- *Activation triggers*: activation triggers will influence the relationship between the source of knowledge and experience and potential absorptive capacity. Specifically, the source of an activation trigger will influence the locus of search for external sources of knowledge while the intensity of the trigger will influence investments in developing the requisite acquisition and assimilation capabilities (Zahra and George, 2002).

Based on the GEM data for Slovenia we hypothesise that the development of entrepreneurial absorptive capacity in Slovenia is very likely stagnant because of (a) the low level of internationalisation of Slovenian firms, the local market and local employment; (b) path dependency of socialist remnants such as anti-competitiveness values or egalitarianism; and (c) a lack of internal and external activation triggers due to low innovativeness.

Low level of internationalisation of Slovenian firms, local market and local employment

Looking at organisational learning in Simon's (1991) way and understanding internationalisation as a learning process, one can expect a company to internationalise if (a) individuals are willing and capable of learning, or (b) where a company is open and capable of employing diverse people. Due to the short entrepreneurship history of Slovenian companies, there are not many established routines that would facilitate learning for its employees, and as employment is local, the process of learning is suppressed.

Visiting exhibitions and fairs, reading professional literature and organising meetings for the exchange of information are among the most important methods enterprises use to increase the level of knowledge, experience and skills. Between 70 and 80 per

cent of surveyed Slovenian enterprises use these methods more often than European companies do (between 30 and 60 per cent of surveyed enterprises). Both Slovenian and European large enterprises use these methods more frequently. The next important method is cooperation with advisers, which is used by 59 per cent of Slovenian SMEs and 33 per cent of European SMEs (Rus and Krošlin, 2004).

Contrary to this good news on the learning interests of Slovenian SMEs, other indicators display the low exposure of Slovenian companies to international competition. We gained an insight into the international orientation of the entrepreneurs within GEM research (Rebernik et al., 2006) by asking adult individuals showing entrepreneurial activity the following question: What proportion of your customers normally live outside your country? Is it more than 90%, more than 75%, more than 50%, more than 25%, more than 10%, or 10% or less? As can be seen from Table 1 the great majority of Slovenian companies have a small share of outside customers, and 34% of established companies and 41.4% of new companies have no exposure to the international business environment, as they have only domestic customers.

Table 1: Exposure to the international environment

Percentage of customers living outside country	Nascent (up to 3 months)	New (from 3 to 42 months)	Established (older than 42 months)
0	20.2	41.4	34
from 1 to 24%	38.2	28.3	40.2
from 25 to 74%	15.4	18.1	14.9
from 75 to 100%	17.3	5.5	9.7
no answer	8.9	6.6	1.2

Path dependency of socialist remnants such as anti-competitiveness values or egalitarianism

We gained some insight into shared egalitarian values in Slovene society within GEM research (Rebernik et al., 2006) by asking the adults if they agreed with the statement: In your country, most people would prefer that everyone had a similar standard of living.

The results of the GEM research show that in 2004, 83.34% of adults in Slovenia agreed with this statement, which ranked Slovenia at the top among the European countries. In 2005 the research reveals a much lower percentage – only 49.64%. Since it is unlikely that shared norms in society change drastically in a very short time, the results should be treated with caution, and should be checked and compared with the results of similar research in 2006 and in ensuing years. However, there is no doubt something is going on in Slovene society regarding shared norms and people’s values.

As the results of the GEM research imply, Slovenia’s cultural and social norms are not particularly conducive to entrepreneurial ventures. We gained an insight into cultural and social norms as one of the entrepreneurial conditions that directly or indirectly shape conditions for the start-up and growth of new firms within GEM research by interviewing national experts. In 2005, these experts placed Slovenia 31st among 33 GEM countries, implying that the extent

to which culture supported individualism and personal independence, and the extent to which people accept the economic, social and psychological risk associated with entrepreneurship, are not especially conducive to entrepreneurial activity in Slovenia.

The experts were the most critical of the willingness of Slovenes to accept the business risk of decision-making for their own firms. This could largely be attributed to half a century of encouraging the people towards collectivism and extensive social security, although even before that Slovenes were probably not among the most entrepreneurial of nations.

Lack of internal and external activation triggers due to low innovativeness

Many sources report on the low innovativeness of Slovenian companies. Within GEM research (Rebernik et al., 2006) we asked individual adult entrepreneurs the following three questions:

- Is your product or service new and unknown to all your potential customers, to some of your potential customers, or to none of your potential customers?
- Have the technologies or procedures needed in the production of this product or service been generally available for less than one year, for one year, for five years or for more than five years?
- Right now, are there many, few, or no other businesses offering the same products or services to your potential customers?

On average, nascent Slovenian entrepreneurs are more convinced than new and established entrepreneurs that their products or services are new to all potential customers (19.5%); only 5.6% of experienced established entrepreneurs believe so. However, a serious doubt arises in relation to the correctness of the conviction by nascent Slovenian entrepreneurs regarding the newness of their products, since in the vast majority of cases they use technology which has already been available for five years or more. The percentage of new entrepreneurs who use old technology is similarly high (on average 78.5%). The greatest proportion of new technology is found in established businesses, as an average of 14% of them are convinced that they use technology which was unavailable a year ago. The GEM data cannot verify to what extent this information is accurate. If it is, then the case is concerned only with the technology that solely enables better utilisation of resources and higher production but does not involve new products, since, on average, only 5.6% of the same entrepreneurs claim their products are truly new.

On average, one fifth of nascent Slovenian entrepreneurs and 4.1% of established entrepreneurs are convinced they have no competition for their products and services. More than 60% of new and established entrepreneurs believe there are many other companies which offer the same or similar products, which coincides with the finding about the low percentage of new products. It is apparent that the introduction of new products and new technologies, together with the encouragement to transfer innovative ideas from universities and institutes into companies still remains a priority for economic policy, which would want to raise the competitiveness of the Slovenian economy.

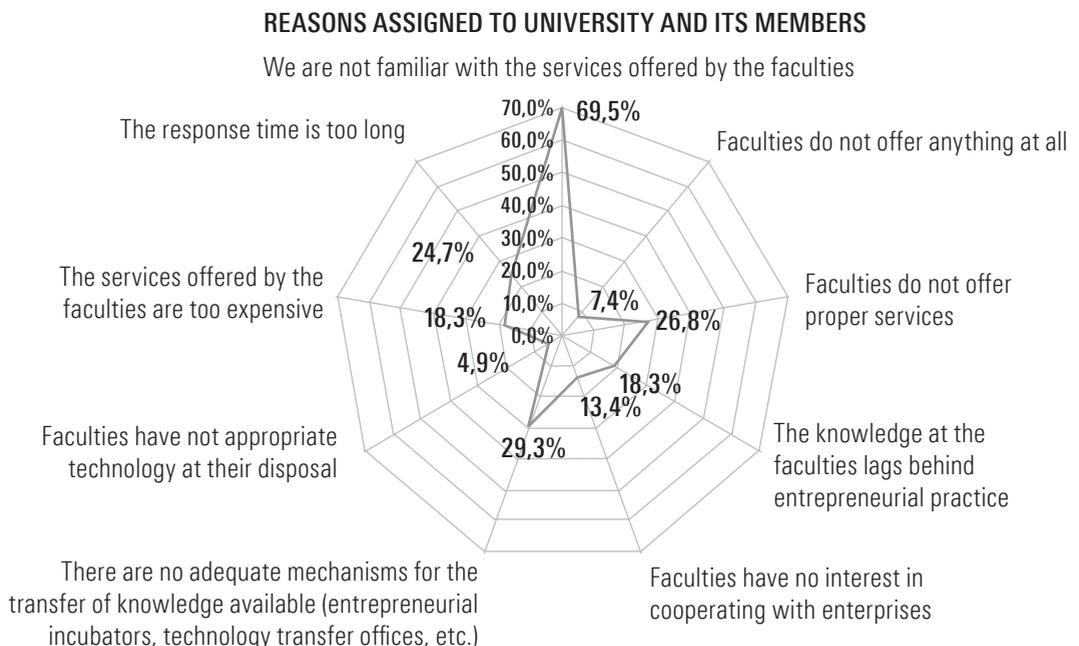
Low level of cooperation and knowledge exchange

The results from the recent CrossboR&D research project show that it is not a common practice for individuals, firms and other organisations in Slovenia to cooperate. Despite the progress the economy has made in a relatively short period of time, the picture has not changed dramatically. The shares of surveyed companies that have not cooperated during the past three years are very high: with institutes at Universities (59,2%), the Slovenian Public Agency for Entrepreneurship and Foreign Investments (57,1%), Regional Development Centres (53,8%), the Craft Chamber of Slovenia (61,3%), Technology Parks (71,1%) and the Innovation Relay Centre of Slovenia (81,3%). Obviously, firms do not use the services and exploit opportunities that support institutions presumably offer. Only 6,6% of firms frequently cooperated with universities, and only 9,2% intend to do so. Firms still lack knowledge about cooperation, which is directly correlated to their absorptive capacity.

Only two out of 13 schools within Maribor University established at least one type of formal or informal cooperation with more than 10% of surveyed firms. The most important type of cooperation is having contact with an individual at university (43% of all cooperation), followed by informal individual cooperation (25%). Formal individual cooperation (18%) and cooperation with an institute within the faculty (14%) are much less frequent. Results show that the University of Maribor does not have appropriate mechanisms in place to foster formal, frequent and long-term cooperation with firms.

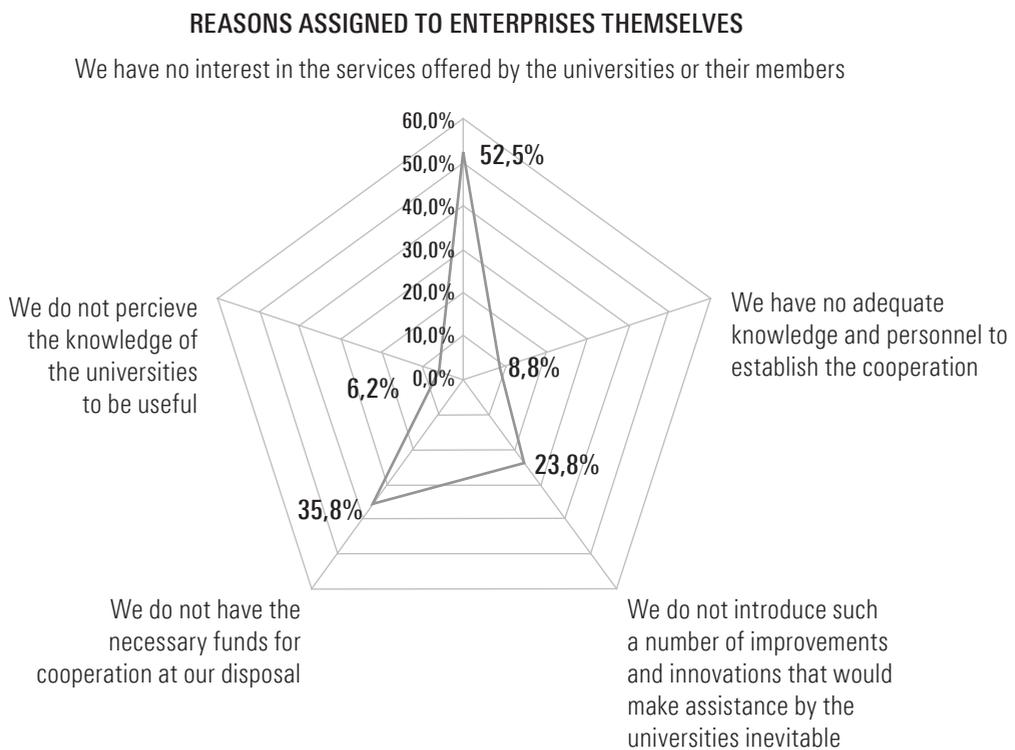
Despite the fact that the majority of companies surveyed self-evaluated their absorptive capacity as good (58%) or even very good (33%), it is clear reasons for the low level of cooperation lies with both partners, the university as well as firms.

Figure 1: Reasons assigned to university and its members



The most frequently assigned reason for low level of cooperation is the lack of knowledge about the services offered by the faculties. Universities are still primarily educational institutions financed by the state and until now have not had to compete on the market. Therefore, they lack the knowledge and infrastructure for the successful marketing of their services. At the same time, firms see that there are no adequate mechanisms for the transfer of knowledge, and that the response time is too long. The firms also perceive that the knowledge universities can supply lags behind entrepreneurial practice. Companies are not satisfied with educational programs, some technical experts' reports, and cooperation with research institutions in accomplishing different projects and even consulting.

Figure 2: Reasons assigned to enterprises themselves



Due to previously discussed reasons, companies show a lack of interest in the services of a university. At the same time they admit that they do not have the necessary funds for cooperation and that they do not introduce a lot of innovations. But they do not admit that they do not have appropriate knowledge and the personnel to establish high-quality cooperation.

Results confirm that many institutional and infrastructural barriers still exist in Slovenia, which, in combination with the remaining cultural barriers, presents a difficult task for both sides to develop absorptive capacity and to turn potential cooperation to their competitive advantage.

Conclusions

Even though business has globalised, many sources of competitive advantage derive from local environment. In times of continuous change it is crucial for the competitiveness of firms that they possess relevant new knowledge, and use it for innovation and application to their business routines. To do that, they first have to be aware that some of their knowledge, on which their successful business is based, becomes obsolete after a while and sometimes even harmful for their future success. They have to go through a deliberate unlearning process, recognise the need to gather new information, adapt it to their needs, transform it and spread it across the organisation. Absorptive capacity is a skill that has to be learned and maintained. Only this way will they be able to take advantage of the competencies and endowments of the local environment. Of course, this will occur if some external economies of scale in the local environment are available, and if support institutions have something useful to offer.

Our research confirmed that for Slovenian firms' cooperation with different partners, which is so important for the development and transfer of knowledge, is still not an ordinary way of doing business. Small firms rarely cooperate with medium-sized or big companies. They do not take advantage of the services support institutions provide. Their internationalisation is poor. Especially weak is the cooperation between firms and universities, which, by definition, should be the main source of new knowledge in the community. The reasons can be found on both sides.

Universities and their members lack formal mechanisms to transfer their knowledge and inventions. Even the existing low level of cooperation is based mainly on individuals and is informal. Many surveyed companies reported that they are not aware of the services faculties offer and even believe that faculties and their institutes have nothing to offer, or that their knowledge is obsolete.

But the barriers to cooperating and effective knowledge transfer are not to be searched for only at universities. Firms do not develop their absorptive capacity, which will enable them to access new knowledge and adapt it to their needs. They lack the funds, people, time and knowledge to begin cooperation and embrace it continuously in the long term.

The development of absorptive capacity is obviously not an easy task. Institutional, infrastructural and cultural barriers remain high. If both partners would invest in the development of high-quality cooperation, they would improve the services offered, they would both experience mutual satisfaction, and would cherish an interest in cooperation, which is obviously missing. Universities in CEE never before faced such competition for students, funds, R&D partners, investors, etc. Their long-term survival and growth, therefore, depends on the development of new services for new target groups, tailored to their needs, especially intensive marketing needs. This is the knowledge they currently do not possess. They are trying to teach others, but fail to learn themselves.

REFERENCES

1. Acs, J. Z. (2002): *Innovation and the growth of cities*. Edward Elgar, Cheltenham.
2. Adams, J., Chiang E., Jensen, J. (2000): The influence of federal laboratory R&D on industrial research, *NBER working paper 7612*.
3. Ahuja, G., Katila, R. (2001): Technological acquisition and the innovation performance of acquiring firms: a longitudinal study, *Strategic Management Journal*, p. 197-220.
4. Argyris, C. (2004): *On organizational learning, 2nd ed.*, reprinted, Malden, US: Blackwell.
5. Barreto, H. (1989): *The Entrepreneur in Microeconomic Theory: Disappearance and Explanation*. Routledge, New York.
6. Bartlett, W., Bukvič, V. (2005): *The promotion of innovation in Slovenia through knowledge transfer from higher education institutions to SMEs*, Working paper No. 57.
7. Baumol, W. (1990): Entrepreneurship: Productive, Unproductive, and Destructive, *Journal of Political Economy*, Vol. 98, No. 5.
8. Blomstermo, A., Eriksson, K., Sharma, D. (2004): Domestic Experience in the Internationalization Process, *Journal of International Entrepreneurship 2*, p. 239-258.
9. Casson, M. (1982): *The Entrepreneur: An Economic Theory*. Barnes and Noble, Totova.
10. Christensen, P. R., Andersen, P. H., Damgaard, T., Munksgaard, K. B. (2004): *Internationalization of Sourcing and Knowledge Development: An Organizational Routine Perspective*; Paper presented at LOK Research Conference, December 1-2, 2003, Middelfart.
11. Cohen, W. M., Levinthal, D. A. (1990): Absorptive capacity: A New Perspective on Learning and Innovation, *Administrative Science Quarterly*, Vol. 35, No. 1, p. 128-152.
12. Cummings, J. (2003): *Knowledge Sharing: A review of the literature*, World Bank OED, available online: [http://lnweb18.worldbank.org/oed/oeddoclib.nsf/DocUNIDViewForJavaSearch/D9E389E7414BE9DE85256DC600572CA0/\\$file/knowledge_eval_literature_review.pdf](http://lnweb18.worldbank.org/oed/oeddoclib.nsf/DocUNIDViewForJavaSearch/D9E389E7414BE9DE85256DC600572CA0/$file/knowledge_eval_literature_review.pdf)
13. Dutta, S., Weiss, A. (1997): The relationship between a firm's level of technological innovativeness and its pattern of partnership agreements, *Management Science*, p. 343-356.
14. Eriksson, K., Johanson, J., Majkgard, A. (1997): Experiential Knowledge and Cost in the Internationalization Process, *Journal of International Business Studies*, Vol. 28, No. 2, p. 337-360.
15. Escribano, A., Fosfuri, A., Tribo, J. A. (2005): *Managing knowledge spillovers: the impact of absorptive capacity on innovation performance*, available online: www.eco.uc3m.es/temp/alvaroe/IJIO_EFT2005.pdf
16. Hebert, R., Link, A. (1989): In Search of the Meaning of Entrepreneurship, *Small Business Economics*, Vol. 1.
17. Holan, P. M., Phillips, N., Lawrence, T. B. (2004): Managing Organizational Forgetting, *MIT Sloan Management Review*, Winter 2004, Vol. 45, No. 2.
18. Johanson, J., Vahlne, J-E. (1977): The Internationalisation Process of the Firm - A Model of Knowledge Development and Increasing Market Commitment, *Journal of International Business Studies*, Vol. 8, p. 23-32.
19. Kirzner, I. (1973): *Competition and Entrepreneurship*. The University of Chicago Press, Chicago.
20. Krošlin, T. (2004): *Vpliv dejavnikov invencijsko-inovacijskega potenciala na uspešnost podjetij*. Univerza v Mariboru, Ekonomsko-poslovna fakulteta.
21. Lane, P. J., Lubatkin, M. (1998): Relative absorptive capacity and interorganizational learning, *Strategic Management Journal*, Vol. 19, p. 461-477.

22. Leibenstein, H. (1968): Entrepreneurship and Development, *American Economic Review, Papers and Proceedings*, Vol. 58, May.
23. Mohnen, P., Hoareau C. (2002): What type of enterprises forges close links with universities and government labs? Evidence from CIS2, *Managerial and Decision Economics*.
24. Nelson R. R., Winter S. G. (1982): *An evolutionary theory of economic change*. Harvard University Press, Cambridge.
25. Rebernik, M. (1999): Resources, opportunities and cooperation; in George E. Lasker (eds), *Advances in support systems research*. Vol. 5, Decision support methodology for human systems management and its applications in economic and commerce, Windsor, Canada: The International Institute for Advanced Studies in Systems Research and Cybernetics.
26. Rebernik, M., Mulej, M. (2000): Requisite holism, isolating mechanisms and Entrepreneurship, *Kybernetes*, Vol. 29, No. 9/10, p. 1126-1140.
27. Rebernik, M., P. Tominc, P., Pušnik, K. (2005): *Global Entrepreneurship Monitor Slovenia 2004: Podjetništvo na prehodu*; Maribor, Slovenia: Faculty Economics and Business, University of Maribor.
28. Rebernik, M., Tominc, P., Duh, M., Rus, M., Krošlin, T., Bradač, B., Močnik, D., Pušnik, K. (2006a): *Slovenski podjetniški observatorij 2005*. IPMMP, Ekonomsko-poslovna fakulteta: Maribor.
29. Rebernik, M., Pušnik, K., Tominc, P., Bradač, B. (2006b): *Regionalni podjetniški monitor in družbene vrednote*. IPMMP, Ekonomsko-poslovna fakulteta: Maribor.
30. Rebernik, M., P. Tominc, P., Pušnik, K. (2006c): *Global Entrepreneurship Monitor Slovenia 2005: Podjetništvo med željami in stvarnostjo*; Maribor, Slovenia: Faculty Economics and Business, University of Maribor.
31. Schmidt, T. (2005): *What determines absorptive capacity*, Paper presented at the DRUID Tenth Anniversary Summer Conference 2005 on Dynamics of industry and innovation: organizations, networks and systems, Copenhagen, Denmark, June 27-29, 2005.
32. Schultz, T. (1990): *Restoring Economic Equilibrium: Human Capital in Modernizing Economy*. Basil Blackwell, Cambridge.
33. Schumpeter, J. (1934): *The Theory of Economic Development*. Harvard University Press, Cambridge.
34. Scott, J. (2003): Absorptive Capacity and the Efficiency of Research Partnerships, *Technology Analysis and Strategic Management*, Vol. 15, No. 2, p. 247-254.
35. Sinkula, J. M. (2002): Market-based success, organizational routines, and unlearning. *Journal of Business and Industrial Marketing*, Vol. 17, No. 4, p. 253-269.
36. Thursby, J., Thursby, M. (2002): Who is selling the Ivory Tower? Sources of Growth in University Licensing, *Management Science*, 48, p. 90-104.
37. Veugelers, R., Cassiman, B. (2005): R&D cooperation between firms and universities: some empirical evidence from Belgian manufacturing. *International Journal of Industrial Organization*, Vol. 23, No. 5/6, p. 355-379.
38. Von Mises, L. (1949): *Human Action: A Treatise on Economics*. Yale University Press, New Haven.
39. Waalkens, J., Jorna, R., Postma, T. (2004): *Learning of SMEs in networks: the role of Absorptive capacity*, available online: www.ebric.info/kuvat/2019_04p.pdf
40. Zahra, S. A., George, G. (2002): Absorptive Capacity: A Review, Reconceptualization, and Extension, *Academy of Management Review*, Vol. 27, p. 185-203.

FOSTERING INNOVATION BY UNLEARNING TACIT KNOWLEDGE

Miroslav Rebernik and Karin Širec

Kybernetes

[invited paper]

Vol. 36 No. 3/4, 2007

pp. 406-419

Emerald Group Publishing Limited

ISSN 0368-492X

Abstract

Purpose: The aim of this paper is to investigate the problems of managing tacit knowledge and the importance of unlearning it. As the main problem of managing tacit knowledge lies in the fact that it escapes observation and measurement, an adequate framework that would make some dimensions of tacit knowledge visible has to be developed.

Design/methodology/approach: On the basis of literature surveys the authors discuss several types of knowledge and issues related to sharing, learning and, most importantly, unlearning obsolete tacit knowledge dimensions.

Findings: To overcome the perpetual elusiveness of tacit knowledge we present a framework that could help highlight dimensions of tacit knowledge that can be mobilized and observed through the manifestation of different behaviour. It is partly possible to make explicit some dimensions of tacit knowledge that not only contribute to successful sharing and mutual learning, but also enable the identification of those parts of knowledge that hinder innovation and should be unlearned. The better we understand the process of creating and using new knowledge and discarding obsolete knowledge, the more likely it is that organizations will foster innovative behaviour in organizations.

Originality/value: Introduced insight is important in understanding the importance of the distinctive requirements of knowledge management related to managing tacit dimensions. In the turbulent and ever-changing business environment, tacit knowledge dimensions grow obsolete very rapidly and hinder innovation processes, so ways of un-learning this obsolete knowledge have to be found.

Keywords: cybernetics, innovation, knowledge management

Paper type: Research paper

Introduction

The development of “hypercompetition” (D’Aveni, 1994) and shortened product lifecycles has reduced the degree to which much special knowledge can provide companies with a sustained competitive advantage. On the one hand, companies are increasingly realizing that their knowledge base is the basis of their competitive advantage (Svelby, 1997). On the other hand, they realize that innovation is paramount to sustain these advantages. To be prepared for new business opportunities, a company must permanently innovate and change its resources, so that new resources will be adequate for the exploitation of new business opportunities. Schumpeter (1934) called this evolutionary process creative destruction.

In knowledge society aimed at sustainable development, the exchange of knowledge among different agents is of crucial importance. To embrace incoming knowledge and use it productively, a critical mass of knowledge and skills has to be present already in the organization. Without an appropriate knowledge base, new knowledge cannot be absorbed. In the absorption process learning – and un-learning – takes place. Learning and un-learning is continually taking place in all knowledge areas and with all types of knowledge, which makes the phenomena very complex and hard to comprehend, especially because the processes are mutually dependent on social, cultural, economic and political contexts, which differ from country to country. The better we understand the process of creating and using knowledge, the more likely organizations will foster innovative behaviour. Some authors (Von Krogh et al., 2000) argue that “the creation of knowledge cannot be managed, but only enabled«.

Developing countries and transitional economies lack experiential knowledge to a greater extent than mature market economies. Understanding organizations as information processing systems, where experiential knowledge is stored in organizational memory (Christensen et al., 2004) brings an important caveat for transitional post-communist countries. During their “previous existence” in socialism/communism these countries accumulated much experiential knowledge that has since grown obsolete and should be disposed of because it has become useless and impedes the accumulation of new knowledge that is so essential for innovation and competitiveness to occur. Data from the Global Entrepreneurship Monitor reveals that in transitional countries newly formed companies display low innovativeness, because these businesses are based on old technologies and with local customers. At the same time these countries have a very low share of high-growth potential companies and low value added per employee in established firms (Rebernik et al., 2006; Minniti, 2006; Autio, 2005).

This paper seeks to enhance the understanding of the learning and unlearning processes in the area of tacit knowledge. The innovation process demands a focus different from that of other business activities, specifically, to nurture open access to people’s extensive tacit knowledge – the one “in and between minds” (Armbrrecht et al., 2001, p. 28). A company’s culture and structure will be the critical factors enabling knowledge flow (Armbrrecht et al., 2001, p. 28). So the next imperative for companies to achieve sustainability of its competitive

advantage is to create superior knowledge management capabilities, and thereby foster ongoing innovation.

In this paper we first present a simple verbal model to show the complexity of different types of knowledge and the learning/unlearning process. Second, we analyse the contribution of tacit knowledge to innovation and the problems encountered in tacit knowledge management. At the end of the paper, we introduce a theoretical concept of how to unlearn tacit knowledge to promote the innovation processes.

Types of knowledge

Knowledge is a living asset; dynamic and volatile, often difficult to observe and understand. Unlike information, it is not final and stored, but emerging and being constantly recreated and socially reconstructed in particular work contexts. Knowledge may be tangible or intangible by its nature. Know-how, when articulated into the organization's database and operating technologies is tangible. Similarly, explicit knowledge is tangible because it has been encoded into documents, databases, or some other permanent medium (Meso and Smith, 2000, p. 232).

All kinds of knowledge together, as an emerging synergy, make knowledge a system which, in combination with values, needs and possibilities, is the starting point of any human action (Mulej et al., 2000). Thus, knowledge is an important part of a more complex system.

On the other hand, the knowledge resources of organizations have pertinently been described as an iceberg. Structured, explicit knowledge is the visible top of the iceberg. This part of the knowledge resource is easy to find and recognize, and therefore also rather easy to share. Beneath the surface of conscious thought lies a vast sea of tacit knowledge, derived from a lifetime of experience, practice, perception and learning. This concept is captured in Polanyi's (1958, 1966) often-quoted statement, "We know a lot more than we can express", and therefore this part of the intangible knowledge resource can be more difficult to share (Haldin-Herrgard, 2000, p. 358).

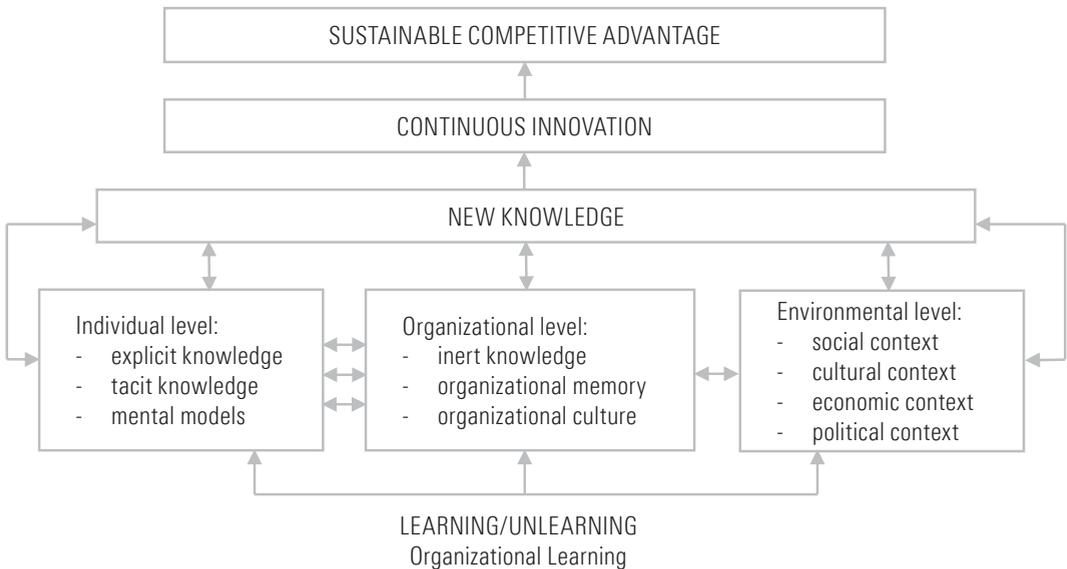
In many industries, success in today's markets depends on the ability to learn about emerging market opportunities, and to rapidly develop and spread the knowledge necessary to exploit them, rather than on careful long-term planning. The key driver of superior performance today is the ability to change when the environment calls for it, and to find the shifting sources of advantage. As a result of these changes, the ability to acquire, develop and spread new knowledge has become an indispensable core competence.

The ability to create new and valuable breakthroughs offers companies an unambiguous competitive advantage. Therefore, it is very important for a company to enable an environment that will encourage unique, original and unexpected innovations, which are far more valuable from a competitive standpoint than innovations that are predictable, incremental or mundane (Lynn et al., 1996).

Such an imperative requires a shift in the role of management. In a knowledge-based economy managers have to manage the environment or context in which work is done, rather than controlling the workers themselves (Stewart, 1997; Sveiby, 1997). The manager will serve as a coach and facilitator, a boundary-buster and head cheerleader. His or her role will be to eliminate the barriers that prevent individuals from performing at their optimum levels. Success in the new economy requires a new form of vision-based leadership (Davenport, 1993, pp. 117-137).

This problem is multidimensional in its nature. It must be managed at individual and organizational level, as well as in the social, cultural, economic and political contexts. All three levels have a number of factors considered to be parallel. We present them in Figure 1.

Figure 1: A typology of attributes needed to create new knowledge



At the individual level, researchers and writers have identified the difference between explicit and tacit knowledge. Explicit knowledge is widely accepted as knowledge that is recognized by the individual and therefore easily expressed or articulated (Durrance, 1998; Newell et al., 2002; Nonaka and Takeuchi, 1995; Roy and Roy, 2002). Explicit knowledge is sometimes referred to as codified knowledge.

At the organizational level, explicit knowledge is generally found captured in a static form. This knowledge, which is easily articulated and documented, can be found in organizational policies, procedures and processes, as well as in documentation such as performance management systems and position descriptions (Becker, 2006).

Tacit (or implicit) knowledge entails information that is difficult to express, formalize and share. It stands in contrast to explicit knowledge, which is conscious and can be put into words. People experience tacit knowledge mostly as intuition, rather than as a body of facts or instruction sets he or she is conscious of having and can explain to others. Tacit knowledge is obtained by internal individual processes, such as experience, reflection, internalisation or individual talent. Therefore, it cannot be given in lectures and found in databases, textbooks, manuals or internal newsletters for diffusion. It has to be internalised in the human body and soul (Haldin-Herrgard, 2000, p. 358).

At the organizational level organizational memory in many ways reflects tacit knowledge, although more has been written about organizational memory in the field of information technology than in the general management literature. Many authors propose different definitions and explanations for organizational memory (Argyris and Schon, 1978; Stein, 1995; Levit and March, 1988; Paoli and Principe, 2003), and they all recognize that organizational memory is not just explicit knowledge that is captured, but importantly, that it also has a tacit dimension.

The third level considered within the model focuses at individual level on mental models (Kim, 1993), and at organizational level on culture. Beside mental models, many other terms can be found in the literature, such as frames of reference (Mezirow, 2000 in Becker, 2006), cognitive maps (Huber, 1991), schemas (Barrett et al., 1995), theories of action (Hedberg, 1981) and paradigms (Markoczy, 1994 in Becker, 2006). We will follow the definition of Mezirows, who describes them as those deep-seated underlying values and belief systems that guide, shape and dictate the individual's everyday attitudes and behaviours. Culture has long been seen as the shared or commonly held beliefs, assumptions, values and taken-for-granted norms and behaviour that govern organizations (Becker, 2006).

On an environmental level companies face the challenge of exchanging knowledge among different agents. The phenomena become very complex and hard to comprehend, especially because processes are mutually dependent on the social, cultural, economic and political contexts, which are different from country to country, and therefore not easily transferred (Rebernik, 1997; Tominc and Rebernik, 2006).

Learning and unlearning

Many definitions of organizational learning and knowledge sharing exist (Hedberg, 1984; Cummings, 2003; Argyris, 2004; Esterby-Smith and Lyles, 2005). According to the definition that:

... an organization learns in only two ways:

- (a) by the learning of its members, or
- (b) by ingesting new members who have knowledge the organization did not previously have (Simon 1991, p. 125)

We should also pay attention to the individual level, as learning and unlearning takes place at both levels.

If, according to Johanson and Vahlne (1977) knowledge is stored in the decision-making system, when decision-makers leave the company, knowledge is lost. Many new companies in the post Berlin Wall era were formed in transitional countries by “drop-out” managers of large and medium-sized companies. As many managers of previously (big) socialist companies have formed their own companies, usually as sole proprietorships, the experiential knowledge embedded in organizational routines has been lost. Large and medium-sized companies have lost the expertise gained through innovation processes, while newly formed companies (very often, one-man bands) lack the human and financial resources to innovate.

The hierarchy of routines (Nelson and Winter, 1982) would lead us to the conclusion that changing the dominant beliefs of top managers could be the answer. But here again, we enter the twilight zone of transitional economies, where institutional arrangements are not established yet, rules of the game and the structures of payoffs (Baumol, 1990) are not determined, many agency problems exist, false cooperation (Rebernik, 1999) is taking place, and requisite holism is missing (Rebernik and Mulej, 2000). For unlearning to take place, intentional forgetting of some parts of existing individual and organizational knowledge is needed. Firms must “disorganize” some part of their knowledge store (Holan et al., 2004). Similar disorganization must also take place at individual level. The complexity of never-ending learning and unlearning processes is depicted in Figure 1.

Tacit knowledge and innovation

Tacit knowledge often allows us to perform at a higher level than our explicit knowledge does. For example, novices cannot become experts simply by exposure to explicit information; they need to experience the activity itself and co-operation relating to it. For these reasons, the success of a manager is heavily dependent on tacit knowledge. Therefore, supporting the sharing of tacit knowledge throughout the company will be possible with methods like apprenticeship, direct interaction, networking and action learning that includes face-to-face social interaction and practical experiences.

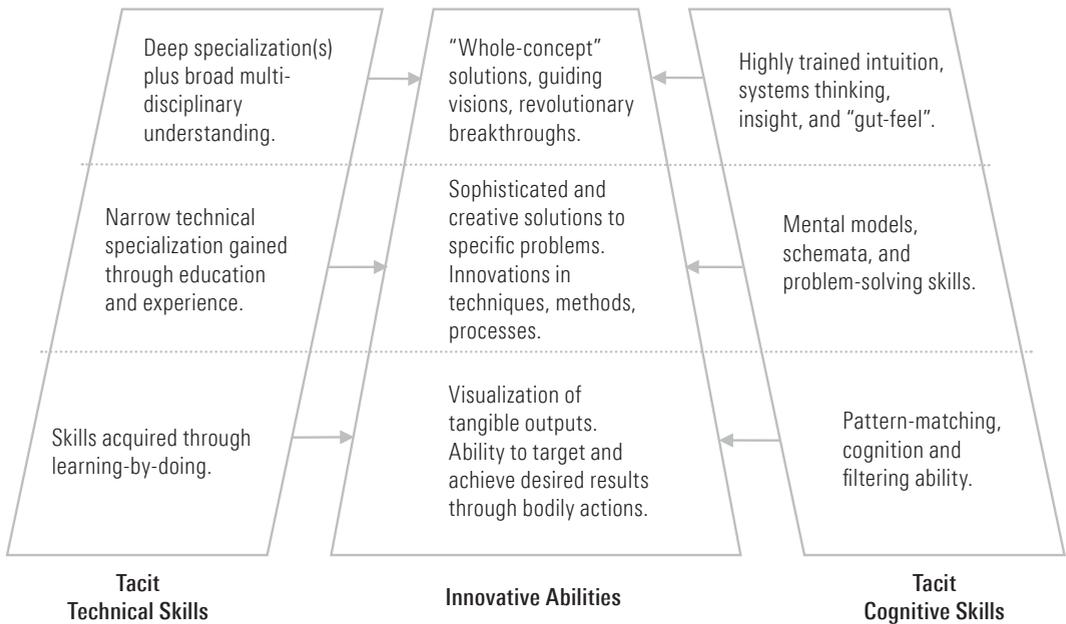
There are four categories of tacit knowledge (Lubit, 2001, p. 166):

- (1) *Hard-to-pin-down skills*. “Know-how”; the word skill implies tacit knowledge. People need to repeatedly practice skills, receive feedback and get a feel for them.
- (2) *Mental models*. We draw on mental models or schemas when trying to make sense of a situation; they determine how we understand and analyse situations; that is, how we understand cause-effect connections and what meaning we attribute to events. The schemas we use are often subconscious abstractions, rather than explicit models we consciously employ, and therefore they belong to tacit knowledge. They affect whether or not we see people as trustworthy, whether we see opportunity in a situation, and how we judge risk.
- (3) *Ways of approaching problems*. Tacit knowledge underlies the decision trees people use.
- (4) *Organizational routines*. Much of a firm’s tacit knowledge is stored in its routines. This tacit knowledge embedded in routines includes an intuitive grasp of what data to focus on and of the relative priority of competing demands. In time, managers leave and the routines remain as a legacy of their knowledge.

The difficulty of expressing, codifying and transmitting tacit knowledge makes it easier for a company to protect it than explicit knowledge. Moreover, tacit knowledge may only be effective when embedded in a particular organizational culture, structure and set of processes and routines. The difficulty of copying tacit knowledge enables tacit knowledge to be the basis of an inimitable competitive advantage.

Tacit knowledge can take on several forms, each of which offers unique advantages to innovation, as shown in Figure 2.

Figure 2: Simplified conceptual model for the contribution of tacit knowledge to innovation



Source: Mascietelli, 2000, p. 184.

At the most fundamental level there is the knowledge gained through “learning-by-doing». A specialist engineer or technologist represents a second category of innovator; one whose knowledge is gained through a combination of formal education and work experience in his specialty.

As the pace of change continues to accelerate, the importance of tacit knowledge and outstanding knowledge management capabilities have to be recognised as critical to the ongoing success of organisations through successful innovation. In the following paragraph we resume the difficulties in managing tacit knowledge in the way that effective unlearning is going to be proposed as one of the solutions for fostering innovation processes.

Managing tacit knowledge

In the next paragraph we are going to present difficulties related to effective management of tacit knowledge. First, we need to address difficulties in sharing tacit knowledge linked with perception and language. The sub-consciousness of tacit knowledge and the difficulty of expressing it are commonly found as the main problems in tacit knowledge diffusion. It is not only that we have difficulty expressing and articulating what we know; we may not even be conscious of what we know or how tacit knowledge connects to our explicit knowledge.

The consumption of time that the internalisation tacit knowledge requires must also be seen as a difficulty in the sharing process. In today's business world time is a scarce resource, and the internalisation of new experiences or knowledge is a process over time (Halding-Herrgard, 2000, p. 361). This difficulty with time is attributed to personal tacit knowledge as well as to more organizational forms. There seems to be a shift from functional organizing and functional management, to process organizing and process management (Hammer and Champy, 1993). The task of functional management is completed in different departments, while the task of process management is handed out in process teams with a "hands-on" approach to the whole process (Lewis, 1995, in Johannessen et al., 1999, p. 132).

We should also point out difficulties related to values. Knowledge is a basis for power and respect, and people are often hesitant to share knowledge lest their power decreases. Moreover, sharing knowledge requires that time be taken away from other responsibilities that have a higher priority. People are not only hesitant to share what they have, but they are hesitant to use the knowledge of others. This has been referred to as the "not invented here" syndrome.

The limited efficacy of most knowledge-management efforts has come about because they have focused overwhelmingly on creating electronic means to capture and store information and improve communication. Far more attention needs to be given to the task of convincing people to effectively use the information system (Lubit, 2000, p. 173).

Further difficulties can be found regarding distance. Social interaction is often seen as a necessity for the diffusion of tacit knowledge. The globalisation, diversification and virtualisation of business that obstruct face-to-face interaction are, therefore, a threat to tacit knowledge diffusion.

Perhaps the most important step toward harnessing the tacit knowledge of individuals and teams is to allow it to flow from the pull of emotional commitment and deep personal involvement (Glynn, 1996 in Mascitelli, 2000, p. 185). Therefore, the challenge for managers is to inspire, guide, excite, encourage, and shape, without overwhelmingly imposing arbitrary structures that might destroy the fragile essence that separates breakthrough innovation from uninspired incrementalism.

For example, managers can foster the genuine commitment of design team members on three different levels (Mascitelli, 2000, p. 187):

- (1) by crafting a “culture of innovation” for the company as a whole;
- (2) by establishing a strong sense of group identity, importance and purpose among project team members; and
- (3) by creating a generative environment for knowledge sharing – where learning, as well as unlearning, occurs.

Another factor encouraging knowledge sharing is procedural justice in decision-making. Research (Lubit, 2000, p. 175) has shown that when managers feel strategic decision-making processes are fair they tend to cooperate voluntarily. Procedural justice has three aspects: engagement, explanation and clarity. When these three aspects of procedural justice are fulfilled, company employees are most likely to both share their ideas and carry out decisions which are made.

Effective knowledge management includes dealing with the defensive mechanisms that impede communication. Common defensive mechanisms include avoiding the discussion of important issues, giving ambiguous messages and distorting information. To avoid these phenomena is very important to develop a culture which values openness, tolerates failures, encourages questioning of the way things are conducted and permits workers to challenge their superiors (Lubit, 2000, p. 175).

Tacit-to-tacit exchange is greatly enhanced by close personal contact. That's why physical co-location and face-to-face interaction can be important catalysts for innovation (Holtshouse, 1998; Nonaka and Takeuchi, 1995, in Mascitelli, 2000, p. 193). This suggestion flies in the face of the popular notion that information technology can eliminate barriers to knowledge exchange across oceans and time zones. If we accept the concept that tacit knowledge is fundamentally based on bodily experiences and emotional involvement, however, it is hard to imagine that something so personal can be digitised and downloaded. This is not to say that groupware and intranets are not essential tools for innovation; their effectiveness in the sharing of explicit knowledge is undeniable. So we are suggesting that simple steps can achieve important results in this regard. The frequent use of brief “stand-up meetings”, for example, can help ensure continuous interaction among team members and encourage socialization and collaboration in innovative activities.

The authors of the book *Enabling knowledge creation* (Von Krogh et al., 2001) go even further in their discussion about effective knowledge creation within an organization. They argue that groups of people working together are more than just teams; they are microcommunities of knowledge. This is an important distinction, because “larger communities of knowledge can share certain practices, routines and languages, but for new tacit knowledge to emerge through socialization, the group must be small.” These teams are in a better position not only to create competitive position-enhancing knowledge, but also to communicate and integrate this knowledge back into their own areas and across the organization. One major challenge is that these microcommunities are typically not stable or perpetual. Unfortunately, through the dissolution of such

microcommunities, most tacit knowledge gained and developed by them is lost. This knowledge can be retained only through the interactions that exist within the micro-community itself, not through documents or manuals (Allred, 2001, p. 162).

Finally, the implementation of new knowledge and best practices must be measured and rewarded, supported by the culture and recognized by promotion decisions. Without attention to the implementation of knowledge, people are likely to learn information, but then fail to change their behaviour in beneficial ways.

Unlearning tacit knowledge

The opposite problem of sharing tacit knowledge lies in the unlearning of it. It has been suggested that the proponents of experiential knowledge may be the worst at unlearning, as the accumulation of such experiential knowledge required considerable investment of time and resources. Knowles and Saxberg (1988) also suggest that those who have invested heavily in their current knowledge may not be willing to unlearn. It would stand to reason that long-held views and knowledge acquired and reinforced over a long period of time may be considered more difficult to unlearn than recently acquired knowledge, to which the individual has less of an emotional attachment. This stands in contrary viewpoint when discussing absorptive capacity, claiming that without an appropriate knowledge base, new knowledge cannot be absorbed. Nonetheless, regardless of whether previously acquired knowledge helps unlearning or hinders it, previously acquired knowledge is recognised as having some influence on unlearning. Tacit knowledge, in particular, raises issues in relation to unlearning due to the fact that it is less easily identified or articulated, meaning it may be less easily challenged as part of the unlearning process (Becker, 2006).

The main problem in studying tacit knowledge lies in the fact that it escapes observation and measurement. To study non-expressed knowledge an adequate methodology has to be developed. To summarize our understanding on managing tacit knowledge we propose a theoretical framework on how the process should be followed through:

- (1) recognition of the tacit dimension on an individual level, as well as on an organizational level;
- (2) observation of the behaviour deriving from individuals as well as organizational teams on the basis of possessed tacit knowledge;
- (3) trying to make the behaviour explicit through sharing it;
- (4) then learning of the new knowledge and simultaneous unlearning of obsolete and inadequate knowledge takes place;
- (5) such a process will further the actions needed for ongoing innovation to occur.

We are going to proceed by first presenting the two steps Baumard (2001) suggested in following tacit knowledge that can potentially be mobilized on an individual and organizational level, as well as observed behaviour deriving from it (Figure 3).

Figure 3: Mobilizing tacit knowledge

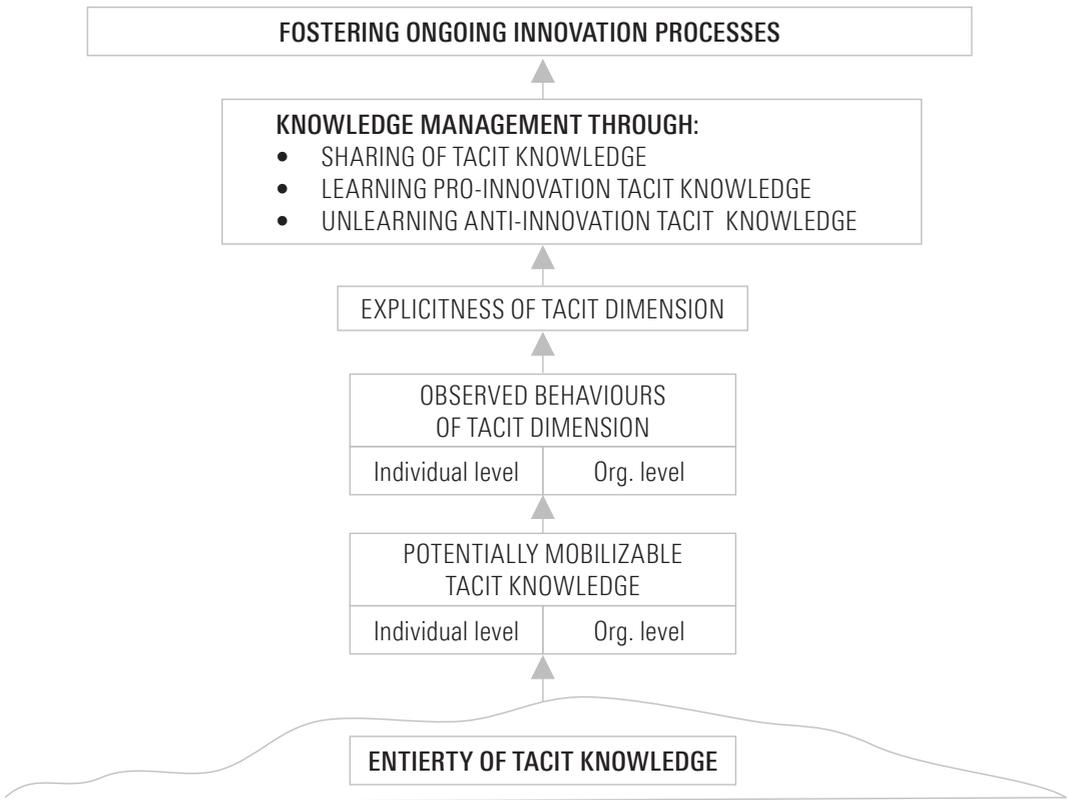
POTENTIALLY MOBILIZABLE TACIT KNOWLEDGE			OBSERVED BEHAVIORS OF TACIT DIMENSION	
Tacit individual knowledge: <ul style="list-style-type: none"> • 'animal' knowledge – instinctive incrementalism, impulsion, reflex, intuition • automatic knowledge • adduction, creating form from chaos, serendipity, accidental discovery • practical knowledge • procedural knowledge 	Tacit organizational knowledge: <ul style="list-style-type: none"> • reference to common sense • reference to local collective knowledge • reference to a form of collective thought particular to the organization • employment of a repertory of actions used in the organization, or derived from a social role • reference to tradition, to the organizational culture 		Tacit and individual: <ul style="list-style-type: none"> • 'floating' attention • infiltration, impregnation • automatic behaviours • reflexes, 'animal instincts' • resentments, conflictual attitudes that are held back • web of tacit relations • dubious feelings • thriving in the fog 	Tacit and collective: <ul style="list-style-type: none"> • communities of practice • things are done without being explained • network of tacit understanding • collective orientation is sought • atmosphere is uncomfortable • inference and insinuation, implicit reciprocal denial • make the configuration collective

Source: Abridged from Baumard (2001).

Although tacit knowledge constitutes a major part of what we know, it is difficult for organizations to fully benefit from this valuable asset. This is so because tacit knowledge is inherently elusive, and in order to capture, store and disseminate it, it is argued that it first has to be made explicit. However, such a process is difficult, and often fails due to three reasons (Stenmark, 2000, p. 9):

- (1) we are not necessarily aware of our tacit knowledge;
- (2) on a personal level, we do not need to make it explicit in order to use it; and
- (3) we may not want to give up a valuable competitive advantage.

Figure 4: Framework for making tacit knowledge visible



In Figure 4 we present a theoretical framework which could help us to overcome this perpetual elusiveness of tacit knowledge. Our understanding of the phenomena derives from the fact that tacit knowledge in its entirety is very difficult to recognize, and to benefit from. Our prepossession is, therefore, to bring forward tacit knowledge that can potentially be mobilized and observable through different manifestations of behaviour in order to make it explicit. Because only its explicitness would allow us to share it, as well as learn what needs to be learned, and unlearn those things that are outdated and obsolete. At this point it also has to be stressed that not all dimensions of tacit knowledge foster innovation processes. So an important knowledge management task would be to separate the tacit knowledge dimension, which is pro and contra the innovation processes. Having done this, it should no longer be difficult to put outstanding management efforts into the learning processes of those who are pro the learning processes and those who are contra the unlearning processes for innovation to occur.

Conclusion

Many have argued that we are in a knowledge economy in which intellectual capital is more important than land, labour and capital. Patents and many visible types of expertise alone will not, however, bring sustained competitive advantage. The

exchange of knowledge among different agents is crucially important to the process in learning and creating absorptive capacity. The absorptive capacity of an organisation to embrace and implement knowledge in its environment can foster or impede the transfer of knowledge. Much of our knowledge is only the basis for a transient competitive advantage as our competitors reverse-engineer our products, copy our best practices and develop parallel (or superior) technologies. In contrast, tacit knowledge and superb knowledge management capabilities can form the basis of a relatively inimitable competitive advantage. Tacit knowledge can be spread within a firm but will be very difficult for other firms to copy. Superior knowledge-management capabilities are the basis for the rapid acquisition and spread of new knowledge and, therefore, foster continuous innovation and improvement.

We made some suggestions on how to manage tacit knowledge which will stimulate the innovation process so a company can gain and retain sustainable competitive advantage. To embrace incoming knowledge and use it productively a critical mass of knowledge and skills must already be present in the organization. Without an appropriate knowledge base, new knowledge cannot be absorbed. In the absorption process learning and unlearning take place. Learning and unlearning takes place continually in all knowledge areas and with all types of knowledge, which makes the phenomena very complex and hard to comprehend, especially because processes are mutually dependent on the social, cultural, economic and political contexts which are different from country to country.

To unleash the power of tacit knowledge in an organization the sharing and learning of tacit knowledge as well as its unlearning must be managed differently from explicit knowledge. Even though tacit knowledge is very elusive, it is possible to create a theoretical framework that could help bring forward tacit knowledge dimensions that are potentially capable of mobilization, and which are observable through different manifestations of behaviour. It is partly possible to make some dimensions of tacit knowledge explicit that not only contribute to successful sharing and mutual learning, but also enable the identification of those parts of knowledge that hinder innovation and should be unlearned. The better we understand the process of creating and using new knowledge and discarding obsolete knowledge, the more likely innovative behaviour will be fostered in organizations.

REFERENCES

1. Allred, B. (2001), "Enabling knowledge creation: how to unlock the mystery of tacit knowledge and release the power of innovation", *The Academy of Management Executive*, Vol. 15 No. 1, pp. 161-2.
2. Argyris, C. (2004), *On organizational learning*, 2nd ed., Blackwell, Malden, MA.
3. Argyris, C. and Schon, D. A. (1978), *Organizational Learning: A Theory of Action Perspective*, Addison-Wesley, Reading, MA.
4. Armbrrecht, F.M.R. Jr., Chapas, R.B., Chappelow, C.C. and Farris, G.F. (2001), "Knowledge management in research and development", *Research Technology Management*, Vol. 44, No. 4, pp. 28-48.

5. Autio, E. (2005), *Global Entrepreneurship Report, 2005 Report on High-Expectation Entrepreneurship*, GEM, London Business School, London.
6. Barrett, F.J., Thoman, G.F. and Hocevar, S.P. (1995), "The central role of discourse in large-scale change: A social construction perspective", *Journal of Applied Behavioral Science*, Vol. 31 No.3, pp. 352-373.
7. Baumard, P. (2001), *Tacit Knowledge in Organizations*, Sage, London.
8. Baumol, W. (1990), "Entrepreneurship: Productive, Unproductive and Destructive", *Journal of Political Economy*, Vol. 98, pp. 893-921.
9. Becker, K. (2006), "Individual and organisational unlearning: Directions for future research", *International Journal of Organisational Behaviour*, Vol. 10 No. 4, pp. 659-670.
10. Christensen, P.R., Andersen, P.H., Damgaard, T. and K.B. Munksgaard (2004), "Internationalization of Sourcing and Knowledge Development: An Organizational Routine Perspective", paper presented at LOK Research Conference, Middelfart, 1-2 December, 2003.
11. Cummings, J. (2003), *Knowledge Sharing: A Review of the Literature*, The World Bank, Washington, DC.
12. D'Aveni, R.A. (1994), *Hypercompetition: Managing the Dynamics of Strategic Maneuvering*, The Free Press, New York, NY.
13. Davenport, T. H. (1993), *Process innovation: reengineering work through information technology*, Harvard Business School Press, Boston, MA.
14. Durrance, B. (1998), "Some explicit thoughts on tacit learning", *Training and development*, Vol. 52 No.12, pp. 24-29.
15. Easterby-Smith, M. and M.A. Lyles (Eds) (2005), *The Blackwell handbook of organizational learning and knowledge management*, 1st paperback, Blackwell, Malden, MA.
16. Haldin-Herrgard, T. (2000), "Difficulties in diffusion of tacit knowledge in organizations", *Journal of Intellectual Capital*, Vol. 1 No. 4, pp. 357-365.
17. Hammer, M. and Champy, J. (1993), *Reengineering the corporation*. New York: Harper Collins.
18. Hedberg, B. (1984), How Organizations Learn and Unlearn; in Nystrom, P. and W. Starbuck (Eds), *Handbook of Organizational Design*, Cambridge University Press, London.
19. Holan de, P., Phillips N. and T. Lawrence (2004), "Managing organizational forgetting", *MIT Sloan Management Review*, Vol. 45, pp. 45-51.
20. Huber, G.P. (1991), "Organizational learning: the contributing processes and the literatures", *Organization Science*, February, pp. 88-115.
21. Johannessen, J.A., Olsen, B. and Olaisen, J. (1999), "Aspects of innovation theory based on knowledge-management", *International Journal of Information Management*, Vol. 19, pp. 121-139.
22. Johanson, J. and Vahlne J.E. (1990), "The Mechanism of Internationalisation", *International Marketing Review*, Vol. 7, pp. 11-24.
23. Kim, D.H. (1993), "The link between individual and organizational learning", *Sloan Management Review*, Vol. 35 No. 1, pp. 37-50.
24. Knowles, H.P. and Saxberg, B.O. (1988), "Organizational leadership of planned and unplanned change: a systems approach to organizational viability", *Futures*, Vol. 20, pp. 252-65.
25. Levitt, B. and March, J.G. (1988), "Organizational learning", *Annual Review of Sociology*, Vol. 14, pp. 319-340.
26. Lubit, R. (2001), "The keys to sustainable competitive advantage: tacit knowledge and knowledge management", *Organizational Dynamics*, Vol. 29 No. 3, pp. 164-178.

27. Lynn, G.S., *et al.* (1996), "Marketing and discontinuous innovation: the probe and learn process", *California Management Review*, Vol. 38, pp. 8-37.
28. Mascitelli, R. (2000), "From experience: harnessing tacit knowledge to achieve breakthrough innovation", *Journal of Product Innovation Management*, Vol. 17 No. 3, pp. 179-193.
29. Meso, P. and Smith, R. (2000), "A resource-based view of organizational knowledge management system", *Journal of Knowledge Management*, Vol. 4 No. 3, pp. 224-234.
30. Minniti, M. (2006), *Global Entrepreneurship Monitor, 2005 Executive Report*. London Business School, London.
31. Mulej, M., *et al.* (2000), *Dialektična in druge mehkosistemske teorije (podlaga za celovitost in uspeh managementa)*. EPF, Maribor.
32. Nelson, R. and G. Winter (1982), *An Evolutionary Theory of economic Change*, Harvard University Press, Cambridge, MA.
33. Newell, S., Robertson, M., Scarbrough, H. and Swan, J. (2002), *Managing Knowledge Work*, Palgrave, New York, NY.
34. Nonaka, I. and Takeuchi, H. (1995), *The knowledge creating company: how Japanese companies create the dynamics of innovation*, Oxford University Press, New York, NY.
35. Paoli, M. and Principe, A. (2003), "Memory of the organization and memories within the organization", *Journal of Management and Governance*, Vol. 7 No. 2, p.145.
36. Polanyi, M. (1958), *Personal knowledge*, Routledge and Kegan Paul, London.
37. Polanyi, M. (1966), *The tacit dimension*, Routledge and Kegan Paul, London.
38. Rebernik, M. (1997), "Beyond markets, hierarchies and ownership mania in transitional countries", *Systems research and behavioural science*. Vol. 14 No. 3, pp. 83-194.
39. Rebernik, M. (1999), "Resources, opportunities and cooperation", in George E. Lasker (Ed.), *Advances in support systems research*. Vol. 5, Decision Support Methodology for Human Systems Management And Its Applications In Economics And Commerce, The International Institute for Advanced Studies in Systems Research and Cybernetics. Windsor.
40. Rebernik, M. and M. Mulej (2000), "Requisite holism, isolating mechanisms and entrepreneurship", *Kybernetes*, Vol. 29 No. 9/10, pp. 1126-1140.
41. Rebernik, M., Tominc, P. and Pušnik, K. (2006), *Podjetništvo med željami in stvarnostjo: Global Entrepreneurship Monitor Slovenija 2005*, Ekonomsko-poslovna fakulteta, Inštitut za podjetništvo in management malih podjetij, Univerza v Mariboru, Maribor.
42. Roy, P. and Roy, P. (2002), "Tacit knowledge management in organizations: A move towards strategic internal communications systems", *Journal of American Academy of Business*, Vol. 2 No.1, pp. 28-32.
43. Schumpeter, J (1934), *The Theory of Economic Development*, Harvard University Press, Cambridge, MA.
44. Simon, H. (1991), "Bounded rationality and organizational learning", *Organization Science*, Vol. 2 No. 1, pp. 125-134.
45. Stein, E. (1995), "Organizational memory: review of concepts and recommendations for management", *International Journal of Information Management*, Vol. 15 No. 2, pp. 17-32.
46. Stenmark, D. (2000-2001), "Leveraging Tacit Organizational Knowledge", *Journal of Management Information Systems*, Vol. 17 No. 3, pp. 9-24.
47. Stewart, T.A. (1997), *Intellectual capital: The new wealth of organizations*, Doubleday, London.
48. Svelby, K.E. (1997), *The new organizational wealth: managing and measuring knowledge-based assets*, Berrett-Koehler, San Francisco, CA.

49. Tominc, P. and Rebernik, M. (2006), "Growth aspirations and cultural support for entrepreneurship: a comparison of three post-socialist countries", *Small Business Economics*, Vol 28 Nos 2/3, pp. 239-255.
50. Von Krogh, E., Ichijo, K., Nonaka, I. (2000), *Enabling Knowledge Creation: How to Unlock the Mystery of Tacit Knowledge and release the Power of Innovation*, Oxford University Press, New York, NY.

GROWTH ASPIRATIONS AND CULTURAL SUPPORT FOR ENTREPRENEURSHIP: A COMPARISON OF POST- SOCIALIST COUNTRIES

Polona Tominc and Miroslav Rebernik

Small Business Economics

Vol. 28, No. 2/3, 2007

pp. 239–255

Springer

ISSN 0921-898X

Abstract

Based on GEM data this paper explores whether significantly different growth aspirations of early stage entrepreneurs in Slovenia, compared to those in Hungary and Croatia, are also accompanied by significantly different opportunity recognition, cultural support for entrepreneurship and self-efficacy. Our results suggest that a higher degree of alertness to unexploited perceived opportunities, and cultural support for entrepreneurial motivation may be the cause of higher growth aspirations of Slovenian early stage entrepreneurs, while self-efficacy with regard to entrepreneurial skills, knowledge and experience was not found to be crucial.

Keywords: early stage entrepreneurship, growth aspirations.

JEL Classifications: M13, D01, J24, L26.

Introduction

Entrepreneurship is regarded as a key to economic development and to the creation of wealth and employment. Besides the number of entrepreneurs, the “quality” of entrepreneurship (value added, contribution to employment, sustainable growth) also matters. Two main streams in existing literature can be found. The first is based on longitudinal research designs, which study actual growth (Gundry and Welsch, 2001; Liao and Welsch, 2003; Colombo and Grilli, 2005; Barringer et al., 2005), while the second focuses on the growth expectations of those entering into entrepreneurship (Davidsson, 1991; Delmar and Davidsson, 1999; Schott and Bager, 2004).

In 2003, Slovenia led among European GEM countries regarding growth aspirations of early stage entrepreneurs, but it also exhibited very low early stage entrepreneurship

participation (Rebernik et al., 2005a). To identify determinants that might influence very high growth aspirations of early stage entrepreneurs in Slovenia, the model established by Shane, Locke and Collins (Shane et al., 2003) may prove useful. In their model the authors adopted Shane and Venkataraman's (2000) definition of entrepreneurship as the process by which opportunities to create future goods and services are discovered, evaluated and exploited. The transition of individuals from one stage of an entrepreneurial process to another is the result of the combination or integration of some or all of the components of entrepreneurial motivation and cognition, where environmental conditions and entrepreneurial opportunities also matter. Based on the current state of the entrepreneurship literature that reports research results on the impacts of factors described in the Shane, Locke and Collins's model (2003), country differences on the three determinants that (beside others) might determine growth aspirations of early stage entrepreneurs are analyzed. These include opportunity recognition, cultural support for entrepreneurial motivation and self-confidence in skills, knowledge and experience needed for entrepreneurship.

People often misunderstand or ignore the fact that the historical background of companies and societies in Eastern and Central Europe differs significantly from those in the West. Most of the leading entrepreneurship literature was born in the US (Schildt and Sillanpaa, 2004), and many of its empirical findings cannot easily be applied to other socio-cultural settings (Ulhoi, 2005), especially to post-communist countries, which had been divorced from capitalism for seven decades, and which still enjoy a very different social, cultural, and institutional environment (Rebernik, 1997).

In this article we try to identify the impact of some factors that might better explain the growth aspirations of early stage entrepreneurs by comparing three post-communist countries: Slovenia, Hungary and Croatia. These countries were selected for analysis because of their proximity to each other and their common non-capitalist history, which make them more comparable. As the analysis will show, the three countries are at first sight very similar regarding some social, economic and historic features, yet they differ significantly with regard to the growth aspirations of early stage entrepreneurs. The GEM data source is the only one that makes comparisons of early stage entrepreneurship, as well as the determinants that might influence entrepreneurship in different countries, possible. Limitations of the data applied are described later in the paper.

Our results suggest that a higher degree of alertness to unexploited perceived opportunities among adults in Slovenia may be the cause of higher growth aspirations of early stage entrepreneurs in Slovenia. Also, most of the components of the cultural support for entrepreneurial motivation are incorporated in adults' opinions in Slovenia to a greater degree than they are in Hungary or Croatia. That may be the influencing factor for the higher growth aspiration of entrepreneurs in Slovenia, while self-efficacy regarding entrepreneurial skills, knowledge and experience of Slovenian adults does not seem to be crucial.

Theoretical background

Following the theory of growth established by Penrose (1959; discussion about this in Davidsson and Wiklund, 1999), researchers explored the motivational, behavioral and personal factors that led to venture creation and its growth. The new venture is viewed as a creation process, performed by an individual (or individuals), who has the ability to perceive and evaluate possibilities, and who is motivated to exploit them through his/her preferences as well as personal and business goals (Shaver and Scott, 1991). Several studies have shown that small- and medium-sized firms are of significant importance to the economy, and that this importance is growing. In particular, these firms are expected to help solve unemployment and economic recession, especially by creating new jobs (Storey, 1994; Reynolds et al., 2003; Arenius et al., 2004). Covin and Slevin (1997) explained that venture growth is the essence of entrepreneurship.

In a small firm, the importance of an owner or manager's willingness to grow is likely to be relatively greater than in a large firm. But not all entrepreneurs are willing to grow their business, since they may expect some consequences of growth to be negative, and in conflict with their goals (Kolvereid, 1992, Storey, 1994). Our paper focuses primarily on entrepreneurs who are in the start-up phase of the entrepreneurial process, and whose actual growth cannot be established yet.

The entrepreneurial process includes at least three main stages: the "discovery" of opportunities, their evaluation and their exploitation (Shane and Venkataraman, 2000). Variation among people in their motivations and abilities to act has an important effect on all phases of the entrepreneurial process. As Shane et al. (2003) explain, the attributes of people making decisions about the entrepreneurial process influence the decisions they make. All human actions are the result of motivational and cognitive factors on the one hand, and also the result of external factors, on the other hand. While entrepreneurial motivation includes a set of personality traits, such as a need for achievement, locus of control, desire for independence, goal-setting etc., cognitive factors include ability, intelligence and skills. External factors in this model refer to economic environmental conditions, such as the status of the economy, the availability of venture capital, government regulations etc. In explaining variations regarding the entrepreneurship process across countries, much attention is also devoted to cultural variables (Hofstede et al., 2004; Gianetti and Simonov, 2005).

As Shane et al. (2003) suggest, the transition of individuals from one stage of entrepreneurial process to another is the result of the combination or integration of motivation and cognition. Furthermore, environmental conditions and entrepreneurial opportunities matter, while the motivations and ability of particular people might lead to different types of entrepreneurial actions under the same environmental conditions. Factors that might determine the growth aspirations of early stage entrepreneurs in different countries include (amongst others): *(i) opportunity recognition, (ii) cultural support for entrepreneurial motivation, and (iii) self-confidence in skills, knowledge and experience, needed for entrepreneurship.*

All three factors describe subjective perceptions and beliefs of the individual but do not necessarily reflect objective circumstances. Factors such as these are often referred to as perceptual (Arenius and Minniti, 2005). One of the defining characteristics of an entrepreneur is the “specialization in judgmental decision-making” (Casson, 2005), which is not culture neutral. An individual’s personal perceptions and judgments about the existence of opportunities, about the acceptance of entrepreneurial behavior in society and about her/his skills are often formed on the basis of shared norms and values in the relevant society; they are often biased, but nevertheless influence the individual’s entrepreneurial plans and actions.

Opportunity recognition

With increased attention being focused on the early stages of the entrepreneurship process in recent years, the concept of opportunities has been increasingly used in entrepreneurship research, and perceiving good business opportunities was assumed to be important for entrepreneurship (Kirzner, 1973, 1979; Shane and Venkataraman, 2000; Eckhardt and Shane, 2003; Reynolds et al., 2003). Davidsson (2003) suggested that the opportunity concept is debatable. For example, opportunity by almost all definitions is considered a favourable situation, known to be profitable. From this point of view, individuals cannot know whether or not what they pursue is an opportunity – only successful actions can, *ex post facto*, be marked as opportunities. Since our paper focuses particularly on start-up entrepreneurs, evaluating opportunities retrospectively is not possible. Therefore, our study adopts the concept of perceived opportunities.

Individuals participate in entrepreneurial activities for two main reasons: they start a new business to exploit a perceived business opportunity, or they are pushed into entrepreneurship because all other options for work are either absent or unsatisfactory. It emerged that 97% of individuals involved in business start-ups are either “opportunity” or “necessity” entrepreneurs (Acs et al., 2005). In 2004, a great variability across countries was observed in the balance of opportunity and necessity entrepreneurship. On a global scale, an average of about 65% of those involved in entrepreneurial endeavors claimed that they were attempting to take advantage of a business opportunity, while 35% stated that they were doing so because they had no other viable employment option. In 2004, the percentage of opportunity entrepreneurs in adult population in Slovenia is 2.17, in Croatia 2.04, and in Hungary 2.75, and do not differ significantly (Slovenia–Croatia: $p = 0.983$; Slovenia–Hungary: $p = 0.242$; Croatia–Hungary: $p = 0.199$).

There is a lack of economic literature investigating national differences in perceiving business opportunities, their perception and exploitation – in more detail than just monitoring the number of individuals who own and run their own firm based on business opportunities versus necessity. The present study aims to provide a clearer insight into the differences in the perception of opportunities in Slovenia, Croatia and Hungary.

As Davidsson (1991) pointed out, the growth motivations are entirely the result of the reality perceived. He proved that differences in the perception of opportunities (among other factors) explained a substantial share of the variation in growth aspirations among entrepreneurs.

The model of occupational choice (Wennekers and Thurik, 1999; Wennekers et al., 2002) underlines the fact that whether an individual will pursue an opportunity and become an entrepreneur depends on his opportunity costs. The exploitation of the opportunity should generate more benefits than the opportunity costs are, both in the form of forgone wages, time and effort expended and as a reward for alertness, risk-bearing and uncertainty (Casson, 1982; Kirzner, 1997; Venkataraman, 1997; Shane 2003).

Another way of looking at opportunity is to exploit Leibenstein's visualization of the economy as a net made up of nodes and pathways. The nodes represent industries or households that receive inputs (or consumer goods) along the pathway, and send outputs (final goods and inputs for other commodities) to other nodes. In the perfect competition model the net is complete; pathways and nodes are well marked and well defined. However, in reality, there are holes and tears in the net, obstructions (knots) along the pathways, and some nodes and pathways are, where they exist, poorly marked or entirely unmarked from the viewpoint of the element of the other nodes (Leibenstein, 1968). An important task the entrepreneur must fulfill is to employ inputs which are inherently ambiguous and undefined, to fill in the gaps and to contribute to the functioning of the market. The entrepreneur connects different markets, is capable of making up for market deficiencies (gap-filling), is an 'input-completer,' and creates and expands time-binding, input-transforming entities (i.e. firms).

Leibenstein's way of visualizing the economy reveals an important point, which is relevant to less-developed economies, such as Slovenia, Croatia and Hungary. The less market institutions are developed and the less developed and stable the "rules of the game" are, the more holes and tears in the net there will be. On the one hand, this means that there are many unexploited opportunities waiting for entrepreneurs to seize them. On the other hand, entrepreneurship in such an environment is much riskier and of uncertain outcome, and therefore less attractive for potential entrepreneurs to combine the tasks of input-completing and gap-filling.

Cultural support for entrepreneurial motivation

Regarding cultural support for entrepreneurial motivation, a higher degree of motivation for entrepreneurship can be expected in those environments where entrepreneurship is socially legitimate and viewed as acceptable behavior (Liao and Welsch, 2003). Some of the earliest and best-known comparative researches on entrepreneurship at the aggregated societal level deal with environmental factors, both economic and cultural. Weber suggests that there may be a causal relationship between economic growth and the value system of Protestantism, better known as the Protestant Work Ethic, which emphasizes personal responsibility for one's actions (Weber, 1904). Schumpeter assumed that strong

feelings of competitiveness are probably the principal motivation of “heroic” entrepreneurs, consistently striving to prove themselves better than other people (Schumpeter, 1934). The relationship between competitiveness of a culture and economic growth is validated by more recent research by Lynn (1992). Dissatisfaction with society and with life in general also appears to be a strong determinant of entrepreneurship (Hofstede et al., 2004), since individuals are often attracted to entrepreneurship by the expectation that it will provide bigger material and/or nonmaterial benefits, like social status and respect. A further elaboration of these issues leads also to the discussion that a higher level of motivation for entrepreneurship can be found in societies, where the opportunity costs of entering into an entrepreneurial career are low (Verheul et al., 2002).

Liao and Welsch (2003) studied the relationship between the three dimensions of social capital (cognitive, relational and structural) and growth aspirations of early stage entrepreneurs. The cognitive dimension of social capital consists of shared norms in society, which are also an important aspect of culture and the attitude towards entrepreneurship. As Coleman (1990) pointed out, a norm in a society exists when the socially defined right to control an action is held not by the actor but by others. Liao and Welsch (2003) argued that the behaviors of early stage entrepreneurs are shaped by the normative, and mimic forces that exist in their environment – the cognitive dimension of social capital would not only increase accessibility to resources for early stage entrepreneurs but also their ability to conduct an enterprise. They proved that the greater the cognitive dimension of social capital, the higher the growth aspirations of early stage entrepreneurs.

Self-confidence in skills and knowledge for entrepreneurship

An individual enters into the process with limited knowledge and skills for starting a new venture. An individual’s ability to become an entrepreneur can be regarded as one of the major determinants of entrepreneurship (Davidsson, 1991).

Although the entrepreneur will accumulate information and experience during the process (Delmar and Davidsson, 1999), the initial self-confidence in his/her own skills and knowledge of entrepreneurship matters. Shane (2000) demonstrated the impact of entrepreneurs’ competence and knowledge in acting on business opportunities. An entrepreneur is an individual who has the ability to evaluate possibilities, and who is motivated to enter and persist in the entrepreneurial process (Shaver and Scott, 1991). The entrepreneur should have the capacity, the entrepreneurial skills/knowledge and motivation, to turn opportunities into something that creates enduring value.

Baum and Locke (2004) proved that the new resource skills (as they defined the ability to acquire and systemize the operating resources needed to start and grow a new venture) of entrepreneurs inspire more challenging visions of the new venture’s growth and higher growth goals, which are among variables that are direct predictors of venture growth. In addition, psychology literature on intentionality and self-efficacy (Bandura, 1997; Baron, 2000) states that an individual with high self-efficacy for a given task (being an entrepreneur) will also set and accept higher goals.

Research question and hypothesis

Evidence in the literature stated above, that growth aspirations, among other determinants, are also the result of opportunity recognition, cultural support and self-efficacy leads us to the research question whether significantly different growth aspirations of Slovenian early stage entrepreneurs are also accompanied by significantly different: (i) *opportunity recognition*, (ii) *cultural support for entrepreneurial motivation*, and (iii) *self-confidence in skills, knowledge and experience, needed for entrepreneurship*.

Hypothesis H1, H2 and H3 are suggested:

H1: The perceptions of good business opportunities by adults in Slovenia differ significantly from adults in Croatia and Hungary.

H2: Cultural support for entrepreneurial motivation of adults in Slovenia differs significantly from that in Croatia and Hungary.

H3: Self-confidence in skills, knowledge and experience, needed for entrepreneurship of adults in Slovenia differs significantly from that of adults in Croatia and Hungary.

Methodology

Data

For testing hypotheses, the main data sources for our study were GEM surveys of the adult population in Slovenia, Croatia and Hungary in 2004. A detailed data collection design within GEM is reported by Reynolds et al. (2005). In analyzing growth aspirations, individuals identified as early stage entrepreneurs in Slovenia and Croatia in 2002, 2003 and 2004 research cycles, and in Hungary in 2002 and 2004 research cycles (in 2003, an adult population survey was not conducted), were included in a consolidated sample. This procedure makes estimates more reliable, since in a single year the number of people involved in early stage entrepreneurship is limited in all three countries – due to limited sample sizes and especially due to low early stage entrepreneurial activity rates. The consolidated sample consists of 190 early stage entrepreneurs from Slovenia, 158 from Croatia and 255 from Hungary.

Variables and methods

Early stage entrepreneurs are identified as those individuals, who are, first, personally involved in the creation of a new venture or who are, secondly, employed as owners/managers of a new firm less than 42 months old.

Explanations of variables are listed in the same order as they appear in the second chapter, described above.

The growth aspirations of early stage entrepreneurs can be divided into those which are anticipated by the entrepreneur and those which are objectively possible, with regard to the characteristics of their products/services, competition, etc. The growth aspirations

of early stage entrepreneurs were assessed by taking into account their anticipation of an increase in the number of new jobs, while the potential of their ventures to grow was estimated by their opinions about the creation of new markets and market expansion with their products/services, and regarding the technology used:

- (a) Degree of growth aspiration – employment, is found in those early stage entrepreneurs who intend to increase the number of jobs by a certain degree in the next 5 years. Four values are assigned: no change in the number of jobs, an increase from 1 to 5, an increase from 6 to 19 and an increase by 20 or more.
- (b) Degree of growth aspiration – market creation, is found in those early stage entrepreneurs who plan some market expansion/creation for their products/services by stating that there are only a few or no other businesses offering the same products/services to potential customers and that all or some potential customers consider the product/service unfamiliar.
- (c) Degree of growth aspiration – technology is found in those early stage entrepreneurs who stated that technologies or procedures required by this product/service were not available more than a year ago.
- (d) Degree of growth aspiration – market creation/ technology is found in those early stage entrepreneurs who plan some market expansion/creation for their products/services by stating that there are only a few or no other businesses offering the same products/services to potential customers, and that all or some potential customers consider the product/service unfamiliar and who stated that technologies or procedures required by this product/ service were not available more than a year ago.

The age of the venture was also taken into account. Following the GEM, we take into consideration three groups of entrepreneurs. The first are nascent entrepreneurs, who have taken some action towards creating a new business and have not paid wages for more than 3 months; the second are new entrepreneurs who are employed as owners/managers of new businesses which have not paid wages or salaries for more than 42 months; while established entrepreneurs are those who are employed as owners/managers of businesses that have paid wages or salaries for more than 42 months. Due to some methodological doubts also considered later in the text, established entrepreneurs are not analyzed in this paper. Those identified as nascent and new entrepreneurs were counted only once – as new entrepreneurs.

Namely, some research (for example Schott and Bager, 2004) shows that entrepreneurial aspirations seem to be higher in nascent entrepreneurs than among entrepreneurs in new firms and established entrepreneurs. Various explanations can be found within the existing literature on the reasons why entrepreneurial aspirations in nascent/new entrepreneurs are, as a rule, higher than the aspirations of established entrepreneurs (Carter et al., 1997; Brown and Kirschhoff, 1997). To mention just two: the survival of ventures and learning. A large number of new ventures do not survive, and it is likely that those that do not survive have the highest and most unrealistic expectations. It is also very likely that nascent/ new entrepreneurs acquire specific knowledge and skills about the business and entrepreneurial frameworks, which subsequently lower their expectations.

- *The perception of (perceived) business opportunities* is measured by the share of adults who are 18–64 years old and answered YES to the question: In the next 6 months will there be good opportunities for starting a business in the area where you live?
- *Cultural support for entrepreneurial motivation*, is measured¹ by the share of adults aged 18–64, who answered YES to the questions:
 - *Do most people in your country prefer that everyone has a similar standard of living?*
 - *Do most people in your country consider starting a new business a desirable career choice?*
 - *Do those successful at starting a new business have a high level of status and respect in your country?*
 - *Do you often see stories in the public media about successful new businesses in your country?*
- *Self-confidence in skills, knowledge and experience needed for entrepreneurship*, is measured by the share of adults who are 18–64 years old and answered YES to the question: Do you have the knowledge, skills and experience required to start a new business?

The Chi-square test is used to test differences of proportions of adults among the three countries on the variables described above. The general criteria for rejecting the hypothesis that differences do not exist are determined by statistical significance at 5% (two-tailed test).

Country similarities in some social, economic and historic features

The three neighbor countries have a lot of common features: they share a common history with the Austrian–Hungarian Monarchy, they also share the experience of almost half a century of socialism and a similar communist history; in the case of Slovenia and Croatia, the countries also spent seven decades as part of the same state, having similar government institutions, as well as the same legal and economic system, etc... Some characteristics of the analyzed countries are presented in Table 1, which shows, among other things, that total early stage entrepreneurial activity indices (TEA indices) in all three countries are on the low side of the global scale. According to the Growth Competitiveness Report, none of the countries can be considered as either technologically developed or globally competitive.

Each country has its own prevailing ethnicity – Slovenians, Croats and Hungarians. Countries are highly ethnically homogenous (at 90% of prevailing ethnicity), and with one dominant language: 92% (Slovenia), 96% (Croatia) and 98% (Hungary). In each of the countries analyzed, ethnic minorities of the other two countries can be found. The three populations are predominantly Roman Catholic.

Table 1: Comparing Slovenia, Croatia and Hungary

Indicators	Slovenia	Croatia	Hungary
Total Early Stage Entrepreneurial Activity ^a			
TEA overall	2.60	3.73	4.29
TEA necessity	0.43	1.57	1.24
TEA opportunity	2.17	2.04	2.75
TEA necessity/TEA opportunity	0.20	0.77	0.45
TEA male	3.59	5.76	5.13
TEA female	1.59	1.74	3.48
Main Economic Indicators ^b			
Real GDP Growth	2.3	3.7	3.4
GDP per capita (US\$ at PPP)	21,175	11,256	14,800
Consumer price inflation	3.6	2.1	6.8
Unemployment rate	10.4	18.7	6.1
Total Population	1,990,000	4,442,000	10,100,000
Total Labor Force 2003 ^a	960,000	2,100,000	4,150,000
Population 18–64 in 2004 ^a	1,344,000	2,841,000	6,550,000
Global Competitiveness Report Rankings ^c			
Growth Competitiveness Index	33	61	39
Technology Index	26	46	29
Public Institution Index	31	76	37
Macroeconomic Environment Index	39	59	55
Business Competitiveness Index	31	72	42

^a GEM 2004 data.

^b The Economist Intelligence Unit: Country profiles 2005, actual or estimation for 2004.

^c Global Competitiveness Report 2004.

Country differences in early stage entrepreneurial growth aspirations

Table 2 shows the results of the analysis of *growth aspirations – employment*: a mean percentage of early stage entrepreneurs regarding their plans on the future number of jobs for each of the three countries, as well as results on the significance of differences among countries. The majority of significant differences are found between Slovenia on one side, and Croatia and Hungary on the other. Differences between Croatia and Hungary are not significant. If we look at the mean percentages in more detail, we see that Slovenian early stage entrepreneurs expect greater job creation. In Slovenia, there are less early stage entrepreneurs who expect an increase in the number of jobs from 1 to 5, but at the same time there is a greater share of those who expect an increase from 6 to 19 than in Croatia and Hungary. The lowest share of early stage entrepreneurs who expect an increase in the number of new jobs of 20 or more is found in Croatia.

Analyzing nascent and new entrepreneurs separately (results are presented in Tables 3 and 4), we can conclude that new entrepreneurs in Slovenia, Croatia and Hungary

do not significantly differ regarding the expected increase in the number of jobs (except those who expect no change in the number of jobs). Most of the differences between countries are the consequence of differences among nascent entrepreneurs². It seems that Slovenian nascent entrepreneurs are extremely optimistic regarding the expected increase in the number of jobs compared to those in Croatia and Hungary.

Table 5 shows the results of the analysis of *growth aspirations* regarding *market creation*, *regarding technology* and *regarding market creation/technology* in each of the three countries, as well as results in the significance of differences among countries. The majority of significant differences in *growth aspirations* regarding *market creation and market creation/technology* are found again between Slovenia on one side, and Croatia and Hungary on the other. Regarding *growth aspirations – technology*, percentages across countries do not differ significantly.

Analyzing nascent and new entrepreneurs separately (results are in Tables 6 and 7), we can conclude that, again, the majority of differences between the countries presented in Table 5 are the consequence of differences among *nascent* entrepreneurs and, again, Slovenian nascent entrepreneurs are extremely optimistic, especially regarding market creation compared with those in Croatia and Hungary. Regarding the use of technologies that were not available more than a year ago, nascent entrepreneurs in the three countries do not differ, but significant differences are found among new entrepreneurs. It seems that new entrepreneurs in Hungary are ahead of Croatians, and especially ahead of new entrepreneurs in Slovenia.

Let us combine the described results on national differences in Table 8. The sign * marks significant country differences. Differences are numerous and indicate, as we assumed, that the three countries are at first sight very similar regarding some social, economic and historic features, yet are significantly different regarding different aspects of early stage entrepreneurship. The majority of differences can be assigned to percentage rates among nascent entrepreneurs in the three countries, where nascent Slovenian entrepreneurs have, in particular, extremely high growth aspirations.

Table 2: *Early stage entrepreneurs, regarding entrepreneurial growth aspirations – employment – (nascent and new entrepreneurs)*

	Slovenia mean (in%)	Croatia mean (in%)	Hungary mean (in%)	Chi-square (significance) Hungary–Slovenia	Chi-square (significance) Croatia–Slovenia	Chi-square (significance) Hungary–Croatia
No change in the number of jobs	10.53	3.80	18.82	5.167 (0.023)	4.718 (0.030)	18.080 (0.000)
Increase in the number of new jobs from 1 to 5	28.42	43.67	40.00	5.913 (0.015)	8.124 (0.004)	0.401 (0.527)
Increase in the number of new jobs from 6 to 19	19.47	11.39	8.63	10.214 (0.001)	3.648 (0.056)	0.566 (0.452)
Increase in the number of new jobs for 20 or more	21.58	8.86	15.69	2.159 (0.142)	9.552 (0.002)	3.421 (0.064)

Table 3: Early stage entrepreneurs, regarding entrepreneurial growth aspirations – employment (nascent entrepreneurs)

	Slovenia mean (in%)	Croatia mean (in%)	Hungary mean (in%)	Chi-square (significance) Hungary–Slovenia	Chi-square (significance) Croatia–Slovenia	Chi-square (significance) Hungary–Croatia
No change in the number of jobs	8.27	3.57	11.51	0.477 (0.490)	1.590 (0.207)	4.304 (0.038)
Increase in the number of new jobs from 1 to 5	27.07	40.18	41.73	5.826 (0.016)	4.149 (0.042)	0.014 (0.905)
Increase in the number of new jobs from 6 to 19	20.30	12.50	10.07	4.785 (0.029)	2.125 (0.145)	0.165 (0.685)
Increase in the number of new jobs for 20 or more	21.05	8.04	12.95	2.625 (0.105)	7.052 (0.008)	1.090 (0.296)

Table 4: Early stage entrepreneurs, regarding entrepreneurial growth aspirations – employment (new entrepreneurs)

	Slovenia mean (in%)	Croatia mean (in%)	Hungary mean (in%)	Chi-square (significance) Hungary–Slovenia	Chi-square (significance) Croatia–Slovenia	Chi-square (significance) Hungary–Croatia
No change in the number of jobs	15.79	4.35	27.59	2.325 (0.127)	Fisher's exact test (0.106)	9.371 (0.002)
Increase in the number of new jobs from 1 to 5	31.58	52.17	37.93	0.423 (0.516)	3.659 (0.056)	2.190 (0.139)
Increase in the number of new jobs from 6 to 19	17.54	8.70	6.90	3.576 (0.059)	1.027 (0.311)	Fisher's exact test (0.742)
Increase in the number of new jobs for 20 or more	22.81	10.87	18.97	0.152 (0.697)	1.756 (0.185)	1.026 (0.311)

Table 5: Early stage entrepreneurs, regarding entrepreneurial growth aspirations – market creation, – technology and – market creation/technology (nascent and new entrepreneurs)

	Slovenia mean (in%)	Croatia mean (in%)	Hungary mean (in%)	Chi-square (significance) Hungary–Slovenia	Chi-square (significance) Croatia–Slovenia	Chi-square (significance) Hungary–Croatia
Market creation	33.68	19.62	16.86	15.960 (0.000)	7.903 (0.005)	0.334 (0.563)
Technology	13.68	11.39	16.47	0.455 (0.500)	0.229 (0.632)	1.638 (0.201)
Market creation/technology	8.95	4.43	3.53	4.866 (0.027)	2.083 (0.149)	0.040 (0.842)

Table 6: Early stage entrepreneurs, regarding entrepreneurial growth aspirations – market creation, – technology and – market creation/technology (nascent entrepreneurs)

	Slovenia mean (in%)	Croatia mean (in%)	Hungary mean (in%)	Chi-square (significance) Hungary–Slovenia	Chi-square (significance) Croatia–Slovenia	Chi-square (significance) Hungary–Croatia
Market creation	41.35	23.21	20.14	13.437 (0.000)	8.238 (0.004)	0.188 (0.664)
Technology	18.05	14.29	17.27	0.000 (0.993)	0.384 (0.536)	0.219 (0.640)
Market creation/technology	12.03	6.25	3.60	5.652 (0.017)	1.757 (0.185)	0.465 (0.495)

Table 7: Early stage entrepreneurs, regarding entrepreneurial growth aspirations – market creation, – technology and – market creation/technology (new entrepreneurs)

	Slovenia mean (in%)	Croatia mean (in%)	Hungary mean (in%)	Chi-square (significance) Hungary–Slovenia	Chi-square (significance) Croatia–Slovenia	Chi-square (significance) Hungary–Croatia
Market creation	15.79	10.87	12.93	0.077 (0.782)	0.189 (0.663)	0.009 (0.924)
Technology	3.51	4.35	15.52	4.280 (0.039)	Fisher's exact test (1.000)	2.835 (0.092)
Market creation/technology	1.75	0.00	3.45	Fisher's exact test (1.000)	Fisher's exact test (1.000)	Fisher's exact test (0.578)

Table 8: Significant country differences in the growth aspirations of early stage entrepreneurs

Growth aspirations	Nascent and new entrepreneurs			Nascent entrepreneurs			New entrepreneurs		
	Hungary–Slovenia	Croatia–Slovenia	Hungary–Croatia	Hungary–Slovenia	Croatia–Slovenia	Hungary–Croatia	Hungary–Slovenia	Croatia–Slovenia	Hungary–Croatia
No change in the number of jobs	*	*	*			*			*
Increase: 1 to 5 jobs	*	*		*	*				
Increase: 6 to 19 jobs	*			*					
Increase: 20 or more jobs		*			*				
Market creation	*	*		*	*		*		
Technology									
Market creation/Technology	*			*					

Results and discussion

Kirzner (1979) emphasized that the opportunity perception is the most distinctive and fundamental characteristic of entrepreneurial behavior. Among adults between 18 and 64 years of age in Slovenia 37.14%, on average, believe that in the area where they live, good business opportunities are likely to appear within the next 6 months. This percentage amounts to 20.83% in Croatia and 17.71% in Hungary, as presented in Table 9.

There is no significant difference between Croatia and Hungary, while Slovenia differs significantly from the other two countries. Therefore, the hypothesis H1, that the perceptions of good business opportunities by adults in Slovenia are significantly different from the perception by adults in Croatia and Hungary, is supported. Consistent with findings reported in the literature (Davidsson, 1991; Shane et al., 2003), a higher degree of alertness to unexploited perceived opportunities in Slovenia may be the cause of higher growth aspirations of Slovenian early stage entrepreneurs. Of course, entrepreneurs are people and may make different decisions when confronted with similar opportunities, but an entrepreneur's vision is exactly that entrepreneur's expectation about how to exploit the perceived opportunity. A very strong belief among people in society that there are "many good business opportunities out there," may lead to rather euphorically formed expectations about results of their exploitation. On the other hand, if we take Kirzner's definition of opportunity as imprecisely defined market need, or un- or under-employed resources or capabilities (Kirzner, 1997), it may be that potential Slovenian entrepreneurs see more underutilized or unemployed resources, or are aware of more of Leibenstein's holes in the net. This may be so because Slovenia was more market-oriented than Hungary during the socialist era, and more internationalized than Croatia, if internationalization is measured in terms of exported goods. Because of those differences, individuals in Slovenia may be more sensitive to seeing opportunities, either in the form of market needs or under-employed resources.

Table 9: Mean percentage of adults in Slovenia, Croatia and Hungary, who believe, that in the area in which they live, good business opportunities are likely to appear within the next 6 months

Good start-up opportunities in the next 6 months in the area where you live.					
Slovenia mean (in%)	Croatia mean (in%)	Hungary mean (in%)	Chi-square (significance) Hungary–Slovenia	Chi-square (significance) Croatia–Slovenia	Chi-square (significance) Hungary–Croatia
37.14	20.83	17.71	91.385 (0.000)	40.914 (0.000)	2.290 (0.130)

The data we had at our disposal did not allow us to differentiate between the different stages of opportunity recognition, such as perception, discovery and creation of opportunity underlined by Ardichvili et al. (2003) or the preparation, incubation, insight, evaluation and elaboration discussed by Lumpkin et al. (2004). Therefore, we don't know whether the respondents had the same perceptions of reality when asked about opportunities. We also had no indication of their absorptive capacity and cognitive processes (Shane, 2003).

Cultural support for entrepreneurial motivation as a part of entrepreneurial capacity was analyzed through four questions, as described above. Table 10 reports the results. The mean percentage of adults who answered YES to each of the four questions was the highest in Slovenia, except in the case of those who believe that most people in the country consider starting a new business a desirable career choice, where Croatia's percentage is the highest. Statistical significances of country differences are also reported in Table 10.

Table 10: Mean percentage of adults that answered YES to the four questions – motivation for entrepreneurship in the society

	Slovenia mean (in%)	Croatia mean (in%)	Hungary mean (in%)	Chi-square (significance) Hungary–Slovenia	Chi-square (significance) Croatia–Slovenia	Chi-square (significance) Hungary–Croatia
Most people in your country prefer that everyone had a similar standard of living	83.34	66.86	51.16	220.783 (0.000)	54.466 (0.000)	40.694 (0.000)
Most people in your country consider starting a new business a desirable career choice	59.28	66.49	55.17	3.063 (0.080)	7.680 (0.006)	20.880 (0.000)
Those successful at starting a new business have a high level of status and respect in your country	76.41	50.39	56.98	78.652 (0.000)	105.925 (0.000)	6.783 (0.009)
You often see stories in the media about successful new businesses in your country	60.87	48.63	35.67	120.323 (0.000)	21.768 (0.000)	27.857 (0.000)

We have some doubts that the phrasing of these questions is correct, since the respondents were not asked about *their opinion*, but about the *opinion of the majority of the people* in their country. Of course, people share norms and values in a society, but entrepreneurs are often considered exceptional individuals. Not everybody has the talent, skills and motivation needed for successful engagement in entrepreneurship. The values of those who are identified as entrepreneurs can even be considered as opposite to those who are not. In Slovenia, for example, a very high percentage of those who agree *that most people would prefer that everyone had a similar standard of living*, in combination with a relatively lower percentage of those who agree *that starting a new business is a desirable career choice*, could point to the difficulties that entrepreneurs face in Slovenian society. This may be supported by research in which it was established that

capitalism is rated very low among the shared values of Slovenian people (Slovenian public opinion 1999–2004, 2004). On the other hand, Croatians pay less attention to the equality of everyone, but consider entrepreneurship a good career choice to a greater extent. The high percentage of Slovenians who stated that stories are often seen in the public media about successful new businesses does not also mean that stories of those who failed are not even more frequently published. It is interesting to note that Hungary is rated the lowest regarding the percentage of adults who answered YES to three of the four questions described. On the other hand, the percentage of those in a country who stated that fear of failure would prevent them from starting a new business is the lowest in Hungary (24.3%), and the difference to both Croatia (41.6%) and Slovenia (34.8%) is significant ($p < 0.05$).

Therefore, we are rather sceptical if the form of the stated questions is appropriate for analyzing the cultural influence towards higher entrepreneurial motivation in the country, and if they ensure a relevant basis for making conclusions about higher or lower cultural support for entrepreneurial motivation between countries. Nevertheless, the hypothesis that cultural support for entrepreneurial motivation is different in Slovenia can be supported. Most of the components of cultural support for entrepreneurial motivation are incorporated in adults' opinions in Slovenia to a greater degree than they are in Hungary or Croatia. That may be the influencing factor for higher growth aspiration of entrepreneurs in Slovenia, as strong shared norms and value define acceptable behavior and sanctions against opportunistic behaviors, while contributing to entrepreneurial growth aspirations (Liao and Welsch, 2003).

The results of the analysis of the *self-confidence in skills and knowledge needed for entrepreneurship* are presented in Table 11. The mean percentage of adults in a country who believe that they have the skill, knowledge and experience required for entrepreneurship is the highest in Slovenia, followed by Croatia and Hungary. The Chi-square test reveals that there is no significant difference between Croatia and Slovenia, while Hungary differs significantly from the other two countries. The hypothesis *H3* can be partly supported: there is no difference between Slovenia and Croatia, while Hungary differs statistically regarding beliefs among adults about knowledge, skills and experiences needed for entrepreneurship. It seems that adults in Hungary are either less confident of their own entrepreneurial skills, or find entrepreneurship to be a much more complex action than adults in Slovenia and Croatia, where the percentage is twice as high. Self-efficacy is the belief in the ability of oneself to muster and implement the necessary personal resources, skills and competences to attain a certain level of achievement in a given task (Bandura, 1997). It revealed the fact that self-efficacy regarding entrepreneurial skills, knowledge and experience of Slovenian adults is not significantly higher than that of adults in Croatia, on average, and it seems that the cause for higher growth aspirations of Slovenian early stage entrepreneurs cannot be searched for in this area. But still, it can be assumed that extremely low self-confidence of Hungarians in their entrepreneurial skills, knowledge and experience can explain at least part of the relatively low growth aspirations of early stage entrepreneurs in their country.

Table 11: Mean percentage of adults who believe that they have the knowledge, skills and experience required to start a new business

Has knowledge, skills and experience required to start a new business.					
Slovenia mean (in%)	Croatia mean (in%)	Hungary mean (in%)	Chi-square (significance) Hungary–Slovenia	Chi-square (significance) Croatia–Slovenia	Chi-square (significance) Hungary–Croatia
43.18	41.71	21.98	111.481 (0.000)	0.267 (0.605)	89.779 (0.000)

Conclusions and extensions

In this paper we searched for explanations of factors that impact growth aspirations of Slovenian early stage entrepreneurs by comparing Slovenia, Hungary and Croatia, especially on different shared norms providing social support for entrepreneurship and encouraging people’s entrepreneurial capacities. Namely, growth aspirations of Slovenian early stage entrepreneurs are significantly higher than those of early stage entrepreneurs in Croatia and Hungary, even though Slovenia, Hungary and Croatia share many historic, economic and social similarities.

Our results suggest that the cause of higher growth aspirations of Slovenian early stage entrepreneurs may be a higher degree of alertness to unexploited perceived opportunities among adults in that country. Also, most of the components of cultural support for entrepreneurial motivation are incorporated in adults’ opinions in Slovenia to a greater degree than they are in Hungary or Croatia. That may be the influencing factor for higher growth aspiration of entrepreneurs in Slovenia, while self-efficacy regarding entrepreneurial skills, knowledge and experience of Slovenian adults does not seem to be crucial.

Even though growth aspirations are very high, Slovenia has a very low level of early stage entrepreneurship. One of the explanations may be given by the prospect theory, which replaces the notion of “utility” with “value” (Kahneman and Tversky, 1979), and centers on the subjective perception of gains and losses. Gains or losses are defined relative to some reference point, very often a status quo. It is assumed that the function relating losses to subjective value is steeper than the function relating gains to subjective value, meaning that people tend to be risk-averse with respect to gains but risk-seeking with respect to losses, which may have interesting implications for the process of entrepreneurship (Baron, 2004). In egalitarian societies such as Slovenia, where two thirds of the population believe people should have a similar standard of living, and entrepreneurship is not a valuable and viable option for wealth creation (Rebernik et al. 2005), people will tend to avoid an entrepreneurial career, even though engagement in entrepreneurship could bring them more value than their current employment. As the majority of new entrants is 95% recruited from the available stock of employment, a relatively low level of unemployment in Slovenia compared to Croatia and Hungary, would support the previous line of arguments. Many of the barriers enumerated by Sarasvathy (2004) can also be found in Slovenia: untitled assets, no market-augmenting

government, no risk capital available, and a comparably lower level of unemployment than in Hungary and Croatia.

Cognitive errors, such as a strong tendency to weight negative information more heavily than positive information (Baron, 2004) may also contribute to a low level of entrepreneurial activity in Slovenia, where not many success stories can be found in the media compared to lamentation and criticism of entrepreneurial frameworks, especially government policy.

Several extensions of our research are possible. First, as described in the paper, adults in the three countries differ significantly regarding various aspects of entrepreneurship. Suggestions from our findings, as well as from the literature (for example Arenius and De Clercq, 2005, who conducted a research on opportunity recognition) are that researches should compare drivers of entrepreneurial growth aspirations across a wider range of countries, where cultural factors, in our opinion, are extremely interesting. To our knowledge, no previous research focused on culturally conditioned differences in growth aspirations of early stage entrepreneurs in different countries. Second, a logical extension of our research is to establish if, and to what extent, growth aspirations are turned into the real growth of ventures. There is some evidence that the growth goals of entrepreneurs are significantly related to subsequent venture growth (Baum et al., 2001). Should further research confirm that high growth aspirations of early stage entrepreneurs are important for their actual growth, findings from our paper are also important for possible policy implications.

The impact of opportunity recognition, self-efficacy and cultural norms on growth aspirations of early stage entrepreneurs is very complex, and to some extent also country-specific. Especially in transitional countries, variables which are difficult to quantify, such as nonentrepreneurial socioeconomic history, slow changing and modernization of traditional values, and fragile institutional settings with unclear and evasive rules of the games, should be taken into account. Because there is a possibility that entrepreneurship research models can be culturally biased and may not accurately reflect the reality in these countries, we should be careful when using them, and when selecting countries to compare to, especially when policy-making advice is one of the intended results of these models.

While conducting this research we faced some methodological doubts. Besides the previously mentioned difficulties in explaining cultural support for entrepreneurship motivation, there is a lack of comparable data for established entrepreneurs in the three countries analyzed. Due to the very small sample, the adult population survey does not provide a relevant sample data for established entrepreneurs. The sampling frame for established entrepreneurs should not be the adult population but the population of all enterprises within one country. In Slovenia, an attempt to resolve this problem is made by conducting the other survey – the Slovenian Entrepreneurship Observatory, in which some of the same issues as in GEM are investigated, but addressed towards entrepreneurs taken from established companies (Rebernik et al., 2005).

There is also the general problem of gathering data among the adult population by household telephones – namely, the increasing number of households that are starting to rely merely on their mobile phones. In Slovenia, in 2004, the number of mobile phone subscriptions equaled the total number of inhabitants, and almost 10% of households are now contactable only over mobile phone (Vehovar et al., 2004). The problem seems to be the most severe in Finland, where the share of mobile-only households has already approached almost 40% (Kuusela and Simpanen, 2002). We can expect that entrepreneurs are, in general, more active and less frequently sit at home by the stationary phone. This could become a serious problem when attempting to determine the rate of active entrepreneurial adults with a survey based on households with stationary phones. Personal interviews could solve this part of the problem. Opportunity perception, perceptions of cultural support for entrepreneurship and other so-called perceptual variables are related to individuals and are not easily or quickly changeable. Individuals form the society and its cultural and social norms, which are predetermined by the society's history. Our results would imply that at first sight historic similarities of economic and social systems seen are not also necessarily leading to similarities in the entrepreneurship process, particularly to similarities in growth expectations of early stage entrepreneurs, and it is also reasonable to expect that the effectiveness of government policies depends on the entrepreneurial history of a society.

Notes

- ¹ We did not form a multi-item (combined) variable, due to some doubts considered later in this paper.
- ² Results of significance of country differences among nascent and new entrepreneurs are, especially in comparisons including Croatia, less reliable, due to a very limited number of nascent and limited number of new entrepreneurs that exhibit the growth aspirations analyzed. If more than 20% of expected frequencies are less than 5, and/or at least one expected frequency is 1 or less, the result of significance (two-tailed) of Fisher's exact test are reported in Tables 3 and 4.

REFERENCES

1. Acs, Z. J., P. Arenius, M. Hay and M. Minniti, 2005, *Global Entrepreneurship Monitor 2004 Executive Report*, Babson College and London Business School.
2. Ardichvili, A., R. Cardozo and S. Ray, 2003, 'A Theory of Entrepreneurial Identification and Development', *Journal of Business Venturing* 18, 105-123.
3. Arenius, P. and D. De Clercq, 2005, 'A Network-based Approach on Opportunity Recognition', *Small Business Economics*, 24, 249-265.
4. Arenius, P. and M. Minniti, 2005, 'Perceptual Variables and Nascent Entrepreneurship', *Small Business Economics* 24, 233-247.
5. Arenius, P., A. Erkkö and A. Kovalainen, 2004, *Finland GEM Executive Summary 2003*, Esopoo, Finland: Helsinki University of Technology.
6. Bandura, A., 1997, *Self-Efficacy: The Exercise of Self-Control*, New York: Freeman.
7. Baron, R., 2004, 'The Cognitive Perspective: A Valuable Tool for Answering Entrepreneurship's Basic "Why" Questions', *Journal of Business Venturing* 19, 221-239.
8. Baron, R., 2000, 'Psychological Perspectives on Entrepreneurship: Cognitive and Social Factors in Entrepreneurs' Success', *Current Directions in Psychological Science* 9, 15-19.

9. Barringer, B. R., F. F. Jones and D. O. Neubaum, 2005, 'A Quantitative Content Analysis of the Characteristics of Rapid-Growth Firms and Their Founders', *Journal of Business Venturing* 20(5), 663–687.
10. Baum, J. R. and E. A. Locke, 2004, 'The Relationship of Entrepreneurial Traits, Skill, and Motivation to Subsequent Venture Growth', *Journal of Applied Psychology* 89(4), 587–598.
11. Baum, J. R., E. A. Locke and K. G. Smith, 2001, 'A Multi- Dimensional Model of Venture Growth', *Academy of Management Journal* 44(2), 292–303.
12. Brown, T. E. and B. A. Kirschoff, 1997, 'The Effects of Resource Availability and Entrepreneurial Orientation on Firm Growth', *Frontiers of Entrepreneurship Research*, 32–46.
13. Carter, N., W. B. Gartner and P. Reynolds, 1997, 'Exploring Start-up Event Sequences', *Journal of Business Venturing* 11, 151–166.
14. Casson, M., 1982, *The Entrepreneur: An Economic Theory*, Oxford: Martin Robertson.
15. Casson, M., 2005, 'Entrepreneurship and The Theory of the Firm', *Journal of Economic Behaviour and Organization* 58, 327–348.
16. Coleman, J. S., 1990, *Foundations of Social Theory*, Cambridge, MA: Harvard Business Press.
17. Colombo, M. G. and L. Grilli, 2005, 'Founders' Human Capital and the Growth of New Technology-based Firms: A Competence-based View', *Research policy* 34(6), 795–816.
18. Covin, J. G. and D. P. Slevin, 1997, 'High Growth Transitions: Theoretical Perspectives and Suggested Directions'. In D. L. Sexton, and E. W. Smilor (eds.), *Entrepreneurship 2000*, Chicago: Upstart, pp. 99–126.
19. Davidsson, P. and J. Wiklund, 1999, 'Theoretical and Methodological Issues in the Study of Firm Growth,' *JIBS – Jonkoping International Business School Working Paper Series 1999–6*, Sweden. http://www.ihh.hj.se/eng/research/publications/wp/jibs_workingpaper1999.htm.
20. Davidsson, P., 1991, 'Continued Entrepreneurship: Ability, Need and Opportunity as Determinants of Small Firm Growth', *Journal of Business Venturing* 6, 405–429.
21. Davidsson, P. 2003, 'The Domain of Entrepreneurship Research: Some Suggestions', in Jerome A. Katz and Dean Shepherd (eds.), *Cognitive Approaches to Entrepreneurship Research, Advances in Entrepreneurship, Firm Emergence and Growth*, 6, 315–372, Oxford: Elsevier/JAI Press.
22. Delmar, F. and P. Davidsson, 1999, 'Firm Size Expectations of Nascent Entrepreneurs', *JIBS – Jonkoping International Business School Working Paper Series 1999–7*, Sweden.
23. Eckhardt, J. and S. Shane, 2003, 'The Individual-opportunity Nexus', in Zoltan J. Acs and David B. Audretsch (eds.), *Handbook of Entrepreneurship Research*, Dordrecht, NL: Kluwer.
24. Giannetti, M. and A. Simonov, 2005, 'Social Interactions and Entrepreneurial Activity,' Paper Presented at the *Conference on Economics and Psychology*, France: Toulouse.
25. Gundry, L. K. and H. Welsch, 2001, 'The Ambitious Entrepreneur: High Growth Strategies of Women-owned Enterprises', *Journal of Business Venturing* 16, 453–470, New York: Elsevier Science Inc.
26. Hofstede, G., N. G. Noorderhaven, A. R. Thurik, L. M. Uhlander, A. R. M. Wennekers and R. E. Wildeman, 2004, 'Culture's Role in Entrepreneurship: Self-Employment Out of Dissatisfaction', in T. E. Brown and J. Ulijn (eds.), *Innovation, Entrepreneurship and Culture*, Cheltenham, UK: Elgar.
27. Kahneman, D. and A. Tversky, 1979, 'Prospect Theory: An Analysis of Decision under Risk', *Econometrica* 47(2), 263–292.
28. Kirzner, I., 1997, 'Entrepreneurial discovery and the competitive market process: An Austrian Approach', *Journal of Economic Literature* 35, 60–85.

29. Kirzner, I. M., 1973, *Competition and Entrepreneurship*, Chicago, IL: University of Chicago Press.
30. Kirzner, I. M., 1979, *Perception, Opportunity and Profit*, Chicago, IL: University of Chicago Press.
31. Kolvereid, L., 1992, 'Growth Aspirations among Norwegian Entrepreneurs', *Journal of Business Venturing* 5, 209–222.
32. Kuusela, V. and M. Simpanen, 2002, Effects of Mobile Phones on Phone Survey Practices and Results, paper presented at the *ICIS Conference*, Copenhagen.
33. Leibenstein, H., 1968, 'Entrepreneurship and Development', *American Economic Review, Papers and Proceedings* 58(May), 72–83.
34. Liao, J. and H. Welsch, 2003, 'Social Capital and Entrepreneurial Growth Aspiration: A Comparison of Technology- and Non-technology-based Nascent Entrepreneurs', *Journal of High Technology Management Research* 14, 149–170.
35. Lumpkin, G., G. Hills and R. Shrader, 2004, 'Opportunity Recognition', in H. Welsch (ed.), *Entrepreneurship: The Way Ahead*, New York: Routledge, pp. 73–90.
36. Lynn, R., 1992, 'The Secret of the Miracle Economy; Different National Attitudes to Competitiveness and Money', *Journal of Economic Psychology* 13(2), 370–372.
37. Penrose, E. T., 1959, *Theory of the Growth of the Firm*, New York, NY: Wiley.
38. Rebernik, M., 1997, 'Beyond Markets, Hierarchies and Ownership Mania in Transitional Countries', *Systems Research and Behavioral Science, Wiley* 14, 193–194.
39. Rebernik, M., P. Tominc and K. Pušnik, 2005a, *GEM Slovenia 2004: Podjetništvo na prehodu*, IPMMP, Faculty of Economics and Business, Maribor.
40. Rebernik, M., P. Tominc, M. Duh, T. Krošlin and G. Radonjič, 2005, *Slovenski podjetniški observatorij 2004* (Slovenian Entrepreneurship Observatory 2004), IPMMP, Faculty of Economics and Business, Maribor.
41. Reynolds, P., B. Bygrave and E. Autio, 2003, *GEM 2003 Executive Report*, Babson College, London Business School, E. M. Kauffman Foundation.
42. Reynolds, P., N. Bosma, E. Autio, S. Hunt, N. De Bono, I. Servais, P. Lopez-Garcia and N. Chin, 2005, 'Global Entrepreneurship Monitor: Data Collection Design and Implementation 1998–2003', *Small Business Economics* 24(3), 205–231.
43. Sarasvathy, S., 2004, 'The Questions We Ask and The Questions We Care About: Reformulating Some Problems in Entrepreneurship Research', *Journal of Business Venturing* 19, 707–717.
44. Schildt, H. and A. Sillanpaa 2004, 'The Field of Entrepreneurship: A Bibliometric Assessment', *Working paper No. 2004/1*, Helsinki University of Technology, Espoo.
45. Schott, T. and T. Bager, 2004, 'Growth Expectations by Entrepreneurs in Nascent Firms, Baby Businesses and Mature Firms', in M. Hancock and T. Bager (eds.), *Global Entrepreneurship Monitor Denmark 2003*, Denmark: Borsens Forlag.
46. Schumpeter, J. A., 1934, *The Theory of Economic Development*, Cambridge, MA: Harvard University Press.
47. Shane, S. and S. Venkataraman, 2000, 'The Promise of Entrepreneurship as a Field of Research', *Academy of Management Review* 25(1), 217–226.
48. Shane, S., 2000, 'Prior Knowledge and the Discovery of Entrepreneurial Opportunities', *Organization Science* 11(4), 448–469.
49. Shane, S., 2003, *A General Theory of Entrepreneurship*, Cheltenham: Edward Elgar.
50. Shane, S., E. A. Locke and C. J. Collins, 2003, 'Entrepreneurial Motivation', *Human Resource Management Review* 13(2), 257–279.

51. Shaver, K. G. and L. R. Scott, 1991, 'Person, Process, Choice: The Psychology of New Venture Creation', *Entrepreneurship Theory and Practice* 16(2), 23–45.
52. *Slovenian Public Opinion 1999–2004 (Slovensko javno mnenje 1999–2004)*, 2004, Tos N., (ed.), Ljubljana, Slovenia: FDV.
53. Storey, D., 1994, *Understanding the Small Business Sector*, London, New York: Routledge.
54. Ulhoi, J., 2005, 'Social Dimension of Entrepreneurship', *Technovation* 25, 939–946.
55. Vehovar, V., E. Belak, Z. Batagelj and S. Cikic, 2004, 'Mobile Phones Surveys: The Slovenian Case Study', *Metodološki zvezki* 1(1), 1–19.
56. Venkataraman, S. 1997, 'The Distinctive Domain of Entrepreneurship Research', in Katz, J. (ed.) *Advances in Entrepreneurship, Firm Emergence and Growth*, vol. 3, Greenwich: JAI Press, pp. 119–138.
57. Verheul, I., S. Wennekers, D. Audretsch and R. Thurik, 2002, 'An Eclectic Theory of Entrepreneurship', in D. B. Audretsch, A. R. Thurik, I. Verheul and A. R. M. Wennekers (eds.), *Entrepreneurship, Determinants and Policy in a European-US Comparison*, Boston/Dordrecht: Kluwer Academic Publishers.
58. Weber, M. 1904, 'The Protestant Ethic and the Spirit of Capitalism', translated by T. Parsons, New York, Scribner, 1929.
59. Wennekers, S. and R. Thurik, 1999, 'Linking Entrepreneurship and Economic Growth', *Small Business Economics*, Springer 13(1), 27–55.
60. Wennekers, S., L. Uhlaner and R. Thurik, 2002, 'Entrepreneurship and Its Conditions: A Macro Perspective', *International Journal of Entrepreneurship Education* 1(1), 1–40.

INTERNATIONALIZATION OF SLOVENIAN SMEs AS LEARNING AND UNLEARNING PROCESS

Miroslav Rebernik and Ksenja Pušnik[†]

DANA Léo-Paul (ed.), WELPE Isabell M. (ed.),
HAN Mary (ed.), RATTEN Vanessa (ed.)
Handbook of Research on European
Business and Entrepreneurship: Towards
a Theory of Internationalization
Edgar Elgar, Cheltenham (UK);
Northampton (MA, USA)
Publishing year: 2008
pp. 580-597

Introduction

The ability to engage in exporting activities is necessary ingredient to ensure the survival and growth of SMEs, especially in small market economy, like Slovenia. Globalization processes, transition to market economy, membership in European Union, progress in telecommunications and transport, and utilization of internet have opened completely new business possibilities for Slovenian SMEs and at the same time exposed them to fiercer international competition.

Our contribution seeks to enhance understanding of the internationalization of SMEs in Slovenia and in this perspective the importance of learning and unlearning processes for encouraging further internationalization of SMEs. Despite the importance of internationalization processes and volume of research in the field, there is still insufficient knowledge about factors associated with the ability of SMEs to be engaged in international activities.

Looking at the internationalization as the product of a series of incremental decisions (Johanson and Vahlne, 1977), the decisions on improving the level of knowledge and skills are very important especially when we consider internationalization to be path-dependent, based on experience, sequential, local and relied upon feedback (Blomstermo et al., 2004). Internationalization of firms implies accumulating new knowledge (ibid.) but at the same time also discarding the knowledge that became obsolete (Hedberg, 1984; Eriksson et al., 1997; Windeknecht and Delahaye, 2004; Blomstermo et al., 2004). In this perspective, not only the process of learning but also the process of unlearning is of special importance when discussing the internationalization of Slovenian economy, and SMEs in particular.

In the paper we, first, outline the internationalization as a learning process. Second, we sketch a simple verbal model to show the complexity of learning and unlearning. Third, we introduce internationalization processes in Slovenia and their tardiness, and, finally discuss some learning and unlearning challenges that Slovenian SMEs are facing. In conclusion, we summarize our findings on the importance of learning and unlearning for the internationalization, and develop some implications for (economic) policy concerning the internationalization of Slovenian SMEs and need for further research.

Internationalization as a learning process

The Uppsala model of internationalization shows the importance of experiential knowledge generated by managers and staff exposed to doing business in international markets. Understanding organizations as an information processing systems where experiential knowledge is stored in organizational memory (Christensen et al., 2004) brings an important caveat for transitional countries like Slovenia. During their 'previous life' in socialism/communism these countries have accumulated much experiential knowledge that has grown obsolete and should be disposed because it became useless and impedes the accumulation of new knowledge needed for market economy and internationalization.

Transitional economies, like Slovenia, to a greater extent than mature market economies lack each type of experiential knowledge: business, institutional and knowledge on how to internationalize. None of them can be obtained without costs and it is hard to be planned in advance (Eriksson et al., 1997). Business knowledge, i.e. the knowledge on customers, competitors and foreign markets is similar to the knowledge that the firm doing business at domestic markets is already exploiting. Institutional knowledge is much harder to obtain. It is consisted of knowledge of government and institutional framework, rules, norms and values in the targeted markets. The third type of knowledge is the knowledge on the process how to internationalize, and is very firm specific, embedded in the routines, norms and structure of the firm (Blomstermo et al., 2004).

If according to Johanson and Vahlne (1977) the knowledge is stored in the decision making system, when decision-makers leave the company, the knowledge is lost. Many of new companies in Slovenia in period 1990 - 1995 was formed by 'drop-out' managers of large and medium sized companies. As many managers of previously (big) socialist companies has formed their own companies, usually as sole proprietorships, the experiential knowledge embedded in organizational routines has been lost. Large and medium-sized companies have lost the expertise gained at international markets, while newly formed (very often one man band) companies did not have the resources to internationalize. They may have had the desire but not the capital and people.

Oviatt and McDougal seminal work on internationalization (Oviat and McDougal, 2005; Autio, 2005) called our attention to companies that are international from inception. They don't follow the stage model and they start their businesses in international

environments without previous collecting of experiences on domestic markets. Born global don't develop routines that could interfere with internationalization and long domestic operations are not a prerequisite in the internationalizing process (Blomstermo et al., 2004).

Research by Christensen et al. (2004) shows that organizational routines play a role in guiding initial international activities of companies but do not give an answer how to accelerate the process of creating routines that would support the internationalization. Hierarchy of routines (Nelson and Winter, 1982) would lead us to conclusion that changing of dominant beliefs of top managers could be the answer. But here again, we enter the twilight zone of transitional economies where institutional arrangements are not build-up yet, rules of the game and the structures of payoffs (Baumol, 1990) are not determined, many agency problems exist, false cooperation (Rebernik, 1999) is taking place, and requisite holism is missing (Rebernik and Mulej, 2000).

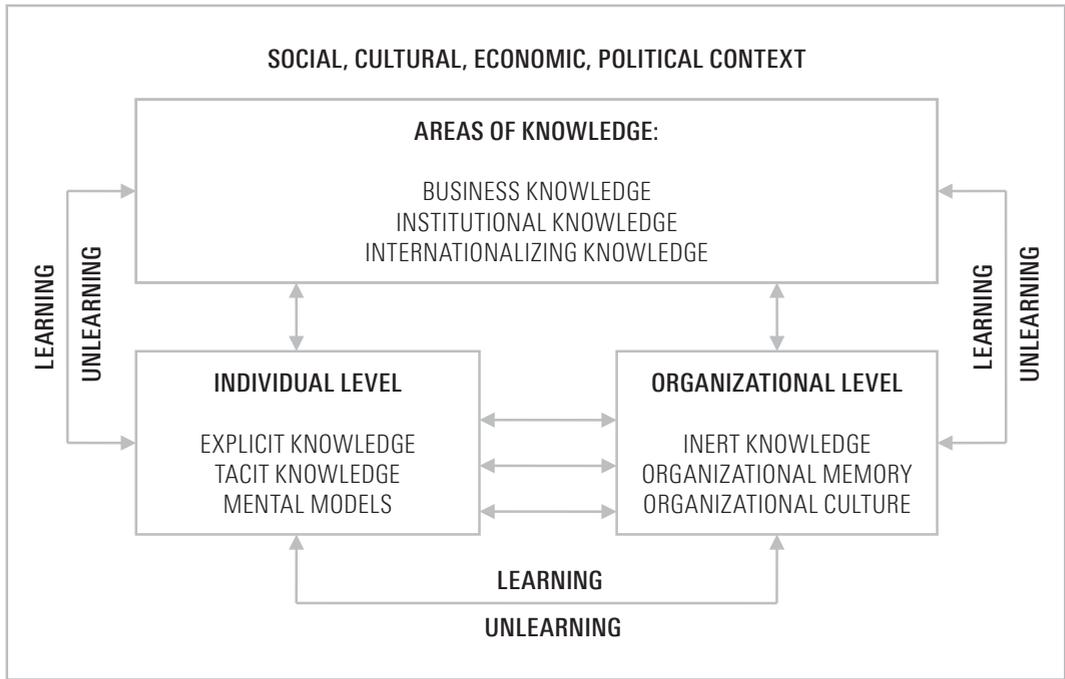
Many definitions of organizational learning and knowledge sharing exist (Hedberg, 1984; Cummings, 2003; Argyris, 2004; Esterby-Smith and Lyles, 2005). According to definition that 'an organization learns in only two ways: (a) by the learning of its members, or (b) by ingesting new members who have knowledge the organization didn't previously have' (Simon 1991, p. 125) our attention should be paid also to individual level, as at both levels the learning and unlearning is taken place.

Complexity of learning and unlearning

Even though we are still not able to answer the question what are the relevant organisational and individual-level competencies for internationalisation (Autio, 2005), we know that any understanding involves both learning new knowledge and discarding obsolete and misleading knowledge and that sometimes the unlearning may be as important as is adding new knowledge (Hedberg, 1984; Sinkula 2002). Nevertheless, until recently not much research has been devoted to area of unlearning even though presence of certain knowledge may constrain learning or even encourage ineffective learning (Cummings, 2003).

It is interesting that young firms may have cognitive learning advantages entering new market because of fewer 'systemic rigidities' as before learning they don't need to unlearn established routines (Autio et al., 2000). This would mean that the later a firm internationalizes, the more likely it develops competencies that constrain the opportunities it sees (Sapienza et al., 2003). For unlearning to take place intentional forgetting of some parts of existing individual and organizational knowledge is needed. Firm must "disorganize" some part of its knowledge store (Holan et al., 2004). Similar disorganization must take place also at individual level. The complexity of never-ending learning and unlearning processes is depicted in Figure 1.

Figure 1: Complexity of learning and unlearning



Source: Windeknecht and Delahaye (2004); Eriksson et al. (1997); Blomstermo et al. (2004)

There are two constituents of knowledge relevant for internationalization, one is owned by individuals, and the other is stored in organizations. They both relate to business knowledge, institutional knowledge and internationalization knowledge (Erickson et al., 1997; Blomstermo et al., 2004). Each type of knowledge has three dimensions (Windeknecht and Delahaye, 2004; Becker, 2005). The first dimension is explicit, easy to be articulated, identified, transferred and documented. The second dimension is tacit, intangible, hard to be defined and expressed. The third dimension is the one that is usually cited as *weltanschauung*, terms of reference, mental models, etc. It is the dimension that is the most difficult to be articulated, and therefore to be changed or unlearned. Explicit knowledge, tacit knowledge and mental models at individual level are to a certain degree synonymous with inert knowledge, organizational memory and organizational culture at organizational level.

Learning and unlearning is permanently taken place in all knowledge areas and with all types of knowledge which makes the phenomena very complex and hard to comprehend, especially because processes are mutually dependent on the social, cultural, economic and political context which is different from country to country. This not only makes internationalizing processes very hard to compare between countries but also call for our prudence when transferring experiential knowledge from one context to another.

In the next section we will show some of the basic characteristics of Slovenian economy and SMEs and their functioning in international environment.

Tardiness of internationalization processes in Slovenia

Main characteristics of Slovenian economy and SMEs

Slovenia became independent state after the collapse of the Socialist Federal Republic of Yugoslavia in 1990. The country with two million people has entered European Union (EU) in May 2004, and is among the most advanced of all transition economies in Central and Eastern Europe, not far behind the less developed countries of the “old” EU. A GDP per capita at purchasing power parity (PPP) exchange rates of EUR 17,400 in 2004 (Bank of Slovenia data) represents 78 per cent of the EU-25 average GDP per capita and places Slovenia above average level of medium-income countries.

Since 1990 Slovenia has undergone a threefold transition: (i) transition from a socialist to a market economy, (ii) transition from a regional to a national economy, and (iii) transition from being a part of Yugoslavia to becoming an independent state and a member of the EU (Mrak et al., 2004). Yet, Slovenia accomplished only the first stage of transition, which was carried out in the context of creating the new independent state and reforms, aimed at macroeconomic stabilization and internal and external liberalization, and significant challenges still remain. These are in part the result of delays in some crucial (structural and institutional) reforms associated with the unique path of transition (i.e. a gradualist approach to the economic reform), including, among others, the building of some institutions (the problem of the so-called ‘implementation gap’), the privatization of state-owned assets, health reform, the second stage of pension reform, the reform of the enterprise sector, the financial sector, and the reform of public administration.

Slovenia has a relatively short entrepreneurship tradition since its private sector started to grow only after the start of its reorientation towards a market economy in 1989. After a sharp increase in the number of small and medium-sized enterprises at the beginning of 1990s, the process of rapid development of small business sector slowed down considerably after 1994. On average, the largest part of SMEs could be found in trade and repair industry (24 per cent), followed by real estate and business activities and manufacturing (each 19 per cent), construction (13 per cent) and transport and communication (10 per cent).

The comparison of Slovenian and EU firms (Table 1) shows that the structure of the economy in terms of number of firms, number of employees and the average number of employees per firm is very similar to European average, less so in turnover per enterprise and value added per employee.

Table 1: Some indicators of Slovenian SMEs in comparison to EU-19 in 2002 and 2003

			Micro, small and medium enterprises (SMEs)					
			Micro	Small	Medium	SMEs Total	Large enterprises	Total
Number of enterprises (in 1000s)	Slovenia	2002	85,36	4,42	1,11	89,14	0,30	89,45
		2003	85,41	4,54	1,10	91,06	0,30	91,35
	Europe-19	2000	19.040	1.200	170	20.415	40	20.455
		2003	17.820	1.260	180	19.270	40	19.310
Share of enterprises in %	Slovenia	2002	93,47	4,95	1,25	99,66	0,34	100,00
		2003	93,50	4,97	1,21	99,67	0,33	100,00
	Europe-19	2000	93,10	5,90	0,80	99,80	0,20	100,00
		2003	92,28	6,53	0,93	99,74	0,21	99,95
Employment (in 1000s)	Slovenia	2002	134,25	91,56	116,00	341,81	203,14	544,94
		2003	134,83	91,56	116,00	342,39	203,14	545,52
	Europe-19	2000	41.750	23.080	15.960	80.790	40.960	121.750
		2003	55.040	24.280	18.100	97.420	42.300	139.720
Employment share in %	Slovenia	2002	24,55	15,95	21,54	62,04	37,96	100,00
		2003	24,72	16,78	21,26	62,76	37,24	100,00
	Europe-19	2000	34,30	19,00	13,10	66,40	33,60	100,00
		2003	39,39	17,38	12,95	69,73	30,27	100,00
Average enterprise size:								
Employment per enterprise	Slovenia	2002	1,62	19,84	106,42	3,82	689,62	6,15
		2003	1,58	20,17	105,36	3,76	683,96	5,97
	Europe-19	2000	2	20	95	4	1.020	6
		2003	3	19	98	5	1.052	7
Turnover per enterprise (in million euro)	Slovenia	2002	0,14	2,03	9,46	0,37	66,42	0,56
		2003	0,13	2,11	10,35	0,35	69,43	0,57
	Europe-19	2000	0,20	3,00	24,00	0,60	255,00	1,10
		2003	0,44	3,61	25,68	0,89	319,02	1,55
Value added per employee (in thousand euro)	Slovenia	2002	17,72	23,07	22,23	20,67	26,90	23,02
		2003	17,71	24,25	23,73	21,50	28,70	24,18
	Europe-19	2000	40	75	105	65	115	80
		2003	40	60	90	55	120	75
Share of labor costs in value added in %	Slovenia	2002	46,14	61,56	67,07	58,39	61,75	59,88
		2003	51,44	63,00	66,24	60,46	60,67	60,55
	Europe-19	2000	66	66	58	63	49	56
		2003	57	57	55	56	47	52

Note: According to the methodology of European Observatory of SMEs, companies in A-agriculture, hunting and forestry, B-fishing, L-public administration, defence, social insurance, and M-education are not included

Source: For Slovenia IPMMP according to data, provided by AJPES (in 2002 and 2003), for Europe-19 European Observatory for SMEs - 6th Report (in 2000) and 7th Report (in 2003)

Internationalization of Slovenian economy and SMEs

The internationalization of enterprises in Slovenia, like in other transition economies, is gaining importance only in recent years. Academic research on internationalization in Slovenia has been addressed seldom if compared to other countries and has been fairly limited. Researchers have been focused mostly on trends and characteristics of inward FDI and, in recent years, also on outward FDI of large firms (Pušnik and Rebernik, 2008). There is still insufficient knowledge about the internationalization of SMEs.

The main reasons for limited research on internationalization of Slovenian enterprises and on internationalization of SMEs in particular are availability of data and statistical problems. General unavailability and modesty of systematic and comprehensive data, limited time series and scope of data, changing methodology and reluctance of firms to report set limits on a substantive empirical and qualitative analysis.

Slovenia has traditionally been an open economy and the most outward-oriented Yugoslavian republic, with export being the most widely used foreign market entry mode. International knowledge was gained relatively early compared to other socialist economies also in other internationalization modes, since Slovenian firms began investing abroad already in the 1960s, firstly in order to facilitate import, than to facilitate export and lastly for general systemic reasons (Jaklič and Svetličič, 2001a; 2001b; 2003a; 2003b; Jaklič, 2003, p. 205). Already in 1980, developed countries accounted for 58 per cent of all Slovenian exports and in 1990 Slovenia accounted for 29 per cent of Yugoslavian exports in 1990 and 20 per cent of its GDP despite having just 8 per cent of its population (Pleskovič and Sachs, 1992, p. 2; cited by Jaklič 2003, p. 14).

During the past decade and a half, internationalization through outward foreign direct investments (FDIs) has come under the pressure of the processes of globalization, liberalization, deregulation, privatization and democratization the most dynamic instrument of integration in the world economy since they has grown relatively quickly, even faster than inward investment (UNCTAD, 2004). Indicators of trade integration and internationalization of Slovenian economy show that Slovenia has becoming more integrated within the international economy (Tables 2 and 3). However, trend in outward FDI indicates that Slovenian economy is still in the early phase of internationalization. Slovenian enterprises' FDI abroad totalled € 2,200.3 million at the end of 2004 (Bank of Slovenia data) and records a relatively high growth rate for fifth consecutive year. The value of inward FDI in Slovenia totalled € 5,633.1 million at the end of 2004, and has increased from 2003 and 2002.

Table 2: Trade integration of goods and services of Slovenian economy in international perspective in 2004

	Slovenia	EU 25	EU-zone	Czech Republic	Estonia	Cyprus	Latvia	Lithuania	Hungary	Poland	Slovakia
Real GDP growth rate at constant prices - % change on previous year	4.6	2.4	2	4	6.2	3.7	8.5	6.7	4	5.3	5.5
Trade integration of goods*	50.8	9.4	n.a	62.8	61.8	20.7	40.8	46.9	56.6	34.8	69.4
Trade integration of services*	9.5	3.3	n.a	8.8	20.2	28.6	10.9	9	10.1	5.3	8.7
Foreign direct investment intensity**	1.6	0.8	1.2	2.3	5.3	5.8	2.8	2.1	2.4	1.4	1.6

* Index of trade integration of goods and services: average value of imports and exports of goods (services) divided by GDP, multiplied by 100

** Average value of inward and outward foreign direct investment flows divided by gross domestic product (GDP)

Source: UNCTAD (2004).

Table 3: Indicators of internationalization of Slovenian economy

	1993	1995	1998	1999	2000	2001	2002	2003	2004
Foreign sale/total sale (in %)*	-	-	-	-	26.73	27.5	28.1	28.8	26.6
Import of goods and services (real growth in %)	17.6	11.3	10.4	8	7.6	3	4.9	6.8	12.4
Export of goods and services (real growth in %)	0.6	1.1	6.7	1.6	13	6.3	67	3.2	12.6
Inward FDI flows as a % of gross fixed capital formation	4.7	4.4	4.5	1.9	2.8	7.9	32.3	2.9	-
Outward FDI flows as a % of gross fixed capital formation	0.04	0.1	-0.1	0.9	1.4	3.1	1.9	4.8	-
Inward FDI stock as a % of GDP	3.8	8.9	12.1	14.5	15.3	16.4	18.7	15.6	-
Outward FDI stock as a % of GDP	1.5	2.5	2.3	3	4	4.9	6.8	6.5	-

* Sole proprietorships excluded

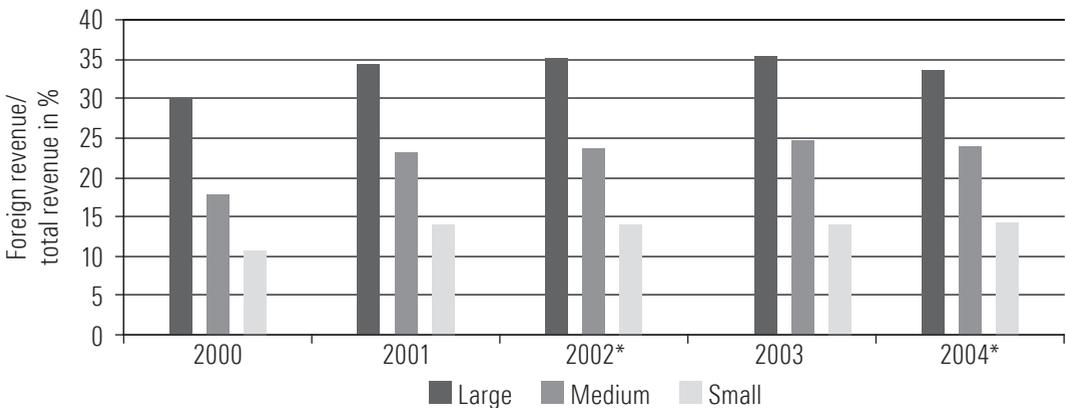
Sources: Bank of Slovenia; AJPEs; UNCTAD, 2001, 2003 and 2004, Annex Tables B5 in B6

The ratio of foreign revenues to total revenues of Slovenian enterprises (*Figure 2*) also indicates the early phase of internationalization of Slovenian enterprises. Almost two

third of Slovenian enterprises makes their revenues only on domestic markets and only one third of enterprises (23.4 per cent in 2003) also on foreign markets (AJ PES data). These exporters employ almost one quarter of employees (71.4 per cent) and have the largest share in total annual turnover (78.6) and added-value (77.3 per cent).

The most export-oriented are large enterprises, which create the largest share of revenues on foreign markets (32.9 per cent). Medium-sized enterprises create 23.0 per cent revenues on foreign markets and small enterprises 12.8 per cent. Large enterprises create also the largest share of total revenue both on domestic (53.5 per cent) and foreign markets (74.2 per cent). In the period 2000-2003, the ratio of foreign revenue/total revenue of all three class sizes has increased, indicating the increasing internationalization in terms of export orientation.

Figure 2: Foreign revenue/total revenue of Slovenian enterprises 2000-2004



* In 2001 and 2004, the criteria for classification of enterprises into large, medium and small enterprises have changed by Enterprises act (Uradni list RS, 45/01, 59/01, 139/04).

Source: IMAD 2005 according to AJ PES data.

The international operations of Slovenian SMEs are rather simple. A survey among 161 internationalized and 86 non-internationalized Slovenian SMEs in 2003 (Ruzzier, 2004) shows that almost three quarters of SMEs use 1 or 2 operating modes. The most frequently used mode of entry to the international markets is direct exporting (used by 66 per cent of enterprises), followed by importing (27 per cent), export through an intermediary (15 per cent) and contract entry mode (12 per cent). Franchising, joint venture direct investment and other non-specific modes are very rarely to be found among Slovenian SMEs.

In another survey (Burger and Svetličič, 2004) among 180 companies from Czech Republic, Estonia, Hungary, Poland and Slovenia, market motives have proved to be by far the most important with almost no differences among motives for investing abroad between SMEs and large firms. Second motive for Slovenian SMEs to start international activities is to fill the gap/niche in the product/service market followed

by the opportunity to meet the existing demand for products and services. Exploiting the opportunity to position at a lower price and the opportunity to cut costs seems to be the least important motive for internationalization. One of the reasons is that SMEs are generally more focused on niche markets where products and services are more differentiated and accustomed to specific needs of known customers and are often less price-elastic (Burger and Svetličič, 2004). SMEs also much more rarely follow long-term strategic motives (technology, brand names, networks) in their outward internationalization than large firms.

Slovenian SMEs need on average between one and two years to start their international activities, but many enterprises never achieve higher rates of foreign annual turnover. They may never exceed 5 or 10 per cent of their annual turnover or they are just occasional exporters. On the other hand, many enterprises increase their foreign turnover very fast (10 per cent of foreign trade on average in 2 to 3 years and 20 per cent in on average 3 to 4 years) and they represent the major part of their total turnover (Ruzzier, 2004).

Slovenian SMEs operates in a relatively small number of markets. Majority of internationalized Slovenian SMEs (39.8 per cent) sell their products or services in 1 to 3 countries, while 4.3 per cent sold them in 21 or more countries. The most common countries in which Slovenian SMEs operate are Italy, Austria and Germany, followed by countries in former Yugoslavia and Russia, other EU countries and associate countries. Slovenian SMEs operate least in the USA and Canada, which shows that these countries are still 'distant' markets for Slovenian enterprises (Ruzzier, 2004).

Research of entrepreneurship activity in Slovenia based on a survey among 3.016 adults in 2005 (Rebernik et al., 2006) shows that less than ten percent of Slovenian enterprises have on average more than three quarter of customers on foreign markets. New enterprises are less export-oriented than established enterprises, a result being consistent with those theories of internationalization, which consider export activities as evolution process.

In the next section we will discuss some selected issues and expose some ideas what is to be learned and unlearned on the individual, organizational and societal level in order to encourage Slovenian companies to become more international.

Learning and unlearning challenges for Slovenian SMEs

Development of competences

Slovenian Entrepreneurship Observatory reports that Slovenian firms are more likely to be aware of the importance of the development of competences than European companies. This is probably because of the awareness of Slovenian enterprises that their lagging behind their European counterparts is mainly due to a lack of knowledge and skills. More than 45 per cent of European and only 28 per cent of Slovenian SMEs

have a (special) person or a group of people employed in charge of developing knowledge, experience and skills of employees. An important obstacle in the development of competences is that the owners of SMEs are often unable to identify missing knowledge or skills. Only a small number of SMEs acknowledge the problems related to the identification of professional needs and the finding of useful resources for the development of competences.

Looking at organizational learning in Simon's (1991) way and understanding internationalization as a learning process, one can expect a company to internationalize if (a) individuals are willing and capable of learning, or (b) where company is open and capable of employing diverse people. Due to the short entrepreneurship history in Slovenia in companies, there are not much established routines that would push for learning of its members, and as the employment is local, the process of learning is suppressed.

Visiting exhibitions and fairs, reading professional literature and meetings organised for the exchange of information are among the most important methods used by enterprises in order to increase the level of knowledge, experience and skills. Slovenian enterprises (between 70 per cent and 80 per cent of surveyed enterprises) use these methods more often than European companies (between 30 and 60 per cent of surveyed enterprises). Both Slovenian and European large enterprises use these methods more frequently. After this comes cooperation with advisers, which is used by 59 per cent of Slovenian and 33 per cent European SMEs (Rus and Krošlin, 2004).

A major assumption of the stage process theory is the gradual accumulation of knowledge, which can be accelerated if SMEs cooperate within industrial clusters (Matlay and Mitra, 2004; Prashantham, 2005). Clusters also support the regional development and provide a fertile environment for internationalization at the cross-section of global and local. Clustering initiatives fits well with arguments that industrial innovation is of crucial importance to economic growth.

The idea of cluster development in Slovenia goes back to beginning of the 1990s, when the concept of clustering was introduced to the wood processing industry (Petrin, 1991). In 2004 more then 350 enterprises and institutions and almost 55,000 employees were involved into clustering (Rebernik et al., 2004). Cooperation of companies in clusters enhances knowledge sharing and accelerates learning and the results of clustering have been encouraging and awareness of clustering has significantly increased. Highly specialized supply chains are developing within the clusters, and the process of outsourcing parts of the value chains that feature lower added value to other regions with lower labour costs has been started. Connections to Italian, Austrian and German clusters have already been established, in part through joint participation in the 6th European Framework Programme.

Not many studies focus on strengthening internationalization via cross border clustering. The Observatory of European SMEs (2002) indicates that the barriers to increase cross border cooperation are mostly linked to differences in legislation (the

labour market, construction and housing, social services, environment and planning, tax policies, education and research, infrastructure and logistics, culture and shared identities, and industrial politics). However, the effects of the Single Market should lead to these barriers being lowered. Very often linguistic barriers and differences in mental and institutional distance matter. Company managers are often familiar with regional and national R&D institutes due to earlier experience, but are unfamiliar with the institutional setting abroad. Thus, in spite of the European efforts at integration and several cross-border initiatives, national innovation systems with their regulations and institutional settings are still important for a company's innovation interactions, and companies from different regions remain strongly embedded in their respective regional and national innovation systems (The Observatory of European SMEs 2002, p. 26).

Obviously the physical borders between countries are not the main difficulty to face in attempting to form a cross-border regional cluster and a network of international firms. Beside lack of institutional knowledge, the main obstacle is the difference in mental models and in organizational cultures.

Technology development

According to GEM Slovenia survey among 3,016 adult populations in 2005 (Rebernik et al., 2006) only 4.9 per cent of Slovenian new enterprises and 5.6 per cent of established enterprises are convinced that their products and services are new to all potential buyers. Larger share of enterprises believe that their products and services are new to some potential buyers (29.2 per cent of new and 16.2 per cent of old enterprises). Slovenian enterprises use mostly technology which is available for five and more years (78.5 per cent of new enterprises and 62.5 per cent of old enterprises). Only some enterprises (7.4 per cent of new and 14.1 per cent of old enterprises) have technology, being available less than one year.

In order to encourage internationalization, innovation orientation of Slovenian companies and technology they exploited has to be improved. We consider successful technology transfer mechanisms to be an important determinant for internationalization of SMEs in Slovenia. Some initiative can be seen in this field but its effectiveness is rather poor and universities have only recently established university incubators and technology transfer offices. Technology and research transfer is according to GEM Slovenia surveys the second most unsettled entrepreneurial framework conditions in Slovenia (Rebernik et al., 2005; 2006).

To successfully achieve technology and research transfer, networking between university (professors, researchers) and the local economy, between financial institutions and various entrepreneurship promotion institutions (Small Business Development Agencies, the Chamber of Commerce and Industry, developmental agencies, etc.) is extremely important. In Slovenia, these supporting institutions are numerous, but their cooperation is poor. They mainly operate at individual level and are largely ineffective. In general, Slovenian universities do not take responsibility for

helping small and medium-sized enterprises in their technological development or in the process of internationalization.

One of the key problems in connecting university and SMEs in Slovenia is the lack of technological development of small enterprises. In addition, they have a short research horizon and often lack the knowledge needed for cooperation; while academic staff are not particularly interested in cooperating with smaller enterprises, as they generate little or almost no income. Institutional, cultural and infrastructural barriers can all be identified as explanations for the lack of success in knowledge transfer (Rebernik, 2003).

Among *institutional barriers*, the present mode of functioning of Slovenian university system is the most influential. It does not direct researchers and staff into the commercialization of research. Universities are still predominately pedagogical rather than research institutions. In order to meet their obligations, academics mainly need to teach and research. To gain promotion and tenure, teaching staff need to publish papers and gain citations, rather than prove the practical applicability of their research.

Considering *cultural barrier*, the prevailing mode of thinking at universities is still mainly administrative. The transfer of innovation into entrepreneurial practice is a complex process that needs to be dealt with as a whole. The complexity of this process is even greater in the university environment, where public and private interests are combined. Most innovations that can be commercialized come from technical faculties where there is little business knowledge available and where the creators of innovation rarely have any entrepreneurial knowledge or experience. Successful transfer of knowledge can only be made possible if university is capable of promoting creative team work between technical and business knowledge, and establishes cooperation with successful companies, investors and various support institutions. The prevailing system of values at institutions of higher education in Slovenia is not inclined towards entrepreneurship. The peculiarities of Slovenian academic culture, which often sees involvement in commercial tasks as a violation of consecrated research work, makes the transfer and commercialization of technology even more difficult.

Among *infrastructural barriers* for technology transfer relatively underdeveloped economic and business environment that surrounds universities together with lack of efficient promotional mechanisms and schemes is to be mentioned. There are no supporting mechanisms at universities with which we could facilitate the weak cooperation between university and business. The practice of company set up stemming from the cooperation between university and its partners is not valued in Slovenia. Neither of the Slovenian universities has yet developed business incubators up to the point that would focus on the transfer of research directly into entrepreneurial practice. The entrepreneurial scope of Slovenian universities and research institutes is still limited to single cooperation agreements and rare joint projects with established (larger) firms.

Slovenia faces a challenge to remove said institutional, cultural and infrastructural barriers for success in knowledge transfer. The main obstacle in learning and knowledge sharing are in organization culture and organizational memory, as well as mental models.

Growth ambitions

GEM surveys on growth aspirations of Slovenian entrepreneurs measured by intended employment of people, by expansion of market and export show that their ambitions are very high when they establish a company but they drop significantly when companies become older and more experienced (Rebernik et al., 2005). Experiential knowledge in this case leads to more cautious operation. On average 13 per cent of Slovenian nascent and new entrepreneurs planned in next 5 year the employment of more than 20 people and to export more than 50 per cent of their products. When we surveyed established companies, which were older than three and a half year, less than 4 per cent still had such intentions. Analyzing Global Entrepreneurship Monitor data for years 2002, 2003 and 2004 we find out that the growth aspirations of Slovenian entrepreneurs are also significantly higher when compared to Croatian and Hungarian entrepreneurs (Tominc and Rebernik, 2005). However, when making conclusions about growth ambitions we should consider that the majority of SMEs are mainly oriented on home markets not just because their owners may not have the ambitions to grow and internationalize but also because barriers to entry are probably higher for them than for larger companies (Acs et al., 1997).

International entrepreneurship and internationalization have a common heritage (Welch, 2004, p. 145), and the decision to internationalize is one of the most important decision the entrepreneur will ever make (Ibrahim, 2004, p. 133). As learning in SMEs occurs only when entrepreneurs and owners/managers recognise the need for acquiring new knowledge, their growth ambitions are important. Internationalization makes sense only when companies want to increase their long-term profitability. Decisions on long-termed profitability are of strategic nature. In smaller companies where ownership is not separated from management, strategic decisions are made by lead entrepreneur. In larger companies they are made by agents (top management) based on governing instructions set by principals (owners). Internationalization decisions therefore depend either on growth ambitions of lead entrepreneur or on the extent of agency problems.

We don't have studies on how agency problems in Slovenian SMEs would oppress internationalization, but taken into account unfinished transitional processes and infant institutional environment in Slovenia we may hypothesise that such problems exists and cause lower efficiency of SMEs in majority of cases where ownership is separated from management. On the other hand, dramatic decrease of growth ambitions with the aging of the company is a clear warning sign that the business and cultural environment of Slovenian SMEs at the moment is not supportive for ambitious growth oriented companies.

Conclusions

The strengthening of internationalization in recent years indicates that Slovenian enterprises are gradually realizing that, without internationalization, they can no longer maintain their market shares as internationalization is almost a necessity given the limited domestic market size (De Clercq et al., 2003, p. 3). However, even though Slovenia is a very small market it seems that it hasn't yet developed its economy up to the point that limited market size would press more aggressively for internationalization.

Slovenian internationalization pattern demonstrates that internationalization remains a cumulative learning and unlearning process at both the individual and organizational level despite the fast changes in the international environment. In this perspective, business, institutional and internationalization knowledge combined with the elimination of institutional, cultural and other barriers and more promotion is an important tool that can convert the prevailing externally forced internationalization (globalization and European Union integration) into a more endogenous one.

Some determinants are of special importance for internationalization of Slovenian SMEs. First, Slovenia as transitional economy lacks each type of experiential knowledge: business, institutional and internationalizing knowledge. Second, although some experiential knowledge is stored in SMEs there are not much established routines that would push for learning of its members, and because the employment is local, the process of learning is extremely important. Third, SMEs very often lack the capabilities and/or resources to expand their operations abroad. Forth, Slovenian SMEs are aware of the importance of development of knowledge and competence, but only small number of them acknowledges the problems of identification of professional needs and the finding of useful resources for the development of competences. Moreover, internationalization of SMEs is oppressed by existing agency problems, as well as by business and cultural environment that is not supportive for growth ambitions of lead entrepreneurs. Furthermore, technology transfer is not yet successful in Slovenia. Finally, SMEs dominate in services industries, which are bounded locally and cannot cross border so easily.

In Slovenia, the improvements in internationalization of SMEs could not be expected without a *supportive entrepreneurial environment, which would create not only necessary conditions for growth of enterprises through internationalization, but also conditions for emergence and growth of new enterprises*. The latter is of special importance since the Global Entrepreneurship Monitor (GEM) placed Slovenia in the bottom of the researched countries; being 41st out of 44 countries in the 2002-2004 period, and in the 17th place among 20 European countries, with 4,4 per cent of adult population engaged in early stage entrepreneurial activities in 2005 (Rebernik et al., 2005; 2006).

In order to encourage entrepreneurship and the process of learning new knowledge and discarding obsolete and misleading knowledge at individual and organizational level, there is a need to improve entrepreneurial framework conditions, which directly

or indirectly affect the level of entrepreneurship in Slovenia. A special attention should be given to government regulation and programs, transfer of R&D, cultural and social norms and education system, which are according to GEM Slovenia surveys proven to be the most unsettled framework conditions in Slovenia (Rebernik, Tominc and Pušnik 2005, 2006). The highest emphasises need to be placed on improving the quality of education for entrepreneurship in order to build entrepreneurial thinking and values; supporting the development of knowledge and competence in enterprises; changing public attitude toward entrepreneurship; encouraging growth ambitions of entrepreneurs, resolving agency problems in Slovenian SMEs, and supporting internationalization of clusters and transfer of research and development.

A policy-mix that create environment for the development of key services and institutions which would support the internationalization of Slovenian SMEs. It seems that Slovenian government has recognized the importance of internationalization for development since a competitive economy and faster economic growth through supporting internationalization, increasing inflows of development-promoting domestic and foreign investment and fostering entrepreneurship has become one of the five key development priorities of new Slovenia's Development Strategy 2006-2013 (2005). However, in order for Slovenia to achieve this goal it needs to prepare and deliver sweeping structural reforms and provide effective policy-mix that would on one hand close the implementation gap in institution's building, and on the other hand provide supportive institutions, which would facilitate the development of entrepreneurship and internationalization. A key role in fostering entrepreneurship in globalization has regional economic policy, which must be characterized by networking and anticipation (Tajnikar and Pušnik, 2005).

Public understanding and awareness of the importance of internationalization not only for a survival and growth of enterprises, but also for economic and social development and welfare of individuals in Slovenia. Changes in cultural and social values are needed, where the main stress should be placed on improving public perceptions of the importance of internationalization as well as on general acceptance of foreign know-how and capital. Slovenian population needs to overcome slight dislike of foreign capital and create the awareness that foreign capital may be instrumental in creating jobs, enabling the growth of enterprises and fostering economic and social development, as well as a mean for (un)learning.

An important tool of awareness building in this perspective is the promotion of internationalization, which is to be ingrained in education system. Education is accountable for the development of more dynamic, flexible and open-minded individual, capable of responding swiftly to the challenges of globalization. Education needs to develop entrepreneurial qualities and skills of individuals, who would be aware of the entrepreneurship as a career option and of the importance of internationalization for the survival and growth of their enterprises, qualified to recognize the need for acquiring new knowledge either by learning of its members or by ingesting new members with knowledge the organization did not have previously.

The process of unlearning in which obsolete knowledge and values would be deliberately replaced is also of utmost importance for transitional countries as Slovenia. Living and doing business in socialism/communism for three generations created a lot of values and experiential knowledge that put obstacles not only for international business but also for everyday running of efficient business. Unfortunately, unlearning processes are neglected in the internationalisation literature (Christensen, 2004, p. 27), even though generation of new knowledge is faster in conditions under which there are few existing organizational routines to unlearn (Autio et al., 2000, p. 911). In order to facilitate the internationalization process it is necessary to think about ways of eliminating old mental models, methodologies and contents which no longer go along with the real world and internationalization needs (Rebernik, 1997; Rebernik and Mulej, 2000). Along with exploitation and exploration, deliberate unlearning should be fully taken into account when encouraging the internationalization of SMEs.

Comprehensive and integrated research, which would provide sufficient knowledge about internationalization of SMEs and the importance of learning and unlearning for ongoing success of organizations on foreign, as well as on domestic markets. Methodology and measures of internationalization of SMEs should be further refined and developed in a way to capture (un)learning as a determinant of internationalization of (Slovenian) SMEs. While literature to date has provided a sound basis for development of the model of learning both on individual and organisational level, empirical research is required to inform the debate about unlearning at both levels (Becker, 2005). Internationalization as learning and unlearning process needs to attract an integrative research attention from various sciences (international business and entrepreneurship, social sciences, psychology, philosophy etc.) with the purpose of advancing descriptive and normative SMEs international theory. For further research Slovenia must improve standardized statistical data and overcome statistical problems (the limited scope of data, changing methodology, and reluctance of firms to report) that limit research on internationalization of both large and SMEs.

Even though internationalization has become a necessity not only for companies to survive and grow and for economies to develop we are still not able to answer the question what are relevant determinants of internationalization, especially for internationalization of SMEs. We know that the decisions to internationalize implies accumulating new knowledge and at the same time also discarding obsolete knowledge, and we also know that learning and unlearning is important. Yet, we will still have to find answers to the questions concerning relevant organizational and individual-level competence for internationalization and in what way processes of learning and unlearning could be encouraged in order to support individuals and organizations to make decisions on internationalization.

REFERENCES:

1. Acs, Z., Morck, R., Shaver, M. and B. Yeung (1997), 'The Internationalization of Small and Medium - Sized Enterprises: A Policy Perspective', *Small Business Economics*, 9(1), 7-20.
2. Argyris, C. (2004), *On organizational learning, 2nd ed.*, reprinted, Malden, US: Blackwell.

3. Autio, E. (2005), 'Creative tension: the significance of Ben Oviatt's and Patricia McDougall's article 'toward a theory of international new ventures', *Journal of International Business Studies*, 36, 9-19.
4. Autio, E., Sapienza, H., and J. Alemida (2000), 'Effects of age at entry, knowledge intensity, and imitability on international growth', *Academy of Management Journal*, 43(5), 909-924.
5. Baumol, W. (1990), 'Entrepreneurship: Productive, Unproductive and Destructive', *Journal of Political Economy*, 98, 893-921.
6. Bank of Slovenia (1993-2005), *Monthly Bulletin*, Various Issues, Ljubljana, Slovenia: Bank of Slovenia.
7. Bank of Slovenia (2004), *Direct Investment 1994-2003, (8)1*, Ljubljana, Slovenia: Bank of Slovenia.
8. Becker, K. (2005), 'Individual and organisational unlearning: directions for future research', *International Journal of Organizational Behaviour*, 9(7), 659-670.
9. Blomstermo, A., Eriksson, K., and D. Sharma (2004), 'Domestic Activity and Knowledge Development in the Internationalization Process of Firms', *Journal of International Entrepreneurship*, 2(3), 239-258.
10. Burger, A. and M. Svetličič (2004), 'Internationalization of small and medium-sized enterprises from selected Central European economies' in *Enlarged European Union: challenges to international business and management: conference proceedings*, Brussels, Belgium: EIBA.
11. Christensen, P. R., Andersen, P. H., Damgaard, T. and K. B. Munksgaard (2004), 'Internationalization of Sourcing and Knowledge Development: An Organizational Routine Perspective', Paper presented at LOK Research Conference, December 1-2, 2003, Middelfart, available on: <http://www.lok.cbs.dk/site/publikationer.asp?aar=2003>
12. Cummings, J. (2003), *Knowledge Sharing: A Review of the Literature*, Washington, US: The World Bank.
13. De Clerq, D., Sapienza, H. J. and H. Crijns (2003), 'The internationalization of small and medium-sized firms: the role of organizational learning effort and entrepreneurial orientation', *Vlerick Leuven Gent Working Papers Series*, available on: <http://www.vlerick.be/research/workingpapers/vlgms-wp-2003-19.pdf>
14. Eriksson, K., Johanson, J., Majkgard, A., Sharma and D. Deo (1997), 'Experiential knowledge and cost in the internationalization process', *Journal of International Business Studies*, Second Quarter, 28(2).
15. Easterby-Smith, M. and M. A. Lyles (eds) (2005), *The Blackwell handbook of organizational learning and knowledge management, 1st paperback*, Malden, US: Blackwell.
16. European Commission (2000), *European Observatory for SMEs: High-tech SMEs in Europe*, No. 6, Brussels, Belgium: European Commission, available on: http://europa.eu.int/comm/enterprise/enterprise_policy/analysis/observatory_en.htm
17. European Commission (2002), *Observatory of European SMEs: Regional Clusters in Europe*, No. 3, Brussels, Belgium: European Commission, available on: http://europa.eu.int/comm/enterprise/enterprise_policy/analysis/observatory_en.htm
18. European Commission (2003), *European Observatory for SMEs: Competence Development in SMEs*, No. 3, Belgium: European Commission, available on: http://europa.eu.int/comm/enterprise/enterprise_policy/analysis/observatory_en.htm
19. European Commission (2003), *European Observatory for SMEs: SMEs in Europe*, No. 7, Brussels, Belgium: European Commission, available on: http://europa.eu.int/comm/enterprise/enterprise_policy/analysis/observatory_en.htm
20. Eurostat, *Statistics in Focus: Economy and Finance*, available on: http://epp.eurostat.cec.eu.int/portal/page?_pageid=0,1136173,0_45570704and_dad=portaland_schema=PORTAL

21. Hedberg, B. (1984), 'How Organizations Learn and Unlearn', in Nystrom, P. and W. Starbuck (eds), *Handbook of Organizational Design*, London, UK: Cambridge University Press.
22. Holan de, P., Phillips N. and T. Lawrence (2004), 'Managing organizational forgetting', *MIT Sloan Management Review*, 45, 45-51.
23. Ibrahim, A. B. (2004), 'Internationalization: motive and processes', in Dana, L.-P. (eds), *Handbook of Research on International Entrepreneurship*, Cheltenham, UK: Edward Elgar.
24. Institute for Macroeconomic Analyses and Development of Republic of Slovenia (IMAD) (2004), *Annual Economic Mirror*, Ljubljana, Slovenia: IMAD.
25. Institute for Macroeconomic Analyses and Development of Republic of Slovenia (IMAD) (2005), *Economic Mirror*, Ljubljana, Slovenia: IMAD.
26. Institute for Macroeconomic Analyses and Development of Republic of Slovenia (IMAD) (2005), *Performance of Commercial Companies 2003*, Ljubljana, Slovenia: IMAD.
27. Institute for Macroeconomic Analyses and Development of Republic of Slovenia (2005), *2005 Spring Report*, Ljubljana, Slovenia: IMAD.
28. Institute for Macroeconomic Analyses and Development of Republic of Slovenia (IMAD) (2005), *The Strategy of Slovenia's Development 2006-2013* (2005), Ljubljana, Slovenia: IMAD.
29. Jaklič, A. and M. Svetličič (2001a), 'Does Transition Matter? FDI from the Czech Republic, Hungary and Slovenia', *Transnational Corporations*, 10(2), 67-105.
30. Jaklič, A. and M. Svetličič (2001b), 'Slovenia's outward direct investment in the states of former Yugoslavia: a strategic or a defensive response?' *Economic Business Review*, 3(3/4), 299-321.
31. Jaklič, A. and M. Svetličič (2003a), *Enhanced Transition through Outward Internationalization: Outward FDI by Slovenian firms*, Burlington, US: Ashgate Publishing Limited.
32. Jaklič, A. and M. Svetličič (2003b), 'The Outward Direct Investment from CEECs: Can their Firms Compete in The Global Market?', *Journal of East European management studies*, 8(1), 67-83.
33. Jaklič, A. (2003), 'Slovenian Outward Foreign Direct Investment', in Marjan Svetličič in Matija Rojec (eds), *Facilitating Transition by Internationalization: Outward Direct Investment from Central European Economies in Transition*, Burlington, US: Ashgate Publishing Limited, pp. 205-226.
34. Johanson, J. and J.-E. Vahlne (1990), 'The Mechanism of Internationalisation', *International Marketing Review*, 7, 11-24.
35. Manolova, T. S., C. G. Bush, L. F. Edelman and P. G. Greene (2002), 'Internationalization of small firms: International factors revised', *International Small Business Journal*, 20(1), 9-13.
36. Matlay, H. and J. Mitra (2004), 'Learning, innovation and globalization: the competitive advantage of collaborative entrepreneurship,' in Dana, L.-P. (eds), *Handbook of Research on International Entrepreneurship*, Cheltenham, GB: Edward Elgar.
37. McDougal, P. P. and B. Oviatti (1996), 'New venture internationalization, strategic change, and performance: A follow-up study', *Journal of Business Venturing*, 9, 469-487.
38. Mrak, M., Rojec, M. and C. Silva-Jáuregui (eds) (2004), *Slovenia: From Yugoslavia to the European Union*, Washington, US: The World Bank.
39. Oviatt, B. M. and P. P. McDougall (2005), 'The internationalization of entrepreneurship', *Journal of International Business Studies*, 36, 2-8.
40. Nelson, R. and G. Winter (1982), *An Evolutionary Theory of economic Change*, Cambridge, UK: Harvard University Press.
41. Petrin, T. (1991), *Medpodjetniška mreža povezav in prestrukturiranje podjetij poviševne industrije notranjske regije in ljubljanskega območja*. Ljubljana, Slovenia: RCEF.

42. Prashantham, S. (2005), 'Toward a Knowledge-Based Conceptualization of Internationalization'. *Journal of International Entrepreneurship*, 3, 37-52
43. Pušnik, K. and M. Rebernik (2006), 'Obstacles to Internationalization of Slovenian SMEs', *Our Economy: Review of Current Issues in Economics* (forthcoming).
44. Rebernik, M. (1997), 'Beyond Markets, Hierarchies and Ownership-Mania in Transitional Countries', *Systems Research and Behavioral Science*, 14(3), 183-149.
45. Rebernik, M. (1999), 'Resources, opportunities and cooperation', in George E. Lasker (eds), *Advances in support systems research. Vol. 5, Decision support methodology for human systems management and its applications in economic and commerce*, Windsor, Canada: The International Institute for Advanced Studies in Systems Research and Cybernetics.
46. Rebernik, M. (2003), 'From innovation to entrepreneurship', in Erich J. Schwarz (eds), *Technologieorientiertes Innovationsmanagement*, Wiesbaden, Germany: Gabler, pp.139-160.
47. Rebernik, M., K. Širec Rantaša, M. Rus, T. Krošlin, P. Tominc, D. Močnik, J. Knez-Riedl and S. Dajčman (2004), *Slovenian Entrepreneurship Observatory 2003*, Maribor, Slovenia: Institute for Entrepreneurship and Small Business Management.
48. Rebernik, M., Dermastia, M. and T. Krošlin (2004), 'Cluster initiatives, firm foundation and entrepreneurship in Slovenia', in Böhm, B., Frisch, H. and M. Steiner (eds), *Slovenia and Austria: Bilateral Economic Effects of EU Accession*, Graz, Austria: Leykam.
49. Rebernik, M. and M. Mulej (2000), 'Requisite holism, isolating mechanisms and Entrepreneurship', *Kybernetes*, 29(9/10), 1126-1140.
50. Rebernik, M., Polona, T. and K. Pušnik (2005), *Global Entrepreneurship Monitor Slovenia 2004: Entrepreneurship on the Crossing*, Maribor, Slovenia: Faculty Economics and Business, University of Maribor.
51. Rebernik, M., Polona, T. and K. Pušnik (2006), *Global Entrepreneurship Monitor Slovenia 2005: Entrepreneurship between wishes and reality on the Crossing*, Maribor, Slovenia: Faculty Economics and Business, University of Maribor (forthcoming).
52. Republic of Slovenia, *Uradni list Republike Slovenije*, several issues.
53. Rus, M. and T. Krošlin (2004), 'How do Slovenian and European SMEs Learn?', in Rebernik, M. et al. (2004), *Slovenian Entrepreneurship Observatory 2003*, Maribor, Slovenia: Institute for Entrepreneurship and Small Business Management, University of Maribor.
54. Ruzzier, M. (2004), *The Internationalization of Small and medium enterprises: The Influence of the Entrepreneur's Human and Social Capital on The Degree of internationalization, Doctoral dissertation*, Ljubljana, Slovenia: Faculty of Economics, University of Ljubljana.
55. Sapienza, H. J., Autio, E. and S. Zahra (2003), 'Effects of Internationalization on Young Firms' Prospects for Survival and Growth', *Academy of Management Best Paper Proceedings*.
56. Simon, H. (1991), 'Bounded rationality and organizational learning', *Organization Science*, 2(1), 125-134.
57. Sinkula, J. M. (2002), 'Market-based success, organizational routines, and unlearning', *Journal of Business and Industrial marketing*, 17 (4), 235-269.
58. Tajnikar, M. and K. Pušnik (2005), 'Globalization and Entrepreneurship – A Slovenian perspective', *Our Economy: Review of Current Issues in Economics*, 51(5-6), 34-44.
59. Tominc, P. and M. Rebernik (2005), 'Growth aspirations and cultural support indices: a comparison of CEE post-socialist countries', paper presented at 2nd GEM Research Conference, Budapest, Hungary.
60. United Nations Conference on Trade and Development (UNCTAD) (2001), *World Investment Report 2001*, Geneva, Switzerland: United Nations Conference on Trade and Development, Division on Transnational Corporations and Investment.

61. United Nations Conference on Trade and Development (UNCTAD) (2003), *World Investment Report 2003*, Geneva, Switzerland: United Nations Conference on Trade and Development, Division on Transnational Corporations and Investment.
62. United Nations Conference on Trade and Development (UNCTAD) (2004), *World Investment Report 2004*, Geneva, Switzerland: United Nations Conference on Trade and Development, Division on Transnational Corporations and Investment.
63. Welch, L. (2004), 'International entrepreneurship and internationalization: common threads', in L. -P. Dana (eds), *Handbook of Research on International Entrepreneurship*, Cheltenham, UK: Edward Elgar.
64. Windeknecht, M. K. and B. Delahaye (2004), 'A model of individual and organisational unlearning', *Proceedings 18th annual Conference of the Australian and New Zealand Academy of Management*, Dunedin, NZ.

MODELLING THE INNOVATIVE NEW VENTURING PROCESS IN TERMS OF DIALECTICAL SYSTEMIC THINKING

Matjaž Mulej and Miroslav Rebernik

HINDLE, Kevin (ed.), KLYVER, Kim (ed.).
Handbook of Research on New Venture Creation
Edgar Elgar, Cheltenham (UK);
Northampton (MA, USA)
Publishing year: 2011
pp. 130-144

Introduction

Not all innovation processes require the creation of a new venture. Not all new venture creation is based on the introduction and dissemination of an innovation. This chapter concerns the situation where actors consciously choose to introduce an innovation by means of creating a new venture so that the two activities are intricately intertwined. For this situation we will contribute a systems theory perspective in order to point to the need for creative cooperation of different disciplines, so that they would better use their capabilities by making synergies among several of them. We will set out the dialectical system, which means a synergy or system of all crucial viewpoints and helps thinkers, decision makers and other actors attain the requisite holism. How important requisite holism is in the issue of new venture creation becomes clear when we observe the difficulty of venture survival (Shepherd et al. 2000; Delmar and Shane 2004; Rebernik et al. 2008; Širec and Rebernik 2009).

The chapter is organized as follows. We first provide a brief summary of the holistic focus of systems thinking. We next provide a closer focus on dialectical systems thinking and the related law of requisite holism/realism. Then we apply dialectical systems thinking and the law of requisite holism to innovative new venture creation, which results in the articulation of a four-stage process model. We conclude that Mulej's dialectical systems theory offers a helpful conceptual and practical approach to the creation of new ventures based on introducing and disseminating innovations.

A brief summary of the holistic focus of systems thinking

Systemic thinking is unavoidable for mastering all preconditions of innovation involving new venture creation quoted or discussed in this chapter. It has been and is

a millennia-old attribute of successful people and the root cause of their being different from the less successful ones. A theory about it was created in the mid-twentieth century.

We are talking about human thinking style. Edward de Bono, the world-famous author on creative thinking, said: 'Thinking is the most important human behaviour' (de Bono 2003). We would add that holistic and creative thinking is what he must have had in mind – and rightly so. This is what systems theory has been created for (Davidson 1983). Ludwig von Bertalanffy, a philosopher, historian of art and theoretical biologist (Drack and Apfalter 2007), hence an interdisciplinary thinker, is the father of the general systems theory, the oldest of the well-known systems theories, which are now abundant (François 2004). He found, some seven to eight decades ago, that the human way of fighting human problems is also the cause of human problems. Humankind, millennia ago, developed the attitude that humans have dominion over nature, rather than being a part of nature and adapting to our natural environment. Since then, and especially in the twentieth century, we have – as humankind – developed a vast array of insights into the laws of nature and the methods/technologies and techniques of using them. We benefit from them; we have never lived a better life, by our own criteria. But we can no longer really understand and master our lives, because we – as humankind – know so much that we – as individuals – must be narrowly specialized. And we do not live as humankind, but as individuals and groups. The whole is fragmented into parts, which might no longer be able to become a whole.¹

So, Bertalanffy (quoted in Elohim 1999) believed that the overall fate of the world depends on the adoption by humanity of a new set of values, based on a general systems *Weltanschauung* (worldview). He wrote:

We are seeking another basic outlook: the world as organization. This [outlook] would profoundly change the categories of our thinking and influence our practical attitudes. We must envision the biosphere as a whole . . . with mutually reinforcing or mutually destructive interdependencies. [We need] a global system of mutually symbiotic societies, mapping new conditions into a flexible institutional structure and dealing with change through constructive reorganization.

Bertalanffy advocated that we dare to broaden our loyalty from nation to globe, that we become patriots of the planet, endeavouring to think and act primarily as members of humanity and that we must begin protecting the individual and cultural identity of others. He advocated a new global morality: 'an ethos, which does not center on individual goods and individual value alone, but on the adaptation of Humankind, as a global system, to its new environment'. The need for this new morality, he said, was imperative:

We are dealing with emergent realities; no longer with isolated groups of men, but with a systematically interdependent global community: it is this level of [reality] which we must keep before our eyes if we are able to inspire larger-scale action, designed to assure our collective and hence our individual survival. (Davidson 1983, quoted from Elohim 1999)

Quoting from Bertalanffy's Foreword (Bertalanffy 1979, p. VII):

Systems science . . . is predominantly a development in engineering sciences in the broad sense, necessitated by the complexity of 'systems' in modern technology. . . . Systems theory, in this sense, is pre-eminently a mathematical field, offering partly novel and highly sophisticated techniques . . . and essentially determined by the requirement to cope with a new sort of problem that has been appearing.

He goes on to point out that what may be obscured in these technical developments of the field – important as they are – is the fact that systems theory is a broad view which far transcends technological problems and demands, a reorientation that has become necessary in science in general and in the gamut of disciplines. It heralds a new worldview of considerable impact. However, development of the field involves a heavy irony. These days, the student of 'systems science' receives a technical training which makes systems theory – originally intended to overcome current over-specialization – into merely another of the hundreds of academic specialisms.

Bertalanffy (1979) makes three key points about the need to emphasize generality in general systems theory. First, it presents a novel paradigm in scientific thinking: the concept of system can be defined and developed in different ways as required by the objective of research, reflecting different aspects of the central notion. Second, general systems theory, then, involves scientific explorations of 'wholes' and 'wholeness' which, not so long ago, were considered to be metaphysical notions transcending the boundaries of science. Systems problems are problems of interrelations of a great number of variables. Third, models, conceptualizations and principles, such as the concepts of information, feedback, control, stability and circuit theory, far transcend specialist boundaries and are of an interdisciplinary nature.

These generic features of systems theory together constitute the 'uncommon sense' Bertalanffy argued for (Davidson 1983). He was fighting the common current practices of one-sidedness, because they were dangerous and still are, as a growing trend. The authority on creativity de Bono might say that Bertalanffy has been arguing for lateral rather than vertical thinking (de Bono 2006). Systems thinking, in most of its versions, was and is about fighting the narrow, over-specialized vertical thinking that can only follow prefabricated rules, for instance in solving crosswords. Systems or lateral thinking requires creative thinking along an unknown path. What is required is both types of thinking where each is appropriate. Lateral thinking must become a normal human habit alongside and in combination with vertical thinking. Let us return to Bertalanffy.

What is to be defined and described as a system is not a question with an obvious or trivial answer. It will be readily agreed that a galaxy, a dog, a cell and an atom are real systems; that is, entities perceived in or inferred from observation, and existing independently of an observer. On the other hand, there are conceptual systems such as logic, mathematics (but e.g. also including music) which essentially are symbolic constructs; with abstracted systems (science) as a subclass of the latter, i.e. conceptual systems corresponding with

reality. However, the distinction is by no means as sharp and clear as it would appear. . . . The distinction between ‘real’ objects and systems as given in observation and ‘conceptual’ constructs and systems cannot be drawn in any common sense way. (Bertalanffy 1979, pp. XXI-XXII)

All this underpins our understanding of the term *system* (Mulej 1979, p. 10). Systems are mental pictures of real or abstract entities as objects of human thinking; they are concepts that represent something existing from a selected perspective, viewpoint or aspect. In mathematical formal terms, a system is a round-off entity consisting of elements and relations, which makes it holistic. In terms of contents, a system depends on its authors’ selected viewpoint; hence, it does not comprise all attributes of the object under consideration, but only the selected part of them. This fact makes a system both holistic (formally, with no contents, or inside the selected viewpoint only) and one-sided (owing to the unavoidable selection of a viewpoint).²

Objects exist, and humans watch and manipulate them with different levels of holism. Total holism makes the object and the system as someone’s mental picture of the object totally equal, but it reaches beyond human natural capacity. This is why humans often become specialized and limited to single viewpoints, causing humans to limit consideration of any object to a one-viewpoint system. By cooperation, normally an interdisciplinary one that includes several essential professions in a synergetic effort, a team can attain more holism – by a dialectical system. Both a system and a dialectical system exist inside the human mental world, in human thinking and feeling; they can be expressed for other humans and other living beings to receive information about humans’ thinking and feeling in models. Thus, according to Bertalanffy (implicitly), a total holism is what systems thinking is all about in order to cover totally everything. Experience has shown that humans are not able to attain this level, not only because of bounded rationality but also because 1) we all are unavoidably specialized in single small fragments of humankind’s entire knowledge and 2) we hardly learn and practise interdisciplinary creative cooperation aimed at more holism in our education.

What matters, too, is the fact that Bertalanffy used the wording ‘systems teaching’ rather than ‘systems theory’ in his original German version. This can be read as a crucial difference: teaching includes influence over people, while theory does not, but offers a generalized knowledge for people to use, if they care to. As we can see from François (2004), there are many systems theories, but only the dialectical systems theory speaks of influencing people (Mulej 1975, 1977, 1978, 1979; Mulej and Ženko 2004a, 2004b; Mulej et al. 1992, 2000, 2007).

Dialectical systems thinking and the related law of requisite holism/realism

The European Union Communication (EU 2000) summarized the essence of systemic thinking with application to innovation in the following context. Humans who are living now are living in the time in which innovation has become more frequent and

unavoidable than ever before. The most advanced areas of the world – Europe, North America, Australia, New Zealand, Japan and the four Pacific Rim tigers: Singapore, Hong Kong, Taiwan and South Korea – contain the 20 per cent of humankind who are living on innovation much more than the other 80 per cent are. The innovative society and economy require humans to master much more entanglement than ever before:

- There are no longer local markets hidden from the global market.
- There is no longer the likelihood that many humans will live without permanent renewal of their skills.
- There are no longer markets in which supply is not bigger than demand, except for the least advanced areas in which close to a billion people are hungry, while in the other areas about a billion people are too fat to be healthy, and except for the most demanded novelties, be they suggestions, potential innovations or innovations.
- There are no longer many areas in which humans can live with no innovation and therefore with no requisitely holistic thinking, called systems thinking in systems theory.
- Still, there are very few humans around the world who are capable of teaching holistic thinking and permitted to teach it in curricula. The role of narrow specialization, which is unavoidable but not sufficient for success, is so strong that people hardly see that the requisitely holistic thinking makes specialization of any profession much more beneficial than any specialization alone. Nobody, whatever their profession, can live well without cooperation with people of other professions. Over-specialization kills, Bertalanffy rightly warned.

A good fifty years after the authors of systems theory succeeded in making this theory known, and after politicians of the world succeeded in using it (informally) by establishing the United Nations Organization – at least on paper – as the most holistic political organization of humankind, the EU found it necessary to explicitly link a ‘systemic’ view with innovation. In its communication (EU 2000, p. 6), the EU, after reminding readers of its previous documents enhancing innovation, states:

The Action Plan [First Action Plan for Innovation in Europe, 1996, based on Green Paper on Innovation, 1995] was firmly based on the ‘systemic’ view, in which innovation is seen as arising from complex interactions between many individuals, organizations and environmental factors, rather than as a linear trajectory from new knowledge to new product. Support for this view has deepened in recent years.

If this has to be stated explicitly in such documents, the question arises:

- Are we humans capable of interdisciplinary cooperation that we need almost every moment?
- What is the theoretical basis for those who are not currently capable of it to learn?

The empirical experience and references-based answer reads:

- Very few humans are by their nature and education capable of interdisciplinary cooperation, because specialists teach specialists to be specialists, including being proud of their specialization. This teaching is fine, but not enough: it may cause hiding from reality behind the walls of one’s specialization and lacking respect for

other specializations and their need for each other as well as for their capacity to solve real problems in interdisciplinary creative cooperation much better than in separation (Ackoff 2001, 2003; Gigch 2003).

- The theoretical basis to learn the skills of interdisciplinary cooperation stems from the original authors of systems theory and cybernetics. But many forget that the founders of systems theory and cybernetics had created their answers to the burning problems of their and our time in an interdisciplinary approach. This is where Mulej's dialectical systems theory (DST) came in a good three decades ago to fill the gap.
- The well-intended and well-applied versions of systems theory which describe a part of reality inside the viewpoint of one or another traditional, specialized, scientific discipline do not match the well-stated EU definition of 'systems view'. Thus they help people solve other problems, but not the one of holism of thinking, decision making and action as a precondition of the survival of humankind and the planet on which we live and/or of success in any human action (Geyer et al. 2003).

In Table 1 our definition of holistic thinking (Mulej et al. 1992, reworked in 2007) is displayed.

A dialectical system comprises in a network all crucial viewpoints in order to help the observer attain a requisite holism (Figure 1), once a total, that is, real, holism with all viewpoints, synergies and attributes is reaching beyond the human capacity.

Inside the authors' (usually tacitly!) selected viewpoint, one tends to consider the object dealt with on the basis of limitation to one part of the really existing attributes only. When specialists of any profession use the word system to call something a system inside their own selected viewpoint, it makes a system fictitiously holistic. It does not include all existing attributes that could be seen from all viewpoints and all their synergies (Table 2).

The essence of the concept of the dialectical system and related law of requisite holism/realism is well expressed by Wilby (2005, p. 388), although she leaves open the question of viewpoints selected and thereby determining the boundaries of study:

The goal of holistic study is not to look at 'everything'. Instead it is to make a decision about what is relevant to the study and what is not and to know and understand why those choices were made. The biases and interests affect the choice of what is likely to be included and excluded (i.e. what is in the system as opposed to what is relegated in the environment of the system).

What Wilby calls holistic, we call requisitely holistic.

Why is requisite holism important? There are scientists attempting to say that their discipline offers the only unique and unifying basis for dealing with systems. They do not speak of worldview, as Bertalanffy does, but of professional/scientific disciplines. Can these be right? Yes, in their own perspective they can. Can these be sufficient for

Table 2: Relation between reality and holism/realism of human consideration of it

Level of realism of consideration of the selected topic	Level of simplification of consideration	Viewpoints of consideration taken in account	Components taken in account in consideration	Relations taken in account in consideration
Existing object to be dealt with	None.	All existing.	All existing.	All existing.
Dialectical system	Small - requisite.	All essential.	All essential.	All essential.
One-viewpoint system	Big due to specialization.	Single – selected by specialization.	Selected inside the boundaries set by the selected viewpoint.	
Model of the one-viewpoint system	Big due to specialization and modelling aimed at clear presentation.	Single – selected by specialization and simplified to be clear.	Selected inside the boundaries set by the selected viewpoint and shown in a simplified - modelled way.	

A brief summary of the law of requisite holism may thus read:

The law of requisite holism says that one needs always to try to do what many, but not all, have the habit of doing in their thinking, decisions and actions – doing one’s best to avoid the exaggeration of both types: 1) the fictitious holism, which observers cause by limiting themselves to one single viewpoint in consideration of complex features and processes; 2) the total holism, which observers cause by no limitation to any selection of a system of viewpoints in consideration of complex features and processes. Instead, the middle ground between both exaggerations should be covered, which can be achieved by using a ‘dialectical system’, made by the author(s) as a system, entity or network of all essential and only essential viewpoints.

For requisite holism to be achieved three preconditions, at least, matter:

1. Both specialists and generalists are needed, as teams that feel ethics of interdependence and cooperate.
2. They include professionals from all and only essential professions or disciplines.
3. Their values are expressed in their ethics of interdependence and practised in a creative team, task force or session(s) based on an equal-footed cooperation rather than top-down one-way commanding.

Requisitely holistic thinking cannot include the global attributes only, because they make a part of the really existing attributes only, although they matter very much and tend to be subject to oversight by specialists. Neither can holistic thinking include the parts’ attributes only, although they matter very much and tend to be subject to focus by specialists of single disciplines and professions. Oversight of relations, especially interdependences causing influences of parts over each other, may not be forgotten about in holistic thinking; specialists who have not developed the habit of considering specialists different from themselves tend to make crucial oversights in this respect. This experience means that they are not realistic.

The application of dialectical systems thinking to innovative new venture creation

How can this understanding of systems thinking inform understanding of the invention–innovation–new venture creation process? We believe there are four stages in the evolution from raw idea to realized, innovative new venture. We will set out the following concepts:

1. A new venture starts as an idea intended to become an outcome of the invention–innovation process in the form of establishment of the new venture. This is a complex and complicated attempt that rarely succeeds, unless all the crucial attributes are considered for the attempt to match the law of requisite holism (see for greater detail than is provided here Mulej and Kajzer 1998; Rebernik and Mulej 2000; Mulej 2007). Let us take a quick look at the attempt to create an innovation. We will see that no single scientific discipline alone can assure success, although many of them may be crucial, but they must also be networked into a dialectical system of all crucial viewpoints (e.g. Mulej 1974; for an explanation in English see Mulej et al. 2007; for a case in English see Potočan and Mulej 2007).

Figure 2: Summary of the invention–innovation–diffusion process

Idea →	Invention →	Suggestion →	Potential innovation →	Innovation (diffusion) →
Unclear potential	Promising a benefit	Recorded as promising a new benefit	Capable of yielding benefit	Providing and yielding benefit (to many)
Scientific research and applied development			Production and market management	
Scientists (for basic knowledge) and technologists (for applied knowledge)			Entrepreneurs, managers (with co-workers) and (many) customers (for final benefit)	
Interdependent complex phases of a complex process: all essential, none self-sufficient → need for requisite holism by (informal) systemic thinking				

Source: Ženko et al. 2008.

2. The basic phases of an invention–innovation–diffusion process include (Figure 2):
 - a. Creation of ideas concerning what new benefit could, perhaps, be created.
 - b. Division of the collected created ideas into the groups of not promising ideas and inventions that are promising ideas.
 - c. Selection of inventions in the groups of forgotten-about inventions and suggestions as the recorded inventions called suggestions.
 - d. Selection of suggestions in the groups of suggestions left aside for later consideration, suggestions to be sold and suggestions worked on as projects in order to develop potential innovations from them. The latter might later, but do not yet, create benefit to the potential users of them and therefore do not yet yield benefit such as revenue and profit to owners or creators.

- e. After the thoughts, decisions and actions in phases a and b have taken place with the owners or creators and managers of their organizations, the decision as to whether or not a potential innovation will become an actually implemented innovation is up to its users, customers or buyers. From the viewpoint of owners, creators or managers now, after the phases of ideas management, research (both in a research department and elsewhere), development (both in a development department and elsewhere) and production (including human resources, finance, material and other supply management, legal issues, etc.), in this phase marketing, public relations and sales management are crucial.
- f. Ideas, invention suggestions, potential innovations and innovations can be used 'in-house' or sold elsewhere. In both cases, as many users, customers or buyers of the potential innovation as possible should be persuaded and attracted. This topic is handled in the diffusion-of-novelty phase of the invention–innovation–diffusion process. This phase can follow every phase mentioned above.

Figure 3: Equation of interdependent preconditions of innovation

Innovation = (invention suggestion X entrepreneurship and entrepreneurial spirit X requisite holism X management X co-workers X suppliers X competitors X customers X innovation-friendly values, culture, ethics and norms X natural environment X socio-economic environment and other outer, i.e. objective, conditions X random factors, such as luck)

Note: X denotes interdependence.

The above insight into the invention–innovation–diffusion process demonstrates that this is a complex and complicated issue. So do data from surveys of practice showing that less than 5 per cent of innovation projects succeed (Chesbrough 2003; Nussbaum et al. 2005; Chesbrough et al. 2006; Economist 2006, 2007; Huston and Sakkab 2006; IBM 2006; McGregor 2006; Nussbaum 2006; Jangtchi 2007) and less than 1 per cent of ideas about inventions become innovations and successful ventures.

Owing to the above facts one must consider:

1. The 'innovation formula' to underline the complexity to be considered. The innovation and successful new venture (as an outcome of the invention–innovation process) result from synergy of many factors. If one is missing there is no long-term successful venture (Figure 3).
2. The related systems, that is, requisitely holistic monitoring, perception, thinking, emotional and spiritual life, decision making and action.
3. The resulting process from vision definition to the reality of successful working of the new venture.

Conclusion

A successfully created new venture can be considered a type of the invention–innovation–diffusion process resulting in innovation if it transforms an invention into

a new benefit for its users, authors and owners. New ventures succeed in a similarly small percentage as other innovative attempts do. Requisitely holistic monitoring, perception, thinking, emotional and spiritual life, decision making, communication and action have normally been a better basis for success than the one-sidedness of specialists, who are inflexible and too narrow to succeed without interdisciplinary creative cooperation. According to experience, this capability is difficult for many specialists to attain. Systems theory, as embodied in the EU 's definition of it in connection with innovation, can help them, to a certain but limited extent. While other systems theories are helpful for other problems, Mulej's dialectical systems theory has in 35 years of development and application proved to offer a helpful conceptual and practical approach to the creation of new ventures based on introducing and disseminating innovations.

Notes

1. The Nobel Prize for Peace 2007 proves that awareness about this fact is growing, as does the Bali conference on climate change and related activities. Data are clear: since 1950 the population on the planet Earth has grown 2.5 times and its consumption of natural resources has grown seven times, while the planet Earth is not growing, but getting depleted very quickly. Humans will either start behaving in terms of systems thinking and requisite holism or leave the Earth as a dying planet to our children or, in the best-case scenario, to our grandchildren (Brown 2008; Taylor 2008; Korten 2009).
2. Therefore, in terms of contents, no system (as a mental picture of the object under consideration from a selected viewpoint) is holistic, but limited to one part of the really existing attributes of the object or topic under consideration. A system can anyway be composed of two kinds of smaller systems: a) subsystems cover attributes owing to which they differ from each other (such as countries of a continent, or production units of a factory, or bonds from blood vessels, etc.); b) partial systems cover attributes which the different parts share (such as a number of uniting organizations of a continent, human resources issues of an office or factory, etc.).

REFERENCES

1. Ackoff, L.R. (2003), 'Iconoclastic management authority advocates a "systemic" approach to innovation', interview by Robert J. Allio (sent to M. Mulej by email, 11 July 2003, from Ackoff Center: acasa@seas.upenn.edu).
2. Ackoff, L.R. (2001), 'Interaction among departments is crucial', *Kansas City Star*, 30 July, interview by Diane Staffors (received by M. Mulej by email from John Donges, jdonges@seas.upenn.edu).
3. Bertalanffy, L.V. (1979), *General Systems Theory: Foundations, Development, Applications*, rev. edn, New York: Braziller.
4. Brown, L.R. (2008), *Plan B 3.0: Mobilizing to Save Civilization*, New York and London: Earth Policy Institute, W.W. Norton.
5. Chesbrough, H.W. (2003), *Open Innovation: The New Imperative for Creating and Profiting from Technology*, Boston, MA: Harvard Business School Press.
6. Chesbrough, H.W., W. Vanhaverbeke and J. West (2006), *Open Innovation: Researching a New Paradigm*, Oxford, New York: Oxford University Press.

7. Davidson, M. (1983), *Uncommon Sense: The Life and Thought of Ludwig von Bertalanffy, Father of General Systems Theory*, Los Angeles: J.P. Tarcher.
8. de Bono, E. (2003), 'Creative thinking', Talk to the 3rd New Moment Ideas Campus, Piran, August 2003, New Moment Ideas Company, Ljubljana (taped by N. Mulej and her team).
9. de Bono, E. (2006), 'Lateralno razmišljanje [Lateral thinking]', *New Moment*, 30.
10. Delmar, F. and S. Shane (2004), 'Legitimizing first: Organizing activities and the survival of new ventures', *Journal of Business Venturing*, 19(3), 385–410.
11. Drack, M. and W. Apfalter (2007), 'Is Paul Weiss' and von Bertalanffy's systems thinking still valid today?', *Systems Research and Behavioral Science*, 24(5), 537–46.
12. *Economist* (2006), 'The new organisation: A survey of the company', 21 January, 1–20.
13. *Economist* (2007), 'Something new under the sun: A special report on innovation', 13 October, 1–24.
14. Elohim, J.L. (1999), 'A message from Professor Elohim', poster at the 11th WOSC Conference, Uxbridge.
15. EU (2000), *Communication from the Commission to the Council and the European Parliament: Innovation in a knowledge-driven economy*, COM(2000) 567 Final, Brussels: Commission of the European Communities.
16. François, C. (2004), *International Encyclopedia of Systems and Cybernetics*, 2nd edn, Munic: Saur.
17. Geyer, F., B. Hornung *et al.* (2003), The Fourth International Conference on Sociocybernetics: Sociocybernetics – the Future of the Social Sciences: Society from Ancient Greece to Cyberspace and Beyond. Abstracts and Program, ISA, RC 51, Kerkyra, Corfu, 30 June – 5 July, 2003.
18. Gigch, J.P.v. (2003), 'The paradigm and the science of management and of the management science disciplines', *Systems Research and Behavioral Science*, 20(6), 499–506.
19. Huston, L. and N. Sakkab (2006), 'Connect and develop: Inside Procter and Gamble's new model for innovation', *Harvard Business Review*, 84(3), 1–9.
20. IBM (2006), *The Global Innovation Outlook*, Armonk, NY: IBM.
21. Jangtchi, G.ur. (2007), 'Erfolgreich Produkte entwickeln 2007: Ideenmanagement und Kreativität; Kernkompetenzen und Markenbildung; Open Innovation und Netzwerkansätze', seminar, Ausseninstitut, Montanuniversität Leoben.
22. Korten, D.S. (2009), *Agenda for a New Economy: From Phantom Wealth to Real Wealth*, San Francisco: Berrett-Koehler.
23. McGregor, J. (2006), 'The world's most innovative companies', *Business Week*, 24 April, 63–76.
24. Mulej, M. (1974), 'Dialektična teorija sistemov in ljudski reki', *Naše gospodarstvo*, 21(3–4), 207–12.
25. Mulej, M. (1975), 'Dialektična teorija sistemov', lecture notes, University of Ljubljana, Faculty of Sport, MA course on systems theory. (A few articles in Slovene journals soon followed.)
26. Mulej, M. (1977), 'A note on dialectical systems thinking', *International Cybernetics Newsletter*, p. 63.
27. Mulej, M. (1978), 'Toward the dialectical systems theory', in R. Trappl, P. Hanika and F. Pichler (eds), *Progress in Cybernetics and Systems Research*, Vienna: OeSGK (Published 1978).
28. Mulej, M. (1979), *Ustvarjalno delo in dialektična teorija sistemov* [Creative work and the dialectical systems theory] (in slovenian), Celje: Razvojni center.
29. Mulej, M. (2007), 'Systems theory: A worldview and/or a methodology aimed at requisite holism/realism of humans' thinking, decisions and action', *Systems Research and Behavioral Science*, 24(3), 347–57.

30. Mulej, M. and Š. Kajzer (1998), 'Ethics of interdependence and the law of requisite holism', in M. Rebernik and M. Mulej (eds), *STIQE '98: Proceedings of the 4th International Conference on Linking Systems Thinking, Innovation, Quality, Entrepreneurship and Environment*, Maribor: Institute of Systems Research Maribor et al.
31. Mulej, M. and Z. Ženko (2004a), *Dialektična teorija sistemov in invencijsko-inovacijski management. (Kratek prikaz)*, Maribor: Management Forum.
32. Mulej, M. and Z. Ženko (2004b), *Introduction to Systems Thinking with Application to Invention and Innovation Management*, Maribor: Management Forum.
33. Mulej, M., G. de Zeeuw, R. Espejo, R. Flood, M. Jackson, Š. Kajzer, J. Mingers, B. Rafolt, M. Rebernik, W. Suojanen, P. Thornton and D. Uršič (1992), *Teorije sistemov*, Maribor: Univerza v Mariboru, Ekonomsko-poslovna fakulteta.
34. Mulej, M., R. Espejo, M. Jackson, Š. Kajzer, J. Mingers, P. Mlakar, N. Mulej, V. Potočan, M. Rebernik, A. Rosicky, B. Schiemenz, S. Umpleby, D. Uršič and R. Vallee (2000), *Dialektična in druge mehkosistemske teorije (podlaga za celovitost in uspeh managementa)*, Maribor: Univerza v Mariboru, Ekonomsko-poslovna fakulteta.
35. Mulej, M., V. Čančer, A. Hrast, K. Jurše, Š. Kajzer, J. Knez-Riedl, N. Mulej, V. Potočan, B. Rosi, D. Uršič and Z. Ženko (2007), *The Law of Requisite Holism and Ethics of Interdependence: Basics of the Dialectical Systems Thinking (Applied to Innovation in Catching-Up Countries)*, available at www.gesi.ar.
36. Nussbaum, B. (2006), 'On Inside innovation', *Businessweek, Supplement*, June.
37. Nussbaum, B., R. Berner and D. Brady (2005), 'Special report. get creative! how to build innovative companies. and: A creative corporation toolbox', *Business Week*, August, 51–68.
38. Potočan, V. and M. Mulej (eds) (2007), *Transition into an Innovative Enterprise*, Maribor: University of Maribor, Faculty of Economics and Business.
39. Rebernik, M. and M. Mulej (2000), 'Requisite holism, isolating mechanisms and entrepreneurship', *Kybernetes*, 29(9/10), 1126–40.
40. Rebernik, M., P. Tominc and K. Pušnik (2008), *Premalo razvojno usmerjenih podjetij: GEM Slovenija 2007*, Maribor: University of Maribor, Faculty of Economics and Business, IPMMP, available at www.gemslovenia.org.
41. Shepherd, D., E. Douglas and M. Shanley (2000), 'New venture survival: Ignorance, external shocks, and risk reduction strategies', *Journal of Business Venturing*, 15(5/6), 393–410.
42. Širec, K. and M. Rebernik (eds) (2009), *Dynamics of Slovenian Entrepreneurship: Slovenian Entrepreneurship Observatory 2008*, Maribor: Faculty of Economics and Business.
43. Taylor, G. (2008), *Evolution's Edge: The Coming Collapse and Transformation of Our World*, Gabriola Island, BC: New Society Publishers.
44. Wilby, J. (2005), 'Combining a systems framework with epidemiology in the study of emerging infectious disease', *Systems Research and Behavioral Science*, 22(5), 385–98.
45. Ženko, Z., M. Mulej, V. Potočan, B. Rosi and T. Mlakar (2008), 'A model of making theory as invention to become an innovation', in M. Mulej, M. Rebernik and B. Bradac (eds), *STIQE 2008: Proceedings of the 9th International Conference on Linking Systems Thinking, Innovation, Quality, Entrepreneurship and Environment*, Maribor: University of Maribor, Faculty of Economics and Business, IPMMP and Slovenian Society for Systems Research (with honorary co-sponsorship of the European Academy of Sciences and Arts, Salzburg, Austria, and IFSR – International Federation for Systems Research, Vienna, Austria), pp. 145–52).

BUILDING ENTREPRENEURSHIP CAREERS VIA ENTREPRENEURSHIP EDUCATION: THE CASE FROM SLOVENIA

Miroslav Rebernik and Karin Širec

DABIĆ, Marina (ed.),

PIETRZYKOWSKI, Maciej (ed.)

Fostering Education in Entrepreneurship

Poznań: Bogucki Wydawnictwo Naukowe

Publishing year: 2011

pp. 15-41

Summary

This chapter discusses entrepreneurship education and training in Slovenia based on two studies—namely, the Global Entrepreneurship Monitor survey and the international study of students' motivation for entrepreneurship. Although Slovenia ranks relatively well in both studies in terms of global comparisons, the analysis of entrepreneurship education and training in Slovenia demands more targeted measures and better tailored entrepreneurship policy in this area, especially at the university level. In the second part of this chapter, the entrepreneurship program at the Faculty of Business and Economics at the University of Maribor is presented. The discussion introduces the quadruple helix of entrepreneurship education to stress the importance of four main players in such education: students, professors, entrepreneurs, and the supportive infrastructure of the entrepreneurship ecosystem.

Key words: higher education, entrepreneurship, entrepreneurial spirit, Global Entrepreneurship Monitor, quadruple helix of entrepreneurship education

JEL codes: I 23, L 26, M 13

Introduction

Global experience from the most developed economies and regions has revealed the important role of universities and other higher education institutions for successful economic breakout. They pool a critical mass of highly educated resources who are, due to their expert knowledge, able to develop new technologies and implement novelties that represent the basis for the development of new entrepreneurial ideas. Entrepreneurship education and training has become the key tool for achieving higher and,

above all, quality entrepreneurial activity. This include not only the higher education level, but also the entire education process of any individual (including lifelong learning).

Creativity and entrepreneurship have always been the motive behind development. Entrepreneurship has become one of the most important factors for economic development due to the creation of new enterprises and employment as well as the creation of jobs within existing companies (Wennekers and Thurik, 1999; Carree and Thurik, 2003; Rasmussena and Sørheim, 2006). The transformation of contemporary societies into knowledge societies and the transition of economic systems from managerial into entrepreneurial systems (Audretsch and Thurik, 2007) have brought to the forefront creative and entrepreneurial individuals who are willing and able to find better ways of doing business, find business opportunities, and contribute toward a better long-term quality of life.

Entrepreneurship is a complicated and multi-layered phenomenon in which entrepreneurs have to play a number of different roles. The role of an innovator is the key role. The notion of entrepreneur as an innovator has been attributed to Joseph Alois Schumpeter (1934), who put the entrepreneur at the core of economic development. Economic development is a dynamic process in which entrepreneurs represent the driving force. No economic development can exist without entrepreneurs and no development can exist without entrepreneurship as the ability to start something new. The definition of an enterprise as a vehicle of new combinations of production forms stresses the importance of special human characteristics—namely, their ability to think, create, and innovate. Entrepreneurs are thus needed for the existence of companies. In order for the company to grow, flourish, and develop, entrepreneurs need to constantly rearrange the available resources. To a large extent enterprises' survival depends on entrepreneurs' innovative abilities. Economic systems (as well as social systems) require entrepreneurs who can find new combinations of production factors, leading to new products and services that will satisfy the constantly changing needs of buyers. Under entrepreneurs' authority, the process of "creative destruction" is created, during which existing technologies, production processes, organisational principles, and old products and services cease to exist and are substituted with new products and services.

Under the influence of advertising campaigns launched by large companies, we too often forget that the majority of enterprises worldwide belong to a group of small and medium-sized enterprises. According to official data, there are 20 million enterprises in the European Union, of which only 43.000 belong to the so-called large enterprises. The rest (99,8 per cent) are small and medium-sized enterprises, which create more than two thirds of jobs in the private sector—almost 90 million jobs (EC, 2010, p. 15). In Slovenia, small and medium-sized enterprises represent 99,8 per cent of all enterprises and create two thirds of jobs (Širec and Rebernik, 2009). In other words, out of 111.201 active enterprises in Slovenia in 2007, only 271 had more than 250 employees while 1.294 had between 50 and 250 employees. All other enterprises were smaller, with the majority employing fewer than 10 people. It is important to be aware of this fact when talking about creativity, innovation, and entrepreneurship.

Small enterprises are not small variations of large enterprises. Individual managing functions in small enterprises cannot be specialised to the same extent as in large enterprises. Education processes in higher education institutions have not taken this feature into account, as they focus primarily on large enterprises to educate experts in different fields (i.e., marketing, finance, accounting). On the other hand, small enterprises cannot afford narrowly specialised individuals. They need highly competent and practice-oriented individuals who are capable of coping with a wide range of business problems.

Despite the fact that small and medium-sized enterprises represent an important part of national economies worldwide, they are not treated by the majority of business and managerial schools in an appropriate manner in which curricula would be adapted to satisfy their needs. The rapidly changing business environment, characterised by an extended role for small and medium-sized enterprises (SMEs), the globalisation of business activities, intensified information, and growing uncertainty, increased the value of human capital engaged in business studies and contributed to the fact that traditional education of future entrepreneurs and managers in SMEs has become unproductive. Consequently, we need such education, which will prepare future graduates for successful performance in rapidly changing environments to promote creative entrepreneurship and be able to recognise business opportunities as well as set up and manage their own enterprises.

This chapter deals, firstly, with the influence and role of entrepreneurship education for economic development and key factors influencing entrepreneurial activities. Secondly, entrepreneurship education in Slovenia will be placed in the context of global entrepreneurship education as revealed through data from worldwide research activity at the Global Entrepreneurship Monitor. We shall present findings regarding student entrepreneurial intentions, identified in the research activity carried out at universities in 11 countries (Australia, Finland, Germany, Great Britain, Ireland, Poland, Portugal, Slovenia, Uganda, the United Arab Emirates, and the South African Republic). Thirdly, a case study of good practice of entrepreneurship education at the Faculty of Business and Economics at the University of Maribor will be presented. Finally, we will present the model of quadruple helix of entrepreneurship education, formed by professors, students, entrepreneurs, and representatives from a wider entrepreneurial ecosystem. In the end, we will offer a number of proposals for efficient entrepreneurship education.

Entrepreneurship education and economic development

In its last report, the Global Education Initiative (GEI) at the World Economic Forum (WEF, 2009) stated that “education is one of the most important foundations for economic development, entrepreneurship is a major driver of innovation and economic growth” and emphasizes the importance of entrepreneurship education, which is “critical for the development of entrepreneurial skills, attitudes and behaviours, which are the basis of economic growth”. The largest study of entrepreneurship, the Global

Entrepreneurship Monitor, in which Slovenia has participated since 2002, has demonstrated that entrepreneurship education is inadequate at all levels of education as it does not encourage creativity, self-sufficiency, or personal initiative. In addition, it does not provide adequate attention to entrepreneurship and new firm creation, nor does it provide adequate instruction in market economic principles (Rebernik et al., 2008). The results of the analysis of the European Commission reveal the worrying scope of entrepreneurship education. The research results show that more than half of European students in higher education do not have access to entrepreneurship education. As such, approximately 11 million students are deprived of this type of learning activities and/or additional learning activities that would otherwise encourage their entrepreneurial activity (EC, 2008). The majority of university programmes still educate students in order to be able to find an employer. Students' responsibility is transferred to someone else—usually to the employer in the private or public sector.

In relation to training future owners and entrepreneurs for self-employment, preparing them to take care of their professional career, university programmes in Slovenia have been absolutely unsuccessful. In the majority of business education programmes (not only in Slovenia), students start building their entrepreneurial careers only after they have graduated and gain initial experience in running a company. What would happen if students in other fields of study were trained in the same manner? Most probably, there would be drivers who had never driven a car, doctors who had never treated a patient, architects who had never designed a building, and painters who had never painted a picture (Rebernik, 2002).

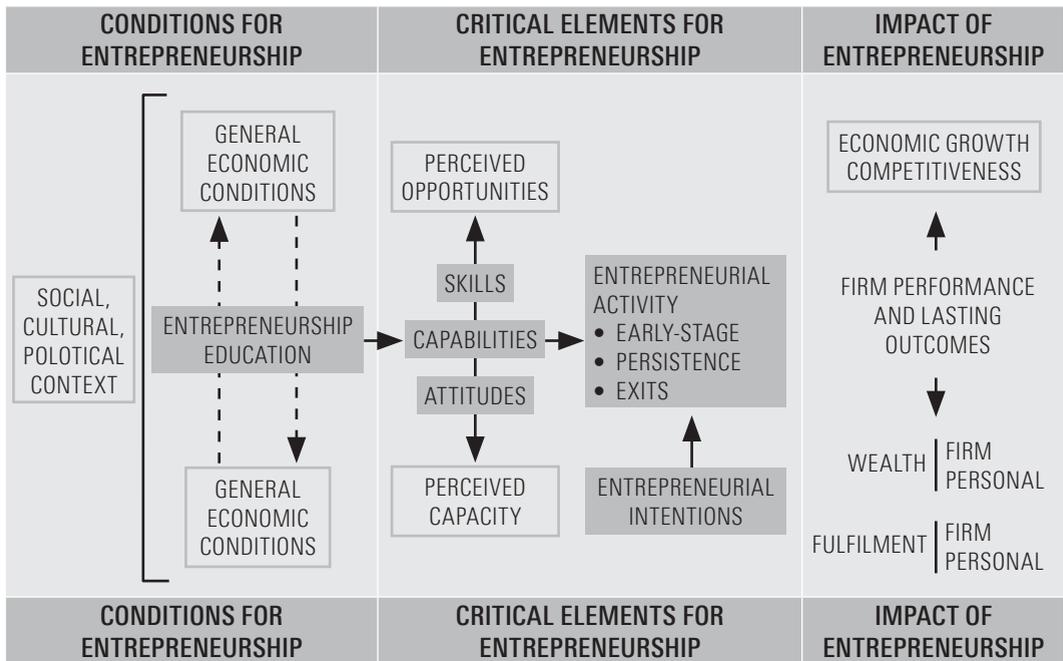
Undoubtedly, students interested in entrepreneurial careers have to develop a number of skills to help them manage and lead their companies (e.g., strategic and operational planning, risk management, market analysis, problem solving, and creativity). A successful start-up demands the mastery and integration of skills that differ from the skills needed to run an existing business. Higher education programmes have certain limitations, but play an important role in educating students on the challenges of entrepreneurial activities and in developing skills and self-esteem (Henderson and Robertson, 2000). Of course, it is not necessary for entrepreneurship education to always lead to establishing one's own business. It is equally important that students acquire additional skills and characteristics that can be useful and necessary in other forms of professional activities, ranging from opportunity perception, networking, and cooperation to healthy ambition and the awareness of self-responsibility.

Entrepreneurship is a learning process. This means that entrepreneurs are not born, but made through skills and experiences acquired under the influence of their teachers, parents, mentors, and role models and developed throughout the growth process (Volery, 2004). Perhaps individuals interested in entrepreneurship and existing entrepreneurs cannot be taught to become entrepreneurs, but they can certainly be encouraged instead of being discouraged from this type of activities. We need to take into account Krueger's (2000) findings that entrepreneurial intentions do not arise spontaneously. They are created even if it appears that they may be spontaneous. Entrepreneurial intentions are of key importance for understanding the entire entrepreneurial process because they

are a prerequisite for entrepreneurial activity. Entrepreneurial intentions are focused on setting up new businesses or the creation of new value within an existing company (Bird, 1988). Thus, entrepreneurial activity can be influenced by providing conditions for the development of key elements that consequently contribute towards the economic growth and competitiveness of whole national industries.

Figure 1 shows the relation between entrepreneurial education and economic development. Under the influence of social, cultural, and political contexts, two basic mechanisms of economic growth operate, defined by two frameworks of general economic conditions and entrepreneurial condition in a national economy. Entrepreneurial education gains support from both frameworks. A favourable education system towards entrepreneurial education represents the basis through which key elements for entrepreneurship are formed. Individuals' skills, abilities, and relationships with entrepreneurship influence the recognition of their abilities and business opportunities in the environment. These are reflected through entrepreneurial intentions, which are realised through entrepreneurial activities of individuals and consequently influence economic growth and the development of the national economy.

Figure 1: The influence of education on entrepreneurship and economic development



Source: Adapted from GEM, Bosma et al., 2008, Teixeira and Davey, 2009.

Extensive literature on entrepreneurship hints at the existence of interest to identify factors leading individuals towards choosing an entrepreneurial career (Martínez et al., 2007). The majority of contributions deal with similar factors, most often analysing individuals' age, sex, professional background, work experience, education, and

psychological profile (Delmar and Davidsson, 2000; Širec, 2007). In the broadest context, three factors have been chosen to measure entrepreneurial aspiration: demographical data, personality traits (Robinson, 1987), and content factors (Naffziger et al., 1994). Demographical data (e.g., sex and age) can be used to describe entrepreneurs, but the majority of these characteristics do not increase the ability to predict whether a person is likely to set up an enterprise (Hatten and Ruhland, 1995). The second way to assess entrepreneurial aspirations is the study of personality traits, such as risk taking, creativity, and the need for achievement (Teixeira, 2008; Širec, 2007). It must be emphasised that the majority of authors (e.g., Naffziger et al., 1994) claim that the decision to pursue entrepreneurial activity depends on much more than just personality traits and individual differences. Ultimately, in order to reach a critical assessment of individual entrepreneurial potential, we need to study the interaction among personality traits (relationship towards risks, creativity, and the need for achievement), other important content factors of perception (work/professional experience, the influence of religion and role models), knowledge of entrepreneurship (entrepreneurial experience, knowledge, awareness and interest), formal education (years of education, level of education, type of higher education institution), and the type of research programme/area.

Critical assessment of entrepreneurship education and training in Slovenia

Some insights into entrepreneurship education and training in Slovenia can be gleaned from the Global Entrepreneurship Monitor (GEM), the major research project aimed at describing and analysing entrepreneurial processes within a wide range of countries. GEM is conducted by the international consortium Global Entrepreneurship Research Association (GERA); it was launched in 1999 with 10 participating countries. Since then, it has expanded significantly to include 54 countries in 2010. Slovenia has been part of the project since 2002.

GEM's contribution to the knowledge and understanding of the entrepreneurial process is unique as it is the only existing data set that can provide consistent cross-country comparisons and information on entrepreneurial activity. As such, the importance of its findings is invaluable for policy makers as well as academics. GEM focuses in particular on the level of involvement in a country's early-stage entrepreneurial activity.

Since its establishment, GEM has collected data annually through surveys of adult populations; these surveys are conducted in each participating country, based on a sample of at least 2000 adults. A separate survey is conducted with national experts to examine different entrepreneurship frameworks that influence the quantity and quality of entrepreneurial activity in each participating country. Experts in each participating country are carefully selected from among successful entrepreneurs, venture capitalists, bankers, policy makers, advisors, and academics always taking care of regional and gender representation. They evaluate their country according to 16 important national entrepreneurship frameworks (finance, government policies, governmental programs, education and training, R&D transfer, commercial and services infrastructure, market

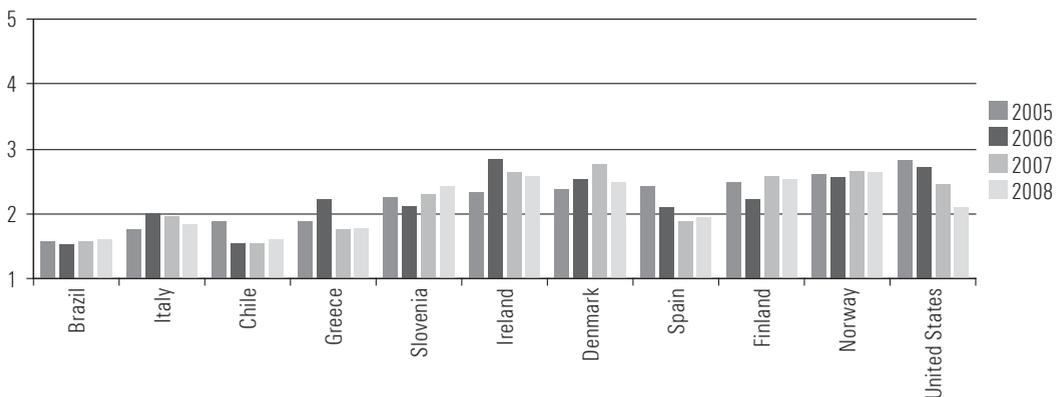
openness, physical infrastructure, cultural and social norms, opportunities to start up, abilities and knowledge to start up, entrepreneur social image, intellectual property rights, women’s support to start up, attention to high growth, and interest to innovation) that influence entrepreneurial intentions and the setting up of a business. A detailed description of the methodology behind the collection of GEM data is provided in Reynolds et al. (2005). In 2010 in Slovenia, 3.021 adults were interviewed in the adult population survey and 54 experts in the national expert survey.

According to the national expert survey, entrepreneurship education is considered to be a very important entrepreneurship framework. Experts’ evaluation is based on agreement or disagreement with each of the following six statements on scale from 1 (“strongly disagree”) to 5 (“strongly agree”):

- Teaching in primary and secondary education encourages creativity, self-sufficiency, and personal initiative.
- Teaching in primary and secondary education provides adequate instruction in market economic principles.
- Teaching in primary and secondary education provides adequate attention to entrepreneurship and new firm creation.
- Colleges and universities provide good and adequate preparation for starting up and growing new firms.
- The level of business and management education provides good and adequate preparation for starting up and growing new firms.
- The vocational, professional, and continuing education systems provide good and adequate preparation for starting up and growing new firms.

Each year the experts are very critical of the quality of the entrepreneurship education framework. Figure 2 shows national experts’ average ratings on the state of in-school entrepreneurship education in a selected sample of GEM nations for the years 2005 – 2008 (Coduras et al., 2010).

Figure 2: Average ratings of in-school entrepreneurship education

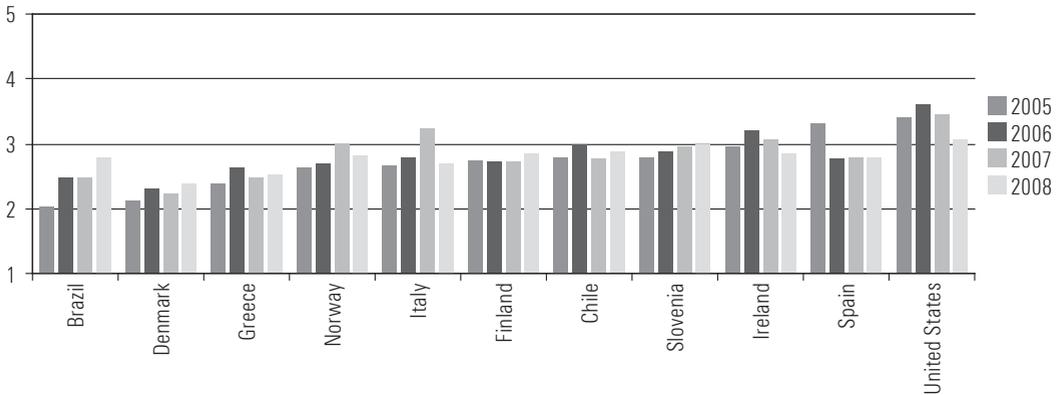


Source: Coduras et al., 2010.

As Figure 2 indicates, among the countries with available data for the analysed period, entrepreneurship education has been extremely critically evaluated in Slovenia. On a scale from 1 to 5, it was rated at less than 2,5. Slovenia is not an exception; national experts in other countries were also extremely critical of formal entrepreneurship education. In all surveyed countries, evaluations were low and relatively stable throughout the observed four-year period. In the United States and Spain, national experts' ratings of entrepreneurship education have grown increasingly negative year after year. Thus, clearly formal entrepreneurship education in the surveyed countries is not satisfying national experts.

Experts rate non-school training for entrepreneurship education higher. The same holds true for Slovenia, but even this type of education was rated lower than 3 on a scale from 1 to 5 (see Figure 3).

Figure 3: Average ratings of non-school entrepreneurship education



Source: Coduras et al., 2010.

A comparison between in-school entrepreneurship education and non-school entrepreneurship education shows that the latter is ranked slightly higher in many countries. This represents a severe criticism of the existing entrepreneurship education in the formal education system, which obviously did not manage to adapt well to the changes in economic structures where small and medium-sized enterprises prevail and where the need for entrepreneurial activity constantly increases.

Among the different subjects taught in entrepreneurship education and training, the most important seem to be those that enable students to set up their own companies and recognise a business opportunity. Table 1 shows the proportion of the adult population aged between 18 and 64 who participated in entrepreneurship education and training in 2008 in order to set up a company (Coduras et al., 2010).

Table 1: Prevalence of start-up training (in-school and non-school) by country and economic group (percentage of working-age population)

Country	Only in-school training	Both in-school and non-school training	Only non-school training	Any in-school training	Any non-school Training	Total
Factor-Driven	A	B	C	A+B	B+C	A+B+C
Egypt	3.4	1.4	2.8	4.8	4.2	7.6
India	2.6	3.5	7.4	6.1	10.9	13.4
Bolivia	1.5	9.1	8.5	10.6	17.6	19.1
Bosnia and Herzegovina	9.6	4.0	6.4	13.6	10.4	20.0
Ecuador	11.9	8.4	6.9	20.3	15.3	27.2
Colombia	10.7	12.6	16.8	23.3	29.4	40.1
Group Average	6.6	6.5	8.1	13.1	14.6	21.2
Efficiency-Driven						
Turkey	2.1	0.4	3.8	2.5	4.2	6.3
Serbia	2.6	0.4	7.2	3.0	7.6	10.2
Dominican Republic	0.6	4.7	2.5	5.3	7.2	7.8
Brazil	3.0	2.4	4.1	5.3	6.4	9.4
Romania	3.8	2.2	2.8	5.9	4.9	8.7
South Africa	5.0	4.4	4.5	9.4	8.9	13.9
Argentina	6.5	3.3	7.6	9.9	11.0	17.5
Mexico	6.9	3.6	5.7	10.5	9.3	16.2
Uruguay	5.8	4.9	13.4	10.7	18.3	24.1
Macedonia	8.3	4.3	6.5	12.6	10.8	19.1
Peru	6.0	8.4	15.2	14.4	23.6	29.6
Latvia	9.2	5.6	13.5	14.9	19.1	28.4
Iran	9.9	5.7	13.5	15.6	19.1	29.1
Jamaica	11.7	4.4	5.0	16.0	9.3	21.0
Hungary	14.5	2.7	7.4	17.1	10.0	24.5
Croatia	2.8	17.3	8.0	20.1	25.3	28.1
Chile	10.3	15.0	17.3	25.3	32.3	42.6
Group Average	6.4	5.3	8.1	11.7	13.4	19.8
Innovation-Driven						
Japan	1.7	3.2	12.5	4.9	15.7	17.4
Israel	4.4	1.6	6.9	5.9	8.4	12.8
Republic of Korea	4.6	1.4	7.6	6.0	9.0	13.6
Greece	4.2	1.9	10.9	6.1	12.8	17.0
United Kingdom	5.6	2.5	10.3	8.1	12.8	18.4
Denmark	6.7	3.3	12.6	10.0	15.9	22.6
France	5.7	4.4	8.0	10.1	12.4	18.1
Italy	3.5	6.7	6.3	10.2	13.0	16.5
Iceland	9.1	2.7	15.0	11.8	17.7	26.8
Germany	8.0	4.4	8.8	12.4	13.2	21.2
Spain	7.4	5.1	9.4	12.6	14.6	22.0
Ireland	8.7	5.4	12.1	14.0	17.4	26.1
Finland	8.3	10.4	29.8	18.8	40.3	48.6
Slovenia	13.4	11.1	11.3	24.5	22.4	35.8
Belgium	16.3	8.8	8.6	25.0	17.3	33.6
Group Average	7.2	4.9	11.3	12.0	16.2	23.4

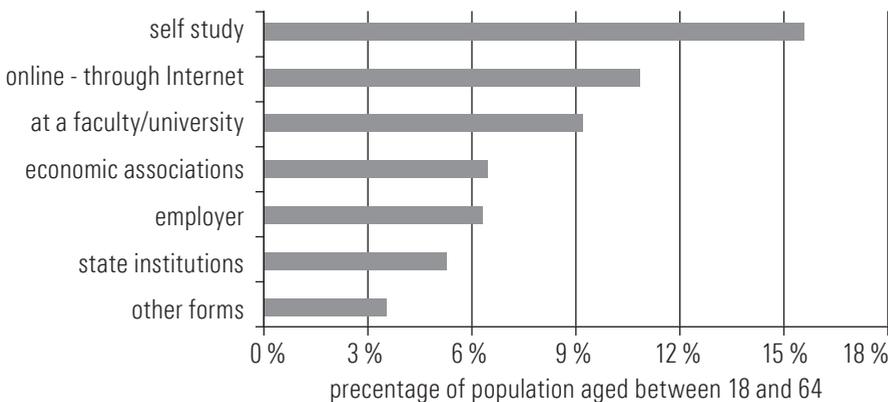
Source: GEM Adult Population Survey, 2008.

Countries within those groups are classified according to Porter's classification of countries in the Global Competitiveness Report as factor-driven, efficiency-driven, and innovation-driven economic groups. In innovation-driven countries, Slovenia ranks extremely high, as more than one third of the working-age population has experienced some sort of entrepreneurship start up education. In this group of countries, Finland takes the lead with 48,6%.

In Slovenia, the percentage of people who have participated in entrepreneurship education and training at various points in their lives by age is harmonised with the average level of entrepreneurial activity: The majority of people between 25 and 34 years old are engaged in early-stage entrepreneurship, which is similar to entrepreneurship education after finishing formal schooling. In the 25-34 years old age group, on average 29,74% have participated in this type of education, with the percentage points decreasing with age (Rebernik et al., 2009).

In Slovenia, on average 23,92% of men and 21,26% of women have participated in entrepreneurship education and training. In absolute terms, the difference is not huge, despite the fact that men in Slovenia indicate more self-confidence than women with regard to self-perception of start-up skills. On average, 60,83% of men and only 40,11% of women have high self-perception of start-up skills (Rebernik et al., 2009).

Figure 4: Types of entrepreneurship education after finishing formal schooling



Source: GEM Slovenia, 2008.

Figure 4 shows the proportion of the population in Slovenia between 18 and 64 years of age who participated in entrepreneurship education and training after finishing formal schooling with regard to the education provider. People tend to choose from among different entrepreneurship education providers; various forms of informal and online education prevail both in Slovenia and abroad. In Slovenia, self-study rates above the average (compared to other countries with innovation-driven economies); this includes informal education about setting up and starting a business (e.g., reading literature during free time, observation of other entrepreneurs, or offering help in

a company founded by someone else). In Slovenia, 15,51% of respondents acquired knowledge and experience to set up their businesses in this way; Finland led the group, with 30%, while the average percentage in this group of countries amounted to 11% (Rebernik et al., 2009).

People are aware of the importance of entrepreneurship education and training in Slovenia, as they often pursue such education, especially in the form of self-study. What about university students? Information related to university students' entrepreneurship education and training is taken from international research carried out at universities in 11 countries (detailed in the following section). The international scope of this research phenomenon is important not only because of the comparative aspect of this approach to entrepreneurship education, but also because of the comparison of values, motives, and intentions of students involved in entrepreneurial activities. The international perspective can be an important comparative mechanism for sharing best practices and providing recommendations for the improvement of entrepreneurship education in individual countries.

Entrepreneurial intentions of Slovenian students

Despite the fact that higher education institutions play an important role in the creation of "entrepreneurship capacity" (Teixeira and Davey, 2009), few empirical studies deal with entrepreneurship attitudes of students as potential future entrepreneurs (Wang and Wong, 2004). Students' willingness to start a new venture in the future mostly depends on their attitudes and knowledge of entrepreneurship. Numerous studies deal with attitudes towards entrepreneurship (Greenberger and Sexton, 1988; Learned, 1992; Naffziger et al., 1994; Brandstätter, 1997), but only a few have dealt with entrepreneurial intentions of students. Existing studies are mainly focused on the United States and Great Britain and have included only small samples of students in entrepreneurship programmes. Thus, we decided to show the results of an international research study dealing with entrepreneurship intentions of students from Slovenia studying at the Faculty of Business and Economics at the University of Maribor. This empirical research study was carried out together with partner universities in 2009. The study includes a wide spectrum of intentions for setting up a business by students who have just embarked upon a university business education. The majority of studies dealing with student intentions for starting a business have focused on students of business studies (e.g. Hills and Barnaby, 1977; Sexton and Bowman, 1983; Hills and Welsch, 1986; Ede et al., 1998; Sagie and Elizur, 1999; Krueger et al., 2000; Lissy, 2000; DeMartino and Barbato, 2002), which makes sense given that it is difficult to find entrepreneurship in other study programmes.

Our contribution gives a detailed description of a part of the research results, which can help us in the formation of arguments for different teaching methods in order to promote such entrepreneurship education and will thus contribute towards starting such business ventures so as to provide jobs and boost growth and competitiveness in global markets. We focus on three questions:

1. Which entrepreneurship competences do students (think they) have?
2. Which factors influence students' decisions to become entrepreneurs or employees?
3. How do students perceive the role of universities in encouraging their interest for entrepreneurship?

Table 2 shows the number of respondents by country and average age; 10,3% of the sample is Slovenian students.

Table 2: Number of respondents by country

Country	N	%	Average age
Australia	65	4,5	20,0
Portugal	224	15,6	18,9
Finland	92	6,4	21,2
Germany	126	8,8	22,4
Slovenia	148	10,3	21,4
Poland	51	3,6	20,3
Great Britain	54	3,8	21,3
Ireland	184	12,8	18,6
United Arab Emirates	118	8,2	19,3
South African Republic	276	19,2	20,0
Uganda	96	6,7	20,1
TOTAL	1.434	100,0	20,2

The Slovenian part of the research was carried out during lectures for first- and second-year students attending the Bologna university study programme at the Faculty of Business and Economics at the University of Maribor. Despite the fact that the research was carried out during lectures, student participation was voluntary. Answers were collected through written questionnaires handed out to undergraduate students most often during the lectures given for first-year students. We received answers from 148 students (27,4% men, 71,6% women). In the international sample, the share of men was 44,5% compared to 55,5% women. In both cases, more women participated than men. Collected data from all participating countries were harmonised by the coordination team led by Todd Davey (2010). The team prepared a SPSS database, which represented the basis for the analysis to find answers to the set questions.

Students were asked if they had already set up a business venture. Just over 12% of Slovenian respondents revealed no interest in setting up a business venture, which is similar to the results of the international sample. It is encouraging that 47,3% of Slovenian students indicated the possibility of starting a company in the future (international results: 50,2%).

Table 3: Relationship to starting a company

	Slovenia (%)	International (%)
No and I have no interest to do so	12,2	12,5
No, but I could imagine starting a company	47,3	50,2
No, but I have an idea that I believe could be successful	20,3	18,3
I am currently thinking about it	15,5	11,7
I have taken steps to start a business	2,0	4,2
Yes, I have founded ___ company/ies	2,7	3,0
TOTAL	100,0	100,0

Source: Author's calculations.

This answer is tightly connected with ownership of key competences and abilities needed for entrepreneurship, which were evaluated by students (see Table 4).

Table 4: Skills and competences for entrepreneurship

		Min	Max	N	Average	SD	Stand. error	Rank
I know techniques to find out what the market wants	Slo	1	5	147	2,98	0,848	0,070	4
	Int.	1	5	1.263	3,15	0,986	0,028	2
I understand the type of issues that confront an entrepreneur in taking an idea to market	Slo	2	5	148	3,38	0,803	0,066	2
	Int.	1	5	1.263	3,27	0,960	0,027	1
I can create a business plan and a business concept	Slo.	1	5	148	3,40	1,042	0,086	1
	Int.	1	5	1.264	3,14	1,075	0,030	3
I know how to legally finance a new business concept	Slo	1	5	148	3,09	0,925	0,076	3
	Int.	1	5	1.259	2,89	1,099	0,031	4

Source: Author's calculations.

Note: Int. = International

Based on a five-point Likert scale ranging from (1) I agree completely to (5) I disagree completely.

The results related to students' self-evaluation of personal abilities demonstrate considerable differences between Slovenian and international respondents. A statistically significant difference emerged among the answers of the two groups of students in three statements. Slovenian students believe they are capable of creating a business plan and developing a business concept, so they ranked this skill highest (rank 1)—statistically considerably higher than the international population of students ($t_{(1410)} = -2,770$, $p = 0,006$). Interestingly, Slovenian students ranked the knowledge of techniques for finding out what the market wants lowest (and statistically significantly lower than the international population) ($t_{(1408)} = 2,303$, $p = 0,022$). The Slovenian students identified a contradictory situation in that they believe that they are able to create a business plan and a business concept despite the fact that they are not familiar with the techniques for finding out what the market wants.

The essence of entrepreneurship activity lies in identifying business opportunities (i.e., determining what the market really needs).

On the other hand, knowing how to finance a new business concept was ranked statistically considerably higher than the international students ($t_{(1405)} = -2,443, p = 0,015$). According to the scope of possible answers (from 1 to 5), the 3,21 average for Slovenian students is relatively low, albeit higher than among international students, where the average is 3,11. This obviously points to the fact that students entering the faculty did not acquire sufficient insights and knowledge about entrepreneurship.

A correlation analysis of variables reflecting the students' skills and abilities and their relationship in establishing new companies showed a correlation between 0,2 and 0,5 ($p = 0,01$), indicating that students with a higher level of entrepreneurship skills expressed a more positive attitude towards starting a company. Similar results occurred in international samples.

Entrepreneurial theory deals with entrepreneurship intentions through the analysis of individuals' personality traits (McClelland 1961; Kets de Vreis 1977). They can be divided into psychological (need for achievement, risk taking, personal independence, locus of control, self-respect, self-fulfilment, vision) and non-psychological (human and social capital) motivational factors (Širec and Močnik, 2010). In our research, we studied four characteristics of student psychological motivation factors, which helped us analyse the constituents of entrepreneurship intentions (see Table 5).

Table 5: Psychological motivation factors for entrepreneurship

		Min	Max	N	Average	SD	Stand. error	Rank
Personal independence/ Managing own time	Slo	2	5	147	4,36	0,721	0,059	1
	Int.	1	5	1237	4,13	0,991	0,028	1
More interesting work	Slo	1	5	146	3,97	0,874	0,072	3
	Int.	1	5	1228	3,71	1,081	0,031	3
Possibilities for self-fulfilment	Slo.	2	5	146	4,14	0,752	0,062	2
	Int.	1	5	1226	4,06	0,989	0,028	2
To avoid uncertainties related to employment (e.g., being unemployed)	Slo	1	5	146	3,21	0,870	0,072	4
	Int.	1	5	1223	3,21	1,156	0,033	4

Source: Author's calculations.

Note: Int. = International

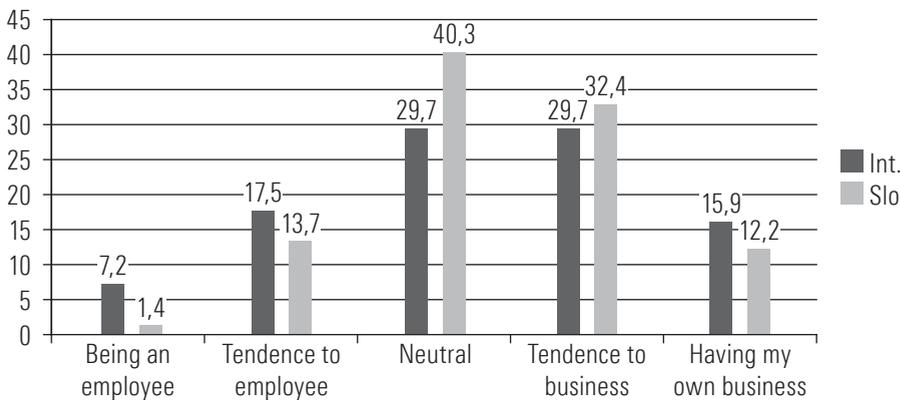
Based on a five-point Likert scale ranging from (1) I agree completely to (5) I disagree completely.

In response to the question "Why do you prefer company ownership to being an employee?", both Slovenian and international students ranked their personal independence highest. Such results were expected as an entrepreneurship role undoubtedly requires a high degree of independence. Entrepreneurs take responsibility for exploiting opportunities that did not exist before and are also responsible for achieving or failing

to achieve results (Širec, 2007). Students ranked possibilities for self-fulfilment second. Interestingly, no differences in preferences emerged in regard to perceiving psychological motivation factors between Slovenian and international students. All factors were ranked equally. This finding can also serve as an argument to support different entrepreneurship education that would have a greater influence on non-psychological motivation factors as the results show that psychological factors reflect a higher degree of homogeneity and are not influenced easily.

With the next question, shown in Figure 5, we sought to obtain students' evaluation of their previous careers. A large share of students graduating from Slovenian business schools still believe that the best career for them would be employment in the public sector. Students were asked to evaluate on a scale from 1 to 5 whether they would prefer to become an employee (1) or have their own business (5). The average value of answers provided by Slovenian students was 3,4, which is 0,1 higher than international average and reflects a tendency towards students' willingness to accept responsibility for their futures.

Figure 5: Selecting future career: being an employee or having your own company (in %)



Source: Author's calculations.

According to Redfort and Trigo (2007), entrepreneurship education can have three key roles in encouraging an “entrepreneurship society”. It can create a positive perception of entrepreneurship, making it a possible and attractive career choice for students. In addition, entrepreneurship education contributes towards the development of knowledge and skills students need in order to develop technical-business skills for a successful entrepreneurial career. Finally, entrepreneurship education can play an important role in scientific development by contributing through research activities and rising awareness of entrepreneurship phenomena.

The education system should help develop individuals' concepts required for making sound employment decisions. If students are deprived of the opportunity to acquire awareness of the worthiness of an entrepreneurial career during their education, it is less likely that they will become involved in entrepreneurship. On the other hand, the education system cannot make up for a favourable environment for entrepreneurship. The environment in Slovenia still represents an obstacle for the development of entrepreneurship. The 2009

GEM (Rebernik et al., 2010) warns against obstacles hindering entrepreneurship, including high degree of egalitarianism in society, high degree of job protection, and a low share of highly educated entrepreneurs.

We were also interested in students' opinion about the role universities play in increasing entrepreneurship orientation of students. Students evaluated statements on a scale from (1) I agree completely to (5) I disagree completely. The results are shown in Table 6.

Table 6: How can universities contribute towards a rise in student entrepreneurial orientation?

		Min	Max	N	Average	SD	Stand. error	Rank
Create more awareness of entrepreneurship as a possible career choice	Slo	2	5	147	3,46	0,813	0,067	
	Int.	1	5	1220	3,68	1,027	0,029	
Provide students with ideas to start a new business	Slo	1	5	147	3,67	0,995	0,082	
	Int.	1	5	1222	3,69	1,030	0,029	
Offer a bachelor or master's degree in entrepreneurship	Slo.	1	5	147	3,71	0,993	0,082	
	Int.	1	5	1211	3,55	1,081	0,031	
Offer project work focussed on entrepreneurship	Slo	1	5	147	4,00	0,876	0,072	2
	Int.	1	5	1216	3,71	1,022	0,029	3
Arrange conferences or workshops on entrepreneurship	Slo	1	5	147	3,68	0,965	0,080	
	Int.	1	5	1216	3,71	1,050	0,030	3
Bring students in contact with the network needed to start a new business	Slo	1	5	147	4,07	0,881	0,073	1
	Int.	1	5	1221	3,91	1,006	0,029	1
Allow companies run by students to use university services	Slo	1	5	62	3,68	1,004	0,128	
	Int.	1	5	512	3,68	1,088	0,048	
Provide students with the financial means needed to start a new business	Slo	1	5	146	3,68	1,089	0,090	
	Int.	1	5	1215	3,41	1,170	0,034	
Bring entrepreneurial students in contact with each other	Slo	2	5	146	3,87	0,873	0,072	3
	Int.	1	5	1211	3,78	0,988	0,028	2

Source: Author's calculations.

Note: Int. = International

Based on a five-point Likert scale ranging from (1) I agree completely to (5) I disagree completely.

The results show a harmonised perception of Slovenian and international students with regard to the role the education system plays in promoting students' entrepreneurial orientation. Desirable activities that ranked highest are (1) bringing students in contact with networks required for the start-up, (2) offering entrepreneurially oriented project work, and (3) bringing students in contact with each other. Students also called for different education methods, with less lecturing and more team project work in real business environments. These are exactly the features of the programme presented in the next section.

Learning entrepreneurship in practice – example of good practice

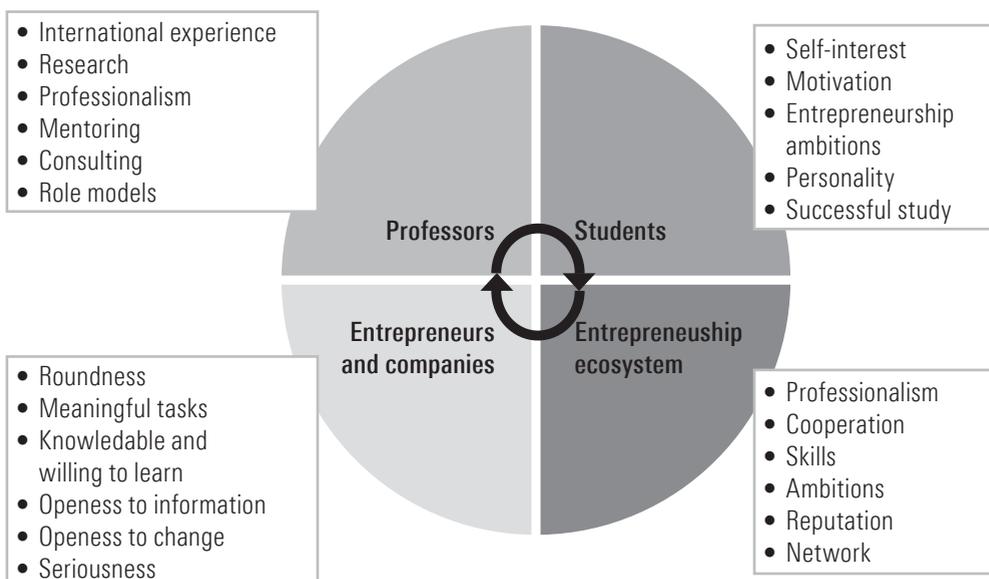
Despite the fact that students in business and managerial study programmes are educated for various jobs, all their competences are linked to thorough knowledge about

doing business and managing companies. It can be said that students are rarely taught about the real life of companies. Entrepreneurship and scientific journals have always been full of contributions that empirically and/or theoretically deal with the problems of entrepreneurship education (e.g., Gorman et al., 1997). What is missing are practical educational attempts demonstrating the possibility of implementing innovative ways to teach entrepreneurship by encouraging creativity and innovativeness within the framework of the present university education system.

A professional environment in which students may find themselves working involves not only an enterprise, but also a whole ecosystem, in which smaller enterprises search for business opportunities and collect the necessary sources to implement current business activities. Therefore, education should creatively replicate such an environment and follow two objectives: build creative and entrepreneurial individuals and create efficient managers. Such an education system is referred to in our contribution as a quadruple helix of effective entrepreneurship education (Rebernik, 2009). Such education consists of four groups of players: students, academics, entrepreneurs, and the entrepreneurship ecosystem with its support infrastructure. The roles of these four players are complex and intertwining. Teaching, studying, researching, and connecting companies and the entrepreneurial ecosystem (see Figure 6) are activities that should be effectively implemented in order to build a successful education system for future entrepreneurs and/or managers of small and medium-sized enterprises.

The programme includes four inseparable components of entrepreneurship education (students, professors, entrepreneurs, and support infrastructure of entrepreneurship ecosystem), understood as a quadruple helix of entrepreneurship education and training (Rebernik, 2009). This is summarised in Figure 6.

Figure 6: Quadruple helix of entrepreneurship education and training



The contrived philosophy of the innovative programme of entrepreneurship education is based on the assumption that education and training of individuals who are likely to become independent entrepreneurs or employees in small enterprises should be considerably different from the education of those individuals who will find employment in large enterprises. This type of education should take into account at least three elements that distinguish small enterprises from big ones: de-specialisation of tasks, scarcity of resources, and self-employment. Such a programme was created in cooperation with four international universities and TEMPUS programme funds at the Faculty of Business and Economics at the University of Maribor during the first half of the 1990s. The programme has proved to be very successful for the last 17 years and represents a unique model in Slovenian education.

The basic purpose of the programme is to educate students to be able to manage their own companies, manage small and medium-sized enterprises, or carry out other managerial tasks immediately after graduation, without having to spend too much time acquiring business practices and getting to know real business life. Graduates should be able to transfer acquired knowledge and skills into practice. In addition to a high academic level, education should focus on practice and be centred on students' independent work and professional careers. In addition to acquiring appropriate knowledge and leadership skills, with the aim of acquiring a theoretical basis as well as a practical routine, students' training focuses on accepting responsibility for themselves and others. Students have to be able to manage existing companies as well as create new jobs.

The programme is based upon the Revans' idea about active learning, which defines acquiring knowledge as "a process of inquiry, beginning with the experience of not knowing what to do next, and finding that an answer is not available from current expertise" (Powell et al., 1999). The programme was created so that each student spends four days each week at the faculty and a day in a chosen mentor company over a period of four semesters. Entrepreneurs and managers in SMEs train students through their work and students (with the help of their professors) solve real-life business problems. The programme tries to unite the higher education sphere and managers/entrepreneurs in order to solve common tasks in such a way that each student enrolled in the programme becomes involved in a small enterprise that is—by complying to certain criteria set in advance—capable of and willing to cooperate with the Faculty of Business and Economics in its entrepreneurship study programme. Under the mentorship of entrepreneurs or top managers of chosen companies, students check their theoretical knowledge against practical experiences gained in companies during a period of two years while simultaneously acquiring practical leadership skills.

The entrepreneurship programme was created and is led by the Institute for Entrepreneurship and Small Business Management at the Faculty of Business and Economics. The institute's main belief is that the contribution towards the development of region and society is the main role of university. Thus, university teachers are not only to teach and research, but also to collaborate in numerous other activities that may contribute towards economic development. Just as we speak about extracurricular activities and their importance for students' development, it is necessary for university teachers to

be engaged in numerous activities. Such engagement, which contributes to familiarising students with the importance and value of innovation and creativity, is reflected especially through the following activities:

- Conducting research for *Global Entrepreneurship Monitor (GEM)*, which is the largest study of entrepreneurial activity among adults in more than 50 countries. GEM was initiated in 1997 with the aim of identifying factors influencing entrepreneurial activity and economic growth on a national level. The institute joined the project in 2002 and conducts research activities related to Slovenia (www.gemslovenia.org).
- *Slovenian entrepreneurship observatory* was established in 1998 in order to evaluate entrepreneurial activity of Slovenian enterprises on an annual basis. Databases created during each project are used for teaching purposes (e.g., Širec and Rebernik, 2009).
- Ad hoc research is conducted within the *European network for social and economic research*, a strong and effective network of institutes from 32 European countries. The institute participates in common research activities when contributions that highlight Slovenian entrepreneurship are needed (www.ensr.eu).
- *STIQE conference*. Since 1992, this international scientific conference focusing on the connection between systemic thinking, innovation, quality and entrepreneurship has been organised every other year to find holistic answers through multidisciplinary and interdisciplinary approaches (e.g., Mulej et al., 2006).
- *PODIM conference*. This conference represents one of the most important events in the field of innovation and entrepreneurship in the region, attracting more than 300 entrepreneurs, university teachers, managers, researchers, and professionals from the entrepreneurial support environment and politics each year (www.podim.org).
- *Slovenian Start-up of the Year*, established in 2007, seeks to foster awareness about important innovative enterprises with large growth potential. The annual prestigious award recognises aspirations during the first phase of entrepreneurial activity, which requires both informal and formal investors and business partners. The selection of a start-up enterprise of the year is based on the evaluation of the business plan and the presentation to the evaluation board (www.startup.si).
- *Business incubator Tovarna podjemov* plays a traditional role of university incubator and ensures support for students and researchers who wish to set up their own enterprises (www.tovarnapodjemov.org).

Students participate in the above-mentioned activities in various ways. For example, they may use databases with research results when writing their seminar and diploma papers, participate in conferences, use tools and information provided by the business incubator, visit companies and institutions in the entrepreneurship support environment, discuss real-life problems, and get acquainted with successful Slovenian entrepreneurs. The study programme has an Internet site (www.podjeten.si) and publishes a magazine in which professors and students publish articles and share their experiences.

In the 17 years during which the entrepreneurship study programme has been offered at the University of Maribor, a number of relationships have been established between

entrepreneurs and owners/managers of small and medium-sized enterprises. Students have completed more than 500 projects in mentoring companies. Many entrepreneurs and managers have participated in discussions during in-class activities. With the money provided by enterprises and the money earned by students through their business activities, numerous study trips at home and abroad have been organised.

Two years ago, a programme analysis was carried out; the results were extremely encouraging. The majority of alumni found their first employment immediately after graduation, with one fifth starting work in mentoring companies. If the graduates had to select a study programme again, 90% of them would choose the entrepreneurship programme. Within 5 years of graduation, 20% of graduates had set up their own companies, and 40% of them believe that they will do the same within the next four years (Širec, 2008). This is a surprising result considering that the TEA index of GEM, which measures early entrepreneurial activity of adults in Slovenia, amounted to only 5,4% in 2009 while all entrepreneurial activity in Slovenia in 2009 amounted to around 10%.

One of the positive results of the implementation of the entrepreneurship programme is the acknowledgment of the need for entrepreneurship education by university teachers and entrepreneurs and managers of SMEs. During the early years of the establishment of cooperation between small enterprises and the university, we noted two interesting opinions. On the one hand, the majority of entrepreneurs and managers in SMEs believed that—from the practical point of view—cooperation with the university was a waste of time. On the other hand, there was a strongly held belief at the university that practical activities do not belong to the university because they are not scientific in nature. The implementation of the entrepreneurship programme did away with many of these false presentations of reality. We soon noticed changes in thinking and shifts in the mental models of university teachers, entrepreneurs, and managers (Rebernik, 1994). Today's teachers work closely with business practice and have deeper insights into business problems and learning requirements of SMEs.

It has also been proved that not every student meets the requirements of combining the study with managerial practice, no matter how bright or hardworking he or she may be. In addition to satisfying formal requirements such as high grades or language skills, appropriate personality, ingenuity, communication, and cooperation skills are needed to ensure that both student and company will benefit from their cooperation.

We should keep in mind that successful cooperation requires the careful selection of mentoring company and entrepreneur/manager. It is all about a quality partnership relationship. Without a common commitment and a willingness to collaborate in the education programme and student training, even a well-organised well-managed programme is likely to become just another ordinary university programme. The commitment of entrepreneurs and company managers to entrepreneurship students in mentoring companies plays the same role as laboratories for chemistry students and flight stimulators for future pilots.

The main finding stemming from the 17 years of experience in implementing the programme is that the sustainable success of entrepreneurship education at the university level requires productive collaboration of all four equally important partner groups: students, university teachers, entrepreneurs, and the support entrepreneurship infrastructure ecosystem. They all have to possess certain qualities or there will be no successful education.

Conclusions

Despite numerous research findings about the important influence on the formation of individuals' interest to participate in entrepreneurship activities, entrepreneurship education is still poorly developed at all levels of education. It does not encourage creativity, independence, or personal initiative enough, nor does it focus sufficient attention on entrepreneurship and the setting up of new businesses. As such, it is unlikely that students will become acquainted with the principles of a market economy. The scope of entrepreneurship education is worrisome as more than a half of European students in higher education have no access to entrepreneurship education; approximately 11 million of students are deprived of such and/or additional learning activities that could encourage their entrepreneurial orientation (EC, 2008). The majority of university programmes continue to train students in such a way that they wait to find an employer. Students do not accept the potential role of self-employment or the possibility of finding and exploiting business opportunities that would enable them to offer employment to others.

Experts who assess individual entrepreneurial frameworks within the Global Entrepreneurship Monitor are extremely critical of entrepreneurship education, especially formal education, ranking in below 2.5 on a 5-point scale. Similarly critical of entrepreneurship education are national experts in individual countries. In all surveyed countries, their rates were low and relatively stable throughout the observed period. It has become rather obvious that experts are not satisfied with the formal education in countries surveyed.

In Slovenia, the percentage of people who have attended entrepreneurship education and training is relatively favourable. More than a third of adults have participated in some form of entrepreneurship education for start ups, with forms of self-education—namely, informal education related to setting up a business or starting a new business (e.g., studying literature in their free time, observing other entrepreneurs, or offering help in conducting business activities in enterprises founded by someone else)—ranking above average compared to other participating countries in the group of innovative economies. In Slovenia, 15.51% of respondents acquired the knowledge and experience to set up their own company in this way, with Finland taking the lead with 30%, while the average in this group was 11%.

What is missing is a more intensive entrepreneurship education at the university level as both Slovenian and international students possessing a higher level of entrepreneurial skills demonstrate a more positive attitude towards setting up their own

companies. In addition, both groups of students share a similar perception regarding the role the education system should play in encouraging students' entrepreneurial orientation. Desirable activities that ranked highest are (1) bringing students in contact with networks required for the start-up, (2) offering entrepreneurially oriented project work, and (3) bringing students in contact with each other. These activities call for different education methods, with less lecturing and more team project work in a real business environment. These are exactly the features of the study programme presented in the second part of our contribution.

During the 17 years of programme implementation, it has been proved that the programme is efficient and relatively successful in its efforts to prepare students for their potential entrepreneurship career. The time students spend in mentoring companies seems especially important. Such an education model cannot be successful if all four key partners are not included in the process—namely, students, university teachers, entrepreneurs, and representatives of entrepreneurship ecosystem. Above all, these partners have to possess certain qualities in addition to their willingness for cooperation. University teachers have to be able to act as consultants to companies as needed and should possess appropriate mentoring abilities for students. It is also desirable that they be engaged in business activities and have international experience. Not every student meets the requirements for combining study with managerial practice, no matter how bright or hardworking he or she may be. In addition to satisfying formal requirements such as high grades or language skills, an appropriate personality, ingenuity, communication, and cooperation skills are also needed to ensure that both student and company will benefit from their cooperation. Entrepreneurs/managers and companies have to be carefully selected. Managers are the partners who really make the difference. Without their commitment to cooperating with university and participating in the educational and training process, the management program—no matter how well organised—would be just an ordinary university program, “just another brick in the wall”. With the commitment of entrepreneurs and managers, the companies start to play a similar role for students in small business management and entrepreneurship as laboratories play for chemistry students or flight simulators for future pilots. It is extremely important that the representatives of the entrepreneurship ecosystem with which companies do business—banks, venture capital, advisors, promoting agencies, and similar institutions—participate in the programme.

Improve entrepreneurship education at universities requires several steps. First, this type of education needs to be expanded to technical faculties. Students attending technical faculties throughout Europe as well as in Slovenia lack information about entrepreneurship because there are no compulsory or optional entrepreneurship subjects offered. Universities should become more responsible for the development of regions and economies; through this role they will become aware of the fact that the creation of knowledge is not enough if this knowledge is not transferred into useful products and services.

Not all students can be taught entrepreneurship as it is a scarce resource with only some individuals possessing the right qualities for entrepreneurship. However, it

is the role of the university to demonstrate the importance of creativity, innovation, and entrepreneurship. Above all, universities should be responsible for showing students that a decision for entrepreneurship represents a career decision. Policy makers should create appropriate conditions for entrepreneurship so that young individuals who possess the necessary characteristics and orientations, when deciding if they should set up their own company or try to find an employer, can recognise the entrepreneurial career as a sound and attractive possibility.

REFERENCES:

1. Audretsch D., Thurik R., 2007. The models of the managed and entrepreneurial economies. In: H. Hanusch, A. Pyka (eds.), *Elgar Companion to Neo-Schumpeterian Economics*. Edward Elgar, Cheltenham.
2. Bird B., 1988. Implementing entrepreneurial ideas: the case for intentions. *Academy of Management Review* 13: 442-554.
3. Bosma N., Jones K., Autio E., Levie J., 2008. *Global Entrepreneurship Monitor 2007 Executive Report*. Babson College and London Business School.
4. Bosma N., Acs Z.J., Autio E., Coduras A., Levie J., 2009. *Global Entrepreneurship Monitor 2008 Executive Report*. Babson College and London Business School.
5. Brandstätter H., 1997. Becoming an entrepreneur – a question of personality structure? *Journal of Economic Psychology* 18: 157-177.
6. Carree M.A., Thurik A.R., 2003. The impact of entrepreneurship on economic growth. In: Z.J. Acs, D.B. Audretsch (eds.), *Handbook of Entrepreneurship Research*, Kluwer Academic Publishers, pp. 437-471.
7. Coduras A., Levie J., Kelley D., Saemundsson R., Schott T., 2010. *GEM Special Report: A Global Perspective on Entrepreneurship and Training*. Global Entrepreneurship Research Association, London.
8. Delmar F., Davidsson P., 2000. Where do they come from? Prevalence and characteristics of nascent entrepreneurs. *Entrepreneurship and Regional Development* 12: 1-23.
9. DeMartino R., Barbato R., 2002. An Analysis of the Motivational Factors of Intending Entrepreneurs. *Journal of Small Business Strategy* 13: 26-36.
10. EC – European Commission, 2006. *Report on the implementation of the entrepreneurship action plan*. Commission Staff Working Paper, Brussels.
11. EC – European Commission, 2008. *Survey of Entrepreneurship in Higher Education in Europe*. Available at: http://ec.europa.eu/enterprise/policies/sme/files/support_measures/training_education/highedsurvey_en.pdf.
12. EC – European Commission, 2010. *European SMEs under Pressure: Annual Report on EU Small and Medium-sized Enterprises 2009*. Available at: http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/performance-review/index_en.htm (15. 6. 2010).
13. Ede F.O., Panigrahi B., Calcich S.E., 1998. African American students' attitudes toward entrepreneurship. *Journal of Education for Business* 73, 5: 291-96.
14. Gorman G., Hanlon D., King W., 1997. Some Research Perspective on Entrepreneurship Education, Enterprise Education and Education for Small Business Management: A Ten-year Literature Review. *International Small Business Journal* 15, 3: 56-77.
15. Greenberger D.B., Sexton D.L., 1988. An interactive model of new venture creation. *Journal of Small Business Management* 26, 3: 1-7.

16. Hatten T.S., Ruhland S.K., 1995. Student attitude toward entrepreneurship as affected by participation in an SBI program. *Journal of Education for Business* 70, 4: 224–227.
17. Henderson R., Robertson M., 1999. Who wants to be an entrepreneur? Young adult attitudes to entrepreneurship as a career. *Education and Training* 41: 236–245.
18. Hills G.E., Barnaby D.J., 1977. Future entrepreneurs from the business schools: Innovation is not dead. In: *Proceedings of the 22nd International Council for Small Business*. International Council for Small Business, pp. 27–30.
19. Hills G.E., Welsch H., 1986. Entrepreneurship behavioral intentions and student independence, characteristics and experiences. In: *Frontiers of Entrepreneurship Research: Proceedings of the Sixth Annual Babson College Entrepreneurship Research Conference*. Babson College, Babson Park, MA, pp. 173–186.
20. Kets de Vreis M.F.R., 1977. The Entrepreneurial Personality at the Crossroads. *Journal of Management Studies* 14: 34–57.
21. Krueger Jr N.F., 2000. The cognitive infrastructure of opportunity emergence. *Entrepreneurship Theory and Practice* 24, 3: 5–24.
22. Krueger N., Reilly M., Carsrud A., 2000. Competing models of entrepreneurial intentions. *Journal of Business Venturing* 15: 411–432.
23. Learned K.E., 1992. What happened before the organization? A model of organization formation. *Entrepreneurship Theory and Practice*: 17, 1, 39–48.
24. Lissy D., 2000. Goodbye b-school. *Harvard Business Review* 78, 2: 16–17.
25. Martínez D., Mora J.-G., Vila L.E., 2007. Entrepreneurs, the Self-employed and Employees amongst Young European Higher Education Graduates. *European Journal of Education* 42, 1: 92–117.
26. McClelland D.C., 1961. *The Achieving Society*. Van Nostrand, NY Princeton.
27. Mulej M., Rebernik M., Krošlin M. (eds.), 2008. *Proceedings of the International Conference on Linking Systems Thinking, Innovation, Quality, Entrepreneurship and Environment*. Institute for Entrepreneurship and Small Business Management, Faculty of Economics and Business, Maribor.
28. Naffziger D.W., Hornsby J.S., Kurtako D.F., 1994. A proposed research model of entrepreneurial motivation. *Entrepreneurship Theory and Practice* 18, 3: 29–42.
29. Powell J. et al., 1999. Action Learning for Innovation and Construction. *Problems of Participation and Connection Conference*, Amsterdam, April 6–9.
30. Rasmussena E., Sørheim R., 2006. Action-based entrepreneurship education. *Technovation* 26: 185–194.
31. Rebernik M., Tominc P., Pušnik K., 2008. *Premalo razvojno usmerjenih podjetij: GEM Slovenija 2007 (Lack of Growth oriented firms: GEM Slovenia 2007)*. University of Maribor, Faculty of Economics and Business, Maribor.
32. Rebernik M., 2002. Business economics and entrepreneurship at the crossroads. *Ekonomický časopis* 50, 3: 471–488.
33. Rebernik M., Tominc P., Pušnik K., 2009. *Rast podjetniške aktivnosti v Sloveniji: GEM Slovenija 2008 (The Growth of Entrepreneurial activity in Slovenia: GEM Slovenia 2008)*. University of Maribor, Faculty of Economics and Business, Maribor.
34. Rebernik M., Tominc P., Pušnik K., 2010. *Slovensko podjetništvo v letu krize: GEM Slovenija 2008 (Slovenian Entrepreneurship in the Year of Crisis: GEM Slovenia 2009)*. University of Maribor, Faculty of Economics and Business, Maribor.
35. Rebernik M., 2009. Quadruple helix of entrepreneurship and management education. *Review of International Comparative Management* 10, 5: 910–921.

36. Redford D., Trigo V., 2007. The State of Portuguese Entrepreneurship Education: A National Study of 2005/2006. *mimeo* ISCTE.
37. Reynolds P., Bosma N., Autio E., Hunt S., De Bono N., Servais I., Lopez-Garcia P., Chin N., 2005. Global Entrepreneurship Monitor: Data Collection Design and Implementation 1998–2003. *Small Business Economics* 24, 3: 205–231.
38. Robinson P.B., 1987. *Prediction of entrepreneurship based on attitude consistency model*. Unpublished doctoral dissertation, Brigham Young University. Dissertation Abstracts International, 48, 2807B.
39. Sagie A., Elizur D., 1999. Achievement motive and entrepreneurial orientation: a structural analysis. *Journal of Organizational Behavior* 20, 3: 375–87.
40. Schumpeter J., 1934. *The Theory of Economic Development*. Harvard University Press, Cambridge.
41. Sexton D.L., Bowman N.B., 1983. Comparative entrepreneurship characteristics of students: preliminary results. In: J. Hornaday, J. Timmons, K. Vesper (eds.), *Frontiers of Entrepreneurship Research*, Babson College, Wellesley, MA, pp. 213–32.
42. Širec K., Rebernik M. (eds.), 2009. *Dynamics of Slovenian entrepreneurship: Slovenian Entrepreneurship observatory 2008*. Faculty of Economics and Business, Maribor.
43. Širec K., Močnik D., 2010. How entrepreneurs personal characteristics affect SMEs' growth = Vpliv podjetnikovih osebnih lastnosti na rast MSP. *Naše gospodarstvo = Our economy* 56, 1/2: 3–12.
44. Širec K., 2008. Diplomanti podjetništva so povedali.... In: K. Širec (ed.), *15 let izkušenj za jasen pogled v prihodnost*, (Bilten IPMMP Podjetništvo, letn. 7), Institute for Entrepreneurship and Small Business Management, Faculty of Economics and Business, Maribor, pp. 4–5.
45. Širec K., 2007. The difference in personal characteristics of Slovenian male and female entrepreneurs. In: E.J. Schwarz, M.A. Wdowiak, D.A. Almer-Jarz (eds.), *Entrepreneurship in a changing Europe: [proceedings]*. Klagenfurt University, Department of Innovation Management and Entrepreneurship, Klagenfurt.
46. Teixeira A.A.C., Davey T., 2009. Attitudes of Higher Education students to new venture creation: a preliminary approach to the Portuguese case. *Working paper*.
47. Teixeira A.A.C., 2008. Entrepreneurial potential in Chemistry and Pharmacy courses. Results from a large survey. *Journal of Business Chemistry* 5, 2: 48–63.
48. Davey T., 2010. How can universities influence student motivation for entrepreneurship? A global study of the attitudes of first-year business students. Fachhochschule Münster, University of Applied Science. *Master thesis*.
49. Volery T., 2004. Entrepreneurship and Enterprise Education in Europe: What Must Be Learnt and What Can Be Taught. *EntreNews* 2: 1–4.
50. Wang C., Wong P.-K., 2004. Entrepreneurial interest of university students in Singapore. *Technovation* 24: 163–172.
51. Wennekers A.R.M., Thurik A.R., 1999. Linking entrepreneurship and economic growth. *Small Business Economics* 13: 27–55.
52. World Economic Forum, 2009. *Educating the Next Wave of Entrepreneurs: Unlocking Entrepreneurial Capabilities to Meet the Global Challenges of the 21st Century: A Report of the Global Education Initiative*. World Economic Forum, Switzerland.

SUPPORTING ECONOMIC GROWTH WITH INNOVATION- ORIENTED ENTREPRENEURSHIP

Katja Crnogaj, Miroslav Rebernik
and Barbara Bradač Hojnik

Ekonomický časopis

Vol. 63 No. 4, 2015

pp. 395-409

Institute of Economic Research of

Slovak Academy of Sciences and

Institute for Forecasting of CSPS of

Slovak Academy of Sciences

ISSN 0013-3035

Abstract

This article aims to examine whether any causal relationships exist among different types of entrepreneurial activity and economic growth. The theory and some empirical evidence proved positive outcomes of entrepreneurial activity, but mixed evidence on the role of entrepreneurship in economic growth. For the purposes of empirical testing, a longitudinal analysis was employed for 24 differently developed countries to estimate the relationship between different types of entrepreneurial activity and GDP growth rate, controlling for the impact of countries' developmental stage and time. The data were obtained from the Global Entrepreneurship Monitor database and complemented with data from other international sources. The results confirmed that entrepreneurship activity, especially innovation-oriented one, is correlated with economic growth, but this relationship is influenced by the economy's developmental stage as well as by specific characteristics of certain years included in the analysis. Our results indicate that governmental interventions cannot be the same for all countries; rather, they have to be adjusted to the specific developmental stage of the national economy and type of entrepreneurship.

Keywords: entrepreneurial activity, economic growth, developmental stage, economic policy, longitudinal study

JEL Classification: L26, M13

Introduction

Entrepreneurship has been recognized as a complex phenomenon involving individuals, companies, and the environment in which it occurs (Wennekers and Thurik, 1999); as a result, measuring and comparing entrepreneurship on the international level and over

time are challenging endeavours. In light of the increased globalization, entrepreneurship not only plays a more important role, but also generates growth because, according to Caree and Thurik (2003), it serves as a vehicle for innovation and change and as a conduit for knowledge spill-overs which generate economic growth. As Audretsch (2007, p. 65) pointed out, entrepreneurship is the missing link between investments in new knowledge and economic growth, making it an important mechanism that permeates the knowledge filter, facilitating the spill-over of knowledge, and ultimately generating economic growth. Governments increasingly consider entrepreneurship and innovativeness as the cornerstones of a competitiveness of national economies, because it can be pursued in two ways (Rebernik and Bradač, 2011; van der Zwan et al., 2011): (1) by engaging creative individuals in entrepreneurial activities to create new companies because it increases dynamism in the national economy and (2) by enabling established companies to achieve their growth and development.

Economic policy co-designs the business environment, which requires an entire set of goal-oriented measures. The outcomes of various policies for entrepreneurship have caused mixed results. In addition, the literature reveals that the fundamental and general question of how-and if-governments are able to influence entrepreneurial activity in a positive manner is far from resolved (Capelleras et al., 2008, in Minniti, 2008, p. 780) and needs further empirical examination.

Therefore, when forming the relevant empirical evidence base for policymakers, we should consider the multidimensional framework of entrepreneurship and use appropriate data sets that allow for a longitudinal comparison between different groups of countries while contributing to the existing knowledge base (Crnogaj, 2012). To provide additional insights into interdependence between entrepreneurship and economic growth, particular types of entrepreneurship (e.g., innovation-oriented entrepreneurship) at countries' different developmental stages should be analysed.

The main objective of this paper is to provide additional empirical evidence on the role of entrepreneurship in economic growth. It is structured as follows. First, the theoretical foundation on entrepreneurship and its connection with economic growth are explained and hypotheses developed. Second, the methodology of the empirical examination is presented, including the data and research model development. Third, the results of the empirical analysis are explained. The article ends with conclusions and policy implications.

Theory background and hypothesis development

Various studies have confirmed the positive outcomes of entrepreneurial activity, leading national policymakers to become increasingly aware of the importance of promoting innovation and entrepreneurship and improving the business environment in order to confront economic, social, and environmental challenges (e.g., Hart, 2003; Lundström and Stevenson, 2005). It is not only the number of entrepreneurs and the number of businesses that determine economic prosperity, but also the entrepreneurs who have both the desire and the capacity to develop their businesses and create jobs.

In this way, it is possible to develop foundations for policymakers regarding entrepreneurship as their measures can either encourage or hinder entrepreneurship. These measures can apply to individuals, businesses, and national economies.

Government policies develop institutional structures for entrepreneurial action and, therefore, have the power to influence entrepreneurial activity (Minniti, 2008, p. 781). The extent to which the government will intervene in the economy depends on its perception of the existence of market failures and distortions and on beliefs concerning the leeway to correct these market failures (Audretsch, Grilo and Thurik, 2007). Insights into the relationship between entrepreneurship and economic development across countries are therefore especially important for policymakers. Hence, although it is important to support entrepreneurship, it is even more important to encourage it on both the supply and demand sides to attain sustainable economic growth. Intentionally influencing the entrepreneurship reality demands accurate knowledge of this reality and the motives that drive it; due to the influence of the policy on the formation of entrepreneurial behaviour, the resulting outcome must be carefully considered and enhanced to the greatest extent possible (Rebernik et al., 2013). The importance of entrepreneurship is also seen by observing empirical research and projects implemented by the World Bank (WB), the Organization for Economic Cooperation and Development (OECD), and the Global Entrepreneurship Research Association to measure business-formation processes across countries (Acs and Szerb 2011, p. 2). Such research demonstrates the importance of the subject.

Our understanding of the specific role of entrepreneurship and its connections with economic growth is limited by the various existing entrepreneurship measures. Measures of entrepreneurship reflect different types of activities and, thus, should be selected carefully (Desai, 2009). The search for indicators and even the articulation of specific statistics has become crucial in order to make progress in the applied research as well as to design, implement, and assess the various measurements of public intervention (Congregado, 2008). We should also consider the fact that entrepreneurship exhibits different stages of development among national economies.

Every country and geographic area has its own features that define entrepreneurship. Understanding entrepreneurship in one's own country means comparing it with others while being aware of the fact that entrepreneurship has different effects with regard to national economic development phases (Rebernik, 2002). Such an approach makes it possible to learn from one another and, in an effort to support entrepreneurship, implement those measures that have proven to be efficient in similar circumstances or developmental phases. When comparing the development of economies on a global level, it is suitable to classify the countries based on the economic theory of stages of development provided by Porter, Sachs and McArthur (2002). Porter divided economies according to their development stage measured by GDP per capita on factor-driven, efficiency-driven, and innovation-driven economies. The economy is factor driven in the first development stage, when it competes based on its basic factor capabilities—primarily, unskilled labour and natural resources (WEF, 2013, p. 10). In the efficiency-driven stage, a country has become more competitive than in the factor-driven

stage, and the development of the economy is accompanied by industrialization and an increased reliance on economies of scale, with large, capital-intensive organizations being dominant. In the market, more efficient production processes and improved product quality are required. As development advances into the innovation-driven stage, businesses become more knowledge intensive, and the service sector expands. Wages and the standard of living increase as well so that businesses are able to sustain such development. At this stage, companies must compete by introducing and producing new and unique goods using the most advanced production processes and by innovating new processes and products (WEF, 2013; Tominc et al., 2015). Porter's classification of national economies according to their achieved developmental stage was embraced by the Global Entrepreneurship Monitor (GEM) and included into its basic research model (Bosma et al., 2009). GEM is an extensive international research project dedicated to understanding the relationship between entrepreneurship and national economic development across a wide range of countries.

The variety in the development of national economies has brought about numerous characteristics with regard to reaching decisions about entering an entrepreneurship career, entrepreneurship development, and competition among companies in different environments. Equally important are the differences regarding the necessary economic policy measures to be taken. Different stages of countries' socio-economic development mean different requirements; therefore, it is impossible to give unified suggestions on how to encourage entrepreneurship in particular (groups of) countries. In addition, empirical evidence from several global studies, such as GEM, as well as measures such as the Global Entrepreneurship and Development Index proved that connections exist between entrepreneurship and economic growth and that the support to encourage positive effects has to be adjusted to the developmental stage of particular economies. According to previous empirical research examining entrepreneurship at different stages of economic development, entrepreneurship in different forms is positively correlated with economic growth, but this relationship differs according to the phase of economic development (e.g., Audretsch et al., 2002; Caree et al., 2002; van Stel et al., 2005; Acs and Varga, 2005; Wennekers et al., 2005; Acs and Amoros, 2008; Wennekers et al., 2010; Stam et al., 2011). Theoretical advances and empirical research seem to support the view that, at higher levels of development, when institutions become stronger, more and more entrepreneurial activity is shifted towards innovative entrepreneurship, thereby strengthening economic development (Acemoglu and Johnson, 2005). Similarly, other researchers have shown that entrepreneurship unlocks economic development only if appropriate institutional backgrounds are in place (Baumol, 1990; Boettke and Coyne, 2003; Powell, 2008, in Stam et al., 2011). As empirical studies examining the relationship among different types of entrepreneurship and economic growth often show mixed results, further research on this topic is warranted. Despite this growing interest in comparative research, the understanding of these variations in entrepreneurship at the country level remains limited (Grilo and Thurik, 2008). This is not surprising given the heterogeneity characterizing both the kinds of entrepreneurship and the economic contexts in which economic growth takes place (Stam et al., 2011, p. 231).

Based on the literature review, it appears that economic growth is affected by entrepreneurial activity over time and that the relationship varies according to the developmental stage of the country. Thus, the theoretical and empirical evidence leads us to investigate the following hypothesis:

H1: Early stage entrepreneurial activity is related to economic growth, and the correlation is influenced by the developmental stage and time period.

Within this context, entrepreneurship might be expected to always be important as it ensures and enables development; however, its importance and influence differ according to the economy's developmental stages. In such an analysis, it is also important to consider specific characteristics of certain years included in the analysis and their impact on economic growth. In addition, economic policy instruments have to be adapted to stimulate a dynamic, innovative, and growth-oriented entrepreneurship, which contributes the most to economic development. As this type of entrepreneurship is important, it is necessary to investigate both innovativeness and innovation-oriented companies, among other factors. Innovation orientation is vital as it provides a framework through which the company's competitive potential and opportunity can be exploited to compete with other companies from different environments, which is particularly important when increasing business globalization. Holcombe (1998) argued that an entrepreneurial multiplier effect exists in the sense that entrepreneurship leads to more entrepreneurial opportunities through innovation. Innovative entrepreneurship is more likely to lead to a greater number of value-added jobs and more wealth creation as innovative entrepreneurs perhaps feel more compelled toward growth by the opportunity of the venture and its innovativeness. In addition, innovative companies appear to have higher growth rates (Stevenson, 2002, p. 60). It has been argued that entrepreneurship and innovation are linked to economic growth (e.g., Galindo and Méndez-Picaz, 2013) and, according to Drucker (1998), create a feedback effect—namely, an economic growth process would also promote innovations, and the latter would encourage entrepreneurship activity, which leads us to the next hypothesis:

H2: Innovation-oriented entrepreneurship contributes to economic growth more than entrepreneurship in general.

Innovation-oriented entrepreneurship is especially important for economic development due to its capability to provide new jobs and contribute to meeting customers' needs as well as achieving competitiveness. Innovation-oriented entrepreneurship is generally managed by educated and highly competent individuals whose motivation is not making ends meet, but rather taking advantage of promising business opportunities. Therefore, the level of innovation-oriented entrepreneurship in a country is expected to be a more relevant driver of economic growth and will contribute more to it compared to entrepreneurship in general.

Methodology

Data and variables

The empirical analysis was conducted on panel data from 24 countries participating in the GEM project between 2006 and 2010 (120 observations). The database is constructed from the adult population survey that is annually administered in countries participating in GEM.

For the *type of economy* variable, we included countries for which data for selected variables were available in all studied years, allowing for a balanced panel database and in line with the already mentioned Porter, Sachs and McArthur's (2002) typology of economies grouped into resource-driven, efficiency-driven, and innovation-driven. In our study, innovation-driven economies were represented by Belgium, Denmark, Finland, France, Greece, Iceland, Italy, Japan, Latvia, the Netherlands, Norway, Slovenia, Spain, the United Kingdom, and the United States. Efficiency-driven economies were represented by Argentina, Brazil, Chile, Columbia, Croatia, Hungary, Peru, Russia, and Uruguay. Countries falling within the factor-driven economies were not included in the research as no sufficient time series exists for these countries. None of the included countries changed their developmental stage during the analysed time period (2006 to 2010).

For the entrepreneurial activity measure, the *total early stage entrepreneurial activity index* (TEA) variable was used. It is one of the main indicators introduced by GEM and measures the percentage of adult individuals (18 to 64 years old) who are in the process of starting a new venture or are already the owners/managers of a business that is less than 42 months old. The TEA index thus shows the early stages of entrepreneurial activity, which are particularly vulnerable to factors in the environment that either encourage entrepreneurship or obstruct it. GEM's concentration on individuals instead of statistical company data enables a detailed insight into the perception of entrepreneurship by the adult population, the national entrepreneurship profile, involvement of adults in entrepreneurial activities, and aspirations of entrepreneurs.

The *TEA innovation-driven* variable is the total early stage entrepreneurial activity index in countries that belong to innovation-driven economies. The TEA efficiency-driven variable refers to the total early stage entrepreneurial activity index in countries that belong to efficiency-driven economies.

To measure innovation-oriented entrepreneurship, the *innovation-oriented entrepreneurship* (TEANPM) variable was used as a subset of total early stage entrepreneurial activity. Innovation-oriented entrepreneurship (TEANPM) is defined as the percentage of early stage entrepreneurs. Innovation-oriented entrepreneurs are those who consider their product or service to be new to the market and, consequently, some or all potential buyers are still unfamiliar with it; furthermore, this product or service is only provided by a few or even no companies on the market.

The *GDP growth* variable was measured as real GDP, and the data were taken from the World Economic Outlook database (September 2011).

Model development

We developed two models that were empirically tested using ordinary least squares (OLS) regression. Given the cross-sectional and time series nature of the data developed for this study, the model was gradually refined by controlling the specific characteristics of a country's development level and time using the stepwise least square dummy variable (LSDV) regression model (Gujarati, 2004). The LSDV regression is able to specify relationships between dependent and independent variables in a more precise manner while controlling the development level of a country and time in our analysis. If an individual country exceeds the median of the GDP per capita created in a certain year, the value of the dummy variable is 1 (innovation-driven countries); otherwise, it is 0 (efficiency-driven countries). The model also included four dummy variables for the years 2007 to 2010. Each dummy variable for the particular year has a value of 1 for the observations (cases) that refer to that year and 0 otherwise. The base regression refers to the year 2006.

In Model 1, the relationship between early stage entrepreneurial activity and economic growth is controlled for by the impact of the country's developmental stage and by the additional characteristics of certain years included in the analysis.

As advised by Stam et al. (2011), we performed a similar regression using a balanced panel data set based on the TEA index from 2006 to 2010 ($t = 2010$).

$$\begin{aligned} \text{GDP growth}_{i,((t+4)-(t-4))} = & a_1 + b_1 \text{TEA}_{i,((t)-(t-4))} + c_1 \text{Type of economy}_i + \\ & + d_1 \log(\text{GDPpc}_{i,((t)-(t-4))}) + e_1 \text{GCI}_{i,((t)-(t-4))} + f_1 \text{GDP growth}_{i,((t-1)-(t-9))} + \\ & + g_1 \text{Year } 2007_i + \dots + g_4 \text{Year } 2010_i + \varepsilon_{it} \end{aligned} \quad (1)$$

where GDP growth is the dependent variable of the i th observation, calculated as the average growth rate of GDP (over a 5-year period); i is the index of observations (24 countries by 5 years: $i = 1, 2, \dots, 120$); t is the index for the years ($t = 1, 2, \dots, 5$; $t = 1$ for the year 2006, ... $t = 5$ for the year 2010); a is a regression constant; b through g are regression coefficients of the variables; TEA is the total early stage entrepreneurial activity index of the i th observation, and GDPpc is per capita income. Following van Stel, Carree and Thurik (2005) and Stam et al. (2011), we used (the log of) countries' initial income level to correct for catch-up effects and GCI (growth competitiveness index) to capture other determinants of economic growth. To limit the potential impact of reversed causality, we added the lagged growth of GDP, which refers to the 5 years prior to the dependent variable's measurement period (average growth rates in 5 years), as an additional control variable. We also included dummy variables for countries' developmental stages and time in years. The ε is an error term of the regression.

In Model 2, we compared entrepreneurship effects separately in innovation-driven and efficiency-driven economies. TEA rates reflect different types of entrepreneurship depending on the stage of economic development. To avoid the possible negative impact of the empirical results being strongly influenced by the global economic crisis, we used a data set for 24 countries from 2006 to 2007 ($t = 2007$).

$$\begin{aligned} \text{GDP growth}_{i,((t+1)-(t-1))} = & a_1 + b_1 \text{TEA}^{\text{efficiency driven}}_{i,((t)-(t-1))} + c_1 \text{TEA}^{\text{innovation driven}}_{i,((t)-(t-1))} \\ & + b_2 \text{TEANPM}^{\text{efficiency driven}}_{i,((t)-(t-1))} + c_2 \text{TEANPM}^{\text{innovation driven}}_{i,((t)-(t-1))} \quad (2) \\ & + d_1 \log(\text{GDPpc}_{i,(t-(t-1))}) + e_1 \text{GCI}_{i,((t)-(t-1))} + f_1 \text{GDP growth}_{i,((t+1)-(t-3))} + \varepsilon_{it} \end{aligned}$$

where GDP growth is the dependent variable of the i th observation, calculated as the average growth rate of GDP (over a 2-year period); i is the index of observations (24 countries by 2 years: $i = 1, 2, \dots, 48$); t is the index for the years ($t = 1$ for the year 2006, $t = 2$ for the year 2007); a is a regression constant; b through f are regression coefficients of the variables; TEA is the total early stage entrepreneurial activity index of the i th observation; TEANPM is the early stage innovation-oriented entrepreneurship of the i th observation; and GDPpc is per capita income. We used (the log of) countries' initial income level to correct for catch-up effects and GCI to capture other determinants of economic growth. To limit the potential impact of reversed causality, we added lagged growth of GDP as an additional control variable; ε is an error term of the regression.

Results

Table 1 presents the estimation results from Model 1. The tests demonstrated that per capita income had an expected negative effect, which is consistent with the conditional convergence effect (Abramovitz, 1986, in Stam et al., 2011). Moreover, GCI was significantly positive and the impact of lagged growth significantly negative, which is likely due to the global crisis that occurred between the GDP's lagged and expected growth. In the second model, TEA is positive but has no significant impact on GDP growth. The addition of a linear TEA term decreases the adjusted R^2 so we can assume, as van Stel, Carree and Thurik (2005) do, that the link between TEA rates and GDP growth is not linear. When we added TEANPM to the model, TEA became non-significantly negative, but the effect of innovation-oriented entrepreneurship on GDP growth was positive at the 5% significance level.

When we included dummies for the type of national economy and time (Model 1(4) in Table 1), the coefficient c_1 was not statistically significant. Therefore, we could not confirm the development level's impact on GDP growth. However, the regression coefficients g_2 and g_3 (representing the specific characteristics of the years 2008 and 2009) negatively affected national economic growth. Based on these results, we repeated the analysis with data referring to the time period before the global economic crisis. We used 2006 and 2007 data, with the economic growth dependent variable calculated as the average growth rate of GDP (over a 2-year period). GCI was not significant, which

we assume is a result of the shorter time series. The impact of lagged growth was significantly positive, suggesting a considerable degree of path dependency. As the value of the dummy variable for the type of national economy was statistically significant, the constant of some countries increased.

Table 1: Early Entrepreneurship Activity and Economic Growth, 2006 – 2010 (dependent variable: GDP growth)

	Model 1(1)	Model 1(2)	Model 1(3)	Model 1(4)
a ₁	12.408	11.676	11.948	8.980
Constant	(8.733) ^c	(6.854) ^c	(7.126) ^c	(4.377) ^c
b ₁		0.027	-0.004	0.050
TEA		(0.783)	(-0.111)	(1.472)
c ₁				-0.692
Type of economy				(-0.967)
c ₃			0.030	
TEANPM			(2.279) ^b	
d ₁	-4.198	-3.983	-4.256	-3.040
log (BDP _{pc})	(-9.755) ^c	(-7.798) ^c	(-8.255) ^c	(-3.768) ^c
e ₁	0.992	0.951	0.983	0.917
GCI	(2.630) ^c	(2.494) ^b	(2.623) ^c	(2.378) ^b
f ₁	-0.220	-0.216	-0.222	-0.135
Lagged GDP growth	(-3.393) ^c	(-3.321) ^c	(-3.465) ^c	(-1.714) ^a
g ₁				-0.221
Year 2007				(-0.538)
g ₂				-0.809
Year 2008				(-1.895) ^a
g ₃				-1.011
Year 2009				(-2.415) ^b
g ₄				0.283
Year 2010				(0.658)
R ²	0.562	0.565	0.584	0.616
R ² adjusted	0.551	0.549	0.565	0.584
F statistic	48.382 ^c	36.315 ^c	31.178 ^c	19.082 ^c
Number of observations	117	117	117	117

Note: t-values are in parentheses; ap ≤ 0.10; bp ≤ 0.05; cp ≤ 0.01. Number of observations is smaller than 120 due to the elimination of those with outliers.

Source: Authors calculation.

Thus, innovation-driven countries contributed to the 2-year average growth rate, which could be the result of the countries' specific economic environment. Therefore, we can assume that the relationship between entrepreneurship and economic growth differs for countries at different developmental stages. By separating TEA variables for different groups of countries, we can confirm this assumption (Table 2).

Entrepreneurship in general (TEA) had a significantly positive impact on economic growth in innovation-driven economies, but a significantly negative impact on economic growth in efficiency-driven economies. These results are consistent with van Stel, Carree and Thurik's (2005) and Stam et al.'s (2009) findings. As indicated in Model 2(2) in Table 2, we identified the positive effects of the innovation-oriented entrepreneurship (TEANPM) for both developed and less developed countries, but the results were not significant. The more positive effect of innovation-oriented entrepreneurship than entrepreneurship in general corresponded to the coefficient c_3 in Model 1(3) in Table 1.

Table 2: Early Entrepreneurship Activity According to the Type of Economy and Economic Growth, 2006 – 2007 (dependent variable: GDP growth)

	Model 2(1)	Model 2(2)
a_1	18.836	10.027
Constant	(3.471) ^c	(2.782) ^c
b_1	-1.210	
TEA efficiency-driven	(-1.674) ^a	
c_1	1.929	
TEA innovation-driven	(2.272) ^b	
b_2		0.001
TEANPM efficiency-driven		(0.025)
c_2		0.034
TEANPM innovation-driven		(0.583)
d_1	-6.197	-2.988
log (BDPpc)	(-3.322) ^c	(-2.260) ^b
e_1	0.714	0.330
GCI	(0.928)	(0.413)
f_1	0.559	0.522
Lagged BDP growth	(4.469) ^c	(3.881) ^c
R ²	0.640	0.601
R ² adjusted	0.597	0.554
F statistic	14.926 ^c	12.656 ^c
Number of observations	48	48

Note: t-values are in parentheses; ^a $p < 0.10$; ^b $p < 0.05$; ^c $p < 0.01$. Following van Stel, Carree and Thurik (2005), we assume a constant equal for each of the groups of countries.

Source: Authors calculation.

Hence, we can conclude that innovation-oriented entrepreneurship has a positive correlation with economic growth and contributes more to national economic growth than entrepreneurship in general. Using our primary source data on early stage entrepreneurial activity from the various GEM surveys and based on the results herein, we found support for hypotheses H1 and H2.

Conclusions and policy implications

This study has revealed that early stage entrepreneurial activity, especially innovation-oriented one, is correlated with economic growth, but that relationship is influenced by an economy's developmental stage and specific characteristics of certain years included in the analysis. In general, the impact of early stage entrepreneurial activity on economic growth was positive in innovation-driven economies but negative in efficiency-driven economies, indicating that the real economic effect can be attributed to the decisions of some people in developed economies to become entrepreneurs. The results confirmed our assumption that involvement in entrepreneurial activity by itself does not equate to higher development, as some other authors demonstrated (Caree et al., 2002; Wennekers et al., 2005). Our findings are in line with some prior studies (van Stel, Carree and Thurik, 2005; Stam et al., 2009), which found that entrepreneurship (TEA) has a stronger impact in high-income countries than in low-income countries, although Stam et al., (2011) found an opposite pattern. According to GEM, less developed countries show even higher levels of entrepreneurial activity with the prevailing low impact, necessity-driven type of entrepreneurship, whose contribution to economic development is smaller. In other words, some people are forced into entrepreneurship out of necessity as there are no other options for employment; meanwhile, others opt for entrepreneurship in order to improve their position. Necessity entrepreneurship, even though it contributes to higher levels of entrepreneurial activity in a given economy, does not necessarily lead to economic growth as well; entrepreneurs are self-employed, do not possess the required development potential, and partake in activities where added value is minimal. Growth can be attributed primarily to highly motivated entrepreneurs who identify a promising business opportunity that allows for the growth of a company and opens new jobs. Apparently, it is not the quantity of entrepreneurship that makes a decisive contribution to a nation's economic and social development, but its quality.

Our findings also suggest that innovation-oriented entrepreneurship has a greater impact on economic growth than overall entrepreneurial activity. Therefore, introducing new products, technologies, and knowledge transfer into practice remains a crucial task for economic policy. These results support Koellinger's (2008) findings that entrepreneurs in highly developed countries are significantly more likely to engage in innovative start-ups. Innovation-driven entrepreneurship is especially important for national prosperity due to its capability to provide new jobs and contribute to meeting customers' needs and achieving competitiveness. Innovation-driven entrepreneurship is managed by educated and highly competent individuals, whose motivation is not making ends meet, but instead taking advantage of promising business opportunities. Ways to arouse an interest in entrepreneurship in such individuals, of course, differ substantially from other types of entrepreneurship.

The environment is a significant factor influencing both the emergence and development of entrepreneurship; therefore, identifying policies leading to appropriate levels of entrepreneurial activity are a significant challenge (Bosma et al., 2012, p. 35). Based on our results, policy should focus on the level of technological development and product innovativeness, educational level, and entrepreneurial ambitions in order

to introduce the necessary dynamics and stability into the economy. Irrespective of the economic development stages, entrepreneurship always remains important. Fundamental entrepreneurship conditions that will attract foreign investments and allow the exploitation of economies of scale should be developed for efficiency-driven countries. It is also necessary to develop additional frameworks to encourage high impact opportunity-based entrepreneurship. Designing and running such economic policy should rely on empirical evidence, including internationally comparable results, and be built on appropriate models that represent a reliable framework for policy-making debates.

The limitation of the current study is its lack of data regarding various aspects of entrepreneurship, such as different types of entrepreneurship and the level of total entrepreneurial activity, as well as its restriction on early stage entrepreneurial activity. Future research should take into account new and established businesses as well as other international comparable measures of entrepreneurial activity. Further analysis of entrepreneurship's impact on economic growth should also incorporate multi-level analyses that consider the determinants of entrepreneurship focused on the individual, company, and country levels to explain entrepreneurial progress. In addition, the research framework could be expanded by considering the indicators of social progress, rather than maintaining a narrow focus on GDP per capita to create more holistic frameworks for appropriate government policies.

REFERENCES

1. Abramovitz, M. (1986): *Catching Up, Forging Ahead, and Falling Behind*. *Journal of Economic History*, 46, No. 2, pp. 385 – 406.
2. Acemoglu, D., Johnson, S. (2005): *Unbundling Institutions*. *Journal of Political Economy*, 113, No. 5, pp. 943 – 995.
3. Acs, Z. J., Amoros, J. E. (2008): *Entrepreneurship and Competitiveness Dynamics in Latin America*. *Small Business Economics*, 31, No. 3, pp. 305 – 322.
4. Acs, Z. J., Szerb, L. (2011): *Global Entrepreneurship and Development Index 2011*. Northampton, MA: Edward Elgar Publishing.
5. Acs, Z. J., Varga, A. (2005): *Agglomeration, Entrepreneurship and Technological Change*. *Small Business Economics*, 24, No. 3, pp. 323 – 334.
6. Audretsch, D. B. (2007): *Entrepreneurship Capital and Economic Growth*. *Oxford Review of Economic Policy*, 23, No. 1, pp. 63 – 78.
7. Audretsch, D. B., Grilo, I., Thurik, R. (2007): *Explaining Entrepreneurship and the Role of Policy: A Framework*. In: Audretsch, D. B., Grilo, I. and Thurik, A. R. (eds): *Handbook of Research on Entrepreneurship Policy*. Northampton, MA: Edward Elgar Publishing.
8. Audretsch, D. B., Thurik, R., Verheul, I., Wennekers, S. (eds) (2002): *Entrepreneurship: Determinants and Policy in a European – U.S. Comparison*. Boston/Dordrecht/London: Kluwer Academic Publishers.
9. Baumol, W. J. (1990): *Entrepreneurship: Productive, Unproductive, and Destructive*. *Journal of Political Economy*, 98, No. 5, pp. 893 – 921.
10. Boettke, P., Coyne, C. J. (2003): *Entrepreneurship and Development: Cause or Consequence?* *Advances in Austrian Economics*, 6, pp. 67 – 88.

11. Bosma, N. S., Acs, Z., Autio, E., Coduras, A., Levie, J. (2009): *Global Entrepreneurship Monitor 2008 Executive Report*. London: London Business School; Santiago: Universidad del Desarrollo; Wellesley, MA: Babson College.
12. Bosma, N., Coduras, A., Litovski, Y., Seaman, J. (2012): *GEM Manual: A Report on the Design, Data and Quality Control of the Global Entrepreneurship Monitor*. Babson Park, MA: Babson College.
13. Capelleras, J. Kevin, M., Greene, F., Storey, D. (2008): Do More Heavily Regulated Economies Have Poorer Performing New Ventures? Evidence from Britain and Spain. *Journal of International Business Studies*, 39, No. 4, pp. 688 – 702.
14. Carree, M., Van Stel, A., Thurik, R., Wennekers, S. (2002): Economic Development and Business Ownership: An Analysis Using Data of 23 OECD Countries in the Period 1976 – 1996. *Small Business Economics*, 19, No. 3, pp. 271 – 290.
15. Carree, M. A., Thurik, A. R. (2003): The Impact of Entrepreneurship on Economic Growth. In: ACS, Z. J. and Audretsch, D. B. (eds): *Handbook of Entrepreneurship Research: An Interdisciplinary Survey and Introduction*. Boston, MA: Kluwer Academic Publishers, pp. 437 – 471.
16. Congregado, E. (2008): *Measuring Entrepreneurship: Building a Statistical System, Preface*. New York, USA: Springer.
17. Crnogaj, K. (2012): *Vpliv izbranih institucionalnih in individualnih dejavnikov na podjetniško aktivnost ter njihova povezava z gospodarskim in družbenim napredkom*. [The Effect of Specific Institutional and Individual Factors on Entrepreneurial Activity and Their Link to Economic and Social Progress.] [Doctoral Dissertation.] Maribor, SLO: Faculty of Economics and Business, University of Maribor.
18. Desai, S. (2009): *Measuring Entrepreneurship in Developing Countries*. [World Institute for Development Economics and Research. Research Paper, No. 2009/10.] Helsinki, FI: United Nations University, World Institute for Development Economics Research.
19. Drucker, P. F. (1998): The Discipline of Innovation. *Harvard Business Review*, 76, No. 6, pp. 149 – 157.
20. Galindo, M. A., Méndez-Picazo, M. T. (2013): Innovation, Entrepreneurship and Economic Growth. *Management Decision*, 51, No. 3, pp. 501 – 514.
21. Grilo, I., Thurik, R. A. (2008): Determinants of Entrepreneurship in Europe and the US. *Industrial and Corporate Change*, 17, No. 6, pp. 1113 – 1145.
22. Gujarati, D. N. (2004): *Basic Econometrics*. Fourth Editions. New York, USA: The Mc Graw-Hill Companies.
23. Hart, D. M. (2003): *The Emergence of Entrepreneurship Policy. Governance, Start-ups, and Growth in the U.S. Knowledge Economy*. Cambridge, UK: Cambridge University Press.
24. Holcombe, R. G. (1998): Entrepreneurship and Economic Growth. *The Quarterly Journal of Austrian Economics*, 1, No. 2, pp. 45 – 62.
25. Koellinger, P. (2008): Why Are Some Entrepreneurs More Innovative Than Others? *Small Business Economics*, 31, No. 1, pp. 21 – 37.
26. Lundström, A., Stevenson, L. (2005): *Entrepreneurship Policy – Theory and Practices*. New York, USA: Springer: ISEN International Studies in Entrepreneurship.
27. Minniti, M. (2008): The Role of Government Policy on Entrepreneurial Activity: Productive, Unproductive, or Destructive? *Entrepreneurship Theory and Practice*, 32, No. 5, pp. 779 – 790.
28. Porter, M. J., Sachs, J., McArthur, J. (2002): Executive Summary: Competitiveness and Stages of Economic Development. In: Porter, M. J., Sachs, P. K., Cornelius, J. W., McArthur, J. and Schwab, K. (eds): *The Global Competitiveness Report 2001 – 2002*. New York, USA: Oxford University Press, pp. 16 – 25.

29. Powell, B. (2008): *Making Poor Nations Rich. Entrepreneurship and the Process of Economic Development*. Stanford, CA, USA: Stanford University Press.
30. Rebernik, M. (2002): Business Economics and Entrepreneurship at the Crossroads. *Ekonomický časopis/Journal of Economics*, 50, No. 3, pp. 471 – 488.
31. Rebernik, M., Bradač, B. (2011): From Making the State to Institutionalizing Entrepreneurship Policy in Slovenia. In: Welter, F. and Smallbone, D. (eds): *Handbook of Re-search on Entrepreneurship Policies in Central and Eastern Europe*. Northampton, MA: Edward Elgar.
32. Rebernik, M., Tominc, P., Crnogaj, K., Širec, K., Bradač Hojnik, B. (2013): *Nezaznane poslovne priložnosti, GEM Slovenija 2012*. [Undetected Business Opportunities, GEM Slovenia 2012.] Maribor, SLO: Faculty of Economics and Business, University of Mari-bor.
33. Stam, E., Hartlog, C., Van Stel, A., Thurik, R. (2009): *Ambitious Entrepreneurship, High-Growth Firms and Macroeconomic Growth*. Zoetermeer, NL: EIM Research Reports.
34. Stam, E., Hartlog, C., Van Stel, A., Thurik, R. (2011): Ambitious Entrepreneurship, High-Growth Firms, and Macroeconomic Growth. In: Minniti, M. (ed.): *The Dynamics of Entrepreneurship: Evidence from the Global Entrepreneurship Monitor Data*. New York, USA: Oxford University Press, pp. 231 – 249.
35. Stevenson, L. (2002). Innovation and Entrepreneurship: A Dutch Policy Perspective in an International Context. In: Snijders, J. A. H. (ed.): *Entrepreneurship in the Netherlands: Innovative Entrepreneurship. New Policy Challenges*. The Hague: EIM Business and Policy Research and Ministry of Economic Affairs, pp. 43 – 66.
36. Tominc, P., Rebernik, M., Bradač Hojnik, B., Širec, K. (2015): *Danube Region Entrepreneurship Observatory: Diversity and Potential*. London, UK: Pearson Education.
37. Van der Zwan, P., Verheul, I., Thurik, R., Grilo, I. (2011): Entrepreneurial Progress: Climbing the Entrepreneurial Ladder in Europe and the United States. *Regional Studies*, 47, No. 5, pp. 803 – 825.
38. Van Stel, A., Carree, M., Thurik, R. (2005): The Effect of Entrepreneurial Activity on National Economic Growth. *Small Business Economics*, 24, No. 3, pp. 311 – 321.
39. WEF (2013): *The Global Competitiveness Report 2013 – 2014: Full Data Edition*. Geneva: World Economic Forum.
40. Wennekers, S., Thurik, R. (1999): Linking Entrepreneurship to Economic Growth. *Small Business Economics*, 13, No. 1, pp. 27 – 55.
41. Wennekers, S., Van Stel, A., Carre, M., Thurik, R. (2010): *The Relationship Between Entrepreneurship and Economic Development: Is It U-shaped?* Zoetermeer: Scientific Analysis of Entrepreneurship and SMEs.
42. Wennekers, S., Van Stel, A., Thurik, R., Reynolds, P. (2005): Nascent Entrepreneurship and the Level of Economic Development. *Small Business Economics*, 24, No. 3, pp. 293 – 309.

BUILDING THE STARTUP ECOSYSTEM IN SLOVENIA

Matej Rus and Miroslav Rebernik

VUKOVIĆ Ksenija (ed.), BRČIĆ Ruža (ed.),
KLAČMER ČALOPA Marina (ed.)

Entrepreneurial Society: Current Trends
and Future Prospects in Entrepreneurship,
Organization and Management

[book of full papers]

Varaždin: Faculty of Organization and Informatics

Publishing year: 2015

pp. 287-292

Paper was originally published in Slovenian
language; translated by Teja Rebernik, MA.

Abstract

Startup companies are important development drivers of new business ideas, innovations, and technologies in the economy. They attract creative individuals and increase the level of engagement of business talent as well as contribute towards the commercialization of new knowledge and technologies. In most cases, startup companies develop globally interesting products or services, which is also why they are intensely focused on growth through internationalization. In the growth stage, they intensely compete for various financing sources and contribute to the development of the market of informal and formal venture capital. Additionally, startups connect with various different private and public startup ecosystem stakeholders that can help them develop their product, finance the launch and growth of the company, develop the market or ensure other resources necessary for startup company development. In this article, we will present detailed insight into the Slovenian startup ecosystem, with an emphasis on public programmes, which significantly developed over the past few years to fill a market gap. In this, we will focus on the description and role of the Initiative Start:up Slovenia and its programmes, namely the PODIM Conference, Start:up of the Year competition with the startup school, and accelerators Start:up GeekHouse and Go:Global Slovenia. The listed programmes of the Initiative represent an important mechanism for supporting startup companies, supplementing and strengthening a relatively weak private startup ecosystem. They are intended for startup companies in all development stages, including the stages of launch, development, and growth through internationalization. The products are closely connected with financial startup incentives and seed capital from the Slovene Enterprise Fund. As stated above, the article will not only present the programmes but also the role of the Initiative in connecting and promoting various stakeholders of the startup ecosystem, both private and public, whose programmes and activities contribute towards the development of startup companies. Among others, the Initiative encouraged the creation of the Startup

Manifesto as the fundamental strategic document of the Slovenian startup ecosystem. With the goal of international collaboration, the Initiative started connecting with cross-border partners in the AlpsAdriatic area and broader in order to strengthen cross-border collaboration of the startup ecosystem and design a joint crossborder startup ecosystem in the AlpsAdriatic area. With the achieved synergies of collaboration, they wish to ensure better services for startup companies and a suitable global placement and visibility.

Keywords: startup ecosystem, accelerator programmes, startup ecosystem stakeholders, startup companies.

Defining the importance of startup companies in the modern society

Startup companies are important engines of new business ideas, innovations, and technologies in the economy. They attract creative individuals and increase the level of engagement of business talent as well as contribute towards the commercialization of new knowledge and technologies.

Rus and Kos (2012) state that startup companies are located in the centre of the new economic revolution, the strongest and biggest so far. The revolution that is leading us away from the post-industrial era and into a knowledge society. When we speak of startup companies, we mean newly founded companies whose purpose is to develop a new, usually innovative, product or service under uncertain circumstances. In most cases, startup companies develop globally interesting products or services, which is why they are also intensively focused on growth through internationalization of their business operations. This is because they usually have high growth potential and consequently also a corresponding contribution to employment growth. According to some estimates, a third of the dynamics of countries' economic growth can be explained with the dynamics of startup entrepreneurship. However, these companies need a suitably developed startup ecosystem. In order to develop successfully, startup companies connect with different private and public startup ecosystem stakeholders that can help them develop their product, finance the launch and growth of the company, develop the market, and ensure other resources necessary for the development of the startup company. Startup companies especially strongly compete for different financing sources and contribute to the development of the market of informal and formal venture capital.

According to predictions of economic experts, the future will bring a division into countries that will know how to answer to the challenges of the knowledge society, and countries in which the economic and societal lag will get increasingly bigger. The article thus discusses the history, state, and challenges of the development of a startup ecosystem in Slovenia, and the contribution of the Initiative Start:up Slovenia to building a globally competitive startup ecosystem in Slovenia.

State of startup entrepreneurship in Slovenia

The state of startup entrepreneurship in Slovenia changed significantly after the onset of the crisis – changed to the better. Data from a startup ecosystem study (Yougo.vc, 2013) show that in October 2013, Slovenia had at least 147 startup companies that employed 1,400 people as well as that the number of startup companies is increasing quickly, including the number of employees. These companies also attracted at least 53 million USD in capital. Slovenian high-tech companies altogether represent about 2-3% of the Slovenian economy and employ about 3,5000 people. The industry is growing faster than the average in the economy and is creating new jobs with high value added, but it is unfortunately still relatively limited. In total, Slovenia exports around 1.5 billion USD worth of high-tech products, which represents around 5% of all exports. Unfortunately, this is still below the average of the EU and far from the most successful countries. In the EU, high-tech products represent 15% of all exports, while in Israel the number is as high as 44% of all exports (27 billion USD). There, the entire high-tech industry employs 200,000 people and 1-2 billion USD are invested in it annually – this is 100- to 200-times more than in Slovenia (Rebernik and Jaklič, 2014).

Startup companies and the high-tech industry thus do exist in Slovenia and are being developed. Unfortunately, the industry is still too small to have more significant impact on entire Slovenian economy. The key question is therefore, how to encourage this industry to contribute to the development of a knowledge-based Slovenian society as much as possible.

Part of the answer undoubtedly lies in the development of a suitable support environment for startup companies, which we usually label as a startup ecosystem. Slovenia already has a developed general business support environment, but it does not yet bring as many results as it could, because it is indiscriminately focused on supporting general entrepreneurship without considering the specifics of startup companies. In Slovenia, the basics of the support ecosystem have been established, but they are not yet sufficient for its development. For the development of startup entrepreneurship, we need a lot more of all support activities, higher quality of support services, and better connections with support institutions elsewhere in the world.

Over the past few years, proactive actors of the Slovene entrepreneurship environment have connected with the goal of co-creating a startup ecosystem that would place Slovenia on lists of successful startup hubs. Below we present the history of the Initiative Start:up Slovenia, its programmes, connections with stakeholders in the startup ecosystem, and its plans for cross-border collaboration and cooperation in the Alps-Adriatic region.

Outline of the Initiative Start:up Slovenia

The Initiative Start:up Slovenia came to existence as an answer to the increasingly big lag in the evolution of the Slovenian startup ecosystem. By strategically connecting the business incubator of the University of Maribor, Venture Factory, and Technology Park

Ljubljana, which became the contracting co-leading partners of the Initiative Start-up Slovenia in 2011, the development of the Slovenian startup ecosystem received a true development boost. The Initiative succeeded in connecting practically all active subjects of the innovative environment in Slovenia in order to jointly create and strengthen national programmes for encouraging entrepreneurship as well as ensure a network of comprehensive support for the launch and building of startup companies across Slovenia (Rus and Lesjak, 2014).

The key stakeholders and partners of the Initiative Start-up Slovenia include:

- Leading subjects of the support environment in Slovenia at various locations. The Initiative already connected regular members, namely Primorska Technology Park, RCR Zasavje, Pomurska Technology Park, and the Savinja Region Incubator, and joined members, including the SAŠA Incubator, Business Incubator of Spodnje Podravje, KIK Štarter Kamnik, and the Club of Young Entrepreneurs Novo Mesto.
- Startup entrepreneurs, whereby the innovative environment subjects that are members of the Initiative include more than 400 successful companies with global potential for rapid growth, while events organized by members of the Initiative are attended by more than 9,000 potential entrepreneurs every year.
- Startup mentors who mentor, consult and use their connections to help young companies with global breakthrough. The network unites more than 100 quality mentors.
- Private investors, in the form of business angels and venture capital funds, who invest together with public money and not only finance the companies but also mentor them (“smart money”).
- Big successful companies that increase their innovation activity through active collaboration with startup companies and inclusion in the ecosystem. In this, the Initiative includes both national and transnational companies.
- Private organizations for encouraging entrepreneurship, such as media platforms, private accelerators at home and abroad, educational institutions for entrepreneurship and others, such as the Hekovnik Institute, CEED, media startup portal Startaj.si, 30Lean ... The Initiative Start-up Slovenia is, for example, a partner and ambassador of the Running Lean methodology in the Slovenian startup ecosystem.
- Ministry of Economic Development and Technology together with the Slovene Enterprise Fund and public agency SPIRIT.
- Other stakeholders, mostly including knowledge institutions such as universities, institutes, private schools as well as student societies, creative centres, co-working spaces, and all others that believe in an innovative and entrepreneurial Slovenia.
- International partners, of which there are more than 50 on all continents, representing different startup and business hubs across the world. Together with them, the Initiative Startup Slovenia helps companies in global growth and engagement.

The Initiative Start-up Slovenia carries out national programmes for encouraging entrepreneurship and entrepreneurial engagement, intended for three target groups, namely business teams in the stages of business idea creation, startup companies, and companies undergoing rapid global growth, which we introduce in more detail below. National programmes have several years of tradition and established brands, but most

importantly, they connect and complement each other content-wise, which offers help and support to companies from idea development to rapid growth on international markets. Several years of programme implementation also ensures good national coverage and regular development and upgrades to the programmes in accordance with global development guidelines.

The programmes represent comprehensive and systematic support to startups and include:

- Financial resources, whereby we speak of subsidies, equity and debt financing, public as well as private, or mix of both. A startup company that fulfil all criteria can receive more than 300.000 EUR of public money for growth and development.
- General and mentor support in the form of educational programmes, mentorships, consultations, and administrative support, training for entrepreneurs, and networking. Research has shown that with such support, the chances of company success strongly increase. There are more than 100 esteemed entrepreneurs, businesspeople and managers in the mentor network, advising and mentoring companies.
- Unified promotion of programmes and companies, including attracting talents from Slovenia, which encompasses transparent public selection of programme participants, monitoring and promoting those included in the programme, and thus ensuring effective control over the consumption of public resources.
- Suitable infrastructure (business premises) in the form of co-working spaces, incubators, and technology parks, whose primary purpose is building a community and environment with the right values that encourage talent, technology, tolerance, and transparency.

The results of the Initiative Start-up Slovenia are better and more impressive every year, for which the key reason lies in national, regional, and international connections and collaboration based on accepting the global trend of smart specialization and networking, and designing excellent services for target groups.

In 2014, the Initiative noted the following results (Startup Inciativa, 2015b):

- more than 320 events organized across Slovenia,
- more than 9,000 attendees, potential entrepreneurs, at events,
- more than 400 members, perspective startup companies with which we regularly and actively collaborate,
- more than 500 business consultations carried out for companies and business teams,
- more than 70 people in co-working spaces of Initiative's partners,
- more than 600 people from more than 10 countries at the regional international conference PODIM.

More detailed statistics of activities are accessible on the website of the Initiative, namely at the address www.startup.si/infografika. It is important to emphasize that the Initiative Start-up Slovenia is an important platform that different organizations and individuals can join if they wish to co-contribute to a vision of a dynamic, business talent-friendly country Slovenia.

Central national programmes of Initiative Start:up Slovenia

Below, we give detailed insight into the public programmes within the Initiative Start:up Slovenia, which were created in close collaboration with the Slovene Enterprise Fund and other stakeholders of the startup ecosystem, that significantly developed over the past few years. These key national public programmes represent an important element of the Slovenian startup ecosystem and are strongly connected and promoted, but at the same time, they also include and consequently strengthen private initiatives.

The key programmes that we introduce in more detail below are three accelerator programmes, namely the programmes of the Start:up of the Year competition with a startup school, the Start:up GeekHouse accelerator, and the Go:Global Slovenia accelerator. The international startup conference PODIM holds a special place, offering international networking of all key ecosystem stakeholders, promotion of work results, exchange of experiences, and learning. The listed programmes of the Initiative represent an important mechanism for supporting startup companies, supplementing and strengthening a relatively weak private startup ecosystem. They are intended for startup companies in all development stages, namely in the stages of launch, development, and growth through internationalization. The products are closely connected with the financial startup incentives and seed capital of the Slovene Enterprise Fund (Rus and Lesjak, 2014).

Start:up of the Year competition and accelerator programme

Start:up of the Year is a multi-dimensional project for encouraging entrepreneurship on the national level. It is a national competition for the best startup of the year, and is part of the broader national campaign of Start:up Slovenia. The purpose of the selection is to motivate talented individuals to launch companies, recognize the best business teams, business models and startup companies in Slovenia, support them with mentorship, connect them to potential investors, and promote their activities to the general public. The Start:up of the Year accelerator is intended for the most early stage of the startup process, i.e. finding the problem/solution fit, and works closely with the government tender for the Startup grant P2. This strategic partnership had been already in 2011 successfully connected with the initiative of the Ministry of Economic Development and Technology. Additionally, Start:up Schools are organized as part of the project, where the participants can obtain the basic entrepreneurship knowledge and the government, by financing the Slovene Enterprise Fund, enables them to independently choose a suitable business mentor on the market (Rus and Lesjak, 2014).

As part of national promotion, the so-called Start:up Roadshow is carried out before every programme cycle in several cities across Slovenia and in science centres. The roadshows introduce the entire national offer of programmes for encouraging startup entrepreneurship as well as the newest business content, knowledge, and trends. All this is strongly supported with a media, PR, and online campaign (Rus and Lesjak, 2014).

Start:up Geek House business accelerator

The Start:up Geek House business accelerator (SGH accelerator) offers all startup companies with innovative ideas and global ambitions access to “smart” capital and the newest business knowledge. The offer of the SGH accelerator for companies looking for their product/market fit includes: acquisition of a convertible loan worth 75,000 € through the SK75 tender, participation in the SGH Bootcamp, an intense 3-month-long educational programme for obtaining the newest business knowledge for building a lean and agile company, working and learning from excellent startup mentors, sharing a co-working space, administrative and expert support, media visibility, and promotion at home and abroad, as well as help finding potential partners and customers internationally (Rus and Lesjak, 2014).

Besides being a business accelerator, the Start:up Geek House is also a co-working space in Start:up cities across Slovenia. Start:up Geek House is a working space intended primarily for ambitious, daring, innovative and entrepreneurial talent possessing knowledge with high value added and devising a new business venture. A workplace in Start:up Geek House can be rented by anyone who is working on their prototype, minimum viable product (MVP) or strategic plan, looking for their first customers or has even already started doing business but doesn't yet need an office of their own. It is also an ideal place for freelancers.

Go:Global Slovenia business accelerator

Most companies find themselves in trouble when they come to the point of global growth. The answer to all key challenges of rapid growth of startup companies is the Go:Global Slovenia business accelerator (GG accelerator), which offers companies that have already found their product/market fit all the necessary elements to successfully start global growth. The business accelerator Go:Global Slovenia provides everything a company needs for starting rapid international expansion, in the form of capital as well as knowledge and international connections (Rus and Lesjak, 2014).

The Go:Global Slovenia business accelerator includes a public equity investment in the amount of 200,000 EUR, an investment preparation programme for attracting international investors, and an accompanying comprehensive and systematic educational programme Go:Global for Growth with experienced Slovenian and foreign international entrepreneurs. Its purpose is to help public fund recipients organize the company professionally and grow globally, It also includes a personal startup mentor for the entrepreneur and his team.

The project includes comprehensive administrative help, access to affordable infrastructure across Slovenia, access to a network of Slovenian and international investors, and active promotion in Slovenia and abroad, including access to connections across various international global hubs across the world.

Besides the business accelerator, One-on-one business mentorships and consultations are also organized within the Go:Global Slovenia programme, as are meetings and consultations for entering the best foreign accelerators such as Seedcamp, Y Combinator, Techstars, Wayra and some others.

International PODIM Conference

The international startup PODIM Conference is one of the biggest conferences in the Alps-Adriatic region and the leading Slovenian conference on entrepreneurship that annually unites all the key stakeholders of the regional startup business ecosystem through an intense educational programme lasting two days. In 2015, when it took place for the 35th time, the conference was attended by more than 600 attendees from more than 10 countries. At the conference, esteemed international and Slovenian guests hold a series of roundtables, lectures, and workshops, where they present the newest knowledge on building new startup companies, from the scientific as well as practical aspect (Rus and Lesjak, 2014).

The conference annually attracts not only stakeholders of the Slovenian entrepreneurship ecosystem but also well known international lecturers, with highlighted resounding keynote conference speakers, Slovenian and international successful entrepreneurs, economists, and political representatives. The conference is an incredible opportunity for promoting Slovenia as a startup hub internationally and for attracting business talents into Slovenia in the long term.

International connections of the Initiative and ambitious goals until 2020

Successful entrepreneurship environments are increasingly globally connected and integrated. Within the Start:up Alpe Adria project, the Initiative Start:up Slovenia is making close connections with the neighbouring countries, the international PODIM Conference, and membership in associations such as IASP (International Association of Science Parks) as well as with other startup hubs across the world. They attracted more than 50 esteemed partners to collaborate, listed on the websites www.startup.si and www.podim.org.

The Start:up Alpe Adria programme closely connects the Slovenian business hub with the neighbouring countries. Main goals of the programme that is led by Slovenia and the key Italian and Austrian organizations for encouraging entrepreneurship are exchanging knowledge, experience, entering foreign markets, and forming international teams. The key activities of Start:up Alpe Adria are the regional Startup Weekend, a unified promotional platform, joint conferences and events, and promotion of the region as a business hub on a global scale (Initiative Start:up Slovenia, 2015a).

Besides its regional connections, the Initiative Start:up Slovenia is also actively working on globally connecting with current business hubs on all continents. Such connections

enable easier and faster entrance of Slovenian companies to foreign markets as well as attract foreign talents to Slovenia. Active international connections are the key and central goal of further activities and upgrades to the Slovenian startup ecosystem.

With successful further development of the Slovenian startup ecosystem and its international connections, we can believe that the daringly set goal written in the Startup Manifesto will actually come true, namely that in Slovenia we can fulfil the following societal goals until 2020 (Rebernik and Jaklič, 2014):

- annually created 1000 new jobs in startup companies in Slovenia;
- annually connected at least 50 startup companies with globally most important ecosystems;
- annually founded or attracted at least 150 startup companies with global potential.

As Rebernik and Jaklič (2014) state, in order to achieve these goals in Slovenia, we need to further systematically invest into the development of the support ecosystem, which is also why the Startup Manifesto was created as the fundamental strategic document for the development of an effective and successful Slovenian startup ecosystem. It treats the key areas of development and activities of the business ecosystem, where different public and private actors would compete and simultaneously collaborate in making a joint vision come true.

As defined by the strategic documents of the European Union and Slovenia (for example Horizon 2020, Research and Innovation Strategy of Slovenia 2011-2020), we are in the most important era of the new economic revolution, the strongest and biggest so far. This is also why the central challenge of the Startup Manifesto is facing the challenge of how the Slovenian society will make its transition from a post-industrial era into the knowledge society, which represents a big opportunity as well as danger for individuals, companies, and the country. The heart of success in a modern creative society are talent, technology, and tolerance. Meanwhile economic success in the knowledge society necessitates a suitable innovation ecosystem, steeped in access to capital and other resources that allow talent to flourish (Rebernik and Jaklič, 2014).

Therefore, it is worth it to continue developing the Startup Manifesto goals through expert dialogue and further look for the most effective instruments and the right activities that support the development of innovative startup companies, but also of course ensure their systematic implementation in practice, including the measurement of their effects.

REFERENCES

1. Bosma, N., Wennekers, S. in Amoros, J. E. (2012). *Global Entrepreneurship Monitor 2011 Extended Report*. Babson College; Universidad de Desarrollo, Universiti Tun Abdul Razak: Wellesley MA, Santiago, Chile, Kuala Lumpur Malaysia.
2. Inicijativa Start:up Slovenija. (2015a). Predstavitvena brošura Inicijative Start:up Slovenija. Maribor. 2015.
3. Inicijativa Start:up Slovenija. (2015b). Rezultati delovanja 2014. <http://www.startup.si/sl-si/o-inicijativi/rezultati-delovanja>. Downloaded: [3 August 2015]

4. Rebernik, M in Jaklič, M. (2014). *Start-up Manifesto, verzija 2.0*. Iniciativa Start-up Slovenija. <http://www.startup.si/sl-si/o-iniciativi/startup-manifest>. Downloaded: [3 August 2015]
5. Rus, M. in Kos, B (2012). *Start-up Manifesto, verzija 1.0*. Iniciativa Start-up Slovenija. <http://www.startup.si/doc/Iniciativa%20StartUp%20Slovenija%20-%20Manifesto%20-%20Final%20Oktober.pdf>. Downloaded: [3 August 2015]
6. Rus, M. in Lesjak, I. (2014). Ključni programi Iniciative Start-up Slovenija. Internal materials.
7. Yougo.vc (2013), Slovenian startup ecosystem, <http://yougo.vc/blog/2013/10/slovenian-startup-ecosystem-october-2013/>

SELECTED BIBLIOGRAPHY FOR THE PERIOD 1993-2018

Miroslav Rebernik, Barbara Bradač Hojnik, Katja Crnogaj, Blaž Frešer, Jožica Knez-Riedl, Tadej Krošlin, Dijana Močnik, Matjaž Mulej, Ksenja Pušnik†, Matej Rus, Karin Širec, Polona Tominc, Zdenka Ženko

1.01 Original scientific articles

VEINGERL ČIČ, Živa, MULEJ, Matjaž, ŠAROTAR ŽIŽEK, Simona. Different intelligences' role in overcoming the differences in employee value system. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2018, no. , vol. , str. [1-16]. <http://www.emeraldinsight.com/doi/full/10.1108/K-06-2017-0200>, doi: 10.1108/K-06-2017-0200. [COBISS.SI-ID 12964892], [JCR, SNIP, Scopus do 20. 1. 2018: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

MULEJ, Matjaž, SLATINEK, Iztok, ČAGRAN, Branka. 'Sustainable and socially responsible university' in Maribor, Slovenia, European Union. *World review of entrepreneurship, management and sustainable development*, ISSN 1746-0581, 2018, no. 1/2, vol. 14, str. 80-96. <https://doi.org/10.1504/WREMSD.2018.10009043>, doi: 10.1504/WREMSD.2018.10009043. [COBISS.SI-ID 12917532], [SNIP]

RABDANOVA, Anna, BOBEK, Samo, TOMINC, Polona, STERNAD ZABUKOVŠEK, Simona. Digitalization and its impact on competitive position of banks in Russia : Sberbank case study. *Bančni vestnik : revija za denarništvo in bančništvo*, ISSN 0005-4631, 2017, letn. 66, št. 6, str. 31-37. [COBISS.SI-ID 12765468]

BULUTOV, Vasilii, BOBEK, Samo, TOMINC, Polona. Some aspects of foreign exchange markets and Russian Ruble exchange rate. *Bančni vestnik : revija za denarništvo in bančništvo*, ISSN 0005-4631, okt. 2017, letn. 66, št. 10, str. 34-40, graf. prikazi. [COBISS.SI-ID 12850460]

FREŠER, Blaž, KOLAR, Iztok. Povezanost sprememb stopnje DDV z likvidnostjo slovenskih bank (= The correlation between new VAT rate and liquidity of Slovenian

banks). *Bančni vestnik : revija za denarništvo in bančništvo*, ISSN 0005-4631, 2017, letn. 66, št. 4, str. 28-34. [COBISS.SI-ID 12730396]

ŽENKO, Zdenka, MULEJ, Matjaž, POTOČAN, Vojko. Knowledge-cum-values management belongs to the way out from global crisis. *Business systems research*, ISSN 1847-9375, 2017, vol. 8, no. 1, str. 113-123. <https://doi.org/10.1515/bsrj-2017-0009>, <https://dk.um.si/IzpisGradiva.php?id=67799>, doi: 10.1515/bsrj-2017-0009. [COBISS.SI-ID 12789788], [WoS do 10. 8. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 30. 12. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

ŠIREC, Karin, TOMINC, Polona. Growth aspirations and growth determinants of immigrants early stage entrepreneurs. *Ekonomický časopis*, ISSN 0013-3035, 2017, vol. 65, no. 7, str. 618-643. [COBISS.SI-ID 12828956], [JCR, SNIP, WoS do 30. 11. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 22. 11. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

MULEJ, Matjaž, HRAST, Anita, POTOČAN, Vojko, EĆIMOVIĆ, Timi, ŽENKO, Zdenka. Sustainable future replaces sustainable development concept by systemic behavior via social responsibility. *International journal of continuing engineering education and life-long learning*, ISSN 1560-4624, 2017, vol. 27, no. 1/2, str. 147-159. [COBISS.SI-ID 12647964], [SNIP, WoS do 15. 1. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 6. 1. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

MITHANS, Monika, IVANUŠ-GRMEK, Milena, ČAGRAN, Branka, MULEJ, Matjaž. Participation in decision-making in school : opportunities and students' attitudes in Austria and Slovenia. *International journal of management in education*, ISSN 1750-385X, 2017, vol. 11, no. 4, str. 424-436, doi: 10.1504/IJMIE.2017.10005986. [COBISS.SI-ID 92988161], [SNIP, Scopus do 21. 10. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

MULEJ, Matjaž, ŽENKO, Zdenka, ŽAKELJ, Viktor. Social responsibility as a next step in development of systemic behavior toward systems solutions of systemic problems of today. *Journal of Systems Science and Systems Engineering*, ISSN 1004-3756, Jun 2017, vol. 26, no. 3, str. 287-302, doi: 10.1007/s11518-017-5333-9. [COBISS.SI-ID 12745756], [JCR, SNIP, WoS do 16. 6. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 10. 6. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž, VEINGERL ČIČ, Živa. Results of socially responsible transformational leadership : increased holism and success. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2017, vol. 46, no. 3, str. 400-418. <http://dx.doi.org/10.1108/K-06-2016-0129>, doi: 10.1108/K-06-2016-0129. [COBISS.SI-ID 12726556], [JCR, SNIP, WoS do 23. 10. 2017: št. citatov (TC): 1, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

citativ (CI): 1, čistih citativ na avtorja (CIAu): 0.33, Scopus do 12. 11. 2017: št. citativ (TC): 1, čistih citativ (CI): 1, čistih citativ na avtorja (CIAu): 0.33]

NEDELKO, Zlatko, MULEJ, Matjaž, POTOČAN, Vojko. How to requisitely holistically consider internal gaps of business ethic. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2017, vol. 46, no. 6, str. 914-932, doi: 10.1108/K-01-2017-0027. [COBISS.SI-ID 12778012], [JCR, SNIP, WoS do 25. 8. 2017: št. citativ (TC): 0, čistih citativ (CI): 0, čistih citativ na avtorja (CIAu): 0, Scopus do 21. 7. 2017: št. citativ (TC): 0, čistih citativ (CI): 0, čistih citativ na avtorja (CIAu): 0]

PIŽMOHT, Franja, GYÖRKÖS, József, MOČNIK, Dijana. Financial evaluation of the convergent technologies development in a digital economy. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2017, vol. 46, iss. 8, str. 1425-1451, doi: 10.1108/K-03-2017-0090. [COBISS.SI-ID 20683542], [JCR, SNIP, WoS do 6. 10. 2017: št. citativ (TC): 0, čistih citativ (CI): 0, čistih citativ na avtorja (CIAu): 0, Scopus do 30. 9. 2017: št. citativ (TC): 0, čistih citativ (CI): 0, čistih citativ na avtorja (CIAu): 0]

ZORIN, Marjeta, TOMINC, Polona, BRATINA, Borut. Factors of a successfully implemented compulsory settlement. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2017, vol. 63, no. 1, str. 14-26, ilustr. <http://dx.doi.org/10.1515/ngoe-2017-0002>, <https://dk.um.si/IzpisGradiva.php?id=67272>, doi: 10.1515/ngoe-2017-0002. [COBISS.SI-ID 12728092]

RANT, Damjana, HORVAT, Robert, TOMINC, Polona, KOROŠEC, Bojana. Household accounting - a case of subsidised self-employed entrepreneurs in Slovenia. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2017, vol. 63, no. 2, str. 32-41. <http://dx.doi.org/10.1515/ngoe-2017-0010>, <https://dk.um.si/IzpisGradiva.php?id=67274>, doi: 10.1515/ngoe-2017-0010. [COBISS.SI-ID 12762140]

STROPNIK, Neca, KOROŠEC, Bojana, TOMINC, Polona. The relationship between the intellectual capital disclosure and cost of debt capital - a case of Slovenian private audited organisations. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2017, vol. 63, no. 4, str. 3-16, ilustr. <http://dx.doi.org/10.1515/ngoe-2017-0019>, doi: 10.1515/ngoe-2017-0019. [COBISS.SI-ID 12962076]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž, MILFELNER, Borut. Determinants of subjective emotional well-being and self-determination of employees : Slovene case. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2017, vol. 63, no. 4, str. 54-65, ilustr. <http://dx.doi.org/10.1515/ngoe-2017-0023>, doi: 10.1515/ngoe-2017-0023. [COBISS.SI-ID 12962844]

TOMINC, Polona, ŠEBJAN, Urban, ŠIREC, Karin. Perceived gender equality in managerial positions in organizations. *Organizacija : revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], May 2017, vol. 50, no. 2, str. 132-150, ilustr. <http://organizacija.fov.uni-mb.si/index.php/organizacija/article/view/758>, <https://dk.um.si/IzpisGradiva.php?id=66684>, doi: 10.1515/orga-2017-0009. [COBISS.SI-ID

12756508], [WoS do 30. 12. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 9. 7. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

ŠEBJAN, Urban, TOMINC, Polona, ŠIREC, Karin. Multiple conceptual modelling of perceived quality of in-flight airline services. *Promet*, ISSN 0353-5320. [Print ed.], 2017, vol. 29, no. 3, str. 311-319. <https://dk.um.si/IzpisGradiva.php?id=68372>, doi: 10.7307/ptt.v29i3.2195. [COBISS.SI-ID 12808988], [JCR, SNIP, WoS do 16. 9. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 16. 10. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

MULEJ, Matjaž, ŠTRUKELJ, Tjaša. Strategija podjetja in družbena odgovornost. *Revija za univerzalno odličnost : RUO*, ISSN 2232-5204, sep. 2017, letn. 6, št. 3, str. 292-307. http://www.fos.unm.si/media/pdf/RUO/2017-6-3/RUO_090_Mulej_strukelj.pdf. [COBISS.SI-ID 2048432642]

ŠEBJAN, Urban, BOBEK, Samo, TOMINC, Polona. TAM based research of CRM analytical tools acceptance. *Sabargam international journal of research in multidiscipline*, ISSN 2456-4672, Jan. 2017, vol. 1, no. 2, str. 1-17. http://www.sijrm.com/papers/1.Sebjan_Bobek_Tominc%20Management.pdf. [COBISS.SI-ID 12719132]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž, VEINGERL ČIČ, Živa. Socially responsible age management model as a business success factor. *Sabargam international journal of research in multidiscipline*, ISSN 2456-4672, Jan. 2017, vol. 1, no. 2, str. 36-53. <http://www.sijrm.com/papers/4.Age%20management%20-%2024%20%202017-final%20Demography.pdf>. [COBISS.SI-ID 12719388]

ŠEBJAN, Urban, BOBEK, Samo, TOMINC, Polona. TAM based research of CRM analytical tools acceptance. *SIES journal of management*, ISSN 0974-2956, Jun. 2017, vol. 13, no. 1, str. 3-17. [COBISS.SI-ID 12881948]

MARKSEL, Maršenka, TOMINC, Polona, BOŽIČNIK, Stanislav. Cruise passengers' expenditures : the case of port of Koper. *Tourism economics*, ISSN 2044-0375, 2017, no. 4, vol. 23, str. 890-897. <http://journals.sagepub.com/doi/10.5367/te.2016.0560>, doi: 10.5367/te.2016.0560. [COBISS.SI-ID 12541724], [JCR, SNIP, WoS do 16. 6. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 20. 7. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

ŠIREC, Karin, MOČNIK, Dijana. The competitiveness of established entrepreneurs in Balkan countries. *World review of entrepreneurship, management and sustainable development*, ISSN 1746-0581, 2017, no. 2/3, vol. 13, str. 141-158, doi: 10.1504/WREMSD.2017.10003421. [COBISS.SI-ID 12707356], [SNIP]

ŠAROTAR ŽIŽEK, Simona, TREVEN, Sonja, MULEJ, Matjaž. Vpliv psihičnega dobrega počutja na temelju zadostne in potrebne osebne celovitosti zaposlenega na uspešnost organizacije in pot iz sedanje krize. *Anali PAZU HD*, ISSN 2386-0219.

[Tiskana izd.], 2016, letn. 2, št. 2, str. 112-146, ilustr. http://hd.anali-pazu.si/sites/default/files/Sarotar_Ziek_S._2016_2_0.pdf. [COBISS.SI-ID 12744988]

TUL, Miloš, VERDENIK, Zdenko, MARŠIČ, Matija, MULEJ, Matjaž. The role of small-sided games in modern soccer and the issue of their holism. *Annales kinesiologicalae*, ISSN 2335-4240, 2016, vol. 7, no. 1, str. 43-65, tabele. <http://ojs.zrs.upr.si/index.php/AK/article/view/115/151>, <https://dk.um.si/IzpisGradiva.php?id=66984>. [COBISS.SI-ID 1538956228]

ŠEBJAN, Urban, TOMINC, Polona. Young customers' organoleptic assessment of tomatoes with different geographic origins : a preliminary study. *British food journal*, ISSN 1758-4108. [Online ed.], 2016, vol. 118, no. 4, str. 871-884. <http://www.emeraldinsight.com/doi/pdfplus/10.1108/BFJ-07-2015-0259>, doi: 10.1108/BFJ-07-2015-0259. [COBISS.SI-ID 12211996], [JCR, SNIP, WoS do 14. 5. 2016: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 28. 3. 2016: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

RAŠIČ, Katja, MULEJ, Matjaž, ČANČER, Vesna. The influential knowledge factors of companies' performance in Slovenia. *Business systems research journal : international journal of the Society for Promotion of Business Information Technology (BIT)*, ISSN 1847-8344, 2016, vol. 7, no. 1, str. 46-58. <https://dk.um.si/IzpisGradiva.php?id=65326>, http://hrcak.srce.hr/index.php?show=clanak&id_clanak_jezik=233373, doi: 10.1515/bsrj-2016-0004. [COBISS.SI-ID 12284444], [WoS do 4. 8. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

ŠEBJAN, Urban, TOMINC, Polona, BORŠIČ, Darja. Cross-country entrepreneurial intentions study : the Danube region perspective. *Croatian economic survey ...*, ISSN 1330-4860, Dec. 2016, vol. 18, no. 2, str. 39-76. <http://hrcak.srce.hr/171243>, <https://dk.um.si/IzpisGradiva.php?id=67237>, doi: 10.15179/ces.18.2.2. [COBISS.SI-ID 12676892], [SNIP, WoS do 29. 9. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 14. 1. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

MULEJ, Matjaž. Prihodnost Maribora. *Dialogi*, ISSN 0012-2068, 2016, letn. 52, št. 5/6, str. 106-124, tabele. [COBISS.SI-ID 12571164]

BRADČ HOJNIK, Barbara, REBERNIK, Miroslav, CRNOGAJ, Katja. Administrative burdens for establishing companies in EU countries. *Ekonomický časopis*, ISSN 0013-3035, 2016, vol. 64, no. 10, str. 994-1017. [COBISS.SI-ID 12679196], [JCR, SNIP, WoS do 19. 4. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 25. 4. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

KOROŠEC, Bojana, JERMAN, Mateja, TOMINC, Polona. The impairment test of goodwill : an empirical analysis of incentives for earnings management in Italian publicly traded companies. *Ekonomška istraživanja*, ISSN 1331-677X, 2016, vol. 29, no. 1,

str. 162-176. <http://www.tandfonline.com/doi/pdf/10.1080/1331677X.2016.1164923>, doi: 10.1080/1331677X.2016.1164923. [COBISS.SI-ID 12278556], [JCR, SNIP, WoS do 13. 8. 2016: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 3. 2. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

KEDMENEČ, Irena, REBERNIK, Miroslav, TOMINC, Polona. Social entrepreneurship education and its association with perceived desirability and feasibility of social entrepreneurship among business students = Obrazovanje za socijalno poduzetništvo i njegova povezanost s percepcijom poželjnosti i izvodljivosti socijalnog poduzetništva kod studenata poslovne ekonomije. *Hrvatski časopis za odgoj i obrazovanje : [CJE]*, ISSN 1848-5189. [Tiskana izd.], 2016, vol. 18, no. 4, str. 1035-1065. <http://hrcak.srce.hr/172313>, doi: 10.15516/cje.v18i4.1774. [COBISS.SI-ID 12685596], [JCR, SNIP, WoS do 17. 2. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 27. 1. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

ŠEBJAN, Urban, BOBEK, Samo, SHARMA, Kirti, TOMINC, Polona. Measuring acceptance of CRM analytical tools with organizational factors. *IMT case journal*, ISSN 2229-6743, Jul. 2015/Jun. 2016, vol. 6, no. 1/2, str. 9-16. [COBISS.SI-ID 12464412]

ŠIMUNDŽA, Anita, KNEZ-RIEDL, Jožica, ČANČER, Vesna. The influence of social entrepreneurship on the increase of social inclusion in Bosnia and Herzegovina. *Innovative issues and approaches in social sciences*, ISSN 1855-0541, 2016, vol. 9, no. 1, str. 208-230. <http://www.iiass.com/pdf/IIASS-2016-no1-art11.pdf>, <https://dk.um.si/Izpis-Gradiva.php?id=66701>, doi: 10.12959/issn.1855-0541.IIASS-2016-no1-art11. [COBISS.SI-ID 12211228]

ŠIREC, Karin, MOČNIK, Dijana. A gender perspective of Slovenian high-growth firm's profitability. *International journal of entrepreneurship & small business*, ISSN 1476-1297, 2016, vol. 27, no. 2/3, str. 247-261. [COBISS.SI-ID 12170780], [SNIP, Scopus do 30. 7. 2017: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 1.00]

POTOČAN, Vojko, MULEJ, Matjaž. Duality of business cybernetics and system(s) theory in consideration of business systems. *International journal of transitions and innovation systems*, ISSN 1745-0071. [Print ed.], 2016, vol. 5, iss. 3/4, str. 314 - 328. <http://dx.doi.org/10.1504/IJTIS.2016.10004468>, doi: 10.1504/IJTIS.2016.10004468. [COBISS.SI-ID 12729628]

ŠIREC, Karin, MOČNIK, Dijana. Indicators of Start-ups' adoption of blue ocean strategy : empirical evidence for the Danube region. *International Review of Entrepreneurship*, 2016, vol. 14, iss. 3, str. [1-24]. <http://www.senatehall.com/entrepreneurship?article=550>. [COBISS.SI-ID 12510748], [WoS do 4. 7. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

MOČNIK, Dijana, ŠIREC, Karin. Growth aspirations of early-stage entrepreneurs : empirical investigation of South-Eastern and Western European countries. *Journal for East European management studies*, ISSN 0949-6181, 2016, vol. 21, no. 3, str. 298-317.

http://www.hampp-verlag.de/hampp_e-journals_JEMS.htm, doi: 10.1688/JEEMS-2016-Mocnik. [COBISS.SI-ID 12213788], [JCR, SNIP, WoS do 30. 11. 2017: št. citatov (TC): 2, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 27. 2. 2016: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

POTOČAN, Vojko, NEDELKO, Zlatko, MULEJ, Matjaž, DABIĆ, Marina. How university's activities support the development of students' entrepreneurial abilities : case of Slovenia and Croatia. *Journal of the knowledge economy*, ISSN 1868-7873, 9. Sep. 2016, vol. , no. , str. <http://link.springer.com/article/10.1007/s13132-016-0407-3/fulltext.html>, doi: 10.1007/s13132-016-0407-3. [COBISS.SI-ID 12479260], [SNIP]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž. Creating a healthy company by occupational health promotion as a part of social responsibility. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2016, vol. 45, no. 2, str. 223-243. <http://dx.doi.org/10.1108/K-02-2015-0051>, doi: 10.1108/K-02-2015-0051. [COBISS.SI-ID 12202780], [JCR, SNIP, WoS do 26. 11. 2017: št. citatov (TC): 1, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 1. 2. 2016: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0] nagrada: "Highly Commended paper", Awards for Excellence 2017 by Emerald Literati Network

MARKSEL, Maršenka, TOMINC, Polona, BOŽIČNIK, Stanislav. Determinants of cruise passengers' expenditures in the port of call. *Management : journal of contemporary management issues*, ISSN 1331-0194, 2016, vol. 21, no. 2, str. 121-143. [COBISS.SI-ID 12669468], [SNIP, WoS do 10. 9. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 22. 6. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

ZORE, Mira, BASTIČ, Majda, MULEJ, Matjaž. Seven or fewer core contents of social responsibility?. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2016, letn. 62, št. 3, str. 29-38. <https://dk.um.si/IzpisGradiva.php?id=65379>, doi: 10.1515/ngoe-2016-0016. [COBISS.SI-ID 12523548]

ŠEBJAN, Urban, BOBEK, Samo, TOMINC, Polona. Factors influencing attitudes towards the use of CRM's analytical tools in organizations. *Organizacija : revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], feb. 2016, vol. 49, no. 1, str. 28-41, ilustr. <http://organizacija.fov.uni-mb.si/index.php/organizacija/article/view/668/1095>, <https://dk.um.si/IzpisGradiva.php?id=65410>, doi: 10.1515/orga-2016-0004. [COBISS.SI-ID 12224284], [Scopus do 20. 5. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

ŽIVKOVIČ, Rebeka, TOMINC, Polona. Ocenjevanje vrednosti stanovanj po načinu tržnih primerjav - model določanja prilagoditev cen primerljivih nepremičnin = Market approach to evaluation of real estate values - model of adjustments of comparable sales' prices. *Sir*ius : revija za teorijo in prakso revizije, računovodstva, davkov, financ, ocenjevanja*

vrednosti in drugih sorodnih področij, ISSN 2335-3252, 2016, leto 2016, št. 3, str. 66-84. <http://www.si-revizija.si/publikacije/revija-sirius>. [COBISS.SI-ID 12307228]

KOVAČ, Jernej, JAVORNIK KREČIČ, Marija, ČAGRAN, Branka, MULEJ, Matjaž. Effect of supervision on stress and burnout in school counsellors : a case of action research. *Systemic practice and action research*, ISSN 1094-429X, Avg. 2017, vol. 30, issue 4, str. 395-406, doi: 10.1007/s11213-016-9400-9. [COBISS.SI-ID 22434568], [JCR, SNIP, WoS do 28. 7. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 19. 9. 2016: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

VEINGERL ČIČ, Živa, MULEJ, Matjaž, ŠAROTAR ŽIŽEK, Simona. Requisitely holistic development methods for improving human resource performance. *Teorija in praksa : revija za družbena vprašanja*, ISSN 0040-3598, jul.-avg. 2016, letn. 53, št. 4, str. 1000-1017, 1025. http://dk.fdv.uni-lj.si/db/pdfs/TiP2016_4_Veingerl-CicMulejSarotar-Zizek.pdf. [COBISS.SI-ID 2048150867], [SNIP]

MOČNIK, Dijana, ŠIREC, Karin. Determinants of a fast-growing firm's profits : empirical evidence for Slovenia. *Analele științifice ale Universitaeții "Al.I. Cuza" din Iași, Științe economice*, ISSN 0379-7864. [Print ed.], 2015, vol. 62, no. 1, str. 37-54. http://saaic.feaa.uaic.ro/index.php/saaic/article/view/147/pdf_62, doi: 10.1515/aicue-2015-0003. [COBISS.SI-ID 18590998], [SNIP, Scopus do 20. 7. 2015: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

ZLATANOVIĆ, Dejana, MULEJ, Matjaž. Soft-systems approaches to knowledge-cum-values management as innovation drivers. *Baltic journal of management*, ISSN 1746-5265, 2015, vol. 10, no. 4, str. 497-518, doi: 10.1108/BJM-01-2015-0015. [COBISS.SI-ID 12092956], [JCR, SNIP, WoS do 24. 12. 2017: št. citatov (TC): 2, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.50, Scopus do 28. 1. 2018: št. citatov (TC): 3, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 1.00]

ZUPANČIČ, Tomaž, ČAGRAN, Branka, MULEJ, Matjaž. Preschool teaching staff 's opinions on the importance of preschool curricular fields of activities, art genres and visual arts fields. *CEPS journal : Center for Educational Policy Studies Journal*, ISSN 1855-9719, 2015, vol. 5, no. 4, str. 9-29, ilustr. http://www.cepsj.si/pdfs/cepsj_5_4/cepsj_pp_9-29_zupancic%20et%20al.pdf. [COBISS.SI-ID 21841672], [SNIP, Scopus do 18. 1. 2016: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

ŠEBJAN, Urban, TOMINC, Polona. Impact of support of teacher and compatibility with needs of study on usefulness of SPSS by students. *Computers in human behavior*, ISSN 0747-5632. [Print ed.], Dec. 2015, vol. 53, str. 354-365. <http://dx.doi.org/10.1016/j.chb.2015.07.022>, doi: 10.1016/j.chb.2015.07.022. [COBISS.SI-ID 12045852], [JCR, SNIP, WoS do 19. 4. 2017: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.50, Scopus do 7. 8. 2015: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž, TREVEN, Sonja. The conceptual model of well-being management based on achieving requisite personal holism. *Cybernetics and systems*, ISSN 0196-9722, 2015, vol. 46, no. 5, str. 342-354, doi: 10.1080/01969722.2015.1012379. [COBISS.SI-ID 12006172], [JCR, SNIP, WoS do 17. 6. 2015: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 17. 6. 2015: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

DOŠENOVIC BONČA, Petra, PONIKVAR, Nina, PUŠNIK, Ksenja, TAJNIKAR, Maks. The role of management decisions in explaining firm market exit. *E+M: ekonomie a management*, ISSN 1212-3609, 2015, vol. 18, iss. 2, str. 103-115, tabele. [COBISS.SI-ID 22645734], [JCR, SNIP, WoS do 25. 7. 2015: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 13. 9. 2016: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

CRNOGAJ, Katja, REBERNIK, Miroslav, BRADAČ HOJNIK, Barbara. Supporting economic growth with innovation-oriented entrepreneurship. *Ekonomický časopis*, ISSN 0013-3035, 2015, 63, č. 4, str. 395-409. [COBISS.SI-ID 12044316], [JCR, SNIP, WoS do 26. 11. 2017: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 1.00, Scopus do 28. 11. 2017: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 1.00]

KEDMENEK, Irena, REBERNIK, Miroslav, PERIĆ, Julia. The impact of individual characteristics on intentions to pursue social entrepreneurship. *Ekonomski pregled : mjesečnik Hrvatskog društva ekonomista*, ISSN 0424-7558, 2015, god. 66, br. 2, str. 119-137. [COBISS.SI-ID 11992604], [SNIP, Scopus do 28. 11. 2016: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.33]

MULEJ, Matjaž, ČAGRAN, Branka. 2014/2015 survey on University of Maribor as a sustainable and socially responsible university. *International journal of markets and business systems*, 2015, vol. 1, no. 4, str. 275-288. <http://www.inderscienceonline.com/doi/abs/10.1504/IJMABS.2015.074204>, doi: 10.1504/IJMABS.2015.074204. [COBISS.SI-ID 21959688]

ŠAROTAR ŽIŽEK, Simona, TREVEN, Sonja, MULEJ, Matjaž. HRM model in tourism, based on Dialectical systems theory. *Management*, ISSN 1854-4231, 2015, letn. 10, št. 4, str. 335-353. http://www.fm-kp.si/zalozba/ISSN/1854-4231/10_335-353.pdf, <https://dk.um.si/IzpisGradiva.php?id=66860>. [COBISS.SI-ID 12185116]

KEDMENEK, Irena, ŠEBJAN, Urban, TOMINC, Polona. Effect of rurality and of human capital resources in the entrepreneurial opportunity identification process. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2015, letn. 61, št. 2, str. 35-44, tabele. <https://dk.um.si/IzpisGradiva.php?id=65371>, doi: 10.1515/ngoe-2015-0008. [COBISS.SI-ID 11984668]

GRAH, Miran, TOMINC, Polona. Relationships among store image and store loyalty in Slovenia. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101.

[Tiskana izd.], 2015, vol. 61, no. 6, str. 28-37, ilustr. <http://dx.doi.org/10.1515/ngoe-2015-0024>, <https://dk.um.si/IzpisGradiva.php?id=65378>, doi: 10.1515/ngoe-2015-0024. [COBISS.SI-ID 12190748]

TOMINC, Polona, ŠEBJAN, Urban. The impact of selected individual and external factors on the occurrence of severe injuries : case study of Slovenia. *Promet*, ISSN 0353-5320. [Print ed.], 2015, vol. 27, no. 4, str. 325-334, doi: 10.7307/ptt.v27i4.1670. [COBISS.SI-ID 12069916], [JCR, SNIP, WoS do 24. 12. 2017: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.50, Scopus do 28. 11. 2017: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.50]

GORIUP, Jana, ČAGRAN, Branka, KROŠL, Katja, MULEJ, Matjaž. Older people and their loneliness : a case in a transitional society. *Sociology and anthropology*, ISSN 2331-6179, 2015, vol. 3, 4, str. 231-239, tabele, doi: 10.13189/sa.2015.030404. [COBISS.SI-ID 21476104]

ŠEBJAN, Urban, TOMINC, Polona. Conceptual model of relationships among customer perceptions of components of insurance service. *South east European journal of economics and business*, ISSN 2233-1999, 2015, vol. 10, no. 1, str. 32-44. <http://dx.doi.org/10.1515/jeb-2015-0002>, <https://dk.um.si/IzpisGradiva.php?id=65454>, doi: 10.1515/jeb-2015-0002. [COBISS.SI-ID 11977500], [SNIP, WoS do 21. 11. 2015: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 22. 8. 2015: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

ZORE, Mira, MULEJ, Matjaž, BASTIČ, Majda. Innovation as mediator between CSR and financial performance in Slovene enterprises. *Sylvan*, ISSN 0039-7660. English ed., 2015, vol. 159, iss. 6, str. 259-287, ilustr. <http://sylvan.ibles.org/syl/search.php?searchQuery=Mira%20Zore,%20Matja%EF%BF%BD%20Mulej,%20Majda%20Basti?&search=search>. [COBISS.SI-ID 12259612], [JCR, SNIP]

STEINER, Gerald, RISOPOULOS, Filippina, MULEJ, Matjaž. Social responsibility and citizen-driven innovation in sustainably mastering global socio-economic crises. *Systems research and behavioral science : the official journal of the International Federation for Systems Research*, ISSN 1092-7026, 2015, vol. 32, iss. 2, str. 160-167. <http://dx.doi.org/10.1002/sres.2255>, doi: 10.1002/sres.2255. [COBISS.SI-ID 11942684], [JCR, SNIP, WoS do 27. 8. 2017: št. citatov (TC): 4, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 0.67, Scopus do 1. 11. 2015: št. citatov (TC): 1, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

BRADAČ HOJNIK, Barbara, REBERNIK, Miroslav. Insight into creative and cultural industries in Slovenia. *Business management dynamics*, ISSN 2047-7031, 2014, vol. 3, no. 9, str. 10-15. http://bmdynamics.com/issue_pdf/bmd110438-%2010-15.pdf. [COBISS.SI-ID 11706652]

ZAJKO, Katja, BRADAČ HOJNIK, Barbara. Key factors of starting up and developing reuse centres. *Business management dynamics*, ISSN 2047-7031, 2014, vol. 4, no. 6, str.

14-25. http://bmdynamics.com/issue_pdf/bmd110512a-%2014-25.pdf. [COBISS.SI-ID 11933212]

KEDMENEČ, Irena, TOMINC, Polona, REBERNIK, Miroslav. Gender differences in the usage of resources in the entrepreneurial opportunity identification process in Slovenia and Croatia. *Ekonomski istraživanja*, ISSN 1331-677X, 2014, vol. 27, no. 1, str. 366-377, doi: 10.1080/1331677X.2014.966973. [COBISS.SI-ID 11812636], [JCR, SNIP, WoS do 8. 1. 2015: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 17. 8. 2015: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

CRNOGAJ, Katja, ŠIREC, Karin. Employment and value-added contribution of Slovenian high-growth companies (Gazelles). *Ekonomski horizonti*, ISSN 1450-863X, 2014, vol. 16, br. 1, str. 17-30. http://www.horizonti.ekfak.kg.ac.rs/sites/default/files/Casopis/2014_1/SR/Crnogaj_Sirec.pdf, doi: 10.5937/ekonhor1401017C. [COBISS.SI-ID 11710236]

HALILOVIĆ, Patricija, CANKAR, Franc, TOMINC, Polona. Innovation and entrepreneurship can be learned and built on = Inovativnost i poduzetništvo može se naučiti i nadograditi. *Hrvatski časopis za odgoj i obrazovanje : [CJE]*, ISSN 1848-5189. [Tiskana izd.], 2014, vol. 16, spec. ed. no. 3, str. 133-153. http://hrcak.srce.hr/index.php?show=clanak&id_clanak_jezik=191374. [COBISS.SI-ID 11859484], [JCR, SNIP, WoS do 22. 1. 2015: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 5. 4. 2015: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

RAŠIČ, Katja, MULEJ, Matjaž, ČANČER, Vesna. Modeling the quality of life - economic growth fuelled by technology research, innovation and knowledge. *Innovative issues and approaches in social sciences*, ISSN 1855-0541, 2014, vol. 7, no. 3, str. 104-131. <http://www.iiass.com/pdf/IIASS-2014-no3-art06.pdf>, <https://dk.um.si/IzpisGradiva.php?id=66697>, doi: 10.12959/issn.1855-0541.IIASS-2014-no3-art06. [COBISS.SI-ID 11794204]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž, TREVEN, Sonja, VANER, Martina. Well-being of all stakeholders in higher education - from knowledge management to knowledge-cum-values management. *International journal of management in education*, ISSN 1750-385X, 2014, vol. 8, no. 3, str. 225-243. [COBISS.SI-ID 11726364], [SNIP, Scopus do 27. 1. 2018: št. citatov (TC): 3, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.25]

ŽENKO, Zdenka, MULEJ, Matjaž. Preconditions for the management of invention-innovation diffusion process. *International journal of productivity management and assessment technologies*, ISSN 2160-9837, 2014, vol. 2, iss. 1, str. 39-50. <http://www.igi-global.com/article/preconditions-for-the-management-of-invention-innovation-diffusion-process/101330#article-preview>. [COBISS.SI-ID 11650588]

VASA, Jaimin, AGGARWAL, Akshai, REBERNIK, Miroslav. Problem and prospectus of SME sectors in India & China with special reference to Chemical, Pharma and Textile

Industries. *International journal of scientific and engineering research*, ISSN 2229-5518, 2014, vol. 5, no. 2, [14] str. <http://www.ijser.org/onlineResearchPaperViewer.aspx?Problem-and-Prospectus-of-SME-sectors-in-India-China-with-special.pdf>. [COBISS.SI-ID 11655708]

ŠAROTAR ŽIŽEK, Simona, TREVEN, Sonja, MULEJ, Matjaž. Creativity-based well-being of employees as a basis of future economy and society. *Kybernetes: the international journal of systems & cybernetics*, ISSN 0368-492X, 2014, vol. 43, no. 2, str. 210-227, doi: 10.1108/K-07-2013-0150. [COBISS.SI-ID 11659292], [JCR, SNIP, WoS do 26. 2. 2017: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.33, Scopus do 27. 4. 2017: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.33]

ROK, Marija, MULEJ, Matjaž. CSR-based model for HRM in tourism and hospitality. *Kybernetes: the international journal of systems & cybernetics*, ISSN 0368-492X, 2014, vol. 43, no. 3/4, str. 346-362. <http://dx.doi.org/10.1108/K-02-2014-0026>. [COBISS.SI-ID 11680028], [JCR, SNIP, WoS do 26. 3. 2017: št. citatov (TC): 3, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 1.50, Scopus do 28. 7. 2017: št. citatov (TC): 6, čistih citatov (CI): 6, čistih citatov na avtorja (CIAu): 3.00]

CRNOGAJ, Katja, REBERNIK, Miroslav, BRADAČ HOJNIK, Barbara, GOMEZELJ OMERZEL, Doris. Building a model of researching the sustainable entrepreneurship in the tourism sector. *Kybernetes: the international journal of systems & cybernetics*, ISSN 0368-492X, 2014, vol. 43, no. 3/4, str. 377-393. [COBISS.SI-ID 11678748], [JCR, SNIP, WoS do 24. 12. 2017: št. citatov (TC): 7, čistih citatov (CI): 4, čistih citatov na avtorja (CIAu): 3.00, Scopus do 27. 1. 2018: št. citatov (TC): 11, čistih citatov (CI): 9, čistih citatov na avtorja (CIAu): 6.75] nagrada: "Outstanding Paper", Awards for Excellence 2015 by Emerald Literati Network

BRUMEN, Mihaela, ČAGRAN, Branka, MULEJ, Matjaž. Education for responsible persons, tourists and hosts through knowledge of neighbouring countries' languages in cross-border areas. *Kybernetes: the international journal of systems & cybernetics*, ISSN 0368-492X, 2014, vol. 43, no. 3/4, str. 614-628. [COBISS.SI-ID 11679516], [JCR, SNIP, WoS do 25. 5. 2014: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 20. 4. 2014: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

ŽENKO, Zdenka, ŠARDI, Valentina. Systemic thinking for socially responsible innovations in social tourism for people with disabilities. *Kybernetes: the international journal of systems & cybernetics*, ISSN 0368-492X, 2014, vol. 43, no. 3/4, str. 652-666. <http://dx.doi.org/10.1108/K-09-2013-0211>. [COBISS.SI-ID 11694876], [JCR, SNIP, WoS do 26. 2. 2017: št. citatov (TC): 2, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 1.00, Scopus do 27. 1. 2017: št. citatov (TC): 2, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 1.00]

CAJNKO, Petra, TREVEN, Sonja, TOMINC, Polona. Managerial coaching model and the impact of its activities on employee satisfaction and company performance.

Management, ISSN 1854-4231, winter 2014, vol. 9, no. 4, str. 285-305, 367, ilustr., tabele. http://www.fm-kp.si/zalozba/ISSN/1854-4231/9_285-305.pdf. [COBISS.SI-ID 11899932]

MAVRIČ, Jasmina, TOMINC, Polona, BOBEK, Vito. Qualitative indicators for measuring the performance development of selected cities = Kvalitativni indikatorji merjenja uspešnosti razvoja izbranih mest. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2014, letn. 60, št. 3/4, str. 13-25, ilustr., doi: 10.7549/ourecon.2014.3-4.02. [COBISS.SI-ID 11807260]

ROŽMAN, Maja, TOMINC, Polona. Upravljanje starostne raznolikosti na delovnih mestih = Management of age diversity at the workplace. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2014, letn. 60, št. 5/6, str. 3-11, ilustr., doi: 10.7549/ourecon.2014.5-6.01. [COBISS.SI-ID 11933980]

MOČNIK, Dijana, ŠIREC, Karin. Aspiracije po rasti, inovativnost in internacionalizacija zgodnjih podjetnikov = Aspirations for growth, innovation and internationalization of the early-stage entrepreneurs. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2014, letn. 60, št. 5/6, str. 12-19, tabele, doi: 10.7549/ourecon.2014.5-6.02. [COBISS.SI-ID 11934236]

DOLINŠEK, Tatjana, TOMINC, Polona, LUTAR-SKERBINJEK, Andreja. The determinants of internet financial reporting in Slovenia. *Online information review : The international journal of digital information research and use*, ISSN 1468-4527, 2014, vol. 38, no. 7, str. 842-860. <http://www.emeraldinsight.com/doi/pdfplus/10.1108/OIR-02-2014-0025>, doi: 10.1108/OIR-02-2014-0025. [COBISS.SI-ID 11857692], [JCR, SNIP, WoS do 25. 6. 2017: št. citatov (TC): 4, čistih citatov (CI): 4, čistih citatov na avtorja (CIAu): 1.33, Scopus do 6. 3. 2017: št. citatov (TC): 3, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 1.00]

ŠEBJAN, Urban, TOMINC, Polona. Relationships among components of insurance companies and services' quality. *Organizacija : revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], nov. 2014, vol. 47, no. 4, str. 231-244, ilustr. <https://dk.um.si/IzpisGradiva.php?id=65423>, doi: 10.2478/orga-2014-0021. [COBISS.SI-ID 11877660]

DOLINŠEK, Tatjana, TOMINC, Polona, LUTAR-SKERBINJEK, Andreja. Users' perceptions on internet financial reporting. *Organizacija : revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], nov. 2014, vol. 47, no. 4, str. 254-266, ilustr. <https://dk.um.si/IzpisGradiva.php?id=65432>, doi: 10.2478/orga-2014-0019. [COBISS.SI-ID 11878684]

TOMINC, Polona, PANDIT, Richa. Study of the impact of service quality on consumer behavior in Internet Banking Services. *Paripex Indian journal of research*, ISSN 2250-1991, 2014, vol. 3, iss. 1, str. 131-133. <http://theglobaljournals.com/paripex/file.php?val=MTkyNQ==>. [COBISS.SI-ID 11633692]

ŠIREC, Karin, MOČNIK, Dijana. Indicators of high potential firms' rapid growth : empirical evidence for Slovenia. *Transformations in business & economics*, ISSN 1648-4460, 2014, vol. 13, no. 2A, str. 448-461. <http://www.transformations.khf.vu.lt/32a/article/indi>. [COBISS.SI-ID 18210070], [JCR, SNIP, WoS do 19. 4. 2017: št. citatov (TC): 2, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 2.00, Scopus do 27. 5. 2017: št. citatov (TC): 2, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 2.00]

ŠEBJAN, Urban, BASTIČ, Majda, TOMINC, Polona. Key factors in the decision-making process for complementary voluntary health insurance. *Aktual'ni problemi ekonomiki*, ISSN 1993-6788, 2013, no. 10 (148), str. 558-566. [COBISS.SI-ID 11588636], [SNIP, Scopus do 14. 10. 2015: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.33]

VREČKO, Igor, ŠIREC, Karin. Managing crisis of SMEs with restructuring projects. *Business management dynamics*, ISSN 2047-7031, 2013, vol. 2, no. 8, str. 54-62. http://bmdynamics.com/issue_pdf/bmd110332-%2054-62.pdf. [COBISS.SI-ID 11373852]

ŽENKO, Zdenka, MULEJ, Matjaž, MULEJ, Nastja, HRAST, Anita. Solving the economic crisis with (requisitely) holistic approach and (ethics of) interdependence. *Business Systems Review*, ISSN 2280-3866, 2013, vol. 2, iss. 2, str. 10-35. <http://www.business-systems-review.org/BSR.Vol.2-Iss.2-Symposium.Valencia.Zenko.et.al.Holisitic.Ethics.pdf>. [COBISS.SI-ID 11388444]

ŠIREC, Karin, MOČNIK, Dijana. Determinants of growth aspirations : empirical evidence of the south-eastern European countries. *Ekonomska revija*, ISSN 1512-8962, May 2013, vol. 11, iss. 1, str. 3-15. [COBISS.SI-ID 17247254]

PŠUNDER, Igor, TOMINC, Polona. Možnosti za uporabo posplošene tržne vrednosti nepremičnin = Potential usage of generalized real estate market value. *Geodetski vestnik : glasilo Zveze geodetov Slovenije*, ISSN 0351-0271. [Tiskana izd.], 2013, letn. 57, št. 4, str. 734-746, 747-759. http://geodetski-vestnik.com/cms/images/57/4/gv57-4_psunder.pdf, http://geodetski-vestnik.com/cms/images/57/4/gv57-4_psunder2.pdf. [COBISS.SI-ID 11607836], [JCR, SNIP, WoS do 9. 2. 2014: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 19. 1. 2014: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

HUSTIČ, Igor, MULEJ, Matjaž. The use of balanced scorecard and the cognitions of Dialectical Systems Theory as an opportunity for innovative renewal of company operations. *Global journal of management and business research*, ISSN 2249-4588. [Spletna izd.], 2013, vol. 13, iss. 3, [11] str. https://globaljournals.org/GJMBR_Volume13/1-The-use-of-Balanced-Scorecard.pdf. [COBISS.SI-ID 11409692]

MULEJ, Matjaž, ŽENKO, Zdenka, ČAGRAN, Branka, MULEJ, Nastja. Relations between the Object under Consideration, Dialectical System, System and Model of it as a basis for the Requisite Holism and Realism of Modelling and its results. *Interdisciplinary description of complex systems*, ISSN 1334-4684, 2013, vol. 11, [št.] (2), str. 238-253.

<http://indecs.eu/2013/indecs2013-pp238-253.pdf>, doi: 10.7906/indecs.11.2.6. [COBISS.SI-ID 11389980]

ČANČER, Vesna, MULEJ, Matjaž. Multi-criteria decision making in creative problem solving. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2013, vol. 42, no. 1, str. 67-81. <http://www.emeraldinsight.com/journals.htm?issn=0368-492x&volume=42&issue=1&articleid=17072896&show=html>, doi: 10.1108/03684921311295484. [COBISS.SI-ID 11303196], [JCR, SNIP, WoS do 25. 6. 2017: št. citatov (TC): 5, čistih citatov (CI): 4, čistih citatov na avtorja (CIAu): 2.00, Scopus do 31. 8. 2017: št. citatov (TC): 6, čistih citatov (CI): 5, čistih citatov na avtorja (CIAu): 2.50]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž. Social responsibility : a way of requisite holism of humans and their well-being. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2013, vol. 42, no. 2, str. 318-335, doi: 10.1108/03684921311310639. [COBISS.SI-ID 11323932], [JCR, SNIP, WoS do 24. 12. 2017: št. citatov (TC): 7, čistih citatov (CI): 5, čistih citatov na avtorja (CIAu): 2.50, Scopus do 31. 8. 2017: št. citatov (TC): 9, čistih citatov (CI): 7, čistih citatov na avtorja (CIAu): 3.50]

CRNOGAJ, Katja, REBERNIK, Miroslav. Podjetniška politika in podporno okolje za razvoj podjetništva. *Management*, ISSN 1854-4231, zima 2013, leto 8, št. 4, str. 309-332, 360, ilustr., tabele. http://www.fm-kp.si/zalozba/ISSN/1854-4231/8_309-332.pdf. [COBISS.SI-ID 1536145348]

TOMINC, Polona. Podjetniško izobraževanje ter podjetniška aktivnost v delu Podonavske regije. *Pedagoška obzorja : časopis za didaktiko in metodiko*, ISSN 0353-1392, 2013, letn. 28, [št.] 2, str. 118-130, tabele. [COBISS.SI-ID 11451932], [SNIP, Scopus do 3. 11. 2015: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 1.00]

ŽENKO, Zdenka, HRAST, Anita, MULEJ, Matjaž. Social responsibility : measures and measurement as a basis for organizational systemic action. *Systemic practice and action research*, ISSN 1094-429X, Dec. 2013, vol. 26, iss. 6, str. [475]-484. <http://dx.doi.org/10.1007/s11213-013-9306-8>, doi: 10.1007/s11213-013-9306-8. [COBISS.SI-ID 11567388], [JCR, SNIP, WoS do 24. 9. 2017: št. citatov (TC): 4, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 1.33, Scopus do 26. 1. 2018: št. citatov (TC): 5, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 2.00]

POTOČAN, Vojko, MULEJ, Matjaž, NEDELKO, Zlatko. The influence of employees' ethical behavior on enterprises' social responsibility. *Systemic practice and action research*, ISSN 1094-429X, 2013, vol. 26, no. 6, str. [497]-511. <http://dx.doi.org/10.1007/s11213-013-9299-3>, doi: 10.1007/s11213-013-9299-3. [COBISS.SI-ID 11588124], [JCR, SNIP, WoS do 24. 12. 2017: št. citatov (TC): 6, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 0.67, Scopus do 26. 9. 2017: št. citatov (TC): 7, čistih citatov (CI): 4, čistih citatov na avtorja (CIAu): 1.33]

STEINER, Gerald, RISOPOULOS, Filippina, MULEJ, Matjaž. Competences for citizen-driven innovation in crisis resolution. *Systemic practice and action research*, ISSN

1094-429X, 2013, vol. 26, no. 6, str. [571]-577. <http://dx.doi.org/10.1007/s11213-013-9307-7>, doi: 10.1007/s11213-013-9307-7. [COBISS.SI-ID 11587868], [JCR, SNIP, WoS do 4. 3. 2016: št. citatov (TC): 1, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 3. 11. 2015: št. citatov (TC): 1, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

ŽENKO, Zdenka, ROSI, Bojan, MULEJ, Matjaž, MLAKAR, Tatjana, MULEJ, Nastja. General Systems Theory completed up by Dialectical Systems Theory. *Systems research and behavioral science : the official journal of the International Federation for Systems Research*, ISSN 1092-7026, 2013, vol. 30, iss. 6, str. 637-645. <http://onlinelibrary.wiley.com/doi/10.1002/sres.2234/pdf>, doi: 10.1002/sres.2234. [COBISS.SI-ID 11630364], [SNIP, WoS do 4. 3. 2016: št. citatov (TC): 3, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 1.20, Scopus do 26. 10. 2017: št. citatov (TC): 2, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 0.80]

BRADAČ HOJNIK, Barbara. Characteristics of innovations in companies : comparison of Croatia and Slovenia. *USA-China business review*, ISSN 1537-1514, May 2013, vol. 12, no. 5, str. 494-504. [COBISS.SI-ID 11406876]

JURŠE, Milan, TOMINC, Polona, JAGER, Jerneja. Kompleksnost vzvodov strategije prodajnih poti v izvoznem trženju. *Akademija MM : slovenska znanstvena revija za trženje*, ISSN 1408-1652, 2012, letn. 11, [št.] 19, str. 49-71, tabele. [COBISS.SI-ID 11178524]

PŠUNDER, Igor, TOMINC, Polona, ČEH, Mitja. Perception of real property mass appraisal in Slovenia. *Aktual'ni problemi ekonomiki*, ISSN 1993-6788, 2012, no. 11 (137), str. 425-435. [COBISS.SI-ID 11301916], [SNIP, WoS do 24. 3. 2014: št. citatov (TC): 2, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.33, Scopus do 8. 1. 2013: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

TOMINC, Polona, REBERNIK, Miroslav. Gender differences in entrepreneurial education and entrepreneurial activity in part of the Danube region. *Aktual'ni problemi ekonomiki*, ISSN 1993-6788, 2012, no. 12 (138), str. 496-505. [COBISS.SI-ID 11311132], [SNIP, WoS do 26. 2. 2017: št. citatov (TC): 2, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 1.00, Scopus do 31. 8. 2017: št. citatov (TC): 6, čistih citatov (CI): 5, čistih citatov na avtorja (CIAu): 5.00]

POTOČAN, Vojko, MULEJ, Matjaž. Challenging managerial dilemmas of operations management. *Cybernetics and systems*, ISSN 0196-9722, 2012, vol. 43, no. 6, str. 493-514, doi: 10.1080/01969722.2012.708614. [COBISS.SI-ID 11161372], [JCR, SNIP, WoS do 5. 11. 2012: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 29. 10. 2012: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

BRADAČ HOJNIK, Barbara, REBERNIK, Miroslav. Outsourcing of R&D and innovation activities in SMEs : evidence from Slovenia. *Ekonomska revija*, ISSN 1512-8962, 2012, vol. 10, no. 2, str. 3-11. [COBISS.SI-ID 11309084]

POTOČAN, Vojko, NEDELKO, Zlatko, MULEJ, Matjaž. Influence of organizational factors on management tools usage in Slovenian organizations. *Inžinerinče ekonomika*, ISSN 1392-2785, 2012, vol. 23, no. 3, str. 291-300. [COBISS.SI-ID 11143196], [JCR, SNIP, WoS do 28. 1. 2018: št. citatov (TC): 12, čistih citatov (CI): 8, čistih citatov na avtorja (CIAu): 2.67, Scopus do 18. 9. 2017: št. citatov (TC): 20, čistih citatov (CI): 12, čistih citatov na avtorja (CIAu): 4.00]

ŠIREC, Karin, MOČNIK, Dijana. Gender specifics in entrepreneurs' personal characteristics. *Journal for East European management studies*, ISSN 0949-6181, 2012, vol. 17, no. 1, str. 11-39. [COBISS.SI-ID 10980636], [JCR, SNIP, WoS do 26. 4. 2017: št. citatov (TC): 8, čistih citatov (CI): 7, čistih citatov na avtorja (CIAu): 7.00, Scopus do 31. 8. 2017: št. citatov (TC): 12, čistih citatov (CI): 9, čistih citatov na avtorja (CIAu): 9.00]

MLAKAR, Tatjana, MULEJ, Matjaž. Complementarity of the Living Systems, the Dialectical Systems Theories and social responsibility : the case of public medical care in Slovenia. *Journal of public health frontier*, ISSN 2227-4561, 2012, vol. 1, no. 1, str. 23-30. <https://archive.org/details/ComplementarityOfTheLivingSystemsTheDialecticalSystemsTheoriesAnd>. [COBISS.SI-ID 11060252]

ŽENKO, Zdenka, MULEJ, Matjaž. Approach to requisite holistic socially responsible behavior with Dialectical Systems Theory. *Mei Zhong gong gong guan li*, ISSN 1548-6591, 2012, vol.9, no. 2, str. 183-194. [COBISS.SI-ID 10987036]

VREČKO, Igor, MULEJ, Matjaž. Obvladovanje sistemskih strateških kriz za preprečevanje poslovnih kriz = Mastering systems strategic crises to prevent business crises. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2012, letn. 58, št. 5/6, str. 3-13, ilustr., doi: 10.7549/ourecon.2012.5-6.01. [COBISS.SI-ID 11304732]

MULEJ, Matjaž. Invencijsko-inovacijsko-difuzijski procesi (IIDP) - premalo upoštevan del osamosvajanja Slovenije (1991-2011). *Studia Historica Slovenica : časopis za humanistične in družboslovne študije*, ISSN 1580-8122, 2012, letn. 12, št. 2/3, str. 513-534, 623, ilustr. [COBISS.SI-ID 1228165], [SNIP]

MAKOVŠEK, Dejan, TOMINC, Polona, LOGOŽAR, Klavdij. A cost performance analysis of transport infrastructure construction in Slovenia. *Transportation*, ISSN 0049-4488, 2012, vol. 39, no. 1, str. 197-214, doi: 10.1007/s11116-011-9319-z. [COBISS.SI-ID 10564892], [JCR, SNIP, WoS do 24. 9. 2017: št. citatov (TC): 5, čistih citatov (CI): 5, čistih citatov na avtorja (CIAu): 1.67, Scopus do 25. 5. 2017: št. citatov (TC): 8, čistih citatov (CI): 8, čistih citatov na avtorja (CIAu): 2.67]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž, POTOČNIK, Amna, KALAMAR, Maja. Personal and personality development as basis of succesful employee diversity and well-being management. *USA-China business review*, ISSN 1537-1514, 2012, vol. 11, no. 1, str. 114-130. [COBISS.SI-ID 10937884]

ŠAROTAR ŽIŽEK, Simona, TREVEN, Sonja, MULEJ, Matjaž, VANER, Martina. The integrative and innovative model of HRM in slovenian tourism. *Academica turistica : tourism & innovation journal*, ISSN 1855-3303, dec. 2011, year 4, no. 2, str. 33-49, ilustr. [COBISS.SI-ID 262273792]

BRADAČ HOJNIK, Barbara, REBERNIK, Miroslav. Analysis of administrative burdens for companies in selected SEE countries. *Analele științifice ale Universității "Al.I. Cuza" din Iași, Științe economice*, ISSN 0379-7864. [Print ed.], 2011, tom. 58, str. [191]-201. [COBISS.SI-ID 10914844]

MULEJ, Matjaž. Survival : climate change and innovation of habits toward more social responsibility of humans. *The European journal of management and public policy*, ISSN 1726-6475, 2011, vol. 11, no. 1, str. 51-70. [COBISS.SI-ID 12025628]

MULEJ, Matjaž, POTOČAN, Vojko, ŽENKO, Zdenka, HRAST, Anita, ŠTRUKELJ, Tjaša. Social responsibility : a crucial knowledge and ethics. *International journal of knowledge and systems science*, ISSN 1947-8208, 2011, vol. 2, no. 4, str. 21-38, doi: 10.4018/jkss.2011100103. [COBISS.SI-ID 10973980]

POTOČAN, Vojko, MULEJ, Matjaž. Managing organizational change as innovation. *Journal of international business management & research*, ISSN 1940-185X, 2011, vol. 2, iss. 4, str. 32-46. [COBISS.SI-ID 10734876]

BOŽIČNIK, Stanislav, MULEJ, Matjaž. A new - 4th order cybernetics and sustainable future. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2011, vol. 40, iss. 5/6, str. 670-684, doi: 10.1108/03684921111142232. [COBISS.SI-ID 15191574], [JCR, SNIP, WoS do 5. 5. 2015: št. citatov (TC): 2, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 1.00, Scopus do 6. 8. 2016: št. citatov (TC): 2, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 1.00]

JURŠE, Milan, MULEJ, Matjaž. The complexities of business school alignment with the emerging globalisation of business education. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2011, vol. 40, no. 9/10, str. 1440-1458, doi: 10.1108/03684921111169477. [COBISS.SI-ID 10848028], [JCR, SNIP, WoS do 19. 2. 2017: št. citatov (TC): 3, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 1.50, Scopus do 24. 11. 2017: št. citatov (TC): 5, čistih citatov (CI): 5, čistih citatov na avtorja (CIAu): 2.50]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž, POTOČNIK, Amna. Requisitely holistic/systemic behavior as precondition and effect of social responsibility and subjective well-being. *Mei Zhong gong gong guan li*, ISSN 1548-6591, nov. 2011, vol. 8, no. 11, str. 1308-1322. [COBISS.SI-ID 10908188]

ŽENKO, Zdenka, MULEJ, Matjaž. Innovating measurement of economic success for more accurate information = Inoviranje merjenja ekonomskega uspeha za bolj ustrezne informacije. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2011, letn. 57, št. 5/6, str. 11-19, ilustr. [COBISS.SI-ID 259471104]

ŠAROTAR ŽIŽEK, Simona, TREVEN, Sonja, MULEJ, Matjaž. Povezava med psihičnim dobrim počutjem zaposlenih in duhovno inteligentnostjo kot dejavniki primerno celovitega menedžmenta. *Organizacija : revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], jan./feb. 2011, letn. 44, št. 1, str. A 2-A 10. [COBISS.SI-ID 10591004]

ŠIREC, Karin, MOČNIK, Dijana. Gender specifics in entrepreneurs' human and social capital. *Revista de management comparat internațional*, ISSN 1582-3458, Jul. 2011, vol. 12, iss. 3, str. 432-443. <http://www.rmci.ase.ro/no12vol3/04.pdf>. [COBISS.SI-ID 10760732]

MULEJ, Matjaž, HRAST, Anita. Družbena odgovornost z ustvarjalnim sodelovanjem namesto neoliberalne krize. *Teorija in praksa : revija za družbena vprašanja*, ISSN 0040-3598, okt. 2011, letn. 48, jubilejna št., str. 1288-1311, 1391. http://dk.fdv.uni-lj.si/db/pdfs/TiP2011_J_Mulej-Hrast.pdf. [COBISS.SI-ID 30736733], [SNIP]

BRADAC HOJNIK, Barbara. Correlation between reasons and effects of outsourcing : evidence from Slovenian SME's. *Analele științifice ale Universității "Al.I. Cuza" din Iași, Științe economice*, ISSN 0379-7864. [Print ed.], 2010, tom. 57, str. [313]-324. [COBISS.SI-ID 10583836]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž, TREVEN, Sonja. Requisite holism of individuals as a precondition for the humankind's way out from the 2008- crisis. *Analele științifice ale Universității "Al.I. Cuza" din Iași, Științe economice*, ISSN 0379-7864. [Print ed.], 2010, tom. 57, str. [399]-418. [COBISS.SI-ID 10585372]

MOČNIK, Dijana. Factors that impact internet use and are sensitive to income : cross-country empirical evidence. *Društvena istraživanja : časopis za opća društvena pitanja*, ISSN 1330-0288, 2010, god. 19, br. 3, str. 333-354. http://hrcak.srce.hr/index.php?show=clanak&id_clanak_jezik=84191. [COBISS.SI-ID 14247190], [JCR, SNIP, WoS do 7. 9. 2010: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 2. 3. 2011: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

PUŠNIK, Ksenja. From technical and cost efficiency to exporting : firm level data from Slovenia. *Economic and business review*, ISSN 1580-0466. [Tiskana izd.], 2010, vol. 12, no. 1, str. 1-28, tabele. <https://dk.um.si/IzpisGradiva.php?id=67267>. [COBISS.SI-ID 19817190]

MOČNIK, Dijana. Determinants of firm entries : empirical evidence for Slovenia. *Economic and business review*, ISSN 1580-0466. [Tiskana izd.], 2010, vol. 12, no. 2, str. 129-145, tabele. [COBISS.SI-ID 19945190]

ŠIREC, Karin, CRNOGAJ, Katja. The impact of applied strategies and competitive advantage creation on SME growth. *Economy & business : Journal international scientific publications*, ISSN 1313-2555, 2010, vol. 4, part 2, str. 62-78. <http://www.science-journals.eu/economy/2010/ISP-EB-Vol4-Part2.swf>. [COBISS.SI-ID 10373916]

MOČNIK, Dijana. Poslovni model in informacijski sistemi. *Elektrotehniški vestnik*, ISSN 0013-5852. [Slovenska tiskana izd.], 2010, letn. 77, št. 2/3, str. 143-148. [COBISS.SI-ID 255920640], [SNIP, Scopus do 31. 5. 2011: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

MOČNIK, Dijana, ŠIREC, Karin. The determinants of internet use controlling for income level: cross-country empirical evidence. *Informations Economics and Policy*, ISSN 0167-6245. [Print ed.], Jul. 2010, vol. 22, iss. 3, str. 243-256, doi: 10.1016/j.infoecopol.2010.01.002. [COBISS.SI-ID 13819926], [JCR, SNIP, WoS do 17. 12. 2017: št. citatov (TC): 13, čistih citatov (CI): 10, čistih citatov na avtorja (CIAu): 10.00, Scopus do 23. 10. 2017: št. citatov (TC): 19, čistih citatov (CI): 15, čistih citatov na avtorja (CIAu): 15.00]

PUŠNIK, Ksenja, TAJNIKAR, Maks. Cross-countries differences in entrepreneurial processes : the case of Slovenia and Croatia in international context. *International journal of sustainable economy*, ISSN 1756-5804, 2010, vol. 2, no. 4, str. 382-399. [COBISS.SI-ID 10296092]

BELAK, Jernej, DUH, Mojca, MULEJ, Matjaž, ŠTRUKELJ, Tjaša. Requisitely holistic ethics planning as pre-condition for enterprise ethical behaviour. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2010, vol. 39, no. 1, str. 19-36. <http://www.emeraldinsight.com/Insight/viewPDF.jsp?contentType=Article&Filename=html/Output/Published/EmeraldFullTextArticle/Pdf/0670390103.pdf>. [COBISS.SI-ID 10190620], [JCR, SNIP, WoS do 17. 12. 2017: št. citatov (TC): 25, čistih citatov (CI): 8, čistih citatov na avtorja (CIAu): 2.00, Scopus do 23. 9. 2017: št. citatov (TC): 26, čistih citatov (CI): 13, čistih citatov na avtorja (CIAu): 3.25]

MOČNIK, Dijana. Achieving increased value for customers through mutual understanding between business and information systems communities. *Managing global transitions : international research journal*, ISSN 1581-6311. [Tiskana izd.], Summer 2010, vol. 8, no. 2, str. 187-205. http://www.fm-kp.si/zalozba/ISSN/1581-6311/8_207-224.pdf. [COBISS.SI-ID 3617239]

ŠIREC, Karin, MOČNIK, Dijana. How entrepreneurs' personal characteristics affect SMEs' growth = Vpliv podjetnikovih osebnih lastnosti na rast MSP. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2010, letn. 56, št. 1/2, str. 3-12. [COBISS.SI-ID 10125340]

GORENAK, Štefka, MULEJ, Matjaž. Upravljanje popolne odgovornosti kot pot do celovitega vodenja podjetja = Total responsibility management (TRM) as an approach toward holistic business management. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2010, letn. 56, št. 1/2, str. 22-31. [COBISS.SI-ID 10125852]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž. Družbena odgovornost na temelju zadostne in potrebne celovitosti posameznikov ter njihovega blagostanja - možen odgovor na finančno, gospodarsko in družbeno krizo iz leta 2008 = Social Responsibility

Based on Requisite Holism of Individuals and Their Prosperity: Possible answer to the Financial, Economic, and Social Crisis of 2008. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2010, letn. 56, št. 3/4, str. 19-32. [COBISS.SI-ID 10300956]

MOČNIK, Dijana. The impact of economic growth on the dynamics of enterprises : empirical evidence for Slovenia's non-agricultural sector. *Organizacija : revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], jul.-avg. 2010, letn. 43, št. 4, str. 154-164. [COBISS.SI-ID 14287126]

HUSTIČ, Igor, MULEJ, Matjaž. Some of the Main Factors of Innovative Renewal of Companies' Operations. *Organizacija : revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], 2010, letn. 43, št. 6, str. 238-246. [COBISS.SI-ID 10467100]

TOMINC, Polona, REBERNIK, Miroslav. Connections of entrepreneurial capacity and openness towards innovations with the individual's decision to become an entrepreneur : a case from Slovenia. *Society and economy : Journal of the Corvinus University of Budapest*, ISSN 1588-9726, 2010, vol. 32, no. 2, str. [297]-313, doi: 10.1556/SocEc.2010.0002. [COBISS.SI-ID 10519068], [SNIP, Scopus do 15. 3. 2011: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

PUŠNIK, Ksenja, TAJNIKAR, Maks. Heterogeneity and competitiveness of entrepreneurial processes in the European Union with special attention on Croatia as candidate country. *South East European journal of economics and business*, ISSN 1840-118X, Apr. 2010, vol. 5, no. 1, str. 7-18, ilustr. [COBISS.SI-ID 19308518], [SNIP, Scopus do 12. 7. 2011: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

BOŽIČNIK, Stanislav, MULEJ, Matjaž. Corporate social responsibility and requisite holism - supported by tradable permits. *Systems research and behavioral science : the official journal of the International Federation for Systems Research*, ISSN 1092-7026, 2010, vol. 27, iss. 1, str. 23-35, doi: 10.1002/sres.989. [COBISS.SI-ID 13319702], [JCR, SNIP, WoS do 5. 3. 2010: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 6. 4. 2015: št. citatov (TC): 3, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 1.00]

ČANČER, Vesna, MULEJ, Matjaž. The Dialectical Systems Theory's Capacity for Multi-Criteria Decision-Making. *Systems research and behavioral science : the official journal of the International Federation for Systems Research*, ISSN 1092-7026, 2010, vol. 27, no. 3, str. 285-300, doi: 10.1002/sres.1016. [COBISS.SI-ID 10250268], [JCR, SNIP, WoS do 18. 6. 2017: št. citatov (TC): 11, čistih citatov (CI): 6, čistih citatov na avtorja (CIAu): 3.00, Scopus do 23. 11. 2017: št. citatov (TC): 13, čistih citatov (CI): 6, čistih citatov na avtorja (CIAu): 3.00]

ŠIREC, Karin, CRNOGAJ, Katja. Diversity of Slovenian high-growth companies. *USA-China business review*, ISSN 1537-1514, February 2010, vol. 9, no. 2, str. 1-16, 2 graf. prikaza, tabele. [COBISS.SI-ID 10180892]

POTOČAN, Vojko, MULEJ, Matjaž. Entrepreneurship of SMEs in the framework of globalization. *USA-China business review*, ISSN 1537-1514, February 2010, vol. 9, no. 2, str. 17-30, 1 graf. prikaz, tabele. [COBISS.SI-ID 10181404]

BELAK, Jernej, MULEJ, Matjaž. Enterprise ethical climate changes over life cycle stages. V: JÓZEF CZYK, Jerzy (ur.). *14th International Congress of Cybernetics and Systems of WOSC : selected and extended contributions*, (Kybernetes, ISSN 0368-492X, Vol. 38, No. 7/8, 2009). Bingley (UK) [etc.]: Cambridge (Mass.): Emerald. 2009, str. 1377-1398. [COBISS.SI-ID 9954844], [JCR, SNIP, WoS do 17. 12. 2017: št. citatov (TC): 17, čistih citatov (CI): 7, čistih citatov na avtorja (CIAu): 3.50, Scopus do 22. 11. 2017: št. citatov (TC): 17, čistih citatov (CI): 7, čistih citatov na avtorja (CIAu): 3.50]

BOŽIČNIK, Stanislav, MULEJ, Matjaž. From division to integration of natural and social sciences by "the universal dialectical systems theory". *Cybernetics and systems*, ISSN 0196-9722, May 2009, vol. 40, no. 4, str. 337 - 362, doi: 10.1080/01969720902847052. [COBISS.SI-ID 13161238], [JCR, SNIP, WoS do 7. 8. 2015: št. citatov (TC): 2, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.50, Scopus do 22. 5. 2017: št. citatov (TC): 4, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 1.50]

DUH, Mojca, TOMINC, Polona, REBERNIK, Miroslav. The importance of family enterprises in transition economies : Is it overestimated?. *Eastern European economics : a journal of translations*, ISSN 0012-8775, 2009, vol. 47, no. 6, str. 22-42, tabele. [COBISS.SI-ID 10101788], [JCR, SNIP, WoS do 17. 9. 2017: št. citatov (TC): 7, čistih citatov (CI): 7, čistih citatov na avtorja (CIAu): 4.67, Scopus do 8. 10. 2016: št. citatov (TC): 5, čistih citatov (CI): 5, čistih citatov na avtorja (CIAu): 3.33]

HAUPTMAN, Lidija, KUBICOVÁ, Jana, RUDY, Kiryl, MULEJ, Matjaž. Fiscal measures for research, development and innovation : cases of Slovenia, Slovakia and Belarus. *Ekonomický časopis*, ISSN 0013-3035, 2009, 57, č. 3, str. 263-277. [COBISS.SI-ID 9850396], [JCR, SNIP, WoS do 8. 7. 2016: št. citatov (TC): 3, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 0.75, Scopus do 8. 5. 2016: št. citatov (TC): 3, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 0.75]

PONIKVAR, Nina, TAJNIKAR, Maks, PUŠNIK, Ksenja. Performance ratios for managerial decision-making in a growing firm. *Journal of business economics and management : transition processes in Central and Eastern Europe*, ISSN 1611-1699, 2009, vol. 10, no. 2, str. 109-120. [COBISS.SI-ID 18793958], [JCR, SNIP, WoS do 16. 7. 2017: št. citatov (TC): 13, čistih citatov (CI): 13, čistih citatov na avtorja (CIAu): 4.33, Scopus do 22. 1. 2017: št. citatov (TC): 16, čistih citatov (CI): 16, čistih citatov na avtorja (CIAu): 5.33]

DUH, Mojca, TOMINC, Polona, REBERNIK, Miroslav. Growth ambitions and succession solutions in family business. *Journal of small business and enterprise development*, ISSN 1462-6004, 2009, vol. 16, iss. 2, str. 256-269. [COBISS.SI-ID 9852956], [SNIP, Scopus do 22. 4. 2017: št. citatov (TC): 6, čistih citatov (CI): 6, čistih citatov na avtorja (CIAu): 4.00]

POTOČAN, Vojko, MULEJ, Matjaž. Business cybernetics - provocation number two. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2009, vol. 38, no. 1/2, str. 93-112. [COBISS.SI-ID 9806620], [JCR, SNIP, WoS do 19. 11. 2017: št. citatov (TC): 4, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 31. 8. 2017: št. citatov (TC): 5, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

POTOČAN, Vojko, MULEJ, Matjaž. Toward a holistical perception of the content of business ethics. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2009, vol. 38, no. 3/4, str. 581-595. [COBISS.SI-ID 9927452], [JCR, SNIP, WoS do 17. 12. 2017: št. citatov (TC): 5, čistih citatov (CI): 4, čistih citatov na avtorja (CIAu): 2.00, Scopus do 22. 4. 2017: št. citatov (TC): 10, čistih citatov (CI): 9, čistih citatov na avtorja (CIAu): 4.50]

POTOČAN, Vojko, MULEJ, Matjaž. How to improve innovativeness of small and medium enterprises. *Management : journal of contemporary management issues*, ISSN 1331-0194, 2009, vol. 14, no. 1, str. 1-20. <https://dk.um.si/IzpisGradiva.php?id=66604>. [COBISS.SI-ID 9882652], [SNIP, Scopus do 31. 8. 2017: št. citatov (TC): 9, čistih citatov (CI): 4, čistih citatov na avtorja (CIAu): 2.00]

BOŽIČNIK, Stanislav, MULEJ, Matjaž. Od determinizma k primerni celovitosti z univerzalno dialektično teorijo sistemov = From determinism to requisite holism by the universal dialectical systems theory. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2009, letn. 55, št. 3/4, str. 52-61. [COBISS.SI-ID 13351446]

ŠIREC, Karin, BRADAČ HOJNIK, Barbara. How does networking impact the SMEs growth. *Organizacija : revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], 2009, vol. 42, no. 2, str. 59-66. [COBISS.SI-ID 9801756]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž, TREVEN, Sonja. Dobro počutje/ subjektivna blaginja sodelavcev kot bistveni dejavnik prehoda v inovativno družbo. *Organizacija : revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], 2009, letn. 42, št. 3, str. A 122 - A 131. [COBISS.SI-ID 9879324]

REBERNIK, Miroslav. Quadruple helix of entrepreneurship and management education. *Revista de management comparat internațional*, ISSN 1582-3458, Dec. 2009, vol. 10, iss. 5, str. 910-921. http://www.rmci.ase.ro/no10vol5/Vol10_No5_Article6.pdf. [COBISS.SI-ID 10134300]

ŠIREC, Karin, CRNOGAJ, Katja. Gender differences in networking of Slovenian SME's. *Revista de management comparat internațional*, ISSN 1582-3458, Dec. 2009, vol. 10, iss. 5, str. 1043-1059. http://www.rmci.ase.ro/no10vol5/Vol10_No5_Article20.pdf. [COBISS.SI-ID 10134044]

ŠKAFAR, Branko, MULEJ, Matjaž. Business excellence in public-utility companies by innovativeness based on dialectical systems thinking. *Cybernetics and systems*, ISSN

0196-9722, 2008, vol. 39, no. 8, str. [806]-824. [COBISS.SI-ID 9664028], [JCR, SNIP, WoS do 17. 1. 2013: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.50, Scopus do 17. 4. 2013: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.50]

POTOČAN, Vojko, MULEJ, Matjaž, ČANČER, Vesna. Influence of values, culture, ethics and norms on economic results : case of Slovenia. *Društvena istraživanja : časopis za opća društvena pitanja*, ISSN 1330-0288, 2008, god. 17, br. 3, str. 373-395. [COBISS.SI-ID 9540124], [JCR, SNIP, WoS do 21. 1. 2018: št. citatov (TC): 7, čistih citatov (CI): 4, čistih citatov na avtorja (CIAu): 1.33, Scopus do 31. 8. 2017: št. citatov (TC): 6, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 1.00]

PUŠNIK, Ksenja, TAJNIKAR, Maks. Technical and cost efficiencies as determinants of business failures of small business : the case of Slovenia. *Eastern European economics : a journal of translations*, ISSN 0012-8775, 2008, vol. 46, no. 1, str. 43-62. [COBISS.SI-ID 9455132], [JCR, SNIP, WoS do 5. 6. 2008: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 31. 8. 2017: št. citatov (TC): 4, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 1.50]

PETERMANEC, Zdenka, MULEJ, Matjaž. Modern information literacy innovates library by systems thinking. *The Innovation journal : the public sector innovation journal*, 2008, vol. 13, no. 3, 11 str. http://www.innovation.cc/peer-reviewed/zdenka9matjaz1dec-2008jagrev_v13i9.pdf. [COBISS.SI-ID 9690908], [SNIP]

KNEZ-RIEDL, Jožica. The development of environmental responsibility amongst Slovenian SMEs. *International journal of entrepreneurship & small business*, ISSN 1476-1297, 2008, vol. 6, no. 1, str. 103-113. [COBISS.SI-ID 9469724], [SNIP, Scopus do 19. 8. 2013: št. citatov (TC): 2, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 2.00]

POTOČAN, Vojko, MULEJ, Matjaž. Development economics' view on growing entrepreneurship in Slovenia. *International journal of entrepreneurship and innovation management*, ISSN 1368-275X, 2008, vol. 8, no. 3, str. 305-319. [COBISS.SI-ID 9557276], [SNIP, Scopus do 21. 7. 2017: št. citatov (TC): 2, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 1.00]

MLAKAR, Tatjana, MULEJ, Matjaž. On the concept of the "control systems theory" as a new model of systemic consideration. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2008, vol. 37, no. 2, str. 215-225. [COBISS.SI-ID 29422597], [JCR, SNIP, WoS do 5. 3. 2013: št. citatov (TC): 3, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 1.00, Scopus do 31. 8. 2017: št. citatov (TC): 5, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 1.50]

PROSENAK, Damijan, MULEJ, Matjaž, SNOJ, Boris. A requisitely holistic approach to marketing in terms of social well-being. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2008, vol. 37, no. 9/10, str. 1508-1529. [COBISS.SI-ID 9699612], [JCR, SNIP, WoS do 23. 10. 2017: št. citatov (TC): 12, čistih citatov (CI): 4, čistih citatov na avtorja (CIAu): 1.50]

citativ na avtorja (CIAu): 1.33, Scopus do 23. 10. 2017: št. citativ (TC): 11, čistih citativ (CI): 3, čistih citativ na avtorja (CIAu): 1.00]

ROSI, Bojan, MULEJ, Matjaž. Diminishing traffic negative impacts over natural environment by a requisitely holistic approach to logistics. *Logistics & sustainable transport*, ISSN 1854-3332. [Tiskana izd.], 2008, vol. 1, no. 1, str. [1-13]. http://www.jlst.org/uploads/transportokolje_rosimulej.pdf. [COBISS.SI-ID 264130048]

PROSENAK, Damijan, MULEJ, Matjaž. O celovitosti in uporabnosti obstoječega koncepta družbene odgovornosti poslovanja = About holism and applicability of the existing concept of corporate social responsibility (CSR). *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2008, letn. 54, št. 3/4, str. 10-21. [COBISS.SI-ID 9512476]

ŠKAFAR, Branko, MULEJ, Matjaž. Innovativeness as Precondition for Business Excellence in Public Utiliy (Communal) Companies. *Organizacija : revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], marec-april 2008, #Letn. #41, #št. #2, str. 62-70. [COBISS.SI-ID 70731]

MULEJ, Matjaž. Primož Trubar in internet z vidika inoviranja : s simpozijev 2008. *Stati inu obstati : revija za vprašanja protestantizma*, ISSN 1408-8363, okt. 2008, št. 7/8, str. 120-125, 335. [COBISS.SI-ID 10049052]

MLAKAR, Tatjana, MULEJ, Matjaž. Complementarity of the living systems and the dialectical systems theories : the case of public medical care in Slovenia. *Cybernetics and systems*, ISSN 0196-9722, 2007, vol. 38, no. 4, str. [381]-399. [COBISS.SI-ID 9122076], [JCR, SNIP, WoS do 14. 5. 2017: št. citativ (TC): 4, čistih citativ (CI): 2, čistih citativ na avtorja (CIAu): 1.00, Scopus do 21. 3. 2017: št. citativ (TC): 3, čistih citativ (CI): 2, čistih citativ na avtorja (CIAu): 1.00]

TOMINC, Polona, REBERNIK, Miroslav. Gender differences in early-stage entrepreneurship in three European post-socialist countries. *Društvena istraživanja : časopis za opća društvena pitanja*, ISSN 1330-0288, 2007, god. 16, br. 3, str. 589-611. [COBISS.SI-ID 9187356], [JCR, SNIP, WoS do 14. 1. 2018: št. citativ (TC): 6, čistih citativ (CI): 5, čistih citativ na avtorja (CIAu): 5.00, Scopus do 20. 7. 2017: št. citativ (TC): 6, čistih citativ (CI): 4, čistih citativ na avtorja (CIAu): 4.00]

RADONJIČ, Gregor, TOMINC, Polona. The role of environmental management system on introduction of new technologies in the metal and chemical/paper/plastic industries. *Journal of cleaner production*, ISSN 0959-6526. [Print ed.], 2007, vol. 15, iss. 15, str. [1482]-1493. [COBISS.SI-ID 9071644], [JCR, SNIP, WoS do 14. 1. 2018: št. citativ (TC): 18, čistih citativ (CI): 17, čistih citativ na avtorja (CIAu): 8.50, Scopus do 20. 1. 2018: št. citativ (TC): 29, čistih citativ (CI): 29, čistih citativ na avtorja (CIAu): 14.50]

TREVEN, Sonja, MULEJ, Matjaž. The systemic approach to the encouragement of innovativeness through employee diversity management. *Kybernetes : the international*

journal of systems & cybernetics, ISSN 0368-492X, 2007, vol. 36, no. 2, str. 144-156. [COBISS.SI-ID 9081628], [JCR, SNIP, WoS do 10. 12. 2017: št. citatov (TC): 2, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.50, Scopus do 20. 4. 2017: št. citatov (TC): 3, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 1.00]

MULEJ, Matjaž, POTOČAN, Vojko. Requisite holism - precondition of reliable business information. *Kybernetes: the international journal of systems & cybernetics*, ISSN 0368-492X, 2007, vol. 36, no. 3/4, str. 319-332. [COBISS.SI-ID 9137436], [JCR, SNIP, WoS do 10. 8. 2016: št. citatov (TC): 5, čistih citatov (CI): 4, čistih citatov na avtorja (CIAu): 2.00, Scopus do 9. 10. 2015: št. citatov (TC): 6, čistih citatov (CI): 4, čistih citatov na avtorja (CIAu): 2.00]

REBERNIK, Miroslav, ŠIREC, Karin. Fostering innovation by unlearning tacit knowledge. *Kybernetes: the international journal of systems & cybernetics*, ISSN 0368-492X, 2007, vol. 36, no. 3/4, str. 406-419. [COBISS.SI-ID 9102620], [JCR, SNIP, WoS do 14. 1. 2018: št. citatov (TC): 26, čistih citatov (CI): 23, čistih citatov na avtorja (CIAu): 23.00, Scopus do 20. 1. 2018: št. citatov (TC): 38, čistih citatov (CI): 35, čistih citatov na avtorja (CIAu): 35.00]

ROSI, Bojan, MULEJ, Matjaž. Diminishing traffic negative impacts over natural environment by a requisitely holistic approach to logistics. *Logistics & sustainable transport*, ISSN 1854-3332. [Tiskana izd.], 22-05-07, vol. 1, iss. 1, 13 str. <http://jlst.fl.uni-mb.si/index.php/journal/article/view/3>. [COBISS.SI-ID 11670038]

JURŠE, Milan, TOMINC, Polona, PROSENAK, Damijan. Globalna tržna usmerjenost in inovativnost kot dejavnika uspešnosti slovenskih podjetij = Global market orientation and innovativeness as business success factors of Slovenian enterprises. *Naše gospodarstvo: revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2007, letn. 53, št. 1/2, str. 3-17. [COBISS.SI-ID 9036316]

RADONJIČ, Gregor, TOMINC, Polona. Pomen sistema ravnanja z okoljem ISO 14001 za tehnološko posodabljanje proizvodnih podjetij = The role of the environmental management standard ISO 14001 in technological improvements in manufacturing companies. *Naše gospodarstvo: revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2007, letn. 53, št. 3/4, str. 58-70. [COBISS.SI-ID 9156892]

MULEJ, Matjaž, MULEJ, Nastja. De Bonova metodologija "šest klobukov razmišljanja" in Mulejeva metodologija ustvarjalnega sodelovanja "USOMID" v novi kombinaciji. *Organizacija: revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], jan. 2007, letn. 40, št. 1, str. 34-41, ilustr. [COBISS.SI-ID 17086182]

POTOČAN, Vojko, MULEJ, Matjaž. Družbena odgovornost trajnostnega podjetja. *Organizacija: revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], 2007, letn. 40, št. 5, str. A129-A133. [COBISS.SI-ID 9280028]

DUH, Mojca, BELAK, Jernej, TOMINC, Polona, REBERNIK, Miroslav. Some aspects of business ethics in family enterprises in Slovenia. *Organizacija : revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], 2007, letn. 40, št. 5, str. 198-206. [COBISS.SI-ID 9279772]

TOMINC, Polona, REBERNIK, Miroslav. Growth aspirations and cultural support for entrepreneurship : a comparison of post-socialist countries. *Small business economics*, ISSN 0921-898X, 2007, vol. 28, no. 2/3, str. [239]-255. [COBISS.SI-ID 9039388], [JCR, SNIP, WoS do 30. 11. 2017: št. citatov (TC): 36, čistih citatov (CI): 35, čistih citatov na avtorja (CIAu): 35.00, Scopus do 20. 12. 2017: št. citatov (TC): 59, čistih citatov (CI): 54, čistih citatov na avtorja (CIAu): 54.00]

POTOČAN, Vojko, MULEJ, Matjaž. Ethics of a sustainable enterprise - and the need for it. *Systemic practice and action research*, ISSN 1094-429X, 2007, vol. 20, no. 2, str. [127]-140. [COBISS.SI-ID 9068316], [JCR, SNIP, WoS do 10. 4. 2017: št. citatov (TC): 13, čistih citatov (CI): 5, čistih citatov na avtorja (CIAu): 2.50, Scopus do 31. 8. 2017: št. citatov (TC): 16, čistih citatov (CI): 7, čistih citatov na avtorja (CIAu): 3.50]

MULEJ, Matjaž. Systems theory: a worldview and/or a methodology aimed at requisite holism/realism of humans' thinking, decisions and action. *Systems research and behavioral science : the official journal of the International Federation for Systems Research*, ISSN 1092-7026, 2007, vol. 24, no. 3, str. [347]-357. [COBISS.SI-ID 9196572], [JCR, SNIP, WoS do 14. 1. 2018: št. citatov (TC): 36, čistih citatov (CI): 17, čistih citatov na avtorja (CIAu): 17.00, Scopus do 23. 1. 2018: št. citatov (TC): 46, čistih citatov (CI): 22, čistih citatov na avtorja (CIAu): 22.00]

REBERNIK, Miroslav, TOMINC, Polona, PUŠNIK, Ksenja. Entrepreneurship in Slovenia 2006 : facts and figures. *Working papers*, ISSN 1854-570X, 2007, vol. 2, no. 1, str. 5-22. [COBISS.SI-ID 9304092]

TREVEN, Sonja, MULEJ, Matjaž. Employee diversity management in the context of dialectical systems theory. *Cybernetics and systems*, ISSN 0196-9722, Dec. 2006, vol. 37, no. 8, str. [815]-837. [COBISS.SI-ID 8939036], [JCR, SNIP, WoS do 10. 4. 2015: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.50, Scopus do 10. 4. 2015: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.50]

URŠIČ, Duško, MULEJ, Matjaž. Application of implicitly systemic management innovation methods - an empirical study in Slovenia. *International journal of services and operations management*, ISSN 1744-2370, 2006, vol. 2, no. 2, str. 146-167. [COBISS.SI-ID 8560924], [SNIP, Scopus do 8. 6. 2014: št. citatov (TC): 4, čistih citatov (CI): 4, čistih citatov na avtorja (CIAu): 2.00]

POTOČAN, Vojko, MULEJ, Matjaž. What is business cybernetics?. *The Journal of American Academy of Business*, Sep. 2006, vol. 9, no. 2, str. 211-217. [COBISS.SI-ID 8675868]

KNEZ-RIEDL, Jožica, MULEJ, Matjaž, DYCK, Robert G. Corporate social responsibility from the viewpoint of systems thinking. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2006, vol. 35, no. 3/4, str. 441-460. [COBISS.SI-ID 8755484], [JCR, SNIP, WoS do 14. 1. 2018: št. citatov (TC): 24, čistih citatov (CI): 13, čistih citatov na avtorja (CIAu): 8.67, Scopus do 19. 12. 2017: št. citatov (TC): 34, čistih citatov (CI): 19, čistih citatov na avtorja (CIAu): 12.67]

MULEJ, Matjaž, KAJZER, Štefan, POTOČAN, Vojko, ROSI, Bojan, KNEZ-RIEDL, Jožica. Interdependence of systems theories - potential innovation supporting innovation. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2006, vol. 35, no. 7/8, str. 942-954. [COBISS.SI-ID 8857628], [JCR, SNIP, WoS do 9. 7. 2017: št. citatov (TC): 11, čistih citatov (CI): 4, čistih citatov na avtorja (CIAu): 1.60, Scopus do 31. 8. 2017: št. citatov (TC): 11, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 1.20]

UDOVIČIČ, Karli, MULEJ, Matjaž. Manager's requisite holism between personal and organisational values. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2006, vol. 35, no. 7/8, str. 993-1004. [COBISS.SI-ID 8857372], [JCR, SNIP, WoS do 15. 2. 2013: št. citatov (TC): 2, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 16. 4. 2013: št. citatov (TC): 3, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.50]

REBERNIK, Miroslav, BRADAČ HOJNIK, Barbara. Cooperation and opportunistic behaviour in transformational outsourcing. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2006, vol. 35, no. 7/8, str. 1005-1013. [COBISS.SI-ID 8858140], [JCR, SNIP, WoS do 10. 8. 2015: št. citatov (TC): 8, čistih citatov (CI): 8, čistih citatov na avtorja (CIAu): 8.00, Scopus do 19. 1. 2018: št. citatov (TC): 13, čistih citatov (CI): 12, čistih citatov na avtorja (CIAu): 12.00]

ČANČER, Vesna, MULEJ, Matjaž. Systemic decision analysis approaches : requisite tools for developing creative ideas into innovations. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2006, vol. 35, no. 7/8, str. 1059-1070. [COBISS.SI-ID 8858652], [JCR, SNIP, WoS do 11. 3. 2016: št. citatov (TC): 6, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.50, Scopus do 19. 9. 2017: št. citatov (TC): 10, čistih citatov (CI): 4, čistih citatov na avtorja (CIAu): 2.00]

ŽENKO, Zdenka, MARN, Jure. Systemic approach to innovations - standards vs software. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2006, vol. 35, no. 7/8, str. 1100-1108. [COBISS.SI-ID 8858908], [JCR, SNIP, WoS do 10. 11. 2013: št. citatov (TC): 2, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 1.00, Scopus do 16. 4. 2013: št. citatov (TC): 2, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 1.00]

ROSI, Bojan, MULEJ, Matjaž. The dialectical network thinking - a new systems theory concerned with management. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2006, vol. 35, no. 7/8, str. 1165-1178. [COBISS.SI-ID 8859932], [JCR, SNIP, WoS do 11. 2. 2016: št. citatov (TC): 10, čistih citatov (CI): 4, čistih

citativ na avtorja (CIAu): 2.00, Scopus do 31. 8. 2017: št. citativ (TC): 14, čistih citativ (CI): 6, čistih citativ na avtorja (CIAu): 3.00]

RADONJIČ, Gregor, TOMINC, Polona. The impact and significance of ISO 14001 certification on the adoption of new technologies : the case of Slovenia. *Management of environmental quality*, ISSN 1477-7835, 2006, vol. 17, no. 6, str. 707-727. [COBISS.SI-ID 8868636], [SNIP, Scopus do 19. 1. 2018: št. citativ (TC): 12, čistih citativ (CI): 12, čistih citativ na avtorja (CIAu): 6.00]

DUH, Mojca, TOMINC, Polona, REBERNIK, Miroslav. Problem definicije družinskih podjetij: primer Slovenije = Problem of definition of family enterprises: case of Slovenia. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2006, letn. 52, št. 3/4, str. 29-38. [COBISS.SI-ID 8703772]

MULEJ, Matjaž. Zakaj v Sloveniji še ni dovolj inoviranja - gospodarsko in kulturno razvojni razlogi = Why Slovenia has not reached a sufficient level of innovation - reasons of economic and cultural development. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2006, letn. 52, št. 3/4, str. 39-48. [COBISS.SI-ID 8704028]

TOMINC, Polona, REBERNIK, Miroslav. Zgodnja podjetniška aktivnost: pričakovanja o rasti podjetij = Early-stage entrepreneurial activity: expectations for growth in entrepreneurial ventures. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2006, letn. 52, št. 5/6, str. 11-19. [COBISS.SI-ID 8964124]

ROSI, Bojan, MULEJ, Matjaž. Kako celoviteje prepoznavati, preprečevati in obvladovati probleme. *Organizacija : revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], jan. 2006, letn. 39, št. 1, str. 35-43. [COBISS.SI-ID 8512028]

MULEJ, Matjaž, POTOČAN, Vojko. Teorija kompleksnosti spada v več tokov teorije sistemov. *Organizacija : revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], jan. 2006, letn. 39, št. 1, str. 44-53. [COBISS.SI-ID 8506140]

URŠIČ, Duško, NIKL, Aljoša, MULEJ, Matjaž, SMOGAVC CESTAR, Andrej. Systems-organisational aspect of a learning organisation in companies. *Systemic practice and action research*, ISSN 1094-429X, 2006, vol. 19, no. 1, str. 81-99. [COBISS.SI-ID 8647708], [JCR, SNIP, WoS do 13. 8. 2017: št. citativ (TC): 2, čistih citativ (CI): 2, čistih citativ na avtorja (CIAu): 0.50, Scopus do 19. 12. 2017: št. citativ (TC): 6, čistih citativ (CI): 6, čistih citativ na avtorja (CIAu): 1.50]

TREVEN, Sonja, MULEJ, Matjaž. A requisitely holistic view of human resources management in innovative enterprises. *Cybernetics and systems*, ISSN 0196-9722, 2005, vol. 36, no. 1, str. 45-63. [COBISS.SI-ID 7825180], [JCR, SNIP, WoS do 12. 9. 2016: št. citativ (TC): 3, čistih citativ (CI): 1, čistih citativ na avtorja (CIAu): 0.50, Scopus do 18. 8. 2017: št. citativ (TC): 10, čistih citativ (CI): 1, čistih citativ na avtorja (CIAu): 0.50]

MULEJ, Matjaž, LIKAR, Borut, POTOČAN, Vojko. Increasing the capacity of companies to absorb inventions from research organizations and encouraging people to innovate. *Cybernetics and systems*, ISSN 0196-9722, 2005, vol. 36, no. 5, str. [491]-512. [COBISS.SI-ID 8153116], [JCR, SNIP, WoS do 10. 4. 2017: št. citatov (TC): 9, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.33, Scopus do 31. 8. 2017: št. citatov (TC): 17, čistih citatov (CI): 8, čistih citatov na avtorja (CIAu): 2.67]

ŽENKO, Zdenka, MARN, Jure. Community design registration and EU enlargement : case of Slovenia. *International journal of innovating and learning*, ISSN 1471-8197, 2005, vol. 2, no. 3, str. 303-318. [COBISS.SI-ID 7987740], [SNIP, Scopus do 2. 3. 2011: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

ŽENKO, Zdenka, MARN, Jure. Enlargement of European Union and shrinking of trademark : case of Slovenia. *International journal of management and enterprise development*, ISSN 1468-4330, 2005, vol. 2, no. 1, str. 65-92. [COBISS.SI-ID 7928860], [SNIP]

ČANČER, Vesna, KNEZ-RIEDL, Jožica. Why and how to evaluate the creditworthiness of SMEs' business partners. *International small business journal*, ISSN 0266-2426, Apr. 2005, vol. 23, no. 2, str. 143-162. [COBISS.SI-ID 7985692], [JCR, SNIP, WoS do 16. 11. 2014: št. citatov (TC): 3, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 1.50, Scopus do 18. 1. 2018: št. citatov (TC): 11, čistih citatov (CI): 7, čistih citatov na avtorja (CIAu): 3.50]

URŠIČ, Duško, MULEJ, Matjaž. Theory and practice of management concepts : Slovenia's experiences. *Journal of management development*, ISSN 0262-1711, 2005, vol. 24, no. 10, str. 856-878. [COBISS.SI-ID 8409372], [SNIP, Scopus do 18. 1. 2018: št. citatov (TC): 8, čistih citatov (CI): 7, čistih citatov na avtorja (CIAu): 3.50]

POTOČAN, Vojko, MULEJ, Matjaž, KAJZER, Štefan. Business cybernetics : a provocative suggestion. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2005, vol. 34, no. 9/10, str. 1496-1516. [COBISS.SI-ID 8354332], [JCR, SNIP, WoS do 12. 11. 2017: št. citatov (TC): 14, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 0.67, Scopus do 18. 1. 2018: št. citatov (TC): 19, čistih citatov (CI): 6, čistih citatov na avtorja (CIAu): 2.00]

REBERNIK, Miroslav, TOMINC, Polona, ŠIREC, Karin. Razvojne ambicije podjetnikov in podjetnic v Sloveniji = Growth aspirations of Slovenian entrepreneurs. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2005, letn. 51, št. 1/2, str. 19-32. [COBISS.SI-ID 8058396]

TREVEN, Sonja, MULEJ, Matjaž. Teorija sistemov, inovativna družba in management stresa v delovnem okolju = Systems theory, innovative society, and stress management in working settings. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2005, letn. 51, št. 3/4, str. 56-63. [COBISS.SI-ID 8172572]

ROSI, Bojan, MULEJ, Matjaž. Z več dialektično omrežnega razmišljanja lahko postane slovenski železniški prometni sistem evropsko konkurenčnejši. *Organizacija : revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], apr. 2005, letn. 38, št. 4, str. 169-175. [COBISS.SI-ID 7998748]

TREVEN, Sonja, MULEJ, Matjaž. Sistemski pristop k obvladovanju raznolikosti zaposlenih v globalnem okolju. *Organizacija : revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], sep. 2005, letn. 38, št. 7, str. 321-329. [COBISS.SI-ID 8260124]

DUH, Mojca, TOMINC, Polona, REBERNIK, Miroslav. Nasledstvo v malih in srednje velikih podjetjih v Sloveniji. *Organizacija : revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], dec. 2005, letn. 38, št. 10, str. 590-599. [COBISS.SI-ID 8431900]

URŠIČ, Duško, ANTERIČ, Sandra, MULEJ, Matjaž. Business process re-engineering in practice : an example of a medium-sized Slovenian company in difficulties. *Systemic practice and action research*, ISSN 1094-429X, Feb. 2005, vol. 18, no. 1, str. 89-117. [COBISS.SI-ID 8082972], [JCR, SNIP, WoS do 12. 2. 2016: št. citatov (TC): 5, čistih citatov (CI): 5, čistih citatov na avtorja (CIAu): 1.67, Scopus do 18. 1. 2018: št. citatov (TC): 8, čistih citatov (CI): 8, čistih citatov na avtorja (CIAu): 2.67]

TAJNIKAR, Maks, PUŠNIK, Ksenja. Globalizacija in podjetništvo z vidika Slovenije = Globalisation and entrepreneurship - a Slovenian perspective. V: [Znanstvena konferenca "Globalizacijski procesi in nova vloga države"] = [Scientific Conference "Globalisation Processes and the New Role of the State"], (Naše gospodarstvo, ISSN 0547-3101, Letn. 51, št. 5/6). Maribor: Ekonomsko-poslovna fakulteta. 2005, str. 34-44, ilustr. [COBISS.SI-ID 16022758]

PIVKA, Marjan, MULEJ, Matjaž. Requisitely holistic ISO 9000 audit leads to continuous innovation/improvement. *Cybernetics and systems*, ISSN 0196-9722, Jun. 2004, vol. 35, no. 4, str. 363-378. [COBISS.SI-ID 7395868], [JCR, SNIP, WoS do 13. 2. 2016: št. citatov (TC): 14, čistih citatov (CI): 9, čistih citatov na avtorja (CIAu): 4.50, Scopus do 31. 8. 2017: št. citatov (TC): 20, čistih citatov (CI): 10, čistih citatov na avtorja (CIAu): 5.00]

TOMINC, Polona, REBERNIK, Miroslav. The scarcity of female entrepreneurship. *Društvena istraživanja : časopis za opća društvena pitanja*, ISSN 1330-0288, 2004, g. 13, br. 4/5, str. 779-802. [COBISS.SI-ID 7735068], [JCR, SNIP, WoS do 14. 1. 2018: št. citatov (TC): 6, čistih citatov (CI): 4, čistih citatov na avtorja (CIAu): 4.00, Scopus do 31. 8. 2017: št. citatov (TC): 8, čistih citatov (CI): 5, čistih citatov na avtorja (CIAu): 5.00]

ŠIREC, Karin. Recruitment of employees : administrative burdens on Slovenian SMEs in comparison with Europe. *Journal for East European management studies*, ISSN 0949-6181, 2004, vol. 9, no. 3, str. 278-312. [COBISS.SI-ID 7548188]

POTOČAN, Vojko, MULEJ, Matjaž. The requisite holism of information in a virtual business organization's management. *The Journal of American Academy of Business*, Sep. 2004, vol. 5, no. 1/2, str. 411-417. [COBISS.SI-ID 7450908]

MULEJ, Matjaž, POTOČAN, Vojko, ŽENKO, Zdenka, KAJZER, Štefan, URŠIČ, Duško, KNEZ-RIEDL, Jožica. How to restore Bertalanffian systems thinking. *Kybernetes: the international journal of systems & cybernetics*, ISSN 0368-492X, 2004, vol. 33, no. 1, str. 48-61. [COBISS.SI-ID 7289884], [JCR, SNIP, WoS do 8. 10. 2017: št. citatov (TC): 30, čistih citatov (CI): 8, čistih citatov na avtorja (CIAu): 4.00, Scopus do 17. 1. 2018: št. citatov (TC): 33, čistih citatov (CI): 8, čistih citatov na avtorja (CIAu): 4.00]

MULEJ, Matjaž, POTOČAN, Vojko, KAJZER, Štefan. Etika soodvisnosti kot podlaga za zaupanje med sodelavci in med organizacijami. *Organizacija: revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], nov. 2004, letn. 37, št. 9, str. 558-563. [COBISS.SI-ID 4219411]

ŽENKO, Zdenka, MULEJ, Matjaž, MARN, Jure. Innovation before entry into the EU : the case of Slovenia. *Post-communist economies*, ISSN 1463-1377, June 2004, vol. 16, no. 2, str. [169]-189, tabele, doi: 10.1080/1463137042000223877. [COBISS.SI-ID 14665702], [JCR, SNIP, WoS do 16. 11. 2013: št. citatov (TC): 5, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.67, Scopus do 31. 8. 2017: št. citatov (TC): 12, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 2.00]

ARTENJAK, Janez, TOMINC, Polona. Cost-volume-profit analysis by using the enterprise input-output modeling. *Bulletin of the Czech Econometric Society*, ISSN 1212-074X, 2003, vol. 10, št. 18, str. 19-34. [COBISS.SI-ID 7042844]

MULEJ, Matjaž, BASTIČ, Majda, BELAK, Janko, KNEZ-RIEDL, Jožica, PIVKA, Marjan, POTOČAN, Vojko, REBERNIK, Miroslav, URŠIČ, Duško, ŽENKO, Zdenka, MULEJ, Nastja. Informal systems thinking or systems theory. *Cybernetics and systems*, ISSN 0196-9722, 2003, vol. 34, no. 2, str. 71-92. [COBISS.SI-ID 6731804], [JCR, SNIP, WoS do 10. 4. 2017: št. citatov (TC): 15, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 1.20, Scopus do 31. 8. 2017: št. citatov (TC): 25, čistih citatov (CI): 8, čistih citatov na avtorja (CIAu): 3.20]

KNEZ-RIEDL, Jožica. Corporate social responsibility and communication with external community = Korporacijska društvena odgovornost i komuniciranje sa vanjskim okruženjem. *Informatologia*, ISSN 1330-0067, 2003, god. 36, br. 3, str. 166-172. [COBISS.SI-ID 7208988], [SNIP, Scopus do 13. 11. 2015: št. citatov (TC): 5, čistih citatov (CI): 4, čistih citatov na avtorja (CIAu): 4.00]

KNEZ-RIEDL, Jožica. Social responsibility of a family business. *MER : revija za management in razvoj*, ISSN 1408-9343, nov. 2003, letn. 5, št. 2, str. 90-99, ilustr. [COBISS.SI-ID 14075366]

MULEJ, Matjaž, ŽENKO, Zdenka. Inovativno podjetništvo kot osebna lastnost in vpliv vlade nanj. *Organizacija : revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], maj 2003, letn. 36, št. 5, str. 273-281. [COBISS.SI-ID 6831132]

MULEJ, Matjaž, ŽENKO, Zdenka, KNEZ-RIEDL, Jožica. Državni ukrepi za pospešeno uveljavljanje inovativne družbe in inovativnega poslovanja. *Organizacija : revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], jun. 2003, letn. 36, št. 6, str. 358-367. [COBISS.SI-ID 3765523]

ŠIREC, Karin, TOMINC, Polona, REBERNIK, Miroslav. Ženske v podjetništvu: neenakost kljub formalni enakosti. *Organizacija : revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], nov. 2003, letn. 36, št. 9, str. 605-612. [COBISS.SI-ID 7076124]

KNEZ-RIEDL, Jožica. Kakovost, inovativnost in boniteta podjetja - prešibko upoštevanje kakovosti poslovanja in inovativnosti pri presojanju bonitete podjetja. *Organizacija : revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], nov. 2003, letn. 36, št. 9, str. 620-627. [COBISS.SI-ID 7076380]

POTOČAN, Vojko, MULEJ, Matjaž. Entrepreneurship: between sustainable development and reality. *Public finance and management*, ISSN 1523-9721, 2003, vol. 3, no. 2, str. 241-262. [COBISS.SI-ID 7266844]

POTOČAN, Vojko, MULEJ, Matjaž. On requisitely holistic understanding of sustainable development. *Systemic practice and action research*, ISSN 1094-429X, 2003, vol. 16, no. 6, str. 421-436. [COBISS.SI-ID 7070492], [JCR, SNIP, WoS do 14. 8. 2016: št. citatov (TC): 15, čistih citatov (CI): 5, čistih citatov na avtorja (CIAu): 2.50, Scopus do 31. 8. 2017: št. citatov (TC): 19, čistih citatov (CI): 5, čistih citatov na avtorja (CIAu): 2.50]

TOMINC, Polona. Some aspects of the gender wage gap in Slovenia. *Društvena istraživanja : časopis za opća društvena pitanja*, ISSN 1330-0288, 2002, god. 11, br. 6, str. 879-896. [COBISS.SI-ID 6768668], [JCR, SNIP, WoS do 14. 5. 2017: št. citatov (TC): 4, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 1.00, Scopus do 31. 8. 2017: št. citatov (TC): 8, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 3.00]

REBERNIK, Miroslav. Business economics and entrepreneurship at the crossroads. *Ekonomický časopis*, ISSN 0013-3035, 2002, 50, č. 3, str. 471-488. [COBISS.SI-ID 6472220], [JCR, SNIP, WoS do 13. 1. 2017: št. citatov (TC): 4, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 1.00]

REBERNIK, Miroslav. Companies as business laboratories. *Journal of teaching in international business*, ISSN 0897-5930, 2002, vol. 13, no. 3/4, str. 99-114. [COBISS.SI-ID 6649372], [Scopus do 17. 2. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

POTOČAN, Vojko, MULEJ, Matjaž. Business system: sustainable development and anticipatory systems thinking. *Management : journal of contemporary management issues*, ISSN 1331-0194, 2002, vol. 7, no. 2, str. 1-12. <https://dk.um.si/IzpisGradiva.php?id=66594>. [COBISS.SI-ID 6772764], [SNIP]

LYNN, Monty L., MULEJ, Matjaž, JURŠE, Karin. Democracy without empowerment : the grand vision and demise of Yugoslav self-management. *Management Decision*, ISSN 0025-1747, 2002, vol. 40, no. 8, str. 797-806. [COBISS.SI-ID 6537756], [SNIP, Scopus do 18. 11. 2017: št. citatov (TC): 13, čistih citatov (CI): 10, čistih citatov na avtorja (CIAu): 3.33]

MULEJ, Matjaž, ŽENKO, Zdenka, BASTIČ, Majda, KNEZ-RIEDL, Jožica, MULEJ, Nastja. Koliko inovativna sta poslovanje slovenskih proizvodnih podjetij in njihov management?. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2002, letn. 48, št. 3/4, str. 217-237. [COBISS.SI-ID 6683420]

KNEZ-RIEDL, Jožica. External social responsibility of the Slovenian SMEs. *Zbornik radova Ekonomskog fakulteta u Rijeci : časopis za ekonomsku teoriju i praksu*, ISSN 1331-8004, 2002, g. 20, sv. 2, str. 35-50. [COBISS.SI-ID 6824220]

MOČNIK, Dijana. Asset specificity and a firm's borrowing ability : an empirical analysis of manufacturing firms. *Journal of Economic Behavior & Organization*, ISSN 0167-2681. [Print ed.], may 2001, vol. 45, no. 1, str. 69-81. [COBISS.SI-ID 5630236], [JCR, SNIP, WoS do 16. 11. 2013: št. citatov (TC): 2, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 2.00, Scopus do 14. 8. 2017: št. citatov (TC): 11, čistih citatov (CI): 11, čistih citatov na avtorja (CIAu): 11.00]

KNEZ-RIEDL, Jožica. Gleichzeitige Kosten- und Umwelteffektivität. *MER : revija za management in razvoj*, ISSN 1408-9343, 2001, letn. 3, št. 6/7, str. 6, 54-59. [COBISS.SI-ID 5664540]

KNEZ-RIEDL, Jožica, KAJZER, Štefan. Na znanju temelječa teorija firme in management znanja. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2001, letn. 47, št. 1/2, str. 61-68. [COBISS.SI-ID 5660956]

POTOČAN, Vojko, MULEJ, Matjaž, KAJZER, Štefan. Ali je mogoče 'celovito' standardizirati odločanje v poslovnih sistemih?. *Organizacija : revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], september 2001, letn. 34, št. 7, str. 422-428. [COBISS.SI-ID 5897500]

REBERNIK, Miroslav, MULEJ, Matjaž. Requisite holism, isolating mechanisms and entrepreneurship. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2000, letn. 29, no. 9/10, str. 1126-1140. [COBISS.SI-ID 5433116], [JCR, SNIP, WoS do 12. 11. 2017: št. citatov (TC): 15, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 2.00, Scopus do 31. 8. 2017: št. citatov (TC): 20, čistih citatov (CI): 5, čistih citatov na avtorja (CIAu): 5.00]

KNEZ-RIEDL, Jožica. Analiza podjetja v spremenjenih okoliščinah poslovanja. *MER : revija za management in razvoj*, ISSN 1408-9343, 2000, letn. 2, št. 2, str. 28-36. [COBISS.SI-ID 5911324]

ŽENKO, Zdenka, MULEJ, Matjaž. Sodelovanje zaposlenih pri obvladovanju podjetij v inovativnih družbah. *Organizacija : revija za management, informatiko in kadre*, ISSN 1318-5454. [Tiskana izd.], junij 2000, letn. 33, št. 6, str. 375-383. [COBISS.SI-ID 5121308]

REBERNIK, Miroslav, MOČNIK, Dijana, RUS, Matej. Regionalni in panožni vidiki slovenskega podjetništva in primerjava z Evropsko unijo. V: ŽIŽMOND, Egon (ur.). *Poslovni cikli in gospodarsko prestrukturiranje*, (Bilten EDP, ISSN 0353-4219, Letn. 23, 2000, 4). Maribor: Ekonomsko-poslovna fakulteta, Institut za diagnozo in prognozo. 2000, str. 51-68. [COBISS.SI-ID 5585692]

MULEJ, Matjaž. Bistveni pomen izhodišč za kakovost analize in zakon potrebne in zadostne celovitosti. V: BELAK, Janko (ur.). *Analiza podjetja in okolja*, (MER, ISSN 1408-9343, Letn. = Jg. 1, 1999, 3). Lesično: MER Evrocenter. 1999, str. 19-25. [COBISS.SI-ID 4822812]

KNEZ-RIEDL, Jožica. Analiza delovanja tekmecev : preusmerjanje k neotipljivim sredstvom. V: BELAK, Janko (ur.). *Analiza podjetja in okolja*, (MER, ISSN 1408-9343, Letn. = Jg. 1, 1999, 3). Lesično: MER Evrocenter. 1999, str. 32-35. [COBISS.SI-ID 4823580]

REBERNIK, Miroslav. Presojanje poslovnih priložnosti. V: BELAK, Janko (ur.). *Analiza podjetja in okolja*, (MER, ISSN 1408-9343, Letn. = Jg. 1, 1999, 3). Lesično: MER Evrocenter. 1999, str. 36-41. [COBISS.SI-ID 4824604]

ARTENJAK, Janez, TOMINC, Polona. Two-stage optimisation of the multiphase production. *Mathematical communications*, ISSN 1331-0623, 1999, 4, str. 43-51. [COBISS.SI-ID 4696604]

KNEZ-RIEDL, Jožica. Inovacije in benchmarking. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 1999, vol. 45, no. 1/2, str. 30-39. [COBISS.SI-ID 4586268]

BRISTER, Jozell, LYNN, Monty L., MULEJ, Matjaž. Downsizing: conversations between the USA and Slovenia. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 1999, letn. 45, št. 5/6, str. 346-365, tabele. [COBISS.SI-ID 10584806]

ŠIREC, Karin. Vpliv izolacijskih mehanizmov na uspešnost podjetja. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 1999, letn. 45, št. 5/6, str. 384-394, tabele. [COBISS.SI-ID 10585830]

MOČNIK, Dijana. Sposobnost zadolževanja podjetja in narava premoženja: empirična raziskava predelovalnih podjetij. *Slovenska ekonomska revija*, ISSN 0354-0731, avg. 1999, letn. 50, št. 4, str. 409-420. [COBISS.SI-ID 4671004]

KNEZ-RIEDL, Jožica, KUČIŠ, Vlasta. Interactive business information seeking and communicating in global environment = Uzajamno djelovanje potrage i prijenosa informacija u globalnom okruženju. *Informatologia*, ISSN 1330-0067, 1998, vol. 31, no. 3-4, str. 177-181. [COBISS.SI-ID 4519964]

PUŠNIK, Ksenja. Ekonomski učinki davka na nepremičnine. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 1998, 44, št. 3, str. 292-312. [COBISS.SI-ID 4205340]

MOČNIK, Dijana. Ali kultura vpliva na upravljanje podjetja?. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 1998, 44, št. 3, str. 341-353. [COBISS.SI-ID 4070684]

MULEJ, Matjaž, KAJZER, Štefan. Tehnološki razvoj in etika soodvisnosti. *Raziskovalec : strokovna revija o raziskovalni in inovacijski politiki*, ISSN 0351-0727, 1998, 28, št. 1, str. 26-35. [COBISS.SI-ID 18496605]

KNEZ-RIEDL, Jožica. Inovacijska sposobnost in boniteta podjetja = Innovation capability and creditworthiness of a firm. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 1997, 43, št. 1/2, str. 135-139. [COBISS.SI-ID 3300380]

REBERNIK, Miroslav. Izgubljeno ravnovesje = The equilibrium lost. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 1997, 43, št. 1/2, str. 160-174. [COBISS.SI-ID 3300636]

KNEZ-RIEDL, Jožica. Poslovna in finančna zanesljivost v kontekstu bonitete podjetja. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 1997, 43, št. 5/6, str. 464-468. [COBISS.SI-ID 3754780]

TOMINC, Polona. Odsekoma linearna regresijska funkcija : metoda najmanjših kvadratov in metoda najmanjših absolutnih odklonov = Piecewise linear regression function : the least squares method and the least absolute deviations method. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 1997, let. 43, št. 3/4, str. 219-227. [COBISS.SI-ID 3488540]

MULEJ, Matjaž, KAJZER, Štefan, TREVEN, Sonja, JURŠE, Karin. Sodobna ekonomija med odpori do inovacij in življenjem od njih = Contemporary economy between refusing innovation and living on it. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 1997, let. 43, št. 3/4, str. 339-349. [COBISS.SI-ID 3490076]

ŽENKO, Zdenka. Vpliv evropskega stila managementa na zaostajanje zahodne Evrope za inovativnostjo ZDA in Japonske = Influence of the European managerial style on the west Europe's lagging behind USA and Japan. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 1997, let. 43, št. 3/4, str. 410-414. [COBISS.SI-ID 3494172]

KAJZER, Štefan, MULEJ, Matjaž, MARN, Ferdinand. The process approach to business as a well proven tool for maintaining cybernetics in business management. *Systemica : the journal of the Systeemgroep Nederland*, ISSN 0167-9961, str. 185-196. [COBISS.SI-ID 4048668]

REBERNIK, Miroslav. Beyond markets, hierarchies and ownership mania in transitional countries. *Systems research and behavioral science : the official journal of the International Federation for Systems Research*, ISSN 1092-7026, 1997, vol. 14, no. 3, str. 183-194. [COBISS.SI-ID 3457820], [JCR, SNIP, WoS do 2. 7. 2017: št. citatov (TC): 2, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 25. 3. 2014: št. citatov (TC): 4, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

MULEJ, Matjaž, KAJZER, Štefan. Total quality management, reengineering, or something else : a basic tool of cybernetics of the socioeconomic systems and country development in Central and Eastern Europe. V: *13th European meeting on cybernetics and systems research, [Vienna, 9-12 April 1996]*, (Cybernetics and Systems, ISSN 0196-9722, Vol. 27, 1996, No. 6, spec. issue). Washington: Taylor & Francis; Vienna: Austrian Society for Cybernetic Studies. 1996, str. 555-563. [COBISS.SI-ID 3083548], [JCR, SNIP, WoS do 15. 2. 2013: št. citatov (TC): 4, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 1.50, Scopus do 21. 9. 2016: št. citatov (TC): 6, čistih citatov (CI): 5, čistih citatov na avtorja (CIAu): 2.50]

TOMINC, Polona, JURŠE, Karin. Some aspects of piecewise linear L_1 approximations in business optimization. *Yugoslav journal of operations research : an international journal dealing with theoretical and computational aspects of operations research, systems science, and management science*, ISSN 0354-0243, 1996, vol. 6, no. 2, str. 289-294. [COBISS.SI-ID 2949660], [SNIP]

MULEJ, Matjaž. Beyond private ownership in Central and Eastern Europe. *Cybernetics and systems*, ISSN 0196-9722, 1995, let. 26, št. 2, str. 133-148. [COBISS.SI-ID 7544836], [JCR, SNIP, WoS do 14. 8. 2006: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 24. 6. 2012: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

MULEJ, Matjaž, MAJERIČ, Avgust, SRUK, Vladimir. (Un)changing values and problems of the "New democracies". *Systemica : the journal of the Systeemgroep Nederland*, ISSN 0167-9961, str. 125-138. [COBISS.SI-ID 7330820]

TOMINC, Polona. Aproksimacije funkcijskih zvez na trgu vrednostnih papirjev. *Bančni vestnik : revija za denarništvo in bančništvo*, ISSN 0005-4631, 43 (1994), 6 ; str. 28-32. [COBISS.SI-ID 6633732]

TOMINC, Polona. Nekateri pogledi na oblikovanje portfelja vrednostnih papirjev. *Bančni vestnik : revija za denarništvo in bančništvo*, ISSN 0005-4631, 43 (1994), 10 ; str. 43-44. [COBISS.SI-ID 6633988]

MEŠKO, Ivan, TOMINC, Polona. Aproksimacija funkcijske zveze z odsekoma linearno funkcijo pri odvisnih osnovnih statističnih znakih. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 40 (1994), 3-4 ; str. 326-334. [COBISS.SI-ID 6280708]

KNEZ-RIEDL, Jožica. Boniteta podjetij v tranziciji = Creditworthiness of the firms in transition. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 1994, 40, št. 5, str. 477-481. [COBISS.SI-ID 6649092]

PALČIČ, Rajko, MULEJ, Matjaž. A success story: modern management producing productivity in a plant in a less-developed area of Slovenia. *Public enterprise : quarterly journal*, ISSN 0351-3564, marec/junij 1994, 14, št. 1/2, str. 121-131. [COBISS.SI-ID 6546180], [Scopus do 2. 3. 2011: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

GABRIJELČIČ, Janez, MULEJ, Matjaž. Success in management innovation: from a "suggestion system" to the "growing bio house". *Public enterprise : quarterly journal*, ISSN 0351-3564, marec/junij 1994, 14, št. 1/2, str. 133-141. [COBISS.SI-ID 6546692]

REBERNIK, Miroslav. De-memorizing and changing of mental models as a precondition for TQM. *Systems research : the official journal of the International Federation for Systems Research*, ISSN 0731-7239, 11 (1994), 1 ; str. 101-111. [COBISS.SI-ID 6105860], [JCR, WoS do 7. 6. 2006: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

MULEJ, Matjaž. Quality and innovation - What can be done without systems thinking in depressed regions?. *Systems research : the official journal of the International Federation for Systems Research*, ISSN 0731-7239, 11 (1994), 1 ; str. 113-124. [COBISS.SI-ID 6106116], [JCR, WoS do 17. 1. 2013: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 1.00]

MULEJ, Matjaž, REBERNIK, Miroslav. There is hardly a (total) quality without systems thinking. *Systems research : the official journal of the International Federation for Systems Research*, ISSN 0731-7239, 1994, let. 11, št. 1, str. 7-14. [COBISS.SI-ID 6105348], [JCR, WoS do 23. 10. 2016: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 1.00]

MULEJ, Matjaž, REBERNIK, Miroslav. Brez systemskega razmišljanja je (popolna) kakovost komajda verjetna. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 39 (1993), 5-6 ; str. 389-395. [COBISS.SI-ID 5649156]

REBERNIK, Miroslav. De-memorizing as a first step in teaching and practicing entrepreneurship. *Newsletter - Informationsdienst : Ökonomie der klein und Mittelbetriebe*, ISSN 1318-2064, (1993), 1 - Generation 1993 ; (1992), 4 - Genration 1992 ; str. 35-44. [COBISS.SI-ID 6554884]

MULEJ, Matjaž. Praktično (dialektično) razmišljanje kot podlaga sodobnega pojmovanja kakovosti in inoviranja. *Organizacija in kadri : prva slovenska revija za organizacijska in kadrovska raziskovanja in prakso*, ISSN 0350-1531, 26 (1993), 1-2 ; str. 58-64. [COBISS.SI-ID 4923652]

1.02 Review articles

ZDOLŠEK, Tanja, ŠIREC, Karin. Proučevanje vpliva podjetniškega izobraževanja na podjetniške namere študentov : pregled dosedanjih empiričnih raziskav = Impact of entrepreneurship education on entrepreneurial intentions of students : a review of empirical research. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2014, letn. 60, št. 3/4, str. 55-64, ilustr., doi: 10.7549/ourecon.2014.3-4.06. [COBISS.SI-ID 11808540]

HOJS POTOČNIK, Jarmila, TOMINC, Polona. Povezanost strukture diplomantov terciarnega izobraževanja z gospodarsko razvitostjo - analiza evropskih držav = Correlation between tertiary education graduates by field of study and economic development - an analysis of European countries. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2013, letn. 59, št. 1/2, str. 56-65, tabele, doi: 10.7549/ourecon.2013.1-2.06. [COBISS.SI-ID 11390748]

ČANČER, Vesna, REBERNIK, Miroslav, KNEZ-RIEDL, Jožica. The environmental creditworthiness assessment methodology = Metodologija presojanja okoljske bonitete. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2013, letn. 59, št. 1/2, str. 66-74, doi: 10.7549/ourecon.2013.1-2.07. [COBISS.SI-ID 11386140]

CRNOGAJ, Katja, REBERNIK, Miroslav. Kritični pregled mednarodno primerljivih mer podjetniške aktivnosti = Critical review of internationally comparable entrepreneurship activity measures. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2013, letn. 59, št. 5/6, str. 23-34, ilustr., doi: 10.7549/ourecon.2013.5-6.03. [COBISS.SI-ID 11594268]

TOMINC, Polona, REBERNIK, Miroslav. Komparativna analiza podjetniške aktivnosti z globalnim indeksom podjetništva in razvoja - GEDI = Comparative analysis of entrepreneurship using the Global Entrepreneurship and Development Index (GEDI). *Naše*

gospodarstvo : revija za aktualna gospodarska vprašanja, ISSN 0547-3101. [Tiskana izd.], 2012, letn. 58, št. 1/2, str. 55-63, ilustr. [COBISS.SI-ID 10974748]

ŽENKO, Zdenka, MULEJ, Matjaž. Diffusion of innovative behaviour with social responsibility. *Kybernetes : the international journal of systems & cybernetics*, ISSN 0368-492X, 2011, vol. 40, no. 9/10, str. 1258-1272, doi: 10.1108/03684921111169378. [COBISS.SI-ID 10846748], [JCR, SNIP, WoS do 17. 12. 2017: št. citatov (TC): 21, čistih citatov (CI): 14, čistih citatov na avtorja (CIAu): 14.00, Scopus do 31. 8. 2017: št. citatov (TC): 22, čistih citatov (CI): 14, čistih citatov na avtorja (CIAu): 14.00]

ŠIREC, Karin. Izzivi in predlog multidimenzionalnega modela proučevanja rasti malih in srednje velikih podjetij = Challenges and suggestions of multidimensional model in studying MSEs' growth. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2011, letn. 57, št. 5/6, str. 20-29, ilustr. [COBISS.SI-ID 259471872]

BRADAC HOJNIK, Barbara. Izzivi proučevanja zunanjega izvajanja z vidika teoretičnih izhodišč = Theoretical backgrounds of outsourcing research. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2011, letn. 57, št. 5/6, str. 30-39, tabele. [COBISS.SI-ID 259474688]

BELE, Jure, ČASAR, Dominik, TOMINC, Polona. Nekateri vidiki družbene blaginje na področju zdravstvenega stanja ljudi = Aspects of social well-being regarding people's health. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2011, letn. 57, št. 5/6, str. 40-52, ilustr. [COBISS.SI-ID 259479296]

ŠIREC, Karin, REBERNIK, Miroslav. Izobraževanje za podjetnost in podjetništvo. *Pedagoška obzorja : časopis za didaktiko in metodiko*, ISSN 0353-1392, 2011, letn. 26, [št.] 4, str. 129-145, ilustr. [COBISS.SI-ID 10914332], [SNIP, Scopus do 24. 1. 2017: št. citatov (TC): 2, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 2.00]

KNEZ, Matjaž, ROSI, Bojan, MULEJ, Matjaž, LIPIČNIK, Martin. Competitiveness by requisitely holistic and innovative logistic management. *Promet*, ISSN 0353-5320. [Print ed.], 2010, vol. 22, no. 3, str. 229-237. [COBISS.SI-ID 10305052], [JCR, SNIP, WoS do 7. 3. 2016: št. citatov (TC): 2, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 0.50, Scopus do 7. 5. 2016: št. citatov (TC): 3, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 0.75]

MULEJ, Matjaž, ŽENKO, Zdenka, POTOČAN, Vojko. "Odrprto inoviranje" namesto "zaprtega inoviranja" = 'Open innovation' replaces 'closed innovation'. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2009, letn. 55, št. 1/2, str. 76-84. [COBISS.SI-ID 9771292]

ŠIREC, Karin. Teorija proizvodnih virov in podjetništvo = Resource based theory and entrepreneurship. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2009, letn. 55, št. 1/2, str. 85-95. [COBISS.SI-ID 9771548]

MULEJ, Matjaž, MLAKAR, Tatjana. Organizational innovation in health care - as a process. *Medicinski glasnik*, ISSN 1840-0132, Feb. 2008, vol. 5, no. 1, str. 24-32. <https://dk.um.si/IzpisGradiva.php?id=67209>. [COBISS.SI-ID 9382684], [JCR, SNIP, WoS do 21. 4. 2008: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 1. 3. 2011: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

MLAKAR, Tatjana, MULEJ, Matjaž. Zasnova kontrolne teorije sistemov kot novega modela celovitega razmišljanja = The concept of control systems theory as a new model of holistic thinking. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2008, letn. 54, št. 5/6, str. 90-94. [COBISS.SI-ID 9653532]

DUH, Mojca, TOMINC, Polona, REBERNIK, Miroslav. Succession issues within family enterprises in transition economies. *Društvena istraživanja : časopis za opća društvena pitanja*, ISSN 1330-0288, 2007, god. 16, br. 4/5, str. 751-779. [COBISS.SI-ID 9321500], [JCR, SNIP, WoS do 17. 11. 2016: št. citatov (TC): 2, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0,67, Scopus do 10. 4. 2016: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0,67]

TOMINC, Polona, REBERNIK, Miroslav. Growth aspirations of Slovenian entrepreneurs - a gender differences perspective. *Management : journal of contemporary management issues*, ISSN 1331-0194, June, 2006, vol. 11, no. 1, str. 37-52, ilustr. <https://dk.um.si/IzpisGradiva.php?id=66603>. [COBISS.SI-ID 16595686], [SNIP]

URŠIČ, Duško, MULEJ, Matjaž, TELIČ, Boštjan. The steps towards successful reengineering in Slovenian companies. *Management : journal of contemporary management issues*, ISSN 1331-0194, 2005, vol. 10, no. 1, str. 51-57. <https://dk.um.si/IzpisGradiva.php?id=66623>. [COBISS.SI-ID 8081948], [SNIP]

ŠIREC, Karin. The importance of tacit knowledge for sustaining a competitive advantage = Pomen nemega znanja za ohranitev trajnostnih konkurenčnih prednosti. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2004, letn. 50, št. 3/4, str. 24-30. [COBISS.SI-ID 7684636]

MULEJ, Matjaž, KAJZER, Štefan, ŽENKO, Zdenka, POTOČAN, Vojko. Bertalanffijška teorija sistemov kot podlaga za etiko soodvisnosti, nujno v inovativni družbi in globalnem gospodarstvu. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2003, letn. 49, št. 3/4, str. 196-215. [COBISS.SI-ID 7105308]

MULEJ, Matjaž, ŽENKO, Zdenka, REBERNIK, Miroslav, POTOČAN, Vojko, BUČAR, Maja. Dvovgeneracijski cikli in podjetništvo v Sloveniji. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2003, let. 49, št. 5/6, str. 436-453. [COBISS.SI-ID 14404582]

MOČNIK, Dijana. Zaupanje, Nashevo ravnovesje in zapornikova dilema. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2002, letn. 48, št. 3/4, str. 261-271. [COBISS.SI-ID 7469078]

TOMINC, Polona. Impact of the new road traffic safety law on the number of road accidents in Slovenia. *Promet*, ISSN 0353-5320. [Print ed.], vol. 14, no. 3, str. 117-121. <https://dk.um.si/IzpisGradiva.php?id=65989>. [COBISS.SI-ID 6456604], [SNIP, Scopus do 31. 8. 2017: št. citatov (TC): 2, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 1.00]

PUŠNIK, Ksenja. Market power versus efficiency - the theoretical concepts of welfare effects of mergers. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 2000, letn. 46, št. 4, str. 487-504. [COBISS.SI-ID 5292572]

AVSEC, Dejan, MULEJ, Matjaž. Pozornost do inovacij vseh tipov in vsega inovacijskega procesa v bančnih merilih poslovanja s komintenti. *Bančni vestnik : revija za denarništvo in bančništvo*, ISSN 0005-4631, jun. 1988, letn. 37, št. 6, str. 171-173. [COBISS.SI-ID 8787365]

AVSEC, Dejan, MULEJ, Matjaž. Funkcija banaka pri unapredjenju inovacija. *Vesnik : časopis za bankarstvo i privredna kretanja*, ISSN 0351-6245, maj 1988, letn. 32, št. 376, str. 33-35. [COBISS.SI-ID 8787109]

TOMINC, Polona. Poslovno planiranje in napovedovanje s programom Smart Forecasts 3.1. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 1996, let. 42, št. 1/2, str. 136-141. [COBISS.SI-ID 2815772]

TOMINC, Polona. Borzni indeks Ljubljanske borze vrednostnih papirjev: analiza glavnih komponent. *Bančni vestnik : revija za denarništvo in bančništvo*, ISSN 0005-4631, 44 (1995), 5 ; str. 29-32. [COBISS.SI-ID 7518980]

KNEZ-RIEDL, Jožica, GODINA, Viljenka. Odličnost malih in srednje velikih podjetij - nuja in izziv. *Naše gospodarstvo : revija za aktualna gospodarska vprašanja*, ISSN 0547-3101. [Tiskana izd.], 1995, 41, št. 5/6, str. 486-493. [COBISS.SI-ID 8208644]

FUJS, Ernest, MULEJ, Matjaž. 21 new attested products after five years of restructuring: Primat Maribor. *Public enterprise : quarterly journal*, ISSN 0351-3564, marec/junij 1994, 14, št. 1/2, str. 142-147. [COBISS.SI-ID 6546436]

1.16 Independent scientific component part or a chapter in a monograph

ŠIREC, Karin, MOČNIK, Dijana. Determinants of established entrepreneurs' innovative activity in Northern and Western Europe. V: MURA, Ladislav (ur.). *Entrepreneurship - development tendencies and empirical approach*. Rijeka: InTech. 2018, str. 93-112, ilustr. <https://cdn.intechopen.com/pdfs-wm/57750.pdf>, doi: 10.5772/intechopen.71843. [COBISS.SI-ID 12976924]

MULEJ, Matjaž, ŽENKO, Zdenka, MULEJ, Nastja. Dialectical systems theory as a way to handle complex systems. V: NEMICHE, Mohamed (ur.), ESSA AIDI, Mohamed (ur.). *Advances in complex societal, environmental and engineered systems*, (Nonlinear systems and complexity, ISSN 2195-9994, 18). Cham: Springer International Publishing. 2017, str. 145-158, doi: 10.1007/978-3-319-46164-9_7. [COBISS.SI-ID 12784668], [WoS do 15. 12. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

MULEJ, Matjaž, ŽENKO, Zdenka, ŠTRUKELJ, Tjaša. Sistemsko ravnanje s pomočjo strategije družbene odgovornosti. V: BUKOVEC, Boris (ur.). *Avtopoietska organizacija*. Novo mesto: Fakulteta za organizacijske študije. 2017, str. 91-107, tabele. [COBISS.SI-ID 2048429058]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž, ŠTRUKELJ, Tjaša. Vodenje podjetja in upravljanje vedenja, ki vodi k doseganju inovacij, temelji pa na znanju z vrednotami. V: ŠAROTAR ŽIŽEK, Simona (ur.), et al. *Družbeno odgovorno ravnanje s sodelavci vseh vrst in starosti*, (Zbirka Sodobni izzivi managementa človeških virov, knj. 2). Maribor: Inštitut za razvoj družbene odgovornosti - IRDO. 2017, str. 11-38. [COBISS.SI-ID 12802588]

AMBROŽIČ, Borut, MULEJ, Matjaž. Socialno gerontološki pogled na participacijo zaposlenih starejših pri delu in v družbi glede na družbeno odgovornost vplivnih ljudi in organizacij. V: ŠAROTAR ŽIŽEK, Simona (ur.), et al. *Družbeno odgovorno ravnanje s sodelavci vseh vrst in starosti*, (Zbirka Sodobni izzivi managementa človeških virov, knj. 2). Maribor: Inštitut za razvoj družbene odgovornosti - IRDO. 2017, str. 125-140. [COBISS.SI-ID 12803868]

VEINGERL ČIČ, Živa, MULEJ, Matjaž, ŠAROTAR ŽIŽEK, Simona. Zadostno in potrebno celovite metode za izboljšanje učinka sodelavcev. V: ŠAROTAR ŽIŽEK, Simona (ur.), et al. *Družbeno odgovorno ravnanje s sodelavci vseh vrst in starosti*, (Zbirka Sodobni izzivi managementa človeških virov, knj. 2). Maribor: Inštitut za razvoj družbene odgovornosti - IRDO. 2017, str. 141-165. [COBISS.SI-ID 12804124]

MULEJ, Matjaž, AMBROŽIČ, Borut. Družbena odgovornost in celovitost participacije kot sredstva HRM. V: ŠAROTAR ŽIŽEK, Simona (ur.), et al. *Družbeno odgovorno ravnanje s sodelavci vseh vrst in starosti*, (Zbirka Sodobni izzivi managementa človeških virov, knj. 2). Maribor: Inštitut za razvoj družbene odgovornosti - IRDO. 2017, str. 166-184. [COBISS.SI-ID 12804380]

RAŠIČ, Katja, MULEJ, Matjaž, ČANČER, Vesna. The system of indicators of economic growth for better quality of life : economic and social impacts. V: WILSON-FLORES, Olivia (ur.). *Economic crises : risk factors, management practices and social impacts*, (Economic issues, problems and perspectives). New York: Nova Science. cop. 2017, str. 81-109. https://www.novapublishers.com/catalog/product_info.php?products_id=60085&o. [COBISS.SI-ID 12685340], [Scopus do 15. 10. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

ŠEBJAN, Urban, TOMINC, Polona. Gender equality at decision-making positions in organizations. V: BIRDIE, Arvind K. (ur.). *Employees and employers in service organizations : emerging challenges and opportunities*. Oakville; Waretown: Apple Academic Press. 2017, str. 71-101. [COBISS.SI-ID 12771868]

REBERNIK, Miroslav, BRADAČ HOJNIK, Barbara. Entrepreneurship ecosystem and policy development in Slovenia. V: SAUKA, Arnis (ur.), CHEPURENKO, Alexander (ur.). *Entrepreneurship in transition economies : diversity, trends, and perspectives*, (Societies and political orders in transition, ISSN 2511-2201, ISSN 2511-221X). Cham: Springer. cop. 2017, str. 171-186, doi: 10.1007/978-3-319-57342-7_10. [COBISS.SI-ID 12812060]

MULEJ, Matjaž, HRAST, Anita, MULEJ, Nastja. Social responsibility : a precondition of requisite holism in corporate governance and strategic management. V: BELAK, Jernej (ur.), DUH, Mojca (ur.). *Ethics, social responsibility and innovation in corporate governance*. Newcastle upon Tyne: Cambridge Scholars Publishing. 2017, str. 27-46. [COBISS.SI-ID 12670748]

ŠTRUKELJ, Tjaša, MULEJ, Matjaž, STERNAD ZABUKOVŠEK, Simona. How enterprise values influence enterprise policy. V: BELAK, Jernej (ur.), DUH, Mojca (ur.). *Ethics, social responsibility and innovation in corporate governance*. Newcastle upon Tyne: Cambridge Scholars Publishing. 2017, str. 47-77. [COBISS.SI-ID 12671004]

MULEJ, Matjaž. Realization of the (dialectical) systems theory by social responsibility. V: KRALJ, Davorin (ur.). *Going green excellence : scientific monograph*, (Collection Environmental business excellence). 1st ed. Maribor: Alma Mater Europaea - Evropski center. 2016, str. 7-20. [COBISS.SI-ID 93012481]

MULEJ, Matjaž, ŠTRUKELJ, Tjaša. Inoviranje procesov z družbeno odgovornostjo organizacije. V: DEŽELAK, Zdenko (ur.), et al. *Izzivi sodobnega poslovanja 2017 : znanstvena monografija*. Maribor: Bio energija. 2017, str. 142-184, ilustr. [COBISS.SI-ID 12847644]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž, ČANČER, Vesna. Health-promoting leadership culture and its role in workplace health promotion. V: WANG, Mu (ur.), KORHAN, Orhan (ur.). *Occupational health*. Rijeka: InTech. 2017, str. 77-99. <http://www.intechopen.com/books/occupational-health/health-promoting-leadership-culture-and-its-role-in-workplace-health-promotion>, doi: 10.5772/65672. [COBISS.SI-ID 12696860], [WoS do 10. 11. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

BRADAČ HOJNIK, Barbara. Primerjava kreativnih in kulturnih industrij v Ljubljani in Mariboru ter njihov doprinos k trajnostnemu razvoju. V: NARED, Janez (ur.), POLAJNAR HORVAT, Katarina (ur.), RAZPOTNIK VISKOVIĆ, Nika (ur.). *Prostor, regija, razvoj*, (Regionalni razvoj, ISSN 1855-5780, 6). 1. izd. Ljubljana: Založba ZRC. 2017, str. 109-122, graf. prikazi, tabele. [COBISS.SI-ID 42158381]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž. Psychological well-being of individuals as employees and a paradigm in the future economy and society. V: VILAS BOAS, Ana Alice (ur.). *Quality of life and quality of working life*. Rijeka: InTech. 2017, str. [225]-241. <https://cdn.intechopen.com/pdfs-wm/55004.pdf>, doi: 10.5772/67927. [COBISS.SI-ID 12798236]

KOREZ-VIDE, Romana, TOMINC, Polona. Competitiveness, entrepreneurship and economic growth. V: TRĄPCZYŃSKI, Piotr (ur.), PUŚLECKI, Łukasz (ur.), JAROSIŃSKI, Mirosław (ur.). *Competitiveness of CEE economies and businesses : multi-disciplinary perspectives on challenges and opportunities*. Cham: Springer. 2016, str. 25-44, doi: 10.1007/978-3-319-39654-5_2. [COBISS.SI-ID 12555292], [Scopus do 6. 5. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

ŠAROTAR ŽIŽEK, Simona, VEINGERL ČIČ, Živa, MULEJ, Matjaž. Obravnavanje starejših v slovenskih organizacijah in stili vodenja. V: ŠAROTAR ŽIŽEK, Simona (ur.), et al. *Napredno in odgovorno sodelovanje na področju ravnanja z ljudmi pri delu*, (Zbirka Sodobni izzivi managementa človeških virov, knj. 1). Maribor: IRDO - Inštitut za razvoj družbene odgovornosti. 2016, str. 36-57. [COBISS.SI-ID 12805148]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž, VEINGERL ČIČ, Živa. Metode povečevanja psihološkega dobrega počutja sodelavcev, družbene odgovornosti, inovativnosti in uspeha, npr. v turizmu. V: ŠAROTAR ŽIŽEK, Simona (ur.), et al. *Napredno in odgovorno sodelovanje na področju ravnanja z ljudmi pri delu*, (Zbirka Sodobni izzivi managementa človeških virov, knj. 1). Maribor: IRDO - Inštitut za razvoj družbene odgovornosti. 2016, str. 58-80. [COBISS.SI-ID 12805404]

MULEJ, Matjaž, MERHAR, Viljem, ŽAKELJ, Viktor. O prihodnost - preživetje brez ekosocializma in družbene odgovornosti???. V: MULEJ, Matjaž (ur.), MERHAR, Viljem (ur.), ŽAKELJ, Viktor (ur.). *Nehajte sovražiti svoje otroke in vnuke. Knj. 1, Družbenoekonomski okvir in osebne lastnosti družbeno odgovornih*, (Knjižna zbirka Frontier, 096), (Zbirka Družbena odgovornost). Maribor: Kulturni center: IRDO, Inštitut za razvoj družbene odgovornosti. 2016, str. 11-23. [COBISS.SI-ID 12491292]

MULEJ, Matjaž, ŽENKO, Zdenka, HRAST, Anita, MERHAR, Viljem. Prihodnost ekonomije v obdobju izobilja in krize izobilja brez zdravih ambicij. V: MULEJ, Matjaž (ur.), MERHAR, Viljem (ur.), ŽAKELJ, Viktor (ur.). *Nehajte sovražiti svoje otroke in vnuke. Knj. 1, Družbenoekonomski okvir in osebne lastnosti družbeno odgovornih*, (Knjižna zbirka Frontier, 096), (Zbirka Družbena odgovornost). Maribor: Kulturni center: IRDO, Inštitut za razvoj družbene odgovornosti. 2016, str. 35-85. [COBISS.SI-ID 12491548]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž. Zadostna in potrebna (osebna) celovitost posameznika (ZIPOC). V: MULEJ, Matjaž (ur.), MERHAR, Viljem (ur.), ŽAKELJ, Viktor (ur.). *Nehajte sovražiti svoje otroke in vnuke. Knj. 1, Družbenoekonomski okvir in osebne lastnosti družbeno odgovornih*, (Knjižna zbirka Frontier, 096), (Zbirka Družbena odgovornost). Maribor: Kulturni center: IRDO, Inštitut za razvoj družbene odgovornosti. 2016, str. 86-140. [COBISS.SI-ID 12491804]

MULEJ, Matjaž. Pravi ljudje na pravih mestih - podlaga za vizionarske organizacije kot prihodnost ekonomije. V: MULEJ, Matjaž (ur.), MERHAR, Viljem (ur.), ŽAKELJ, Viktor (ur.). *Nehajte sovražiti svoje otroke in vnuke. Knj. 1, Družbenoekonomski okvir in osebne lastnosti družbeno odgovornih*, (Knjižna zbirka Frontier, 096), (Zbirka Družbena odgovornost). Maribor: Kulturni center: IRDO, Inštitut za razvoj družbene odgovornosti. 2016, str. 187-231. [COBISS.SI-ID 12492316]

MULEJ, Matjaž, EĆIMOVIĆ, Timi, HRAST, Anita, ŽENKO, Zdenka. Trajnostna bodočnost, ne le trajnostni razvoj s pomočjo systemskega ravnanja v obliki družbene odgovornosti. V: MULEJ, Matjaž (ur.), HRAST, Anita (ur.). *Nehajte sovražiti svoje otroke in vnuke. Knj. 2, Informacije za odločanje družbeno odgovornih*, (Knjižna zbirka Frontier, 097), (Zbirka Družbena odgovornost). Maribor: Kulturni center: IRDO, Inštitut za razvoj družbene odgovornosti. 2016, str. 22-35. [COBISS.SI-ID 12478492]

ZORE, Mira, MULEJ, Matjaž. Praktični izzivi na poti do družbene odgovornosti (organizacij). V: MULEJ, Matjaž (ur.), HRAST, Anita (ur.). *Nehajte sovražiti svoje otroke in vnuke. Knj. 2, Informacije za odločanje družbeno odgovornih*, (Knjižna zbirka Frontier, 097), (Zbirka Družbena odgovornost). Maribor: Kulturni center: IRDO, Inštitut za razvoj družbene odgovornosti. 2016, str. 65-86. [COBISS.SI-ID 12478236]

MULEJ, Matjaž. Temeljna načela družbene odgovornosti (organizacij). V: MULEJ, Matjaž (ur.), ČAGRAN, Branka (ur.). *Nehajte sovražiti svoje otroke in vnuke. Knj. 3, Uveljavljanje družbene odgovornosti v vzgoji in izobraževanju*, (Knjižna zbirka Frontier, 098), (Zbirka Družbena odgovornost). Maribor: Kulturni center: IRDO, Inštitut za razvoj družbene odgovornosti. 2016, str. 13-31. [COBISS.SI-ID 12495132]

MULEJ, Matjaž, HRAST, Anita, ČAGRAN, Branka. Vzgoja za ustvarjalno sodelovanje - del družbene odgovornosti šolstva. V: MULEJ, Matjaž (ur.), ČAGRAN, Branka (ur.). *Nehajte sovražiti svoje otroke in vnuke. Knj. 3, Uveljavljanje družbene odgovornosti v vzgoji in izobraževanju*, (Knjižna zbirka Frontier, 098), (Zbirka Družbena odgovornost). Maribor: Kulturni center: IRDO, Inštitut za razvoj družbene odgovornosti. 2016, str. 73-103. [COBISS.SI-ID 12495388]

MULEJ, Matjaž, ŠAROTAR ŽIŽEK, Simona. Teze za razpravo : za katere vrednote naj vzgajamo in izobražujemo. V: MULEJ, Matjaž (ur.), ČAGRAN, Branka (ur.). *Nehajte sovražiti svoje otroke in vnuke. Knj. 3, Uveljavljanje družbene odgovornosti v vzgoji in izobraževanju*, (Knjižna zbirka Frontier, 098), (Zbirka Družbena odgovornost). Maribor: Kulturni center: IRDO, Inštitut za razvoj družbene odgovornosti. 2016, str. 104-128. [COBISS.SI-ID 12495900]

MULEJ, Matjaž, PUHALJ, Stojan, SITAR, Peter. Družbena odgovornost v športu. V: MULEJ, Matjaž (ur.), ČAGRAN, Branka (ur.). *Nehajte sovražiti svoje otroke in vnuke. Knj. 3, Uveljavljanje družbene odgovornosti v vzgoji in izobraževanju*, (Knjižna zbirka Frontier, 098), (Zbirka Družbena odgovornost). Maribor: Kulturni center: IRDO, Inštitut za razvoj družbene odgovornosti. 2016, str. 129-143. [COBISS.SI-ID 22519560]

MULEJ, Matjaž, ŠAROTAR ŽIŽEK, Simona. Razlike vrednot in uporabnost inteligence za premoščanje le-teh. V: HORVAT, Tadeja (ur.), et al. *Novodobni izzivi družbe: znanstvena monografija*. Rakičan: RIS Dvorec. 2016, str. 110-121, ilustr. http://www.ris-dr.si/data/attachment/b70158055ed1d6180d8028abe679b0c239c372c5/1473060398Znanstvena_monografija_NOVODOBNI_IZZIVI_DRU_BE.pdf. [COBISS.SI-ID 12796700]

ŠIREC, Karin, MOČNIK, Dijana. Gender-based determinants of innovative activity in Southeast European established entrepreneurs. V: RAMADANI, Veland (ur.), GÉRGURI-RASHITI, Shqipe (ur.), FAYOLLE, Alain (ur.). *Female entrepreneurship in transition economies: trends and challenges*, (Business & Management Collection). Houndsmill; New York: Palgrave Macmillan. 2015, str. 67-86. <http://www.palgraveconnect.com/pc/doi/finder/10.1057/9781137444516.0014?focus=true>. [COBISS.SI-ID 18662166]

ŠEBJAN, Urban, BOBEK, Samo, TOMINC, Polona. Critical factors within organizations influencing effective use of CRM solutions. V: CHATTERJEE, Samir Ranjan (ur.). *Managing in recovering markets*, (Springer Proceedings in Business and Economics, ISSN 2198-7246). New Delhi [etc.]: Springer. 2015, str. 223-233, doi: 10.1007/978-81-322-1979-8_17. [COBISS.SI-ID 11869724]

ŠAROTAR ŽIŽEK, Simona, TREVEN, Sonja, MULEJ, Matjaž. Teoretični in konceptualni model psihičnega dobrega počutja na temelju zadostne in potrebne osebne celovitosti zaposlenih kot vira za krepitev uspešnosti organizacije. V: ŠAROTAR ŽIŽEK, Simona (ur.), et al. *Model psihičnega dobrega počutja zaposlenih na temelju zadostne in potrebne osebne celovitosti za krepitev uspešnosti*, (Zbirka Well-being). Maribor: IRDO, Inštitut za razvoj družbene odgovornosti. 2015, str. 91-108. [COBISS.SI-ID 11928348]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž. Opredelitev celovitosti. V: ŠAROTAR ŽIŽEK, Simona (ur.), et al. *Osebna celovitost človeka*, (Zbirka Well-being). Maribor: IRDO, Inštitut za razvoj družbene odgovornosti. 2015, str. 2-6. [COBISS.SI-ID 11915292]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž. Zgodovina filozofije celovitosti in zgodovinski razvoj celovitosti. V: ŠAROTAR ŽIŽEK, Simona (ur.), et al. *Osebna celovitost človeka*, (Zbirka Well-being). Maribor: IRDO, Inštitut za razvoj družbene odgovornosti. 2015, str. 6-9. [COBISS.SI-ID 11915548]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž. Znanost, celovitost, navidezna celovitost, zadostna in potrebna celovitost. V: ŠAROTAR ŽIŽEK, Simona (ur.), et al. *Osebna celovitost človeka*, (Zbirka Well-being). Maribor: IRDO, Inštitut za razvoj družbene odgovornosti. 2015, str. 9-18. [COBISS.SI-ID 11916316]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž. Celovitost in sistemsko razmišljanje. V: ŠAROTAR ŽIŽEK, Simona (ur.), et al. *Osebna celovitost človeka*, (Zbirka Well-being). Maribor: IRDO, Inštitut za razvoj družbene odgovornosti. 2015, str. 19-23. [COBISS.SI-ID 11916572]

MULEJ, Matjaž. Temeljna načela in ovire družbene odgovornosti (podjetij) kot neformalne poti do zadostne in potrebne osebne celovitosti. V: ŠAROTAR ŽIŽEK, Simona (ur.), et al. *Osebna celovitost človeka*, (Zbirka Well-being). Maribor: IRDO, Inštitut za razvoj družbene odgovornosti. 2015, str. 23-48. [COBISS.SI-ID 11916828]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž. Sistem, sistemsko razmišljanje, teorija sistemov in dialektična teorija sistemov. V: ŠAROTAR ŽIŽEK, Simona (ur.), et al. *Osebna celovitost človeka*, (Zbirka Well-being). Maribor: IRDO, Inštitut za razvoj družbene odgovornosti. 2015, str. 50-66. [COBISS.SI-ID 11917340]

ŠAROTAR ŽIŽEK, Simona, TREVEN, Sonja, MULEJ, Matjaž. Zavest kot sidrišče zadostne in potrebne osebne celovitosti kot tudi zaposlenega/sodelavca - podlaga za merjenje zadostne in potrebne celovitosti njegovega dobrega počutja. V: ŠAROTAR ŽIŽEK, Simona (ur.), et al. *Osebna celovitost človeka*, (Zbirka Well-being). Maribor: IRDO, Inštitut za razvoj družbene odgovornosti. 2015, str. 79-88. [COBISS.SI-ID 11918364]

ŠAROTAR ŽIŽEK, Simona, TREVEN, Sonja, MULEJ, Matjaž. Celovitost in zavest. V: ŠAROTAR ŽIŽEK, Simona (ur.), et al. *Osebna celovitost človeka*, (Zbirka Well-being). Maribor: IRDO, Inštitut za razvoj družbene odgovornosti. 2015, str. 88-97. [COBISS.SI-ID 11918876]

ŠAROTAR ŽIŽEK, Simona, TREVEN, Sonja, MULEJ, Matjaž. Psihično dobro počutje kot eden izmed rezultatov zadostne in potrebne osebne celovitosti. V: ŠAROTAR ŽIŽEK, Simona (ur.), et al. *Psihično dobro počutje zaposlenih*, (Zbirka Well-being). Maribor: IRDO. 2015, str. 90-91. [COBISS.SI-ID 11930652]

IVANUŠA, Teodora, MULEJ, Matjaž, PODBREGAR, Iztok, ROSI, Bojan. Requisite holism of behavior when facing complexity of pandemic diseases - new trends in healthcare information system (HIS). V: MULEJ, Matjaž (ur.), DYCK, Robert G. (ur.). *Social responsibility - range of perspectives per topics and countries*, (Social responsibility beyond neoliberalism and charity, ISSN 2352-3336, Vol. 4). [S. l.]: Bentham eBooks. 2015, str. 105-161. <http://ebooks.benthamscience.com/book/9781681080406/chapter/130789/>. [COBISS.SI-ID 512672573]

MULEJ, Matjaž, MEDVEDEVA, Tat'iana A., POTOČAN, Vojko, ŽENKO, Zdenka, ŠAROTAR ŽIŽEK, Simona, HRAST, Anita, ŠTRUKELJ, Tjaša. Innovation of managerial attributes to incorporate a more systemic world-view. V: MULEJ, Matjaž (ur.), DYCK, Robert G. (ur.). *Social responsibility - range of perspectives per topics and countries*, (Social responsibility beyond neoliberalism and charity, ISSN 2352-3336, Vol. 4). [S. l.]: Bentham eBooks. 2015, str. 163-195. <http://ebooks.benthamscience.com/book/9781681080406/chapter/130790/>, doi: 10.2174/9781681080406115040009. [COBISS.SI-ID 11980316]

ŠAROTAR ŽIŽEK, Simona, TREVEN, Sonja, MULEJ, Matjaž. Pomen človekove osebnosti in njegovega osebnostnega razvoja za zadostno in potrebno osebno celovitost človeka kot zaposlenega. V: ŠAROTAR ŽIŽEK, Simona (ur.), et al. *Zagotavljanje zadostne*

in potrebne osebne celovitosti človeka, (Zbirka Well-being). Maribor: IRDO, Inštitut za razvoj družbene odgovornosti. 2015, str. 53-55. [COBISS.SI-ID 11920924]

ŠAROTAR ŽIŽEK, Simona, TREVEN, Sonja, MULEJ, Matjaž. Drugi pogoji za zagotavljanje zadostne in potrebne osebne celovitosti ljudi. V: ŠAROTAR ŽIŽEK, Simona (ur.), et al. *Zagotavljanje zadostne in potrebne osebne celovitosti človeka*, (Zbirka Well-being). Maribor: IRDO, Inštitut za razvoj družbene odgovornosti. 2015, str. 89-92. [COBISS.SI-ID 11921436]

ŠAROTAR ŽIŽEK, Simona, TREVEN, Sonja, MULEJ, Matjaž. Psihično dobro počutje kot eden izmed rezultatov zadostne in potrebne osebne celovitosti. V: ŠAROTAR ŽIŽEK, Simona (ur.), et al. *Zagotavljanje zadostne in potrebne osebne celovitosti človeka*, (Zbirka Well-being). Maribor: IRDO, Inštitut za razvoj družbene odgovornosti. 2015, str. 92-93. [COBISS.SI-ID 11921692]

POTOČAN, Vojko, MULEJ, Matjaž. Efficiency theories : the state-of-the-art. V: CRUZ-CUNHA, Maria Manuela (ur.), MOREIRA, Fernando (ur.), VARAJAO, Joao (ur.). *Handbook of research on enterprise 2.0 : technological, social, and organizational dimensions*, (Advances in business information systems and analytics, ISSN 2327-3275). Hershey; New York: Business Science Reference: IGI Global. cop. 2014, str. 124-146. [COBISS.SI-ID 11497756]

REBERNIK, Miroslav. Requisite holism, isolating mechanisms and entrepreneurship. V: IVANUŠA, Teodora, et al. *Matjaž Mulej in 40 let njegove dialektične teorije sistemov : enostranskost in celovitost : znanstvena monografija*. Ljubljana: Zavod za varnostne strategije. 2014, str. 43-70. [COBISS.SI-ID 11874332]

ŽENKO, Zdenka. Comparative analysis of management models in Japan, United States of America, and Western Europe. V: IVANUŠA, Teodora, et al. *Matjaž Mulej in 40 let njegove dialektične teorije sistemov : enostranskost in celovitost : znanstvena monografija*. Ljubljana: Zavod za varnostne strategije. 2014, str. 153-176. [COBISS.SI-ID 11875100]

MULEJ, Matjaž, FATUR, Peter, KNEZ-RIEDL, Jožica, KOKOL, Andrej, POTOČAN, Vojko, PROSENAL, Damijan, ŠKAFAR, Branko, ŽENKO, Zdenka. Providing and measuring efficiency of inovation : a complex issue requiring requisite holism. V: PARRA-LUNA, Francisco (ur.), KASPAROVA, Eva (ur.), FRENCK, Micael (ur.). *Measuring Organisational Efficiency*. London: College Publications. 2014, str. 79-139. <http://www.collegepublications.co.uk/systems/?00004>. [COBISS.SI-ID 294475]

MULEJ, Matjaž, DYCK, Robert G. Radical innovation of values, culture, ethics, and norms required for social responsibility. V: MULEJ, Matjaž (ur.), DYCK, Robert G. (ur.). *Social responsibility - a non-technological innovation process*, (Social responsibility beyond neoliberalism and charity, ISSN 2352-3336, Vol. 1). [S. l.]: Bentham e-Books. 2014, str. 3-14. <http://www.eurekaselect.com/121110/chapter/radical-innovation-of-values%2C-culture%2C-ethics%2C-and-norms-required-for-social-responsibilit>, doi: 10.2174/9781608058747114010005. [COBISS.SI-ID 11775004]

MULEJ, Matjaž, HRAST, Anita. Human and organizational social responsibility. V: MULEJ, Matjaž (ur.), DYCK, Robert G. (ur.). *Social responsibility - a non-technological innovation process*, (Social responsibility beyond neoliberalism and charity, ISSN 2352-3336, Vol. 1). [S. 1.]: Bentham e-Books. 2014, str. 15-89. <http://www.eurekaselect.com/121111/chapter/human-and-organizational-social-responsibilit>, doi: 10.2174/9781608058747114010006. [COBISS.SI-ID 11775260]

MULEJ, Matjaž, DYCK, Robert G. Cultural innovation for social responsibility stimulated by the global occupy movement and the European Union : introduction. V: MULEJ, Matjaž (ur.), DYCK, Robert G. (ur.). *Social responsibility - a non-technological innovation process*, (Social responsibility beyond neoliberalism and charity, ISSN 2352-3336, Vol. 1). [S. 1.]: Bentham e-Books. 2014, str. VIII-XXV. <http://www.eurekaselect.com/121109>, <https://ebooks.benthamsience.com/book/9781608058747/chapter/121109/>. [COBISS.SI-ID 12922396]

MULEJ, Matjaž, MULEJ, Nastja. Support to ethics of interdependence and holism by Edward de Bono's methods of thinking. V: MULEJ, Matjaž (ur.), DYCK, Robert G. (ur.). *Social responsibility - methods, dilemmas and hopes*, (Social responsibility beyond neoliberalism and charity, ISSN 2352-3336, Vol. 3). [S. 1.]: Bentham eBooks. 2014, str. 3-27. <http://www.eurekaselect.com/123219/chapter/support-to-ethics-of-interdependence-and-holism-by-edward-de-bono%E2%80%99s-methods-of-thinkin>, doi: 10.2174/9781608059068114030004. [COBISS.SI-ID 11775772]

ČANČER, Vesna, MULEJ, Matjaž. Capability of new systems theories to help escape the crisis. V: MULEJ, Matjaž (ur.), DYCK, Robert G. (ur.). *Social responsibility - methods, dilemmas and hopes*, (Social responsibility beyond neoliberalism and charity, ISSN 2352-3336, Vol. 3). [S. 1.]: Bentham eBooks. 2014, str. 28-46. <http://www.eurekaselect.com/123220/chapter/capability-of-new-systems-theories-to-help-escape-the-crisi>, doi: 10.2174/9781608059068114030005. [COBISS.SI-ID 11776028]

MULEJ, Matjaž, TURKIEWICZ, Kazimierz, TURKIEWICZ, Domenika B. The syntax of autocratic systems and the cybernetic alternative of systems based on social responsibility. V: MULEJ, Matjaž (ur.), DYCK, Robert G. (ur.). *Social responsibility - methods, dilemmas and hopes*, (Social responsibility beyond neoliberalism and charity, ISSN 2352-3336, Vol. 3). [S. 1.]: Bentham eBooks. 2014, str. 79-95. <http://www.eurekaselect.com/123224/chapter/the-syntax-of-autocratic-systems-and-the-cybernetic-alternative-of-systems-based-on-social-responsibilit>, doi: 10.2174/9781608059068114030008. [COBISS.SI-ID 11776284]

ŠAROTAR ŽIŽEK, Simona, ŽENKO, Zdenka, TREVEN, Sonja. Requisite personal holism as a basis of social responsibility. V: MULEJ, Matjaž (ur.), DYCK, Robert G. (ur.). *Social responsibility - methods, dilemmas and hopes*, (Social responsibility beyond neoliberalism and charity, ISSN 2352-3336, Vol. 3). [S. 1.]: Bentham eBooks. 2014, str. 239-256. <http://www.eurekaselect.com/123273/chapter/requisite-personal-holism-as-a-basis-of-social-responsibilit>, doi: 10.2174/9781608059068114030015. [COBISS.SI-ID 11776796]

ŠIREC, Karin, MOČNIK, Dijana. Gender-based differences in the performance of Slovenian high-growth companies. V: LEWIS, Kate V. (ur.), et al. *Women's entrepreneurship in the 21st century : an international multi-level research analysis*. Cheltenham (UK); Northampton (Mass.): E. Elgar. cop. 2014, str. 165-185. [COBISS.SI-ID 11880476], [Scopus do 8. 4. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

ŠIREC, Karin, CRNOGAJ, Katja. Gender perspectives of SMEs networking activities : evidence from Slovenia. V: RAMADANI, Veland (ur.), SCHNEIDER, Robert C. (ur.). *Entrepreneurship in the Balkans : diversity, support and prospects*. Berlin; Heidelberg: Springer. cop. 2013, str. 117-132. [COBISS.SI-ID 11482908], [Scopus do 4. 2. 2016: št. citatov (TC): 1, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

IVANUŠA, Teodora, MULEJ, Matjaž, PODBREGAR, Iztok, ROSI, Bojan. Toward requisite holism of content of the term critical infrastructure. V: KEKOVIĆ, Zoran (ur.), et al. *National critical infrastructure protection regional perspective*. Beograd: University of Belgrade, Faculty of Security Studies; Ljubljana: Institute for Corporative Security Studies. 2013, str. [15]-26, graf. prikazi. [COBISS.SI-ID 2793962]

MULEJ, Matjaž. Holistični model dobrega počutja, temelječ na inovativnosti in družbeni odgovornosti. V: ŠAROTAR ŽIŽEK, Simona (ur.), et al. *Premagovanje stresa kot sredstvo za zagotavljanje dobrega počutja : znanstvena monografija projekta Chance 4 change*. Maribor: Ekonomsko-poslovna fakulteta. 2013, str. 193-215. [COBISS.SI-ID 11459356]

POTOČAN, Vojko, NEDELKO, Zlatko, MULEJ, Matjaž. Evolving from institutional transition to socially responsible development. V: GASPARSKI, Wojciech (ur.), ROK, Boleslaw (ur.). *Transition redesigned : a practical philosophy perspective*, (Praxiology, v. 20). New Brunswick: Transaction Publishers. cop. 2013, str. 149-170. [COBISS.SI-ID 11339804]

ŠIREC, Karin, TOMINC, Polona, REBERNIK, Miroslav. Innovation driven growth aspirations of Slovenian early-stage entrepreneurs. V: DABIĆ, Marina, et al. *Entrepreneurship and innovation*. Maribor: Faculty of Economics and Business; Zagreb: Faculty of Economics and Business. 2012, str. 143-158. [COBISS.SI-ID 11093276]

ŠTRUKELJ, Tjaša, MULEJ, Matjaž, STERNAD ZABUKOVŠEK, Simona. Firm vision and policy innovations toward social responsibility for firm's long-term survival. V: TIPURIĆ, Darko (ur.), DABIĆ, Marina (ur.). *Management, governance, and entrepreneurship : new perspectives and challenges*. Darwen: Access Press. 2012, str. 200-216. [COBISS.SI-ID 11270428]

ŠIREC, Karin, REBERNIK, Miroslav, BRADAČ HOJNIK, Barbara. Managing tacit knowledge in strategic outsourcing. V: HOU, Huei-Tse (ur.). *New research on knowledge management models and methods*. Rijeka: InTech. 2012, str. 111-128. [COBISS.SI-ID 11068700]

POTOČAN, Vojko, NEDELKO, Zlatko, MULEJ, Matjaž. What is New with Organization of E-Business : Organizational Viewpoint of the Relationships in E-Business. V: CRUZ-CUNHA, Maria Manuela (ur.), VARAJAO, Joao (ur.). *E-business issues, challenges and opportunities for SMEs : driving competitiveness*. Hershey; New York: Business Science Reference: IGI Global. 2011, str. 131-148. [COBISS.SI-ID 10556956], [Scopus do 23. 9. 2017: št. citatov (TC): 9, čistih citatov (CI): 9, čistih citatov na avtorja (CIAu): 3.00]

ŠAROTAR ŽIŽEK, Simona, MULEJ, Matjaž, TREVEN, Sonja. Well-being and e-business as an influential innovation. V: CRUZ-CUNHA, Maria Manuela (ur.), VARAJAO, Joao (ur.). *E-business managerial aspects, solutions and case studies*, (Premier reference source). Hershey, PA: Business Science Reference: IGI Global. cop. 2011, str. 113-135, doi: 10.4018/978-1-60960-463-9.ch007. [COBISS.SI-ID 10719004], [Scopus do 18. 5. 2014: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

POTOČAN, Vojko, MULEJ, Matjaž. Crucial Consequences of Un-Holistic Business Information. V: CRUZ-CUNHA, Maria Manuela (ur.), VARAJAO, Joao (ur.). *Enterprise information systems design, implementation and management : organizational applications*, (Premier reference source). Hershey; New York: Business Science Reference: IGI Global. cop. 2011, str. 357-370. [COBISS.SI-ID 10350364], [WoS do 9. 4. 2017: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

REBERNIK, Miroslav, BRADAČ HOJNIK, Barbara. From making the state to institutionalizing entrepreneurship policy in Slovenia. V: WELTER, Friederike (ur.), SMALLBONE, David (ur.). *Handbook of research on entrepreneurship policies in Central and Eastern Europe*. Cheltenham; Northampton: E. Elgar. cop. 2011, str. 141-165. [COBISS.SI-ID 10767388], [WoS do 10. 4. 2017: št. citatov (TC): 2, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 1.00, Scopus do 31. 8. 2017: št. citatov (TC): 1, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

MULEJ, Matjaž, REBERNIK, Miroslav. Modelling the innovative new venturing process in terms of dialectical systemic thinking. V: HINDLE, Kevin (ur.), KLYVER, Kim (ur.). *Handbook of research on new venture creation*. Cheltenham; Northampton: Edward Elgar. cop. 2011, str. 130-144. [COBISS.SI-ID 10616348], [WoS do 10. 4. 2017: št. citatov (TC): 1, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 7. 5. 2014: št. citatov (TC): 1, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

POTOČAN, Vojko, MULEJ, Matjaž. Socially Responsible Ethics of Enterprise. V: O'SULLIVAN, Grażyna (ur.), TORUŃSKI, Janusz (ur.), WYRĘBEK, Henryk (ur.). *Corporate social responsibility and ethical aspects of business*. Warsaw: Studio Emka. 2010, str. 80-[120]. [COBISS.SI-ID 10392348]

KOREZ-VIDE, Romana, TOMINC, Polona, LOGOŽAR, Klavdij. Impact of trade logistics performance costs on intra-EU trade : empirical evidence from the enlarged EU. V: KANDŽIJA, Vinko (ur.), KUMAR, Andrej (ur.). *Economic integration, competition and cooperation = Intégrations économiques, concurrence et coopération : research monograph*. 1st ed. Rijeka: Faculty of Economics. 2010, str. 167-180. [COBISS.SI-ID 10447644]

MULEJ, Matjaž, POTOČAN, Vojko, ŽENKO, Zdenka. Preconditions for requisite holism of information bases for the invention-innovation process management. V: *Social, managerial, and organizational dimensions of enterprise information systems*, (Premier reference source). Hershey (PA); New York: Business Science Reference: IGI Global. cop. 2010, str. 400-414. [COBISS.SI-ID 9998364]

ŠIREC, Karin, REBERNIK, Miroslav. Razkoraki med slovenskim in evropskim podjetništvom. V: ŠIREC, Karin (ur.), et al. *Vrzeli slovenskega podjetniškega okolja : slovenski podjetniški observatorij 2009/10*, (Slovenski podjetniški observatorij, ISSN 1854-8040). Maribor: Ekonomsko-poslovna fakulteta. 2010, str. 7-15. [COBISS.SI-ID 10381084]

MOČNIK, Dijana. Temeljne značilnosti slovenskega podjetništva v primerjavi z evropskim. V: ŠIREC, Karin (ur.), et al. *Vrzeli slovenskega podjetniškega okolja : slovenski podjetniški observatorij 2009/10*, (Slovenski podjetniški observatorij, ISSN 1854-8040). Maribor: Ekonomsko-poslovna fakulteta. 2010, str. 17-44. [COBISS.SI-ID 10381340]

ŠIREC, Karin, CRNOGAJ, Katja. Slovenske gazele in njihov družbeno-ekonomski pomen. V: ŠIREC, Karin (ur.), et al. *Vrzeli slovenskega podjetniškega okolja : slovenski podjetniški observatorij 2009/10*, (Slovenski podjetniški observatorij, ISSN 1854-8040). Maribor: Ekonomsko-poslovna fakulteta. 2010, str. 45-60. [COBISS.SI-ID 10374172]

BRADAČ HOJNIK, Barbara, REBERNIK, Miroslav. Sodobna javna uprava za manj ovir MSP. V: ŠIREC, Karin (ur.), et al. *Vrzeli slovenskega podjetniškega okolja : slovenski podjetniški observatorij 2009/10*, (Slovenski podjetniški observatorij, ISSN 1854-8040). Maribor: Ekonomsko-poslovna fakulteta. 2010, str. 83-96. [COBISS.SI-ID 10381852]

RUS, Matej. Otežen dostop do virov financiranja v času krize. V: ŠIREC, Karin (ur.), et al. *Vrzeli slovenskega podjetniškega okolja : slovenski podjetniški observatorij 2009/10*, (Slovenski podjetniški observatorij, ISSN 1854-8040). Maribor: Ekonomsko-poslovna fakulteta. 2010, str. 97-112. [COBISS.SI-ID 10382108]

KOREZ-VIDE, Romana, TOMINC, Polona. Izzivi Slovenije na področju izkoriščanja priložnosti enotnega trga Evropske unije. V: ŠIREC, Karin (ur.), et al. *Vrzeli slovenskega podjetniškega okolja : slovenski podjetniški observatorij 2009/10*, (Slovenski podjetniški observatorij, ISSN 1854-8040). Maribor: Ekonomsko-poslovna fakulteta. 2010, str. 113-129. [COBISS.SI-ID 10382364]

KNEZ-RIEDL, Jožica. Energetska učinkovitost slovenskih MSP. V: ŠIREC, Karin (ur.), et al. *Vrzeli slovenskega podjetniškega okolja : slovenski podjetniški observatorij 2009/10*, (Slovenski podjetniški observatorij, ISSN 1854-8040). Maribor: Ekonomsko-poslovna fakulteta. 2010, str. 149-166. [COBISS.SI-ID 10382876]

STAMENČIĆ, Zoran, ŠIREC, Karin. Internacionalizacija MSP za dvig konkurenčnosti slovenskega gospodarstva. V: ŠIREC, Karin (ur.), et al. *Vrzeli slovenskega podjetniškega okolja : slovenski podjetniški observatorij 2009/10*, (Slovenski podjetniški observatorij, ISSN

1854-8040). Maribor: Ekonomsko-poslovna fakulteta. 2010, str. 167-185. [COBISS.SI-ID 10383132]

ŠIREC, Karin, TOMINC, Polona, REBERNIK, Miroslav. Gender differences in the growth aspirations and technology orientation of Slovenian entrepreneurs. V: BRUSH, Candida G. (ur.). *Women entrepreneurs and the global environment for growth : a research perspective*. Cheltenham; Northampton: Edward Elgar. cop. 2010, str. 323-343. [COBISS.SI-ID 10663452], [Scopus do 31. 8. 2017: št. citatov (TC): 3, čistih citatov (CI): 2, čistih citatov na avtorja (CIAu): 2.00]

RUS, Matej, REBERNIK, Miroslav. Slovenian enterprises in 2007. V: ŠIREC, Karin (ur.), et al. *Dynamics of Slovenian entrepreneurship : Slovenian entrepreneurship observatory 2008*, (Slovenian entrepreneurship observatory, ISSN 1854-8040). Maribor: Faculty of Economics and Business. 2009, str. 11-25. [COBISS.SI-ID 9798684]

MOČNIK, Dijana. Structural business statistics of non-financial business economy for the EU-27 and Slovenia. V: ŠIREC, Karin (ur.), et al. *Dynamics of Slovenian entrepreneurship : Slovenian entrepreneurship observatory 2008*, (Slovenian entrepreneurship observatory, ISSN 1854-8040). Maribor: Faculty of Economics and Business. 2009, str. 27-46. [COBISS.SI-ID 9799196]

MOČNIK, Dijana. The impact of Slovenian entries on economic performance. V: ŠIREC, Karin (ur.), et al. *Dynamics of Slovenian entrepreneurship : Slovenian entrepreneurship observatory 2008*, (Slovenian entrepreneurship observatory, ISSN 1854-8040). Maribor: Faculty of Economics and Business. 2009, str. 47-62. [COBISS.SI-ID 9799452]

PUŠNIK, Ksenja, TAJNIKAR, Maks. The impact of prices and efficiency on firm performance : the case of tourism firms in Slovenia. V: ŠIREC, Karin (ur.), et al. *Dynamics of Slovenian entrepreneurship : Slovenian entrepreneurship observatory 2008*, (Slovenian entrepreneurship observatory, ISSN 1854-8040). Maribor: Faculty of Economics and Business. 2009, str. 63-85. [COBISS.SI-ID 9799708]

PODGORNIK, Rok, TOMINC, Polona, REBERNIK, Miroslav. Regional analysis of selected key factors influencing the early-stage entrepreneurial activity in Slovenia. V: ŠIREC, Karin (ur.), et al. *Dynamics of Slovenian entrepreneurship : Slovenian entrepreneurship observatory 2008*, (Slovenian entrepreneurship observatory, ISSN 1854-8040). Maribor: Faculty of Economics and Business. 2009, str. 87-104. [COBISS.SI-ID 9799964]

BRADAČ HOJNIK, Barbara. Strategic and traditional reasons for outsourcing in Slovenian SMEs. V: ŠIREC, Karin (ur.), et al. *Dynamics of Slovenian entrepreneurship : Slovenian entrepreneurship observatory 2008*, (Slovenian entrepreneurship observatory, ISSN 1854-8040). Maribor: Faculty of Economics and Business. 2009, str. 123-132. [COBISS.SI-ID 9800732]

ŠIREC, Karin, CRNOGAJ, Katja. SME networking activities among Slovenian male and female entrepreneurs. V: ŠIREC, Karin (ur.), et al. *Dynamics of Slovenian*

entrepreneurship : Slovenian entrepreneurship observatory 2008, (Slovenian entrepreneurship observatory, ISSN 1854-8040). Maribor: Faculty of Economics and Business. 2009, str. 133-149. [COBISS.SI-ID 9800988]

BOŽIČNIK, Stanislav, MULEJ, Matjaž. A sustainable world CO₂ emissions management model supported by systems thinking and social responsibility. V: SCHENK, Winfried (ur.), SCHENK, Tilman A. (ur.). *Forschung im Spannungsfeld zwischen Geographie und Ökonomie : zum 65. Geburtstag von Konrad Schliephake*, (Würzburger Geographische Manuskripte, ISSN 0931-8623, Heft 75). Würzburg: Institut für Geographie der Universität. cop. 2009, str. 79-93. [COBISS.SI-ID 13571094]

REBERNIK, Miroslav, BRADAČ HOJNIK, Barbara. The role of adaptation and learning of entrepreneurs in managing outsourcing relationships. V: *The management of small and medium enterprises*, (Routledge studies in small business, 15). New York: Taylor & Francis; London; Abingdon (UK): Routledge. 2009, str. [282]-298. [COBISS.SI-ID 9969436], [Scopus do 22. 6. 2017: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 1.00]

TAJNIKAR, Maks, PUŠNIK, Ksenja. Efficiency as firm-specific determinant of export performance : evidence from Slovenia. V: KANDŽIJA, Vinko (ur.), KUMAR, Andrej (ur.). *50 years of European Union = L'Union Européenne a 50 ans : research monograph*. Rijeka: University of Rijeka, Faculty of Economics. 2008, str. 302-311. [COBISS.SI-ID 9808156]

KNEZ-RIEDL, Jožica, MULEJ, Matjaž. Developing a sustainable/holistic firm. V: *Across disciplinary boundaries towards a sustainable life : psychodynamic reflection on human behaviour*, (Research on cases and theories, ISSN 0940-2829, v. 12). München; Mering: R. Hampp. 2008, str. 217-225. [COBISS.SI-ID 10139420]

TAJNIKAR, Maks, PUŠNIK, Ksenja. Determinants of entrepreneurship in Slovenia from an international perspective. V: VELOUTSOU, Cleopatra (ur.). *Advances in entrepreneurship research*. Athens: Athens Institute for Education and Research. 2008, str. 19-31. [COBISS.SI-ID 18156774]

REBERNIK, Miroslav, PUŠNIK, Ksenja. Internationalization of Slovenian SMEs as a learning and unlearning process. V: DANA, Léo-Paul (ur.), et al. *Handbook of research on European business and entrepreneurship : towards a theory of internationalization*. Cheltenham (UK); Northampton (Mass.): E. Elgar. cop. 2008, str. 580-597. [COBISS.SI-ID 9457180], [Scopus do 24. 3. 2014: št. citatov (TC): 1, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0]

PODGORNIK, Rok, TOMINC, Polona, REBERNIK, Miroslav. Regionalna zgodnja podjetniška aktivnost v Sloveniji. V: ŠIREC, Karin (ur.), et al. *Različnost kot podjetniška priložnost : slovenski podjetniški observatorij 2007/08*, (Slovenski podjetniški observatorij, ISSN 1854-8040). Maribor: Ekonomsko-poslovna fakulteta. 2008, str. 15-37. [COBISS.SI-ID 9703196]

MOČNIK, Dijana. Učinek vstopov podjetij na gospodarsko rast in njihovi dejavniki : empirična analiza za Slovenijo. V: ŠIREC, Karin (ur.), et al. *Različnost kot podjetniška priložnost : slovenski podjetniški observatorij 2007/08*, (Slovenski podjetniški observatorij, ISSN 1854-8040). Maribor: Ekonomsko-poslovna fakulteta. 2008, str. 39-66. [COBISS.SI-ID 9704476]

BRADAČ HOJNIK, Barbara, REBERNIK, Miroslav. Značilnosti zunanjega izvajanja v slovenskih malih in srednje velikih podjetjih. V: ŠIREC, Karin (ur.), et al. *Različnost kot podjetniška priložnost : slovenski podjetniški observatorij 2007/08*, (Slovenski podjetniški observatorij, ISSN 1854-8040). Maribor: Ekonomsko-poslovna fakulteta. 2008, str. 67-81. [COBISS.SI-ID 9703452] kategorija: 3C; tip dela je verificiral OSICD

ŠIREC, Karin, CRNOGAJ, Katja. Mrežno delovanje slovenskih malih in srednje velikih podjetij. V: ŠIREC, Karin (ur.), et al. *Različnost kot podjetniška priložnost : slovenski podjetniški observatorij 2007/08*, (Slovenski podjetniški observatorij, ISSN 1854-8040). Maribor: Ekonomsko-poslovna fakulteta. 2008, str. 83-100. [COBISS.SI-ID 9703708]

RUS, Matej, REBERNIK, Miroslav. Slovenska podjetja v letu 2009. V: ŠIREC, Karin (ur.), et al. *Različnost kot podjetniška priložnost : slovenski podjetniški observatorij 2007/08*, (Slovenski podjetniški observatorij, ISSN 1854-8040). Maribor: Ekonomsko-poslovna fakulteta. 2008, str. 121-143. [COBISS.SI-ID 9704220]

MOČNIK, Dijana, MULEJ, Matjaž. Can a pure market economy exist today?. V: BOŽIČNIK, Stanislav, EĆIMOVIĆ, Timi, MULEJ, Matjaž. *Sustainable future, requisite holism, and social responsibility : (against the current abuse of free market society)*. Penang: Ansted Service Centre, Ansted University Malaysia, School of Environmental Sciences; Korte: SEM Institute for Climate Change; Maribor: IRDO Institute for Development of Social Responsibility. 2008, str. [30-35]. [COBISS.SI-ID 9640220]

EĆIMOVIĆ, Timi, HAW, Roger B., ESPOSITO, Mark, MULEJ, Matjaž. The individual and corporate social responsibility. V: BOŽIČNIK, Stanislav, EĆIMOVIĆ, Timi, MULEJ, Matjaž. *Sustainable future, requisite holism, and social responsibility : (against the current abuse of free market society)*. Penang: Ansted Service Centre, Ansted University Malaysia, School of Environmental Sciences; Korte: SEM Institute for Climate Change; Maribor: IRDO Institute for Development of Social Responsibility. 2008, str. [44-51]. [COBISS.SI-ID 9642012]

BOŽIČNIK, Stanislav, MULEJ, Matjaž. Social responsibility by requisitely holistic tradable permits. V: BOŽIČNIK, Stanislav, EĆIMOVIĆ, Timi, MULEJ, Matjaž. *Sustainable future, requisite holism, and social responsibility : (against the current abuse of free market society)*. Penang: Ansted Service Centre, Ansted University Malaysia, School of Environmental Sciences; Korte: SEM Institute for Climate Change; Maribor: IRDO Institute for Development of Social Responsibility. 2008, str. [77-84]. [COBISS.SI-ID 12691990]

KNEZ-RIEDL, Jožica, MULEJ, Matjaž. Social responsibility and Adam Smith's economic theory. V: BOŽIČNIK, Stanislav, EĆIMOVIĆ, Timi, MULEJ, Matjaž. *Sustainable future, requisite holism, and social responsibility : (against the current abuse of free market society)*. Penang: Ansted Service Centre, Ansted University Malaysia, School of Environmental Sciences; Korte: SEM Institute for Climate Change; Maribor: IRDO Institute for Development of Social Responsibility. 2008, str. [98-108]. [COBISS.SI-ID 9639708]

HRAST, Anita, PROSENAK, Damijan, MULEJ, Matjaž, POTOČAN, Vojko. Affluence - cause for dangers for sustainable future - to be solved by social responsibility. V: BOŽIČNIK, Stanislav, EĆIMOVIĆ, Timi, MULEJ, Matjaž. *Sustainable future, requisite holism, and social responsibility : (against the current abuse of free market society)*. Penang: Ansted Service Centre, Ansted University Malaysia, School of Environmental Sciences; Korte: SEM Institute for Climate Change; Maribor: IRDO Institute for Development of Social Responsibility. 2008, str. [149-160]. [COBISS.SI-ID 9642268]

ŽENKO, Zdenka, MULEJ, Matjaž, POTOČAN, Vojko, ROSI, Bojan, MLAKAR, Tatjana. A model of making theory as invention to become an innovation. V: BOŽIČNIK, Stanislav, EĆIMOVIĆ, Timi, MULEJ, Matjaž. *Sustainable future, requisite holism, and social responsibility : (against the current abuse of free market society)*. Penang: Ansted Service Centre, Ansted University Malaysia, School of Environmental Sciences; Korte: SEM Institute for Climate Change; Maribor: IRDO Institute for Development of Social Responsibility. 2008, str. [161-169]. [COBISS.SI-ID 9642524]

ŠTRUKELJ, Tjaša, MULEJ, Matjaž. Business policy and strategic management for the sustainable future. V: BOŽIČNIK, Stanislav, EĆIMOVIĆ, Timi, MULEJ, Matjaž. *Sustainable future, requisite holism, and social responsibility : (against the current abuse of free market society)*. Penang: Ansted Service Centre, Ansted University Malaysia, School of Environmental Sciences; Korte: SEM Institute for Climate Change; Maribor: IRDO Institute for Development of Social Responsibility. 2008, str. [170-181]. [COBISS.SI-ID 9642780]

TAVČAR, Josip, ZIDANŠEK, Aleksander, BOŽIČNIK, Stanislav, MULEJ, Matjaž, POTOČAN, Vojko, EĆIMOVIĆ, Timi. Per aspera ad harmoniam astrum - sustainable (development) future of humankind - and systems thinking about its ethical imperative and the planet Earth - mother Earth. V: BOŽIČNIK, Stanislav, EĆIMOVIĆ, Timi, MULEJ, Matjaž. *Sustainable future, requisite holism, and social responsibility : (against the current abuse of free market society)*. Penang: Ansted Service Centre, Ansted University Malaysia, School of Environmental Sciences; Korte: SEM Institute for Climate Change; Maribor: IRDO Institute for Development of Social Responsibility. 2008, str. [198-205]. [COBISS.SI-ID 9643036]

ŠIREC, Karin. Vpliv osebnih lastnosti podjetnikov na rast slovenskih podjetij. V: REBERNIK, Miroslav (ur.), et al. *Podobe slovenskega podjetništva v letu 2006*, (Slovenski podjetniški observatorij, ISSN 1854-8040). Maribor: Ekonomsko-poslovna fakulteta. 2007, str. 15-38. [COBISS.SI-ID 9378076]

KROŠLIN, Tadej. Absorpcijska sposobnost za prenos inovacij, raziskav in razvoja v mala in srednje velika podjetja. V: REBERNIK, Miroslav (ur.), et al. *Podobe slovenskega podjetništva v letu 2006*, (Slovenski podjetniški observatorij, ISSN 1854-8040). Maribor: Ekonomsko-poslovna fakulteta. 2007, str. 39-67. [COBISS.SI-ID 9378332]

PUŠNIK, Ksenja, TAJNIKAR, Maks. Dejavniki poslovnega neuspeha malih podjetij v Sloveniji. V: REBERNIK, Miroslav (ur.), et al. *Podobe slovenskega podjetništva v letu 2006*, (Slovenski podjetniški observatorij, ISSN 1854-8040). Maribor: Ekonomsko-poslovna fakulteta. 2007, str. 69-92. [COBISS.SI-ID 9378588]

DUH, Mojca, TOMINC, Polona. Družinska podjetja v zgodnjih fazah podjetniškega procesa. V: REBERNIK, Miroslav (ur.), et al. *Podobe slovenskega podjetništva v letu 2006*, (Slovenski podjetniški observatorij, ISSN 1854-8040). Maribor: Ekonomsko-poslovna fakulteta. 2007, str. 93-108. [COBISS.SI-ID 9379100]

BRADAČ HOJNIK, Barbara, REBERNIK, Miroslav. Standardizacija v evropskih malih in srednje velikih podjetjih. V: REBERNIK, Miroslav (ur.), et al. *Podobe slovenskega podjetništva v letu 2006*, (Slovenski podjetniški observatorij, ISSN 1854-8040). Maribor: Ekonomsko-poslovna fakulteta. 2007, str. 109-128. [COBISS.SI-ID 9379356]

RUS, Matej, REBERNIK, Miroslav. Slovenska podjetja v letu 2005. V: REBERNIK, Miroslav (ur.), et al. *Podobe slovenskega podjetništva v letu 2006*, (Slovenski podjetniški observatorij, ISSN 1854-8040). Maribor: Ekonomsko-poslovna fakulteta. 2007, str. 129-161. [COBISS.SI-ID 9379612]

MULEJ, Matjaž. Lastnosti vodij, potrebne za absorpcijsko sposobnost v inovativni družbi. V: HAČEK, Miro (ur.), ZAJC, Drago (ur.). *Slovenija v evropski družbi znanja in razvoja*, (Knjižna zbirka Politični procesi in inštitucije). 1. natis. Ljubljana: Fakulteta za družbene vede. cop. 2007, str. 25-37. [COBISS.SI-ID 9062172]

MULEJ, Matjaž, POTOČAN, Vojko. Systems thinking and requisite holism. V: POTOČAN, Vojko (ur.), MULEJ, Matjaž (ur.). *Transition into an innovative enterprise*. Maribor: Faculty of Economics and Business. 2007, str. [16]-25. [COBISS.SI-ID 9210396]

MULEJ, Matjaž, POTOČAN, Vojko, ŽENKO, Zdenka. Development economics' view at the way from the institutional to the real transition in latecomer countries, such as Slovenia. V: POTOČAN, Vojko (ur.), MULEJ, Matjaž (ur.). *Transition into an innovative enterprise*. Maribor: Faculty of Economics and Business. 2007, str. [28]-66. [COBISS.SI-ID 9210652]

POTOČAN, Vojko, MULEJ, Matjaž, ČANČER, Vesna. Innovation of ethics as a base for economic development - Case of Slovenia. V: POTOČAN, Vojko (ur.), MULEJ, Matjaž (ur.). *Transition into an innovative enterprise*. Maribor: Faculty of Economics and Business. 2007, str. [68]-99. [COBISS.SI-ID 9210908]

ŽENKO, Zdenka, MULEJ, Matjaž. The lesson from the most innovative regions and possible benefits for innovativeness of Slovenian enterprises. V: POTOČAN, Vojko (ur.), MULEJ, Matjaž (ur.). *Transition into an innovative enterprise*. Maribor: Faculty of Economics and Business. 2007, str. [134]-144. [COBISS.SI-ID 9212444]

MULEJ, Matjaž, POTOČAN, Vojko, ŽENKO, Zdenka. Realization of the invention in this book - as a process. V: POTOČAN, Vojko (ur.), MULEJ, Matjaž (ur.). *Transition into an innovative enterprise*. Maribor: Faculty of Economics and Business. 2007, str. [168]-180. [COBISS.SI-ID 9211420]

TOMINC, Polona, REBERNIK, Miroslav. Female entrepreneurial growth aspirations in Slovenia : an unexploited resource. V: BRUSH, Candida G. (ur.), et al. *Growth-oriented women entrepreneurs and their businesses : a global research perspective*, (New horizons in entrepreneurship). Cheltenham (UK); Northampton (Mass.): E. Elgar. cop. 2006, str. 330-347. [COBISS.SI-ID 8674332], [Scopus do 19. 9. 2017: št. citatov (TC): 5, čistih citatov (CI): 4, čistih citatov na avtorja (CIAu): 4.00]

MULEJ, Matjaž, ŽIVKO, Tjaša. Benchmarking of research organisation in Slovenia - the situation and some suggestions. V: GAJDUSEK, Martin Felix (ur.), MAYR, Andrea Christiane (ur.), POLZER, Miroslav (ur.). *Science policy and human resources development in South-Eastern Europe in the context of European integration*. [Wien]: Austrian Federal Ministry for Education, Science and Culture. 2006, str. 93-104. [COBISS.SI-ID 8978972]

JURIČ, Matjaž B., RUS, Matej, REBERNIK, Miroslav, ROZMAN, Ivan. Establishment of science park and other spin-off mechanisms at the University of Maribor. V: GAJDUSEK, Martin Felix (ur.), MAYR, Andrea Christiane (ur.), POLZER, Miroslav (ur.). *Science policy and human resources development in South-Eastern Europe in the context of European integration*. [Wien]: Austrian Federal Ministry for Education, Science and Culture. 2006, str. 149-156. [COBISS.SI-ID 8979228]

KNEZ-RIEDL, Jožica. Vprašanja smisla pri soočanju s krizo in uspehom : krize, razvoj podjetja in management. V: BELAK, Janko. *Integralni management in razvoj podjetja*, (Knjižna zbirka Management in razvoj, 12). Gubno: MER Evrocenter; V Mariboru: Založba MER. 2003, str. 153-159. [COBISS.SI-ID 6773532]

MULEJ, Matjaž. Promotion of innovation in small and medium-sized enterprises. V: SCHWARZ, Erich J. (ur.). *Technologieorientiertes Innovationsmanagement : Strategien für kleine und mittelständische Unternehmen*. Wiesbaden: Gabler. cop. 2003, str. 107-137. [COBISS.SI-ID 6986268]

REBERNIK, Miroslav. From innovation to entrepreneurship. V: SCHWARZ, Erich J. (ur.). *Technologieorientiertes Innovationsmanagement : Strategien für kleine und mittelständische Unternehmen*. Wiesbaden: Gabler. cop. 2003, str. 139-160. [COBISS.SI-ID 6986524]

LESJAK, Dušan, REBERNIK, Miroslav. Real-world learning of information resource management : chapter 5. V: DADASHZADEH, Mohammad (ur.), SABER, Al (ur.), SABER, Sherry (ur.). *Information technology education in the new millennium*. Hershey (PA) [etc.]: IRM Press. cop. 2002, str. 33-43. [COBISS.SI-ID 6205980]

REBERNIK, Miroslav. Companies as business laboratories. V: TESAR, George (ur.). *International business teaching in Eastern and Central European countries*. Binghamton (NY): International Business Press; New York; London; Oxford (UK): The Haworth Press. cop. 2002, str. 99-114. [COBISS.SI-ID 6834972]

POTOČAN, Vojko, MULEJ, Matjaž, KAJZER, Štefan. Ethics of interdependence and economic globalization in CEEC. V: BOŽINA, Lovre (ur.), KRBEČ, Denisa (ur.). *Ekonomska globalizacija i razvoj u malim zemljama Europe*. Pula: Fakultet ekonomije i turizma "Dr. Mijo Mirković". 2001, str. 57-65. [COBISS.SI-ID 5753372]

TOMINC, Polona, ARTENJAK, Janez. Two-stage optimisation of the multiphase production : an application. V: RUPNIK, Viljem (ur.), ZADNIK STIRN, Lidija (ur.), DROBNE, Samo (ur.). *Rešitve proizvodnih problemov = Solutions to production problems*, (SDI-SOR serija, ISSN 1580-4283, št. 2). Ljubljana: Slovensko društvo Informatika, Sekcija za operacijske raziskave: = Slovenian Society Informatika, Section of Operational Research. 2000, str. 249-256. [COBISS.SI-ID 5130268]

MULEJ, Matjaž, KAJZER, Štefan, REBERNIK, Miroslav. Systems theories, holism, sustainable development and education. V: STUHLER, Elmar A. (ur.), VEZJAK, Marjan (ur.). *Sustainable development : the role of the universities*, (Research on Cases and Theories, Vol. 7). München; Mering: Hampp. 2000, str. 43-60. [COBISS.SI-ID 4855068]

MULEJ, Matjaž. Allan Mogensen (1901-1989) : a pioneer with work teams and his impact on Yugoslavian teams. V: BEYERLEIN, Michael Martin (ur.). *Work teams : past, present and future*, (Social indicators research series, 6). Boston: Kluwer Academic Publishers. 2000, str. 157-168. [COBISS.SI-ID 5359388]

LYNN, Monty L., MULEJ, Matjaž, JURŠE, Karin. Yugoslav self-management : the world's largest experiment in work teams. V: BEYERLEIN, Michael Martin (ur.). *Work teams : past, present and future*, (Social indicators research series, 6). Boston: Kluwer Academic Publishers. 2000, str. 247-253. [COBISS.SI-ID 5415964]

REBERNIK, Miroslav. Podjetništvo in management. V: *Ekonomija in poslovne vede*. Maribor: Ekonomsko-poslovna fakulteta, 1999, zv. 2, str. 69-116. [COBISS.SI-ID 4870172]

KNEZ-RIEDL, Jožica. Trajnostni razvoj: uresničevanje koncepta v malih in srednje velikih podjetjih. V: BELAK, Janko. *Razvoj podjetja in razvojni management : posebnosti malih in srednje velikih podjetij*, (Zbirka Management in razvoj, 1). Gubno: MER Evrocenter. 1998, str. 145-154. [COBISS.SI-ID 3973660]

DYCK, Robert G., MULEJ, Matjaž. The global problematique, reasons for its existence, and the transformative agenda. V: DYCK, Robert G. (ur.), MULEJ, Matjaž (ur.). *Self-transformation of the forgotten four-fifths*. Preliminary ed. Dubuque: Kendall/Hunt. 1998, str. 3-10. [COBISS.SI-ID 3666716]

REBERNIK, Miroslav. The forgotten four-fifths need entrepreneurship, not merely ownership and management. V: DYCK, Robert G. (ur.), MULEJ, Matjaž (ur.). *Self-transformation of the forgotten four-fifths*. Preliminary ed. Dubuque: Kendall/Hunt. 1998, str. 25-35. [COBISS.SI-ID 3667740]

MULEJ, Matjaž. Towards an environment-friendly entrepreneurship. V: DYCK, Robert G. (ur.), MULEJ, Matjaž (ur.). *Self-transformation of the forgotten four-fifths*. Preliminary ed. Dubuque: Kendall/Hunt. 1998, str. 281-288. [COBISS.SI-ID 3667996]

MULEJ, Matjaž, KAJZER, Štefan. Self-transformation and transition from a preindustrial to contemporary economy and society. V: DYCK, Robert G. (ur.), MULEJ, Matjaž (ur.). *Self-transformation of the forgotten four-fifths*. Preliminary ed. Dubuque: Kendall/Hunt. 1998, str. 325-331. [COBISS.SI-ID 3668508]

REBERNIK, Miroslav, ŽIŽEK, Jan. Indigenous entrepreneurship. V: DYCK, Robert G. (ur.), MULEJ, Matjaž (ur.). *Self-transformation of the forgotten four-fifths*. Preliminary ed. Dubuque: Kendall/Hunt. 1998, str. 333-342. [COBISS.SI-ID 3668764]

KNEZ-RIEDL, Jožica, MULEJ, Matjaž, JURŠE, Karin, LUTAR-SKERBINJEK, Andreja, POTOČAN, Vojko. From creditworthiness to trustworthiness. V: DYCK, Robert G. (ur.), MULEJ, Matjaž (ur.). *Self-transformation of the forgotten four-fifths*. Preliminary ed. Dubuque: Kendall/Hunt. 1998, str. 343-350. [COBISS.SI-ID 3669020]

AVSEC, Dejan, MULEJ, Matjaž. A version of the "Universal stock ownership plan" applied to self-transformation of the forgotten four-fifths. V: DYCK, Robert G. (ur.), MULEJ, Matjaž (ur.). *Self-transformation of the forgotten four-fifths*. Preliminary ed. Dubuque: Kendall/Hunt. 1998, str. 351-358. [COBISS.SI-ID 3669276]

MULEJ, Matjaž, DYCK, Robert G. Dialectical systems theory and evolutionary development. V: DYCK, Robert G. (ur.), MULEJ, Matjaž (ur.). *Self-transformation of the forgotten four-fifths*. Preliminary ed. Dubuque: Kendall/Hunt. 1998, str. 379-389. [COBISS.SI-ID 3669532]

MULEJ, Matjaž. Sinergija, proces, potrebna raznolikost in dialektika = Synergie, Prozess, notwendige Vielfältigkeit und Dialektik. V: THOMMEN, Jean-Paul (ur.), MUGLER, Josef (ur.), BELAK, Janko (ur.). *Sinergija in razvojni management = Synergie und Entwicklungsmanagement*. (Knjižna zbirka Management in razvoj, 3). Gubno: MER Evrocenter. 1998, str. 91-116. [COBISS.SI-ID 4441628]

ŽIŽMOND, Egon, REBERNIK, Miroslav. Mikroekonomika in podjetniška ekonomika. V: *Ekonomija in poslovne vede*. Maribor: Ekonomsko-poslovna fakulteta, 1997, zv. 1, str. 45-112. [COBISS.SI-ID 3736604]

MULEJ, Matjaž. Obvladovanje inovacij in kakovosti. V: *Ekonomija in poslovne vede*. Maribor: Ekonomsko-poslovna fakulteta, 1997, zv. 1, str. 385-430. [COBISS.SI-ID 3739420]

REBERNIK, Miroslav, MOČNIK, Dijana. Entrepreneurship and small business research in Slovenia. V: LANDSTRÖM, Hans (ur.), FRANK, Hermann (ur.), VECIANA, José M. (ur.). *Entrepreneurship and small business research in Europe : an ECSB survey*. Aldershot (UK) [etc.]: Avebury; Brookfield (Ver.): Ashgate. 1997, str. 250-262. [COBISS.SI-ID 3274268]

KNEZ-RIEDL, Jožica. Die Verwirklichung des Konzepts der nachhaltigen und dauerhaften Entwicklung von KMU. V: BELAK, Janko (ur.), et al. *Unternehmensentwicklung und Management : unter besonderer Berücksichtigung der Klein- und Mittelbetriebe in den Reformländern*. Zürich: Versus. 1997, str. 259-269. [COBISS.SI-ID 3129116]

REBERNIK, Miroslav. Das Unternehmertum in der Theorie der Mikroökonomie und seine wirtschaftliche Rolle. V: BELAK, Janko (ur.), KAJZER, Štefan (ur.). *Unternehmen im Übergangsprozeß zur Marktwirtschaft : mit Fallbeispielen aus Slowenien*. Wien: Linde. 1994, str. 34-45. [COBISS.SI-ID 6567172]

REBERNIK, Miroslav. Unternehmer, Eigentümer und Manager. V: BELAK, Janko (ur.), KAJZER, Štefan (ur.). *Unternehmen im Übergangsprozeß zur Marktwirtschaft : mit Fallbeispielen aus Slowenien*. Wien: Linde. 1994, str. 46-48. [COBISS.SI-ID 6567428]

REBERNIK, Miroslav. Innovation und inneres Unternehmertum. V: BELAK, Janko (ur.), KAJZER, Štefan (ur.). *Unternehmen im Übergangsprozeß zur Marktwirtschaft : mit Fallbeispielen aus Slowenien*. Wien: Linde. 1994, str. 49-55. [COBISS.SI-ID 6567684]

REBERNIK, Miroslav. Hindernisse für Entwicklung des Unternehmertums in der Staaten im Übergang zur Marktwirtschaft. V: BELAK, Janko (ur.), KAJZER, Štefan (ur.). *Unternehmen im Übergangsprozeß zur Marktwirtschaft : mit Fallbeispielen aus Slowenien*. Wien: Linde. 1994, str. 56-60. [COBISS.SI-ID 6567940]

REBERNIK, Miroslav. Podjetništvo, inoviranje in notranje podjetništvo. V: BELAK, Janko (ur.). *Podjetništvo, politika podjetja in management*. 1. natis. Maribor: Obzorja. 1993, str. 27-46. [COBISS.SI-ID 5171204]

2.01 Scientific monographs

REBERNIK, Miroslav, CRNOGAJ, Katja, ŠIREC, Karin, BRADAČ HOJNIK, Barbara, RUS, Matej, TOMINC, Polona. *Dinamika podjetniškega potenciala : GEM Slovenija 2016*, (Slovenski podjetniški observatorij). Maribor: Univerzitetna založba Univerze,

2017. 194 str., ilustr., tabele, graf. prikazi. ISBN 978-961-286-024-0. http://www.epf.um.si/fileadmin/user_upload/GEM_2016__web.pdf, doi: 10.18690/978-961-286-024-0. [COBISS.SI-ID 91360001]

REBERNIK, Miroslav, CRNOGAJ, Katja, ŠIREC, Karin, BRADAČ HOJNIK, Barbara, RUS, Matej, TOMINC, Polona. *Dynamics of entrepreneurial potential : GEM Slovenia 2016 : executive summary*. Maribor: University of Maribor Press: Faculty of Economics and Business, 2017. 22 str., ilustr. ISBN 978-961-286-047-9. <http://press.um.si/index.php/ump/catalog/book/223>, doi: 10.18690/978-961-286-047-9. [COBISS.SI-ID 92417025]

MOČNIK, Dijana, CRNOGAJ, Katja, BRADAČ HOJNIK, Barbara, REBERNIK, Miroslav (urednik, avtor dodatnega besedila), ŠIREC, Karin (urednik, avtor dodatnega besedila). *Slovenska podjetja in družbena odgovornost : slovenski podjetniški observatorij 2016*, (Slovenski podjetniški observatorij). Maribor: Univerzitetna založba Univerze, 2017. 143 str., ilustr., tabele, graf. prikazi. ISBN 978-961-286-012-7. <https://dk.um.si/IzpisGradiva.php?id=65152>, <http://ipmmp.um.si/wp-content/uploads/2017/03/Slovenski-podjetni%C5%A1ki-observatorij-2016-web.pdf>, doi: 10.18690/978-961-286-012-7. [COBISS.SI-ID 90847489]

DOLINŠEK, Tatjana, LUTAR-SKERBINJEK, Andreja, TOMINC, Polona. *Spletno računovodsko poročanje slovenskih podjetij*, (Zbirka Strokovne in znanstvene monografije FKPV). 1. izd. Celje: Fakulteta za komercialne in poslovne vede, 2017. 212 str., 22 str. pril., tabele, graf. prikazi. ISBN 978-961-6997-02-7. [COBISS.SI-ID 290448896]

SEMASHKO, Leo M., MULEJ, Matjaž, HRAST, Anita, et al.. *Global Peace Science or peaceloveology, peacescience : First Common Good and Human Right, Revolution of Social Sciences, Creating Peace from SPHERONS' Harmony and Nonviolent Victory of Peace over War in XXI century : world textbook for schools, colleges, universities and academies*. New Delhi: JD Group of Publication, 2016. 614 str., ilustr. ISBN 978-81-929087-8-6. http://www.peacefromharmony.org/?cat=en_c&key=585. [COBISS.SI-ID 291328768]

REBERNIK, Miroslav, TOMINC, Polona, CRNOGAJ, Katja, ŠIREC, Karin, BRADAČ HOJNIK, Barbara, RUS, Matej. *Podjetništvo med priložnostjo in nujo : GEM Slovenija 2015*, (Slovenski podjetniški observatorij). Maribor: Ekonomsko-poslovna fakulteta, 2016. 174 str., ilustr. ISBN 978-961-6802-39-0. http://www.spiritslovenia.si/resources/files/doc/publikacije/GEM_Slovenija_2015.pdf. [COBISS.SI-ID 86200577]

MOČNIK, Dijana, RUS, Matej, REBERNIK, Miroslav (urednik, avtor dodatnega besedila), ŠIREC, Karin (urednik, avtor dodatnega besedila). *Slovenska podjetja in značilnosti start-up ekosistema : slovenski podjetniški observatorij 2015*, (Slovenski podjetniški observatorij). Maribor: Ekonomsko-poslovna fakulteta, 2016. 112 str., ilustr. ISBN 978-961-6802-38-3. [http://www.epfip.uni-mb.si/scripts/download.php?file=/data/upload/SPO_2016\(1\).pdf](http://www.epfip.uni-mb.si/scripts/download.php?file=/data/upload/SPO_2016(1).pdf). [COBISS.SI-ID 85752833]

KOSI, Tanja, LAPORŠEK, Suzana, RUZZIER, Mitja, RUS, Matej. *Analiza čezmejnih podjetniških priložnosti na Obalno-kraškem in Goriškem*. Ljubljana: MeritUM, 2015. XI,

191 str., ilustr. ISBN 978-961-92961-5-8. http://meritum.si/modules/form/template/default/images/Analiza_podjetniskih_priloznosti_MONOGRAFIJA.pdf. [COBISS.SI-ID 279762432]

TOMINC, Polona, REBERNIK, Miroslav, BRADAČ HOJNIK, Barbara, ŠIREC, Karin. *Danube region entrepreneurship observatory : diversity and potential.* Harlow [etc.]: Pearson Education, cop. 2015. VIII, 99 str., ilustr. ISBN 978-1-78448-047-9. http://www.epfip.uni-mb.si/scripts/download.php?file=/data/upload/DREO_monograph_2015.pdf. [COBISS.SI-ID 12023324]

REBERNIK, Miroslav, TOMINC, Polona, CRNOGAJ, Katja, ŠIREC, Karin, BRADAČ HOJNIK, Barbara, RUS, Matej. *Pomanjkanje vitalnosti slovenskega podjetništva : GEM Slovenija 2014,* (Slovenski podjetniški observatorij). Maribor: Ekonomsko-poslovna fakulteta, 2015. 167 str., ilustr. ISBN 978-961-6802-35-2. http://www.gemslovenia.org/scripts/download.php?file=/data/upload/GEM_2015popr.pdf. [COBISS.SI-ID 81852929]

REBERNIK, Miroslav, MOČNIK, Dijana, BRADAČ HOJNIK, Barbara. *Slovenska podjetja in okoljski vidiki poslovanja : slovenski podjetniški observatorij 2014,* (Slovenski podjetniški observatorij). Maribor: Ekonomsko-poslovna fakulteta, 2015. 90 str., ilustr. ISBN 978-961-6802-34-5. [http://www.epfip.uni-mb.si/scripts/download.php?file=/data/upload/SPO_2014_monografija\(1\).pdf](http://www.epfip.uni-mb.si/scripts/download.php?file=/data/upload/SPO_2014_monografija(1).pdf). [COBISS.SI-ID 81251073]

IVANUŠA, Teodora (avtor, urednik), MARHL, Marko, MULEJ, Matjaž (avtor, avtor dodatnega besedila), AVSEC, Dejan, JAKOVLJEVIĆ, Darinka, REBERNIK, Miroslav, TASIČ, Matic, URŠIČ, Duško, ČUBER, Stanislav, BUČAR, Maja, ŽENKO, Zdenka, MARKIČ, Mirko, ROSI, Bojan, UDOVIČIČ, Karli, ŠKAFAR, Branko, MLAKAR, Tatjana, BOŽIČNIK, Stanislav, HUSTIČ, Igor, KUNTARIČ, Ana, VREČKO, Igor, NEDELKO, Zlatko, ŠAROTAR ŽIŽEK, Simona. *Matjaž Mulej in 40 let njegove dialektične teorije sistemov : enostranskost in celovitost : znanstvena monografija.* Ljubljana: Zavod za varnostne strategije, 2014. XXXVIII, 574 str., graf. prikazi. ISBN 978-961-93528-2-3. [COBISS.SI-ID 275353088]

REBERNIK, Miroslav, TOMINC, Polona, CRNOGAJ, Katja, ŠIREC, Karin, BRADAČ HOJNIK, Barbara, RUS, Matej. *Spregledan podjetniški potencial mladih : GEM Slovenija 2013,* (Slovenski podjetniški observatorij). Maribor: Ekonomsko-poslovna fakulteta, 2014. 152 str., ilustr. ISBN 978-961-6802-30-7. http://www.gemslovenia.org/scripts/download.php?file=/data/upload/GEM_2013_lowres_splet.pdf. [COBISS.SI-ID 77815041]

REBERNIK, Miroslav, ŠIREC, Karin, MOČNIK, Dijana. *Stanje slovenskega podjetništva in izzivi izobraževanja za podjetnost : slovenski podjetniški observatorij 2013,* (Slovenski podjetniški observatorij (Maribor)). Maribor: Ekonomsko-poslovna fakulteta, 2014. 95 str., ilustr. ISBN 978-961-6802-29-1. http://www.epfip.uni-mb.si/scripts/download.php?file=/data/upload/EPF_SPO2014_za_na_spletno_stran.pdf. [COBISS.SI-ID 76872193]

MULEJ, Matjaž, BOŽIČNIK, Stanislav, ČANČER, Vesna, HRAST, Anita, JURŠE, Karin, KAJZER, Štefan, KNEZ-RIEDL, Jožica, JERE JAKULIN, Tadeja, MLAKAR, Tatjana, MULEJ, Nastja, POTOČAN, Vojko, RISOPOULOS, Filippina, ROSI, Bojan, STEINER, Gerald, ŠTRUKELJ, Tjaša, URŠIČ, Duško, ŽENKO, Zdenka. *Dialectical systems thinking and the law of requisite holism concerning innovation*, (Exploring unity through diversity, vol. 3). Litchfield Park: Emergent Publications, cop. 2013. XVII, 365 str., ilustr. ISBN 978-1-938158-09-4. [COBISS.SI-ID 74479361]

REBERNIK, Miroslav, TOMINC, Polona, CRNOGAJ, Katja, ŠIREC, Karin, BRADAČ HOJNIK, Barbara. *Nezaznane priložnosti : GEM Slovenija 2012*, (Slovenski podjetniški observatorij). Maribor: Ekonomsko-poslovna fakulteta, 2013. 173 str., ilustr. ISBN 978-961-6802-20-8. <http://www.gemconsortium.org/docs/download/2799>. [COBISS.SI-ID 73829121]

ŠAROTAR ŽIŽEK, Simona, TREVEN, Sonja, TREVEN, Urška, MILFELNER, Borut, PISNIK, Aleksandra, POTOČNIK, Amna, MULEJ, Matjaž, IVANOVIČ, Bogdan, et al., ŠAROTAR ŽIŽEK, Simona (urednik), TREVEN, Sonja (urednik), JIMÉNEZ, Paul (urednik), POTOČNIK, Amna (urednik). *Stressabbau als Mittel zur Sicherung des Wohlbefindens : [wissenschaftliche Monographie des Projektes Chance 4 change]*. Maribor: Ekonomsko-poslovna fakulteta, 2013. 260 str., ilustr. ISBN 978-961-6802-24-6. [COBISS.SI-ID 74763777]

REBERNIK, Miroslav, ŠIREC, Karin, TOMINC, Polona, MOČNIK, Dijana, BRADAČ HOJNIK, Barbara, KOREZ-VIDE, Romana, ŠTRUKELJ, Tjaša, HAUPTMAN, Lidija, ŠIREC, Karin (urednik, recenzent), REBERNIK, Miroslav (urednik). *Razvojni potenciali slovenskega podjetništva : slovenski podjetniški observatorij 2011/12*, (Slovenski podjetniški observatorij). Maribor: Ekonomsko-poslovna fakulteta, 2012. 116 str., ilustr. ISBN 978-961-6802-11-6. [COBISS.SI-ID 69329665]

REBERNIK, Miroslav, TOMINC, Polona, CRNOGAJ, Katja. *Usihanje podjetništva v Sloveniji : GEM Slovenija 2011*, (Slovenski podjetniški observatorij). Maribor: Ekonomsko-poslovna fakulteta, 2012. 134 str., ilustr. ISBN 978-961-6802-13-0. <http://www.gemconsortium.org/docs/download/2391>. [COBISS.SI-ID 70055169]

BAŠIĆ, Maja, DABIĆ, Marina, PURIFICACIÓN GARCÍA, María, GASPAR, Fernando, GAWEL, Aleksandra, GUTIÉRREZ, Pablo, HUEBER, Olivier, JANKOWSKA, Barbara, LANERO, Ana, MARTIN, Lynn, NAUSEDARTE, Reda, OMAZIĆ, Mislav Ante, PIETRZYKOWSKI, Maciej, PUNDZIENE, Asta, REBERNIK, Miroslav, SCHOFIELD, Clare, SINDLER, Alexandra, ŠIREC, Karin, VÁZQUEZ, José Luis, VLAHOV, Rebeka Danijela, DABIĆ, Marina (urednik), PIETRZYKOWSKI, Maciej (urednik). *Fostering education in entrepreneurship*. Poznań: Bogucki Wydawnictwo Naukowe, 2011. 201 str., ilustr. ISBN 978-83-62662-54-8. [COBISS.SI-ID 10778652]

REBERNIK, Miroslav, TOMINC, Polona, CRNOGAJ, Katja. *Podjetniška aktivnost, aspiracije in odnos do podjetništva : GEM Slovenija 2010*, (Slovenski podjetniški observatorij). Maribor: Ekonomsko-poslovna fakulteta, 2011. 120 str., graf. prikazi, tabele. ISBN

978-961-6802-04-8. <http://www.gemconsortium.org/download.asp?fid=1147>. [COBISS.SI-ID 67082753]

REBERNIK, Miroslav, TOMINC, Polona, PUŠNIK, Ksenja. *Slovensko podjetništvo v letu krize : GEM Slovenija 2009*, (Slovenski podjetniški observatorij). Maribor: Ekonomsko-poslovna fakulteta, 2010. 136 str., graf. prikazi, tabele. ISBN 978-961-6354-97-4. [COBISS.SI-ID 64866817]

REBERNIK, Miroslav, TOMINC, Polona, PUŠNIK, Ksenja. *Rast podjetniške aktivnosti v Sloveniji : GEM Slovenija 2008*, (Slovenski podjetniški observatorij). Maribor: Ekonomsko-poslovna fakulteta, 2009. 112 str., tabele, graf. prikazi. ISBN 978-961-6354-89-9. [COBISS.SI-ID 62725377]

MULEJ, Matjaž, FATUR, Peter, KNEZ-RIEDL, Jožica, KOKOL, Andrej, MULEJ, Nastja, POTOČAN, Vojko, PROSENAK, Damijan, ŠKAFAR, Branko, ŽENKO, Zdenka, LIKAR, Borut (urednik). *Invencijsko-inovacijski management z uporabo dialektične teorije sistemov : (podlaga za uresničitev ciljev Evropske unije glede inoviranja)*. 1. izd. Ljubljana: Korona plus, 2008. 1 optični disk (CD-ROM). ISBN 978-961-90592-8-9. [COBISS.SI-ID 237548800]

REBERNIK, Miroslav, TOMINC, Polona, PUŠNIK, Ksenja. *Premalo razvojno usmerjenih podjetij : GEM Slovenija 2007*, (Slovenski podjetniški observatorij). Maribor: Ekonomsko-poslovna fakulteta, cop. 2008. 108 str., graf. prikazi, tabele. ISBN 978-961-6354-76-9. [COBISS.SI-ID 60616705]

PUŠNIK, Ksenja, ŠLEBINGER, Monika, BRADAČ HOJNIK, Barbara, REBERNIK, Miroslav. *The age as resource : active ageing in Slovenia and new EU member states*. Maribor: Faculty of Economics and Business, 2007. 140 str., graf. prikazi, tabele. ISBN 978-961-6354-69-1. [COBISS.SI-ID 59380225]

MULEJ, Matjaž. *Inoviranje navad države in manjših podjetij z invencijami iz raziskovalnih organizacij*, (Znanstvene monografije Fakultete za management Koper). Koper: Fakulteta za management, cop. 2007. 250 str., ilustr., tabele. ISBN 978-961-6573-69-6. [COBISS.SI-ID 236609536]

REBERNIK, Miroslav, TOMINC, Polona, PUŠNIK, Ksenja. *Počasne spremembe podjetniške stvarnosti : GEM Slovenija 2006*, (Slovenski podjetniški observatorij). Maribor: Ekonomsko-poslovna fakulteta, cop. 2007. 137 str., graf. prikazi, tabele. ISBN 961-6354-55-8. ISBN 978-961-6354-55-4. [COBISS.SI-ID 58242305]

OVIN, Rasto (avtor, urednik), JAGRIČ, Timotej (avtor, urednik), OPLOTNIK, Žan, KOREZ-VIDE, Romana, KRAMBERGER, Boštjan, VOLŠEK, Nataša, BRATINA, Borut, REBERNIK, Miroslav, TOMINC, Polona, PUŠNIK, Ksenja, BOBEK, Vito, JEŠOVNIK, Peter, JURŠE, Milan, ŠLEBINGER, Monika, BRADAČ HOJNIK, Barbara, MILES, Keith. *Ekonomske in socialne reforme : priložnost ali tveganje?*. Maribor:

Ekonomsko-poslovna fakulteta, Inštitut za ekonomsko diagnozo in prognozo, 2006. 159 str., graf. prikazi, tabele. ISBN 961-6354-42-6. [COBISS.SI-ID 56313345]

PUŠNIK, Ksenja, ŠLEBINGER, Monika, MLINARIČ, Franjo, MIKEK, Peter. *Presoja prevzemov in koncentracij na trgu finančnih storitev*. Maribor: Ekonomsko-poslovna fakulteta, Inštitut za finance in bančništvo, cop. 2005. XIX, 191 str., graf. prikazi. ISBN 961-6354-60-4. [COBISS.SI-ID 55896833]

EČIMOVIĆ, Timi, MULEJ, Matjaž, MAYUR, Rashmi, BASTIČ, Majda, ČANČER, Vesna, DYCK, Robert G., GAGERN, Maria v., KAJZER, Štefan, KNEZ-RIEDL, Jožica, KORLEVIČ, Korado, MARKOVIČ-HRIBERNIK, Tanja, MULEJ, Nastja, POTOČAN, Vojko, UDOVIČIČ, Karli, STEINER, Gerald, STUHLER, Elmar A., TREVEN, Sonja, UDYAVAR, Roshni, UMPLEBY, Stuart A., URŠIČ, Duško, VEZJAK, Marjan, ŽENKO, Zdenka, MARAŽ, Boris (urednik). *Systems thinking and climate change system : (against a big "tragedy of commons" of all of us)*. Korte: SEM, Institute for climate change, 2002. 303 str. ISBN 961-236-380-3. [COBISS.SI-ID 121398272]

KNEZ-RIEDL, Jožica. *Pojmovanje in presojanje bonitete podjetja*, (Zbirka Srebrna knjiga, št. 15). Ljubljana: Zveza računovodij, finančnikov in revizorjev Slovenije, 2000. 206 str., graf. prikazi, tabele. ISBN 86-7591-069-X. [COBISS.SI-ID 107216128]

IVANKO, Štefan, KAJZER, Štefan, KANJUO-MRČELA, Aleksandra, KAVČIČ, Bogdan, KOVAČ, Jure, MIHELČIČ, Miran, MULEJ, Matjaž, OVSENIK, Jože, ROZMAN, Rudi, URŠIČ, Duško, VILA, Antun, KAVČIČ, Bogdan (urednik), KOVAČ, Jure (urednik). *Sodobna razlaga organizacije*. Kranj: Moderna organizacija, 1999. 379 str., ilustr., graf. prikazi. ISBN 961-232-074-8. [COBISS.SI-ID 104931328]

2.08 Doctoral dissertations

CRNOGAJ, Katja. *Vpliv izbranih institucionalnih in individualnih dejavnikov na podjetniško aktivnost ter njihova povezava z gospodarskim in družbenim napredkom : doktorska disertacija*. Maribor: [K. Crnogaj], 2012. X, 253 str., tabele, graf. prikazi. <http://dkum.uni-mb.si/Dokument.php?id=48241>. [COBISS.SI-ID 21039334]

BRADAČ HOJNIK, Barbara. *Značilnosti zunanjega izvajanja aktivnosti in njegova povezava z uspešnostjo poslovanja malih in srednje velikih podjetij v Sloveniji : doktorska disertacija*. Maribor: [B. Bradáč], 2009. VIII, 228 str., graf. prikazi, tabele. <http://www.epf.uni-mb.si/ediplome/pdfs/bradac-barbara-dok.pdf>. [COBISS.SI-ID 9842460]

PUŠNIK, Ksenja. *Dejavniki izstopa podjetij s trga na primeru Slovenije : doktorska disertacija*. Ljubljana: [K. Pušnik], 2008. X, 364 str., 115 str. pril., tabele. <http://www.cek.ef.uni-lj.si/doktor/pusnik4.pdf>. [COBISS.SI-ID 18131942]

ŠIREC, Karin. *Vpliv poslovnih priložnosti, sposobnosti podjetja in osebnih lastnosti podjetnika na rast malih in srednjevelikih podjetij : doktorska disertacija*. Maribor: [K. Širec], 2007. XVIII, 243 str., graf. prikazi, preglednice. [COBISS.SI-ID 9162012]

MULEJ, Matjaž. *Absorpcijska sposobnost tranzicijskih malih in srednjih podjetij za prenos invencij, vednosti in znanja iz raziskovalnih organizacij : doktorska disertacija*. Maribor; Koper: [M. Mulej], 2006. VII, 179 str., [96] str. 7 pril., preglednice. [COBISS.SI-ID 1801687]

ŽENKO, Zdenka. *Comparative analysis of management models in Japan, United States of America, and Western Europe : doctoral dissertation*, (Ekonomsko-poslovna fakulteta, Maribor, Doktorske disertacije, 73). Maribor: [Z. Ženko], 1999. 327, 3 f., graf. prikazi, večinoma tabele. [COBISS.SI-ID 105961728]

KNEZ-RIEDL, Jožica. *Objektivizacija presoje bonitete podjetja s pomočjo panožnih dejavnikov : doktorska disertacija*, (Ekonomsko-poslovna fakulteta, Maribor, Doktorske disertacije, 68). Maribor: [J. Knez-Riedl], 1998. 278, 8 f., graf. prikazi, tabele. [COBISS.SI-ID 78211072]

MOČNIK, Dijana. *Soodvisnost specifičnosti premoženja podjetja in njegove zadolžitve z vidika teorije transakcijskih stroškov : doktorska disertacija*, (Ekonomsko-poslovna fakulteta, Maribor, Doktorske disertacije, 70). Maribor: [D. Močnik], 1998. V, 174, 3 f., graf. prikazi, tabele. [COBISS.SI-ID 80280064]

TOMINC, Polona. *Odsekoma linearne aproksimacije pri ocenjevanju prodajnih možnosti in njihova uporaba pri optimizaciji poslovanja : doktorska disertacija*, (Ekonomsko-poslovna fakulteta, Maribor, Doktorske disertacije, 64). Maribor: [P. Tominc], 1996. 169 f., graf. prikazi, tabele. [COBISS.SI-ID 2957852]

REVIEWS

Review by Prof. Dr. Mitja Ruzzier

Slovenia is a young country that has experienced various transitional stages of development since its independence in 1991, and today we can count it amongst developed and modern European countries. This transitional feature is also apparent in different aspects of the economy, which include entrepreneurship, entrepreneurship education and entrepreneurship research. Meanwhile, the “age” of independent Slovenia and its development also strongly coincide with the 25-year development period of studying entrepreneurship at the Faculty of Economics and Business Maribor, which is summarized in the present monograph.

The existing monograph also reflects the initiative of one individual, Prof. Miroslav Rebernik, who always believed in the importance of entrepreneurship, small companies and entrepreneurs when the economy was still dominated by large companies and a socialistic way of thinking. During this period, the entrepreneurial mindset, marketing orientation and looking towards foreign markets were considered “different”, and maybe even unacceptable. But individuals are not enough for stories that last and grow.

Prof. Rebernik has succeeded in transferring his vision to his young co-workers who today form a stable and diverse Entrepreneurship Department, with many educational entrepreneurship programmes, applied and research projects and development initiatives conducted on a national level.

The development path of the research group surrounding Prof. Rebernik marks an important milestone this year, its 25th anniversary. This development path is also seen in the existing monograph, which highlight its research directions. These directions include the following concepts: approaches and highlights, starting with an article on business economics as a systemic way of thinking, followed by review articles on entrepreneurship research in Slovenia, entrepreneurial obstacles to regional development, absorption abilities of SMEs, intangible learning, and encouraging innovativeness. The development path also embraces the shaping of knowledge, the desire for growth, cultural support, the process of learning and internationalization of business in SMEs, founding new companies and a business career, entrepreneurial growth, innovation support, all up to the newest concept of the development of startup companies and the entrepreneurial ecosystem.

I hope and wish that they continue to research, teach and develop the entrepreneurial society with the same energy, momentum and passion for at least another 25 years!

Review by Prof. Dr. Boštjan Antončič

The book excellently highlights the different aspects and factors important for the development of entrepreneurship in Slovenia and internationally. Over the past 25 years, Prof. Dr. Miroslav Rebernik and his co workers have contributed enormously to the creation of new knowledge as well as the understanding, promotion and development of the entrepreneurial mindset and entrepreneurship in Slovenia.

DEPARTMENT'S COLLEAGUES



Miroslav Rebernik

Miroslav Rebernik, PhD, is Professor of Entrepreneurship and Business Economics, head of the Department of Entrepreneurship and Business Economics, and Director of the Institute for Entrepreneurship and Small Business Management at the Faculty of Economics and Business at the University of Maribor. He was visiting professor at Portland State University and a Fulbright research scholar at Babson College. In 1992 he established the first full-time entrepreneurship programme in Slovenia at undergraduate level. Since 1999 he has managed the team that created the Slovenian Entrepreneurship Observatory, and run the research project. Since 2002, he has led the Slovenian team of the Global Entrepreneurship Monitor research programme. He also co-founded the University of Maribor Business Incubator Venture Factory, chairs the International Innovation and Entrepreneurship Conference PODIM, is actively engaged in the Initiative Start-up Slovenia and Start-up Maribor, and is permanently running and/or cooperates with colleagues in national and international projects. He was a long-time member of the working group on "Policy-relevant Research on Entrepreneurship and SMEs" organised by the European Commission. He is a member of the ECSB Board of Directors, and in July 2014 was nominated as a European ENSR Fellow. In 1979, the University of Maribor awarded Prof. Rebernik the Silver Badge of Recognition for "dedicated involvement in university life", and in 2010, the Golden Badge for "excellent research and teaching".



Barbara Bradač Hojnik

Barbara Bradač Hojnik, PhD, is an Associate Professor of Entrepreneurship at the Faculty of Economics and Business, University of Maribor, and takes part in Business Economics and Entrepreneurship teaching at the faculty. She started her career at the faculty as a young researcher financed by a national programme. In her doctoral study, she examined outsourcing in Slovenian small and medium-sized enterprises. She furthered her education at the European Institute for Advanced Studies in Management, Belgium, in the area of entrepreneurship, innovation and finance. In recent years she has participated in almost 20 national and international research projects at the Institute for Entrepreneurship and Small Business Management at the same faculty. She is a member of the Slovenian Entrepreneurship Observatory research team, of the Global Entrepreneurship Monitor Slovenia team, and of the research programme "Entrepreneurship for an Innovative Society". She has participated in numerous international scientific conferences and is the author or co-author of several scientific articles, books and chapters in scientific monographs. Her research focuses primarily on entrepreneurship in general, corporate entrepreneurship, social, environmental and sustainable entrepreneurship, entrepreneurship policy, outsourcing and SMEs.



Katja Crnogaj

Katja Crnogaj, PhD, is an Assistant Professor in the Department of Entrepreneurship and Business Economics at the Faculty of Economics and Business, University of Maribor. During her regular education, she obtained professional experience by working in economic business firms. Since 2008, she has worked at the Faculty of Economics and Business, and in 2012, she received her doctoral degree. As a researcher and member of the Institute for Entrepreneurship and Small Business Management, she is currently involved in several national and international research projects. She participates in several courses in undergraduate and postgraduate study programmes. Furthermore, she is head of the study field, Entrepreneurship, in the undergraduate study programme, a member of the research group Slovenian Entrepreneurship Observatory and Global Entrepreneurship Monitor, and a member of the FEB Quality Assurance Committee. Her main research interests include entrepreneurship determinants and their link to economic and social progress, entrepreneurship measures, international entrepreneurship, entrepreneurial networks, high growth firms, entrepreneurial policy and other fields in entrepreneurship and business economics. She publishes her research results in various scientific and professional journals and monographs.



Blaž Frešer

Blaž Frešer is a junior researcher, teaching assistant on entrepreneurship, and PhD student at the Faculty of Economics and Business, University of Maribor. He has received his bachelor's and master's degree in Accounting, Auditing and Taxes at the faculty. During his studies, he achieved above average results and received the Rector's Award as the best student of the Faculty of Economics and Business, University of Maribor in 2015. Currently, he is preparing a PhD thesis on the topic of high-growth enterprises' performance, connected with the perceived availability of selected growth determinants. His research interests are in the area of entrepreneurship, and involve researching different enterprises' growth determinants, especially financial resources. He is a co-author of a published scientific article, conference proceedings and an article in a monograph. He is also preparing a few scientific articles and other scientific contributions for publication.



Jožica Knez-Riedl

Jožica Knez-Riedl, PhD, is a retired full Professor of Business Economics. She combined her professional experiences as a business analyst and creditworthiness evaluator with research of new approaches focused on non-financial criteria. Her doctoral thesis (creditworthiness from the viewpoint of the industry of a firm) leans upon research at Dun & Bradstreet, foreign universities (Vienna, Udine, Bayreuth, Stockholm, Fordham University) and management schools (Gent, Boros). Her book *Considering and evaluating the creditworthiness of a firm* (2000) was the first on this topic in Slovenia. She was among the first scholars to teach environmental economics and responsible entrepreneurship at a Slovenian faculty. For promoting the concept of CSR (launched as an EU project) among Slovenian enterprises she was awarded by the Slovenian Institute for Social Responsibility and Development (IRDO). Recently Jožica has published scientific articles, about social entrepreneurship in international reviews. She has presented her research results at international conferences and lectured at foreign universities (the faculty of Economics at Rijeka, Croatia, and Carl Franzens University Graz, Austria). She has also authored and co-authored numerous chapters in books, monographs and lecture materials on business economics, SD, environmental economics, CSR and new business paradigms. She has also participated in several seminars for managers, auditors and entrepreneurial consultants, providing them with new trends.



Tadej Krošlin

Tadej Krošlin, MSc (Econ.) is Chief Business Development Officer at IIC, the International Insurance Consortium AG in Munich, and co-owner of Platform d.o.o., a dynamic #insurtech company developing modern IT platforms. He is a passionate researcher of digitalization, innovation management, lean enterprise, design thinking and agile project methodologies. From 2008 until 2017 he worked for the Gorenje Group as Business Development Director at Gorenje Surovina, responsible for R&D, IT, business process and quality management, ISO certification and research laboratory. He led the company's R&D group and was head of the project management office. From 2013 until 2015 he was Managing Director of Gorenje Ekologija in Serbia, responsible for the development of international joint ventures. He also led the implementation of comprehensive waste management for strategic partners such as Fiat in Kragujevac, Gorenje Tiki and others. From 2002 until 2010 he was a senior lecturer in Business Economics and Entrepreneurship at the Faculty of Economics and Business, University of Maribor, where he also finished his postgraduate education. He further developed his knowledge in the USA and finished a Manager Academy programme with the Gorenje Group. He has more than eight years of teaching experience and won several "Teacher of the Year" awards at FEB.



Dijana Močnik

Dijana Močnik, PhD, is a full-time Professor at the Faculty of Electrical Engineering and Computer Science at the University of Maribor. She received her PhD at the Faculty of Economics and Business, University of Maribor. Prior to her academic career, she was employed in companies where she was involved in market research, business analysis, and company valuation. She was employed as a teaching assistant at the Faculty of Economics and Business for eight years, then as a senior lecturer and assistant professor. During that time, she made her research visits to the Belgian Faculty of Management in Gent, Gothenburg University and Borås University in Sweden, the Faculty of Economics and Banking at Udine in Italy, and the Institute for the Processing and Management of Information at the University of Vienna. Since 2001, she has been employed at the Faculty of Electrical Engineering and Computer Science. She has published numerous articles in renowned journals and published the following textbooks: *Business Decision Making*, *Small Business Management*, *Media Economics*, *Strategic Management*, *Services Management and Marketing*, and *Management and Economics for Engineers*.



Matjaž Mulej

Matjaž Mulej (1941), who earned a double PhD at the University of Maribor's Faculty of Economics and Business, is Professor Emeritus, Systems and Innovation Theory (and Social Responsibility for 12 years) at the University of Maribor. He has been featured in nearly 2.000 publications in just under 50 countries. As a visiting professor abroad, he spent 15 semesters in the USA, Austria, China, Mexico and Germany. He has also presented more than 50 talks at universities and conferences on all continents. Among his works are *Dialectical Systems Theory* (see: François, 2004, *International Encyclopedia of Systems and Cybernetics*) and *Innovative Business Paradigm and Methods for Emerging Economies*. He has also supervised 26 PhD and 62 MS finished theses. He has served as a member of the European Academy of Sciences and Arts, Salzburg (2004); the European Academy of Sciences and Humanities, Paris (2004); and the International Academy for Systems and Cybernetic Sciences, Vienna, now Pau, France (2010) (former head, now vice-president). He also holds a BS degree in Economic Analysis, an MS in Development Economics, Doctorates in Economics/Systems Theory, and in Management/Innovation Management. He has been the recipient of several awards in Yugoslavia, Slovenia, Maribor, the University of Maribor and the Institute for the Development of Social Responsibility (IRDO). He has two children, four grandchildren, and has been married since 1962. He is an active sportsman (tennis).



Ksenja Pušnik†

Ksenja Pušnik†, PhD, was Assistant Professor for Business Economics and Entrepreneurship at the Faculty of Economics and Business at the University of Maribor. As a researcher at the Institute for Entrepreneurship and Small Business Management, she was a member of the team for Global Entrepreneurship Monitor Slovenia and the Slovenian Entrepreneurship Observatory. Her main research interests included market exits, entrepreneurship, concentrations and policies of competition, fiscal policies, population ageing and growing businesses. She participated in more than 20 scientific and academic conferences, was a member of numerous programme and organizational committees of Slovenian and international conferences, and edited the FEB magazine. Before her employment at the FEB, she was a journalist in the field of the economy and business, and a leader of strategic and developmental projects in the company. As the recipient of the Tempus and Erasmus research scholarships as well as a research scholarship from the Philipps University of Marburg, she was a researcher at the Institute of Economics at the Vrije Universiteit in Brussels (Belgium) and at the Forschungsstelle zum Vergleich wirtschaftlicher Lenkungssysteme research centre at the Philipps University of Marburg (Germany).



Matej Rus

Matej Rus, MSc (Econ.) is a Senior Lecturer in entrepreneurship. Apart from his academic and research career at the Faculty of Economics and Business, which began in 1996, he has been concentrating on consulting for entrepreneurs. In 2001, as a social entrepreneur and the director of Tovarna podjetij (www.tovarnapodjetij.org) he began to implement the vision of establishing a thriving entrepreneurial incubator at the University of Maribor. He also established significant and recognizable national programmes for startup entrepreneurship, such as Start:up Geekhouse, Go:Gobal Slovenia and Start:up Slovenia. He works mostly with early stage startups and innovation-driven startup-oriented corporates. His successful entrepreneurial path, fruitful research and consulting work all contributed to his considerable experience, which he transfers into teaching, thus contributing to the applicability of theoretical knowledge. Apart from that, he is the head of the organizational committee of the international PODIM Conference, the leading author of a handbook and tool for business planning, as well as a member of the startup group named by the Government of the Republic of Slovenia to improve framework conditions for startups.



Karin Širec

Karin Širec, PhD, is an Associate Professor at the Faculty of Economics and Business, University of Maribor. In 2014-2015 she was appointed Vice Dean for International Accreditations at FEB. Since 2011 she has been a member of the FEB Senate. As a member of the Institute for Entrepreneurship and Small Business Management she carries out research in the fields of entrepreneurship, business economics, female entrepreneurship, high-growth entrepreneurship as well as the establishment and growth of companies. Since 1998, she has carried out regular annual research on the state of entrepreneurship in Slovenia in comparison with Europe. The findings of her research and that of other members of the Institute are published in the series of scientific monographs 'Slovenian Entrepreneurship Observatory'. She is a representative of a Slovenian research group in the international research project DIANA, which specializes in women's entrepreneurship research. Since 2002, the Institute has been implementing the Slovenian part of the world-wide research Global Entrepreneurship Monitor. She is the Slovenian Vice President of the European Council for Small Business (ECSB). Since 2013 she has served as a country expert for the European Commission/OECD project "Inclusive Entrepreneurship".



Polona Tominc

Polona Tominc, PhD, is a full-time Professor in the Department of Quantitative Economic Analysis at the Faculty of Economics and Business, University of Maribor. She was Vice Dean of Education from 2008 to 2015. She is currently actively involved in the process of quality assessment in higher education as a national expert of the Slovenian Quality Assurance Agency and as an evaluator of the international accreditation organization, the European Council for Business Education. Her research focuses on statistical methods in economics and the business sciences, especially in the field of entrepreneurship, gender differences and behavioural differences between social groups in different fields of management. She has been participating and leading several Erasmus+, bilateral and cross-border projects. She has published over 60 original scientific papers, more than half of which appear in the Scopus or WoS databases. She has also participated in several scientific conferences and is author or co-author of chapters and monograph publications. She has been mentoring several doctoral students. She is a team member of the Global Entrepreneurship Monitor Slovenia and the Slovenian Entrepreneurship Observatory research team, and is a leader of the research programme "Entrepreneurship for an Innovative Society".



Zdenka Ženko

Zdenka Ženko, PhD, teaches courses at undergraduate and graduate level at the Faculty of Economics and Business in Slovene and English. She is a full-time Professor of Governance and Strategic Management, and was formerly an Associate Professor of Innovation Management and an Assistant Professor of System Theory. Currently she serves as Vice Dean for Scientific Research, Chair of the Committee for Scientific Research at FEB, head of the Doctoral Program at FEB and a member of different committees at the University of Maribor. She was employed in Apis, the Jozef Stefan Institute, Lek (now Novartis), ASUCLA and Tehnološki transfer. She was also a manager and consultant who established a few companies during her career. Her doctoral thesis is Comparative Analysis of Management Models in Japan, the USA and Western Europe. She has worked and acquired knowledge in the Czech Republic, Greece, Belgium, the USA, Austria, Ukraine and Finland. She lectured in Graz, Kharkov, Lahti and Luxemburg. Her research interests lie in innovating, creativity and ethics.

