

New economy and Territory: a study of information technologies

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Keywords:

Concentration
Information
Knowledge
Services
Cities.

Abstract:

The discussion presented here is related to the territory and the economic activities. In this context, globalization has produced a new economy in which competitiveness needs information, knowledge, technologies, and the territory needs content that provides these elements. Study has focus on the Information Technologies (IT), which are important technologies for the formation of global world and for the changes in all areas of society. There is an effort to better define this activity, which is already born digital and makes time and space more flexible, building its geography. Thus, it seeks to locate IT activities and unveil the characteristics of this territory in which it is located. The analysis part is Rio Grande do Sul, and IT classification is based on the National Classification of Economic Activities-CNAE, and uses data from the Annual List of Social Information-RAIS and, with this, absolute data are obtained from companies and employees in the state. This study is based on quantitative data, in which information from national databases is used to structure conclusions, statistical softwares help the analyzes and the study is supported by cartographies, graphs and boards, elaborated by the study itself. As a result, we have geographical concentration of these activities, and the territories in which they are installed are loaded with science and technology, infrastructure and capital, that announces territorial inequalities and a hegemonization of processes in the world, in which the metropolises seem to be the winners.

INTRODUCTION

After the World War II, a transformation in the nature of Capitalism began to take place, leading to an important phase, the globalized Capitalism. This period is characterized by a shift from industrial production towards services, which allowed the reduction of the intensive need for manpower, although the production has not stopped expanding, this is because the sophistication of manufacturing processes is now accentuated, now intensive in technology, enabling manpower to be replaced in various activities by machine. Profit margins within conventional markets have narrowed, and many enterprises have moved to specialized markets, and this specialization required a flexible production system.

One of the driving forces behind growth during this phase of Capitalism was the information economy and knowledge, in other words, a form of production and management in which productivity and competitiveness depend heavily on generation of knowledge and access to rapid assimilation of the novelty. Globalization brought together and stimulated the development of

material and immaterial technologies, which, by enhancing human brain, contributed to the creation of paradigm of information, knowledge and learning society, allowing the existence of a new economy. The information, the learning and the knowledge are key elements in this context. Thus, Lundval and Borrás (1998) name the process as economy of learning.

And so, today, information and knowledge must be in tune with innovation, as it requires that new ideas do not only happen in times of crisis, in other words, we must think of crisis as daily.

Innovation must happen continuously, which requires competitiveness so that processes and products can always be reviewed and oriented to generate innovations, and because the flexible market has changed rapidly. Gathering of information, and transformation of these into innovations, leads the company to be in constant learning. This learning is not only about with codified (or explicit) knowledge, but also with tacit ones. Nonoka and Takeuchi (2008, p. 18) define codified or explicit knowledge as the one that “can be expressed in words, numbers, sounds, and shared in the form of data, scientific formulas, visual

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aids, audio tapes, specifications of products and manuals. The explicit knowledge can be quickly transmitted to individuals, formally and systematically". This knowledge can be quickly disseminated through networks. Tacit knowledge, according to Nonaka and Takeuchi (2008, p. 18), "is not easily visible and explainable. On the contrary, it is highly personal and difficult to formalize, making communication and sharing difficult. Subjective intuitions and hunches are under the rubric of tacit knowledge". This knowledge is linked to experience, which, many times, even those who have it cannot explain it. Thus, tacit knowledge tends to be extremely territorialized.

Facing this panorama, some affirmatives emerge about returning to the territory or the power of territories. Given various meanings of concept, it is worth clarifying which territory is understood as a result of power relations, as pointed out by Raffestin (2011). The power tends to dominate and control, and it materializes in space, forming territory, which covers various resources, not only seen as raw materials, but as infrastructure, population and information, knowledge and learning capacity. When the territory is constituted, actors produce a territoriality marked by symbols, ideas, customs, allowing possession and dominance of a certain group. Actually, the territory gains a closer look from the scientific community, because it is an important promoter of innovation. According to Helder Santos:

The territory ceases to be a space valued only for its quantitative aspects, ceasing to be seen as a mere physical platform (where resources and material infrastructures are based), to assume a character of living and lived space where the qualitative aspects, immaterial and intangible, the density of relational networks and the depth of knowledge / learning relationships take on a central role and add thickness to the territory. (SANTOS, 2009, p. 293).

Territories, in which actors manage to organize themselves in order to achieve synergy and make the most of material and immaterial resources in today's society, become competitive agglomerations, in other words, they start to compete for revalry in global markets. Although, territories can operate in networks, and it is in the territory-zone that proximity is facilitated, building an atmosphere for innovation.

Cities, especially the large centers, that have concentrated these competitive spaces, where innovation and entrepreneurship are greater, in this process.

What identifies this new economic dynamics is an ever-increasing search for innovation to guarantee competitiveness, and, for this, there is a need to build an ecosystem in which information and learning are constant, so the knowledge generated becomes innovation. Large cities, in most parts of the world, the

metropolitans, that provide conditions for this process being possible. According to Méndez:

These services have competitive advantages for the metropolis, both because of the volume of externalities associated with the size of their markets (for consumption, work and capital), and for the density and quality of their physical infrastructure (from high capacity transport routes and international airports, logistics platforms, teleports, etc.) and, above all, across a series of specific resources that are valued as strategic. These include a qualified human capital, the presence of public and private organizations that generate and disseminate knowledge, as well as a generally favorable institutional framework - less in comparative terms with other territories - the exchange of information, the external opening and the formation of clusters entrepreneurial and social networks that enhance innovation, with the appearance of growing performance in scale. (MÉNDEZ, 2007, p. 54).

Storper (2005) also points out that these cities make it possible to guarantee the buzz, which is the noise arising from face-to-face contact, which, for the author, allows transmission of non-codable knowledge, the tacit. The face-to-face contact is a means of overcoming problems of coordination and encouragement in uncertain environments, and a key element of socialization that, on the other hand, allows people to be part of groups; and, likewise, a direct source of psychological motivation.

Thus, what is perceived for innovation, is the importance of concentration of people, capital, and the presence of science and technology. It is necessary to bring together those who want to innovate, and those who need innovations and the quality of urban equipment, but also face-to-face. Storper (2005) considers the economic strength of cities is in the buzz produced by face-to-face, however, as Asheim (2016) points out, it is still poorly defined. In the face of uncertainty, contributions are possible, and it seems to us that this concept can be extended, because the buzz is composed not only by the presence of face-to-face, but also for territories or cities that contain concentration of people, capital, and presence of science and technology, of those who want to innovate, and of those who need innovations and quality of urban equipment. The buzz seems to be the noise of all this happening, it is more than face-to-face contact, it is a synergy that involves material factors, such as infrastructure and study centers, but also possibilities for face-to-face meetings. Thus, the territory requires new resources that allow it to circulate and produce information, and effervescence.

If this process elects some centers, it can be expected that territorial inequalities will accentuate, damaging social cohesion. If this is worrying in central countries, it becomes more worrying when we analyze the realities of the semi-peripheral countries. The

European Union, which has invested in intensifying strategies to promote the entry of its members into information, knowledge and learning society, has been concerned with the issue of inequalities among members of community and has pointed to strategies that reduce this situation. Among these strategies is the adoption of smart specialization proposals that seek to guide the economy so that the strengths of each region are valued.

Studies of the new economy need to be elaborated in order to understand the consequences in semi-peripheral countries like Brazil, since problems of territorial and social cohesion are more serious in countries that already face historical social and territorial issues.

Study in focus investigates information technologies, firstly, showing their geography and, later, searching for the reasons for such geography. For the first item, data on jobs and IT companies are used, for the second, variables that can reveal the reasons for this geography are used. Thus, data are presented on the location of IT companies, IT employers and the relationship of the presence of IT in these places with the variables, infrastructure, higher education courses in the area of Information Technologies, computer programs records and availability of information. Internet speed. Data presented are primarily quantitative and start from the database of the Annual List of Social Information-RAIS, using the year 2016 as a reference, however, they are guided by various dialogues with professionals who work with IT. The other data information is from the Brazilian Institute of Geography and Statistics - IBGE; the National Intellectual Property Institute-INPI; the Higher Education Census of the Ministry of Education, the National Institute of Educational Studies and Statistics Anísio Teixeira - INEP, and the National Telecommunications Agency - ANATEL, in the available years (2010-2017). Obtaining information, the data were treated with Excel and SPSS software. Figure were built using the Arcgis software.

The analysis is the state of Rio Grande do Sul, extreme south of Brazil, bordering Uruguay and Argentina, and its capital is Porto Alegre, located to the east of the state.

An Attempt of characterizing the it activities

IT is a segment of service sector that is difficult to define, professionals themselves believe that it is

renewed all the time and qualifying what it really is to become a risk, because one can underestimate any activity that is emerging. However, ITs can be characterized by information service activities. They generate and circulate information and, by enhancing human brain, accelerated the ability to think and store knowledge, allowing ideas to generate novelties. At the same time, they enable circulation of codified knowledge and, in some cases, even tacit knowledge, making novelties quickly obsolete, which denotes power of this technology for innovation. These technologies allow integration between companies enabling an almost instantaneous international operation, a car is sold in one country and, in another, the need for production of certain parts is triggered via Web, all of which allows competitiveness and profitability to increase.

The activities officially are characterized as services, as it is often intangible and invisible, however, there is a discussion on this topic, as pointed out by Kon (2004). Services are closely linked to the industry; as an example, we can mention the embedded technology, which are software and hardware systems that exist inside cars, refrigerators, video games, airplanes, etc., as it is the case of telemetry, a system that reads data from the vehicle and passes it on to a central which has information about the condition of vehicle. And these products appear as manufactured, industry products, but their differential comes from embedded technology. We can also mention some producers of non-customizable software, who consider their product linked to the industry, since they sell copies of this product that can be reapplied to their users. This discussion of services is very important in a world which economic sectors are increasingly turning to the intangible, as their weight in the economy may be underestimated.

It should be noticed that we are not discussing economic activities with a higher power to generate wealth, not yet. This statement is based on data such as from the company Fortune, in which the ranking of the largest companies in the world by revenue is presented, in data presented in 2017, among the first 11 companies, Apple appears in technology industry in the 11th place. On the other hand, in the ranking in which companies that grow fast are presented, out of ten, six companies are technology companies.

The classification adopted by the study to define IT follows that used by the National Classification of Economic Activities - CNAE, in which it is defined within the service sector involving activities indicated in Board 1:

Board 1: Services and provision of IT services according to CNAE –CLASSE, 2.0.

Service activities and provision of services
<ol style="list-style-type: none"> 1. Development of Custom Computer Programs. 2. Development and Licensing of Customizable Computer Programs. 3. Development and Licensing of Non-Customizable Computer Programs. 4. Consulting in Information Technology. 5. Technical Support, Maintenance and other IT services. 6. Data processing, Application service providers and hosting services on the Internet. 7. Portals, Content Providers and other information services on the Internet. 8. Other service provision activities.

Source: CONCLA (2006); IBGE (2016).

Analyzing the characteristics that involve the activities, it is possible to classify them as potentially innovative or routine. Innovative activities are those that involve software development, both customizable and non-customizable. Along with developments, those consulting activities were considered as potentially innovative, as they involve possibilities of generating new products in orientation of companies. These are those that generate new products for market development. Routine activities are those which involve operations on existing products, including items 5 to 8 of Board 1. The referred activity, in Brazil, began at the end of last century and occupied in 2017, according to data from the National Quarterly Accounts-CNT of IBGE, 2.7% of the national Gross Domestic Product (GDP). These numbers show that it does not have a great weight in the formation of national capital, but it has been growing. In 2010, the total value of production in this segment, in current prices, according to CNT of IBGE (2018), meant R\$ 126,542 million; in 2017, it was R\$ 180,200 million, which shows a growth rate of 42% in this segment.

IT is an economic activity that involves qualification. The basic content discussed is essential to be emphasized among professionals in the area in higher education courses, but it is not only that, professional in this area must be constantly improving in formal or informal learning communities. Herein lies the importance of the network, which is fundamental for work contacts and to develop learning to overcome new challenges resulting from constant evolution of activity.

Studies by Oliveira (2014, 2016, 2018) and Pereira and Oliveira (2020), reveal that IT involves companies that occupy few spaces; they are clean companies, their waste resembles an ordinary office; they allow outsourcing, work with a group of employees, but can easily operate with another company that is in another country, since they operate remotely, making time and

space flexible, allowing us to synchronize and asynchronous communications.

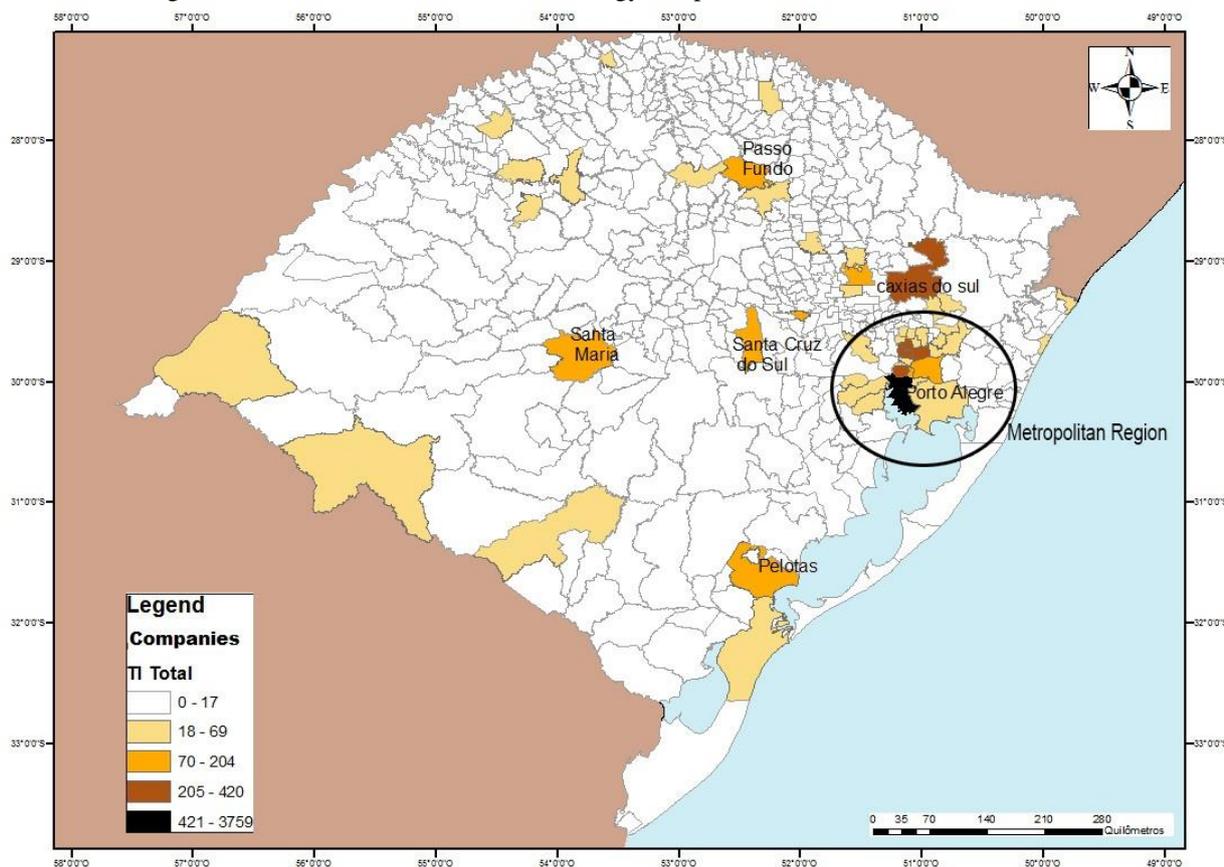
This relation of possibility listed above allows us to say that such activities point to a possibility of a varied location, even with strong decentralizations. However, it is not what is found in the study that follows.

It in Rio Grande do Sul (RS): the concentrated location

IT in Rio Grande do Sul has remained as timid as in Brazil, but has undergone a small growth, since, according to data from the IBGE's CNT, between 2013 and 2015, it went from 2.4 to 2.6 of the Gross Added Value. According to RAIS, Rio Grande do Sul had 8,058 companies in 2016, and the activities that most comprised companies were: Technical Support, Maintenance and Other Services in Information Technology (2,171); Data Processing, Application Service Providers and Internet Hosting Services (1,205); followed by the Custom Computer Program Development activity (1,343). The first two are routine activities, and the second, potentially innovative. These are data that reveal a certain weakness in the organization of IT in Rio Grande do Sul, as companies have a specialization that does not provide innovation. What can be exemplified with Dell Computadores do Brasil Ltda., which is located in Guaíba, this company has a recognized competence linked to innovation, with the development of computer systems, but in RS, its main activity is technical support, a routine activity that limits innovation.

Analyzing Figure 1, which presents data of the location of IT companies in the territory of Rio Grande do Sul, there is an agglomeration of companies in the Porto Alegre-Caxias do Sul axis, and this axis also covers the Metropolitan Region of Porto Alegre.

Figure 1. Location of Information Technology companies in Rio Grande do Sul, 2016.



Source: RAIS (2016).

Bringing together the 20 largest municipalities that shelter IT companies, they account for 82% of the companies. Porto Alegre presents itself as a prime city, it is the most important within the IT activities, bringing together half of IT companies, since 2016, Porto Alegre had 3,759 companies, containing 46.6% of the companies of the entire state. Figure 1 also reveals the importance of metropolitan region (MR), counting the municipalities that have the largest number of IT companies, in which ten of them are in the MR of Porto Alegre: Novo Hamburgo (397), Canoas (331), São Leopoldo (282), Gravataí (134), Cachoeirinha (121), Esteio (69), Montenegro (64), Campo Bom (59), Sapiranga (56) and Guaíba (49). In addition to the capital and MR, the other municipalities in Rio Grande do Sul that have IT activities highlighted already have recognized economic and political evidence, as in the cases of Caxias do Sul (420), Pelotas (204), Santa Maria (142), Passo Fundo (135) and Santa Cruz (111).

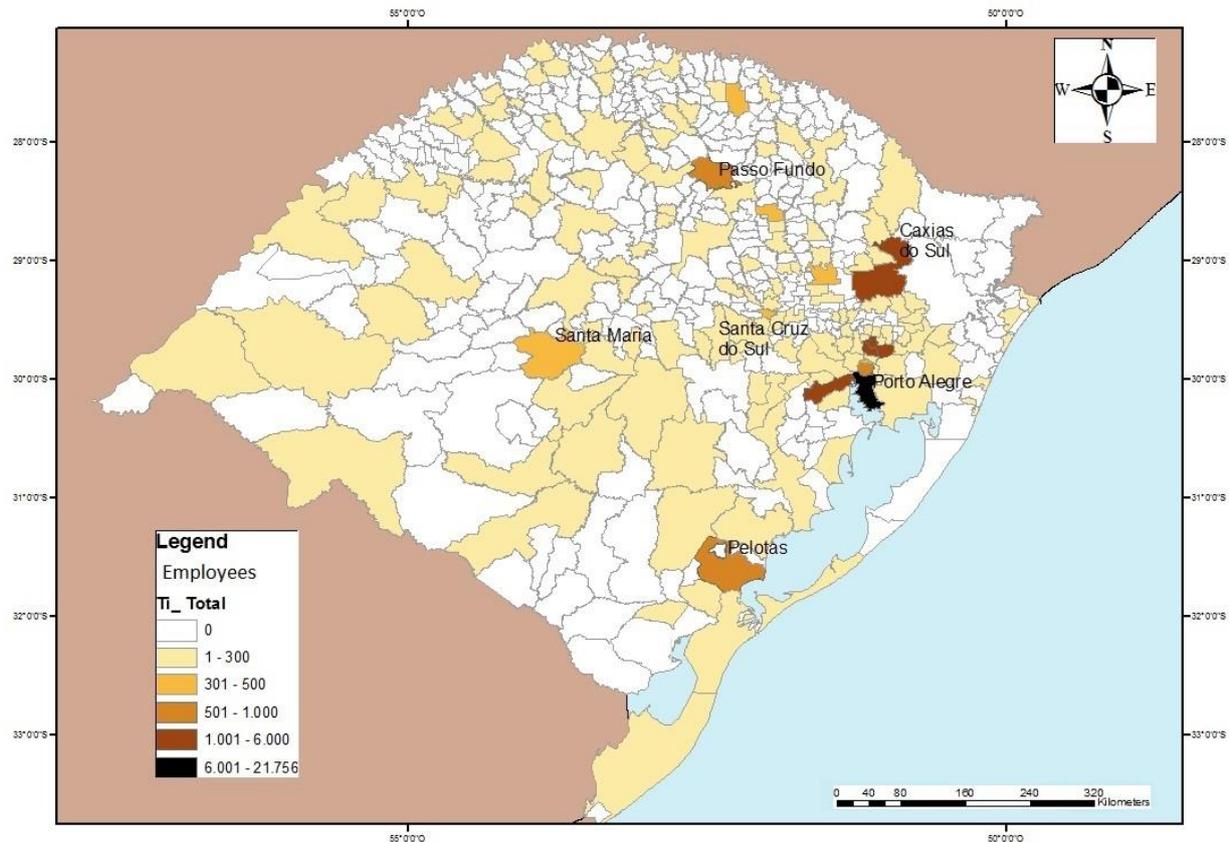
Analyzing the distribution of activities, there is no specialization of companies. In other words, routine and potentially innovative activities occur in all municipalities; again revealing the importance of Porto Alegre, which concentrates most companies in all IT activities.

Data on IT employees were analyzed as active bonds to refine the discussion as well RAIS mentions it.

In 2016, there were 37,995 active links in this activity. Porto Alegre held 21,756 employees, 57% of total in Rio Grande do Sul. The 20 municipalities with the largest number of employees were home to 92% of total employees in Rio Grande do Sul. The metropolitan region, along with Porto Alegre and Caxias do Sul, forming the Caxias-Porto Alegre axis, involve 32,562 workers. The result is similar to that previously presented on IT companies, revealing significant geographical concentration.

Figure 2 represents this concentration of employees. The difference found between data of companies and employees in IT is that, among the 20 municipalities that have the largest number of IT employees, there is a greater number of municipalities outside the Caxias-Porto Alegre axis, in addition to Passo Fundo (628), Pelotas (521), Santa Maria (352), Erechim (354), appearing Casca (334), Três de Maio (160) and Marau (142). The majority of the employed population is engaged in potentially innovative activities, 20,146, accounting for 53% of employees. But it is important to note that the activity which contains more employees is the activity of Technical Support, Maintenance and other IT services, with 7,423 workers. In the interior municipalities, activities are related to both routine and potentially innovative activities.

Figure 2. Location of Information Technology employees in Rio Grande do Sul, 2016.



Source: RAIS (2016).

As a result of Figure 1 and 2, there is a concentration of IT activities in the MR of Porto Alegre, expanding a little more on the Caxias do Sul-Porto Alegre axis. And the municipalities that stand out outside the axis are: Pelotas, in South; Santa Maria, in the Center; and Passo Fundo, in North, both in relation to companies and the number of employees. However, without a doubt, Porto Alegre is the great center that embraces this activity, reinforcing what has already been stated, the cities are the ones that provide the conditions for this to be possible, especially those that can guarantee synergy coming from those who want to innovate and who needs innovations.

Characteristics of territories in which IT concentration is Located

Recovering what has already been stated in this study, the territories within the new economy need to incorporate new resources. Manpower, raw materials and infrastructure are still important, but in this century, territories are, or should be, loaded with new content. It is recommended, at this moment, to analyze these territories that IT has been using to develop its activities, and that form an agglomeration, and verify if they shelter these new contents. In this study, new content is presented as linked to knowledge and information. These contents have a broader sense that is presented by Storper, and they are translated into

variables Internet speed, population, GDP, urban centrality, registration of patents and IT graduates.

Presence of fixed broadband Internet: Homogeneity of territory

Internet is a resource that must be presented in the territory for development of IT activities, which, as mentioned, operates remotely, and, for this to happen, Internet speed, in various offers, are essential. Analyzing data made available by ANATEL, in 2016, on fixed Internet broadband, speeds, technologies and companies that offer Internet, it appears that, in Rio Grande do Sul, Internet is available throughout the territory, since, in 497 municipalities, Internet services are found at speeds ranging from 512kbps to > 34 Mbps. Selecting only technologies, Ethernet, Cable Modem, XDSL and Fiber, it ensures that they are all over the territory and with at least 08 offers of companies / speeds, as shown in Figure 3. The groups that offered the technologies in 2016 were Algar (CTBC Telecom), Blue, BT, GVT OI SKY / AT & T, Telecom Américas, Telecom Italia and Telefônica. Focusing in greater detail on technologies, it is observed that optical fiber, with a speed of more than 34 Mbps, considered a technology with great efficiency, is offered in 413 municipalities.

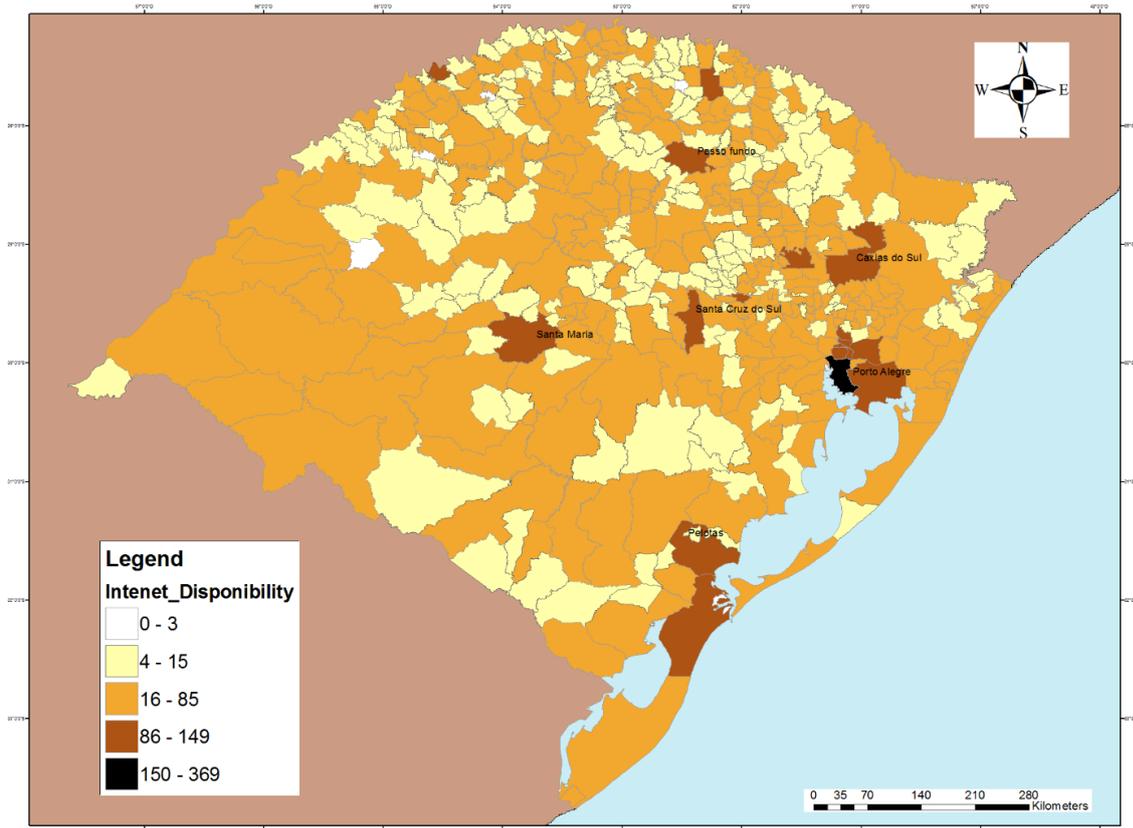
However, despite the fact that municipalities have a well-distributed Internet availability, the same pattern does not apply to companies and IT jobs, as has already

been reported. The situation of Bagé is emblematic, even when it has speeds above > 34 Mbps, in fiber, and with several companies offering the service, there is no importance of IT in this municipality.

Thus, analyzing data on Internet offer, it appears that, being well distributed in Rio Grande do Sul, cannot be considered as a fundamental factor that allows or reinforces the concentration seen in Figure 1 and 2.

It is worth mentioning that investigation revealed that groups that make Internet available, despite the existence of installed infrastructure, only materialize the offer through customer demand, a fact that explains the existence of a greater offer in municipalities with higher IT and the fact that neighboring municipalities have different Internet availability.

Figure 3. Internet availability, using Ethernet, Cable Modem, XDSL and Fiber technologies in Rio Grande do Sul (all speed ranges).



Source: ANATEL (2016).

Population and Gross Domestic Product: concentration of population and capital, and the agglomeration in IT

Considering data from the 2010 Census and the 2017 GDP, it is shown that the location of IT companies directly involves concentration of population and capital. Data from the population of Rio Grande do Sul in correlation with data from IT companies show that the 20 most populous municipalities in Rio Grande do Sul are on the list of largest IT company concentrators.

In these IT agglomerations, it is found a population to promote learning and information, as well as capital to be used in the development of activities, and capital that needs services in this activity. The present population is a fundamental resource, it is manpower to work, but it is also a resource for those who think and create, based on their tacit and codable knowledge, and also who need innovations. It is important to generate

novelties and even to maintain routine activities in IT, which increasingly require a qualified population. The capital present in this territory needs IT services, feeds the market, injects money for innovations to be disseminated, finances study, and attracts new companies and new people.

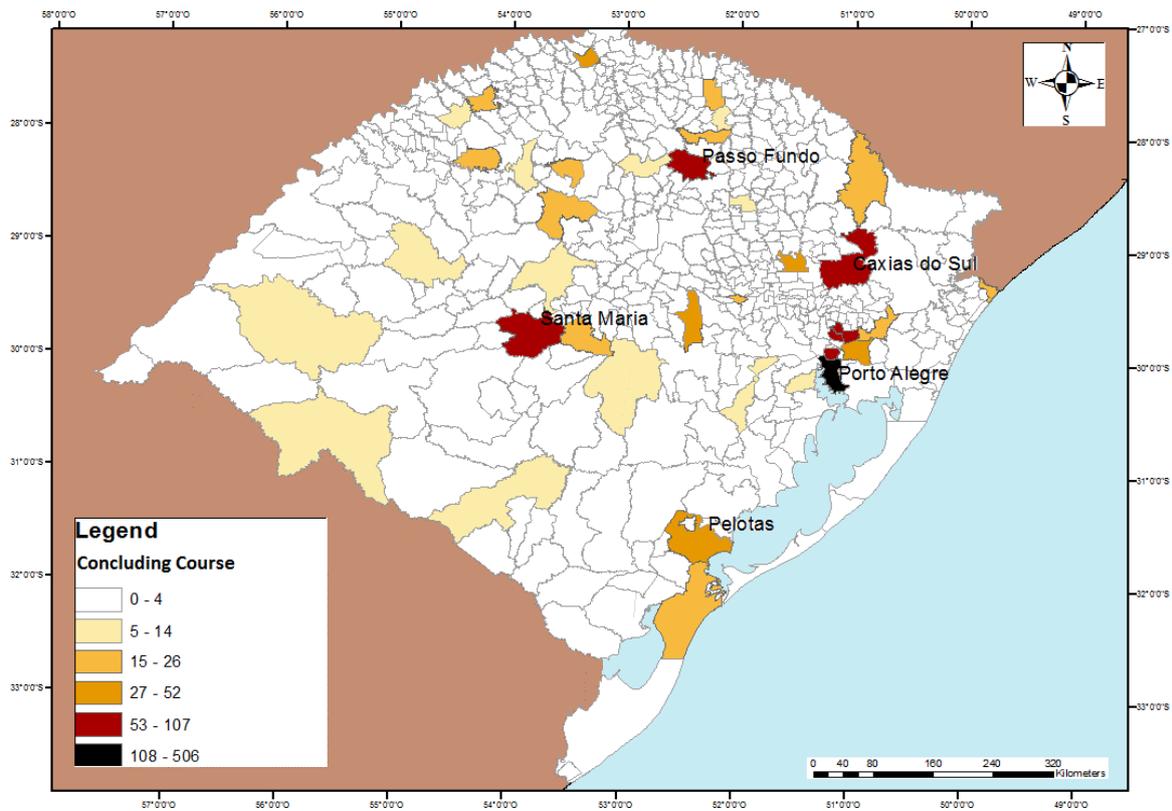
The presence of an intense record of Computer Programs and undergraduate courses in the agglomeration

Information on graduates of undergraduate IT courses is important to be analyzed in the framework of the knowledge society, which aims innovation. This is because, although innovation values tacit knowledge, the codable knowledges are fundamental. The codified knowledge is appropriate over time at the university and the conclusion of graduation is the consolidation of all these aspects. To continue in the career, the professional

needs to continue studying and, without the synthesis of graduation, everything becomes more complex. And, evaluating the information about schooling at RAIS, it is shown that IT involves qualified people, since 65%

of workers have higher education or they are studying. Even though they are timid data, and data for the master's degree (404 workers) and doctorate (38 workers) already appear in the 2016 statistics.

Figure 4. Graduates in IT Undergraduate Courses in Rio Grande do Sul, 2016.

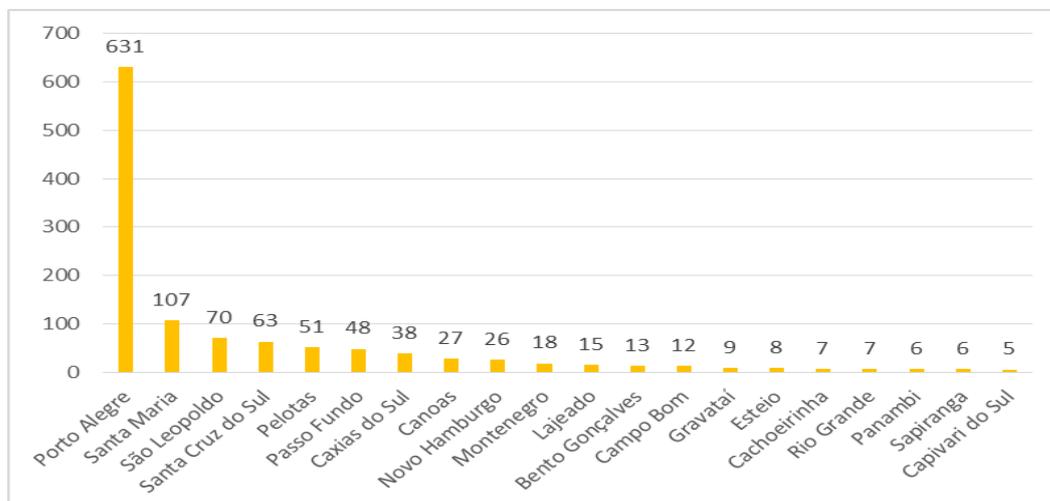


Source: INEP (2016).

Figure 4 helps in assessing the spatialization of data from the Higher Education Census. It is observed that the largest number of graduates is located in the municipalities that have more IT companies, and Porto Alegre is again highlighted, followed by Caxias do Sul and Novo Hamburgo. The 10 municipalities that sheltered, in 2016, the 1,204 graduates in

Undergraduate courses in IT are equivalent to 74% of graduates in the area. Computer Program records are data referring to deposits at the INPI, of people or companies, to protect the authorship of the invention. For the use of this work, data from 2000-2016 were aggregated, and the data are still timid, which denotes little innovation in this segment of the services sector.

Graph 1. Deposits of Computer Program Records, 2000-2017.



Source: National Institute of Intellectual Property-INPI, 2017.

In 17 years, 1,258 computer program records were deposited, with 631 leaving the municipalities that concentrate the largest number of IT companies, as shown in Graph 1. It is noticed that the records are concentrated in the Porto Alegre-Caxias do Sul axis and in the interior cities already mentioned; again, there is a strong relationship between this variable and the presence of IT companies. Here, it is observed that, although timid, innovation exists, which means that information, knowledge and learning are taking place in these territories.

Concentration of IT and urban centralities in Rio Grande do Sul

Variable urban centrality was used from the document - Regions of Influence of Cities-REGIC, 2007, organized by IBGE. It is a classification of typologies of cities according to their regional centrality and their area of influence. In the definition of centralities,

information is used referring to: information on administrative subordination in the federal public sector, the location of headquarters and branches of companies, the offer of air connections, displacements for hospital admissions, coverage areas of television stations, the offer of higher education, the diversity of commercial activities, the provision of banking services, the presence of Internet domains, etc. In addition, information on material and immaterial flows between cities are considered. Thus, REGIC establishes cities that have different hierarchies. Levels of greatest influence to least influence are metropolises, regional capitals A, B and C, sub-regional centers, zone centers and local centers. Comparing the 20 cities that shelter the largest number of IT companies with their position in REGIC, we obtain Board 2, in which it is registered that, among the 20 municipalities with the most IT activities, there are one metropolis, five regional capitals and four sub-regional centers.

Board 2. The 20 (twenty) largest municipalities with IT companies and their classification according to REGIC, 2007.

Municipalities	REGIC classification
1-Porto Alegre	Metropolis
2-Caxias do Sul	Regional Capital B
3-Novo Hamburgo	*
4-Canoas	*
5-Sao Leopoldo	*
6-Pelotas	Regional Capital C
7-Santa Maria	Regional Capital B
8-Passo Fundo	Regional Capital B
9-Gravataí	*
10-Cachoeirinha	*
11-Santa Cruz do Sul	Subregional Center A
12-Bento Goncalves	Subregional Center A
13-Lajeado	Subregional Center A
14-Esteio	*
15-Erechim	Subregional Center A
16-Montenegro	*
17-Rio Grande	Regional Capital C
18-Campo Bom	*
19-Sapiranga	*
20-Guaíba	*

Source: IBGE (2017). Municipalities with * belong to the Metropolitan Region of Porto Alegre.

The remaining ten municipalities are part of the Porto Alegre Metropolitan Region; this indicates that IT companies are either in the MR, or they are in regional capitals B or C or in subregional centers. Data that allows a relationship between IT and places that have material infrastructure, not only for transport, but also for centers that concentrate differentiated resources within the state.

FINAL CONSIDERATIONS

Study began by pointing out that globalization is a new phase of Capitalism, which has increased competition. And innovation is considered the key to face this situation. New strategies must be adopted for that to happen, and the transformation of information into knowledge becomes fundamental, as these processes are correlated, but they are different, the focus of the economy has been making these processes the same, to generate new products to the market.

Nowadays it can be pointed out that there is a new economy that is built based on the service sector, and it is linked to the imperative of innovation. IT is one of the most emblematic activities of this new economy, because it generates innovation, directly and indirectly, and quickly puts innovation in circulation. Thus, it contributes so that the created innovation becomes quickly obsolete, in other words, when it is quickly disseminated through the Internet, the created innovation is overcome by new proposals. Furthermore, it encourages flows, makes time and space more flexible, even the physical space it operates is small and versatile. IT is integrated with the flexibility and versatility that new global economy announces. However, this process is not dominant in the world yet (see Fortune data) and it is also not in Brazil, but it is presented and shows no signs of contraction, on the contrary.

Study done in Rio Grande do Sul sought to identify the location of the IT and which characteristics of the territories where this activity is developed. And it revealed that the chosen space is the metropolitan, in other words, IT in Rio Grande do Sul is vigorously established in Porto Alegre and its surroundings, revealing a strong agglomeration. And the municipalities that stand out outside this axis are few: Passo Fundo, Santa Maria, Pelotas Santa Cruz and Caxias do Sul, and the latter is very close to the metropolitan axis.

Companies are linked to routine activities, which involve technical support, data processing and maintenance of portals. This is not a positive fact, since, according to what is pointed out at this study, the competitiveness of countries comes precisely from activities that can generate innovation. Rio Grande do Sul, if it wants to align itself with the economic imperative of this century, must seek to strengthen jobs and IT companies in potentially innovative activities.

Considering that IT activity can act at a distance, the study sought to discuss the reasons for concentration, and, therefore, it was based on the premise that resources that territories need today, allowing competitiveness of companies, is loaded with information and knowledge. It started by discussing the presence of fixed broadband Internet, considering, initially, that the concentration of IT companies could be linked to the availability of Internet, after all, we are facing a new technical network. But this premise was discarded by the study, Internet is presented in the whole territory of Rio Grande do Sul. And high-speed fiber (> 34 Mbps) is presented in most municipalities. Thus, data presented reveal that there is availability of Internet, moreover, it was examined that the infrastructure exists, the offer that is not materialized by the groups that control the technologies, this because there is no demand.

Continuing the studies, the variables GDP (indicating presence of capital) and population (indicating population that does and needs innovation) were investigated. Data revealed that, in the territories where IT companies and employees are located, this is

where the greatest concentration of population is and where there is the highest GDP. It is what reveals that IT is where there is demand and movement, people thinking about innovations for other people and companies, and where there is capital to pay for it; which, in the study's view, reveals agitation, noise.

Thus, in fact, new economy is constituted within the premise of information and knowledge, both professions must seek knowledge and information, and the territories must contain them. And, to evaluate this idea, the study presented variables graduation and deposit of computer programs. It was found that IT is an activity that has professionals who achieve significant levels of education, more than 50% of them have higher education or they are studying. And, in the territories where IT is located, this is the focus of the numbers of graduates in this area. By perfecting data for the analysis, it was found that, where there is a greater number of deposits of computer programs, this is where IT is. Therefore, it is possible to affirm that these territories are loaded with information and knowledge.

Completing the analysis, the urban network was investigated, using data from REGIC. The comparison of data with the presence of companies and IT employees revealed that municipalities with the greatest influence on urban network, in other words, where the state's political, economic, financial and cultural command is located, they are territories with the largest number of IT companies.

This observation allows us to broaden the face-to-face thesis, showing that the "buzz" is accompanied by other types of "noise", as people promoting knowledge, people learning, people moving, people looking for innovations. Thus, they create an effervescence.

Therefore, the study exposes that IT activity in Rio Grande do Sul follows the new logic of services, and the new economy, looking for large centers. And this fact has very serious implications from a socio-spatial point of view, as the territories chosen by the new economy appear to be selective. This selectivity can aggravate territorial inequalities that already exist at different scales in Brazil.

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AUTHORS' CONTRIBUTION

Geovana Mendes de Oliveira planned and executed the research and data collection, as well as wrote the results and did a review.



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