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The impact of cultural heritage preservation policies on land use: the case of the Historic Centre of Pelotas (Rio Grande do Sul), Brazil

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One of the main aims of cultural policies on the preservation of heritage is the revitalisation and sustainability of historic centres. In Brazil, 26 cities have been benefiting from the MONUMENTA Programme since 1999. Considering that its purpose is to promote the economic, social and cultural use of benefiting areas, the change in land use was analysed in the case study of the Historic Centre of Pelotas. With the information held by the Urban Planning Division of Pelotas Town Council, a detailed analysis was carried out on the economic activities in the years 2002 and 2007. According to the criteria established by the National Classification of Economic Activities, 15,155 records were identified and divided into categories. Subsequently, a statistical analysis was carried out, using as a criterion the Box and Whisker Diagram. The results from the project area revealed a reduction in floor space in categories of hospitality industry; social and health services and professional and administrative activities. However, it showed an increase in the categories of construction, art, culture, and leisure. Without underestimating any influence of other public policies in force at the time, the conclusions in this analysis will be credited to the MONUMENTA Programme.

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Keywords: Preservation policy; urban heritage; land use analysis; MONUMENTA Programme.

Introduction

The MONUMENTA Programme

The protection and preservation of cultural heritage is a way of perpetuating the intangible values of a place. SPHAN¹ (National Service of Historic and Artistic Heritage) was created in 1937 and given responsibility for the preservation of national heritage. The principal function of the organisation was to identify and protect Brazilian Cultural Heritage as stated in Decree Law N^o. 25, dated 30th November of that year, a law which is still in force today.

From the 1970s, the assessment of historic places has taken the buildings as landmarks, in terms of their position and relevance in the urban space. Their cultural preservation was considered as essential in giving a sense of identity to the city.

Towards the end of the 1990s, the Ministry of Culture adopted a policy of including heritage in local, regional and national planning programmes, with the aim of ensuring effective protection and conservation of cultural and natural heritage sites. 1995 saw the first negotiations, between the Inter-American Development Bank and the Ministry of Culture, to develop a programme to preserve Brazil's Urban Heritage – the MONUMENTA Programme.

Seven historic areas were initially earmarked, based on their historic sites or their symbolic value as "gateways to the country". Ouro Preto, Olinda, Salvador and São Luis do Maranhão were selected for their historic sites and Recife, Rio de Janeiro and São Paulo for their symbolic value (Taddei Neto, 2000). The first two cities in each case became key models and were used as a base for developing the criteria and norms of the Inter-American Development Bank (IDB) Loan Proposal, dated 31st August 1999. With the signing of document N^o. 1.200/OC-BR by the Ministry of Culture on 4th December 1999, the MONUMENTA Programme was rolled out throughout Brazil.

This is an innovative national programme which seeks to reconcile the sustainable revitalisation and preservation of urban historic heritage, protected by the National Institute of Historic and Artistic Heritage (IPHAN), with economic and social development of the areas. The MONUMENTA Programme is a result of cooperation between the Ministry of Culture (MinC) and the Inter-American Development Bank (IDB), with support from the United Nations Educational, Scientific and Cultural Organisation (UNESCO), participation by city councils or/and the State, the private sector and owners of protected properties.

The programme is valued at 125 million dollars, with a 20 year amortisation period. Of this total value, 50% is financed by the IDB and the remaining 50% by the Federal Government. Of the 62.5 million dollars match funding, the Federal Government contributes 48% of total expenditure, 32% comes from municipalities or states and the remaining 20% from the private sector (IDB, 1999).

The project is important in ensuring the urban sustainability of historic centres; it seeks to establish mechanisms to preserve heritage in a sustainable way without requiring constant financial contributions from federal resources. The ultimate goal is to extend this model to other historic centres not under federal protection.

Twenty-six cities, in 17 of the 26 Brazilian states, were eligible to participate in the MONUMENTA Programme, scheduled to end in 2012.

The joining process

During the first year of the programme, the need was established for the Executing Agency (the Ministry of Culture) to prepare a "List of Priority Project Areas", including National Urban Historic Sites - SHUN, and Urban Sets of National Monuments² – CUMN. (BID, 1999:19).

The list was compiled by a Working Group (GT) appointed by the Ministry of Culture, using a scoring model based on certain priority criteria namely: plurality, decentralisation, homogeneity / diversity, uniqueness, chronological gap and risk (Brazil, 2005a).

In total, 101 Priority Areas (sites or urban sets) were identified for intervention. The Working Group decided that where urban complexes had complementary characteristics, or were located close to each other, they would be analysed together. The list was therefore reduced from 101 to 94 areas. The 94 areas cover 80 Brazilian municipalities, in 23 of the 26 Brazilian states.

The Ministry of Culture invited the municipalities to prepare a document known as "Carta Consulta" (Expression of Interest), a compilation and diagnosis of socio-economic and cultural data, along with a preliminary indication of the Area targeted for the Project³ and the Area of Influence⁴. The document would also outline the objectives the programme aimed to achieve and its impact on the local economy and population (Brazil, 2006).

The proposals outlined in the "Carta Consulta" was the result of a workshop of a planning committee, made up of the owners of the properties, associations, non-governmental organisations (NGOs) and representatives from the Council, the State and the Union. Their approach was based on the German ZOPP method (from Deutsch, Zielorientierte Projektplanung, widely known as Objectives Oriented Project Planning - OOPP), which seeks a consensus in a participative manner, as a prerequisite for developing the "Carta Consulta".

Eligible municipalities had to meet four conditions imposed by the IDB. The first was that the town should be included in the "List of Priority Project Areas". The second, which focused on economic possibilities, dealt with the municipality's ability to carry out the investments and provide their financial counterpart (32% of project's cost). The third, of a more social and multi-disciplinary character, focused on the project's proposals, which necessarily had to be based on stakeholders' participation and involvement in workshops (ZOPP method). The fourth, and final condition, related to the private sector's interest and their participation in the project (IDB, 1999).

Meeting the above conditions stipulated by the IDB and the position in the "List of Priority Project Areas", twenty-six areas (Historic Sites or Urban Sets of National Monuments) were thus eligible to participate in the programme which in this case, corresponded to twenty-six municipalities.

When their "Carta Consulta" was approved, each municipality was invited to sign the "Cooperation Agreement for the Formulation of the Project". This subsequent document, called the Project Profile, included information on the rehabilitation of buildings and/or eligible public spaces, along with technical, institutional, financial, economic and socio-environmental feasibility studies. It had to be approved by a special team appointed by the Ministry of Culture (CMU – Central Management Unit) before submission to the Bank for review and approval.

The municipalities that were approved by both entities were invited to sign the financing agreement with the Ministry of Culture, and the Contract Review with the Financing Organisation - the Caixa Econômica Federal (Brazil, 2006). In the case of Pelotas, the project "Rehabilitation of Coronel Osorio Square and surroundings", classified among the Urban Sets of National Monuments, came into being with the signing of Agreement Nº. 392/2002.

Among the various conditions imposed prior to the signing of the agreement between the Ministry of Culture and the municipalities, mentioned in the proposed IDB loan agreement, was the need for signatories to demonstrate organisational competence. They had to create a task force called PEU (Project Executing Unit), whose remit was to prepare, coordinate, monitor, implement and manage the project in the eligible area. They were also responsible for addressing legislative issues, such as the approval of Municipal Law on Preservation Funding⁵ and associated matters; i.e., to ensure that the municipality undertakes to finance activities not funded by the programme but which could enhance the sustainability of the project.

Town of Pelotas, in numbers

According to the Demographic Census of the Brazilian Institute of Geography and Statistics (IBGE), the population of Pelotas reached 328,275 in 2010. According to information available on the website of Pelotas Town Council, the city has a land area of 1,610.09km², situated at a distance of 250km from the city of Porto Alegre (capital of Rio Grande do Sul) and 135km from the border of Uruguay. It is a place endowed with an extremely rich architectural heritage: the Municipal Secretary of Culture has registered 2,090 properties in the Inventory of Cultural Heritage of Pelotas (2004)⁶. Most of these properties are concentrated in the city centre.

The area benefitting from the MONUMENTA Programme (project area and area of influence) is a space made up of 45 squares (including five green areas), totalling an area⁷ of 50 hectares. In this area 266 properties are inventoried, 14 of which are given special protective status known as "tombamento"⁸, nine by the municipality, one by the State and four by the Federal Government (in this case represented by IPHAN). According to the IBGE Demographic Census (2010), approximately 4,600 people live in the area benefitting from the Programme and its immediate surroundings.

Programme objectives and its influence on land use

The programme objectives are part of the Special Contractual Conditions of Loan Agreement Nº. 1.200/OC-BR, signed on 4th December 1999, previously outlined in the Executive Summary of Loan Proposal BR-0261, dated 31st August 1999. The programme's purpose described in this document is to "increase the economic, cultural and social use of Project Areas" (IDB, 1999:1).

The programme assumes that there is a connection between the conservation of cultural heritage and socioeconomic development (shown in the following quote from the programme's referential framework): "the restoration and adaptation of historic buildings attracts economic activities (including tourism and cultural activities), permits higher valued economic use of buildings, generates employment, and has other linkages. These activities increase the likelihood that restoration and rehabilitation will be sustainable." (IDB, 1999:15).

Objective

Considering that the purpose of the MONUMENTA Programme is to promote the economic, social and cultural use of beneficiary areas, the change in land use will be analysed, from an urban geography perspective, in the area of Pelotas' Historic Centre defined by the programme, in the years 2002 and 2007. The conclusion of this analysis will be credited to the programme, without underestimating any influence associated with other public policies that may have been concomitant during the intervention process.

Methodology

Materials

The Project Report, dated 31st August 1999, prepared by the Inter-American Development Bank and the latest version of the Operating Regulations of the MONUMENTA Programme, dated September 2006, provide context for this article.

Three primary sources were used to demonstrate the results. The first is the list of local units or establishments where economic activity occurs, along with a description of each one. The Brazilian Institute of Geography and Statistics, states that "*economic activity of production units should be seen as a process, i.e. a combination of actions that result in certain types of products, or even a combination of resources that generate specific goods and services*" (IBGE, 2007:20); they can therefore, include organisations and establishments of public or private companies, farms, non-profit institutions and independent contractors.

From a spatial perspective, those buildings should be located in the project area and the area of influence defined by the MONUMENTA Programme. The properties located in the area of the immediate surroundings were also included to have a larger set of data for calculating the average of economic activities.

This analysis was conducted using two dates as reference: December 2002, the year in which the city of Pelotas signed the financing agreement with the Ministry of Culture, and December 2007, when the Project Profile was reviewed.

The list of properties that met the above-mentioned conditions were held by the Urban Planning Division of Pelotas Town Council in June 2010. They included the address of the local unit or establishment (street, number and other relevant address details), the type of activity carried out and the floor space (in m²) occupied. The lists were recorded electronically in separate files, one for 2002 and the other for 2007, in .txt format. In total, 15,155 records of economic activities in the aforementioned years were identified.

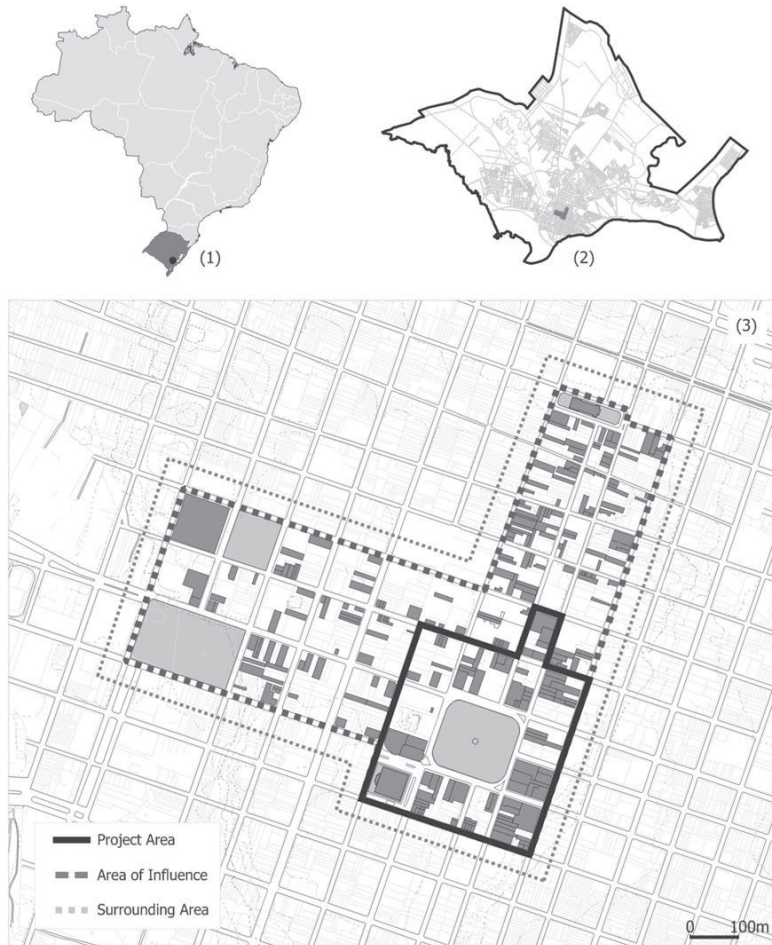
It should be noted that this list has no record of any of the buildings occupied by public authorities located in the historic city centre.

The second source comes from the National Classification of Economic Activities (CNAE 2.0), prepared by the National Classification Commission (CONCLA), released in 2007 by the Brazilian Institute of Geography and Statistics (IBGE), the ruling body of the CNAE. This information is available on the institution's website.

Finally, the third source is the urban plan held by Department of Memory and Heritage (Culture Division) of Pelotas Town Council in May 2008. The plan shows the entire urban network in Pelotas municipality, with an identification of each block with respective building numbers on each plot. Apart from focusing on the area defined by the MONUMENTA Programme, (project area and area of influence), the properties in the immediate vicinity (surrounding area) were also included as reference in the statistical analysis and conclusions.

Microsoft Excel 2010 was used to present the bar chart and tables, while AutoCAD 2010 was used to demonstrate the location of economic activities in 2002 and 2007.

Plan 1. Pelotas Town Plan and the intervention area of MONUMENTA Programme.



Sources: (1) Based on the Political Map of Brazil by IBGE. The image shows the location of Pelotas Town in the State of Rio Grande do Sul / Brazil. (2) District No1. Pelotas Town has a total of 9 districts. Based on the Urban Plan of Pelotas, held by the Department of Mapping and Geographic Information (Urban Planning Division) of Pelotas Town Council, 2006. (3) Based on the Urban Plan held by Department of Memory and Heritage (Culture Division) of Pelotas Town Council, 2008. Ref: 48_MUB Lotes. The dark grey colour shows the properties inventoried by Culture Division and the light grey colour, areas of greens.

Methods

The two files in .txt format was opened separately in Excel. The software gives users the option of using a "text import wizard" tool before viewing the spreadsheet and allowing manual adjustment of the data in the columns taken from the .txt file. Once the data is integrated into the Excel spreadsheet, the initial work consists of the following:

- i. Data processing - manual correction of data that has been fragmented into two or more columns due to the use of the "text import wizard" tool;
- ii. Identification of properties based on their location in the project area (PA) or area of influence (AI) defined by the MONUMENTA Programme, in addition to the immediate surrounding area (SA);
- iii. Identification of activities in accordance with criteria established by the National Classification Commission (CONCLA) in January 2007. The findings in this article are restricted to the hierarchical level of the sections described in the National Classification of Economic Activities (CNAE 2.0). However, it was necessary to identify all activities in their respective class. On the

table illustrated below, the methodology is shown step by step. Information concerning the numbering of the property, surface and the type of economic activity was changed, to ensure the protection of personal data.

Table 1. Table 1. Illustration of items II y III.

(ii)						(iii)
Sector	Street Name	Nr.	Com.	Surface	Activity	Category
AP	Andrade Neves	30	A	80.00	Newspapers and magazines	G
AP	Andrade Neves	30	A	80.00	Lottery tickets	N
AP	Andrade Neves	30	B	15.00	Coffee shop, ice-cream	I
AP	Andrade Neves	30	B	15.00	Sweets and caramels homemade	G
AP	Andrade Neves	32	--	1,870.00	Supermarket	G

Source: Independent (author's own sources).

- iv. Establishing the number of activities that share the same space in a single property. During the identification process to establish the type of activity (item iii) it was found that 59% of records (8,891, out of 15,155) belonged to different activities that were being conducted in a communal space. For example, the local unit or establishment at 30A Andrade Neves Street has 80m² of space, in which magazines and newspapers (category G) and lottery tickets (category N) are sold. Each of these activities falls within a different category in the CNAE classification system. But how is it possible to analyse the growth of a particular category of activity that applies if several categories share the same space? Based on the table given above, how many square meters correspond to the magazine and newspapers activity (category G) and how does it correspond to the lottery tickets activity (category N)? Below is illustrated some possible variations in distribution of economic activities in an 80m² area of the property listed in Table 1.



Assuming these figures might correspond to specific cases, which one should we choose? Is the first figure showing a relationship of proportionality - 40m² to the first activity and 40m² to the second one – the one that should be used as reference for other cases? Or would one of the four others be a better choice? But who gives these parameters? Is there a classification that can attribute an average value for each category? The answer is no.

Therefore, to achieve the correct proportion of each category, it was necessary to estimate the value of the average area occupied by each activity in its respective category. This work was carried out in the second phase as outlined in item "v" below, in the statistical treatment of the data.

- v. Data management - the structure remained the same in 2002 and 2007. At the end of the first stage, the two tables were structured in 9 columns as follows: 1 - year of activity, 2 - property location in project area, area of influence or surrounding area, 3 - property address, 4 - house number, 5 – other details (room or office number), 6 - amount of floor space occupied by a local unit or establishment in a property, 7 - number of activities sharing space in a local unit or establishment, 8 - type of activity conducted in a local unit or establishment and 9 - category within which the activity falls.

Table 2. Illustration of item V.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Year	Sect	Street Name	Nr.	Com.	Surface	Tm	Activity	Cat.
2007	AP	Andrade Neves	30	A	80.00	2	Newspapers and magazines	G
2007	AP	Andrade Neves	30	A	80.00	2	Lottery tickets	N
2007	AP	Andrade Neves	30	B	15.00	2	Coffee shop, ice-cream	I
2007	AP	Andrade Neves	30	B	15.00	2	Sweets and caramels homemade	G
2007	AP	Andrade Neves	32	--	1,870.00	1	Supermarket	G

Source: Independent (author's own sources).

Once atypical values were eliminated, the statistical treatment of data was carried out according to the average of different categories, to find an estimate of the square meters of activities that were being carried out within the same area of the local unit or establishment. For example, according to table 2, activities that belongs to the categories G and N share an area of 80m² in one property. Considering that the average of category G is 75m² and the average of category N is 26.2m², we could estimate that the activity of category G occupy the follow area: $A = 80 \times [75 / (75 + 26.2)] = 59.29\text{m}^2$, and the activity of category N occupy the remaining 20.71m².

Having this form of estimation clear is essential to calculating in a representative way the average values for each category. To do so, economic activities that operated alone in an establishment were considered, i.e., without sharing floor space with any other activity. In this way, it was possible to know its exact dimensions. In addition, economic activities that resemble, in terms of surface, the space that we want to estimate were also taken into account, i.e., that is not considered an atypical value. 2002 and 2007's data was processed together, as there was no significant difference in the size of the activities in properties between these years.

Firstly, all economic activities were separated into their respective categories, and in each category the set of activities that occupy alone the surface of an establishment was selected. Secondly, economic activities with atypical values were sought, using as a criterion the Box-Plot, also known as the Box and Whisker Diagram.

Data was placed in increasing order of surface area, to elicit the lower quartile (Q1 - value of the floor space corresponding to 25% position of the data), the upper quartile (Q3 - value of the floor space which corresponds to 75% position of the data) and the interquartile range (IQR = Q3 - Q1).

The lower limit (L.Lim) and upper limit (U.Lim) were then calculated to reveal atypical values, using the following formulae:

$$L.Lim. = Q1 - (1.5 \times IQR)$$

$$U.Lim. = Q3 + (1.5 \times IQR)$$

where: L.Lim y U.Lim. = lower limit and upper limit that identify the atypical values,

Q1 = value of the floor space corresponding to 25% position of the data,

Q3 = value of the floor space that corresponds to 75% position of the data,

IQR = interquartile range.

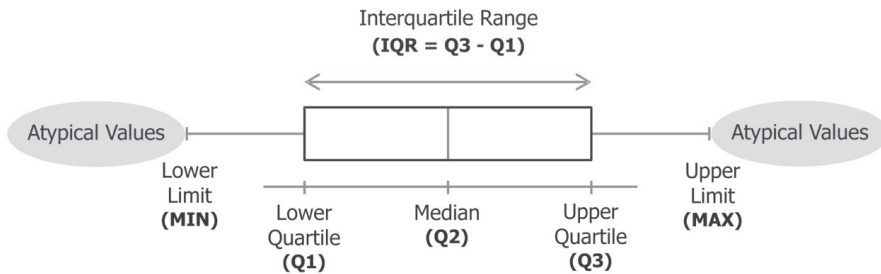


Figure 1. Representation of the Box and Whisker Diagram.

Once the atypical values were known, it was observed that there was no atypical value below the Lower Limit. That is because the surface area occupied by the economic activity is a probability density function with positive skew. All economic activities with an area equal to or greater than the Upper Limit and, therefore, classified as atypical value were treated separately. They were assigned to a new subcategory within the category of analysis, and analyzed separately.

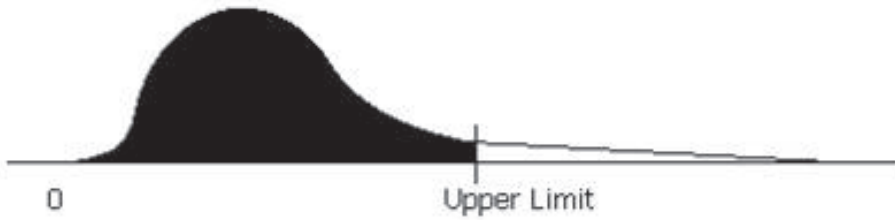


Figure 2. Representation of the surface occupied by the economic activity of one category.

For all other activities in the same category - corresponding to the black shading in Figure 2 - the arithmetic mean was, as noted above, used for estimating the area occupied by each of the activities that share the same space in a property, using a proportional rule.

Once we have estimated these values, we have an individual value of the area occupied by each activity, making it possible to analyse the level of growth in all relevant categories from the year 2002 to 2007.

We have to assume that the estimated value of the floor space for each class of activity within the MONUMENTA Programme does not necessarily represent the value of those same activities in other cities or districts in Pelotas. We therefore omitted a description of those classes, along with the estimated value of their floor space, from this article.

Discussion

Of the 15,155 records of economic activity held by the Urban Planning Division of Pelotas Town Council, 47% (7,101, out of 15,155 entries) referred to 2002 and 53% (8,054 out of the total 15,155 records) to 2007.

Taking into account all the records of economic activity identified for this study, in 2002 they occupied a total of 4,566 local units or establishments, while in 2007 there were 4,984 occupancies - an absolute increase of 418 local units or establishments. 606 types of economic activities were identified and grouped into 17 categories of the 21 described in the CNAE. In 2002 and 2007, we noted that of the 606 activity types, eight types in the 2002 database did not appear in the 2007 database. Therefore, during the analysis period, these activities ceased to exist. However, this does not necessarily mean that the unit or establishment was closed; activity may have changed.

On the other hand, of the 606 activity types, 76 of the ones that appeared in the 2007 database did not appear in the 2002 database, thus revealing new economic activities.

The following template shows the activity categories in the project area and in the area of influence of the MONUMENTA Programme in Pelotas' Historic Centre. It also shows the average estimated value of the floor space relevant to activities that share the same local unit or establishment with other activities. The floor space occupied by each activity can therefore be calculated. Excluded from the information are activities with atypical values, as they have their own valuation, calculated within each category.

The 76 new types of activities registered in 2007 were concentrated mainly in the following categories: G - 11 units, M - 12 units, N - 11 units and S - 10 units.

The categories described in Table 3, except for two (L and O), showed some types of activities with atypical values for their floor space compared to the average for each category. 72 classes, concentrated in category C (13 types of activities) and S (17 types of activities) were identified.

Table 3. Estimated value of average floor space occupied by economic activities in local units, according to their corresponding category within the project area and area of influence, defined by the MONUMENTA Programme, and surrounding area in Pelotas' Historic Centre - Rio Grande do Sul, in 2002 and 2007.

No	Category	Concept	Average Floor Space (m ²)
01	A	Agriculture, livestock, forestry production, fisheries and aquaculture	10.5
02	C	Processing	14.3
03	F	Construction	15.0
04	G	Trade, repair of motor vehicles and motorcycles	80.0
05	H	Transport and storage	18.6
06	I	Hospitality industry	89.1
07	J	Information and communication	57.6
08	K	Financial services, insurance and related services	90.1
09	L	Property	31.7
10	M	Professional, scientific and technical services	27.4
11	N	Administrative and support services	26.2
12	O	Public administration, defence and social security	140.1
13	P	Education	52.0
14	Q	Health and social care	23.9
15	R	The arts, culture, sports and leisure	81.5
16	S	Other service industry activities, associations and trade unions	17.9
17	T	Domestic services	12.7

Source: Independent (author's own sources), based on the CNAE (CONCLA / IBGE) and data available from the Urban Planning Division of Pelotas Town Council.

A final file was produced showing the estimated floor space utilised by each of the activities taking into account: 1 - the estimated values in Table 3 for new surface areas of activities that share communal space with other activities, 2 - the estimated atypical values of those activities that formed a separate class within each category, and 3 - the values of all activities that occupied the entire unit.

The findings of this process are revealed in Table 4, a horizontal analysis of the percentage growth in 2007 compared with 2002 in each activity category, in the project area and area of influence defined by the MONUMENTA Programme.

Table 4. Percentage growth of economic activity categories in 2007 (compared with 2002), in the project area and area of influence defined by the MONUMENTA Programme. Pelotas' Historic Centre - Rio Grande do Sul.

Category	Project Area			Area of Influence		
	2002 (m2)	2007 (m2)	%	2002 (m2)	2007 (m2)	%
A	25.8	25.8	0.0%	180.5	188.4	4.4%
C	1,971.5	2,140.2	8.6%	6,938.9	7,344.7	5.8%
F	716.4	729.4	1.8%	4,401.9	4,327.8	-1.7%
G	25,745.3	27,966.9	8.6%	122,078.0	144,900.4	18.7%
H	2,529.5	3,140.0	24.1%	10,214.3	12,566.3	23.0%
I	10,452.2	6,536.1	-37.5%	27,085.1	28,306.9	4.5%
J	801.2	828.4	3.4%	5,385.3	6,211.3	15.3%
K	15,856.1	17,098.7	7.8%	7,586.2	10,669.1	40.6%
L	1,042.5	1,034.3	-0.8%	4,611.4	4,954.0	7.4%
M	5,457.9	5,228.5	-4.2%	14,346.0	15,828.4	10.3%
N	8,484.4	8,829.9	4.1%	4,432.1	5,222.3	17.8%
O			0.0%	1,184.0	1,204.0	1.7%
P	2,134.6	2,307.0	8.1%	8,229.7	10,087.8	22.6%
Q	2,452.3	2,229.7	-9.1%	39,979.1	40,732.0	1.9%
R	6,217.2	6,636.6	30.4%	6,201.1	6,028.9	-2.8%
S	4,616.2	6,112.9	0.5%	8,553.1	9,386.9	9.7%
T	47.0	47.0	0.0%	260.4	261.8	0.5%
Total	88,550.2	90,891.4	2.6%	271,667.4	308,221.0	13.5%

Source: Independent (author's own sources), based on the CNEA and property data held by the Urban Planning Division of Pelotas Town Council.

A general analysis of the data in Table 4 reveals a positive growth rate based on floor space in most categories of activity in the project area and area of influence. The percentage growth in both areas, but in different proportions, was concentrated in categories C, G, H, J, K, N, P and S. Of these categories,

C is showing greater discrepancy in favour of the project area: 8.6% versus 5.8% in the area of influence, and category K is showing greater discrepancy in favour of area of influence: 40.6% versus 7.8% in the project area.

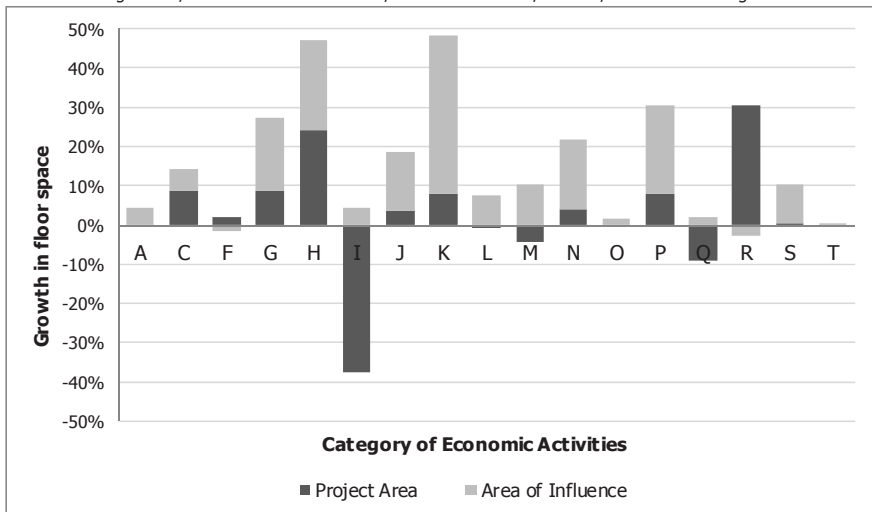
In the project area, activity in agriculture, livestock, forestry production, fisheries and aquaculture (category A), as well as domestic services (category T), remained constant during 2002 and 2007. However, they showed an increase in the area of influence: 4.4% and 0.5% respectively.

In view of the methods used, the basic template did not reveal registrations of category O activities relating to municipal public administration. A site visit was therefore conducted during which it was found that buildings occupied by these institutions are located mostly in Pelotas' Historic Centre. With this in mind, both areas were perceived to have increased the space allocated to this activity by 1.7% in the area of influence.

The activities that showed negative growth, i.e. a reduction in floor space in the project area were placed into four categories: I - hospitality industry (-37.5%), L - property (-0.8%), M - professional scientific and technical services (-4.2%) and Q - health and social care (-9.1%). Conversely, in the area of influence negative percentages were concentrated in two categories: F - construction (-1.7%) and R - the arts, culture, sports and leisure (-2.8%).

The following bar chart shows a comparison between the growth rate in the project area and in the area of influence for each of the categories described in Table 4.

Bar Chart 1. Percentage growth of economic activity categories in the project area and area of influence defined by the MONUMENTA Programme, in Pelotas' Historic Centre, Rio Grande do Sul, in 2007, based on 2002 figures.



Source: Independent (author's own sources), based on the CNAE and data held by the Urban Planning Division of Pelotas Town Council.

In analyzing the negative percentages of the above-mentioned six categories, it emerged that the reduction in floor space did not occur simultaneously in the project area and the area of influence. Quite the contrary: while there was negative growth in categories F and R in the area of influence, they showed positive growth in the project area.

Furthermore, there was a similar occurrence in the categories that showed negative percentages in the project area relative to the area of influence. This was the case in categories I, L, M and Q.

Finally, taking into account the total space of all categories in the project area in 2002 (88,550.2m²) and 2007 (90,891.4m²), and area of Influence in 2002 (360,217.55m²) and 2007 (399,112.41m²); it is possible to calculate the total percentage of space occupied in each area and estimate their growth rate. Specifically, the project area is 2.6%, heavily weighted by category I, as will be indicated in the conclusions - without it, the growth would have been 8.2% - and the area of influence around 13.5%.

The project area in 2002 showed an occupancy rate of 24.58% (88,550.19m² of the total 360,217.55m²), while in 2007 it was 22.77% (90,891.44m² of the total 399,112.41m²). Although in absolute terms this represented an increase of 2,341.25m², in percentage terms there was actually a 1.8%

reduction. So although in 2007 there was an increase in floor space, this was lower in proportion when compared with the increase in floor space in the area of influence.

In 2002, the area of influence had an occupancy rate of 75.42% (271,667.35m² of the total 360,217.55m²) while in 2007, the figure was 77.23% (308,220.97m² of the total 399,112.41m²). This represented in absolute terms an increase of 36,553.61m², and 1.8% in percentage terms.

Compared to 2002 figures, 2007 saw a 10.8% (38,894.86m²) growth in the project area and in the area of influence.

Conclusions

The MONUMENTA Programme has provided a link between revitalisation & preservation of Brazilian urban historic heritage and economic & social development since the signing of Loan Agreement N^o. 1.200/OC-BR, between the Ministry of Culture and the Inter-American Development Bank, in December 1999.

The programme encompasses a range of actions including the rehabilitation of protected buildings, the revitalisation of public spaces and the provision of incentives to private property owners to restore their buildings and improve urban infrastructure. Those basic measures, along with other activities, including workforce training in catering, tourism promotion and capacity building, are intended to boost economic, social and cultural growth which in turn will enhance the Programme's sustainability and thus ensure its effectiveness.

In Pelotas, the revitalisation of the historic centre resulted in development of these sectors; in the space of five years, there was a marked increase in the registration of economic activities. Using the year 2002 as a benchmark, in this case study, there was an increase of 13.4% (from 7,101 to 8,054 registrations), an absolute increase of 953 registrations of economic activities in 2007.

Attracted by the effects and benefits of the Programme, entrepreneurs and professionals started to view Pelotas' Historic Centre as a place favourable to the development of new businesses and the expansion of their existing ones. This would support the view that there may have been an increase in job opportunities but this variable was not considered in the study.

There was a 10.8% increase in floor space used for economic activity in the area included in the MONUMENTA Programme in 2007 when compared to 2002. This brought more dynamism to the city. It could be said that the programme had a positive impact in general, since this increase was evident not only in terms of the amount of occupied floor space mentioned above, but also in the increased number of registrations (953) and the creation of new economic activity (76). However, this increase was not proportional in all categories in the project area and the area of influence.

The increase in space for the categories in one area and the reduction in another resulted in changes in the location of units or establishments in the urban region. Certain activities in the project area, such as those classified under category R - the arts, culture, sports and leisure and F - construction, may have been stimulated by the MONUMENTA Programme which has acted as a catalyst for development in these categories.

In category R, the number of units recorded for use by craft workers in the project area was higher than in the area of influence. The training of craft labour in restoration work, sponsored by the programme within the component "Training of Craftsman and Local Agents of Culture and Tourism", may have encouraged trainees to set up office in the project area. In the case of Pelotas, the approval of the Term of Reference TOR13005-17 entitled "Professional qualifications for entry level jobs of restoration and conservation of architectural heritage of Pelotas" by invitation to tender n^o.130/2005, enabled the training of 168 people, with an age profile ranging between 18 and 60 years (Programa MONUMENTA & IPHAN, 2007:31).

Furthermore, even within the category R, restoration of the historic building which houses the Municipal Library to be used to promote culture (not registered in 2002) contributed, significantly, to the increase in this category.

In Class F, the area occupied by professionals linked to the construction in the project area was greater proportionally than in the area of influence. Restoration work on historic buildings and the revitalisation of public spaces became key drivers for increased activity in this sector.



Figure 3. Municipal Library, 2009.



Figure 4. Grand Hotel, 2008.

However, other activities saw an increase in floor space in the area of influence and a decrease in the project area. This is the case in category I - hospitality industry, M - professional, scientific and technical activity and Q - Health and social care. Category I results were a surprise, since growth in the tourism sector is a significant indicator when analysing cultural development. Fortunately, the reason why this reduction took place is known. The Grand Hotel, located in Coronel Osorio Square (project area), was temporarily acquired by Pelotas Town Council in 2003 closing it temporarily. The loss of 4.150m² of floor space occupied by the hotel in the project area adversely affected the figures, which came out negative for category I. If this hotel had continued in operation, it would have produced growth in this category. But this situation is set to change. According to information on the Council Town's website, it plans to reopen the hotel and in addition establish a training facility - a Hotel School, with professional courses at the technical, undergraduate and post-graduate levels.

Fluctuation in percentages in the different categories mentioned in this article may be linked to the amounts charged for floor space in properties located in the project area and in the area of influence, after the effects of the implemented Programme were seen. This study is being carried out in order to identify factors that may have influenced changes in land use.

With the results obtained in this investigation, it was possible to identify the closure or the emergence of local units or establishments, economic activities and the expansion of existing ones. Through the use of a georeference program, it is possible to see where those changes are happening. That is to say, an analysis at this level lets you follow market trends from the perspective of land use. Understanding these trends and these transformations is the basis for the formulation of public policies aimed at certain types of incentive activity in strategic locations in the urban space, more precisely, activities that can enhance and strengthen the recognition and preservation of historical heritage in our cities. For that reason, the results of this analysis are designed to assist in urban and regional planning by the relevant public authorities.

Endnotes

¹ Since its creation by Law Nº.378 in 13/01/1937, SPHAN has undergone several name changes: DPHAN - National Department of Historic and Artistic Heritage in 1941, (Decree-Law Nº.8534, in 02/01/1946), IPHAN - National Institute of Historic and Artistic Heritage (Decree Nº.66967 in 27/07/1970), then SPHAN (Decree Nº.84198 in 13/11/1979), exerting regulatory function in conjunction with the National Pro-Memory Foundation, acting as the executive body. Later, it became IBPC - Brazilian Institute for Cultural Heritage (Decree Nº. 99492 in 03/09/1990), extinguishing the aforementioned bodies. Finally, it changes again into IPHAN (Provisional Measure Nº.752 in 06/12/1994), an acronym still in use today.

- ² The Urban Sets of National Monuments corresponds to a group of monuments recognized by IPHAN situated outside the Historic Site, but within the urban area and maintaining close relationships (Brazil, 2006).
- ³ According to the provisions of the Programme's Operating Regulations (2006), the project area is the actual space that benefits from resources under the programme. It is part of the investment of public or private buildings and public spaces (streets, avenues and squares). In the municipality of Pelotas, the project area is situated on the 2nd urban zone of cultural heritage preservation, where Coronel Osorio Square and surrounding buildings are located, known as the heart of Pelotas' Historic Centre.
- ⁴ The Programme's Operating Regulations (2006) provide that the area of influence is the territorial space surrounding the project area, where projects may be undertaken to ensure economic sustainability of the investment. In the municipality of Pelotas, the area of influence is located predominantly in the 1st urban zone of cultural heritage preservation, containing a set of properties with historic and cultural value.
- ⁵ The municipality is committed to maintaining the Preservation Fund for 20 years and also to add to the annual budget the minimum amount specified, appraised every two years (BRAZIL, 2006).
- ⁶ The Cultural Heritage Inventory of Pelotas, dated on December 2004, consists of a list of properties with historic, artistic, cultural and / or architectural relevance and its purpose is to preserve the complex of buildings in their urban context (PMPEL, SMC: 2007) through the Municipal Pelotas Law Nº.4.568, of 07/07/2000, Nº. 4778, of 04/01/2002, Nº.4.803 of 12/04/2002 and Municipal Pelotas Decree Nº.4.490 of 27/02/2003.
- ⁷ The area that benefited from the programme was calculated using AutoCAD 2010, based on the Urban Plan "48_MUB Lotes.dwg", held by the Department of Memory and Heritage (Culture Division) of Pelotas Town Council.
- ⁸ The word "Tombamento" comes from "the Tower of Tombo", the Portuguese national archive, where even today important documents are held, including originals dating back as far as the ninth century. The "Tombamento" action is accomplished through administrative action, defined by Decree-Law Nº. 25 of 30/11/1937. It can occur in the three spheres of government: federal, through IPHAN, the State and / or the City. Through the "Tombamento", cultural heritage is protected by a special legal regime, ensuring their existence for future generations.

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