



ENTREPRENEURSHIP & NETWORKS IN PERIPHERAL AREAS: A BIBLIOMETRIC ANALYSIS

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Abstract

Purpose. Despite growing scholarly attention to Peripheral Areas (PAs), research on entrepreneurship and networks that sustain them remains scattered across disciplines. This paper offers the first systematic map of this literature, tracing its intellectual foundations, identifying the most influential voices, and proposing avenues for further research.

Design/methodology/approach. We conduct a bibliometric analysis of 937 documents drawn from Scopus and Web of Science from 2000 to 2023. Performance analysis examines publication and citation patterns while science mapping, through citation, co-citation, and bibliographic coupling, uncovers the intellectual structure and thematic evolution of the field.

Findings. Research on entrepreneurship and networks in PAs has grown, concentrated around two dominant streams: contextualised/rural entrepreneurship and social capital. Key outlets and authors are identified. Thematic mapping uncovers social capital, regional/rural development as motor themes, along with microfinance, women's entrepreneurship, migration as emerging niches.

Practical and social implications. Findings stress that networks and social capital are central resources enabling resource mobilisation, innovation and place development in PAs. Policy and practice should prioritise network facilitation, place-based support, and social-enterprise promotion to enhance local resilience and inclusive development.

Originality of the study. By merging Scopus and WOS and applying a comprehensive bibliometric workflow (2000–2023), this study provides the first consolidated, multidisciplinary map of entrepreneurship–network research in PAs, pinpoints thematic gaps and offers a clear research agenda for future, place-sensitive investigations.

1. Introduction

In the last decade, an increasing interest towards Peripheral Areas (PAs) has emerged among researchers (Pugh & Dubois, 2021), practitioners and policymakers, who see in these territories new opportunities for regional and national economic growth (European Commission, 2021). With this umbrella term, we refer to places that experience the structural disadvantages of unequal regional development (Korsgaard et al., 2015a), standing in contrast to larger metropolitan areas where essential services, work, and entrepreneurial opportunities tend to concentrate (Wiggins & Proctor, 2001; Scott, 2006; Barca et al., 2014). While industrial development across the 19th and 20th centuries led to a general impoverishment of these places (Mumford, 1954; Kühn, 2015), today challenges, such as geopolitical tensions and climate crisis, but also opportunities coming from digitalisation and green transition, provide new reasons and tools to bring them back from abandonment.

In these contexts, a key role is played by local entrepreneurial activities (Korsgaard et al., 2015a; Gherhes et al., 2021), which support economic and social development through their network of relationships. Networks are fundamental for entrepreneurship in PAs: they allow firms to mobilise place-based resources, access external ones, and overcome place-related constraints (Johannisson & Nilsson, 1989; Beckmann et al., 2021). The issue has been expanded through the years, from simple inter-firm trading relationships (Richardson, 1972) to more elaborated conceptualisations of relational structures connecting multiple actors (Håkansson & Snehota, 1995; Håkansson & Ford, 2002), and scholars have increasingly recognised that entrepreneurial behaviours, resource access, and opportunity perception are all contingent on the environment in which actors are embedded (Wigren-Kristoferson et al., 2022).

Despite this growing attention, the existing literature on entrepreneurship and networks in PAs remains scattered across disciplines, spanning regional economics, economic geography, organisation studies, and innovation research, with no systematic review bringing these contributions together. Existing reviews have addressed adjacent themes, such as peripheralization (Kühn, 2015), entrepreneurship in PAs (Pato & Teixeira, 2016), and innovation processes in PAs (Eder, 2019; Eder & Trippel, 2019), but dedicated reviews specifically focused on the intersection of entrepreneurship and networks in PAs remain scarce (Leick & Gretzinger, 2020; Beckmann et al., 2021). To fill this gap, we conduct a bibliometric analysis (Donthu et al., 2021; Kraus et al., 2022) of contributions on entrepreneurship and networks in PAs, mapping the state of the art, identifying emerging trends, and highlighting aspects that deserve greater attention in future studies.

In particular, this bibliometric analysis addresses the following two interrelated research questions (RQs):

1. *What is the state of the art of research in entrepreneurship and networks in the context of PAs, in terms of prevailing topics, most prominent authors, outlets, and documents?*
2. *What are the emerging themes and the future streams of studies on the issue under investigation?*

The article is structured as follows. In the next section, the bibliometric methodology approach is outlined with the protocol explanation. Section three describes the obtained results, divided between performance analysis and science mapping. Section four discusses the main results and addresses the two RQs, tracing four main future research avenues. Finally, conclusions are drawn along with the limitations of the study and the future developments.

2. Methodology

Considering the growth of research in small business and entrepreneurship (Kraus et al., 2023) and in the light of our research purposes, a bibliometric analysis seems the proper method to analyse such a large amount of contributions on the issue of entrepreneurship and networks in PAs.

The popularity of bibliometric analysis is due to several factors (Donthu et al. 2021, Kraus et al., 2022), from the disposal of new technological tools to the recognition of its importance in research, as it permits to handle large volumes of scientific data and to produce high research impact. As Rey-Martí et al. (2016) note, with the application of statistical tools to determine qualitative and quantitative changes in a given scientific research topic, this method enables scholars to gain an overview of the research, identifying knowledge gaps and future trends. This work adopts “bibliometrix”, a comprehensive R-tool specifically designed for bibliometric analyses (Aria & Cuccurullo, 2017), as a tool for extracting key information from our dataset.

2.1 Data Collection

Data were collected from Scopus and Web of Science (WoS), two complementary databases widely recommended for bibliometric work in the social sciences (Mongeon & Paul-Hus, 2016; Sánchez et al., 2017). Their joint use broadens analytical coverage but requires dataset harmonisation

prior to merging (Echchakoui, 2020; Caputo & Kargina, 2022). Drawing from previous contributions mentioned in the introductory section, the search query was constructed by linking key themes, or their synonyms and related terms, concerning entrepreneurship, networks, peripherality, and geographical contextualization. These keywords were searched for in the titles, abstracts, and keywords of each document in the databases (Table 1).

Table 1. Research query development

Research Themes	Entrepreneurship		Networks		Peripherality		Territory
Title, Abstract, Keywords	<i>entrepreneur* business* firm* venture* compan*</i>	AND	<i>network* ecosystem* district* platform* cluster* communit* relation* interact*</i>	AND	<i>rural* "sparsely populated" remote marginal peripher* inner "non-core" "left behind"</i>	AND	<i>place* area* region* territor* space* local*</i>
Boolean operators	OR		OR		OR		OR

Source: author's elaboration.

In relation to the time frame definition, we considered Pike et al. (2023) argumentation which indicates 2008 as the starting point from which the topic of PAs began to attract the attention of researchers. However, the authors also highlight significant literary production between the late 1990s and early 2000s. For this reason, we have decided to extend the timeframe of our research from 2000 to 2023, capturing more than 20 years of studies on the issue.

As search boundaries within the two databases, we limited the research area to "Business, Management and Accounting", the document type to "Article", "Review", "Book Chapter", "Book", and "Editorial" and, finally, the language to "English". We decided not to restrict the search to high-ranking outlets in order to have a holistic representation of current research contributions and also to identify minor trends. With these parameters, our search conducted on Scopus and WoS yielded us 716 and 538 results respectively.

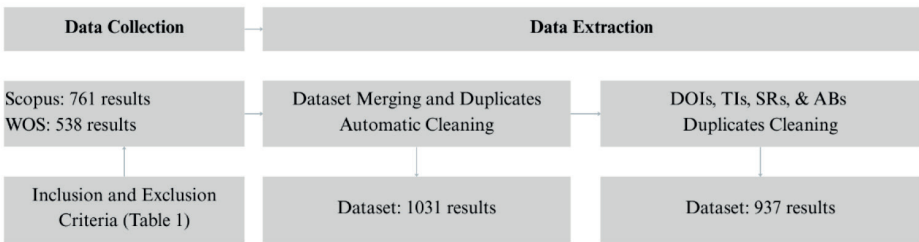
We followed the instructions of Echchakoui (2020) to merge and clean the downloaded datasets in bibtext format by using Rstudio. Since Scopus and WoS datasets have different structure, the first step involved the standardisation of their columns' order and names according to the format outlined by Aria and Cuccurullo (2017). The two datasets were merged into

one and cleaned it from errors and duplicates (Figure 1). Duplicate records were removed automatically in two stages. First, an automated deduplication was performed across all fields. Second, the dataset was reviewed, cross-checking separately titles, DOIs, and abstracts to catch any residual duplicates that the automated process may have missed due to inconsistencies or errors in the metadata.

No additional screening was performed as the search string was deliberately constructed to be highly specific, combining 4 themes' categories, minimising the risk for irrelevant documents.

Our final combined dataset resulted in 937 documents, and we uploaded it into biblioshiny interface for bibliometrix.

Figure 1. Research extraction process



Source: Our elaboration

2.2 Data Analysis

Data analysis follows the two-stage structure that constitute the fundamental building blocks of a comprehensive bibliometric analysis, namely *performance analysis* and a *science mapping* (Donthu et al., 2021; Mukherjee et al., 2022), which allow to move from a descriptive overview of scholarly production to a structural understanding of how knowledge has developed and organised itself within a field (Lim & Kumar, 2024). All analyses were conducted using the bibliometrix R-package (Aria & Cuccurullo, 2017), an open-source tool specifically designed to support the full bibliometric workflow, from data loading and cleaning to network construction and visualisation.

Performance analysis is an evaluative technique that assesses the contributions of research constituents to a given field through quantitative metrics (Donthu et al., 2021). Specifically, the metrics employed in this study include *total publications per year*, which indicate annual growth rate, the *mean total citations (TC) per year*, which measure the influence and reach of a set of contributions, and *authors' h-index*, which captures both the productivity and citation impact of authors and outlets simultaneously. These

indicators allow us to identify the most influential authors, journals, and documents in the corpus, and to track how the field has grown over time.

Science mapping shifts the focus from individual contributions to the relationships between research constituents and to the intellectual structure they collectively form (Donthu et al., 2021; Aria & Cuccurullo, 2017). The techniques employed in this study are described below.

Citation analysis measures the number of citations for individual articles to identify the most influential ones (Donthu et al., 2021). Our study focuses specifically on local citations (LC) to assess the impact at the dataset level. The same analysis was carried out on the references cited by the articles, in order to find the most influential ones in terms of LC.

Co-citation analysis is used to uncover relationships among cited foundational publications, wherein cited publications converging into a cluster represent a common theme (Mukherjee et al., 2022). When two works are repeatedly cited in the same papers, it is reasonable to infer that the scholarly community perceives them as thematically related (Donthu et al., 2021). In this study, the technique is applied to the 50 most cited references in the corpus, and the resulting clusters are interpreted as knowledge communities or intellectual traditions.

Bibliographic coupling is the forward-looking counterpart of co-citation analysis, connecting documents within the examined dataset that cite the same references (Hjørland, 2013; Donthu et al., 2021). Two articles are strongly coupled when their bibliographies overlap substantially, suggesting that they draw on the same intellectual foundations and are therefore likely to address related research questions. Unlike co-citation, which tends to surface older, foundational works, bibliographic coupling is better suited to mapping current and recent research fronts, as it focuses on the citing documents rather than the cited ones. In this study, it is used to cluster the top 100 documents by LC score, identifying the main thematic communities present in contemporary research on entrepreneurship and networks in peripheral areas.

Finally, co-word analysis shifts the unit of analysis from documents and references to words. Specifically, it examines which author-assigned keywords tend to appear together across the corpus, treating co-occurrence as a proxy for thematic relatedness (Aria & Cuccurullo, 2017). It is particularly useful for mapping the conceptual landscape of a field and identifying emerging, declining, or niche topics. In this study, the results of co-word analysis are visualised through a thematic map, which positions keyword clusters according to the dimensions of centrality, that is the relevance of the cluster to the overall field, and density, i.e. how strongly the keywords within a cluster are connected to each other, indicating the degree of internal development of that theme.

These two dimensions define four quadrants in the thematic map: Q1)

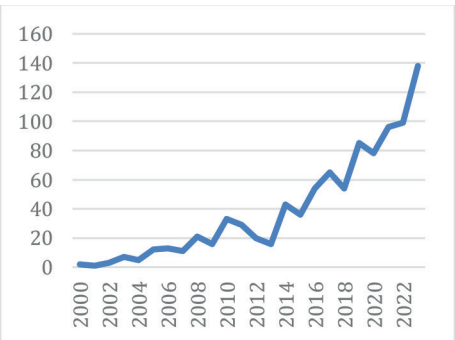
motor themes - high centrality and high density - which are both central and well-developed; Q2) basic themes - high centrality and low density, which are relevant but underexplored; Q3) niche themes - low centrality, high density - which are internally coherent but peripheral; Q4) emerging or declining themes - low centrality and low density - whose trajectory remains unclear.

3. Findings

3.1. Performance Analysis

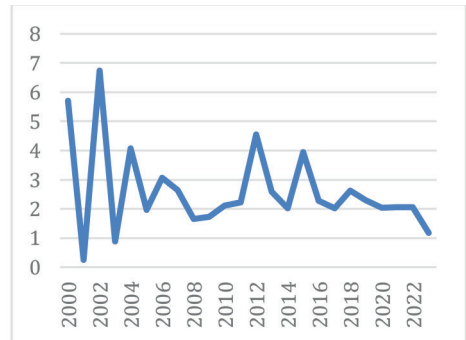
Figure 2 illustrates the annual scientific production that we can see increasing every year at 20.21% rate. It started with very few documents in 2000 to reach 138 results in 2023, with a significant increase after 2013.

Figure 2. Annual production



Source. Our elaboration

Figure 3. Mean Total Citation (TC) per year



Source. Our elaboration

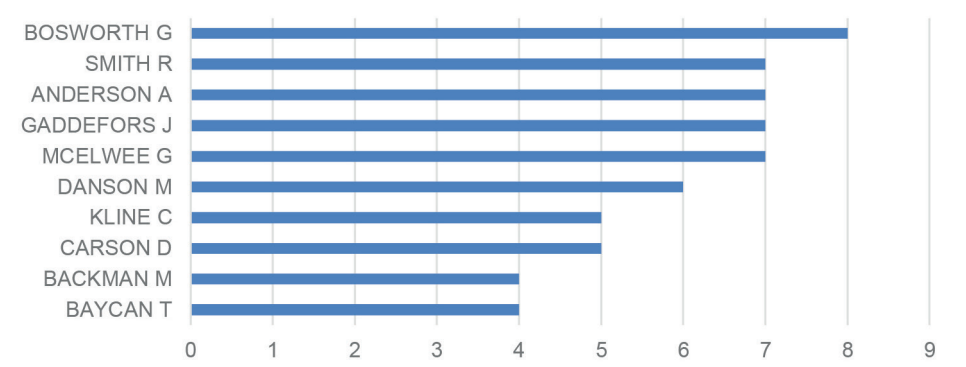
Not surprisingly, we note a decrease in Mean Total Citations (TC) per year trend (Figure 3) due to the expansion of the research on the topic and by the newness of documents which have a mean age of 6,61 years. However, we can clearly notice four peaks of citations in 2000, 2002, 2012, and 2015.

In Figure 4, the 10 most productive authors are ranked according to the number of published documents. Bosworth G. is the most productive author, with 8 publications.

A clearer view is provided by the analysis of Authors' local impact based on h-index. As we can see in Table 2, Anderson, A. and Bosworth, G. appear to be the most relevant authors, but the first one has a higher TC

index and is the first in our list to have published documents on the topic. In terms of TC index, Korsgaard, S. has the highest rate.

Figure 4. Top 10 Authors per production



Source. Our elaboration

Table 2. Top 10 authors per h-index

Author	Affiliation	h-index	TC	Publications	First Publication Year
Anderson, A.	University of Aberdeen	6	474	7	2000
Bosworth, G.	Northumbria University	6	234	8	2008
Gaddefors, J.	Swedish University of Agricultural Sciences	5	369	7	2015
Kline, C.	Appalachian State University	5	179	5	2010
Smith, R.	University of the West of Scotland	5	114	7	2006
McElwee, G.	Nottingham Business School	5	110	7	2009
Korsgaard, S.	University of Southern Denmark	4	512	4	2015
Backman, M.	Jönköping International Business School	4	340	4	2005
Carson, D.	Umeå University	4	79	5	2001
Danson, M.	Heriot-Watt University	4	76	6	2012

Source. Our Elaboration

Table 3 examines the 10 most important journals for local impact. *Entrepreneurship and Regional Development* is the most relevant outlet from every point of view.

Table 3. Top 10 Journal per h-index

Outlet	h-index	TC	Publications	First Publication Year
Entrepreneurship and Regional Development	20	1631	35	2000
Technological Forecasting and Social Change	10	433	13	2012
Journal of Enterprising Communities	9	268	24	2015
Journal of Small Business and Enterprise Development	9	311	15	2005
Regional Studies	9	374	13	2006
Journal of Sustainable Tourism	8	601	9	2007
International Journal of Entrepreneurial Behaviour & Research	7	331	14	2016
International Journal of Entrepreneurship and Innovation	7	171	9	2013
International Journal of Entrepreneurship and Small Business	7	158	17	2006
Local Economy	7	148	17	2016

Source. Our Elaboration

However, a more accurate analysis of the local sources is given by Figure 5, where we can see the most locally cited sources. Entrepreneurship and Regional Development is still at the first position, but it is followed by Journal of Business Venturing and Small Business Economics.

Figure 5. Top 10 sources per local citations (LC)



Source. Our Elaboration

3.2. Science Mapping

3.2.1. Citation analysis

Table 4 presents the top 10 articles for local impact on Entrepreneurship, Networks and PAs. By observing the local citation index (LC), i.e., how many times the document has been cited by others in the dataset, we can classify articles according to their relevance to the topic we are analysing. From this perspective, although other articles may have a higher number of global citations (GC), their weight is lower for the purposes of the analysis. The ratio between LC and GC provides us with information on the specialisation of that article within the academic community.

Table 4. Top 10 Articles per Local Citations (LC)

Authors	Title	Year	LC	GC	LC/GC Ratio (%)
Gaddefors, J. & Anderson, A.R.	Romancing the rural: Reconceptualizing rural entrepreneurship as engagement with context(s)	2019	13	62	20.97
Freire-Gibb, L.C. & Nielsen, K.	Entrepreneurship Within Urban and Rural Areas: Creative People and Social Networks	2014	10	64	15.63
Lordkipanidze, M., Brezet, H. & Backman, M.	The entrepreneurship factor in sustainable tourism development	2005	7	213	3.29
Mair, J., Martí, I. & Ventresca, M.J.	Building Inclusive Markets in Rural Bangladesh: How Intermediaries Work Institutional Voids	2012	6	689	0.87
Brown, R.	Mission impossible? Entrepreneurial universities and peripheral regional innovation systems	2016	5	90	5.56
Burnett, K.A. & Danson, M.	Enterprise and entrepreneurship on islands and remote rural environments	2017	5	27	18.52
Paulson, A.L. & Towansend, R.	Entrepreneurship and financial constraints in Thailand	2004	4	149	2.68
Lafuente, E., Vaillant, Y. & Serarols, C.	Location decisions of knowledge-based entrepreneurs: Why some Catalan KISAs choose to be rural?	2010	4	54	7.41
Aarstad, J., Haugland, S.A. & Greve, A.	Performance Spillover Effects in Entrepreneurial Networks: Assessing a Dyadic Theory of Social Capital	2010	4	71	5.63

Authors	Title	Year	LC	GC	LC/GC Ratio (%)
Cunha, C., Kastenholz, E. & João Carneiro, M.	Entrepreneurs in rural tourism: Do life-style motivations contribute to management practices that enhance sustainable entrepreneurial ecosystems?	2020	4	61	6.56

Source. Our elaboration

These ten most locally cited articles reflect the two main research streams identified throughout this analysis, that is, contextualised entrepreneurship and social capital, while also shedding light on the structural conditions and individual motivations that shape entrepreneurial activity in PAs.

A first strand foregrounds the relational and contextual nature of entrepreneurship in PAs. Gaddefors and Anderson (2019), the most locally cited contribution, challenge static readings of rural context, arguing that entrepreneurs and their territories co-produce one another through ongoing engagement rather than entrepreneurship simply occurring within a given place. This theoretical reframing is consistent with the embeddedness perspective running through the broader literature, and is operationalised empirically by Freire-Gibb and Nielsen (2014), who show that social networks, rather than individual creativity, are the decisive factor for new venture creation in rural areas, where relational ties compensate for sparse formal infrastructure. Burnett and Danson (2017) extend this reasoning to island and remote environments, highlighting how localised social capital functions simultaneously as a constraint and a distinctive resource, one that calls for place-sensitive policies rather than frameworks transposed from urban contexts.

A second strand examines how structural and institutional conditions filter entrepreneurial activity. Mair et al. (2012), Paulson and Townsend (2004), and Brown (2016) collectively suggest that the institutional architecture of PAs is not merely thin or absent but actively shapes who can engage in entrepreneurship, how they do so, and with what resources. Particularly notable is Brown's (2016) critical observation that even formally supportive institutions such as universities can generate policy lock-in, reinforcing their own centrality rather than catalysing broader entrepreneurial ecosystems in peripheral regional innovation systems.

A third strand connects entrepreneurship in PAs to networks, performance spillovers, and sustainable development. Aarstad et al. (2010) demonstrate that network position matters as much as individual endowments, with firms embedded alongside social-capital-rich partners benefiting from performance spillovers, a finding with direct implications for

how entrepreneurial communities in PAs can be deliberately structured. Lordkipanidze et al. (2005) and Cunha et al. (2020), both focused on rural tourism, show that cooperative networking is a key mechanism for overcoming weak entrepreneurial culture and administrative barriers, while Lafuente et al. (2010) nuance this picture by showing that personal motivations, particularly quality-of-life considerations, rather than infrastructure alone, drive the type of entrepreneurship most likely to generate knowledge spillovers in PAs.

Taken together, these contributions converge on a core insight that networks and social capital are not merely resources for entrepreneurs in PAs but constitutive elements of the entrepreneurial process itself, enabling resource mobilisation, legitimation, and place development where formal market and institutional architectures are incomplete.

Table 5. Top 10 cited references per Local Citations (LC)

Author	Year	Title	LC
Welter, F.	2011	Contextualizing entrepreneurship—conceptual challenges and ways forward	40
Korsgaard, S., Müller, S., & Tanvig, H. W.	2015	Rural entrepreneurship or entrepreneurship in the rural—between place and space.	36
Eisenhardt, K. M.	1989	Building theories from case study research	35
Jack, S. L., & Anderson, A. R.	2002	The effects of embeddedness on the entrepreneurial process	33
Granovetter, M.	1985	Economic action and social structure: The problem of embeddedness	31
Anderson, A. R.	2000	Paradox in the periphery: an entrepreneurial reconstruction?	27
Korsgaard, S., Ferguson, R., & Gaddefors, J.	2015	The best of both worlds: how rural entrepreneurs use placial embeddedness and strategic networks to create opportunities	26
McKeever, E., Jack, S., & Anderson, A.	2015	Embedded entrepreneurship in the creative reconstruction of place	26
Peredo, A. M., & Chrisman, J. J.	2006	Toward a theory of community-based enterprise	23
Miles, M. B., Huberman, A. M., & Saldana, J.	2014	Qualitative data analysis: A methods sourcebook	22

Source. Our elaboration

The most locally cited references in Table 5 reveal the theoretical and methodological architecture underlying the empirical contributions examined in Table 4, making the intellectual lineage of the field explicit. The two dominant strands we have previously highlighted are traceable to a

small number of foundational texts that the applied literature repeatedly mobilises.

The contextual strand is anchored above all by Welter (2011), the most locally cited reference in the entire dataset, whose systematic argument for treating context as a multi-dimensional analytical lens, encompassing spatial, institutional, social, and temporal dimensions, provides the conceptual scaffolding on which much of the subsequent empirical work is built. Anderson (2000) anticipates this move from an empirical angle, showing that peripheral location can be reconstructed as an entrepreneurial resource rather than a structural liability. Korsgaard and colleagues extend this logic in two complementary directions: the first work (2015a) distinguishes between place-based and space-based orientations in rural entrepreneurship, mapping the tension between locally embedded actors and more strategically networked entrepreneurs; the second (2015b) argues that the most effective rural entrepreneurs combine both orientations simultaneously. McKeever et al. (2015) complete the picture by showing how deeply embedded entrepreneurs actively reconstruct the places they inhabit.

The embeddedness strand traces back to Granovetter (1985), whose argument that economic action is inextricably embedded in social structures of trust and obligation functions as the invisible connective tissue of the field. Jack and Anderson (2002) operationalise this insight in an explicitly entrepreneurial register, showing how embeddedness shapes both the opportunities entrepreneurs can perceive and the resources they can mobilise. Peredo and Chrisman (2006) extend this reasoning to collective forms of entrepreneurship in resource-poor environments, providing a theoretical counterpart to the intermediary model of Mair et al. (2012) and to the community-oriented practices documented by Burnett and Danson (2017).

Finally, the presence of Eisenhardt (1989) and Miles et al. (2014) in this ranking, signals that a substantial share of the empirical work in this field relies on qualitative case-study designs.

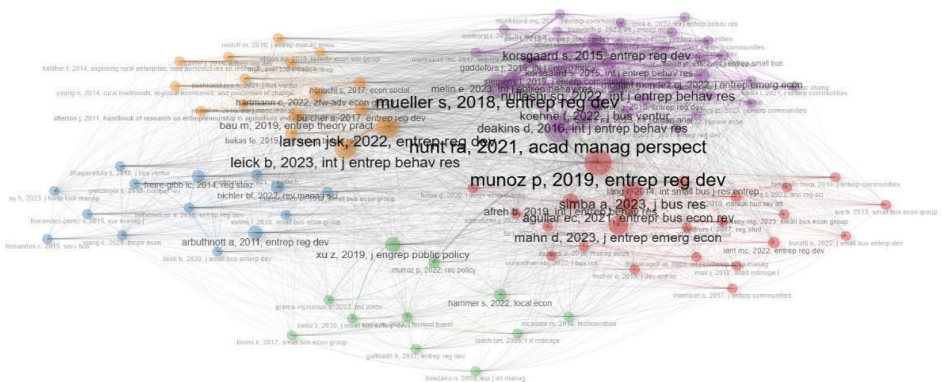
3.2.2 Bibliographic Coupling

Bibliographic coupling groups documents that share common references, revealing not merely thematic affinities but genuine intellectual communities. Read alongside the previous section's findings, the cluster structure in Figures 6 and 7 becomes analytically informative in ways that the visual alone does not immediately convey. Specifically, Figure 6 shows the top 100 documents for LC score clustered around common topics identified by Keywords Plus criteria, which are standardized terms extracted automatically from the titles of the cited references. The most relevant are represented by larger points and bold references. Figure 7 helps us in iden-

tifying and classifying the five clusters in terms of impact and centrality for the research topic.

In Figure 6, the centrality of the purple cluster, organised around the concepts of *place* and *space*, and building predominantly on Welter (2011), Korsgaard et al. (2015a, 2015b), and Anderson (2000), confirms that the contextualised entrepreneurship stream has developed a relatively consolidated theoretical core. The density of connections between the red, purple, and orange clusters is equally significant: rather than signalling redundancy, it indicates that the two main streams are not hermetically sealed, suggesting that the field has been gradually building towards an integrated framework in which relational and spatial dimensions of peripheral entrepreneurship are treated as mutually constitutive.

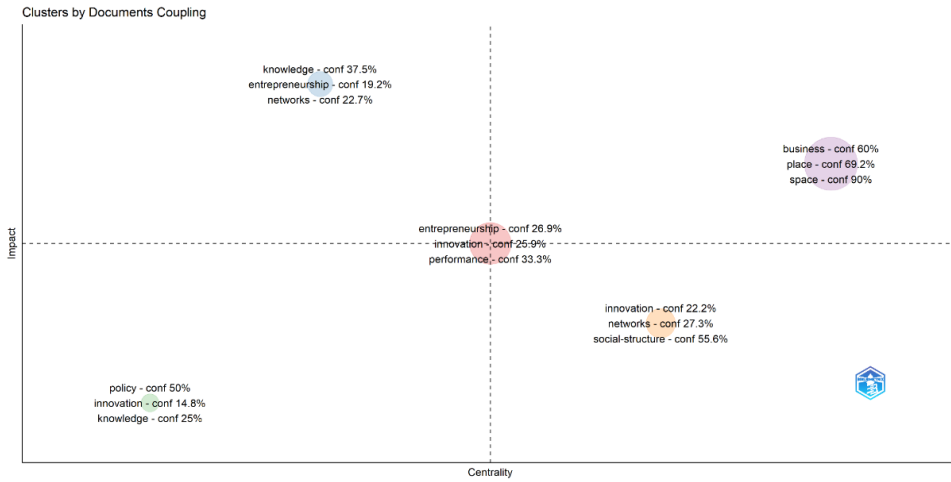
Figure 6. Top 100 documents for local citation score clustered per Keywords Plus



Source. Bibliometrix

At the same time, the cluster map (Figure 7) points to a structural tension. The most peripheral and less connected clusters, show weaker bibliographic coupling with the dominant clusters. This signals that these research communities draw on substantially different reference bases rather than in the entrepreneurship-and-place tradition. Bringing these frameworks together into dialogue remains largely undone, and represents one of the most promising frontiers for future cross-cluster fertilisation.

Figure 7. Clusters impact and centrality



Source. Bibliometrix

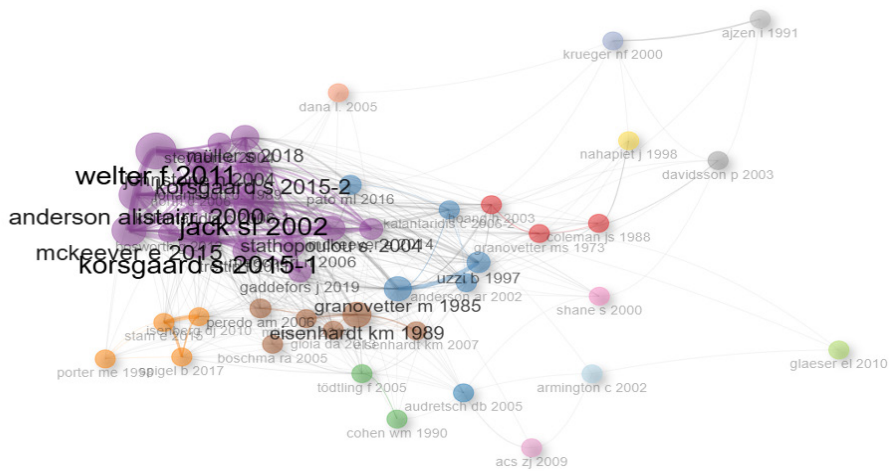
3.2.3 Co-citation analysis

While bibliographic coupling groups documents that share common references (Donthu et al., 2021), co-citation analysis inverts the perspective by identifying which foundational texts are systematically read together by the scholarly community (Hjørland, 2013). The two techniques are therefore complementary, and their findings here are mutually reinforcing.

The emergence of a single dominant co-citation cluster, centred on Welter (2011), Jack and Anderson (2002), and Korsgaard et al. (2015a), is analytically significant for two reasons. First, it confirms that the two streams identified throughout this analysis are not parallel but overlapping traditions. In other words, scholars working on either contextualised entrepreneurship or social embeddedness consistently frame their contributions against the same theoretical background.

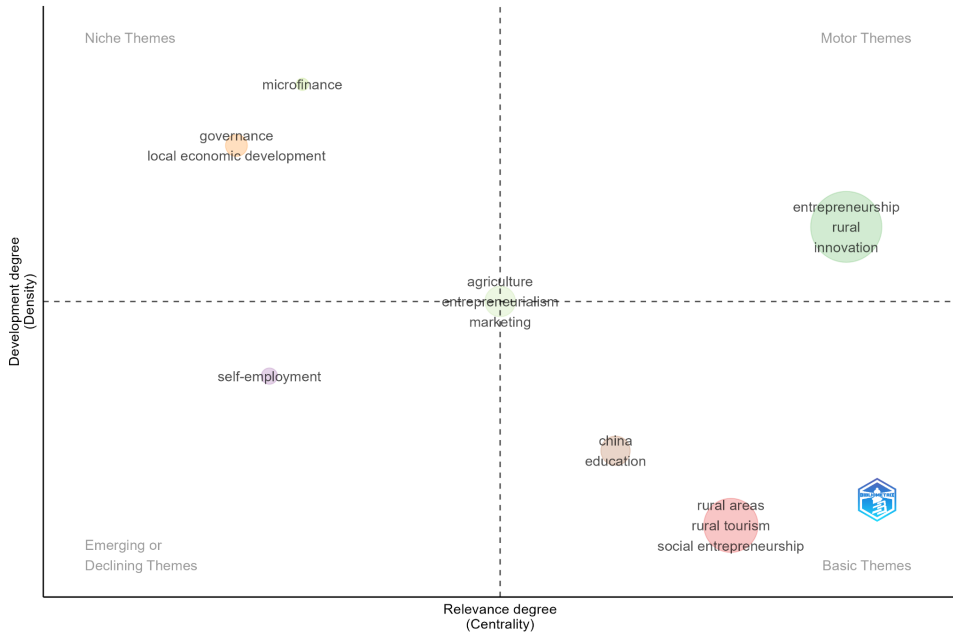
Second, the compactness of this cluster suggests that the field's theoretical foundations, while robust, are relatively narrow. The relative isolation of Granovetter (1985) and Peredo and Chrisman (2006) from the core, despite their high local citation counts, indicates that the sociology of networks and the community-enterprise tradition are widely cited individually but have not been fully integrated into the dominant framework, reinforcing the observation made in the bibliographic coupling analysis about inter-cluster bridges remaining underdeveloped.

Figure 8. Top 50 references co-citation analysis



Source. Bibliometrix

Figure 9. Co-word analysis thematic map



Source. Bibliometrix

3.2.4 Co-word analysis

The co-word analysis thematic map in Figure 9 extends this picture into the temporal dimension, tracing not only where research currently stands but also the directions in which it is moving. The motor themes in Q1, entrepreneurship, rural, innovation, social capital, regional development, confirm that the field's productive core is precisely the intersection of the two dominant streams. Their development level, close to the average, suggests that this core, while established, has not yet reached theoretical saturation. Family firms and community emerge as secondary motor themes within the same cluster, pointing to a growing interest in the collective and intergenerational dimensions of entrepreneurship in PAs that the literature has begun to explore but not yet systematically theorised.

The basic themes in Q2, social entrepreneurship, social innovation, creativity, and lifestyle entrepreneurship, are perhaps the most analytically interesting. Their high relevance but lower development indicates that these topics are firmly established as research concerns without having generated the same cumulative theoretical progress as the motor themes.

The emerging cluster in Q3, organised around self-employment and immigrant entrepreneurship, and the niche cluster in Q4, centred on microfinance, women's entrepreneurship, and financial inclusion, deserve particular attention. Their low centrality does not reflect marginal empirical importance but rather a genuine theoretical disconnect from the mainstream literature, as these communities build on different foundational references that have not yet been brought into dialogue with the place-embeddedness framework.

4. Discussion

This paper presented a bibliometric analysis on business networks and entrepreneurship in PAs, identifying the evolution of the field and tracing future research avenues.

Performance analysis confirms the growing interest on the issue, highlighting the most prominent authors and outlets, belonging to a variety of research areas beyond the fields of Entrepreneurship and Regional Development.

Science mapping revealed that the main documents are focused around the two interconnected topics of entrepreneurship in PAs (Bosworth, 2012; Korsgaard et al., 2015a; Gaddefors & Anderson, 2019) and social capital/embeddedness (Bourdieu, 1986; Granovetter, 1985; Malecki, 2012). Entrepreneurship in PAs is characterised by a strong degree of territorial embeddedness, reflected in rural localisation, rural customers, and rural products

(Bosworth, 2012; Korsgaard et al., 2015a), and by the centrality of relationships as the primary development factor. As Korsgaard et al. (2015a) argue, rural entrepreneurship leads to an enhancement of the quality of place and of localised resources, a process that social capital literature confirms empirically (Moyes et al., 2015).

These two streams are linked by the concept of social entrepreneurship, understood as entrepreneurial effort aimed at creating social value (Peredo & McLean, 2006). Social entrepreneurship is strongly present in our results and is proposed as a key leverage for place development, operating as a mediation activity between actors from different levels, voluntary, public, and mainstream business (Steiner & Teasdale, 2019), and generating positive externalities for the territory.

Besides these main research streams, science mapping analysis revealed further subjects that can be developed. Building on the gaps identified through science mapping, we propose four directions for future research.

First, the co-citation network shows that foundational contributions from the sociology of networks (Granovetter, 1985) and community-based enterprise theory (Peredo & Chrisman, 2006) are widely cited individually but rarely mobilised together with the dominant contextualised entrepreneurship framework. Whilst recognising the established nature of these issues, future research could analyse them in connection with the prevailing strand of contextualised entrepreneurship literature, with a particular focus on PAs. Nevertheless, this could be an opportunity to expand research beyond the social relationships' dynamics, placing emphasis also on contractual relations in such contexts.

Second, the literature is heavily concentrated in Northern and Western Europe, with PAs in the Global South, Eastern Europe, and Latin America largely absent from the empirical record. This raises a theoretically consequential question concerning social capital and contextualised entrepreneurship mechanisms in different geographical contexts.

Third, as it emerges from the thematic map's Q3 and Q4 clusters, topics such as migrant entrepreneurship, women's entrepreneurship, and microfinance, that draw on entirely different theoretical traditions, are still under-integrated without yet having been brought into dialogue with the mainstream literature. In the contemporary global scenario, characterised by turbulence and diversity, studies that address these issues in the context of PAs have the potential to generate significant interest.

Finally, in the light of the predominance of cross-sectional designs in the corpus prevents any systematic understanding of how entrepreneurial networks evolve over time. Future research should investigate how entrepreneurial networks in PAs adapt and restructure in response to disruptive external shocks such as digitalisation, climate transition, or pandemic-related and geopolitical disruptions.

5. Conclusions

The present bibliometric analysis offers a wide representation of recent studies and future trends of research over the interdisciplinary issue of entrepreneurship in PAs. On the one hand, the performance analysis revealed the increasing interest on PAs-related research, led by entrepreneurship and regional development studies. On the other hand, the content analysis highlighted relevant topics of rural entrepreneurship and social entrepreneurship which often employ the concept of social capital as key resource for business activities.

Therefore, it appears that relationships and networks are key resources for business activities located in PAs, opening to new research opportunities studies on the topic beside Entrepreneurship literature.

This study is not without limitations, as the bibliometric analysis method involves per se some issues (Donthu et al., 2021). Firstly, the choice of keywords and inclusion criteria, even when identified as holistically as possible, may not capture all conceptually relevant studies that do not employ the specific terminology adopted.

Secondly, bibliometric analysis operates at the level of aggregate structural patterns rather than the depth of individual textual arguments (Donthu et al., 2021; Mukherjee et al., 2022). Accordingly, the findings should be interpreted as a map of the field's intellectual landscape rather than a substitute for an in-depth systematic or meta-analytic review. Future research may complement this study by engaging more qualitatively with the thematic clusters identified here.

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