PORTUGUESE PUBLICATION IN THE AIM OF REGIONAL SCIENCE: A STUDY OF ARTICLES PUBLISHED IN RPER FROM 2003 TO 2015[1]

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Abstract

This paper is a study of the full content of articles published by RPER, the Portuguese Review of Regional Studies, from the time it was launched in 2003 until the first quarter of 2015. RPER is a journal edited by the Portuguese section of the European Regional Science Association, which was established in the first half of the 1980s. The Association (APDR) and the journal are the result of contributions by researchers and technicians from different scientific fields, including mainly Economics, Geography, Sociology, Engineering and Architecture. The main focus of these contributions is the socio-economic life of concrete sites, and the way this life is conditioned by resources and capabilities, the historical and cultural heritage and institutions. Content analysis was undertaken to identify the main subjects chosen during the total period under analysis, the nature of the articles published (theoretical or empirical) and the main analytical framework used. The analysis also covers sub-periods to

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investigate major trends found in terms of subjects chosen and analytical methods, questioning the rationale behind them. The paper concludes with a few notes regarding the social echo the research received and an identification of the main limitations of the research. In the first part of the article, we conduct a summary review of the genesis and evolution of Regional Science at international level to serve as a basis for the empirical approach developed.

Keywords: Regional Science; Scientific Publication; Content Analysis Analytical Methods; Portugal

Introduction

Regional Science has to do with territories analysis and development, approaching them on meso or micro scales, and it is a subject that has been attracting the interest of several disciplines, including Economics, Geography, Sociology, Engineering and Architecture.

Portugal was not a leading country when investigations were initially launched in this scientific field, as it was only in the 1970s that Portuguese researchers began to produce more consistent and theoretically supported studies on regional issues. In fact, a *décalage* of around 40 years existed between the pioneering studies conducted in the United States on regional issues, in the context of Roosevelt's "New Deal" (LOPES, 1979), and the ones held in Portugal. Even looking at the major contributions on regional growth produced by European Researchers [namely, Albert Hirschman (1958), Gunnar Myrdal (1984) and François Perroux (1949)] in the fifties (RICHARDSON, 1986; LOPES, 1979), a large delay has to be admitted.

Since then, one can claim Portugal was able to follow the advances in Regional Science that had occurred in the United States and Europe. The consolidation of this research field happened during the 1990s and early 2000s. Nowadays, with the increasing internationalization of the Portuguese investigation, one can assume that Portuguese researchers are fully part of the European and global Regional Science scientific community.

The present paper focuses on the contributions of Portuguese researchers to RPER (Revista Portuguesa de Estudos Regionais/Portuguese Review of Regional Studies) since 2003, the year in which it was launched.

The journal is edited by the Portuguese Association for Regional Development (APDR), which was founded in 1984. This association, according to its foundation guides, aims to contribute to innovation, deepening and disseminating knowledge in the context of regional development. It also envisages promoting the exchange of information and experiences among its members and institutions of professionals and promoting encounters between the different disciplines involved and fostering collaboration between the university and Public Administration with a view to closer links between scientific knowledge and the practice of regional development (http://www.apdr.pt/a-apdr/ - retrieved 02/09/2015).

APDR is the Portuguese section of the European Regional Science Association (ERSA) and, as underlined, has been developing a

relevant role in the diffusion of Regional Science in Portugal, mainly since 1998. Among other initiatives, it has been organizing an annual congress and producing relevant publications in line with the aims of the "APDR Collection" (*e.g.*, a compendium on Regional Economics – COSTA and NIJKAMP, 2009).

The authors of this paper have decided to focus their research on papers published in the Portuguese Review of Regional Studies as a way of approaching the investigation made in Portugal in the field of Regional Science and because of the maturity reached by this scientific field. This way, they will also try to check how the research reflects the evolution of Regional Science and the debate on territorial issues at international level, and of the progress made by the Portuguese economy and society as well as policy concerns felt during the evolution of Regional Science, mainly in Portugal.

Taking all this into account, the present paper is structured in four sections. In the first, we summarise the genesis and evolution of Regional Science at international level and invoke the pioneering research produced in Portugal. The second section deals with the methodology followed in this paper. The third section focuses on papers published by RPER according to the main thematic nature of the articles and the analytical methods used. In the fourth section, we discuss the research conducted and trends related to the evolution of Regional Science globally during the relevant period and the progress achieved by the Portuguese economy and society. The final section presents the conclusions and limitations of the analysis.

The origins and evolution of Regional Science

The initial contribution from the USA and the evolution of the new discipline

There is consensus that Regional Science can survive only by taking into account the perspectives of Geography, Economics, Planning, and other social sciences, and that it is a composite of these sciences (BAILLY and GIBSON, 2004).

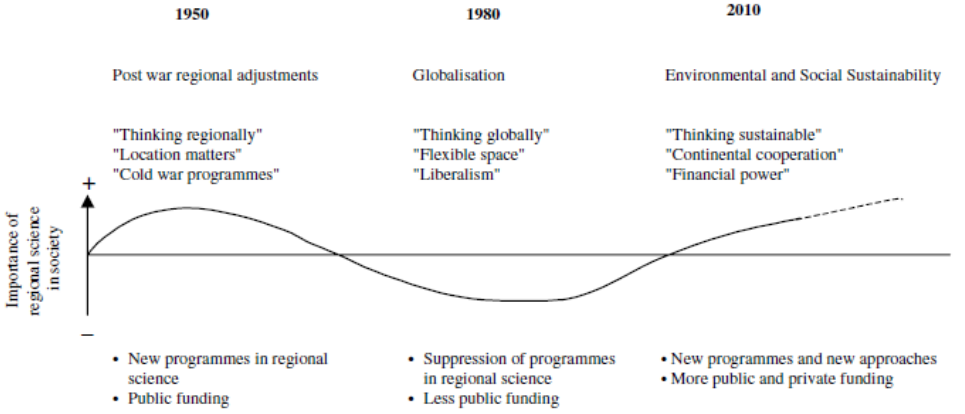
Also, there is no doubt about the importance of the investigation held in the United States of America concerning the genesis of Regional Science (ISSERMAN, 1993; BAILLY and GIBSON, 2004). This happened in a more consistent way in the 1950s (MORIARTY, 1993; BAILLY and GIBSON, 2004; BOYCE, 2004). The University of Pennsylvania played a leading role in this regard and has shown it can communicate articulately to a large audience.

The first Regional Science investigators made important contributions on strategic planning "(...) for resource utilisation and industrial location to support the efforts of the allies during World War II. The United States and Europe were 'thinking regionally' as they carried out the business of wartime and post-war regional adjustments, especially with the Marshall Plan. Meanwhile, the cold war was driving programmes to build capacity and develop networks to facilitate flows between regions (e.g., the interstate highway system in the United States and the St. Lawrence Seaway)" (BAILLY and GIBSON, 2004, p. 130) (In the article, "Regional Science received a boost from the events following the Second World War" (BAILLY and GIBSON, 2004, p. 130). In some continents, such as Europe and North America, spatial scientists were asked to plan and manage the post-war reconstruction.

For sciences like Geography, the 1950s were a good period because at the time, some members of the scientific community of geographers were questioning their science as it was – they had to move forward from just describing similarities and differences among areas (MORIARTY, 1993). In the 1950s, geographers were abandoning their idiographic focus (description of areas and regions as unique places) and were becoming receptive to the idea of turning their science into a nomothetic discipline, using positivism in its methods. For Walter Isard, Regional Science was the first systematic attempt to join the work of economists and geographers (BARNES, 2004).

Up until the 1970s, Regional Science evolved rapidly, but the 1980s saw a transition from 'thinking regionally' to 'thinking globally' and the entrance of liberalism in spatial planning (BAILLY and GIBSON, 2004). Following BAILLY and GIBSON (2004), Figure 1 presents the three major trends Regional Science experienced during the period after World War II up to the present.

Figure 1: The three periods of Regional Science



Source: BAILLY and GIBSON, 2004, p. 131.

In 1954, in line with important developments in the research field, the *Regional Science Association* was born in Detroit (BOYCE, 2004). At that time, an interdisciplinary organization was proposed (ISSERMAN, 1993) and it was marked by the use of formal neoclassical theory supported by rigorous statistical techniques that tried to explain a space economy (BARNES, 2004).

From its inception until 1960-61, the *Regional Science Association* grew from 60 members to 960 members (BOYCE, 2004), and 30 years after it was launched, its ranks numbered over 3,000 members (ISSERMAN, 1993). Isard was one of the association's leading founders and he contributed significantly to the wide recognition given to the field of Regional Science. Some authors (e.g., BOYCE, 2004) attribute the institutional origins of the field to contributions made by Walter Isard, a prominent economist, who had entered Harvard University in 1939 as a graduate student in economics.

His main contributions were: *Location and Space Economy* (1956); *Industrial Complex Analysis and Regional Development* (1959); and *Methods of Regional Analysis* (1960). He also helped found the Regional Science Research Institute at Penn, and, in 1958, the Journal of Regional Science. The spread of Regional Science to Europe in the 1960s was also the result of his important contributions. Some authors agreed that, at that time, Walter Isard was a true regional scientist (ISSERMAN, 1993). Isard's main contribution was on abstract

spatial theorizing. For him, abstraction was essential and relevant, even though it ignores geographic detail (ISSERMAN, 1993).

There is consensus on Isard's seminal role in establishing Regional Science, and his first big effort to get space into economics in the 1950s (KRUGMAN, 1998), but he was not the first to use the term Regional Science. Twenty years earlier, a report of the U.S. National Resources Committee (1935) identified "a selected group of regional scientists" and asked them, among other things, "Upon what basis would you delineate a region?" and "What, in your opinion, is the best type of region for use in regional planning and development?" (ISSERMAN, 1993, p. 3).

But one cannot forget the theoretical contributions of Ricardo (1817), Von Thunen (1826), Weber (1909), Christaller (1933) and Losch (1939), who were fundamental not only to Regional Science, but also to economic geography and regional economics (MORIARTY, 1993).

Regional Science was envisaged as a field of social sciences much more than the application of economics to geographical questions. It aimed to capture the essence of a region (as a living organism) (ISSERMAN, 1993).

Some concerns were raised on the methods to be used (ISSERMAN, 1993; BOYCE, 2004). Which tools, hypotheses, models and data-processing techniques should be specifically designed for regional analysis? The gravity model that was analysed by Stewart and Wamtz (1958) in the first issue of the Journal of Regional Science (founded by Isard) was considered the first example of "work which does not fall neatly into any one discipline and yet is not interdisciplinary" and "may clearly be termed Regional Science" (ALONSO *et al.*, 1958, cited by ISSERMAN, 1993, p. 5). Boyce (2004) pointed out that the first publication in the field of Regional Science was in *Papers and Proceedings* of the Regional Science Association in 1955.

One cannot forget Harry W. Richardson's theoretical contribution and the diffusion work he undertook. In this regard, it is worth highlighting a few of his publications, such as *Regional Economics: Location Theory; Urban Structure and Regional Change* (1969); and *Regional and Urban Economics* (1978), translated into Spanish in 1986; and *Regional Growth Theory* (1973).

In the 1960s and 1970s some other relevant journals in Regional Science were born, such as *The Annals of Regional Science* (1967), *Regional Science and Urban Economics* (as *Regional and Urban Economics*, in 1971), and *International Regional Science*

Review, in 1975. Also, by 1990, the venerable *Papers of the Regional Science Association* became a quarterly journal, *Papers in Regional Science*. Five important Regional Science journals appeared between 1990 and 1999: *Journal of Regional Science*; *Regional Science and Urban Economics*; *Papers in Regional Science*; *Annals of Regional Science*; and *International Regional Science Review* (REY and ANSELIN, 2000).

The period 1968 to 1989 was one of expansion of Regional Science and, towards the latter part of the sixties, Europe began to develop an important role in that regard.

The mature period began in 1990 and was marked by the establishment of three supra-regional organizations. The association was renamed *Regional Science Association International* (RSAI) on January 1, 1990 (BOYCE, 2004). So, the original *Regional Science Association*, created in 1954, evolved into the RSAI, which today is composed of three supra-regional groups of individual national and international sections or associations with over 4,000 members (http://www.regionalscience.org/ - retrieved 10/09/2015).

The three supra-regional groups are: *The Regional Science Association of the Americas (RSAmericas)*; *The European Regional Science Association* (ERSA); and *The Pacific Regional Science Conference Organisation* (PRSCO). *Papers on Regional Science* became the official journal of the RSAI and *Regional Science Policy and Practice*, published by Wiley-Blackwell on behalf of the RSAI, also became an important official publication.

One may ask whether Regional Science is a science. Isserman wrote that, "In the nineties, it seemed that it would never become a science. Its main attempts are in two strands, symbolized by theoretical work like Isard's Location and the Space Economy and General Theory and Alonso's Location and Land Use and methodological work like Isard et al.'s Methods of Regional Analysis" (ISSERMAN, 1993, p. 21). Later, Bailly and Gibson (2004, p. 128) remembered that Regional Science suffered because it was not a "foundation discipline" and "because it is not perceived as a field that can make distinctive and vital contributions to planning and management strategies for regional growth and development."

In the nineties Isserman (1993) stated that Regional Science was an active interdiscipline. In 1993, after 40 years of Regional Science, Isserman remembered the need for new ideas and young scholars and a sense of direction and purpose for Regional Science to remain more than a convenient gathering place and publication outlet.

He wrote that "Regional science will be stronger and more interesting if regional scientists try to "(…) seek out cross-departmental linkages on campus and design programs of study focusing on societal problems and policy issues" (…) "Strive to do research defined by real problems of real regions. Avoid estrangement from reality (…). Stress relevance, not elegance" (ISSERMAN, 1993, pp. 40-41). The debate at the time tended to underline that the path a certain current of Regional Science had followed, centred on abstraction and formal (modelling) elegance, and did not address the problems felt by concrete regions and cities. Such a path was leading Regional Science into a no man's land.

In reaction to this trend, a shift took place from the dominant positivist paradigm to a more humanist one, grounded in post-modernism, centring its focus on the pursuit of sustainable regional development. That had to do with the debate on growth and climate change that had taken place and which had its top moment with the publication of the Brundtland Report (2007) on *Our Common Future*.

Some other problems have caught the attention of regional scientists in recent decades, such as social and territorial inequalities, quality of life issues, the rapid aging of populations, exclusion and the quality of the environment (natural and built).

Nowadays, Regional Science is assumed to be at the forefront in the development of new empirical analytical methods, such as spatial econometrics. Additionally, it has been experiencing a constant influx of new ideas from others fields (MITZE, 2014). The methodological approaches followed include a mix of descriptive, structural and experimental ones, as highlighted by Mitze (2014).

The contributions from Portuguese researchers

Regional Science was introduced in Portugal only in the 1970s as Portuguese researchers began to produce more consistent and theoretically supported studies on regional issues.

Simões Lopes is considered the founding father of Regional Science in Portugal. He got his PhD in Economics at Oxford University, and his research focused on Portuguese regional development. He also participated in the public debate on regional development issues. His main written contribution was a book published in Portuguese in 1979 titled *Regional Development – Problematic, Theory, Models* (Lopes, 1979), which has subsequently been used as an academic manual to support teachings on Regional Science at Portuguese universities.

In the beginning of his book he remembers that space was one of the variables that was too late in capturing the attention of academic research (LOPES, 1979). Following Isard's point of view, he claimed that, for a long time, research had concentrated on time, forgetting space. For him, in development (which is much more than economic development), the spatial dimension was much important than the time dimension.

According to Lopes, regional development was an interdisciplinary field, that is, approaching it through the eyes of a single discipline (e.g., Economics, Geography, Sociology) was always insufficient to fully understand its determinants. The problems experienced by territories were more than just economic problems; they were endowed with a social nature and, thus, he claimed, their resolution could only be addressed by putting together a set of instruments provided by different disciplines, according to the nature of the problems experienced (LOPES, 1979). Underlining the complexity of social life and regional problems, he claimed that economic development and spatial organization interact and condition each other (LOPES, 1979).

Even before publishing the previously mentioned manual, Lopes had expressed his concerns about the regional imbalance in Portugal (LOPES, 1976; LOPES, 1978), a developmental imbalance of a cumulative nature (LOPES, 1976; LOPES, 1978; LOPES, 1979).

Later, in 1984, together with a few of his PhD students and university colleagues, he was one of the founders of the *Portuguese Association for Regional Development* (APDR). The main goals of the association, as stated in its rules were (and still are): i) to contribute to innovation, deepening and disseminating knowledge on regional development; ii) promoting the exchange of information and experiences among members and professionals from various institutions, this way promoting encounters between the different disciplines involved; iii) fostering collaboration between the university and Public Administration with a view to establishing closer links between scientific knowledge and the practice of regional development; iv) collaborating on the definition of public policy and establishing research guidelines concerning the regional domain (http://www.apdr.pt/a-apdr/estatutos/ - retrieved 02/09/2015) .

APDR is the Portuguese section of the *European Regional Science Association* (ERSA) and currently has about 160 members, who have developed their careers in academic institutions and other

public and private institutions related to regional development and policies (http://www.apdr.pt/a-apdr/estatutos/ - retrieved 05/10/2015).

In 2003, the RPER journal *Revista Portuguesa de Estudos Regionais*/*Portuguese Review of Regional Studies* was launched. This journal will be the focus of our empirical work in this paper.

With regard to regional issues, in examining the years preceding the establishment of Regional Science in Portugal, some researchers have focused their scientific efforts on the characterization of the situation, and have thus contributed to the definition of a few policies. One can mention the names of geographers Orlando Ribeiro, Jorge Gaspar and João Ferrão. Orlando Ribeiro developed his scientific contribution mainly after the 1950s, while the other ones came later. João Ferrão took much of his approach to the regional issue from Simões Lopes, as he claimed publicly on several occasions. Eugénio Castro Caldas, who developed his research in a different scientific field (Agrarian Engineering), also deserves a mention for his work on homogeneous regions in Portugal.

In the past 20 years in Portugal, we have contributed to an increase in the number of journals dealing with Regional Science. Besides RPER, *Sociedade e Território: Revista de Estudos Urbanos e Regionais* (*Society and Territory: Journal of Urban and Regional Studies*) has made an important contribution from the diffusion of investigations of Regional Science by Portuguese researchers and technicians. Other journals, focusing on Economics, Geography, Sociology and Engineering issues, have published papers on this subject. Anyway, one must underline that since the beginning of the 21st century, much of the research produced in Portugal on Regional Science and on other fields, such as Economics, has been published in international journals.

The Carnation Revolution, in 1974, and Portugal's entrance into the European Economic Community (now the European Union) in 1986 made it easier to conduct investigations on regional issues and helped to address the need to think, plan and act regionally. The need to solve economic and social problems, and within them regional inequalities, which became notorious during the seventies, opened a space for the development of Regional Science. The increase in relevant research staff at universities in the 1990s naturally resulted in increasing research on the area and the enhanced quality of such research.

Indeed, the nineties was remarkable for the increasing number of investigators in all scientific areas. These included a growing number of PhDs, who received vigorous financial and institutional

support from the Portuguese Governments at the time, using money that came from European Union sources (Ministry of Science, Technology and Higher Education, 2011).

In fact, looking at the region's future competitiveness and the role technological change played in such competitiveness, the evolution of the Portuguese tertiary education system was thought to be instrumental. The Portuguese tertiary education system grew rapidly in the 1980s and 1990s and became much more open to young people of all social classes (Ministry of Science, Technology and Higher Education, 2011). This is made clear in a document produced by the Ministry of Science, Technology and Higher Education (2011, p. 3) which states: "Portugal has recently overcome its traditional gap in scientific and technological development and surpassed the average OECD level in terms of the number of researchers per thousand workforce, attaining 8.2 full-time researchers per thousand workforce in 2009, as opposed to 3.5 in 2005 and only 1.5 in the late 1980s. Overall R&D expenditure more than doubled over the last five years: it was 1.71% of GDP in 2009, compared to 0.81% in 2005, and only 0.4% in the late 1980s."

Unfortunately, the amount of public funds released to research and the tertiary education system has been considerably reduced since 2011, as has the national government's commitment to the aforementioned strategy.

Methods

Taking into account the evolution of Regional Science in Portugal since its launch in the late 1970s and the progress made by the Portuguese economy since then, together with the maturing status attained by the discipline at global level, we decided to look at articles published by RPER in order to check how they reflect those circumstances and the major trends followed by the research published in Portugal. The period under analysis extends from its launch in January 2003, until the first quarter of 2015, the latest issue that was available when we began this study.

As previously stated, RPER is a journal edited by the Portuguese section of the *European Regional Science Association* and a few years ago became indexed in Scopus, after having been indexed in Econlit in previous years.

The methodology used was qualitative in nature and 194 papers were analyzed, following its quarterly publication during most of the period under analysis, a total of around 12 years. This type of analysis

was inspired in similar available researches, namely those of Rey and Anselin (2000) on *Regional Science Publication Patterns in the 1990s*, and of Nunkoo, Smith and Ramkissoon (2013) on *Residents' Attitudes to Tourism: a Longitudinal Study of 140 Articles from 1984 to 2010.* The option taken in terms of structure of the analysis and the focus chosen were our own decision, in relation to the aims of the paper. Other approaches could be followed and deeper analysis could be undertaken in terms of their content and of the scientific and policy contributions one can extract from them.

The analysis made covered three items:

i) the main thematic covered by the papers published (28 keywords were assumed);
ii) the nature of the papers (theoretical, mix, empirical);
iii) the main analytical methods used (35 categories were employed).

The keywords defined tried to express the common thematic of Regional Science, but ensuring that no empty segments were preserved. The choice of keywords follows the choice of keywords identified in every article published, but adopting just one for each case.

We have also taken the option of using three periods to analyse the data:

i) from 2003 to 2005;
ii) from 2006 to 2010;
iii) from 2010 to 2015.

These three periods were selected bearing in mind the journal's launch (1st phase); an interim period (2nd phase); and a period closer to the present, eventually corresponding to a more mature one (coinciding with the indexing of RPER in Econlit and Scopus).

Those periods are related to the evolution of the Portuguese economy from the status of an economy going it alone to full GDP convergence with the average of European Union countries. The periods also span eras in which families experienced a certain level of confidence in their future, witnessed a decrease in GDP and budgets, and lived through a debt crisis during the first half of the current decade. Between those initial and final periods, the country experienced economic uncertainty following the financial crisis in the US and then in Europe. The segmentation into three periods was envisaged to get a minimum and comparable amount of articles in each period.

The analysis and its classification according to the aims identified were based on reading: i) the title, abstract and keywords of each article; and ii) their methodology and conclusion. Some of the articles were read in full. In this process, we decided to identify just a keyword and an analytical methodology for each text. Just the main subject and analytical methodology used in each article were kept. We are aware this is a simplifying procedure but it was too complex to do differently in order to attain our goals.

Of course, the journal under analysis does not publish papers only by Portuguese authors or papers addressing Portuguese issues. In fact, of the total number of articles under scrutiny, less than 20% (17%) did not have authors or co-authors who are Portuguese researchers or technicians.

A limitation of this investigation comes from forgetting the research published by regional scientists in journals edited abroad and in more specialized journals; that is, those dealing with, for example, regional policy or spatial analysis. Furthermore, one cannot forget the biases associated with a study focused on a single journal.

Main thematic focus and analytical methods

Thematic focus and scientific nature of the articles

Taking account of the period under analysis (2003-2015), the subjects chosen by Portuguese (and other) researchers for successful submission to the RPER dealt with various topics related to Regional Science. Table 1 shows that "Tourism Products and Tourism Development" ranks first (24 articles dealing with it), well ahead of the second most popular subject (14 articles) and the third most popular subject (13 articles). After a rather timid appearance in the first years of the journal's publication, Regional Science seems to have become quite a popular issue to investigate.

This was probably not the result of a hazard game. In fact, the strong orientation of the Portuguese economy and its regions towards tourism occurred during the first decade of the 21st century, after the hosting of the 1998 World Exhibition by Lisbon and the 2004 European Championship, which took place in various cities. The second half of the first decade of the 21st century and the first years of the second decade were also chosen by the national government for the implementation of a strategic development tourism plan (Ministério da Economia e da Inovação, 2007). This commitment towards tourism had to do with the country's rich endowment of tourism resources but was

also an attempt to surpass the crisis experienced in the manufacturing and agrarian sectors since the beginning of the new century.

Table 1: Main thematic focus of articles published in RPER (2003-2015¨) by periods of publication

	N (03/15)	% (03/15)	N (03/05)	N (06/10)	N (11/15)
Tourism Products and Tourism	24	12.37	4	11	9
Development	14	7.22	5	4	5
Local Productive Systems	14	7.22	1	5	8
Public Equipment Policies and Growth	13	6.70	3	6	4
Analytical Methods	11	5.67	3	2	6
Urban Economics and Policies	10	5.15	5	0	5
Regional Imbalance and growth	10	5.15	1	4	5
convergence	8	4.12	4	3	1
Regional Development Policies	8	4.12	2	3	3
Territorial Innovation Systems	8	4.12	2	5	1
Transport Systems and Policies	8	4.12	3	1	4
Demographic Dynamics	8	4.12	1	5	2
Local Public Debt and Local Finances	7	3.61	0	7	0
Manufacture and Services Location	6	3.09	0	3	3
Environmental Policies	5	2.60	1	2	2
Urban and Regional Planning	5	2.60	0	4	1
Social Policies	4	2.06	2	0	2
Human Capital and Regional	4	2.06	1	1	2
Development	4	2.06	0	3	1
Labour Market	4	2.06	2	1	1
Interregional Trade and F. Direct	3	1.55	1	2	0
Investment	3	1.55	0	0	3
Endog. Resources and Develop.	3	1.55	3	0	0
Strategies	3	1.55	1	0	2
Local History	2	1.03	1	1	0
Territorial Planning and Management	2	1.03	1	0	1
Local and Regional Governance	2	1.03	0	1	1
Research and Development Policies	1	0.52	1	0	0
State Reform					
Income Distribution					
Public-Private Partnerships					
Price Policies					
Journals Rankings					
Total	194	100	48	74	72

Source: Authors' own elaboration.
¨ Regarding 2015, just the 1st quarter was considered.

The research on "Local Productive Systems" had to do with the aforementioned crisis in the manufacturing and agrarian sectors, but

was also influenced by research that had been conducted worldwide on industrial districts, local productive systems and "millieux innovateurs en Europe", in this case conducted mostly by GREMI (*Groupe de Recherche Européen sur les Milieux Innovateurs*). The eight papers published on "Territorial Innovation Systems" reinforce this idea.

Research dealing with "Public equipment policies and growth" became part of the debate on how to reinforce growth and convergence of the Portuguese economy. This was in line with research conducted before, in the aim of using structural European Funding to finance infrastructures and public equipment. This issue turned out to be very controversial after the first years of Portuguese integration in the European Union.

The number of papers mostly dedicated to the presentation of analytical methodologies (13) is particularly noteworthy because it reflects the emphasis placed on maintaining the rigor of analysis undertaken and, in a certain way, the maturity attained by the field.

Urban territories caught the attention of a significant number of authors, as indicated by papers addressing the issues of "Urban Economics and Policies" (n=11) and "Urban and Regional Planning" (n=6), themes that together accounted for 8.76% of all articles published by RPER during the period 2003 to the first quarter of 2015. "Regional Imbalance and Growth Convergence" and "Regional Development Policies" have attracted similar interest (Table 1). Interestingly, while the issue "Regional Development Policies" has been mostly present in the two last periods, "Regional Imbalance" seems to have vanished in the interim period to return in the last one. If that has to do with the way government austerity has been felt by different regions of the country is something one can inquire into.

In view of the ranking of "Social Policies" and "Environmental Policies" (Table 1), this may be due to a lack of research or, perhaps, articles on these topics may tend to be submitted to other, less generalist, journals.

It is also worth mentioning how little importance Portuguese researchers have attributed to subjects such as "State Reform", "Income Distribution" and "Public-Private Partnerships". This is ironic since the public debate that appeared in the media over the past four to five years was concentrated largely on those themes, in particular, the first and third ones. Even so, "State Reform" was considered worthy of publication in two articles in RPER after 2010. The policies to be designed to address those issues were thought to be

an essential part of the government's fight against budget deficits and debt.

As noted previously, commenting on the evolution of the research produced in Portugal and the number of papers dedicated to the presentation of analytical methodologies, as documented in Table 1, the study of Regional Science in Portugal was gaining increasing maturity and increasingly becoming compatible with international studies. Clearly, the analytical methods used had become more sophisticated, and theoretical approaches had been more rigorously researched and applied. Table 2 tries to present appropriate data on theoretical papers published in the *Portuguese Review of Regional Studies*. From these data, we can conclude that the number of articles dedicated to more theoretical issues was larger in the two more recent periods than in the first, but remained a minor part of the papers published, which was, perhaps, to be expected. Meanwhile, if we look together for articles endowed with a theoretical and mixed nature (22.2%), we can conclude that there was not much change during the period under analysis (2003-2015). The pertinence of closely addressing policy issues or producing diagnoses has clearly dominated the research conducted. This is a valuable approach, as underlined by the debate on the issue at an international level (see: ISSERMAN, 1993; and BAILLY and GIBSON, 2004), not just a moment during the evolution of Regional Science. Even so, progress in modelling and the use of new methods should not be disregarded.

Table 2: Nature of the articles published in RPER (2003-2015¨) by period of publication

	N (03/15)	% (03/15)	N (03/05)	N (06/10)	N (11/15)
Theoretical	16	8.3	1	8	7
Mix	27	13.9	7	13	7
Empirical	151	77.8	40	53	58
Total	194	100	48	74	72

Source: Authors' own elaboration.
¨ Regarding 2015, just the 1st quarter was considered.

Empirical research has dominated the investigation conducted in Portugal on regional issues, as documented in Table 2 (100 of 194 papers published in RPER), and the diverse constraints faced by the Portuguese economy and its regions during the period under analysis have not changed that.

Analytical methods used

As seen in the tables, the themes of the articles published by the journal edited by APDR cover a large thematic set and their nature goes from the theoretical to the empirical, with a large predominance of the empirical one. Being so, it is not surprising that the type of methodologies applied were varied and ranged from the qualitative to the quantitative.

With regard to qualitative methods and tools, we have case studies, SWOT analysis, comparative studies, content analysis, scenarios, historical and sociological analysis, reviews of literature, maps and graphics, juridical analysis, models and analytical schemes. The case studies and SWOT analysis are among the methods more commonly used. The others, each one, count for little, but if we include theoretical articles and essays, they represent around 18% of the articles published (Table 3).

There are many quantitative analytical methods, a few of which are significantly represented, namely: Descriptive statistics, which is by far the most popular methodology applied; ordinary least squares, which ranks second; and factorial and cluster analyses, which rank fifth and sixth, just after case studies and SWOT analysis (Table 3). Specialization indexes/location quotients also have a relevant presence (six articles made use of them). If we take econometric methodologies, they are also well represented but are spread among various techniques (generalized least squares, logit/probit models, fixed-effects model, discrete choice model, and so on).

It is noteworthy that neither the use of descriptive statistics nor qualitative methods have decreased over the years, in contrast to cluster analysis and logit/probit models, which seem to have lost their popularity (Table 3). Remarkable too is the multiplication of econometric techniques used, even just once in many cases. That was more frequent in the second and third periods studied.

A possible explanation for that is the willingness of research to test the applicability of new statistical methods to Regional Science studies or their intention of bringing novelty to their articles this way, which is in line with what was found in the literature (see: ISSERMAN, 1993; BOYCE, 2004). Many of those methods and tools are commonly used by other scientific disciplines.

Table 3: The main analytical methods used in articles published in RPER (2003-2015¨) by period of publication

	N (03/15)	% (03/15)	N (03/05)	N (06/10)	N (11/15)
Descriptive Statistics	53	27.32	11	21	21
Ordinary Least Squares	18	9.28	7	6	5
Case Studies	14	7.22	0	3	10
SWOT Analysis	12	6.19	2	6	4
Factorial Analysis	7	3.61	3	3	1
Clusters Analysis	7	3.61	4	2	1
Specialization Indexes/Location Quotients	6	3.09	2	1	3
Generalised Least Squares	4	2.06	2	2	0
Input-Output Model	4	2.06	1	2	1
Logit/Probit Models	4	2.06	4	0	0
Geographic Information Systems	3	1.55	1	1	1
Hedonic Model	3	1.55	1	1	1
Fix-Effects Model	2	1.03	1	1	0
Generalised Moments Method	2	1.03	1	0	1
Gravity Models	2	1.03	0	2	0
Hazard Functions	1	0.52	1	0	0
Markov Linkage	1	0.52	1	0	0
Multidimensional Scaling	1	0.52	1	0	0
Accountancy Multipliers Analysis	1	0.52	1	0	0
Neural Networks	1	0.52	0	1	0
Stochastic Frontier Model	1	0.52	0	1	0
Economic Export Base Model	1	0.52	0	1	0
Contingent Valuation Methodology	1	0.52	0	1	0
Spatial Lag Model	1	0.52	0	1	0
Spatial Interaction Model	1	0.52	0	1	0
Conjoint Analysis	1	0.52	0	1	0
Discrete Choice Model	1	0.52	0	0	1
Lorenz` Curves	1	0.52	0	0	1
Non-parametric and Semi-param. Methods	1	0.52	0	0	1
Spatial Auto-regressive Models	1	0.52	0	0	1
Social Accounting Matrixes	1	0.52	0	0	1
VAR Model	35	18.04	4	15	17
Shift-share Analysis					
Others					
Total	194	100	48	74	72

Source: Authors' own elaboration.
¨ Regarding 2015, just the 1st quarter was considered.

Gravity models, economic export base models, input-output models and shift-share analysis are analytical tools that have a deep

tradition of use in Regional Science, but are in a minority or have a residual presence.

Concluding: looking at the example of RPER during its publication period, there seems to be a place for the use of qualitative and quantitative techniques and tools to approach the study of Regional Science issues. Formal analytical sophistication found its place among the authors, who used the journal to make their research available to the public but these authors did not succeed in winning the entire floor. A question that can be raised, following what has been asked in other scientific domains (see, for example, NUNKOO, SMITH and RAMKISSOON, 2013), is whether quantitative and qualitative methods should be used jointly. Bearing in mind the complexity of territories, this is a case in which there should be much more place for that.

Discussion

Looking at "The three periods for Regional Science" as announced by Bailly and Gibson (2004), it is not clear that Portuguese researchers are syntonized with the topic Regional Science. Globally, in this phase of its path it is supposed to address the topics of "Environment and Social Sustainability", "Continental Cooperation" and "Financial Power". Instead, it has been addressing mainly tourism development strategies, competitiveness issues approached through the concepts of local productive systems, territorial innovation systems and public equipment policies. Maybe this is a result of the desire to give social pertinence to their research, considering the inefficiencies, obstacles and regional imbalances Portuguese society and its economy still face in several areas.

Environment has a place, as does the financing of the economy (public-private partnerships, in particular), but the latter is a second priority. Continental and even intra-European cooperation just do not show up. Perhaps this is not the option for Portuguese researchers but the result of recent orientations by European Union powers in terms of policy integration and general economic policy drivers.

Urban problems and the transportation infrastructure in Portugal and Europe are still some of the main spatial policy issues that need to be addressed on a macro and micro level to provide greater emphasis on social policies. Portuguese researchers seem to have some sensibility towards that. From the empirical results we got, we believe there is hope those subjects turn out to be more present in future investigations, as soon as the country succeeds in surpassing

the deep austerity phase is has experienced since 2011. There are signs, we say.

Really, what we can conclude from the analysis of the articles published by RPER during the period 2003 to 2015 is that the thematic focus taken did not portray what Rey and Anselin (2000) found for the nineties concerning the publication in five important international Regional Science journals: the *Journal of Regional Science*, *Regional Science and Urban Economics*, *Papers in Regional Science*, *Annals of Regional Science* and *International Regional Science Review*. Perhaps, this is because they were dealing with the nineties. Perhaps this has to do with the orientation of those journals to singular subjects within Regional Science. Perhaps because most of the research produced by Portuguese researchers (and, mostly, the one that is to be published by a journal edited in Portugal – RPER) takes as subjects the regional and local realities of the country, willing to produce pertinent social diagnosis and policy recommendations.

Conclusions

This paper tries to present a portrait of research produced in Portugal with a focus on Regional Science. In so doing we have examined papers published in the *Portuguese Review of Regional Studies* and looked at their main thematic focus, scientific nature (theoretical, mix, empirical) and the analytical methods employed. Using this path, as an associated result, we have tried to establish whether the research conducted reflected the evolution of Regional Science and the debate on territorial issues at global level or, instead, was a consequence of the progress made by the Portuguese economy and society and of policy concerns felt during the period under analysis (2003-2015).

Looking at the evolution of Regional Science and derived researchers' associations, one could conclude that, since its genesis between the end of the 1930s and 1950s until the 1970s, it evolved rapidly but, in the 80s it faced a crisis, as "thinking regionally" tended to be replaced by "thinking globally" and, because of this, spatial planning was largely abandoned.

Another critical issue emerged by the end of the 20th century. It came from the tendency by some within Regional Science toward emphasizing modelling and abstraction, instead of real problems of real regions. The social relevance of the research produced was, therefore, put in question.

Regional Science was born in Portugal later, in the seventies, a period during which António Simões Lopes played a seminal role. Many researches who were the founders of the Portuguese Regional Science Association (APDR) and, later, of the Portuguese Regional Studies Review (RPER) have been his PhD students or have maintained a close working relationship with him.

From the empirical approach, based on articles published in RPER until the present date, we could conclude that subjects such as "Tourism Products and Tourism Development", "Local Productive Systems" and "Territorial Innovation Systems" rank first in the research concerns of the Portuguese Regional Science investigators. This focus can be thought to be both the result of the influence of research on those issues that had been taking place worldwide during the eighties and nineties and the one of the Portuguese social and economic contexts in which national and regional competitiveness emerged as a major constraint, mainly in the second half of the twenties and later.

Research on environment, the financing of the economy, and continental or even intra-European cooperation have not taken a major role, as expected, as the international Regional Science investigations and concerns revealed.

Empirical papers are dominant among the papers published in RPER and the methodological approaches are both of a qualitative and quantitative nature. Case studies and SWOT analysis have played a major role, together with the use of descriptive statistics and econometric methods, assuming multiple formats. Formal analytical sophistication found a place among the authors who have chosen to publish in RPER, but it has not succeeded in winning the entire floor. Social pertinence of the research produced seems to have been the first concern of the Portuguese researchers.

This research suffers from several limitations, among which we can underline the following: the portrait of the research in Regional Science made in Portugal cannot be captured fully by articles published in RPER, as this is a journal published in Portugal which also publishes papers on regional issues and because, naturally, they also publish in journals edited worldwide. One must also bear in mind that RPER does not only publish papers from Portuguese authors (less than 20% of the articles published during the period under analysis were from foreign researchers or had them as co-authors). Finally, readers must keep in mind the limitations of the methodology adopted to approach the empirical research, namely choosing the option of

classifying the main subjects of the papers according to keywords, keeping just one for each text taken, using a similar procedure to classify the analytical methodology used. We are aware that this is a simplifying procedure but it was too complex to do differently in order to attain our goals. Future research can go deeper on this.

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