



# Bibliometric analysis of immigrant entrepreneurship research 2009–2019

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## Abstract

This comprehensive bibliometric study analyses the nomological structure of the immigrant entrepreneurship domain 2009–2019 by means of citation and co-citation analysis. Web of Science citation data was used to return lists of most-cited authors, journals, and publications. Co-citation matrixes were tabulated and visualized with the VosViewer software for three consecutive time intervals to highlight shifts in the evolving structure of knowledge. The results show that the immigrant entrepreneurship domain transformed into a management research domain with seminal theorization shifting toward structuralistic models. Recently, however, the results indicate the successive fragmentation of the nomological network, shown as more localized network clusters while a universal field theory appears absent. We discuss the implications of these developments with regards to the findings of works of content synthesis and formulate seven specific recommendations for future research in the field as well as point out why “multifocality” appears a prosperous concept to further advancing field theorization. Our results serve as an important point of reference for both scholars and practitioners in the field of immigrant entrepreneurship.

**Keywords** Immigrant · Entrepreneurship · Bibliometrics · VosViewer

## Introduction

According to estimates, 281 million people were living permanently outside their country of birth in 2020, highlighting migration as a key reality of modern societies and as such attracting increased interest from policymakers and researchers worldwide (United Nations DESA, 2020). Regarding the socio-economic integration of migrants, the higher share of self-employed among migrant communities compared to native populations of host countries has been frequently emphasized (Bosma et al., 2021; Lofstrom, 2019; Zhou, 2004). On the one hand, entrepreneurship facilitates the integration of migrants when access to job markets is hampered due to language barriers, qualification mismatches, or discrimination. At the same time, migrant entrepreneurship

is likewise becoming more opportunity-driven and promises the host regions an additional source of innovation, which will help to expand the range of goods and services on offer while also generating employment for both migrants and natives (Beyer, 2017; Bosma et al., 2021; Ram et al., 2017). As such, policy support for migrant entrepreneurship became a frequent sight that however requires an accurate understanding of the fast-paced dynamics of the phenomenon in all its facets ranging from ethnic enclave economies to businesses that take a leading role in the global high-tech transformation of economy and society (c.f. migrant founded companies Google, Tesla, eBay, or Yahoo!). As a result, research on migrant entrepreneurship is no longer niche research but an essential means to understanding economic and social innovation and quickly becoming a major discipline in the field of business and management research (Dabić et al., 2020; R. J. S. Dheer, 2018; Guerra Fernandes et al., 2022; Nazareno et al., 2019). Against the background of increased socio-economic importance, the research discipline migrant entrepreneurship has become increasingly attractive and both the number of publications and the geographical range of research increased significantly in recent years, which again caused greater shifts in the knowledge

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structure of the field (Guerra Fernandes et al., 2022; Indarti et al., 2020; Sithas & Surangi, 2021). Synthesis work plays an essential role in monitoring these shifts to provide current and aspiring scholars with insights on seminal works and the trajectory of the field.

Over time, several works provided substantial synthesis to the immigrant entrepreneurship field, the majority of which systematic literature reviews (SLRs); among the most widely regarded, Zhou (2004), as one of the landmark studies on transnational entrepreneurship, Aliaga-Isla and Rialp (2013) for setting important course toward a stronger qualitative orientation and geographical diversification, R. J. Dheer (2018) for delineating field boundaries and establishing a framework for integrating new findings, and most recently Nazareno et al. (2019) for its debate of contemporary approaches of theoretical field updates as well as Sithas and Surangi (2021) for specifying seven main themes of research foci. Despite methodological rigor of content analysis, that all adopt a replicable, scientific, and transparent approach to minimize selection bias; with academic knowledge expanding exponentially, it is increasingly difficult to determine the relevant works for content analysis (Donthu et al., 2021; Linnenluecke et al., 2020; Zupic & Čater, 2015) as the technique by nature can only consider fractions of the full body of knowledge (Hiebl, 2021; Kuckertz & Block, 2021; Williams et al., 2021). While SLRs still remain the most common approach to synthesizing a field (Fisch & Block, 2018; Hiebl, 2021; Rojon et al., 2021), scholars call for bibliometric analysis as a quantitative synthesis supplement (Ganzaroli et al., 2013)—a valuable tool for measuring the quality and productivity of knowledge production (Cobo et al., 2015; Ganzaroli et al., 2013) that provides a scientific summary of the evidence of field knowledge (Popay et al., 2006). Like content analysis, bibliometrics uses a systematic approach to summarize evidence with a detailed and comprehensive study plan (Tawfik et al., 2019), which limits bias, in order to allow it to be replicated in future studies (Jones et al., 2011).

Table 1 provides an overview of the methodological approaches taken by some of the most recent and widely regarded bibliometric synthesis studies that mapped the domain immigrant entrepreneurship in recent years. The listing shows a wide range of search terms, databases, selection criteria, samples sizes, time frames, software, and analytical methods used—an inference that no universal agenda exists for conducting a bibliometric analysis on immigrant entrepreneurship. Puzzling appears the complete absence of co-citation analysis after 2011, an analytical tool that is considered one of the most seminal techniques of bibliometric analysis (Ma et al., 2013). The persistent single emphasis on citation analysis instead has resulted in incomplete samples that missed seminal works due to methodological inaccuracies in search strings and selection criteria. Co-citation

addresses these methodological shortcomings specifically by generating its sample from a vast number of backwards-cited references from source documents that result in a more complete picture of seminal studies and their influence over time across the several research clusters of the nomological network of knowledge. As visualized networks, co-citation offers an easy to comprehend and instant regard of field structure, especially for upcoming scholars who require an early point of reference for developing their research agenda. While co-citation analysis as one of the key bibliometric measures undoubtedly provides an essential additional in-depth insight into the deeper structure of a field (Linnenluecke et al., 2020; Sternberg, 1991; Sutton & Staw, 1995), it experiences certain limitations, e.g., the technique does not determine the purpose of a single citation within a source document, since citations could occur in a negation mode or for non-scientific merits like an authors' prestige (Kraus et al., 2012; Osareh, 1996; Pilkington & Teichert, 2006). As well the technique suffers from contemporary blindness since recent field additions require time to accumulate the necessary citation counts to be regarded for analysis.

To hedge these limitations, we consider the results from co-citation analysis in relation to findings from rigid content analysis which allows for a more detailed approximation of domain knowledge and its future trajectory than any of the two methodologies executed in isolation. We specifically regard the three content synthesis works by Aliaga-Isla and Rialp (2013), R. J. Dheer (2018) and Nazareno et al. (2019), each as a direct reference point for discussing the implications derived from the three snapshot networks that subdivide the entire time frame 2009 to 2019 in our analysis in order to highlight the evolving nature of the nomological structure. The following research questions guide our investigation.

RQ1: How has the structure of research clusters changed according to co-citation analysis?

RQ2: Which implications emerge for the future research agenda of the field?

Hereafter, we first detail the methodological approach that involves SSCI citation source data from 2008 to 2019. After data tabulation of backward-cited references into the three consecutive time frames that indicate the evolution of research foci, the resulting networks are visualized as networks of nodes and edges using the VosViewer software tool. The evolution depicts a striking thematic fragmentation of the field after 2009 that goes together with the gradual dissolve of core field theorization causing us to renew the calls for theoretical rigor and providing an updated discussion about paths to step beyond the limitations of the mixed-embeddedness theory. We highlight local centers of network density as promising areas for empirical work in the future involving super-diversity, refugee entrepreneurship, and transnationalism and formulate 7 distinct research foci that apply unanimously throughout all clusters.

**Table 1** Methodological approaches of bibliometric studies on immigrant entrepreneurship

Publication	Purpose/RQ	Time frame	Sample size	Data source	Search strings	Software	Output
(Ma et al., 2013)	1) Mapping major research themes in ethnic entrepreneurship research in 1999-2008. 2) Citation and co-citation analysis to identify the invisible network of knowledge underlying ethnic entrepreneurship literature.	1999-2008	403	WoS	Title/abstracts: Keywords - "ethnic entrepreneurship" OR - "ethnic entrepreneur" OR - "ethnic business" OR - "ethnic enterprise" OR - "immigrant business" OR - "immigrant enterprise" OR - "immigrant entrepreneur" OR - "immigrant entrepreneurship" and all possible derivatives and combinations of these terms	Ms Excel/ Graphing programmer NETDRAW 2.0/ Social network analysis software suite UCINET	Citation analysis 1) Top 10 most cited journals/books in ethnic entrepreneurship literature 2) Top 10 most cited scholars in ethnic entrepreneurship literature 3) Top 51 publications selected for co-citation analysis: 1999-2003 4) Top 51 publications selected for co-citation analysis: 2004-2008 5) Top 51 publications selected for co-citation analysis: 2009-2011
(Ganzaroli et al., 2013)	1) Build up a map of the intellectual infrastructure of the filed useful to identify core publications and epistemological community/group in it.	1990-2013	102	WoS	Title/abstracts: Keywords - "ethnic entrepreneurship" OR - "ethnic entrepreneur" OR - "migrant entrepreneurship" OR - "migrant entrepreneur" OR - "multicultural entrepreneurship" OR - "multicultural entrepreneur" OR - "cross-cultural Entrepreneurship" OR - "cross-cultural entrepreneur" OR- "transnational entrepreneurship" OR - "transnational entrepreneur"	- Bibexcel- GPS visualiser	Co-citation analysis 1) Research clusters in ethnic entrepreneurship literature: 1999-2003 2) Research clusters in ethnic entrepreneurship literature: 2004-2008 3) Research clusters in ethnic entrepreneurship literature: 2009-2011 1) Geographic distribution of authors in the world 2) Authors with the largest number of publications. 3) Most active journals in publication Citation analysis 1) most backwards-cited authors 2) Network of direct citations between the publications in the sample.
(Indarti et al., 2020)	1) What research has been done in the field in the context of growing markets, regarding definitions, theories, research themes, research methodologies and settings? 2) What are the future research agendas in the ethnic entrepreneurship field?	1988-2018	183	PoP & Google Scholar	Title/abstracts: Keywords - "ethnic entrepreneurship" AND "emerging markets" - "ethnic entrepreneurship" AND "developing countries" - "immigrant entrepreneurship" AND "emerging markets" - "immigrant entrepreneurship" AND "developing markets"	MS Excel	Co-citations cluster analysis 1) Number of publications per year (1988–2019) 2) Publishers of reviewed articles 3) Top seven journals that published the highest number of articles on the selected topic 4) Various definitions of ethnic entrepreneurs 5) Theoretical approach/perspective and description 6) Clusters of research themes 7) Research methods used in the field of ethnic entrepreneurship 8) Research setting of ethnic entrepreneurship studies

Table 1 (continued)

Publication	Purpose/RQ	Time frame	Sample size	Data source	Search strings	Software	Output
(Guerra Fernandes et al., 2022)	1) Describe how the publications in this scientific area are organized concerning authors and the evolution of scientific production in the period under analysis. 2) Identify the most cited publications and authors. 3) Understand which scientific journals and countries have the highest scientific production in this area.4) Identify future research opportunities.	1980-2021	267	WoS & Scopus	Title/abstracts: Keywords - "ethnic" AND "entrepreneur"	R-Studio 4.0.4 software tool/ Bibliometrix version 3.0.4.	1) Annual scientific production 2) Country scientific production 3) Most cited countries 4) Most cited journals, authors, and articles 5) Topical trend in 10 most cited articles 6) Keyword analysis (mapping of thematic clusters)

\*Author created infographic

## Methodology

The citation data for this study was extracted from Thomson Reuters Web of Science. We searched peer-reviewed journals with an impact factor in the period 2009 to 2019 for article abstracts and titles containing relevant “immigrant entrepreneurship” related terms to ensure a methodologically sound initial set of source documents. Our search strings were consistent with the bibliometric predecessor study by Ma et al. (2013) featuring co-citation analysis of the field prior 2008, which results in a consistent methodology regarding search strings, data base, and analytical tool over a total of 20 years (1999–2019). In order to analyze a none-static but evolving nomological structure requires snapshots of the structure for different time intervals to infer shifts and trends. In accordance, we created three separate snapshots by searching for articles published in the two consecutive 5-year time periods 2009–2013 and 2014–2018 to infer broader nomological shifts as well as a separate search for 2019 alone to infer on the most recent field dynamics. The choice for 5-year intervals was consistent with Ma et al. (2013), who created intervals for 1999–2003 (S1) and 2004–2008 (S2) which are referenced in our analysis as networks S1 and S2 while our newly computed networks 2009–2013 and 2014–2018 are regarded as S3 and S4 in order to showcase the extended reference frame of discussion regarding domain development.

Prior to conducting co-citation analysis, the initial citation data yielded interesting background information that we decided to include, c.f. list of most-cited journals (Table 2), list of most-cited authors (Table 3), and list of most-cited publications (Tables 4, 5, and 6). The later formed the basis to compute co-citation matrixes with MS Excel to count frequencies of co-cited works in source articles for the three mentioned intervals. In a final step, the hidden structure of knowledge was visualized as a network of nodes and edges by using VosViewer, a software, previously used to map developments in the field of entrepreneurship studies (Ferreira et al., 2015). Our approach toward domain analysis by means of network analysis is in its form a widely executed approach in the field of management studies, including other entrepreneurship disciplines c.f. (Ferreira et al., 2015; Gartner et al., 2006; Kraus et al., 2014; Landström et al., 2012; Schildt et al., 2006). Figure 1 summarizes our methodological approach regarding data mining, analysis and discussion.

## Results

### Citation analysis

Between 1999 and 2019, the SSCI categories associated with field output transitioned from merely sociology-related

**Table 2** Top 10 most-cited journals in migrant entrepreneurship literature

S3 (2009–2013) Journal	Citations	S4 (2014–2018) Journal	Citations	S2019 (2019) Journal	Citations
International Migration Review	486	<b>Entrepreneurship Theory and Practice</b>	<b>672</b>	Journal of Ethnic and Migration Studies	270
American Sociological Review	416	<b>Journal of Business Venturing</b>	<b>619</b>	<b>Entrepreneurship &amp; Regional Development</b>	<b>230</b>
Journal of Ethnic and Migration Studies	367	International Migration Review	598	<b>Entrepreneurship Theory and Practice</b>	<b>198</b>
American Journal of Sociology	346	American Sociological Review	572	<b>Journal of Business Venturing</b>	<b>191</b>
<b>Entrepreneurship Theory and Practice</b>	<b>319</b>	<b>Entrepreneurship &amp; Regional Development</b>	<b>565</b>	Ethnic and Racial Studies	180
Journal of International Business Studies	309	Journal of Ethnic and Migration Studies	511	International Migration Review	176
Ethnic and Racial Studies	297	American Journal of Sociology	481	<b>International Small Business Journal</b>	<b>160</b>
<b>Journal of Business Venturing</b>	<b>275</b>	Journal of International Business Studies	<b>470</b>	American Economic Review	129
Academy of Management Review	260	Ethnic and Racial Studies	406	Academy of Management Review	123
<b>Entrepreneurship &amp; Regional Development</b>	<b>258</b>	Academy of Management Review	373	American Sociological Review	117

Specialized entrepreneurship journals in boldface

\* Information adapted from Thomas Reuter's Web of Science © database

to management-related categories, as indicated by Fig. 1. Ma et al. (2013) previously predicted a greater research focus on entrepreneurial and management features from his analysis of the field trajectory 1999–2008. In 2019, more than half of journal publications were associated with the field of management, business, and economics, with sociology and ethnic studies decreased to a combined 12% (Fig. 2).

In addition to shifts in SSCI categories, Table 2 shows the two specialized entrepreneurship journals “*Entrepreneurship Theory and Practice*” and “*Journal of Business Venturing*” as main outlets of field publications between 2014 and 2018 (S4), i.e., replacing the sociological journals “*International Migration*

*Review*” and “*American Sociological Review*” that had topped the list between 2009 and 2013 (S3). In the broader context of 20 years development 1999–2018, the “*Journal of Small Business Management*” was the first ever specialized entrepreneurship journal entering the list of most-cited journals in 10th rank in 2003–2008 (Ma et al., 2013), strengthening the impression of a major readjustment of the field's focus after 2008.

Table 3 correlates the shift in category link and journal outlets with shifts in the list of most-cited scholars. Most apparent is the rise of Kloosterman to the top of the list for the interval 2019 (S2019). Meanwhile, the Top-6 most-cited scholars across intervals 2009–2019 stayed consistent with only slight

**Table 3** Top 10 most-cited scholars in migrant entrepreneurship literature

S3 (2009–2013) Author	Citations	S4 (2014–2018) Author	Citations	S2019 (2019) Author	Citations
<i>Portes</i>	328	<i>Portes</i>	351	Kloosterman	<u>76</u>
<i>Light</i>	296	<i>Light</i>	288	<i>Portes</i>	71
<i>Ram</i>	190	<b>Kloosterman</b>	<u>196</u>	<i>Ram</i>	67
<i>Waldinger</i>	172	<i>Waldinger</i>	187	<i>Light</i>	67
<b>Kloosterman</b>	<u>148</u>	<i>Zhou</i>	144	<i>Waldinger</i>	48
<i>Zhou</i>	118	<i>Ram</i>	137	<i>Zhou</i>	46
Aldrich	111	Fairlie	124	Fairlie	37
Saxenian	98	Aldrich	120	Rath	36
Fairlie	93	Borjas	107	Bourdieu	33
Borjas	90	Bates	97	Aldrich	32

Specialized entrepreneurship journals in boldface

\* Information adapted from (Ma, 2013) and Thomas Reuter's Web of Science © database



**Table 4** Most-cited publications 2009–2013

ID	Publication	Citations	ID	Publication	Citations
A1/(1)_NC-1	<b>(Waldinger et al., 1990)/B</b>	100	A46/(24)_NC-3	<b>(Bates, 1994)</b>	19
A2/(3)_NC-1	(Light & Gold, 2000)/B	76	A47/(-)_NC-4	(Chaganti & Greene, 2002)	19
A3/(2)_NC-3	(Light, 1972)/B	71	A48/(29)_NC-3	(Portes & Zhou, 1996)	19
A4/(10)_NC-2	(Kloosterman et al., 1999)	64	A49/(-)_NC-4	(Schumpeter & Backhaus, 2003)/B	19
A5/(4)_NC-1	(Aldrich & Waldinger, 1990)	60	A50/(39)_NC-5	(Yuengert, 1995)	19
A6/(5)_NC-1	(Bonacich, 1973)	57	A51/(-)_NC-4	(Aldrich & Zimmer, 1986)	18
A7/(-)_NC-1	(Zhou, 2004)	54	A52/(-)_NC-2	(Barrett et al., 2002)	18
A8/(26)_NC-2	(Kloosterman & Rath, 2001)	49	A53/(-)_NC-4	(Davidsson & Honig, 2003)	18
A9/(41)_NC-4	(Granovetter, 1985)	46	A54/(-)_NC-5	(Fairlie, 1999)	18
A10/(6)_NC-3	(Light & Bonacich, 1988)/B	45	A55/(27)_NC-3	<b>(Light et al., 1994)</b>	18
A11/(21)_NC-1	(Portes et al., 2002)	43	A56/(-)_NC-4	(Lin et al., 2001)/B	18
A12/(17)_NC-3	<b>(Wilson and Portes, 1980)</b>	41	A57/(28)_NC-3	<b>(Portes &amp; Jensen, 1989)</b>	18
A13/(9)_NC-1	(Hofstede, 1980)/B	38	A58/(22)_NC-3	<b>(Sanders &amp; Nee, 1987)</b>	18
A14/(8)_NC-4	(Portes & Sensenbrenner, 1993)	36	A59/(-)_NC-1	(Weber, 1930)/B	18
A15/(12)_NC-3	<b>(Portes and Bach, 1985)/B</b>	36	A60/(-)_NC-4	(Adler & Kwon, 2002)	17
A16/(31)_NC-2	(Barrett et al., 1996)	35	A61/(-)_NC-1	(Basch et al., 1994)/B	17
A17/(7)_NC-3	<b>(Light &amp; Rosenstein, 1995)/B</b>	33	A62/(32)_NC-2	<b>(Basu, 1998)</b>	17
A18/(20)_NC-5	(Borjas, 1986)	31	A63/(-)_NC-4	(Becker, 1964)/B	17
A19/(-)_NC-4	(Coleman, 1988)	31	A64/(-)_NC-5	(Constant & Zimmermann, 2006)	17
A20/(11)_NC-5	(Fairlie & Meyer, 1996)	31	A65/(-)_NC-1	(Dana, 2007)/B	17
A21/(-)_NC-1	(Saxenian, 2007)/B	31	A66/(18)_NC-5	(Evans & Leighton, 1989)	17
A22/(-)_NC-1	(Yin, 1984)/B	31	A67/(-)_NC-5	(Evans & Jovanovic, 1989)	17
A23/(-)_NC-4	(Granovetter, 1973)	29	A68/(25)_NC-2	<b>(Evans, 1989)</b>	17
A24/(-)_NC-1	(Kloosterman & Rath, 2003)/B	29	A69/(40)_NC-4	(Fukuyama, 1995)/B	17
A25/(37)_NC-4	(Portes, 1998)	29	A70/(-)_NC-2	(Kloosterman, 2010)	17
A26/(-)_NC-4	(Putnam, 2000)/B	29	A71/(-)_NC-5	(Portes & Zhou, 1993)	17
A27/(13)_NC-4	(Sanders & Nee, 1996)	29	A72/(-)_NC-2	(Ram et al., 2003)	17
A28/(33)_NC-2	(Basu & Altinay, 2002)	28	A73/(51)_NC-3	<b>(Zhou &amp; Logan, 1989)</b>	17
A29/(15)_NC-3	<b>(Bonacich &amp; Modell, 1980)/B</b>	27	A74/(-)_NC-3	(Aldrich et al., 1985)	16
A30/(-)_NC-1	(Portes, 1995)/B	27	A75/(-)_NC-2	(Iyer & Shapiro, 1999)	16
A31/(-)_NC-2	(Rath & Kloosterman, 2000)	27	A76/(-)_NC-1	(Ley, 2006)	16
A32/(-)_NC-4	(Bourdieu, 2018)/B	26	A77/(-)_NC-3	(Min & Bozorgmehr, 2000)	16
A33/(-)_NC-5	(Clark & Drinkwater, 2000)	25	A78/(-)_NC-1	(North, 1990)/B	16
A34/(43)_NC-5	<b>(Light, 1979)</b>	25	A79/(-)_NC-1	(Saxenian, 2002)	16
A35/(48)_NC-2	(Ram & Smallbone, 2003)	25	A80/(49)_NC-2	<b>(Storey, 1994)/B</b>	16
A36/(-)_NC-1	(Florida, 2002)/B	24	A81/(16)_NC-3	(Waldinger, 1996)/B	16
A37/(35)_NC-3	(Light & Karageorgis, 1994)/B	23	A82/(-)_NC-4	(Burt, 1992) B	16
A38/(-)_NC-4	(Light, 1984)	23	A83/(-)_NC-2	(Bagwell, 2008)	15
A39/(-)_NC-1	(Shane & Venkataraman, 2000)	23	A84/(-)_NC-5	(Baycan Levent et al., 2003)	15
A40/(23)_NC-3	(Zhou, 1992)/B	23	A85/(36)_NC-3	<b>(Logan et al., 1994)</b>	15
A41/(-)_NC-2	(Engelen, 2001)	22	A86/(-)_NC-1	(Portes et al., 1999)	15
A42/(-)_NC-1	(Saxenian, 1999)/B	22	A87/(-)_NC-2	(Ram & Hillin, 1994)	15
A43/(-)_NC-2	(Sassen, 1991)/B	22	A88/(-)_NC-2	(Ram et al., 2001)	15
A44/(19)_NC-2	<b>(Ram &amp; Jones, 1998)</b>	20	A89/(-)_NC-1	(Saxenian, 2002)	15
A45/(50)_NC-3	<b>(Waldinger, 1986)/B</b>	20	A90/(-)_NC-2	(Werbner, 1994)/B	15

Specialized entrepreneurship journals in boldface

\* Information adapted from (Ma, 2013) and Thomas Reuter's Web of Science © database

**Table 5** Most-cited publications 2014–2018

ID	Publication	Citations	ID	Publication	Citations
B1/(A1)_NC-2	(Waldinger et al., 1990)/B	109	B44/(A31)_NC-3	(Rath & Kloosterman, 2000)	26
B2/(A7)_NC-2	(Zhou, 2004)	87	B45/(A65)_NC-3	(Dana, 2007)/B	25
B3/(A5)_NC-3	(Aldrich & Waldinger, 1990)	86	B46/(A40)_NC-2	(Zhou, 1992)/B	25
B4/(A3)_NC-2	(Light, 1972)/B	73	B47/(A58)_NC-2	(Sanders & Nee, 1987)	24
B5/(A8)_NC-3	(Kloosterman & Rath, 2001)	66	B48/(-)_NC-1	(Strauss & Corbin, 1990)/B	24
B6/(A4)_NC-3	(Kloosterman et al., 1999)	65	B49/(A55)_NC-2	(Light et al., 1994)	23
B7/(A2)_NC-2	(Light & Gold, 2000)/B	58	B50/(A25)_NC-1	(Portes, 1998)	23
B8/(A12)_NC-2	(Wilson & Portes, 1980)	58	B51/(-)_NC-2	(Portes & Rumbaut, 2006)/B	23
B9/(A6)_NC-2	(Bonacich, 1973)	57	B52/(-)_NC-1	(Levie, 2007)	22
B10/(A14)_NC-1	(Portes & Sensenbrenner, 1993)	56	B53/(A34)_NC-2	(Light, 1979)	22
B11/(A10)_NC-2	(Light & Bonacich, 1988)/B	56	B54/(-)_NC-3	(Masurel et al., 2002)	22
B12/(A11)_NC-1	(Portes et al., 2002)	55	B55/(A30)_NC-2	(Portes, 1995)/B	22
B13/(A70)_NC-3	(Kloosterman, 2010)	52	B56/(-)_NC-1	(Friederike Welter, 2011)	22
B14/(A27)_NC-2	(Sanders & Nee, 1996)	49	B57/(A74)_NC-2	(Aldrich et al., 1985)	21
B15/(A9)_NC-1	(Granovetter, 1985)	47	B58/(-)_NC-2	(Becker, 1957)/B	21
B16/(A13)_NC-1	(Hofstede, 1980)/B	41	B59/(-)_NC-1	(Chand & Ghorbani, 2011)	21
B17/(A17)_NC-2	(Light & Rosenstein, 1995)/B	41	B60/(-)_NC-3	(Collins & Low, 2010)	21
B18/(-)_NC-1	(Drori et al., 2009)	40	B61/(A68)_NC-2	(Evans, 1989)	21
B19/(A23)_NC-1	(Granovetter, 1973)	39	B62/(-)_NC-1	(Patton, 1990)/B	21
B20/(A32)_NC-1	(Bourdieu, 2018)	38	B63/(-)_NC-1	(Ram et al., 2008)	21
B21/(A47)_NC-1	(Chaganti & Greene, 2002)	37	B64/(A21)_NC-1	(Saxenian, 2007)/B	21
B22/(A15)_NC-2	(Portes & Bach, 1985)/B	37	B65/(-)_NC-1	(Sequeira et al., 2009)	21
B23/(A22)_NC-1	(Yin, 1984)/B	36	B66/(-)_NC-1	(Shane, 2003)/B	21
B24/(A18)_NC-2	(Borjas, 1986)	35	B67/(-)_NC-1	(Baycan-Levent & Nijkamp, 2009)	20
B25/(A64)_NC-2	(Constant & Zimmermann, 2006)	35	B68/(-)_NC-1	(Bourdieu, 1984)/B	20
B26/(A29)_NC-2	(Bonacich & Modell, 1980)/B	32	B69/(-)_NC-1	(Hofstede et al., 2005)/B	20
B27/(A19)_NC-1	(Coleman, 1988)	32	B70/(-)_NC-1	(Dafna Kariv et al., 2009)	20
B28/(A20)_NC-2	(Fairlie & Meyer, 1996)	32	B71/(-)_NC-3	(Rusinovic, 2008)	20
B29/(-)_NC-3	(Volery, 2007)	32	B72/(-)_NC-2	(Valdez, 2011)/B	20
B30/(-)_NC-1	(Miles et al., 1994)/B	30	B73/(A52)	(Barrett et al., 2002)	19
B31/(A39)_NC-1	(Shane & Venkataraman, 2000)	30	B74/(A16)	(Barrett et al., 1996)	19
B32/(A28)_NC-3	(Basu & Altinay, 2002)	29	B75/(-)_NC-2	(Portes & Zhou, 1992)	19
B33/(A24)_NC-3	(R Kloosterman & Rath, 2003)/B	29	B76/(-)_NC-1	(Rauch & Trindade, 2002)	19
B34/(-)_NC-1	(Aliaga-Isla & Rialp, 2013)	28	B77/(-)_NC-3	(Shinnar & Young, 2008)	19
B35/(A33)_NC-2	(Clark & Drinkwater, 2000)	28	B78/(A62)_NC-3	(Basu, 1998)	18
B36/(A38)_NC-2	(Light, 1984)	28	B79/(-)_NC-1	(Chen & Tan, 2009)	18
B37/(-)_NC-1	(Achidi Ndofor & Priem, 2011)	28	B80/(-)_NC-3	(Chrysostome, 2010)	18
B38/(A26)_NC-1	(Putnam, 2000)/B	28	B81/(-)_NC-3	(Engelen, 2001)	18
B39/(A53)_NC-1	(Davidsson & Honig, 2003)	27	B82/(-)_NC-2	(Hammarstedt, 2001)	18
B40/(-)_NC-1	(Eisenhardt, 1989)	27	B83/(-)_NC-1	(Jones et al., 2010)	18
B41/(-)_NC-1	(Glaser & Strauss, 1967)/B	27	B84/(-)_NC-1	(Nahapiet & Ghoshal, 1998)	18
B42/(A57)_NC-2	(Portes & Jensen, 1989)	27	B85/(-)_NC-1	(Wong & Ng, 2002)	18
B43/(A1)_NC-1	(Vertovec, 2007)	27	B86/(A50)_NC-2	(Yuengert, 1995)	18

\* Information adapted from Thomas Reuter's Web of Science © database

but none-directed alterations in rank, while these scholars except Kloosterman already listed in the Top-10 for interval 1999–2003. Tables 4, 5, and 6 list the most-cited publications

for each interval. Each publication features a unique ID, that later helps to identify its node in the network visualization (refer to Fig. 1 for details on the information contained in the ID).

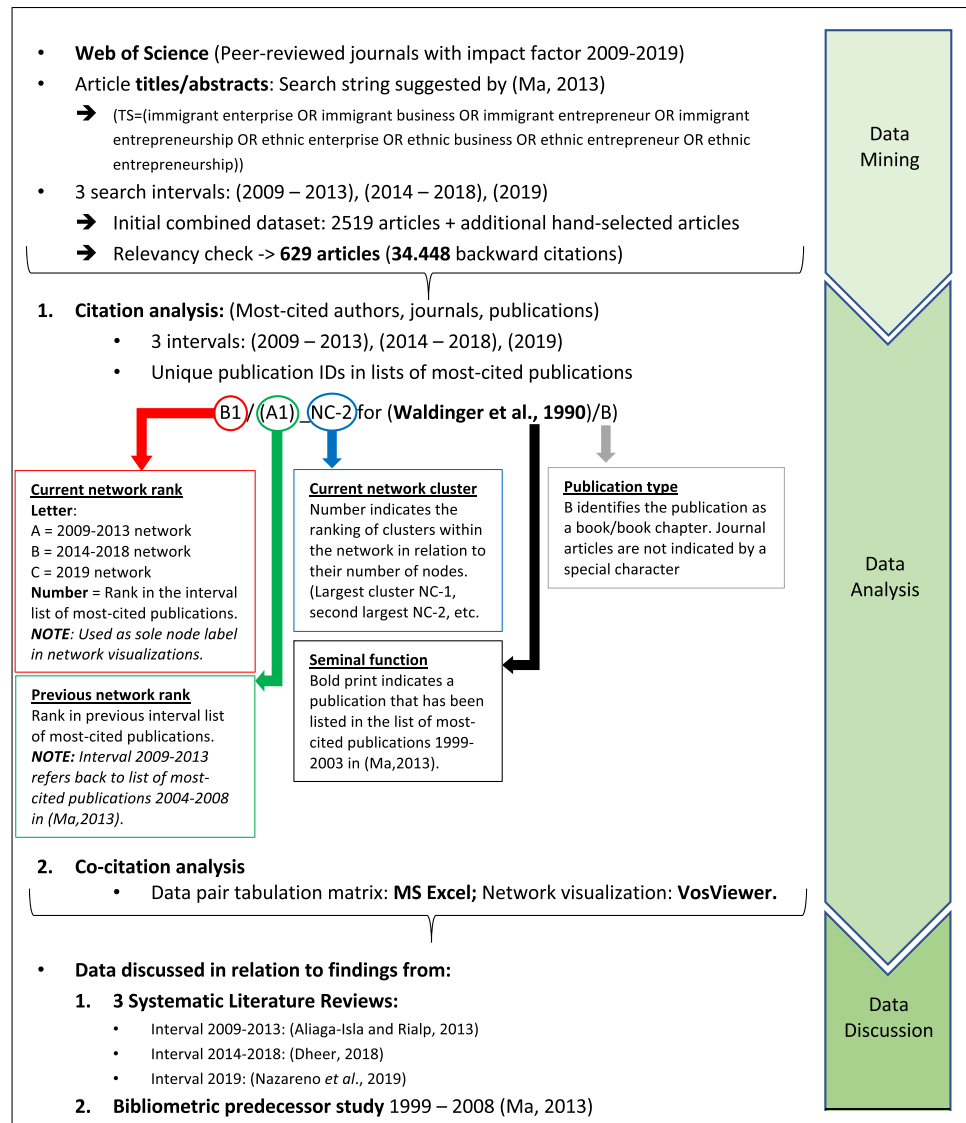
**Table 6** Most-cited publications 2019

ID	Publication	Citations	ID	Publication	Citations
C1/(B2)_NC-4	(Zhou, 2004)	24	C49/(-)_NC-2	(Jack & Anderson, 2002)	6
C2/(B13)_NC-5	(Kloosterman, 2010)	22	C50/(B70)_NC-4	(Dafna Kariv et al., 2009)	6
C3/(B1)_NC-4	(Waldinger et al., 1990)/B	19	C51/(-)_NC-2	(Katila & Wahlbeck, 2012)	6
C4/(B6)_NC-5	(Kloosterman et al., 1999)	17	C52/(-)_NC-4	(Omi & Winant, 2014)/B	6
C5/(B3)_NC-4	(Aldrich & Waldinger, 1990)	15	C53/(B63)_NC-3	(Ram et al., 2008)	6
C6/(B15)_NC-5	(Granovetter, 1985)	15	C54/(B76)_NC-4	(Rauch & Trindade, 2002)	6
C7/(B5)_NC-5	(Kloosterman & Rath, 2001)	15	C55/(-)_NC-3	(Sepulveda et al., 2011)	6
C8/(B29)_NC-4	(Volery, 2007)/B	14	C56/(-)_NC-3	(Smallbone et al., 2010)	6
C9/(-)_NC-3	(Jones et al., 2014)	13	C57/(B48)_NC-2	(Strauss & Corbin, 1990)/B	6
C10/(B30)_NC-2	(Miles et al., 1994)/B	12	C58/(B72)_NC-3	(Valdez, 2011)/B	6
C11/(-)_NC-3	(Vershinina et al., 2011)	12	C59/(-)_NC-5	(Wang & Altinay, 2012)	6
C12/(B4)_NC-4	(Light, 1972)/B	11	C60/(B56)_NC-2	(Friederike Welter, 2011)	6
C13/(B14)_NC-1	(Sanders & Nee, 1996)	11	C61/(B46)_NC-3	(Zhou, 1992)/B	6
C14/(B35)_NC-1	(Clark & Drinkwater, 2000)	10	C62/(-)_NC-1	(Ajzen, 1991)	5
C15/(B16)_NC-1	(Hofstede, 1980)/B	10	C63/(-)_NC-2	(Beckers & Blumberg, 2013)	5
C16/(B10)_NC-1	(Portes & Sensenbrenner, 1993)	10	C64/(-)_NC-1	(Braun & Clarke, 2006)	5
C17/(B12)_NC-2	(Portes et al., 2002)	10	C65/(-)_NC-2	(Brzozowski et al., 2014)	5
C18/(-)_NC-3	(Monder Ram et al., 2017)	10	C66/(B21)_NC-3	(Chaganti & Greene, 2002)	5
C19/(B34)_NC-2	(Aliaga-Isla & Rialp, 2013)	9	C67/(B59)_NC-1	(Chand & Ghorbani, 2011)	5
C20/(B32)_NC-1	(Basu & Altinay, 2002)	9	C68/(-)_NC-1	(Collins, 2003)	5
C21/(B36)_NC-1	(Light, 1984)	9	C69/(B60)_NC-1	(Collins, 2010)	5
C22/(B23)_NC-2	(Yin, 1984)/B	9	C70/(-)_NC-4	(Combes et al., 2005)	5
C23/(B18)_NC-2	(Drori et al., 2009)	8	C71/(-)_NC-1	(Corbin & Strauss, 2008)/B	5
C24/(B7)_NC-3	(Light & Gold, 2000)/B	8	C72/(-)_NC-1	(Creswell, 2003)/B	5
C25/(B44)_NC-2	(Rath & Kloosterman, 2000)	8	C73/(-)_NC-4	(Dana & Dana, 2005)	5
C26/(B43)_NC-3	(Vertovec, 2007)	8	C74/(B39)_NC-2	(Davidsson & Honig, 2003)	5
C27/(B20)_NC-3	(Bourdieu, 2018)/B	7	C75/(-)_NC-3	(Edwards et al., 2016)	5
C28/(-)_NC-5	(Carter et al., 2015)	7	C76/(-)_NC-3	(Essers & Benschop, 2009)	5
C29/(-)_NC-2	(Eisenhardt & Graebner, 2007)	7	C77/(B61)_NC-1	(Evans, 1989)	5
C30/(B28)_NC-1	(Fairlie & Meyer, 1996)	7	C78/(-)_NC-2	(Lincoln & Guba, 1985)/B	5
C31/(-)_NC-2	(Gioia et al., 2013)	7	C79/(-)_NC-2	(Ibrahim & Galt, 2011)	5
C32/(B52)_NC-1	(Levie, 2007)	7	C80/(-)_NC-4	(Kloosterman, 2003)	5
C33/(B37)_NC-2	(Achidi Ndofor & Priem, 2011)	7	C81/(-)_NC-3	(Koning & Verver, 2013)	5
C34/(-)_NC-5	(Ram & Jones, 2008)	7	C82/(B53)_NC-4	(Light, 1979)	5
C35/(-)_NC-1	(Wauters & Lambrecht, 2008)	7	C83/(-)_NC-1	(Lin et al., 2001)/B	5
C36/(B8)_NC-4	(Wilson & Portes, 1980)	7	C84/(B54)_NC-5	(Masurel et al., 2002)	5
C37/(B73)_NC-5	(Barrett et al., 2002)	6	C85/(-)_NC-1	(McPherson et al., 2001)	5
C38/(-)_NC-3	(Barrett & Vershinina, 2017)	6	C86/(-)_NC-2	(Mustafa & Chen, 2010)	5
C39/(-)_NC-3	(Barth, 1998)/B	6	C87/(-)_NC-2	(North, 1990)/B	5
C40/(-)_NC-1	(Bizri, 2017)	6	C88/(B22)_NC-4	(Portes & Bach, 1985)/B	5
C41/(-)_NC-2	(Brzozowski et al., 2017)	6	C89/(B38)_NC-1	(Putnam, 2000)/B	5
C42/(-)_NC-1	(Charmaz, 2014)/B	6	C90/(-)_NC-4	(Raijman & Tienda, 2000)	5
C43/(B80)_NC-1	(Chrysostome, 2010)	6	C91/(-)_NC-2	(Riddle et al., 2010)	5
C44/(B40)_NC-4	(Eisenhardt, 1989)	6	C92/(B47)_NC-4	(Sanders & Nee, 1987)	5
C45/(B81)_NC-5	(Engelen, 2001)	6	C93/(B77)_NC-1	(Shinnar & Young, 2008)	5
C46/(B41)_NC-1	(Glaser & Strauss, 1967)/B	6	C94/(-)_NC-1	(Shneikat & Ryan, 2018)	5
C47/(B19)_NC-3	(Granovetter, 1973)	6	C95/(-)_NC-3	(Terjesen & Elam, 2009)	5
C48/(B69)_NC-1	(Hofstede et al., 2005)/B	6	C96/(-)_NC-4	(Waldinger, 1993)	5

\*Information adapted from Thomas Reuter's Web of Science © database



**Fig. 1** Study methodology.  
\*Author created infographic



Across the three intervals, the share of publications already listed as most-cited domain publications for the interval 1999–2003 in Ma et al. (2013) reduced steadily to only 10% in 2019. Meanwhile, the percentage of journal articles in the list increased from 64% between 2009 and 2013 to 76% in 2019. Apparent is also the successively growing share of works on qualitative research methodologies in the lists over time. Topping the most recent 2019 list are Zhou (2004) and R. C. Kloosterman (2010), while Light (1972) and Bonacich (1973) as seminal expressions of historical culturalist theorization dropping down in rank.

These shifts signal an increase in focus on transnational entrepreneurship including increased application of structuralist theorization while seminal works on culturalist theorization loose citation counts despite their historic merits. The tabulated citation data offers novel indication of deep structural

shifts in the hidden structure of knowledge, that requires more detailed tracing by means of co-citation analysis.

### Co-citation analysis

We employ science mapping that uses co-citation analysis to examine how disciplines, fields, specialties, and individual papers are related to one another (Zupic & Čater, 2015). We produce a spatial representation of the findings analogous to geographic maps by using the VosViewer software (Small, 1999; van Leeuwen & Calero Medina, 2012). The resulting nomological networks for the three consecutive intervals 2009–2013, 2014–2018, and 2019 locate seminal fieldworks in the networks center due to their high citation count, multiple edges, and strong edge weights, hence centralized nodes impact research in the various network

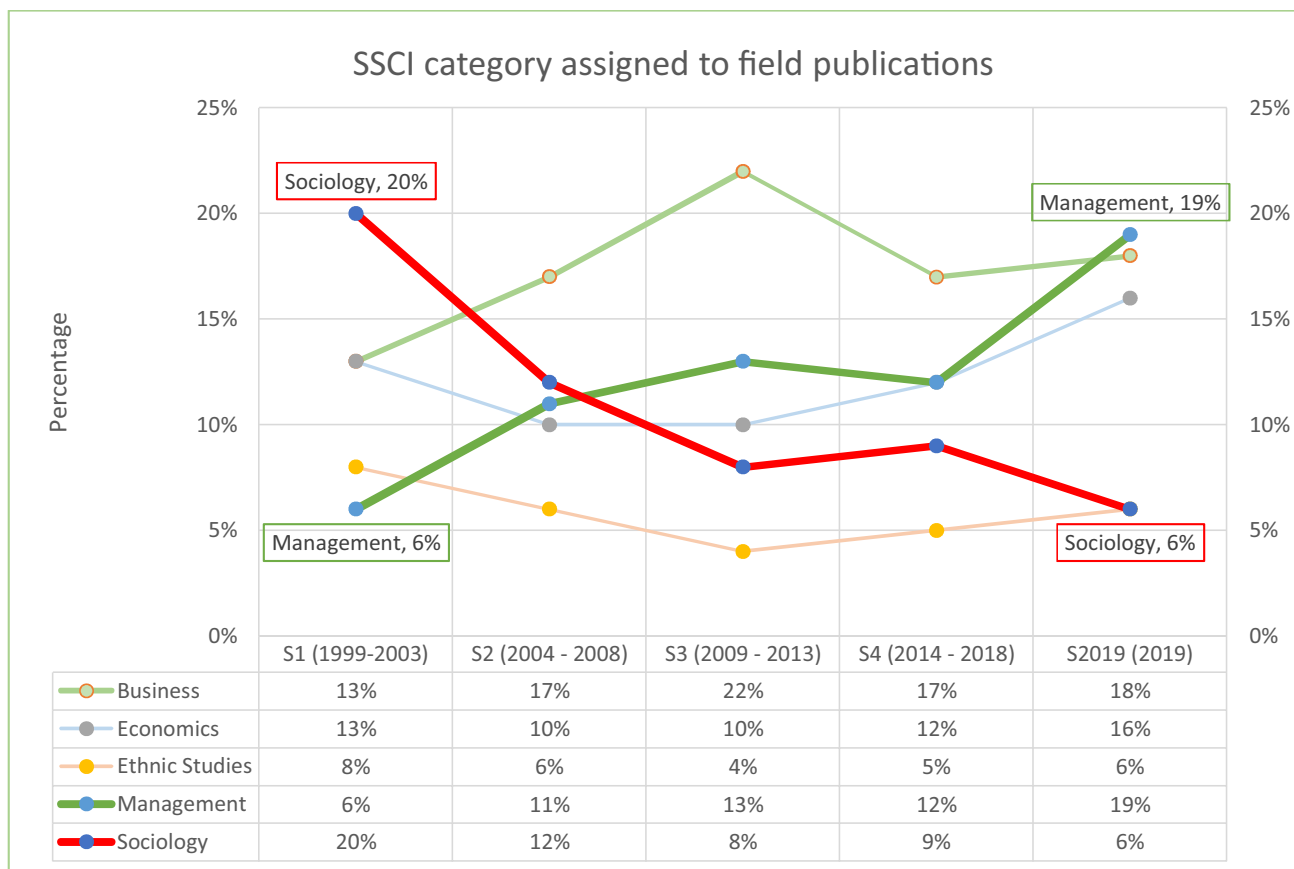


Fig. 2 IE Publications by SSCI category. \* Information adapted from Thomas Reuter’s Web of Science © database

clusters. The peripheral network regions instead contain more recent field additions of yet less seminal impact, hence rather yield insights on the more contemporary dynamics within each cluster and inferring on their trajectory. As a result, domain trends and signs of impending field fragmentation first show as shifts in the network periphery, while shifting core structures result from long-term and universal conceptual readjustments of research focus across clusters.

In order to visualize detailed nomological structures that show both core and peripheral shifts, we methodologically divert slightly from Ma et al. (2013) by visualizing the co-citation matrix of the full set of most-cited publications. To enhance visual comprehension, only edge weights greater 10 are displayed. For each interval, we regard density and cluster analysis to report on the individual cluster dynamics and inferring insights in correlation with qualitative synthesis works.

**Structure prior 2009**

Field knowledge up to the turn of the century when the mixed-embeddedness theory (R. Kloosterman et al., 1999) revolutionized the field was relatively consistent (Aliaga-Isla & Rialp, 2013). Ma et al. (2013) indicated in their bibliometric

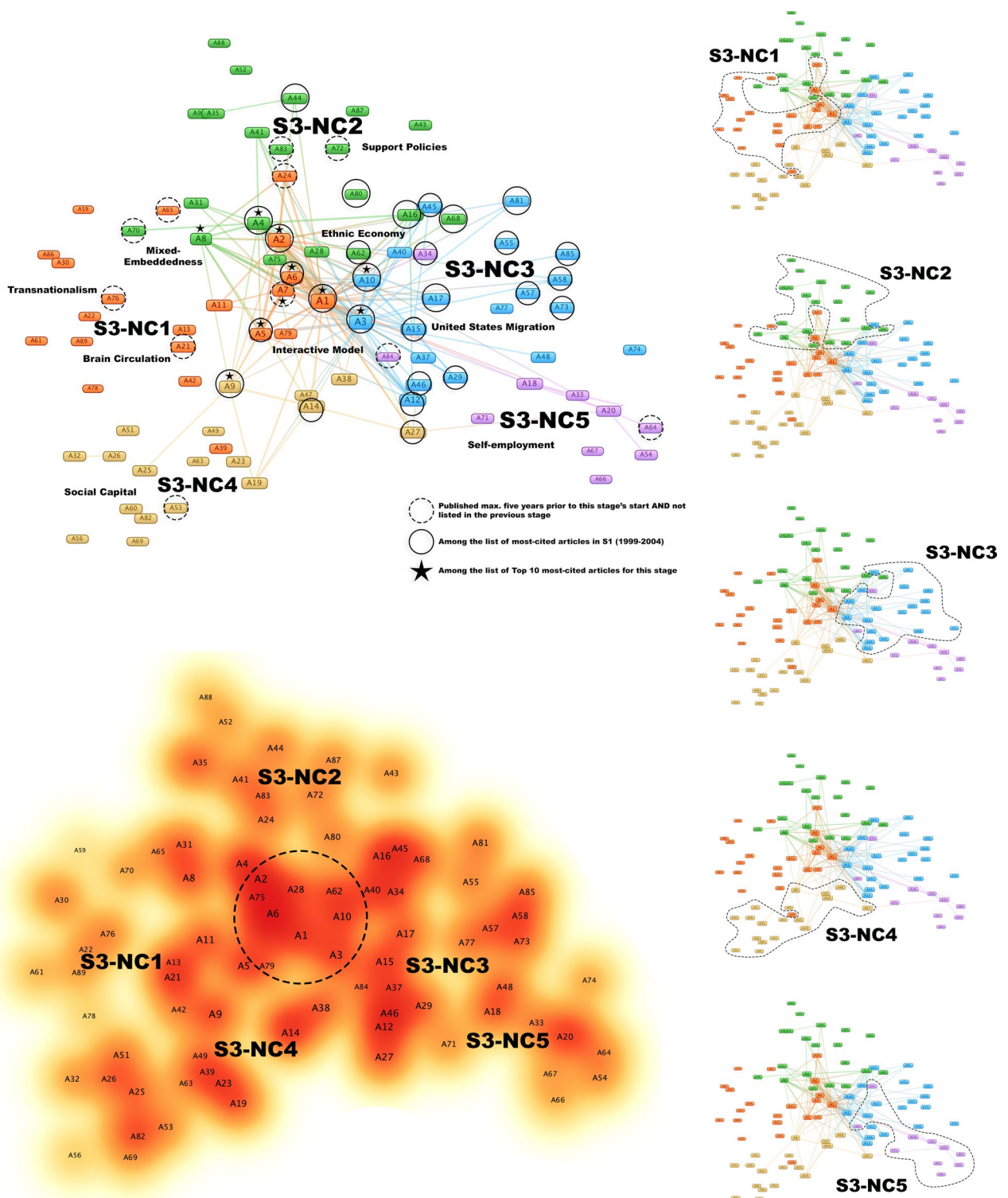
assessment of the domain 1999–2008, that field knowledge drew on a steady set of culturalist theorization, while only weak cluster divisions running along taxonomic lines regarding research context or methodology were apparent. Subsequently, we consider our results in the extended 20 years range 1999–2019 by referencing results from the nomological analysis by Ma et al. (2013) who tabulated two snapshots of the structure in 1999–2003 (S1) and 2004–2008 (S2).

**Structure 2009–2013 (Fig. 3)**

Shifts in the network core compared to the previous 2004–2008 interval in Ma et al. (2013) indicate the growing emphasis on studying phenomenon related to “Transnational Entrepreneurship” by means of structuralistic theorization shown by proximity between Waldinger (1996) (A1) and Bonacich (1973) (A6) with Zhou (2004) (A7). In addition, the structure contains 5 research clusters occupying the peripheral regions.

**Transnationalism (S3-NC1)**

PORTES et al. (2002) (A11) is located slightly of the network core region to trace the dynamics of the “Transnational



S3 Clusters	S3 Node IDs
S3-NC1 (22 nodes)	A1/A2/A5/A6/A7/A11/A13/A21/A22/A24/A30/A36/A39/A42/A59/A61/A65/A76/A78/A79/A86/A89
S3-NC2 (20 nodes)	A4/A8/A16/A28/A31/A35/A41/A43/A44/A52/A62/A68/A70/A72/A75/A80/A83/A87/A88/A90
S3-NC3 (19 nodes)	A3/A10/A12/A15/A17/A29/A37/A40/A45/A46/A48/A55/A57/A58/A73/A74/A77/A81/A85
S3-NC4 (18 nodes)	A9/A14/A19/A23/A25/A26/A27/A32/A38/A47/A49/A51/A53/A56/A60/A63/A69/A82
S3-NC5 (11 nodes)	A18/A20/A33/A34/A50/A54/A64/A66/A67/A71/A84

**Fig. 3** Network clusters and density analysis for interval 2009–2013 (S3). \* Information adapted from Thomas Reuter’s Web of Science © data-base and visualized with VosViewer

Entrepreneurship” debate into the biggest network cluster. The cluster contains half of the 10 most-cited publications of the interval and the greatest number of newly listed works. The two book publications (Saxenian, 2007) (A21) and (Dana, 2007) (A65) as the two highest new entry publications of the interval highlight the dynamic momentum of transnationalism research between 2009 and 2013. Frequent citation of Saxenian (2007) (A21) stress the view on transnational entrepreneurs as transformational “Argonauts” of the global economy, while citation of the collection of related works in the handbook by Dana (2007) (A65) in proximity of seminal structure-based theorization c.f. (R. Kloosterman & Rath, 2001) (A8) highlight how the phenomenon is predominantly studied by its features of contextual embeddedness. Meanwhile are the limited cluster density and limited edge weights with the network core indicative of predominantly inductive approaches in absence of phenomenon specific theorization.

### Institutional embeddedness (S3-NC2)

The majority of structuralistic theoretical approaches cluster in the overlapping network region with S3-NC1. Works like G. A. Barrett et al. (1996) (A16) in the UK context signal that the limitation to the North American research context in the interval 2009–2013 is increasingly a thing of the past. Structuralistic theory aids work on new communities and ethno-national variations outside of traditional contexts (Bagwell, 2008) (A83) by regarding the role of institutional context, e.g., business support policies (Ram & Smallbone, 2003) (A35) including mainstream provisions and engagement strategies as antecedents for sectorial diversification (Ram et al., 2003) (A72).

### Ethno-national variations (S3-NC3)

While S3-NC1 and S3-NC2 develop on advances of structuralistic theorization, the traditional approach of investigation on basis of culturalistic ethno-national variations highlighted by Light (1972) (A3) and Light and Bonacich (1988) (A10) cluster in the less dynamic cluster S3-NC3 that is further earmarked by a greater absence of new cluster additions since S2. Apparent high edge weights with works of structuralistic theorization in the network core instead suggest that classical works of culturalistic theorization remain prominent predominantly for citation in literature review sections, while less frequently used as theoretical framework in contemporary empirical studies. Min and Bozorgmehr (2000) (A77) as the only recent addition highlights ongoing investigation of controversies regarding ethnic or class resources as roots causes for immigrant businesses and whether or not a causal connection exists between ethnic business and ethnic solidarity.

### Social capital (S3-NC4)

The debate on the role of social capital develops on the basis of a broad and well-established literature, including Schumpeter and Backhaus (2003) (A49), Putnam (2000) (A25), Bourdieu and Richardson (1986) (A32), and Granovetter (1985) (A9). References to works such as Portes (1998) (A25) signal the caution in the debate not to jeopardize the heuristic value of the concept by over-expanding the concept. Current approaches advance, e.g., from Adler and Kwon (2002) (A60) and explore sources, benefits, risks, and contingencies of social capital, while works like Davidsson and Honig (2003) (A53) indicate efforts to zoom in further on strong and weak ties as predictors for nascent entrepreneurs and startup success.

### Self-employment (S3-NC5)

Scholarly works regarding the relationship between labor market effects and entrepreneurship tendencies share strong citation links with S3-NC3 on ethno-national variations. Positioned just of the outer ranges and in heightened proximity with citations forming the basis of explorations of ethno-national variations, the cluster regards differences between immigrants and natives in the drive toward self-employment (Constant & Zimmermann, 2006) (A64). Proximity with the social capital cluster node (Sanders & Nee, 1996) (A27) likewise suggests social capital theory as a central measure for exploring the linkages between labor market access and self-employment. Prominently explored linkages with self-employment include wage/salary earnings (Fairlie & Meyer, 1996) (A20) or the role of host country exposure or human capital composition as shown in citations of the only new cluster addition (Constant & Zimmermann, 2006) (A64).

### Content analytical correlation with (Aliaga-Isla & Rialp, 2013)

Content synthesis analysis regarded the works including R. Kloosterman et al. (1999) (A4), R. Kloosterman and Rath (2001) (A8), R. C. Kloosterman (2010) (A70), and Saxenian (2002) (A79) as indicative of the contemporary state of immigrant entrepreneurship research in 2013.

Aliaga-Isla and Rialp (2013) overlap in their analysis with our view that the nomological structure illustrates the increasing importance of research on transnational entrepreneurship with a simultaneous theoretical reorientation along the structuralist view of the phenomenon. In addition, they urge the field to address the shortage in theory-building by increased application of qualitative mixed methods, i.e. grounded theory approaches toward longitudinal case studies on more diverse and novel contexts to identify common theoretical patterns (Aliaga-Isla & Rialp, 2013).



## Structure 2014–2018 (Fig. 4)

The nomological structure 2009–2013, that featured 5 distinct thematic clusters, each with strong edge weights with seminal field theorization in the dense network core, transitions in 2014–2018 toward a structure of 3 methodologically distinct clusters, that indicate decreasing theoretical domain integrity. Most notable is the division between deductive agency-based research approaches on traditional aspects c.f. labor market access and inductive structure-based explorations on more contemporary phenomenon c.f. super-diversity. The mixed-embeddedness theory forms the backbone of contemporary thematical explorations as evident by the centralizing node shifts of R. Kloosterman et al. (1999) (B5) and R. Kloosterman and Rath (2001) (B6), while agent-based culturalistic theorization, c.f., (Light, 1972) (B4), (Light & Gold, 2000) (B7), and (Bonacich, 1973) (B9) have moved off the core and into the less dynamic cluster S4-NC2. The second highest-ranking new interval addition (Volery, 2007) (B29) that merges the “culturalist” and “structuralist” approach into an interactive concept, highlights by its centered location the debate on whether one standalone domain theory can be reinstated. In the awakened methodological reshuffle, the center position of Volery (2007) (B29) likewise points toward concerns that necessary theoretical field updates could be impaired by the complex phenomenon dynamics that usually move too fast for statistics to keep up. Multiple new additions of recently published thematic works to the list of most-cited publications show careful inductive empirical attention.

### Structuralistic explorations (S4-NC1)

Transnational entrepreneurship continues on its dynamic empirical trajectory as seen in frequent citations of most recent cluster additions c.f. Chen and Tan (2009) (B79), Kariv et al. (2009) (B70), and Sequeira et al. (2009) (B65). Altogether, the inductive empirical cluster contains 11 of the 13 newly added publications of the interval 2014–2018. While traditional social capital theory provides a loose conceptual backbone c.f. Portes and Sensenbrenner (1993) (B10), Bourdieu and Richardson (1986) (B20), Coleman (1988) (B27), Putnam (2000) (B38), are the locations of Welter (2011) (B56) on the multiplicity of contexts and challenges faced in contextualizing entrepreneurship theory as well as Ram et al. (2008) (B63) synthesizing the “forms of capital” model by Sanders and Nee (1996) (B14) with the interactive model by Aldrich and Waldinger (1990) (B3) indicative of efforts to advance the understanding of context-specific contemporary phenomenon (c.f. edges with thematic works on Super-diversity) on the grounds of structure-based approaches that also induces their refinement. Citation of Portes et al. (2002) (B12) regarding the historic disregard

of transnationalism in mainstream sociological literature coupled with the highest-ranking new interval addition (Drori et al., 2009) (B18) providing a synthesis of transnational entrepreneurship research, further concurs that research on transnational entrepreneurship in 2014–2018 escapes traditional culturalistic explanation models, instead understanding dynamics of innovation apart close co-ethnic associations eventually steams from structure-based explanation models. Noting high edge weights of Aliaga-Isa and Rialp (2013) (B34) with contemporary transnational entrepreneurship literature could imply more research by means of qualitative methodological application, further signaled by dense cluster proximity with traditional works on qualitative research methods c.f. Yin (1984) (B23), Miles et al. (1994) (B30), Eisenhardt (1989) (B40), Glaser and Strauss (1967) (B41), and Patton (1990) (B62). In addition, growing citation counts and localized density around Jones et al. (2010) (B83) indicate an additional most recent stream of inductive investigation on super-diversity in the interval 2014–2018. Scholars approach the significant practical and theoretical challenge that the multiple-origin, transnationally connected, socio-economically differentiated and legally stratified super-diverse immigrant communities pose to the field (Vertovec, 2007) (B43).

### Culturalistic explorations (S4-NC2)

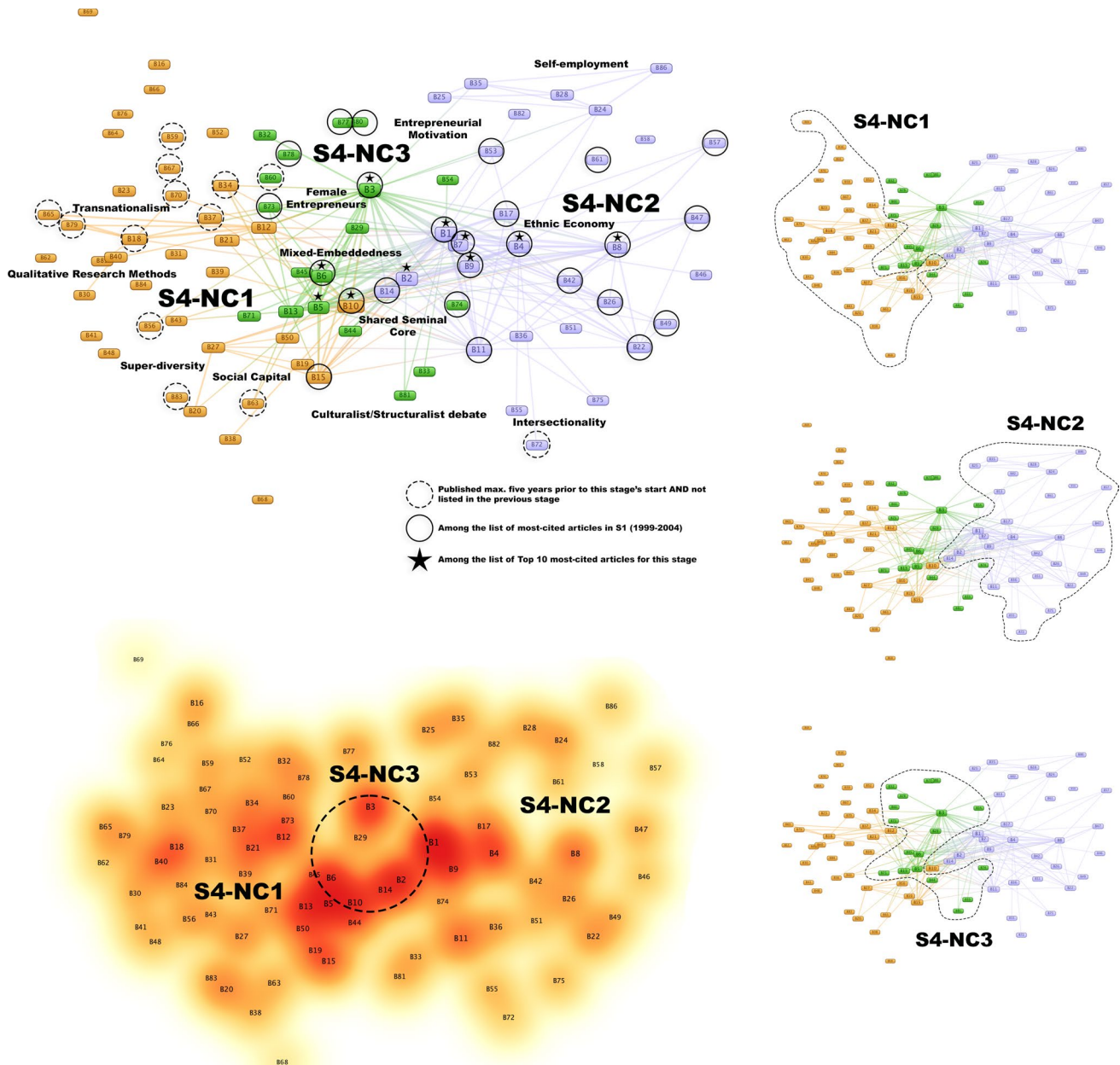
Deductive research on agent-based root causes of immigrant entrepreneurship predominantly rests on well-established culturalistic explanation models. Eighty percent (24/30) of the most-cited publications along this line of research were published prior the year 2000, compared with less than 50% (16/38) among works advancing structure-based explanation models in cluster S4-NC1. These numbers deepen the impression of a nomological imbalance between advances in agency- and structure-based conceptualization.

Among the few dynamic agent-based research streams account comparative studies as seen in citation of c.f. Constant and Zimmermann (2006) (B25) and Hammarstedt (2001) (B82). Edge frequency and weights of seminal agency-based theorization and works with qualitative research designs are limited, hence suggesting predominantly quantitative empirical approaches. Citation of Valdez (2011) (B72) signals an additional slight agency-based dynamic research momentum related to research on intersectionality, that investigates the effects of combinations of agency-related multi-group embeddedness.

### Conceptual explorations (S4-NC3)

The conceptual exploration into the domain future appears in the stream of structure-based theorization that comprises the bulk of the core region of the nomological structure in





S4 Clusters	S4 Node IDs
S4-NC1 (38 nodes)	B10/B12/B15/B16/B18/B19/B20/B21/B23/B27/B30/B31/B34/B37/B38/B39/B40/B41/B43/B48/B50/B52/B56/B59/B62/B63/B64/B65/B66/B67/B68/B69/B70/B76/B79/B83/B84/B85
S3-NC2 (30 nodes)	B1/B2/B4/B7/B8/B9/B11/B14/B17/B22/B24/B25/B26/B28/B35/B36/B42/B46/B47/B49/B51/B53/B55/B57/B58/B61/B72/B75/B82/B86
S3-NC3 (18 nodes)	B3/B5/B6/B13/B29/B32/B33/B44/B45/B54/B60/B71/B73/B74/B77/B78/B80/B81

**Fig. 4** Network clusters and density analysis for interval 2014–2018 (S4). \* Information adapted from Thomas Reuter’s Web of Science © database and visualized with VosViewer

2014–2018 and in close proximity with thematic research clusters on contemporary phenomenon in S4-NC1, c.f. edges with R. Kloosterman et al. (1999) (B5) and R. Kloosterman and Rath (2001) (B6) in proximity of Portes and Sensenbrenner (1993) (B10).

The mixed-embeddedness theory specifically guides research streams on the roles of banks and state agencies as seen in frequent co-citation with c.f. G. Barrett et al. (2002) (B73). Citation counts of Collins and Low (2010) (B60) further indicate a stream of merely structure-based

investigation of female entrepreneurship among immigrants of Asian descent, while citation of Masurel et al. (2002) (B54) points toward a research segment undergoing a paradigm shift by considering immigrant entrepreneurship as means for solving host country challenges, e.g., structural unemployment problems of ethnic groups, which explains the nodes' proximity with predominantly culturalist theorization guiding deductive explorations in S4-NC2. Frequent co-citation with Light (1972) (B7), Bonacich (1973) (B9), and Sanders and Nee (1996) (B14) also shows that researchers in the combination of structure- and agent-based theory lay the foundation of the research area and describe it as such in their works as a story of two worlds.

### Content analytical correlation with (R. J. S. Dheer, 2018)

R. J. S. Dheer (2018) concludes analysis with apparent domain fragmentation and a strong call for theoretical updates. Equal to Aliaga-Isla and Rialp (2013) for the field in 2013, R. J. S. Dheer (2018) bemoans for the domain state in 2018 the prevailing prominence of quantitative empirical studies using secondary data, e.g., country census/GEM data. Different from R. J. S. Dheer (2018) however, shifts in the nomological structure show no indication of qualitative methodological void; in fact, we consider frequent contemporary publications proximate works on qualitative methodological approaches in S4-NC1 indication of inductive emphasis on ground theory principles to explore domain fragmentation.

## Discussion and implication

This discussion features implications provided from a third snapshot of the nomological structure in 2019 (Fig. 5), as well as content synthesis (Nazareno et al., 2019) and other works beyond the scope of publications sampled for co-citation analysis throughout our study.

The co-citation analysis detailed how the nomological structure evolved over the past few years and how the research density of various branches of research has increased or decreased.

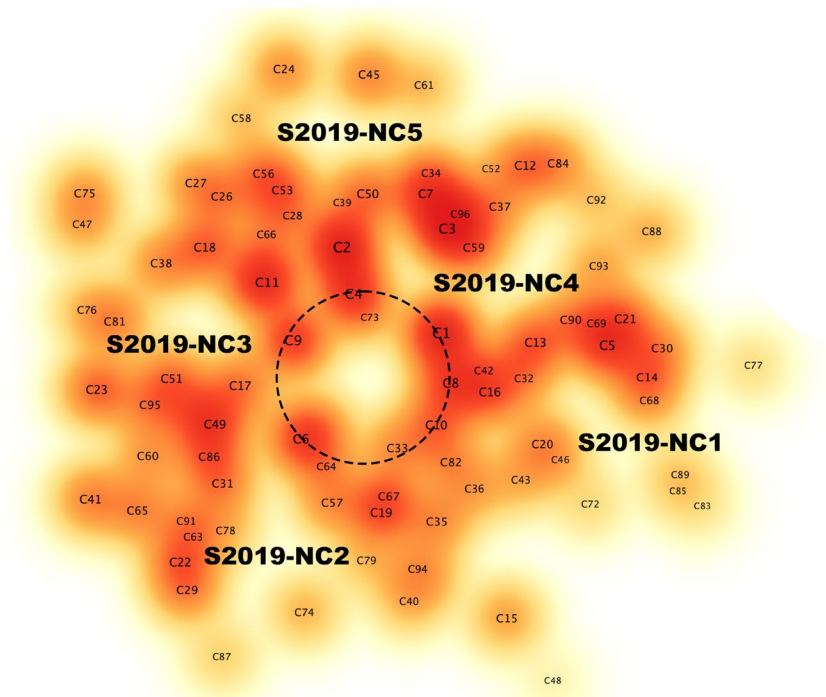
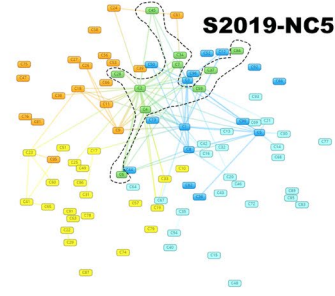
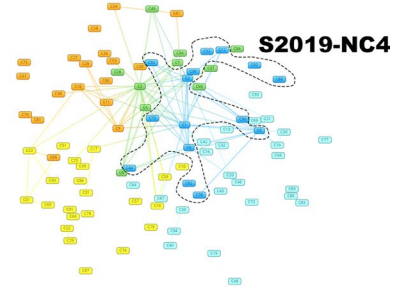
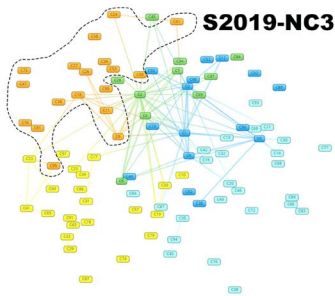
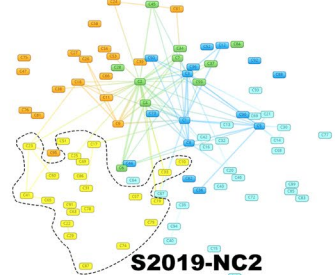
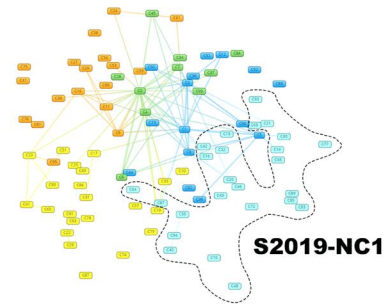
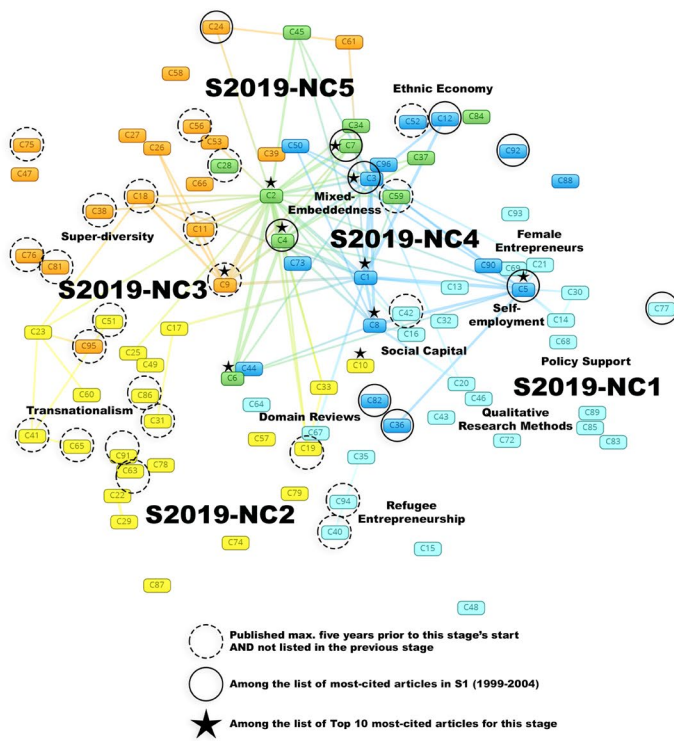
One of the thematic evergreens over the entire period of our observation 2009–2019 as likewise already in 2004–2008 in (Ma et al., 2013) when instigated by Zhou (2004), is research on transnational entrepreneurship, which continues as an independent cluster (S2019-NC2). Low edge weights in 2019 between thematic works c.f. Gioia et al. (2013) (C31), Brzozowski (2017) (C41), Beckers and Blumberg (2013) (C63), Brzozowski et al. (2014) (C65), and existing structural field theory c.f. R. C. Kloosterman (2010) (C2), R. Kloosterman et al. (1999) (C4), R. Kloosterman and Rath (2001) (C7), however, illustrates the limited

application of the mixed embeddedness theory due to an insufficient framework to capture the role of embeddedness in the home country.

The cluster therefore stimulates theoretical adaptations. Due to contemporary blindness of co-citation analysis however, latest theoretical adaptations do not show up as network nodes, but must be inferred upon from the latest literature hosting theoretical updates c.f. simultaneous embeddedness (You & Zhou, 2019) or multiple embeddedness (Harima et al., 2021), concepts partially borrowed from MNE research on the role of subsidiaries (Meyer et al., 2011) and better equipped to capture the range of multifocal embeddedness of home, host, or third country in transnational entrepreneurship. Regardless of individual theories, the concept of multifocality (Solano et al., 2022) must generally be regarded as expedient in order to record transnational entrepreneurship, since it considers the structural embeddedness in groups and locations in a differentiated way and refers to the influence of so-called Modes of Behavior that seem to influence certain opportunity structures.

Empirical research, meanwhile, is influenced in its future orientation by the effects of the Covid-19 pandemic and other socio-economic eruptions, e.g., the Ukraine crisis, all of which contribute to deglobalization affecting transnational entrepreneurship through the partial collapse of international value chains. According to Harima (2022), transnational entrepreneurs react by (1) balancing between multiple institutions, (2) mobilizing transnational social capital, and (3) adapting transnational value creation. Results demonstrate the cognitive flexibility of transnationally embedded migrant entrepreneurs and the benefits they derive from multifocal embeddedness for mitigating adverse situations. The essence of high cluster density, current empirical research performance and far-reaching global changes in the framework conditions will keep research on transnational entrepreneurship dynamic in the future.

A comparable development emerges for research on refugee entrepreneurship, which clusters in close proximity with work on transnational entrepreneurship. The nodes (Bizri, 2017) (C40) and (Shneikat & Ryan, 2018) (C94) imply strings of research on aspects of pseudo family business perception, collective bootstrapping, distinct network structures, opportunity-seizing proliferation, one-way-ahead attitude, and the role of social media. Harima et al. (2021) indicates the conceptual proximity by situating refugee entrepreneurship in Europe in a transnational framework, by conceptualizing the effects of disembeddedness that reflect the result of the involuntary or even forceful expelling of refugees from their home countries. In the analysis period of this work up to and including 2019, the area is still little accentuated and characterized by its few nodes and edges, but considerations can be derived from additional literature. In this regards, it will be interesting to see how trans-European and ethnically



S2019 Clusters	S2019 Node IDs
S2019-NC1 (27 nodes)	C13/C14/C15/C16/C20/C21/C30/C32/C35/C40/C42/C43/C46/C48/C62/C64/C67/C68/C69/C71/C72/C77/C83/C85/C89/C93/C94
S2019-NC2 (22 nodes)	C10/C17/C19/C22/C23/C25/C29/C31/C33/C41/C49/C51/C57/C60/C63/C65/C74/C78/C79/C86/C87/C91
S2019-NC3 (19 nodes)	C9/C11/C18/C24/C26/C27/C38/C39/C47/C53/C55/C56/C58/C61/C66/C75/C76/C81/C95
S2019-NC4 (16 nodes)	C1/C3/C5/C8/C12/C36/C44/C50/C52/C73/C80/C82/C88/C90/C92/C96
S2019-NC5 (10 nodes)	C2/C4/C6/C7/C28/C34/C37/C45/C59/C84



**Fig. 5** Network clusters and density analysis for interval 2019 (S2019). \* Information adapted from Thomas Reuter's Web of Science © database and visualized with VosViewer

homogeneous refugee movements as a result of the Ukraine crisis will shape the patterns of multifocal embeddedness and whether it locates the cluster in the nomological structure closer or further away from Super-diversity.

In the context of tracking the developments since 2009 into the thematically most dynamic and largest clusters of 2019, raises the debate on whether the current accentuation of socio-economic, political, and social changes eventually requires a reinstated stronger cultural perspective throughout the entire area, including conceptions at the intersection with structural theorization. The question seems current for taking account of the increasing importance of research on intersectionality. Valdez (2011) (B72/C58) in nomological proximity to the culture-structural debate in 2014–2018, structures with R. Barrett and Vershinina (2017) (C38) and other aspects of super-diversity in 2019 to indicate its growing dynamics. Vorobeva (2022) and Dy and Agwunobi (2018) likewise deduce from synthesis how the focus of recent studies is shifting from looking at one-dimensional minority characteristics (e.g., ethnic or female entrepreneurship) toward looking at multiple, simultaneous, and overlapping minority identities of entrepreneurs (e.g., female migrants, Black poor, Muslim female immigrants). The accentuation of numerous different nuances in the construction of minority identities makes the field of intersectionality research a potential breeding ground for a cultural-structuralist intersection theory, that helps deepen our understanding of the multiple experiences of privilege and vulnerability that arise from both cultural and structural embeddedness.

Under the umbrella of intersectionality, also the gender perspective becomes inevitably more articulated, which manifests itself as a local density point c.f. nodes Clark and Drinkwater (2000) (C14), Collins and Low (2010) (C69), and Braun and Clarke (2006) (C64). Indarti et al. (2020) sees the next steps on female immigrant entrepreneurship in geographical expansion of the scope of research and less emphasis on Asian migrants in western host countries. Likewise appears the still dominant perspective on marginalization limiting, instead distinct opportunities from female founding teams and particular multifocal embeddedness should be emphasized.

Equally important remains the study on the influence of support services. López Peláez et al. (2022) offers a current literature synthesis that, in addition to Vertovec (2021), shows a contemporary discourse and overview of the influence on the development of social policy measures. In the entire subject area of super-diversity/intersectionality, the changes in resource mobility in times of deglobalization

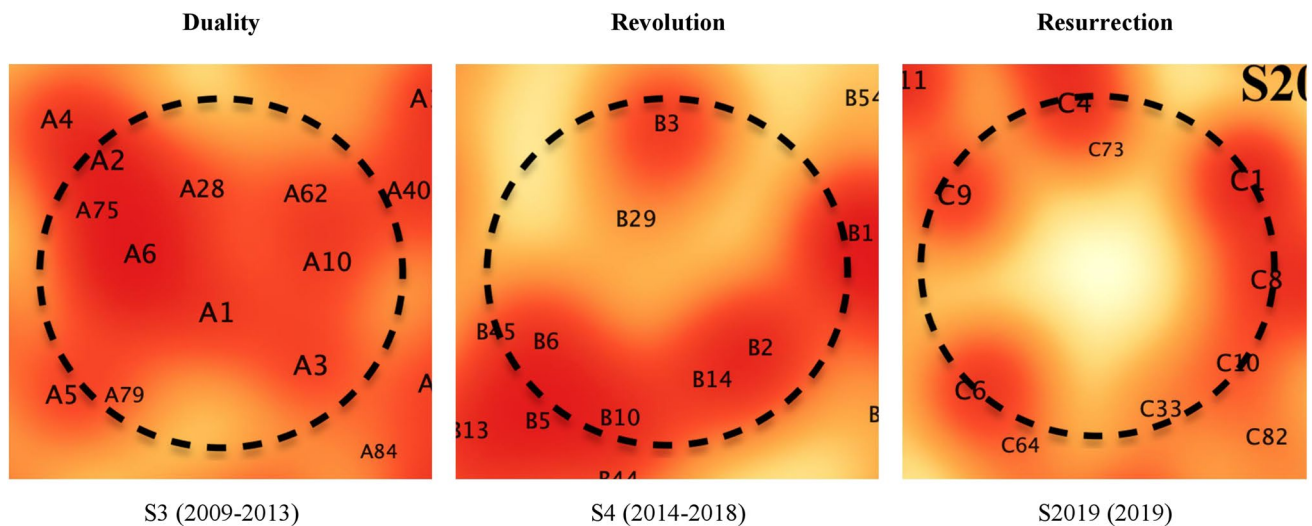
should also be considered. We also recognize close proximity of both thematic fields with seminal publications c.f. the Theory of Planned Behavior (Ajzen, 1991) (C62), Homophily (McPherson et al., 2001) (C85), Grounded theory (Glaser & Strauss, 1967) (C46), (Charmaz, 2014) (C42), and mixed methods (Creswell, 2003) (C72) that indicate more inductive research that will conceptualize a new ethnic economy on basis of shared experiences rather than common ethnicity, since the phenomenon so far has created headache for existing field theorization according to (Ram et al., 2017) (C18).

## Implications and future research

Co-citation analysis implies that profound theoretical refinement is necessary in the field of immigrant entrepreneurship in order to adjust to the nomological fragmentation that is as evident from several localized centers of field knowledge, while core density has been in steady decline between 2008 and 2019 signaling the gradual loss of a unified field theory (Fig. 6).

We share with Nazareno et al. (2019) our perception that the last seminal field concept—the mixed embeddedness theory—has lost contemporary applicability but at the same time encourage scholars to extend on its structuralist merits toward frameworks that capture the magnitude of contextual multifocality in shaping the phenomenon.

With regards to implications for renewed theorization across all clusters, our analysis and discussion in light of the latest field knowledge lets us suggest 7 specific avenues for future research. (1) Digital embeddedness must be better recorded alongside other forms of embeddedness, since it is an essential determinant of resource capitalization. With technological advances underway, the clear boundaries of immigrant entrepreneurship as a physical concept will continue to blur in the future. How do we deal with contextual divergence between founder and company? How do we deal with founding teams of Digital Nomads across countries or without visa status? Can a company exist in multiple places at the same time; can it operate trans-physically as a digital company? A stronger emphasis on the company as central fix of analysis will benefit the approach. (2) Contemporary and currently still isolated phenomenon such as expat-preneurship (Selmer et al., 2018) must be situated under the domain umbrella; hence, an urgent need for clarity of domain boundaries exists. As an example, expat-preneurship is considered to be highly innovative (Ruthemeier, 2021), but has so far had no place in the nomological network of knowledge on migrant entrepreneurship. Scholars should use phenomenon like expat-preneurship to expand the knowledge base and induce more inclusive theorization. How do we design, e.g., in the future, the rapid sequence of



**Fig. 6** Network core density 2009–2019 (S3, S4, S2019). \* Information adapted from Thomas Reuter's Web of Science © database and visualized with VosViewer

embeddedness and disembeddedness that occur in refugee or expatriate entrepreneurship? What connects migration, flight, and expatriation as the basis for the decision to found a company? In particular, temporal definitions do not appear to us to be sufficient to demarcate conceptual differences. (3) Interdisciplinary collaborations provide opportunities to induce existing knowledge that could unlock new input and output channels beyond the traditional conceptual roots in migration and management studies. In particular, social entrepreneurship beyond the ethnic enclave offers opportunities for greater consideration of methods and findings from the fields of psychology, social psychology, etc. (4) Intersectionality research must counteract much more strongly the application of the still deep-rooted narrow ideas of roles, groups and heritage in order to grasp the concept in all its contemporary facets. (5) Additional host regions in Asia and Africa must be approached empirically, since continued scholarly neglect will put lasting constraints on the applicability of updated field theorization and fail to unlock new avenues of immigrant entrepreneurship research. (6) North to South migration is increasing. What characterizes the entrepreneurial approaches of nationals from developed countries that found businesses in developing countries? In what form is infrastructure available or even necessary? Is the absence of governmental structure, a challenge or blessing? (7) The bibliometric assessment of progress and development is necessary in certain intervals and with consistent methodological approaches as a means to supplement content synthesis literature and provide field scholars with a comprehensive overview of the deeper knowledge structure of the field. Co-citations is a fundamental technique to achieve these ends as the example of this study aimed to show.

Besides theoretical implications, our discussion leads to managerial implications. As all types of scientific discovery, insights about the state of the immigrant entrepreneurship domain should benefit real-world application. We were particular in articulating the indications we see for immigrant entrepreneurship as a transnational and multifocal phenomenon. As such any policy measures in support of migrant entrepreneurship must consider the magnitude of both personal and institutional transnational links. This relates in particular also to the range of different groups within the phenomenon. South to North Refugee and Diaspora entrepreneurs, e.g., are known to remit large amounts of their profits back to their host regions for providing a substantial contribution to the livelihood of friends and relatives. The majority of North to North or South to South migrants on the other hand contain their funds predominantly within their context, while North to South migrants benefit from migrating funds into the host context. As well intentions behind migrant entrepreneurship might change considerably with time, e.g., while certain subgroups, like expatriate entrepreneurs, are defined by their intent to remain only temporarily and voluntarily in their host countries; changes in personal circumstances (e.g., marriage with a local) are known to shift their focus toward long-term residency or even attainment of citizenship in the host country. Any measures taken by policymakers to support a particular group or cause have to be carefully drafted and controlled for outcome. Scientific discoveries on the particularities of different groups and their intentions across time and place foster these ends considerably and allow the immigrants themselves and their host and home regions to prosper from entrepreneurship. If funds however are scattered inconsequently, these benefits do not materialize. Bibliometric measures by means of



co-citation is a fundamental tool for providing scholars with the necessary overview of the field to regard new avenues of scientific discoveries that again aid purposeful policies toward regional innovation and revitalization by means of immigrant entrepreneurship.

## Limitations

Two limitations exist for this study. First, co-citation analysis suffers from contemporary blindness regarding the impact of contemporary field additions. As well the technique is not capable of determining the exact purpose of a citation within the logic of the citing paper. To address the limitations, we coupled our regard of the nomological structure with results from well-regarded content synthesis works. The second limitation concerns our choice for the VosViewer software for visualizing the nomological networks. To our knowledge, we are the first to introduce this software to the field of immigrant entrepreneurship. With no prior results about the application recorded from other studies in the field, it should be mentioned that other software tools would have been available that were used in the area before. However, the application of VosViewer in a number of related fields, e.g., expatriate studies (Andersen, 2019) felt proof of its capacity to map a growing and diversified field of knowledge, like the immigrant entrepreneurship field.

## Conclusion

This study is a bibliometric update on basis of citation and co-citation analysis. In particular, co-citation has proven with several academic disciplines that it contributed highly valuable and additional insights about the state of the nomological structure of field knowledge. Despite obvious merits, the technique had remained unutilized on the evolution of knowledge on immigrant entrepreneurship for over 10 years; hence, we highlight in the composition of clusters the trends and shifts between 2009 and 2019. Our methodological approach used SSCI citation data from WoS that were tabulated with MsExcel and returned as three consecutive networks of nodes and edges with the VosViewer software. We compensated for the apparent limitations of co-citation by correlation of our findings with three well-regarded works of content synthesis of the field.

The most insightful findings from our analysis concern the successive dissolve in seminal domain theorization as indicated by reduced cluster density in the network core. At the same time, various local centers of cluster density have emerged and changed composition over time. The latest analyzed structure in 2019 earmarked super-diversity,

transnationalism and refugee entrepreneurship as promising thematic avenues for current and aspiring scholars in management studies as well as other disciplines. With regards the following 7 distinct avenues to be paid particular attention by domain scholars in all clusters: (1) digital embeddedness, (2) isolated phenomenon, (3) interdisciplinary collaborations, (4) intersectionality, (5) Asian and African host regions, (6) North–South migration, and (7) bibliometric assessments. Practitioners are encouraged to forge close collaboration with academia and apply the additional knowledge gained regarding the range of groups and their particular purposes for engaging in entrepreneurship in the shaping of more impactful real world application measures.

**Author contribution** JW computed, analyzed, and interpreted the nomological network structures. DC was a major contributor in writing the manuscript and formulated field implications. Both authors read and approved the final manuscript.

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**Data availability** Citation and co-citation data available from Thomas Reuter's Web of Science © database.

**Code availability** Built-in algorithms from VosViewer © software used that are freely available @ <https://www.vosviewer.com/download>.

## Declarations

**Conflict of interest** Not applicable.

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