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Research Article

Innovation Research Based on Global Entrepreneurship Monitor (GEM) Project: Review of the Last Decade

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Abstract

Research on innovation and entrepreneurship has increased in recent years. This article explores the structure of innovation research based on Global Entrepreneurship Monitor (GEM) project. A search of articles containing innovation and GEM related words was conducted, including only those published in journals within the Thomson Reuters' Social Sciences Citation Index®. The main findings of this study show that is feasible use GEM's data set to do research on innovation. Models that treat new firm creation and innovation as separate aspects of entrepreneurship, as well as, determinants of economic growth could be conceptualize and test with data provide by GEM project. Also, the number of innovations articles using GEM' database has increased in recent years, suggesting opportunities and challenges for future research.

Keywords: *Innovation management, bibliometrics, creativity, organizational studies,new business venture*

1. Introduction

Due to the role in productivity, employment, and economic and social performance the literature on entrepreneurship increased in recent years (Wennekers, van Stel, Thurik, & Reynolds, 2005). Some authors consider that entrepreneurship and new firms' formation are important for the long term economic performance of countries and its regions (Acs, Desai, & Hessels, 2008; Audretsch & Keilbach, 2005).

Literature also agrees that innovation is an economic growth driver as well as a policy tool for promoting economic and social development (Lundvall, Johnson, Andersen, & Dalum, 2002; Nelson & Winter, 1982). Both, entrepreneurship and innovation had in common economic growth and other topics of research. This paper review innovation research using an entrepreneurship dataset.

Created by researchers at the Babson College (USA) and London Business School (UK) in 1999, the purpose of Global Entrepreneurship Monitors (GEM) is to explore the relationship

between entrepreneurial activity and economic growth (Álvarez, Urbano, & Amorós, 2014; Nieto & González-Álvarez, 2016).

Despite the increasing number of people using and collaborating with the GEM project, according to the Social Sciences Citation Index (SSCI), few systematic reviews of GEM-based research can be found (Álvarez et al., 2014). This article aims to explore the content of research on innovation based on GEM data set. In these studies we identify topics, units of analysis and statistical techniques as well as the intellectual core of innovation research based on GEM. To do so, a search of articles include in Social Sciences Citation Index (SSCI) was conducted.

The structure of this paper is as follows. Section 2 presents the data and methods used to select the articles considered in it. Section 3 discusses the results of the study. Finally section 4 presents the conclusions and implication of this study.

2. Data and Methods

Concerning to the methodology aspects, we select the articles considered in this literature review based on their inclusion in the SSCI Web of Knowledge. The search keywords *Innovation*, *GEM*, "*Global Entrepreneurship Monitor*", and "*GEM data*" are used in the search within titles, abstracts or keywords. The search covered articles in the *Business*, *Management*, and *Economics* subject categories. The equation used in the search was as follow: *TS=(innovation) AND TS=(GEM OR "Global Entrepreneurship monitor" OR "GEM data") AND WC=(BUSINESS OR MANAGEMENT OR ECONOMICS).*

The search yield 57 articles all published between 2005 and 2016. Three papers were excluded from the analysis; the first one is an introduction to special issue without any other purpose or contribution. The other two used the word *gems* as in jewelry industry. After the first selection process 54 articles remained. Then an exploratory study of the research topic, theoretical or empirical, and the different methodologies used (level of analysis, statistical techniques, data source). In addition, we present the intellectual core of innovation research based on GEM is presented as Di Stefano, Peteraf, and Verona (2010) propose. Finally we show the number of authors per article, the most cited authors, and the most active author in publishing.

3. Results

The proliferation of publications on innovation and entrepreneurship shows an exponential growth since 1990. Fig. 1 shows published papers include in Social Sciences Citation Index (SSCI). In fact, the number of relevant papers on innovation has approximately tripled within the last decade. Entrepreneurship articles are almost quadrupled.

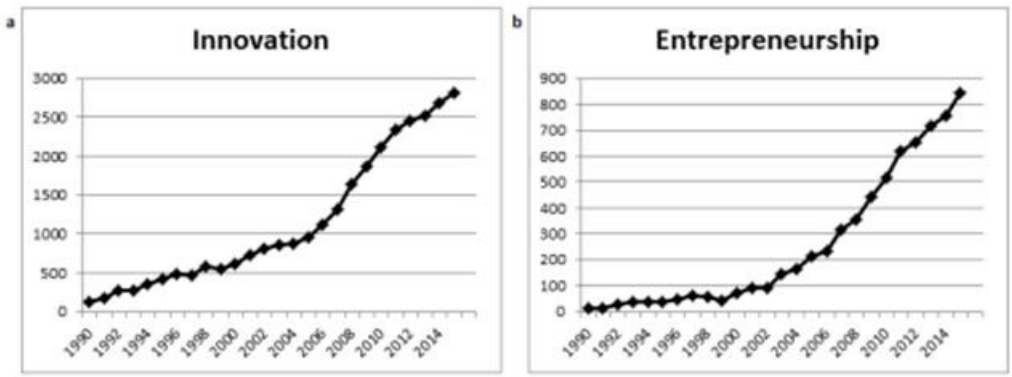

Fig. 1: Published articles per year. (a) Innovation research; (b) Entrepreneurship research.

3.1 Innovation and entrepreneurship research

As we mentioned before, this article explores the structure of innovation research based on GEM data. Is important to explore how *innovation* was used in the selected articles. The words *innovation* or *innovative* are include in the title of nine articles (17%), and 15 articles (28%) include them in the article´s abstract.

Wong, Ho, and Autio (2005) explore firm formation and technological innovation as separate determinants of growth. Koellinger (2008) provides theoretical insights and empirical evidence of entrepreneurial innovativeness (type of novelty) and propose differences between innovative and imitative entrepreneurship, using perceptual variables to explain entrepreneurs' degree of innovation. Anokhin and Wincent (2012) propose that the relationship between start-up rates and innovation is not uniformly positive depending on the country's stage of development and find that start-up rates and innovation boost country innovativeness.

In their research Turró, Urbano, and Peris-Ortiz (2014) use *Institutional Economics* as a conceptual framework with the objective of analyzing the environmental factors that condition *innovation* within the firms. They also provide insights for governmental policies interested in fostering innovation and corporate entrepreneurship. Boyer and Blazy (2014) study innovative and non-innovative French micro-start-ups and find that survival time of innovative enterprises is significantly lower than the non-innovative ones.

Schott and Sedaghat (2014) hypothesize that the quality of a national system moderates the impacts of networks on innovation by adding value to networks, then, they find that quality of national educational system adds innovation benefits to both public and private sphere networking. Crnogaj, Rebernik, and Hojnik (2015) present evidence suggesting that entrepreneurship activity, especially innovation-oriented, is correlated with economic growth and that this relationship is influenced by the economy's developmental stage.

Laužikas and Dailydaitė (2015) focus on impacts of social capital on transformation from efficiency to innovation-driven business. They include aspects like companies that deliver innovative products/services, customers who appreciate and want to try innovative products/services and number of expected competitors in the market. Recently Schott and Jensen (2016) study with a two level model, how firms' networking benefits both process and product innovation.

In general economic oriented papers use innovation as determinant of economic growth and/or refer to the importance of the three stages of economic development factor-driven stage, efficiency-driven stage and innovation-driven stage (Acs & Amorós, 2008a, 2008b; Acs et al., 2008; Bosma & Schutjens, 2007; Khefacha & Belkacem, 2016; Martínez-Fierro, Biedma-Ferrer, & Ruiz-Navarro, 2015; Öner & Kunday, 2016; Peterson & Valliere, 2008; Valliere & Peterson, 2009; Wong et al., 2005).

Other important papers works on building a theoretical background that considers the adoption of new technologies through a dynamic process of creative destruction based on innovation as the most important factor for achieving long-term economic growth (Khefacha & Belkacem, 2016). Hundt and Sternberg (2014) propose that innovative business ideas that entail high risk and uncertainty are more likely to be pursued by individuals who suddenly have lower opportunity costs to self-employment than before (e.g., during recession).

De Clercq, Danis, and Dakhli (2010) shows how advanced market economies tend to view new businesses in positive terms as innovative actors whose activities provide the ‘‘indispensable driving force that empowers capitalist economic growth' Authors like Stephan and Uhlaner (2010) use innovative new business owner rate, in two models of descriptive norms on national entrepreneurship rates.

Wong et al. (2005) first, show the influence of entrepreneurship on economic growth. Second, they also show that this relationship depends more on countries' total per-capita income than on national levels of innovation. Finally they propose to empirically test a model that incorporates new firm creation and innovation as separate aspects of entrepreneurship and determinants of economic growth rates.

Recently , Devece, Peris-Ortiz, and Rueda-Armengot (2016) present an application of fuzzy-set Qualitative Comparative Analysis (fsQCA) to identify the basic entrepreneurial characteristics

(opportunity recognition and innovation) and drivers of entrepreneurship (necessity vs. opportunity) that increase the likelihood of success for new businesses during these two periods in the economic cycle. Results reveal that necessity-driven entrepreneurship is ineffective during recessions and that innovation and opportunity recognition is more relevant as success factors during periods of recession.

3.2 Quantitative analysis

The number of papers on innovation using GEM data is coherent with the evolution of the topics. The largest number of articles was published between 2014 and 2016 (25). The largest number of article per a year is found in two years 2013 and 2016 (10) per year. Table 1 shows the number of published articles per year in the journals with major number of articles. The results also indicate a growing trend in using GEM data to research on innovation, 46% are works published in the last three years. Despite the increasing number of articles, research on innovation using GEM in SSCI journals remains low. This might be an important opportunity for future research.

Small Business Economics has the major number of articles (17%), followed by *International Entrepreneurship and Management Journal* (14%), *Journal of Business Research* (9%), and Entrepreneurship and Regional Development (7%). Other seven journals have (4%) of the publications each (see Table 1).

Table 1: Journals and published articles per year

Journal	2005 2007	2008 2010	2011 2013	2014 2016	Total	%
Small Business Economics	1	3	3	2	9	17
International Entrepreneurship and Management Journal	0	0	4	4	8	14
Journal of Business Research	0	0	0	5	5	9
Entrepreneurship and Regional Development	0	1	2	1	4	7
Estudios de Economia	0	2	0	0	2	4
European Journal of International Management	0	1	1	0	2	4
International Small Business Journal	0	1	1	0	2	4
Journal of Business Venturing	0	1	1	0	2	4
Journal of International Business Studies	0	1	1	0	2	4
Management Decision	0	0	2	0	2	4
Technological Forecasting and Social Change	0	0	0	2	2	4
Rbgn-Revista Brasileira de Gestao de Negocios	0	0	0	1	1	2
Others	1	1	1	10	13	24
Total	2	11	16	25	54	100
%	4	20	30	46	100	

GEM-based research on innovation uses as analysis level country, regions or firm in the majority of the articles 24 in total (44%). Followed by the individual analysis level with 23 articles (43%), while only seven papers (13%) use multilevel analysis. See Table 2 for a complete list of references.

Table 2: Analysis level

Analysis level	No.	%	Reference
Individual	23	43	Aragon-Mendoza, Pardo del Val, & Roig-Dobón, (2016); Boyer & Blazy, (2014); Coduras, Clemente, & Ruiz, (2016); Devece, Peris-Ortiz, & Rueda-Armengot, (2016); Díaz-Casero, Hernández-Mogollón, & Roldán, (2012); Guerrero & Peña-Legazkue, (2013); Guzmán-Alfonso & Guzmán-Cuevas, (2012); Koellinger, (2008); Kwon & Arenius, (2010); Laužikas & Dailydaitė, (2015); Liñán, Santos, & Fernández, (2011); Martiarena, (2013); Mas-Tur, Pinazo, Tur-Porcar, & Sánchez-Masferrer, (2015); Muñoz-Bullón, Sánchez-Bueno, & Vos-Saz, (2015); Nieto & González-Álvarez, (2016); Noguera, Alvarez, & Urbano, (2013); Ramos-Rodríguez, Medina-Garrido, Lorenzo-Gómez, & Ruiz-Navarro, (2010); Rodríguez Gutiérrez, Fuentes Fuentes, & Ariza, (2014); Ruiz Arroyo, Fuentes Fuentes, & Ruiz Jiménez, (2016); Sánchez-Escobedo, Díaz-Casero, Díaz-Aunión, & Hernández-Mogollón, (2014); Schott & Sedaghat, (2014); Turró, López, & Urbano, (2013); Urbano & Turró, (2013)

Analysis level	No.	%	Reference
Country Regions Firms	24	44	Acs & Amorós, (2008ª), (2008b); Acs et al., (2008); Amorós, Basco, & Romaní, (2016); Anokhin & Wincent, (2012); Beynon, Jones, & Pickernell, (2016); Bosma & Schutjens, (2007); Colovic & Lamotte, (2015); Crnogaj, Rebernik, & Hojnik, (2015); De Clercq et al., (2010); Díaz-Casero, Díaz-Aunión, & Sánchez-Escobedo, (2012); Khefacha & Belkacem, (2016); Komlósi, Szerb, Acs, & Ortega-Argilés, (2015); Marcotte, (2013); Martínez-Fierro, Biedma-Ferrer, & Ruiz-Navarro, (2015); Nissan, Castaño, & Carrasco, (2012); Pathak, Laplume, & Xavier-Oliveira, (2015); Peterson & Valliere, (2008); Puumalainen, Sjögrén, Syrjä, & Barraket, (2015); Stam, (2013); Stephan & Uhlaner, (2010); Turró, Urbano, & Peris-Ortiz, (2014); Valliere & Peterson, (2009); Wong et al., (2005)
Multilevel	7	13	Estrin, Korosteleva, & Mickiewicz, (2013); Hundt & Sternberg, (2014); Öner & Kunday, (2016); Schott & Jensen, (2016); Terjesen & Szerb, (2008); Urbano, Alvarez, & Turró, (2013); Wennberg, Pathak, & Autio, (2013)
Total	54	100	

Table 3 shows the statistical techniques used in the selected articles. As expected, due the nature of the GEM binary variables the most used statistical technique in the empirical studies are logit, probit, and tobit models (35%). Follow by multiple regression models with 20% of the studies. Other techniques with 7% are next in the list follow by panel data technique used in eight studies (15%). New techniques appear with the use of Structural Equation Modeling in GEM-based research, three studies used this technique. Is important to highlight that between 2015 and 2016 four studies (7%) used qualitative techniques namely fuzzy-set Qualitative Comparative Analysis (fsQCA). Previous reviews in GEM-based research mentioned this as an emerging future research line (Álvarez et al., 2014).

Table 3: Statistical technique used in the article

Technique	No.	%	Reference
Multiple regression model	11	20	Estrin et al., (2013); Hundt & Sternberg, (2014); Öner & Kunday, (2016); Peterson & Valliere, (2008); Schott & Sedaghat, (2014); Stam, (2013); Stephan & Uhlaner, (2010); Terjesen & Szerb, (2008); Valliere & Peterson, (2009); Wennberg et al., (2013); Wong et al., (2005)
Logit, probit, and tobit models	19	35	Amorós et al., (2016); Aragon-Mendoza et al., (2016); Boyer & Blazy, (2014); Colovic & Lamotte, (2015); De Clercq et al., (2010); Guerrero & Peña-Legazkue, (2013); Koellinger, (2008); Kwon & Arenius, (2010); Liñán et al., (2011); Martiarena, (2013); Muñoz-Bullón et al., (2015); Nieto & González-Álvarez, (2016); Noguera et al., (2013); Ramos-Rodríguez et al., (2010); Ruiz Arroyo et al., (2016); Sánchez-Escobedo et al., (2014); Turró et al., (2013), (2014); Urbano et al., (2013)
Panel data	8	15	Acs & Amorós, (2008a); Anokhin & Wincent, (2012); Díaz-Casero, Díaz-Aunión, et al., (2012); Guzmán-Alfonso & Guzmán-Cuevas, (2012); Khefacha & Belkacem, (2016); Pathak et al., (2015); Puumalainen et al., (2015); Urbano & Turró, (2013)
Structural Equation Models	3	6	Díaz-Casero, Hernández-Mogollón, & Roldán, (2012); Nissan et al., (2012); Rodríguez Gutiérrez et al., (2014)
fsQCA (Qualitative Comparative Analysis)	4	7	Beynon et al., (2016); Coduras et al., (2016); Devece et al., (2016); Mas-Tur et al., (2015)
Others	9	17	Acs & Amorós, (2008b); Acs et al., (2008); Bosma & Schutjens, (2007); Crnogaj et al., (2015); Komlósi et al., (2015); Laužikas & Dailydaitė, (2015); Marcotte, (2013); Martínez-Fierro et al., (2015); Schott & Jensen, (2016)
Total	54	100	

Most of the articles have three authors (43%), follow by articles with two authors (37%). Studies with one and four authors have 9% each and one author is at the end of the list with 2%. The average number of authors is three this is common on management and business studies and also is an indicator of the importance of research teams in this field.

As is see in Table 4 Spain is the country with the major number of publications (63%) follow by USA (29%) and Germany (16%). Latin American countries in the list are Chile (8%), Colombia (5%), and México, Brazil and El Salvador with (3%). The number of countries with scientific publication is very low especially in Latin American countries this is an important opportunity for future research in the topic using GEM data set.

Table 4: Countries and published articles

Country	No.	%	Country	No.	%
Australia	1	3	Kuwait	1	3
Belgium	1	3	Mexico	1	3
Brazil	1	3	Netherlands	5	13
Canada	5	13	Scotland	1	3
Chile	3	8	Singapore	1	3
Colombia	2	5	Slovenia	1	3
Denmark	2	5	Spain	24	63
El Salvador	1	3	Sweden	2	5
England	5	13	Tunisia	1	3
Finland	5	13	Turkey	1	3
France	4	11	USA	11	29
Germany	6	16	Wales	1	3
Hungary	2	5	Total	38	100

We use citation analysis to identify the intellectual core of research on innovation using GEM data set as proposed by Di Stefano (2010) the authors make the assumption that citation counts are a valid measure of prominence and influence and use it as a critical first step in uncovering the underlying structure of a field. To do so, we include only articles that received a number of citations greater than the average number of citations within our panel 14 citations (Di Stefano et al., 2010).
We used number of citations according SSCI in order to stablish the impact of articles and as we mentioned before a valid measure of prominence and influence of the authors. The intellectual core of innovation research based on GEM data includes 12 studies. The most cited article is Wong et al. (2005) with 188 cites (29%). Followed by Acs et al. (2008) with 89 cites that represents 14% of the total cites. In the third place is Stephan and Uhlaner (2010) 64 cites, 10% of the total cites. Fourth and fifth places are Koellinger (2008), and Kwon and Arenius (2010) with 59 and 50 cites respectively. Table 5, presents the all intellectual core of innovation research based on GEM data.

Table 5: The intellectual core of innovation research based on GEM data

References	Times cited
Wong, Ho and Autio. *Small Business Economics*. 2005, 24(3)	188
Acs, Desai and Hessels. *Small Business Economics*. 2008, 31(3)	89
Stephan and Uhlaner. *Journal of International Business Studies.* 2010, 41(8)	64
Koellinger. *Small Business Economics.* 2008, 31(1)	59
Kwon and Arenius. *Journal of Business Venturing*. 2010, 25(3)	50
Estrin, Korosteleva and Mickiewicz. *Journal of Business Venturing.* 2013, 28(4)	44
Acs and Amoros. *Small Business Economics.* 2008, 31(3)	42
De Clercq, Danis and Dakhli. *International Business Review.* 2010, 19(1)	33
Valliere and Peterson. *Entrepreneurship And Regional Development.* 2009, 21(5-6)	27
Linan, Santos and Fernandez. *International Entrepreneurship and Management Journal.* 2011, 7(3)	27
Ramos-Rodriguez, Medina-Garrido, Lorenzo-Gomez and Ruiz-Navarro. *International Small Business Journal*. 2010, 28(6)	16
Wennberg, Pathak and Autio. *Entrepreneurship and Regional Development.* 2013, 25(9-10)	15

In Fig. 2, we present the visualization of intellectual core of innovation research based on GEM data. The bubble size represents the number of citations showing the relative importance of each paper. The figure also shows the year and the Web of Science categories of each article *Business*; *Business, Economics, Management*; *Business, Management*; *Business, Planning & Development;* and *Economics, Geography*.

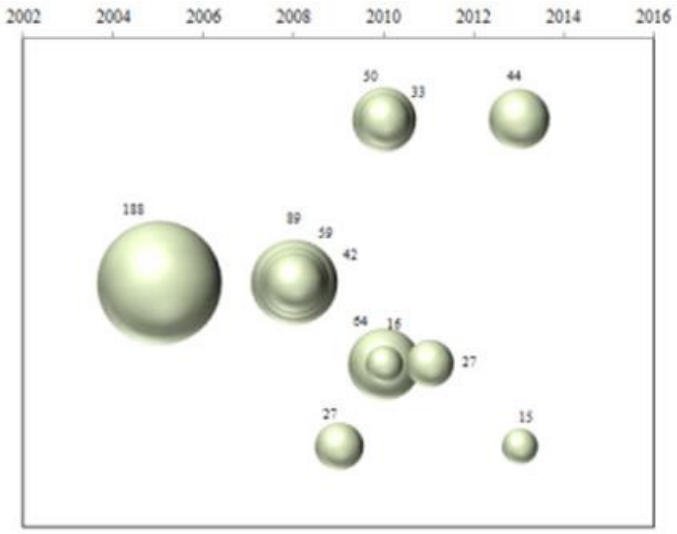

Fig. 2: The intellectual core of innovation research based on GEM data

Table 6 presents the top ten of authors, order by the number of articles and by the total cites per author. The author with more papers is Urbano with five articles, followed by Acs and Turro with four papers each. The most cited author is Autio with 203 cites, followed by Acs (135) and Amorós (46) these three authors belong to the intellectual core of innovation research based on GEM data.

Table 6: Number of articles and total cites per author

Author	Articles
Urbano, D	5
Acs, ZJ	4
Turro, A	4
Amoros, JE	3
Diaz-Casero, JC	3
Hernandez-Mogollon, R	3
Autio, E	2
Alvarez, C	2
Coduras, A	2
Diaz-Aunion, AM	2

Author	Cites
Autio, E	203
Acs, ZJ	135
Amoros, JE	46
Urbano, D	24
Turro, A	14
Alvarez, C	12
Diaz-Casero, JC	5
Hernandez-Mogollon, R	5
Coduras, A	4
Diaz-Aunion, AM	4

Is interesting to point out that most cited authors also published in most important entrepreneurship and small business management journals all of them include in the Journal Citations Report (JCR). The articles include in the intellectual core of innovation research based on GEM data, also are published in these journals. *Small Business Economics* has 33% of the works in the intellectual core, *Entrepreneurship and Regional Development*, and Journal of Business Venturing has 17% each, finally *International Business Review*, *International Entrepreneurship and Management Journal*, *International Small Business Journal*, and *Journal of International Business Studies* has 8% of the articles in the intellectual core.

4. Conclusions and Implications

The GEM project is currently a mature group of academics, researchers, professionals and resources all over the world. Since 1999 the GEM project collects data, produces annual national and regional reports, and explores specific themes (e.g., female entrepreneurs, high-growth new

ventures, financing new ventures, entrepreneurship education and training, social entrepreneurship, etc.). The relevance of GEM-based publications and reports, in designing policies related to foster entrepreneurial activities were proven.

In this article we explore the structure of innovation research based on data of Global Entrepreneurship Monitor (GEM) using academic works published in journals indexed by the SSCI. Entrepreneurship and innovation overlap in many facets, indicating that GEM data can be used to explore many of these specific themes (e.g., innovative new business, innovation-driven stage economies, innovative business ideas, intrapreneurship and corporate entrepreneurship, etc.).

Acs and Amorós, (2008b) emphasize that there has not been much progress in theoretical studies related to GEM probably because the GEM project is in the initial phase. These arguments suggest that as GEM matures, there will be more publications related to it in high-impact journals (Álvarez et al., 2014). The GEM project is now mature and robust the richness of its data set can support high impact research on entrepreneurship and innovation, even look back and improve with better data great papers like *Entrepreneurship, Innovation and Economic Growth: Evidence from GEM data* (Wong et al., 2005).

Multilevel models and articles are scarce. The current availability of individual and country-level data from GEM project provides inputs to conceptualize and test theory involving relationships that cross levels and time. That's an extraordinary opportunity for future research on innovation and entrepreneurship. Another future line of research can be found on Wong et al., (2005) proposal, to empirically test a model that incorporates new firm creation and innovation as separate phenomena of entrepreneurship.

Finally, articles using techniques like fsQCA evidence the evolution of works made with GEM´s database and the project itself. This certainly helps in positioning the database as a source for works published in leading high-impact entrepreneurship journals in order to reach the high-impact JCR journals within the business and management areas.

References

Acs, Z. J., & Amorós, J. E. (2008a). Entrepreneurship and competitiveness dynamics in Latin America. *Small Business Economics*, *31*(3), 305–322.

Acs, Z. J., & Amorós, J. E. (2008b). Introduction: The startup process. *Estudios de Economía*, *35*(2), 121–132.

Acs, Z. J., Desai, S., & Hessels, J. (2008). Entrepreneurship, economic development and institutions. *Small Business Economics*, *31*(3), 219–234.

Álvarez, C., Urbano, D., & Amorós, J. E. (2014). GEM research: achievements and challenges. *Small Business Economics*, *42*(3), 445–465.

Amorós, J. E., Basco, R., & Romaní, G. (2016). Determinants of early internationalization of new firms: the case of Chile. *International Entrepreneurship and Management Journal*, *12*(1), 283–307.

Anokhin, S., & Wincent, J. (2012). Start-up rates and innovation: A cross-country examination. *Journal of International Business Studies*, *43*(1), 41–60.

Aragon-Mendoza, J., Pardo del Val, M., & Roig-Dobón, S. (2016). The influence of institutions development in venture creation decision: A cognitive view. *Journal of Business Research*, *69*, 4941–4946.

Audretsch, D., & Keilbach, M. (2005). Entrepreneurship capital and regional growth. *The Annals of Regional Science*, *39*(3), 457–469.

Beynon, M. J., Jones, P., & Pickernell, D. (2016). Country-based comparison analysis using fsQCA investigating entrepreneurial attitudes and activity. *Journal of Business Research*, *69*(2), 1271–1276.

Bosma, N., & Schutjens, V. (2007). Patterns of promising entrepreneurial activity in European regions. *Tijdschrift Voor Economische En Sociale Geografie*, *98*(5), 675–686.

Boyer, T., & Blazy, R. (2014). Born to be alive? The survival of innovative and non-innovative French micro-start-ups. *Small Business Economics*, *42*(4), 669–683.

Coduras, A., Clemente, J. A., & Ruiz, J. (2016). A novel application of fuzzy-set qualitative comparative analysis to GEM data. *Journal of Business Research*, *69*(4), 1265–1270.

Colovic, A., & Lamotte, O. (2015). Technological Environment and Technology Entrepreneurship: A Cross-Country Analysis. *Creativity and Innovation Management*, *24*(4), 617–628.

Crnogaj, K., Rebernik, M., & Hojnik, B. B. (2015). Supporting Economic Growth with Innovation-oriented Entrepreneurship. *Economicky Casopis*, *63*(4), 395–409.

De Clercq, D., Danis, W. M., & Dakhli, M. (2010). The moderating effect of institutional context on the relationship between associational activity and new business activity in emerging economies. *International*

Business Review, *19*(1), 85–101.
Devece, C., Peris-Ortiz, M., & Rueda-Armengot, C. (2016). Entrepreneurship during economic crisis: Success factors and paths to failure. *Journal of Business Research*, *69*, 5366–5370.
Di Stefano, G., Peteraf, M., & Verona, G. (2010). Dynamic capabilities deconstructed: a bibliographic investigation into the origins, development, and future directions of the research domain. *Industrial and Corporate Change*, *19*(4), 1187–1204.
Díaz-Casero, J. C., Díaz-Aunión, D. Á. M., & Sánchez-Escobedo, M. C. (2012). Economic freedom and entrepreneurial activity. *Management Decision*, *50*(9), 1686–1711.
Díaz-Casero, J. C., Hernández-Mogollón, R., & Roldán, J. L. (2012). A structural model of the antecedents to entrepreneurial capacity. *International Small Business Journal*, *30*(8), 850–872.
Estrin, S., Korosteleva, J., & Mickiewicz, T. (2013). Which institutions encourage entrepreneurial growth aspirations? *Journal of Business Venturing*, *28*(4), 564–580.
Guerrero, M., & Peña-Legazkue, I. (2013). The effect of intrapreneurial experience on corporate venturing: Evidence from developed economies. *International Entrepreneurship and Management Journal*, *9*(3), 397–416.
Guzmán-Alfonso, C., & Guzmán-Cuevas, J. (2012). Entrepreneurial intention models as applied to Latin America. *Journal of Organizational Change Management*, *25*(5), 721–735.
Hundt, C., & Sternberg, R. (2014). How Did the Economic Crisis Influence New Firm Creation? *Jahrbücher Für Nationalökonomie Und Statistk*, *234*(6), 722–756.
Khefacha, I., & Belkacem, L. (2016). Technology-based ventures and sustainable development: Cointegrating and causal relationships with a panel data approach. *The Journal of International Trade & Economic Development*, *25*(2), 192–212.
Koellinger, P. (2008). Why are some entrepreneurs more innovative than others? *Small Business Economics*, *31*(1), 21–37.
Komlósi, É., Szerb, L., Acs, Z. J., & Ortega-Argilés, R. (2015). Quality-related regional differences in entrepreneurship based on the GEDI methodology: The case of Hungary*. *Acta Oeconomica*, *65*(3), 455–477.
Kwon, S.-W., & Arenius, P. (2010). Nations of entrepreneurs: A social capital perspective. *Journal of Business Venturing*, *25*(3), 315–330.
Laužikas, M., & Dailydaitė, S. (2015). Impacts of social capital on transformation from efficiency to innovation-driven business. *Journal of Business Economics and Management*, *16*(1), 37–51.
Liñán, F., Santos, F. J., & Fernández, J. (2011). The influence of perceptions on potential entrepreneurs. *International Entrepreneurship and Management Journal*, *7*(3), 373–390.
Lundvall, B.-Å., Johnson, B., Andersen, E. S., & Dalum, B. (2002). National systems of production, innovation and competence building. *Research Policy*, *31*(2), 213–231.
Marcotte, C. (2013). Measuring entrepreneurship at the country level: A review and research agenda. *Entrepreneurship & Regional Development*, *25*((3-4)), 174–194.
Martiarena, A. (2013). What's so entrepreneurial about intrapreneurs? *Small Business Economics*, *40*(1), 27–39.
Martínez-Fierro, S., Biedma-Ferrer, J. M., & Ruiz-Navarro, J. (2015). Entrepreneurial framework conditions and economic development: an analysis of GEM countries. *Revista de Economía Mundial*, *41*, 181–212.
Mas-Tur, A., Pinazo, P., Tur-Porcar, A. M., & Sánchez-Masferrer, M. (2015). What to avoid to succeed as an entrepreneur. *Journal of Business Research*, *68*(11), 2279–2284.
Muñoz-Bullón, F., Sánchez-Bueno, M. J., & Vos-Saz, A. (2015). Nascent entrepreneurs' personality attributes and the international dimension of new ventures. *International Entrepreneurship and Management Journal*, *11*(3), 473–492.
Nelson, R. R., & Winter, S. G. (1982). *An evolutionary theory of economic change*. Harvard University Press.
Nieto, M., & González-Álvarez, N. (2016). Social capital effects on the discovery and exploitation of entrepreneurial opportunities. *International Entrepreneurship and Management Journal*, *12*(2), 507–530.
Nissan, E., Castaño, M.-S., & Carrasco, I. (2012). Drivers of non-profit activity: a cross-country analysis. *Small Business Economics*, *38*(3), 303–320.
Noguera, M., Alvarez, C., & Urbano, D. (2013). Socio-cultural factors and female entrepreneurship. *International Entrepreneurship and Management Journal*, *9*(2), 183–197.
Öner, M. A., & Kunday, Ö. (2016). A study on Schumpeterian and Kirznerian entrepreneurship in Turkey: 2006–2013. *Technological Forecasting and Social Change*, *102*, 62–71.
Pathak, S., Laplume, A., & Xavier-Oliveira, E. (2015). Inbound foreign direct investment and domestic entrepreneurial activity. *Entrepreneurship & Regional Development*, *27*((5-6)), 334–356.
Peterson, R., & Valliere, D. (2008). Entrepreneurship and national economic growth: The European entrepreneurial deficit. *European Journal of International Management*, *2*(4), 471–490.
Puumalainen, K., Sjögrén, H., Syrjä, P., & Barraket, J. (2015). Comparing social entrepreneurship across nations: An exploratory study of institutional effects. *Canadian Journal of Administrative Science*, *32*(4),

276–287.
Ramos-Rodríguez, A.-R., Medina-Garrido, J.-A., Lorenzo-Gómez, J.-D., & Ruiz-Navarro, J. (2010). What you know or who you know? The role of intellectual and social capital in opportunity recognition. *International Small Business Journal*, *28*(6), 566–582.
Rodríguez Gutiérrez, P., Fuentes Fuentes, M. del M., & Ariza, L. R. (2014). Strategic capabilities and performance in women-owned businesses in Mexico. *Journal of Small Business Management*, *52*(3), 541–554.
Ruiz Arroyo, M., Fuentes Fuentes, M. del M., & Ruiz Jiménez, J. M. (2016). An international study of the factors explaining high-growth expectation in new ventures: a gender perspective. *Revista Brasileira de Gestão de Negócios*, *18*(60), 171–190.
Sánchez-Escobedo, M. de la C., Díaz-Casero, J. C., Díaz-Aunión, D. Á. M., & Hernández-Mogollón, R. (2014). Gender analysis of entrepreneurial intentions as a function of economic development across three groups of countries. *International Entrepreneurship and Management Journal*, *10*(4), 747–765.
Schott, T., & Jensen, K. W. (2016). Firms' innovation benefiting from networking and institutional support: A global analysis of national and firm effects. *Research Policy*, *45*(6), 1233–1246.
Schott, T., & Sedaghat, M. (2014). Innovation embedded in entrepreneurs' networks and national educational systems. *Small Business Economics*, *43*(2), 463–476.
Stam, E. (2013). Knowledge and entrepreneurial employees: A country-level analysis. *Small Business Economics*, *41*(4), 887–898.
Stephan, U., & Uhlaner, L. M. (2010). Performance-based vs socially supportive culture: A cross-national study of descriptive norms and entrepreneurship. *Journal of International Business Studies*, *41*(8), 1347–1364.
Terjesen, S., & Szerb, L. (2008). Dice thrown from the beginning? An empirical investigation of determinants of firm level growth expectations. *Estudios de Economía*, *35*(2), 153–178.
Turró, A., López, L., & Urbano, D. (2013). Intrapreneurship conditioning factors from a resource-based theory. *European Journal of International Management*, *7*(3), 315–332.
Turró, A., Urbano, D., & Peris-Ortiz, M. (2014). Culture and innovation: The moderating effect of cultural values on corporate entrepreneurship. *Technological Forecasting and Social Change*, *88*, 360–369.
Urbano, D., Alvarez, C., & Turró, A. (2013). Organizational resources and intrapreneurial activities: an international study. *Management Decision*, *51*(4), 854–870.
Urbano, D., & Turró, A. (2013). Conditioning factors for corporate entrepreneurship: an in (ex) ternal approach. *International Entrepreneurship and Management Journal*, *9*(3), 379–396.
Valliere, D., & Peterson, R. (2009). Entrepreneurship and economic growth: Evidence from emerging and developed countries. *Entrepreneurship & Regional Development*, *21*((5-6)), 459–480.
Wennberg, K., Pathak, S., & Autio, E. (2013). How culture moulds the effects of self-efficacy and fear of failure on entrepreneurship. *Entrepreneurship & Regional Development*, *25*((9-10)), 756–780.
Wennekers, S., van Stel, A., Thurik, R., & Reynolds, P. (2005). Nascent entrepreneurship and the level of economic development. *Small Business Economics*, *24*(3), 293–309.
Wong, P. K., Ho, Y. P., & Autio, E. (2005). Entrepreneurship, innovation and economic growth: Evidence from GEM data. *Small Business Economics*, *24*(3), 335–350.