

Review Article

Productive Competitiveness and Regional Development: A Systematic Literature Review

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Abstract

This article aims to, essentially, analyse the perspective of different scientific works on the influence of productive competitiveness on the development of regions in their different scales. This systematic literature review study was based on around 103 works published on themes about the competitiveness and productivity of the regions present in the Scopus database. *Zotero* and *VOSViewer* software were used to manage the database of this investigation, allowing not only the qualitative organization of key contents, but also the mapping of existing authors and linkages in terms of co-occurrences. The methodology used allowed exploring the different conceptual establishments that seek to relate productivity with the competitiveness of the regions and vice versa. As a criterion for the inclusion of works and consequent analysis, conceptual review studies on territorial competitiveness with a geographic economic focus were chosen, extracted from the Scopus database. This review also made it possible to extract the main accessible meanings in the keywords of seminal authors in studies of this nature, research trends in terms of interests in the development of studies that seek to explore competitive capacity of regions in recent years, as well as studies on the capabilities of regions tending to specialization, innovation, valuation of intellectual (human) and territorial capital and sustainability.

Keywords

Competitiveness, Productivity, Regional Development, Systematic Literature Review

1. Introduction

Many countries particularly those with regional economic disparities, looking for ways to gain from the increase in regional competitiveness through region adapted policies, defining characteristics and needs, seeking from government action to foster growth, improve well-being and tackle inequalities.

According to [22, 34, 23], territorial competitiveness filters down to regional, urban and local levels, particularly in the role of regionally based policy interventions to help improve

the competitiveness of regions and city regions. In many advanced nations, these interventions are part of a strategic framework to improve productive and innovative performance. In this political perspective, the main factors of regional competitiveness are generally considered to consist in the improvement of knowledge and creativity through groups or networks of complementary companies and organizations. This perspective is similar to endogenous regional development thinking currents whose argument holds that regions

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Received: 13 June 2024; **Accepted:** 22 August 2024; **Published:** 6 September 2024



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themselves act as organizational forms of coordination that facilitate sustainable competitive advantage.

The concept of regional competitiveness is based on the expectation of the place to explore its geographic, human, institutional and productivity potential as a strategy for achieving prosperity [14]. Obtaining high levels of productivity depends on the presence of more advanced factors or high-quality and specialized groups, from human resources, technology, infrastructure and capital. And when productivity drives competitiveness, competing rival groups will be created in a local region, stimulating the intensity of local economic activity, making the market increasingly attractive and improved [29, 38, 32].

This study seeks to answer the following question: To what extent can productive competitiveness contribute to the development of regions, fundamentally in sub-national geographical contexts?

In order to answer this question, an attempt was made to interrelate the vision of several authors, from the fundamental concepts, factors that determine the existence of these conditions for the regions, as well as the entities (actors) necessary for the developments of regional ecosystems. Clusters were also identified at the level of Keywords to allow a more incisive, and, at the same time, broader approach to the theme.

2. Theoretical Background

In order to analyse the productive competitiveness of a region, our study will focus on the conceptual approach on the valences of territorial capital that can constitute advantages to regional and local development according to the perspective of different authors.

2.1. Region, Regional Competitiveness and Productivity: Concepts

The term region is used in many ways in the social sciences, referring to supranational dimensions in international dimensions but, in other disciplines, it focuses on a territorial sublevel grounded in a multiscale perspective. Regions are too different in their geographical scale and institutional achievement to be explained by a single set of drivers.

The constructivist approach sees regions as the result of contradiction between social and political actors under spe-

cific conditions. It does not take the regions ontology as certain, but sees them as potential spaces to be filled with social and economic content, often times contested. This is consistent with modern theories of territory that moved from a rigid definition of boundaries and emphasized flexibility and multiple meanings [28, 8]. Regions can also be conceptualized as interstate, cross-border spaces [28].

To expand region's designs perception, [8], analyses the concept of region and competitiveness and defines the region as productive system that can be differentiated both by space and organization, and contains a degree of coherence due to the nature of the localized interactions that constitute it.

The idea of competitiveness implies the identification of a fundamental determinant of local prosperity, that is, the base for sustainable growth in modern economies [35]. Some authors as [22, 31, 15], define regional competitiveness as the difference in the growth rate of regions relative to their abilities to project future economic growth in relation to other regions in similar states of economic development.

However, competitive regions cannot be built without productivity, it is the only relevant measure of competitiveness. Productivity can also be defined as the level of efficiency in producing goods or services. Productivity gives an idea of how to use resources in the production of goods. The levels of productivity, in turn, define the level of prosperity that can be achieved by an economy [4, 39]. Competitive and productive regions need to be surrounded by a set of assumptions that will contribute to their performance, as we will see in Table 1.

2.2. Determinants of Competitiveness

In assessing regional performance, various factors contribute to shaping the economic landscape, as highlighted by [14, 16, 1]. These factors can be broadly categorized into two dimensions: macroeconomic and microeconomic. The Macro dimension, which is driven by a set of institutions (social infrastructure), policies and investment in public goods that define the context of an economy. Microeconomic factors are those that directly influence productivity and workforce mobilization from inputs resulting from governmental investments and incentives resulting of competition and market opening. In a more sectioned way, determinants are presented subdivided into different dimensions of analysis, as well as different authors who support the related views.

Table 1. Determinants of competitiveness.

Analysis dimensions	Determining Variables (input)	Conditioning Variables (outputs)	Authors
Social and Economical	Health, Environment, Technology, Innovation, Education and Human Capital; Work environment withcapable	The existence of individuals with technical and educational level, that have an impact on the quality of work (universities); a high- quality education system, that involves public participation on a large scale can stimulate competitiveness through the integration of this collective with	[14, 1, 16, 38, 6, 40, 30].

Analysis dimensions	Determining Variables (input)	Conditioning Variables (outputs)	Authors
Geographical	human resources;	accumulated knowledge into the labour market.	[34, 29, 17, 12, 24, 33, 10, 36].
	The type (urban/rural) and location of the regions;	Particularly remote low-density areas struggle with poor connectivity, market access, low population density and economic activities that may allow the existing agglomeration economies to benefit, thereby undermining their competitiveness.	
Political and Strategical	Climatic location, natural, forestry and agricultural resources Investment in Research and Development;	The competitive advantage of a nation is determined by the strength of its endogenous factors, which in turn foster competitiveness by attracting investment to the region.	[16, 1, 2, 38, 42, 14, 3, 27, 17].
	Specialization for productive competitiveness and development	The creation of knowledge from Research and Development, through joint action between entrepreneurs, the public sector and foreign companies;	
Economical	Effective regional policies (topdown P!!“W)	The need for structural changes in territories, fundamentally in those specialized in agricultural productivity. Structural change with a focus on productivity can be triggered by capital accumulation, technological change and the strategic allocation of production factors.	[14, 37, 30].
	Governance as an instrument of economic performance (strategic reorientation)	The need for changes in spatial policies from top to bottom, oriented towards infrastructure, focused on lagging regions aiming at a more market-integrated territory; Apply an effective place-based regional policy so that the strengths or geographic resources likely to generate competitive advantages can be identified; Combine top down and bottom-up long-term strategic visions, market-oriented and action-oriented performances;	
Economical	Investment as a crucial element to sustainable development	New generation of intelligent and coordinated state organization with market characteristics, offering effective means of evaluating the quality of performance and accountability, that is, reinventing or restructuring local governance.	[14, 37, 30].
		Criticize measures of one size fits all solutions, recognizing the need for a regulatory framework for coherent, fair and transparent investment in the regions.	

3. Methods

3.1. Inclusion Criteria

As part of this review, studies focusing on territorial competitiveness or those that explore conceptual intersections between productivity and regional competitiveness variables were incorporated. The analysis deliberately excluded themes related to internal and commercial competitiveness of companies.

We focused on literature review articles and original articles, prioritizing publications from the last 10 years while ensuring inclusion of substantial contributions from seminal authors in the field. Our scope encompassed theoretical and conceptual studies with a geographic and economic emphasis, particularly those exploring sectors such as agriculture and industry. Special attention was given to low-density areas displaying a tendency toward productive specialization. Excluded from consideration were book chapters and book reviews.

3.2. Database and Types of Studies Selected

For the selection of the most relevant studies on productive competitiveness, we opted to search the database for keywords such as “Competitiveness AND Productivity” as well as “Regional development”. The articles were extracted from the Scopus databases, generating around 161,076 documents which, in turn, were filtered by the period of publication, preferably those released from 2017 to 2023, having been reduced to 53,000, articles from review and original articles (48,917), Domain of social sciences (10,949), open access (2,579), title and Abstract reading (305), Duplicate items (282), Further reading of contents (71), addition of 32 articles from seminal authors, resulting in 103 final studies. Studies on competitive advantages, theories of competitiveness, economic growth, entrepreneurial ecosystems, human and intellectual capital, labor productivity, place-based policies, regional development, regional resilience, specialization and strategic planning for competitiveness and productivity were selected.

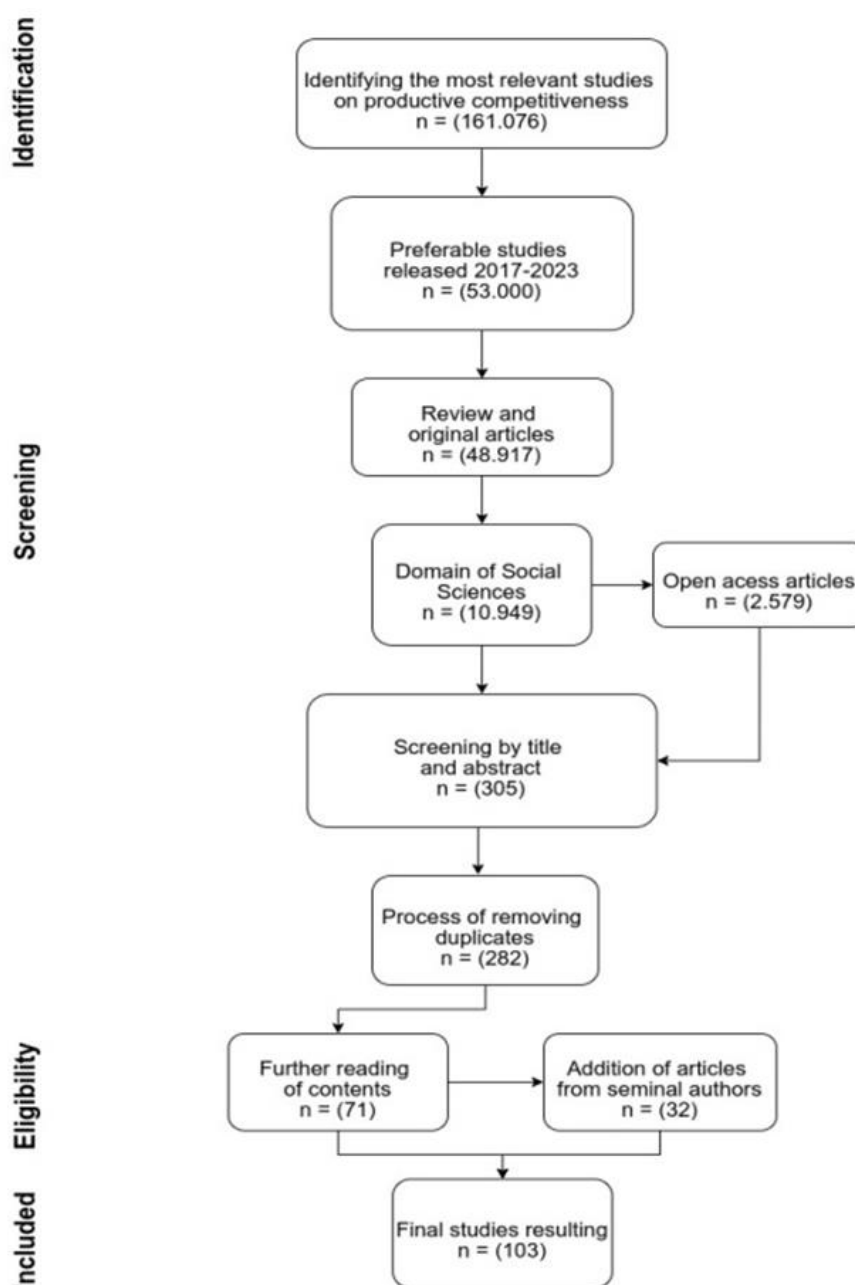


Figure 1. Prisma framework for Systematic literature revision.

4. Results

4.1. Evolution of Scientific Production in This Topic

The below chart illustrates the evolution of scientific production on productive competitiveness and region development. The record shows that the publications extracted and analysed evolved from the year 1990 to 2023, with a greater expansion growth between 2017 and 2019, as shown in graph n 1. The US and UK as we see in table 5, were the countries

with more publications in these research trends, mainly influenced by various factors as economics concern in order to face economic challenges on issues related to competitiveness and regional development, economic downturns, shifts in industry landscapes, or emerging global economic trends often stimulate research in these areas. Otherwise, with continued globalization and rapid technological advancements, these factors can significantly impact regional economies, prompting researchers to investigate how regions can remain competitive in the face of global challenges and technological disruptions. The needs of how regions can foster innovation ecosystems, and entrepreneurship in driving economic development gained prominence during this period.

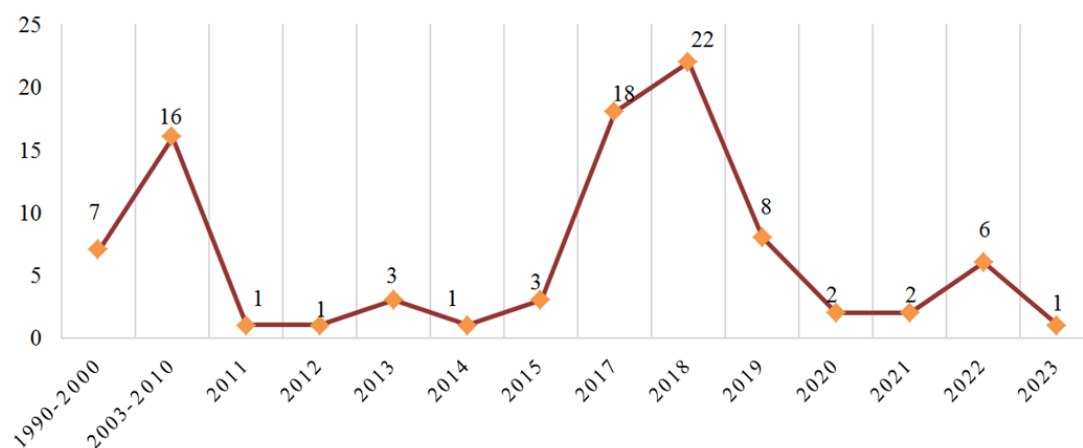


Figure 2. Evolution of scientific production/years.

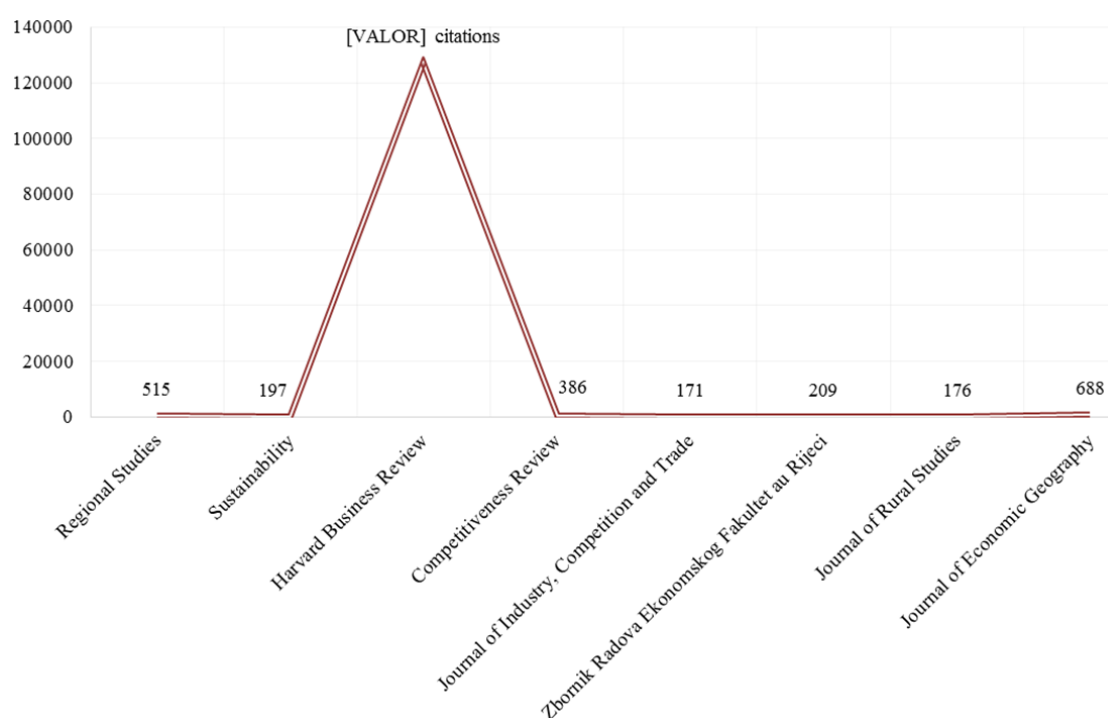


Figure 3. Main journals by citation number.

Table 2. List of Journals from which articles were extracted.

R	Journals	N°Art	N°cit.	Countries	Years	H-Index	Subject area and category
1	Harvard Business Review	7	127.396	USA	1990/2004/2006/2008/2011/2015/2023	190	Business; Management; Accounting; Economics, Econometrics and finance.
2	Regional Studies	5	515	United Kingdom	2010/2018	128	Geography; Economics; Business and Industry.
3	Sustainability	4	197	Switzerland	2018/2019	109	Economics; Econometric.
4	Zbornik Radova Ekonomskog Fakulteta u Rijeci	4	209	Croatia	2017	14	Business; Management; Economics, Econometrics and Finance.

R	Journals	N°Art	N°cit.	Countries	Years	H-Index	Subject area and category
5	Competitiveness Review	3	386	United Kingdom	2006/2015/2017	31	Business, Management And Accounting Business
6	Journal of Industry, Competition and Trade	3	171	Netherland	2006	25	Management And Accounting; Economics and econometrics
7	Journal of Economic Geography	3	688	United Kingdom	2005/2010/2022	107	Geography, Planning and Development
8	Journal of Rural Studies	2	176	United Kingdom	2018/	114	Development Geography, Planning and Development, Sociology and Political Science.

Source: Extracted data from SJR, Scimago Journal & Country Rank.

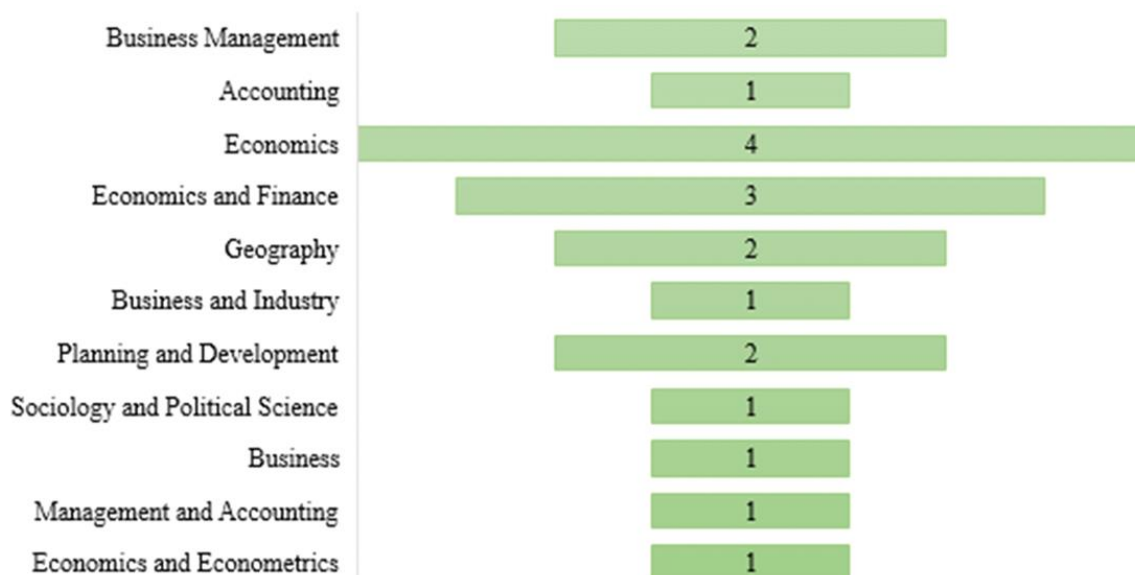


Figure 4. Knowledge areas.

Over the span of 30 years, according to the data depicted in the second chart, the Harvard Business Review (HBR) magazine emerges as the most frequently cited and impactful journal. Remarkably, it commands approximately 91% of the most cited journal articles. Renowned for its business-oriented perspective, HBR features numerous works characterized by intricate conceptual frameworks and exhaustive analyses of strategic competitiveness models. These contributions aptly cater to the image and imperatives of competitiveness prevalent in the United States of America, underscoring its commitment to global competitiveness and development. The Harvard Business Review serves as a platform for esteemed scholars such as Porter and others who delve into the theory of competitiveness and territorial development. Their high-caliber scientific works, disseminated through the magazine, significantly enhance the precision and depth of analyses pertaining to productive competitiveness

and regional development.

Based on the volume of citations, the Harvard Business Review journal was the most requested for the extraction of articles, about 7 (the equivalent to 7%) of the total number of journals requested, followed by Regional Studies with around 5%. The United Kingdom is the country with the most representation in terms of studies published in journals on the topic of productive competitiveness and regional development, with Switzerland, Croatia and the Netherlands also present. The areas of knowledge and specific categories explored were: Management, Economics, Econometrics, Business, Geography, Planning and Development (Graph n°3).

In the realm of knowledge areas associated with "productive competitiveness" and "regional development," the most referenced authors in the Scopus database include, [36, 35, 21, 1, 11]. Their works are among the most frequently consulted resources in this domain. The research methodologies employed in the

supporting literature predominantly comprise statistical (quantitative) analysis, mixed approaches, and literature review studies.

This methodological diversity underscores the comprehensive nature of the analysis presented in this article.

Table 3. Top 5 most productive authors according to the keywords.

Author	N °articles	Journals	Title	Methodology
Michael E. Porter	8	Harvard Business Review; Harvard Business School; The journal of economic perspective; National Bureau of Economic Research;	UK Competitiveness: moving to the next stage; The Microeconomic Foundations of Prosperity: Findings from the Business Competitiveness Index; The Competitive Advantage of Nations; Strategy and Society: The link between competitive advantage and corporate social responsibility; Creating Shared value; Toward a New Conception of the Environment Competitiveness Relationship; The Determinants of National Competitiveness; The Five Competitive Forces That Shape Strategy	Quantitative; Quantitative; Bibliographic Review Bibliographic Review; Qualitative QualiQuantitative
Christian Ketels	7	Harvard Business Review; National Bureau of Economic Research; Cambridge Journal of Regions, Economy and Society; Journal of Industry, Competition and Trade;	European Clusters Competitiveness in Rural U.S. Regions: Learning and Research Agenda; India's Quest for Sustainable Growth in a new Global Reality: The Need for a Region and Sector driven Approach.	QualiQuantitative; QuantiQualitative; Quantitative
Robert Huggins	5	JCC: The Business and Economics Research Journal; Zbornik Radova Ekonomskog Fakultet au Rijeci; Regional Studies.	Regional Competitiveness: Theories and Methodologies; Regional competitiveness, economic growth and stages of development; Regional Competitive Intelligence: Benchmarking and Policymaking Introducing regional competitiveness and development: contemporary theories and perspectives New directions in regional innovation policy: a network model for generating entrepreneurship and economic development	QuantiQualitative; QuantiQualitative; Qualitative QualiQuantitative; Qualitative
Karl Aiginger	4	Competitiveness Review; Journal of Industry, Competition and Trade; Structural Change and Economic Dynamics.	Competitiveness: from a misleading concept to a strategy supporting Beyond GDP goals; Regional competitiveness: connecting an old concept with new goals; Competitiveness: From a Dangerous Obsession to a Welfare Creating Ability with Positive Externalities; A framework for evaluating the dynamic competitiveness of countries	Quantitative Quantitative Quantitative Quantitative
Roberta Capello	2	International Regional Science Review; Regional Science: Policy and Practice.	Modelling Regional Growth between Competitiveness and Austerity Measures: The MASST3 Model; Regional Competitiveness and Territorial Capital: A Conceptual Approach and Empirical Evidence from the European Union.	Quantitative; Quantitative

Table 4. Main Results from the articles.

Author	Summary of results in the main articles searched
MICHAEL E. PORTER	<p>(1) The UK needs to make the transition from high productivity to high levels of prosperity. (2) To do this, there must be a high coalition of government entities at different levels, private companies, trade associations and professional organizations, universities and research institutions. (3) National prosperity is ultimately determined by competitiveness, which is manifested by the productivity with which a nation uses its resources and the strength of clusters; (4) Competitive realities demand leaders who believe in change. Leaders understand the need for pressure and challenge. (5) Developing domestic goods is better than relying on foreign resources. (6) The proposal of a new way of looking at the relationship between business and society that does not threaten corporate success and social well-being, pressuring companies to create research and development values as a long-term investment aimed at future competitiveness. (7) The need for a more sophisticated form of capitalism, imbued with social purpose. The theory of shared values focuses on how companies create social benefits instead of diminishing them by guiding investments from companies to communities creating economic values (profits) through the creation of social values (competitiveness); (8) The need for a new thinking about the relationship between the environment and productive competitiveness. The focus should be on pollution control in relation to resource productivity. (9) The determinants of competitiveness are strongly influenced by market, demand conditions, companies, international business and economic activities, foreign direct investment, international trade and governance over all other determinants;</p>
CHRISTIAN KETELS	<p>(1) Clusters are currently seen as an important competitiveness factor for the European economy, redefining the role of the private and public sector in economic policy. Territorial clustering initiatives are effective when regional government institutions have strong and independent decision-making powers; (2) Rural regions grow or decline economically based on the same principles as other regions. Focusing on characteristics that regions share ignores many of the most important factors that drive a specific region's performance; (3) Development policy design needs to allow for the local application of critical policy tools to create an institutional architecture for action and for national-regional collaboration.</p>
ROBERT HUGGINS	<p>(1) In a globalized economic environment, differences in regional competitiveness are not always related to national or geospatial characteristics. Regional competitiveness, therefore, is based on the presence of conditions that allow companies to compete in their chosen markets and on the value that these companies generate being captured by the respective region; (2) Critics suggest that comparative analysis of regional competitiveness is a flawed technique because it does not allow regions to see themselves in a way that is meaningful or constructive for policy making. Such criticism does not take into account the variety and rapid development of regional systems for each context; (3) The essence of the region's discourse must be open, connected and able to create permanent circles of dynamism and sustained growth; (4) Engage with the policy dynamics of innovation, entrepreneurship and networks. Facilitating these connections is vital for regions with low innovation capacity to improve their economic development trajectories.</p>
KARL AIGINGER	<p>(1) Productivity is partly determined by structure and capabilities and labour productivity can be seen as a nested component in traditional outcomes as well as outcomes defined by new perspectives; (2) The results of regional competitiveness depend on innovation, education, institutions, social cohesion and social ambition; (3) The greater competitiveness of a country should not necessarily be accompanied by lesser competitiveness in other countries. Specifically in advanced countries, policies that promote the capacity to create well-being will create positive spillovers in other economies; (4) The ideas of the definition of competitiveness should have in mind the final objectives of the economic process, replicated in a function of social welfare: here consumption, social objectives and environmental standards are the ultimate ends. Competitive ability depends on the resources provided, including endogenous resources such as technology and human physical capital.</p>
ROBERTA CAPELLO	<p>(1) More integration, more expansion of the economy and greater spatial heterogeneity; it increases cohesion, as well as causing less gains, fundamentally in regions with less territorial assets; (2) The approach to competitiveness and territorial capital suggests a new role for local or regional policy makers: that of 'facilitators' of links and cooperation between actors, transfer of R&D, development of science-based entrepreneurship, university spin-offs.</p>

Clusters of keywords were generated from VOSViewer software, based on data combined in works on Productive Competitiveness and Regional Development. The 3 (three) main groups essential to research: Competitiveness; Innovation; Regional Development; Human Capital; Regional Disparities; Productivity; Intellectual potential; Entrepreneurial Ecosystems; Governance and Education; allowed for a more in-depth approach to the theme under development.

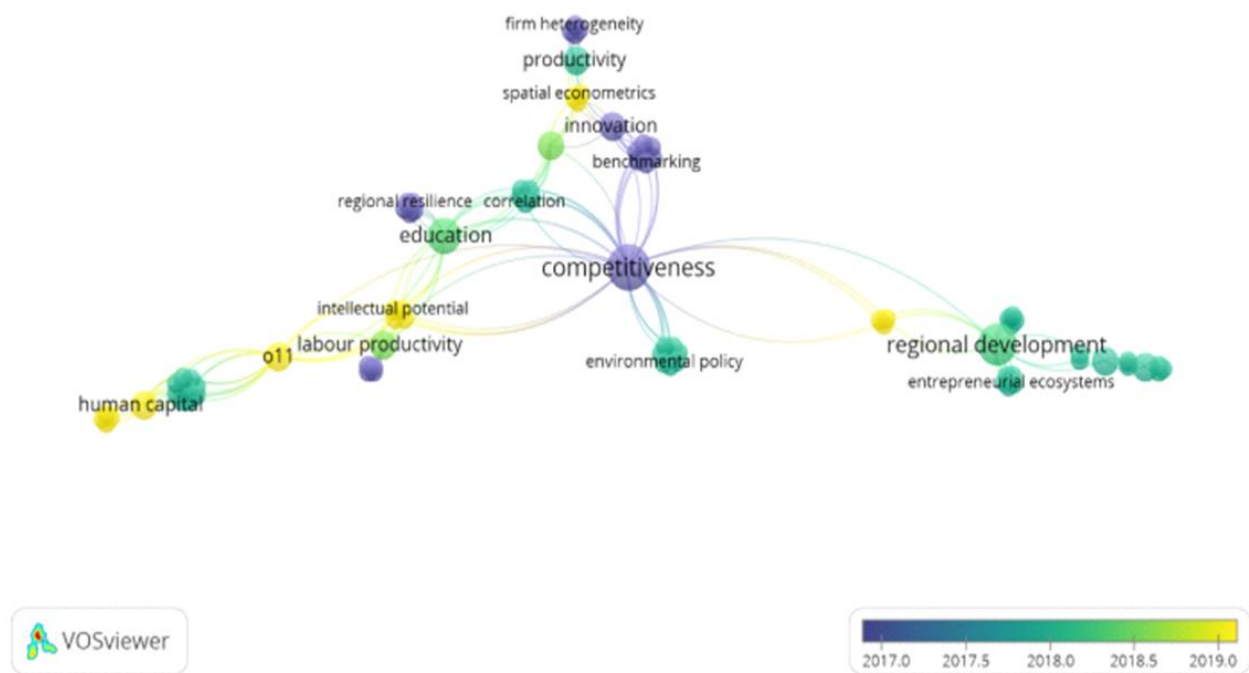


Figure 5. Keyword Clusters.

Table 5. Scientific production by Keywords Clusters.

Cluster 1	Cluster 2	Cluster 3
Competitiveness;	Regional development;	Human capital
Innovation;	Education;	Intellectual Potential;
Benchmarking;	Productivity;	Multifactor productivity;
Learning;	Labour productivity;	Globalisation
Regional disparities;	lifelong learning;	Spatial econometrics.
Economic Crisis;	Knowledge economy;	Entrepreneurship;
Regional resilience;	Governance;	Socioeconomic development.
European nuts II region;	Entrepreneurial Ecosystem;	
Global value chains;	Sustainable Regional competitiveness.	
Firm heterogeneity;		

Table 6. Most cited Authors by Keywords with highest co-authorship linkages.

Keywords	Main Authors	Countries of publication	Author h index	Occur	Total link Strenght	Searched Documents
Competitiveness	Porter;	U.S.A	97	5	34	69
	Huggins;	UK	59			
	Capello;	U.S.A	36			
	Camagni;	Switzerland	25			
	Aiginger;	Austria	10			
	Ketels.	U.S.A	8			

Keywords	Main Authors	Countries of publication	Author h index	Occur	Total link Strenght	Searched Documents
Education	Dima;	Switzerland	12	3	19	5
	Romão;	UK	43			
	Giannakis;	UK	16			
	Bilan.	Czech Republic	33			
Territorial Capital	Camagni;	Switzerland	*	2	17	6
	Capello;	U.S.A	*			
	Romão	U.K	*			
Regional development	Bachtler.	U.S.A	18	4	16	4
	Beugelsdijk	U.K	59			
	Huggins	U.K	*			
Human Capital	Romão;	U.K	*	2	14	4
	Prasetyo;	Lithuania	6			
	Bachtler	U.S.A	18			
Innovation	Romão	U.K	*	2	13	5
	Huggins;	Croatia	*			
	Teixeira;	U.K	23			
Competitivity & regional grow	Krammer	U.S.A	11	1	12	4
	Ivanov á	U.S.A	8			
	Huggins;	U.K	*			
	Capello;	U.S.A	*			
	Cohen.	U.S.A	17			

* For repeated data about author index

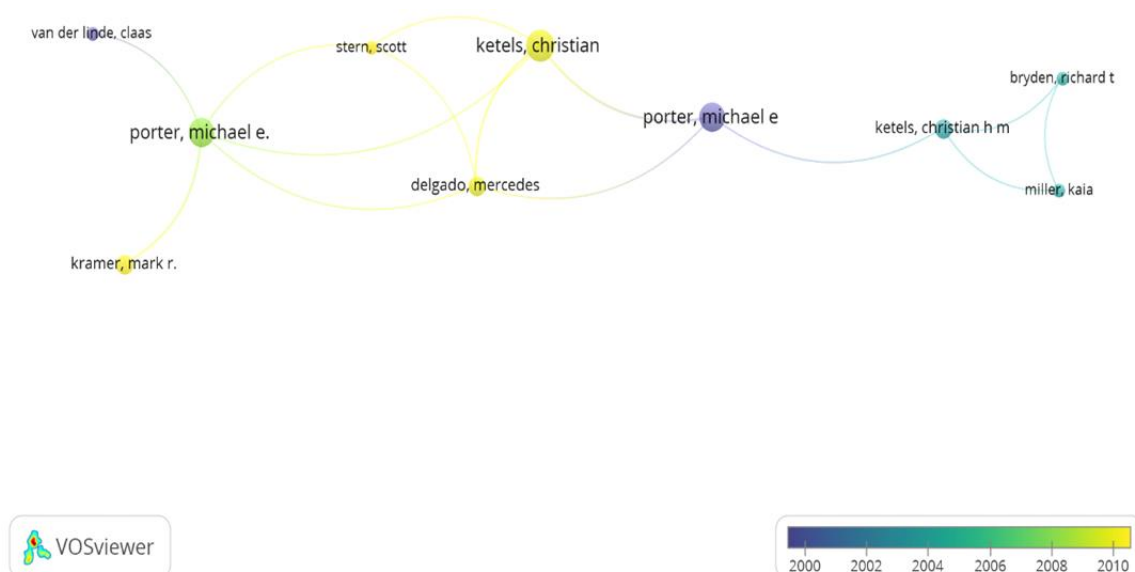


Figure 6. Most citations authors across the years.

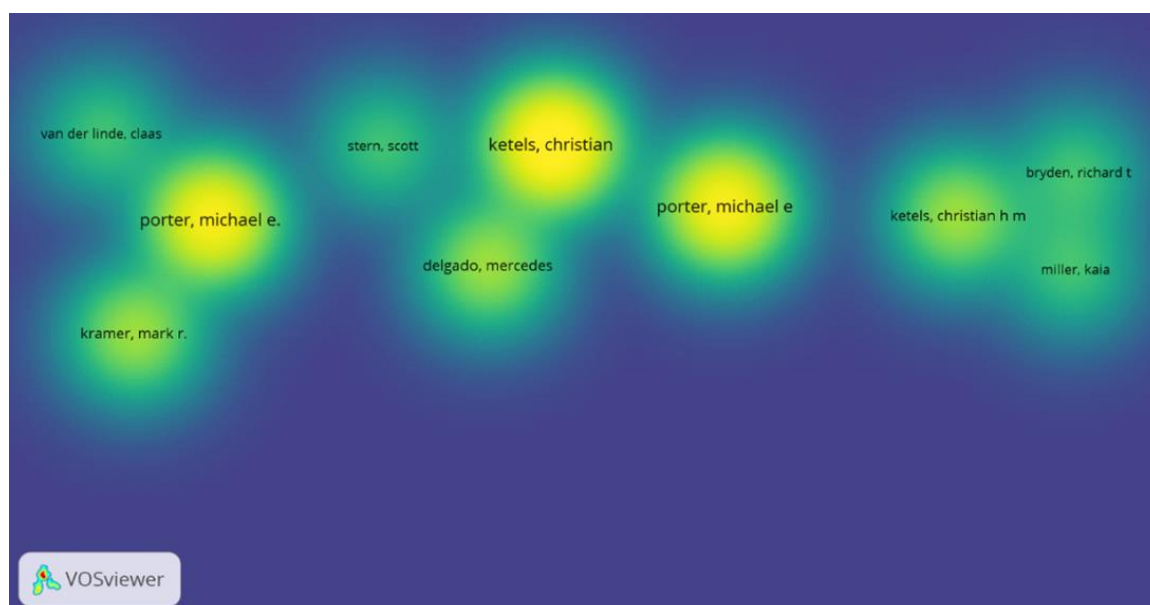


Figure 7. Author density map citation.

For the Keyword “Competitiveness”, Michael E. Porter (Harvard Business School Professor) is the most cited author in the knowledge network in this area, as a specialist on economic and social development theories and business strategies. Christian Ketels, also a Harvard Professor, with research interests in competitiveness, clusters, regional economics and economic policies. Professor at Stanford University, Robert Huggins, with a portfolio on regional studies, urban economic development, regional competitiveness, knowledge economy and high-tech industries. Keywords such as Education; Territorial Capital, Regional Development; Human Capital and Innovation are the most closely linked keywords.

4.2. Gathering of Main Cluster 1 Ideas

Cluster 1 – Competitiveness and his advantage factors

This cluster represents a convergence of ideas and authors adept at addressing pivotal aspects of the topic at hand, particularly focusing on the concepts of competitiveness, innovation, regional disparities, learning, and regional resilience. These scholars bring forth comprehensive insights and methodologies that significantly contribute to our understanding of these critical dimensions within the broader discourse of productive competitiveness and regional development. Their collective expertise enriches the analysis by providing nuanced perspectives and empirical foundations essential for advancing knowledge in this field. With this, [36, 16], look to the productive capacity of the regions through their economies, measured by the goods and services produced per unit the nation’s human, capital, and natural re-

sources. Prosperity, productivity and innovation are the result of competitiveness, retro feeding them, adding value to produced goods, local rent and allowing regions to open up to new markets [35].

Authors like [13, 25, 34, 7], associate the variables competitiveness and innovation, highlighting that, in the current knowledge-based economy, competitiveness largely depends on innovation, which is considered a major advantage as a key component of productivity growth. There is also an interactive theoretical model proposed by [34], called the “diamond model” that reveals the scope of gains in competitive advantages, through the interaction of several endogenous determinants that explain the differences between the national competitive levels of countries (benchmarking), highlighting factors such as: Input factors condition, demand conditions, firm strategy, structure and competition, related and support industries, and it is the combination of these elements that determines the competitive power of the regions, supports innovation and grants national competitive advantages [29].

In the different approaches to development by authors, the competitiveness of territories, Productivity and innovation exist at transversal points. They work in a system of influencer networks to create new functional dimensions and added value.

For [14, 15], the analysis of the concept competitiveness leads to the conclusion that competitiveness is the combination of institutions, policies and factors, which determines the productivity level of a territory. The concept of competitiveness is associated with 3 (three) fundamental ideas: market share, costs and productivity.

Table 7. Types of study and methodology of the main articles on competitiveness and advantage factors theme.

Authors	Article	Cit.	Objective	Methodology
[36]	UK Competitiveness: moving to the next stage	859	Synthesize, interpret and draw implications from available evidence on UK competitiveness.	Literature Review Review of existing research on competitiveness in the UK. Analysis of existing detailed data from the Global Competitiveness report.
[16]	The relationship between the knowledge economy and global competitiveness in the European Union	119	Study the influence of various indicators related to the knowledge economy on the competitiveness of countries in the European Union (EU)	Quantitative Empirical analysis of variables, dependent and independent, indicators such as Global competitiveness (GCI) and Gross Domestic Product in EU countries.
[35]	The Microeconomic Foundations of Prosperity: Findings from the Business Competitiveness Index	273	Offer a conceptual framework for understanding the determinants of competitiveness with a focus on the microeconomic level	Quantitative The use of available data and econometric methods according to the results reflected in the different economic reports
[13]	The impacts of environmental regulations on competitiveness	612	Quantify the effects of asymmetric environmental regulations on key aspects of business competitiveness.	Literature review Review recent empirical literature on the impacts of environmental regulations on the competitiveness of firms.
[25]	The impact of innovation performance on the competitiveness of the Visegrad 4 countries	84	Determine the impact of your innovation performance on the international competitiveness position pursued by the Global Economic Forum based on the Global Competitiveness Index (GCI) synoptic	Quantitative Compare the overall competitiveness of V4 countries and the scores of these countries on innovative performance and business process sophistication.
[34]	The Competitive Advantage of Nations	888	Investigate why nations gain competitive advantage in specific industries and the implications for corporate strategy and national economies.	Qualitative Study conducted over 4 years in 10 major trading nations, Denmark, Germany, Italy, Japan, Korea, Singapore, Sweden, Switzerland, United Kingdom and United States.
[7]	Smart Specialization for Smart Spatial Development: Innovative Strategies for Building Competitive Advantages in Tourism in Slovakia	69	Offer a vision of smart development based on the interconnections between innovation, competitive advantage and tourism, with the objective of identifying and evaluating their impact on sustainable spatial development.	Quantitative Conducted through a questionnaire survey using the Delphi method with a group of experts composed of ex-nationals and foreigners participating in 3 rounds.
[29]	Comparative analyses of competitive advantage using Porter diamond model (the case of MSMEs in Himachal Pradesh)	119	Measure and analyse the competitive advantage of micro, small and medium-sized companies (MSMEs) based on Porter's diamond structure	Quantitative Exploratory factor analysis and internal consistency tests were performed to verify the validity of the scales and the reliability of the measurement instrument (questionnaire).
[14]	The determinants of national competitiveness.	514	Develop a new definition of competitiveness directly linked to economic performance that encompasses the full range of factors that shape national prosperity.	Quantitative Estimate a theoretically based and empirically validated national competitiveness index.
[15]	A New Regional Competitiveness Index: Theory, Methods and Findings	220	Provide a description of the first European Regional Competitiveness Index (RCI) calculated for all NUTS 2 regions in the 27 EU Member States.	Quantitative Use the methodology of composite indicators to measure the regional competitiveness index.

Cluster 2 – Productivity and Regional development

The authors [42, 1], mention an approach of productivity and region growth through a comparative analysis of the total of imports and exports in the different territorial quadrants from China to the exterior, revealing that, the commerce flux between goods, services and labor capacity via regional migration, allowed more productivity and growth over a decade. Factors such as external investment and transference have also influenced policy reforms.

Productivity suffers changes at sectorial, structural and local levels. This heterogeneity, in structure, sectors and regional levels, implies that a particular sector and the regional composition of an economy is essential to determine its impact, the presence of local factors such as land, public structures, regional migration, as well as the input relations /output across sectors will determine the change in regional productivity and its outcomes [9, 42]. The distribution of sectoral

production between regions in many countries is not uniform due to the involvement of a complex network of interactions between sectors, enhanced by: spaces that are normally very distant from each other; policy changes, which affect the local regulatory environment; factors of production fixed locally and unequally distributed in space [12].

Authors as [27], speaks of the need for the emergence of productive and entrepreneurial regions as contemporary social trend. Entrepreneurial regions have an enhanced role in regional and local economic development as they are often involved in their own forms of economic policy. This approach makes it possible to create efforts for a culture of entrepreneurship, develop territorial talents, provide intermediary services with a focus on institutional interventions capable of providing favorable transitions at multiple levels [33].

Table 8. Types of study and methodology of the main articles on Productivity and Regional development approaches.

Authors	Article	Cit.	Objective	Methodology
[42]	Trade, migration, and productivity: A quantitative analysis of China	392	Study how goods and market frictions affect aggregate labour productivity in China.	Quantitative Using quantitative models to calculate the magnitude and consequences of trade and migration costs
[1]	A framework for evaluating the dynamic competitiveness of countries	278	Present a framework for assessing the competitive position of nations that links competitiveness to the concept of maximizing welfare.	Qualitative Application of the broader concept of competitiveness and the notion of competing on quality to the German debate on competitiveness.
[9]	The impact of regional and sectoral productivity changes on the US economy	345	Study the impact of intersectoral and inter-regional trade linkages on the propagation of disaggregated productivity changes in the US economy.	Quantitative A methodology was used to decompose total productivity factors (TPF) into regional, sectoral and regional-sectoral components.
[12]	Agglomeration, productivity and regional growth: production theory approaches	88	Discuss the empirical representation of agglomeration economies, focusing on the potential of econometric models based on production theory to analyse the productive impacts of such externalities.	Literature Review Provide an overview of the theoretical and empirical literature of agglomeration and highlight various applications from a cost function perspective.
[27]	The Entrepreneurial City: Reimagining localities, redesigning economic governance, or restructuring capital?	716	Examine the re-image of local economies through discourses on the entrepreneurial city.	Literature Review It results from a research project by the ESRC (Economic and Social Research Council) on local governance
[33]	Entrepreneurial Ecosystems: The Foundations of Place-based Renewal	94	Question the idea of an entrepreneurial ecosystem emphasizing 'place' as its location.	Measure entrepreneurial ecosystems and their results

Cluster 3 – Intellectual Capital

Bilan, Y., & Mishchuk, H. and Romão, J., & Nijkamp, P. [6, 38] put the impact of the intellectual component of human capital on regional development and productivity, a study that demonstrated that regions that present outstanding macroeconomic indicators also have sufficient intellectual resources for economic development, reflected in an improvement of opportunities in the labor market.

Secundo, G. and De Beer, C., et al. highlight the production of knowledge by universities as one of the fundamental factors for regional competitiveness through the creation of regional/national systems of innovation, technology transfer and social engagement [40, 17, 26]. Universities have new

responsibilities in helping to transform the knowledge generated to create value in terms of economic and social development. In this perspective, it is seen as a strategic asset for the competitiveness of individuals, organizations and countries. It allows stimulating business innovation, fostering competitiveness and promoting the development of regions. Intellectual capital forms the basis of national and regional wealth and potential growth in the future.

A precise view from [26], considers intellectual capital for regional development and competitiveness. To this purpose, it categorizes regional intellectual capital into dimensions and its purpose for regional development.

Table 9. Dimensions and purposes of Intellectual capital according main studies.

Goals of regional development	Dimensions of intellectual capital	Authors
Competitive development	Human Capital; Structural Capital; Relational Capital	[37, 17, 19]
Sustainable Economic Development	Institutions and Governance; Social Capital; Technology; Regional Human Capital;	[14, 19, 5, 24, 3, 27, 33, 30, 18]
Social Well-being	Regions Diversity; Knowledge; Universities; Willingness to future-oriented development.	[21, 16, 20, 38, 41, 32, 2, 22]
Sustainability	Skills and development; Public administration; Share capital; Environmental capital; Economic capital.	[37, 13, 1, 18, 10, 27]

Table 10. Types of study and methodology of the main articles on Intellectual capital related to regional competitiveness.

Authors	Article	Cit.	Objective	Methodology
[17]	Human Capital and Regional Development	1173	Investigate regional development determinants.	Quantitative Using a database of 1,569 sub-national regions from 110 countries, covering 74% of the world's surface and 97% of its GDP. We combine cross-regional analysis of geographic, institutional, cultural, and human capital determinants of regional development with an examination of productivity in several thousand establishments located in these regions.
[6]	An analysis of intellectual potential and its impact on the social and economic development of European countries	78	Evaluate the impact of intellectual potential on a country's competitiveness as measured by the most important indicators of economic growth and standard of living.	Quantitative The graph analysis method, the multi-criteria evaluation method on the development of human capital factors and regional differences using the taxonomic measurement method of Hellwig development in a constant pattern and equations used by the OECD were applied.
[38]	Impacts of innovation, productivity and specialization on tourism competitiveness—a spatial econometric analysis on European regions	89	Examine how the development of regional innovation systems influences the competitiveness of regional tourism.	Quantitative Measurement of global spatial correlation between variables. Elaborated using the Moran I test that uses auto-correlation computed through the Geoda 1.6.0 software.

Authors	Article	Cit.	Objective	Methodology
[40]	Mobilising intellectual capital to improve European universities' competitiveness: The technology transfer offices' role Emerald Insight	87	Show intellectual capital through the role of technology transfer by universities.	Quantitative Measure universities technology transfer efficiency through several intangible indicators.
[26]	Intellectual capital as a factor of sustainable regional competitiveness	67	Define the concept of competitiveness based on three structures: that of the World Economic Forum, that of the Competitiveness Index and relate it to the concept of intellectual capital.	Literature Review Systematic literature review of articles on intellectual capital, literature on competitiveness, and three sustainable competitiveness frameworks to define sustainable regional competitiveness.

5. Discussion

The concept of regions is seen in a scalar geographic perspective, not having a rigid definition of limits, therefore carrying a symbolic representation in many studies. The regions as dynamic and competitive functional territories are portrayed as productive systems in their space and organization.

There is a big problem in defining the concept of competitiveness, since it assigns all the focus to national regions without rethinking essential modifications of the same notion at the sub-national scale. As a result of the bibliographic mapping, the regions of publication were analyzed, with the research demonstrating the countries with the highest scientific yields in themes related to productive competitiveness and regional development. The United States of America and the United Kingdom stand out. Of the extracted works, North American publications are profiled as having superior quality if we stick to the measurement of frequency in terms of citation and the *h-index* of authors who publish most in these "Journals". In terms of the most explored journals, the British journals are the most explored, existing in a larger number and with a ranking of citations favorably good, for example, we have to highlight the *Journal of Regional Studies*, with 515 citations, the *Journal of Economic Geography* with 688 and the *Competitiveness Review* with 386 citations.

Articles published in the last 5 years were selected with greater preponderance, noting a more evident vertiginous growth from 2016 to 2018, noting a marked slowdown in the development of this theme in subsequent years due to the influence of the pandemic. Among the most cited authors are: Michael E. Porter; Christian Ketels; Robert Huggins; Karl Aiginger; Roberta Capello, with the highest number of connections between authors.

Limitations and opportunities in Research

Research on competitiveness at the subnational level in areas characterized by low population density and economic activity is relatively scarce. There is a clear need for studies that delve into the endogenous characteristics of these terri-

tories, particularly focusing on the influence of rural resources as drivers of innovation and growth within their own space. Moreover, there is a notable gap in research concerning regional productive specialization and competitiveness in African countries. Such analyses could yield valuable insights and knowledge, enabling a better understanding of local, national, and regional contexts. By addressing these gaps, researchers can identify optimal strategies for enhancing the success and development of these territories.

6. Conclusion

One of the most significant aspects of regional competitiveness concepts lies in the role of institutions. Institutions not only influence the intensity and nature of relationships among actors but also impact the degree of interactive learning within regions. Additionally, institutions play a crucial role in a region's capacity to adapt, transform, or restructure specific organizations and institutions essential for the development of economic activities. In essence, institutions serve as the backbone of regional competitiveness, shaping the dynamics and evolution of economic ecosystems.

Research on over 103 works, allows recognizing that regional competitiveness and its consequent development, is the result of determinants that are based on factors of a social, geographic and political strategy and economic nature, being conditioned by realities that are often uneven in terms of instruction of the actors, of interterritorial configurations, that is the influences of density in terms of economic activities, their connectivity, as well as natural aspects such as climate and other important resources.

Productive competitiveness demands greater socialization of knowledge, with universities, research, development and innovation being considered as strategic territorial capital. At the institutional level, it will be necessary to add governance in its social-territorial vision for the development of contextualized regional policies and good performance of accountability. It is also necessary to define a framework for equitable investment between regions. The bibliometric study carried

out allowed us to verify that there is, in fact, an addiction to the overvaluation of central territories from a political-strategic point of view resulting from the existing competitive advantages, and, increasingly accentuated devaluation/ruralization of regions far from the center due to the ineffectiveness of territorial-based policies, capable of valuing the production capacity of the regions.

Abbreviations

GDP	Gross Domestic Product
HBR	Harvard Business Review
OECD	Organization for Economic Cooperation and Development
VOSviewer	Visualization of Similarities (in Bibliographic Map)

Author Contributions

Waldemar Sérgio Tavares is the sole author. The author read and approved the final manuscript.

Conflicts of Interest

The author declares no conflicts of interest.

References

- [1] Aiginger, K. (1998). A framework for evaluating the dynamic competitiveness of countries. *Structural Change and Economic Dynamics*, 9(2), 159–188. [https://doi.org/10.1016/S0954-349X\(97\)00026-X](https://doi.org/10.1016/S0954-349X(97)00026-X)
- [2] Alam, K., & Erdiaw-Kwasie, M. (2018). Assessing regional digital competence: Digital futures and strategic planning implications. *Elsevier*, 60, 60–69.
- [3] Bachtler, J. (2018). Beyond Brexit: Reshaping policies for regional development in Europe. *Wiley Online Library*. <https://rsaconnect.onlinelibrary.wiley.com/doi/abs/10.1111/pirs.12351>
- [4] Bakhtiar, Irwansyah, D., & Zulmiardi. (2018). Measurement of Study Productivity and Evaluation Analysis by using the American Productivity Center (APC) Model at a Palm Oil Factory (Pks PT. Syaukath Sejahtera). In *Proceedings of MICOMS 2017* (Vol. 1, pp. 81–86). Emerald Publishing Limited. <https://doi.org/10.1108/978-1-78756-793-1-00084>
- [5] B&ć, G. (2015). *Measuring regional competitiveness: A survey of approaches, measurement and data*. Institute of Economics, Centre for Economic and Regional Studies. <https://ideas.repec.org/p/has/discpr/1529.html>
- [6] Bilan, Y., & Mishchuk, H. (2020). An analysis of intellectual potential and its impact on the social and economic development of European countries. *pdfs.semanticscholar.org*. <https://doi.org/10.7441/joc.2020.01.02>
- [7] Borsekova, K., & Vaňová, A. (2017). Smart specialization for smart spatial development: Innovative strategies for building competitive advantages in tourism in Slovakia. *Elsevier*. <https://www.sciencedirect.com/science/article/pii/S0038012115300331>
- [8] Boschma, R. (2004). *Competitiveness of Regions from an Evolutionary Perspective*. https://www.researchgate.net/publication/24087834_Competitiveness_of_Regions_from_an_Evolutionary_Perspective
- [9] Caliendo, L., & Parro, F. (2018). The impact of regional and sectoral productivity changes on the US economy. *academic.oup.com*. <https://academic.oup.com/restud/article-abstract/85/4/2042/4774710>
- [10] Camagni, R. (2017). Regional competitiveness: Towards a concept of territorial capital. *Seminal Studies in Regional and Urban Economics: Contributions from an Impressive Mind*, 115–131. https://doi.org/10.1007/978-3-319-57807-1_6
- [11] Capello, R., Caragliu, A., & Fratesi, U. (2017). *Modeling Regional Growth between Competitiveness and Austerity Measures: The MASST3 Model*. <https://journals.sagepub.com/doi/abs/10.1177/0160017614543850>
- [12] Cohen, J., & Paul, C. J. M. (2008). Agglomeration, productivity and regional growth: Production theory approaches. *elgaronline.com*. <https://www.elgaronline.com/view/edcoll/9781788970013/9781788970013.00013.xml>
- [13] Dechezleprêtre, A., & Sato, M. (2017). The impacts of environmental regulations on competitiveness. *Review of Environmental Economics and Policy*, 11(2), 183–206. <https://doi.org/10.1093/REEP/REX013>
- [14] Delgado, M., Ketels, C., Porter, M. E., & Stern, S. (2012). *The Determinants of National Competitiveness* (Working Paper N.º 18249). National Bureau of Economic Research. <https://doi.org/10.3386/w18249>
- [15] Dijkstra, L., Kozovska, K., & Annoni, P. (2011). (PDF) *A New Regional Competitiveness Index: Theory, Methods and Findings*. https://www.researchgate.net/publication/259357714_A_New_Regional_Competitiveness_Index_Theory_Methods_and_Findings
- [16] Dima, A., Begu, L., & Vasilescu, M. (2018). The relationship between the knowledge economy and global competitiveness in the European Union. *mdpi.com*. <https://doi.org/10.3390/su10061706>
- [17] Gennaioli, N., La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2013). Human Capital and Regional Development*. *The Quarterly Journal of Economics*, 128(1), 105–164. <https://doi.org/10.1093/qje/qjs050>
- [18] Ghisetti, C. (2017). Green technologies and environmental productivity: A cross-sectoral analysis of direct and indirect effects in Italian regions. *Elsevier*. <https://www.sciencedirect.com/science/article/pii/S0921800916302117>

- [19] Grassia, M. G., Marino, M., Mazza, R., Misuraca, M., Zavarrone, E., & Friel, M. (2022). Regional Competitiveness: A Structural-Based Topic Analysis on Recent Literature. *Social Indicators Research*, 1–26. <https://doi.org/10.1007/S11205-022-02951-4/TABLES/3>
- [20] Heijman, W., Hagelaar, G., & van der Heide, M. (2019). *Rural Resilience as a New Development Concept*. 195–211. https://doi.org/10.1007/978-3-030-28642-2_11
- [21] Huggins, R. (2010). Regional Competitive Intelligence: Benchmarking and Policy-making. *Regional Studies*, 44(5), 639–658. <https://doi.org/10.1080/00343400802331312>
- [22] Huggins, R., Izushi, H., & Thompson, P. (2013). *Regional Competitiveness: Theories and Methodologies for Empirical Analysis* by Robert Huggins, Hiro Izushi, Piers Thompson: SSRN. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2332832
- [23] Huggins, R., Prokop, D., & Thompson, P. (2021). *UK Competitiveness Index 2021*. <http://irep.ntu.ac.uk/id/eprint/44799/>
- [24] Huggins, R., & Thompson, P. (2017). Introducing regional competitiveness and development: Contemporary theories and perspectives. *Handbook of Regions and Competitiveness*, 1–32.
- [25] Ivanová E., & Cepel, M. (2018). The impact of innovation performance on the competitiveness of the Visegrad 4 countries. <https://www.cjournal.cz/files275.pdf>
- [26] Januškaitė, V. (2018). Intellectual capital as a factor of sustainable regional competitiveness. *mdpi.com*. <https://doi.org/10.3390/su10124848>
- [27] Jessop, B. (2018). The Entrepreneurial City: Re-imaging localities, redesigning economic governance, or restructuring capital? *taylorfrancis.com*. <https://www.taylorfrancis.com/chapters/edit/10.4324/9781351169486-4/entrepreneurial-city-bob-jessop>
- [28] Keating, M. (2017). Contesting European regions. *Taylor & Francis*. <https://www.tandfonline.com/doi/abs/10.1080/00343404.2016.1227777>
- [29] Kharub, M., & Sharma, R. (2017). Comparative analyses of competitive advantage using Porter diamond model (the case of MSMEs in Himachal Pradesh). *Competitiveness Review: An International Business Journal*, 27(2), 132–160. <https://doi.org/10.1108/CR-02-2016-0007>
- [30] Krammer, S. (2017). Science, technology, and innovation for economic competitiveness: The role of smart specialization in less-developed countries. *Elsevier*. <https://www.sciencedirect.com/science/article/pii/S0040162517308582>
- [31] Meyer-Stamer, J. (2008). *Meyer Stamer, J. (2008) Systemic Competitiveness and Local Economic Development. Meso Partner, Duisberg. - References—Scientific Research Publishing*. [https://www.scirp.org/\(S\(i43dyn45teexjx455qlt3d2q\)\)/reference/ReferencesPapers.aspx?ReferenceID=1334394](https://www.scirp.org/(S(i43dyn45teexjx455qlt3d2q))/reference/ReferencesPapers.aspx?ReferenceID=1334394)
- [32] Momaya, K. S. (2019). The Past and the Future of Competitiveness Research: A Review in an Emerging Context of Innovation and EMNEs. *International Journal of Global Business and Competitiveness*, 14(1), 1–10. <https://doi.org/10.1007/S42943-019-00002-3>
- [33] O'Connor, A., Stam, E., Sussan, F., & Audretsch, D. B. (2018). Entrepreneurial Ecosystems: The Foundations of Place-based Renewal. *International Studies in Entrepreneurship*, 38, 1–21. https://doi.org/10.1007/978-3-319-63531-6_1
- [34] Porter, M. E. (1990). The Competitive Advantage of Nations. *Harvard Business Review*. <https://hbr.org/1990/03/the-competitive-advantage-of-nations>
- [35] Porter, M. E., Ketels, C., & Delgado, M. (2007). *The Microeconomic Foundations of Prosperity: Findings from the Business Competitiveness Index*.
- [36] Porter, M. E., & Ketels, C. H. M. (2003). UK Competitiveness: Moving to the next stage. 3. *Harvard Business School*. <https://www.hbs.edu/faculty/pages/item.aspx?num=155397>
- [37] Prasetyo, P. (2020). Human capital, institutional economics and entrepreneurship as a driver for quality & sustainable economic growth. *researchgate.net*, 7(4). [https://doi.org/10.9770/jesi.2020.7.4\(1\)](https://doi.org/10.9770/jesi.2020.7.4(1))
- [38] Romão, J., & Nijkamp, P. (2019). Impacts of innovation, productivity and specialization on tourism competitiveness—a spatial econometric analysis on European regions. *Current Issues in Tourism*, 22(10), 1150–1169. <https://doi.org/10.1080/13683500.2017.1366434>
- [39] Schwab, K. (2018). *The global competitiveness report 2018*. <https://apo.org.au/node/262576>
- [40] Secundo, G., De Beer, C., Schutte, C. S. L., & Passiante, G. (2017). *Mobilising intellectual capital to improve European universities' competitiveness: The technology transfer offices' role* | Emerald Insight. <https://www.emerald.com/insight/content/doi/10.1108/JIC-12-2016-0139/full/html>
- [41] Sérgio Teixeira, M Ferreira, J. J., Jesus Teixeira, S., & José de Matos Ferreira, J. (2018). A bibliometric study of regional competitiveness and tourism innovation. *researchgate.net*, 8(3), 214–243. <https://doi.org/10.1504/IJTP.2018.094483>
- [42] Tombe, T., & Zhu, X. (2000). Trade, migration, and productivity: A quantitative analysis of china. *aeaweb.org*, 109(5), 1843–1872. <https://doi.org/10.1257/aer.20150811>

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