

## Chapter Six

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### **The operation of commercial signage controls in different urban contexts and residents' perceptions and evaluations of historic city centres**

#### MAIN STRUCTURE OF CHAPTER SIX

- 6.1 Introduction.
- 6.2 Commercial signage approaches adopted in Oxford, Gramado and Pelotas.
- 6.3 User perception and evaluation of commercial signage controls.
- 6.4 User perception and evaluation of historic city centres.
- 6.5 Conclusion.

#### 6.1 INTRODUCTION

This chapter addresses four of the research objectives of this study:

a. Research objective B: Investigation of what issues are involved in the operation of commercial signage controls adopted in a historic city centre of a country where a national commercial signage approach is applied to help local authorities to guide and control commercial signs, and in historic city centres of a country where there is no national commercial signage approach to help local authorities to design and apply commercial signage controls.

b. Research objective C: Identification of the influence of different commercial signage approaches on the streetscape of historic city centres in terms of (i) order among commercial signs and buildings, (ii) the relationship between aesthetic composition of these media and historic building facades, and (iii) general visual character of commercial street facades.

c. Research objective D: Analysis of user perception and evaluation of commercial signage controls in historic city centres with regard to the (i) necessity of commercial signage controls, (ii) public participation in the development of these controls, and (iii) physical aspects that need to be taken into account in these controls.

d. Research objective E: Evaluation of the effects that different commercial signage approaches have on historic city centres through residents' perceptions and evaluations of the (i) appearance of the historic city centre, (ii) city centre functions, (iii) city centre

image, and (iv) wayfinding through commercial signs.

In the introduction of this chapter, a brief description of the urban context of each case study is presented. Next, the chapter is divided into two main sections. The first section describes the findings from the qualitative analysis; it identifies how commercial signage controls are approached in each case study by analysing legislation and guidelines related to commercial signage controls, and transcription of interviews with the City Council officers. This discussion also shows the influence of marketing the city and urban tourism strategies on the control of commercial signs in each case study (research objective B). The influence of commercial signage approaches on the appearance of commercial street facades in Oxford, Gramado, and Pelotas is also presented through the findings from systematic observations, notes, and photographs taken on-site (research objective C).

The second section of this chapter presents the results from the quantitative analysis of questionnaire type B. Responses of residents in Oxford, Gramado and Pelotas, and lay people and professionals are analysed and compared. This section discusses user responses related to: (i) the necessity for the application of commercial signage controls, (ii) user desire to get involved in the development of these controls, (iii) those physical features of the streetscape recognized by users as important in the development of commercial signage controls (research objective D), (iv) city centre appearance, (v) city centre functions, (vi) city centre image, and (vii) wayfinding through commercial signs (research objective E). This section also explores the relationship between these last three aspects and user satisfaction with the appearance of the city centres, and user perception and evaluation of order among commercial signs. This part of the chapter is designed to answer the research questions by testing propositions 1 and 2 and working hypotheses A and B (see Table 6.1). Sub-hypotheses developed from these working hypotheses were designed to guide the statistical analysis (see Appendix 6.1); the results from the statistical testing of these are presented in this chapter as findings related to working hypotheses A and B.

Table 6.1: Propositions and working hypotheses tested in Chapter Six (Source: author).

PROPOSITIONS	WORKING HYPOTHESES
<b>Proposition 1:</b> There is no relationship between the commercial signage approach adopted in historic city centres and user perception and evaluation of the necessity for commercial signage controls, public participation in the development of these controls, and physical aspects that need to be taken into account in these controls.	<b>Working hypothesis A:</b> There are no differences between users, who live in places where different commercial signage approaches are applied, in terms of perception and evaluation of necessity for commercial signage controls, public participation in the development of these controls, and physical aspects that need to be taken into account in these controls.
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Continuation:	
PROPOSITIONS	WORKING HYPOTHESES
<b>Proposition 2:</b> There is a relationship between the commercial signage approach adopted in historic city centres and user perception and evaluation of historic city centres in terms of appearance, city centre functions, city centre image, and wayfinding through commercial signage.	<b>Working hypothesis B:</b> Historic city centres where different commercial signage approaches are applied are perceived and evaluated differently in terms of appearance, city centre functions, city centre image, and wayfinding through commercial signage.

To conclude, this chapter sets out the preliminary results of the thesis in order to begin to answer the research questions.

### 6.1.1 The urban context of each case study

The contextualization of the case studies is fundamental to provide a general picture of the different urban contexts that the participants of this investigation experience (Silverman, 2005, pp.113-115; Cherulnik, 1993, pp.5-11). General information of the County of Oxfordshire and the Federal State of Rio Grande do Sul, and of the cities of Oxford, Gramado, and Pelotas are presented below.

#### 6.1.1.1 Oxfordshire (England) and Rio Grande do Sul (Brazil)

**Oxfordshire** is in south-east England (see Figure 6.1), and it is divided into five local government districts: Oxford, Cherwell, Vale of the White Horse, West Oxfordshire, and South Oxfordshire. The main centre of the population is the city of Oxford. A total of 605,488 people live in Oxfordshire, which has an area of 2,605 km<sup>2</sup>; the demographic density is 241 people per km<sup>2</sup>. The majority of residents are English. The largest group of immigrants came from Europe but other ethnic groups are also found but to a much smaller extent: Indian, Pakistani, Black Caribbean, Asian groups, Black Africans, and Bangladeshi (National Statistics, 2001). This county has one of the major tourism industries of England. This area is also noted for the concentration of performance motor sport companies and facilities; Oxford University Press has headed a concentration of print and publishing firms; and the University of Oxford is also linked to the concentration of local biotechnology companies (Mackay, 1993, pp.vii-xi).

**Rio Grande do Sul** is the southern most Federal State in Brazil (see Figure 6.1), and it has 496 cities; among the main cities are Porto Alegre (State Capital) and Pelotas. The cities of Gramado and Canela are highlighted tourist destinations. A total of 10,200 million people live in an area of approximately 282,062 km<sup>2</sup>; the demographic density is 38,49 people per

km<sup>2</sup>. The population consists primarily of the descendants of European immigrants, especially Portuguese, Italians, and Germans. Groups of Poles, Spanish, Russians, Lithuanians, Ukrainians, and Jews are also found (IBGE, 2005). Rio Grande do Sul is known for grain production, viticulture, ranching, and for its industrial output. Ecotourism is popular in the cities of Gramado and Canela. The cold weather is among the attractions for tourism in Rio Grande do Sul (Urbim, 1999, pp.70-110).

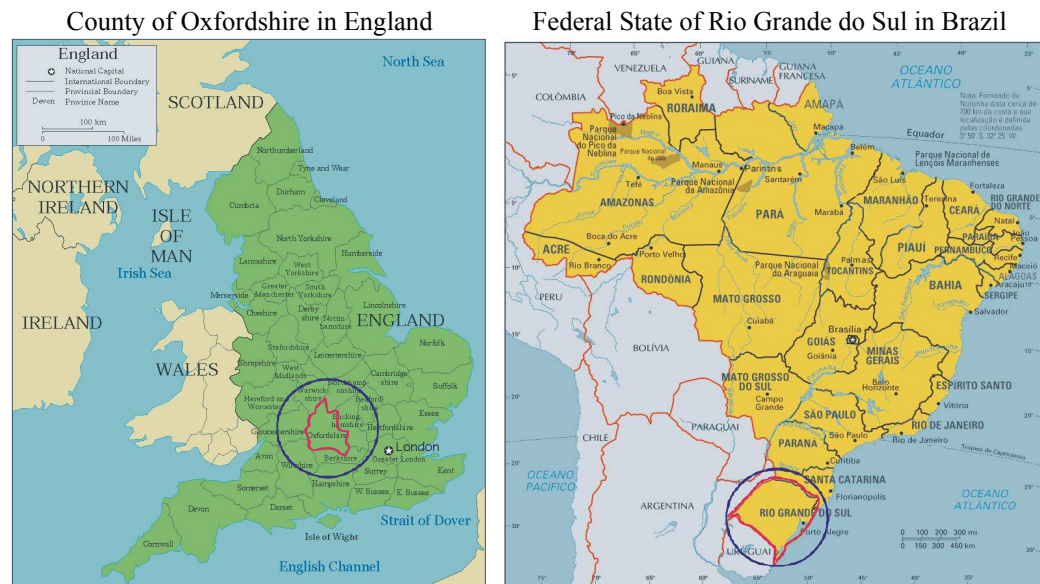


Figure 6.1: Location of the County of Oxfordshire in England, and the Federal State of Rio Grande do Sul in Brazil (Source: author).

### 6.1.1.2 Cities of Oxford, Gramado, and Pelotas

**Oxford**, in Oxfordshire, is situated 82,7 km northwest of London. According to Tyack (1998, p.1), this city owes its origins to the expansion of urban life in England, which occurred in the late 9th and 10th centuries. This city was first mentioned in written records in 900 A.D, and, after the Second World War, became a recognized centre of research activities, especially in the sciences and social science. Oxford is recognized as one of the most important historic cities in England (Wikipedia, 2006c; Tyack, 1998, pp.xi-37, 229; Kennedy, 1998, p.8; Rodwell, 1974, pp.133-135). The influx of migrant labour to the car plants, recent immigration from south-east Asia, and a large international student population have provided Oxford with a cosmopolitan character. By the early twentieth century, Oxford experienced rapid industrial and population growth, with the printing and publishing industries becoming well established by the 1920s. In the present time, the city is mainly characterized by the academic life promoted by two Universities: University of

Oxford and Oxford Brookes University. In terms of streetscape, according to Kennedy (1998, p.5), the city centre of Oxford is comprised of “shops, offices and, as then, the colleges so that the population is transient”. This area is characterized by preserved historic buildings and intense commercial activities. Gerard Manley Hopkins describes the visual character of Oxford as “Towery city and branchy between towers” (Tyack, 1998, p.343; see Figure 6.2).



Figure 6.2: City centre of Oxford in England (Source: author).

**Gramado**, in the Federal State of Rio Grande do Sul, is located 120 km north of Porto Alegre, the State Capital. This city was once part of “Santo Antonio da Patrulha”, which was one of the four first most important municipal localities that characterized the history of Rio Grande do Sul (Barroso in Weimer, 1992, p.44). The majority of its early inhabitants were Swiss, German, and Italian immigrants, who gave the city a unique visual character compared to other Brazilian places; its character was influenced by the architecture and lifestyle brought by them. During the early 1950s, four German immigrants, Roosenfeld, Nelz, Renner and Knorr, arrived in Gramado with progressive views, and they began to buy land in order to avoid disordered urban growth, which had already begun in other Brazilian cities and towns. Araucaria pines and hydrangeas began to be cultivated by these immigrants, and today the landscape of Gramado is characterised by this vegetation, which forms a green belt around the city (Daros & Barroso, 2000, pp.25-31). Gramado has been recognized as a city since 1954, and, since then, the local authority has promoted this place as a national tourist attraction, and its particular landscape is one of its visual appeals (Zatti, 1999, pp.143-153). In terms of streetscape, the city centre of Gramado is characterized by contemporary buildings; few original buildings from the nineteenth century and the beginning of the twentieth century can be seen in the city centre today. The visual character of Gramado has been re-designed: older buildings have been

demolished to make way for new buildings, which try to reproduce the architectural style brought by the first immigrants (Weimer, 1992, p.74; see Figure 6.3).



Figure 6.3: City centre of Gramado in Brazil – new buildings that try to reproduce the architectural style brought by the first immigrants (left); an original building from the early period of the city that is still preserved (right) (Source: author).

**Pelotas**, also in the Federal State of Rio Grande do Sul, is located 249 km from Porto Alegre and 150 km from the Uruguayan border. It is one of the most important historic cities in Rio Grande do Sul, and is recognized by its cultural and historic role in the urban development of this State. In 1943 Pelotas was recognized as a city but, before that, this place was already well-known across the country. In the nineteenth century, Pelotas was known as one of the most prosperous centres of cultural and commercial activities in Brazil, and the richest city of the State. During this period, several remarkable buildings were built in the city, and today they still portray the visual character of Pelotas. The majority of immigrants came from Portugal, and their influence determined many features of the local character, culture, and architecture of the city. German immigrants also came to Pelotas, as did other European groups, but in smaller numbers. The increasing economic development of the city was brought to a halt by the economic circumstances created after the First World War (1914-1918) (Arriada, 1994, pp.83-134). In the present time, Pelotas has a flourishing peach industry and is well known for its production of traditional Portuguese sweets. This city hosts two universities responsible for an important part of the local economic development, and it is the biggest and most developed commercial centre in the southern part of Rio Grande do Sul. In terms of streetscape, the city centre of Pelotas is characterized by historic buildings dating from the nineteenth century, which are, in general, covered by commercial signs; few historic buildings are not covered by these media (Portella, 2003, pp.89-92; Schlee & Moura, 1998, pp. 10-14; see Figure 6.4).



Figure 6.4: City centre of Pelotas in Brazil – buildings covered by commercial signs (left); a historic building not covered by these media (right) (Source: author).

Table 6.2 indicates general characteristics of Oxford, Gramado and Pelotas, and Figure 6.5 shows the location of these case studies.

Table 6.2: Total population, area and demographic density of Oxford, Gramado and Pelotas (Source: IBGE, 2005; Natiomaster, 2004; National Statistics, 2001).

General characteristics	OXFORD	GRAMADO	PELOTAS
Total population	134,248 habitants	33,278 habitants	334,101 habitants
Area	45.59 km <sup>2</sup>	237 km <sup>2</sup>	1921 km <sup>2</sup>
Demographic density	3,183 hab/ km <sup>2</sup>	140,4 hab/ km <sup>2</sup>	207,7 hab/ km <sup>2</sup>

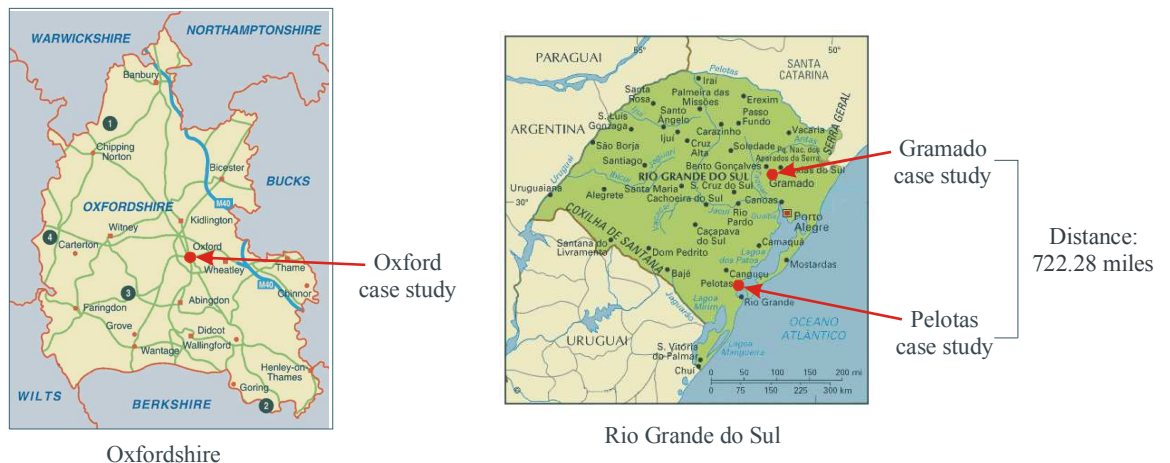


Figure 6.5: Geographic location of the case studies of Oxford, Gramado and Pelotas (Source: author).

## 6.2 COMMERCIAL SIGNAGE APPROACHES ADOPTED IN OXFORD, GRAMADO, AND PELOTAS

This section refers to research objective B presenting the issues involved in the operation of commercial signage controls adopted in Oxford, Gramado, and Pelotas. The findings from the analysis of (i) legislation and guidelines related to commercial signage controls,

and (ii) transcriptions of the interviews conducted with City Council officers (see Appendix 5.15) are presented in the next paragraphs. The results related to the factors pointed out in Chapter Five (see section 5.3.3.4) and the following issues identified by the analysis of the interviews are discussed in this section: (i) the political context of each case study, (ii) the controls related to franchise signs, (iii) the attitude of residents in terms of implementation of commercial signage controls, (iv) the identification of people responsible for the analysis of planning applications of new commercial signs, (v) the suggestions made by the local community in terms of the appearance of new commercial signs, (vi) the persuasion of people, mainly shop owners, to respect commercial signage controls, (vii) the analysis of what is missing in the current and/or future commercial signage controls, and (xix) the discussion about new commercial signage controls, which have been proposed by the local authority.

Comparing Oxford and Gramado, the main difference between the commercial signage controls adopted in each city lies in their objectives. In Oxford, controls are applied to protect the historic character of the city centre, mainly in conservation areas and to listed buildings. In Gramado, these controls are designed to reinforce the visual character of the city promoted by the local authority as the “Brazilian Switzerland”. Protection of historic buildings was not identified in any document reviewed in this research as an issue taken into account by the local authority of Gramado. In addition, the findings from the interview with the City Council officers of Gramado show that the promotion of this city as the “Brazilian Switzerland” through marketing the city and urban tourism strategies employed by the local authority clearly influences the way that commercial signage controls are designed (see section 6.2.1).

In Pelotas, the current commercial signage control, which was implemented in 1970, aims to protect the built environment and reduce visual pollution. However, this control lets shop owners display shopfronts and window displays in conservation areas without the knowledge of the City Council. Consequently, as identified by the researcher’s Masters dissertation (2003), historic buildings are harmed by these media, and the resulting visual pollution is an increasing problem in Pelotas. Part of this situation is also linked with the historic context of this city during the end of 1960s (see section 6.2.2). Even though the local authority is now interested in the design and implementation of a new and more effective commercial signage control to protect the historic heritage of the city, its



approach in applying this kind of control is still inadequate. The following quotation extracted from the transcription of the interview conducted with the City Council officers of Pelotas illustrates how the local authority approaches the enforcement of commercial signage controls in this city; this may be one of the reasons why visual pollution is a problem in Pelotas:

“after a shop owner displays his commercial sign on his building, it is too difficult to remove it (...) if it is removed, it creates a heavy atmosphere in local society. We have examples of shop owners that want their shops to stand out from the others (...); for example, there is a confectioner at Goncalves Chaves Street who displayed a gigantic sign in a triangular shape on his shop. It is totally against any kind of guideline to control commercial signage, even the Code of Postures<sup>1</sup> (...); if you go to the site and ask him to take the sign down, he will start to complain that he is helping the city in a lot of other ways like in (...) the Fenadoce [a national event that happens in the city every year], and the City Council goes there to remove his shopfront. In some respects, he has a point (...)” (City Council officer in Pelotas, the total transcription is presented in Appendix 5.15).

On the other hand, the results from the interviews with City Council officers in Oxford and Gramado indicate that the enforcement of commercial signage controls in these cities is, in general, effective, due to the approach adopted by the local authority in dealing with this issue. In Oxford, when irregular commercial signs are displayed, an enforcement notice is sent to the person responsible for these signs, and, if these media are not removed, he or she is prosecuted through the courts. In Gramado, a penalty fee is applied to any shop owner who displays irregular commercial signs; these elements are also removed by the City Council. If the removed signs, kept in a public deposit, are not collected by their owners within 24 hours, these media are incinerated. Although the City Council of Gramado is fully committed to the control of commercial signs, some irregular media are still noticeable in the city centre, such as at Borges de Medeiros Avenue (see Figure 6.6). In this case, the power of the local authority appears to be ineffective in dealing with a small number of shop owners who do not mind paying the penalty fee and replacing the removed signs with new ones.

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<sup>1</sup> In the Brazilian context, Code of Postures means a group of policies, which indicate the attitude of the local authority to a particular situation, or the way in which it should deal with a particular situation.



Figure 6.6: Irregular signs displayed on buildings in the city centre of Gramado at Borges de Medeiros Avenue (Source: author).

Comparing the Brazilian case studies, the differences between the commercial signage control approaches adopted in Gramado and Pelotas lie in two issues: (i) the political context, and (ii) the level of public participation. In Gramado, since 1954, the local authority during different municipal administrations (the local authority in Brazil is elected every four years) has been following the same general principles and political ideology to make Gramado a tourist destination. On the other hand, in Pelotas, every time a new local authority is elected, projects started by the former government are usually forgotten. This research recognizes that this makes it difficult to implement any kind of aesthetic control because any plan to improve the appearance of the city centre requires a long term commitment. In relation to the level of public participation, in Gramado, like Oxford, everyone can make comments during the process of development of commercial signage controls. In Pelotas, public participation does not happen at all, although some advertisers and a few shop owners are invited by the City Council to partake in informal discussions concerning guidelines to control shopfronts and window displays. However, a public meeting open to the local community and members of civic societies is not on the agenda. This fact may influence the way that residents perceive themselves in the process of commercial signage control in Pelotas.

With regard to the analysis of the interviews conducted with City Council officers, this research identified that, in Oxford and Gramado, if irregular commercial signs are displayed in the city centre, local people express their disapproval to the City Council through letters, phones calls, and/or local media. In both cases, residents feel committed to ensure that the guidelines proposed by the local authority have been respected by shop owners. This commitment might happen because they participate in the process of the

development of guidelines to control commercial signage. In Pelotas, on the other hand, if irregular commercial signs are displayed in the city centre, local people do not denounce this situation because they believe that the local authority will not do anything (Portella, 2003). In addition, the fact that they do not have any participation in the process of the development of commercial signage controls may contribute to this lack of commitment.

In addition, another main difference found among the commercial signage control approaches adopted in the case studies is related to the attitude of shop owners in relation to the commercial signage controls. According to the City Council officers interviewed by the researcher, (i) usually in Oxford, shop owners tend to respect the legislation and guidelines defined by the local authority, while (ii) in Gramado, in general, they are in favour of this kind of control, but if a few shop owners decide not to follow the guidelines, this is enough to make this entire user group adopt the same posture. Therefore, the administrative control of Gramado City Council is fundamental to ensure that shop owners do not disrespect the regulations. In Pelotas, shop owners usually do not respect the legislation and guidelines related to commercial signage; if the City Council does not provide an effective control on-site, the implementation of any kind of aesthetic control becomes useless in this city.

The main results from the analysis of (i) the legislation and guidelines related to commercial signage controls, and (ii) the transcription of the interviews are summarized in Table 6.3. These findings suggest that the appearance of the city centre of each case study reflects the way that commercial signage controls are approached. A detailed discussion of the influence of commercial signage controls on the appearance of the city centres of Oxford, Gramado, and Pelotas is presented in sections 6.2.1 and 6.2.2 of this chapter.

Table 6.3: Issues related to the commercial signage controls adopted by the local authority in the historic city centres of Oxford, Gramado and Pelotas (Source: author).

<b>ISSUES RELATED TO THE COMMERCIAL SIGNAGE CONTROLS ADOPTED IN THE CITY CENTRES OF OXFORD, GRAMADO, AND PELOTAS</b>	
<b>1. COMMERCIAL SIGNAGE CONTROLS REVIEWED IN THIS THESIS</b>	
<b>OXFORD</b>	<ul style="list-style-type: none"> <li>• Planning Policy Guidance 19: outdoor advertisement control (1992).</li> <li>• Statutory Instrument 1992 n° 666, Control of Advertisements.</li> <li>• Shopfronts and Advertisements in historic towns.</li> <li>• Oxford Local Plan 2001-2016, section 12.8.</li> <li>• Regulation related to alterations in listed buildings and conservation areas that can be linked to commercial signage controls: Planning Act 1990 - Listed Buildings and Conservation areas (see Appendix 6.2).</li> </ul>
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<b>ISSUES RELATED TO THE COMMERCIAL SIGNAGE CONTROLS ADOPTED IN THE CITY CENTRES OF OXFORD, GRAMADO, AND PELOTAS</b>	
<b>1. COMMERCIAL SIGNAGE CONTROLS REVIEWED IN THIS THESIS (continuation)</b>	
<b>GRAMADO</b>	<ul style="list-style-type: none"> <li>• Former commercial signage control: the Municipal Law n° 1255/1994</li> <li>• Current commercial signage control: the Decree of Law n° 036/2005.</li> <li>• New law that has been analysed by Town Councillors: the Code of Postures (see Appendix 6.3).</li> </ul>
<b>PELOTAS</b>	<ul style="list-style-type: none"> <li>• Current commercial signage control: Law n° 1870/1970, the Code of Postures</li> <li>• New law that has been analysed by Town Councillors: the Project of law n°25.10.2004 (see Appendix 6.4).</li> </ul>
<b>2. GENERAL CHARACTERISTICS OF THE COMMERCIAL SIGNAGE CONTROLS</b>	
<b>OXFORD</b>	The controls are restricted in relation to listed buildings and conservation areas. In other zones, these controls are more general.
<b>GRAMADO</b>	Very restricted. Until the new law is approved, only a standard commercial sign defined by the City Council can be displayed in the city.
<b>PELOTAS</b>	The Code of Postures (Chapter VI) has a range of guidelines related to shopfronts and window displays. However, the majority of these are described in subjective terms, such as "Art. 84. The display of commercial signs is not allowed when these media are manufactured in <i>inadequate</i> materials." What does <i>inadequate</i> materials mean? In order to help the control by the City Council, these guidelines should be described in objective terms related to physical characteristics of commercial signs, such as " <i>shopfronts manufactured in plastic are not allowed</i> ".
<b>3. MAIN AIMS OF THE COMMERCIAL SIGNAGE CONTROLS</b>	
<b>OXFORD</b>	<p><b>General aims:</b></p> <ul style="list-style-type: none"> <li>(i) Protect the historic character of the city. This protection is mainly focused on conservation areas and in historic buildings.</li> <li>(ii) Order commercial streetscapes.</li> </ul> <p><b>Aims of specific legislation:</b></p> <ul style="list-style-type: none"> <li>(i) Statutory Instrument defines whether advert consent is actually required.</li> <li>(ii) Local Plan policy and guidance highlights tighter controls within sensitive areas of the city.</li> <li>(iii) Planning Act 1990 (Listed Buildings and Conservation areas) allows the local authority seeks to specific consents if the advert affects special character of listed buildings and conservation areas.</li> </ul>
<b>GRAMADO</b>	<p><b>General aim of the current law:</b></p> <ul style="list-style-type: none"> <li>(i) Avoid visual pollution during the period that the new law has been analysed.</li> </ul> <p><b>General aim of the new law:</b></p> <ul style="list-style-type: none"> <li>(i) Avoid visual pollution in the whole city through the control of the appearance of commercial signage and number of these media on building facades. It is done in order to create a place perceived and evaluated positively by residents and tourists.</li> <li>(ii) Create and promote a city identity: a unique style that difference Gramado of other places. In this regard, the controls are also addressed to create an identity for access roads, streets and so on.</li> <li>(iii) Create an ordered city centre to attract people and promote tourist attractions.</li> </ul>
<b>PELOTAS</b>	<p><b>General aim of the current law:</b></p> <ul style="list-style-type: none"> <li>(i) Protect the built environment and avoid visual pollution.</li> </ul> <p><b>General aim of the new law:</b></p> <ul style="list-style-type: none"> <li>(i) Protect the historic heritage.</li> <li>(ii) Reduce visual pollution.</li> <li>(iii) Contribute to create a positive image of the city centre in order to attract people and allow them to see the building facades which are now hidden by commercial signs.</li> <li>(iv) Increase tourist activities and visual quality of the built environment.</li> </ul> <p>One specific aim of this new law is to define the maxim limit of percentage of building facades that can be covered by commercial signs. The researcher' Masters dissertation (Portella, 2003) recommends 3% in listed buildings. However, the City Council believes that shop owners would not respect this limit because it is too extreme compared to the actual situation; so, it defines a limit of 10%.</p>
<b>4. POLITICAL CONTEXT OF EACH CASE STUDY THAT MIGHT AFFECT THE IMPLEMENTATION OF COMMERCIAL SIGNAGE CONTROLS</b>	
<b>OXFORD</b>	Independently of the political party that is in power, the Planning Policy Guidance 19 (1992) ensures that the City Council adopts commercial signage controls.
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<b>4. POLITICAL CONTEXT OF EACH CASE STUDY THAT MIGHT AFFECT THE IMPLEMENTATION OF COMMERCIAL SIGNAGE CONTROLS (continuation)</b>	
<b>OXFORD</b> (continuation)	<b>Main difference between England and Brazil:</b> In Brazil, there is no national approach to control commercial signage leaving local authorities with the responsibility to develop commercial signage controls, and to decide whether these controls are necessary in historic cities. Each time that a political party of a local government changes due to new elections, the initiatives developed by the former government are usually not implemented by the new politicians.
<b>GRAMADO</b>	The same political party has been in the local power for the last 8 years; it will be like this until 2008, according to the results of the last election (2004). The fact that the same party has been in power for almost one decade helps the continuation of projects allowing the design and implementation of a long plan of development.
<b>PELOTAS</b>	Since the 1980s, the local government has been interested in designing and implementing a new commercial signage control. The former local government (2000-2004) decided to design these regulations. However, when the new local government was elected (2004-2008), the project of law which had been already sent to City Councillors was returned to the Planning Department for further analysis. This process makes implementation of new regulations very slow, since there is no continuation of projects which had been proposed by former governments.
<b>5. PEOPLE RESPONSIBLE FOR DEVELOPMENT OF COMMERCIAL SIGNAGE CONTROLS</b>	
<b>OXFORD</b>	Development Control Officers (unlisted buildings) and Conservation Officers (listed building).
<b>GRAMADO</b>	Planning Department Officers and Environment Department Officers.
<b>PELOTAS</b>	Planning Department Officers, Quality Environment Department Officers, Culture Department Officers, and City Council Lawyers.
<b>6. EFFICIENCY OF COMMERCIAL SIGNAGE CONTROLS WITHIN THE CITY CENTRE</b>	
<b>OXFORD</b>	In general, the commercial signage controls are effective. The greatest efficiency can be seen in conservation areas and on historic buildings. If properties are not listed and are not in a conservation area, only one reason can be applied to refuse a planning application for a new commercial sign: traffic considerations.
<b>GRAMADO</b>	The commercial signage control (Decree of law) is effective.
<b>PELOTAS</b>	The Code of Postures is not effective since the guidelines are described in subjective terms and there is no control by the City Council. This Code defines that, in general, shopfronts and window displays can be displayed without the knowledge of the City Council.
<b>7. PEOPLE CONSULTED DURING THE DEVELOPMENT OF COMMERCIAL SIGNAGE CONTROLS</b>	
<b>OXFORD</b>	Everyone can make comments during the process of development of commercial signage controls. Public audiences are organized and usually civic societies, such as Preservation Trust, are the most participating groups. People are invited to these audiences through articles published in the local newspaper OX Times.
<b>GRAMADO</b>	Everyone can make comments during the process of development of commercial signage controls. Public audiences are organized and, usually, civic societies, architects, shop owners, and local community leaders are the most participating groups. People are invited to these audiences through articles published in the local newspapers and City Council website.
<b>PELOTAS</b>	Taking the Code of Postures, only City Council officers were consulted during its development. During the development of the new law, members of publicity agencies were invited to discuss the proposed guidelines. However, these users were more interested in regulations to impede informal workers, such as metalworkers, to manufacture shopfronts than to discuss how to avoid the negative effects of these media on listed buildings. Shop owners were also invited by City Council officers but just a few of them participate. These people were invited by City Council officers in person or by phone.
<b>8. ENFORCEMENT OF COMMERCIAL SIGNAGE CONTROLS</b>	
<b>OXFORD</b>	<b>City Council control:</b> The enforcement of the commercial signage controls is done through legislation. To install a new shopfront, a planning application needs to be approved, and a building permit should be given to the shop owner. The City Council has records of all buildings permits, and if it is noted that a shopfront has been displayed without this licence, an enforcement officer is sent to the site. An enforcement notice can require rectification of the irregular situation. Failure to comply can lead to prosecution through the court. Usually, shop owners respect legislation.
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<b>8. ENFORCEMENT OF COMMERCIAL SIGNAGE CONTROLS (continuation)</b>	
<b>OXFORD</b> (continuation)	<b>Public control:</b> If a shop owner displays irregular commercial signs, preservation and civic societies will let the City Council knows; they act as control officers.
<b>GRAMADO</b>	<p><b>City Council control:</b> The City Council has a department called "Centre of Control", which has records of all consents given to shop owners install new commercial signs. Having this information, control officers are on-site everyday in order to ensure that any irregular sign has been displayed. They also regulate if commercial signage displayed on building facades respect the layout approved by the local authority. If any irregularity is noted, a penalty fee is applied to the shop owner, and the irregular sign is removed by the City Council.</p> <p><b>Public control:</b> There is an important support of the local community. Usually, residents contact the City Council to denounce irregular commercial signs. They phone officers, send posts and e-mails, and some of them make their disapproval known through Broadcast TV in a weekly TV program called "Talk Citizen".</p>
<b>PELOTAS</b>	<p><b>City Council control:</b> City Council officers do not implement controls to ensure that the Code of Postures has been respected.</p> <p><b>Public control:</b> Public control does not exist in Pelotas. Residents do not get involved in this issue. Findings of the researcher's Master dissertation (Portella, 2003) suggest that residents do not complain whether irregular signs are displayed because they believe that the City Council will not take any action against it.</p> <p><b>City Council control of the new law:</b> City Council control is defined as fundamental to ensure the implementation of the new commercial signage control. City Council officers suggest that without control, this new regulation will be useless. Control officers will be on-site frequently in order to ensure that irregular commercial signs have been not displayed. Irregular signs should be removed before builders finish putting these on building facades.</p>
<b>9. CONTROL RELATED TO FRANCHISES</b>	
<b>OXFORD</b>	The City Council encourages shop owners to adapt the design of shopfront franchises to the city style than to use a standard design. When a planning application comes in, officers try to persuade shop owners to manufacture commercial signs rather than apply standard solutions on building facades.
<b>GRAMADO</b>	Commercial signage franchises need to be adapted to the standard commercial sign defined by the City Council. Otherwise, these media will be not authorized.
<b>PELOTAS</b>	Considering the Code of Postures, there is no control in relation to commercial signage of franchises. On the other hand, the new commercial signage control suggests that commercial signage of franchises should follow the same guidelines defined for any other commercial sign.
<b>10. ATTITUDE OF PEOPLE IN TERMS OF IMPLEMENTATION OF COMMERCIAL SIGNAGE CONTROLS</b>	
<b>OXFORD</b>	<p><b>Shop owners:</b> Shop owners always respect legislations, and, they almost never display a commercial signage without a planning application approval and a building permit.</p> <p><b>Public participation:</b> If irregular commercial signs or/and bad design commercial signs are displayed mainly in the city centre, local people will contact the City Council.</p>
<b>GRAMADO</b>	<p><b>Shop owners:</b> Without the control of the City Council is very difficult to make shop owners respect the commercial signage control. Usually shop owners are in favour of this regulation, but they just respect these if all members of this class respect as well. If some shops owners begin not following the proposed guidelines, it is enough to make all of them adopt the same attitude.</p> <p><b>Public participation:</b> If irregular commercial signs or/and bad design commercial signage are displayed in the city centre, local people make their disapproval known.</p>
<b>PELOTAS</b>	<p><b>Shop owners:</b> Without the control of the City Council, it is very difficult to make shop owners to respect commercial signage controls. Usually, shop owners do not respect legislations in Pelotas. The City Council assumes that remove irregular signs after these media are finished and put on building facades can creates "a heavy atmosphere in the local community". Taking this context, the new law defines a period which varies between 12 to 24 months for shop owners to re-adapt their commercial signs to the new legislation.</p> <p><b>Public participation:</b> Public participation does not exist as explained earlier (issue number 8 of this table).</p>
<b>11. PROCEDURE TO INSTALL A NEW COMMERCIAL SIGNAGE</b>	
<b>OXFORD</b>	A planning application is needed to install new commercial signs. Only if minored changes are done in an existing sign, an application might be not necessary. If it is not a listed building, and the commercial sign satisfies the regulations determined by PPG19, a planning application might also not be needed.
CONTINUATION ON THE NEXT PAGE.	

Continuation:	
<b>11. PROCEDURE TO INSTALL A NEW COMMERCIAL SIGNAGE (continuation)</b>	
<b>GRAMADO</b>	A planning application is needed to install new commercial signs. If the application is approved, the shop owner needs to pay a licence if he/she is not the owner of the building where the media will be displayed.
<b>PELOTAS</b>	According to the Code of Postures, shopfronts and window displays can be displayed without any planning permission. The new law defines that a planning application will be needed to install new commercial signs.
<b>12. ASPECTS ANALYSED BY THE CITY COUNCIL WHEN A NEW COMMERCIAL SIGN IS INSTALLED</b>	
<b>OXFORD</b>	The relationship between the aesthetic composition of building facades and commercial signs is analysed. It is mainly related to whether the sizes of the new media are in proportion with size of building facades. According to the City Council, signs need to reinforce the visual character of the city. In this regard, size, shape, proportion, colour, fonts of texts, material and the relationship with neighbouring proprieties are considered.
<b>GRAMADO</b>	The City Council analyses whether a commercial sign is appropriate for the urban context. The main issues taken into account are: size in relation to building facades, proportion, material, and font of texts.
<b>PELOTAS</b>	According to the Code of Postures, colour, arrangement in relation to building facades, width, height, and material should be analysed by the City Council. However, as window displays and shopfronts can be displayed without planning application, this kind of control can be done only after the sign is installed. According to the new commercial signage control, size, shape, proportion, colour and mainly the relationship between commercial signage and historic building facades will be analysed through planning applications. Building fenestration is also considered.
<b>13. PEOPLE WHO ANALYSES PLANNING APPLICATIONS OF NEW COMMERCIAL SIGNS</b>	
<b>OXFORD</b>	Development control officers (unlisted buildings) and conservation officers (listed buildings). Property owners that will be affected by the insertion of new commercial signage and civic societies are notified. When a new planning application is submitted, this is advertised in the local newspaper OX Times, and a side note is posted if Listed Building Consent is sought, so people can write their comments to the City Council.
<b>GRAMADO</b>	According to the Decree of law, planning department officers and environment department officers. If the new law be approved, a specific group will be formed to analyse planning applications of commercial signs. This will be called "Council group" and be comprised of one Planning Department officer, one Environment Department officer, one interior designer, one publisher, and members from the local community.
<b>PELOTAS</b>	According the Code of Postures and the new law, Planning Department officers who are architects.
<b>14. SUGGESTIONS MADE BY THE LOCAL COMMUNITY IN TERMS OF THE APPEARANCE OF NEW COMMERCIAL SIGNS</b>	
<b>OXFORD</b>	The planning application will come back to the shop owner, and officers will ask him/her to consider the suggestions made if comments made by members of the local community and sent to the City Council were based on valid reasons.
<b>GRAMADO</b>	The actual Decree of law does not take into account suggestions made by the local community in terms of the appearance of commercial signs. If the new commercial signage control is approved, suggestions made by the "Council group" (issue 13 of this table) will be taken into account in the analysis of new commercial signs. According to their suggestions, shop owners will be asked or not to make changes in their commercial signage design.
<b>PELOTAS</b>	The Code of Postures and the new commercial signage control do not take into account suggestions made by local people in terms of the appearance of new commercial signs.
<b>15. PERSUASION OF PEOPLE TO RESPECT COMMERCIAL SIGNAGE CONTROLS</b>	
<b>OXFORD</b>	The City centre manager is an important person on this subject. He is employed partly by the City Council and partly by private retailers. He is a useful link between community and the local authority in order to persuade shop owners to follow the commercial signage guidelines.
<b>GRAMADO</b>	City Council seeks to persuade people to support the actual decree of law and new legislation through public audiences. In these meetings, local people make their comments about the actual and the future legislation. The City Council explains why these controls are so important to create and maintain the city identity.
CONTINUATION ON THE NEXT PAGE.	

Continuation:	
<b>15. PERSUASION OF PEOPLE TO RESPECT COMMERCIAL SIGNAGE CONTROLS (continuation)</b>	
<b>PELOTAS</b>	Considering the Code of Postures, the City Council does not apply any strategy to persuade local people to support this legislation. Taking the new commercial signage control, a pilot area to test the guidelines proposed is defined. The objective is to show how the city centre will look with the implementation of the new commercial signage control. As a result, the local community and shop owners can evaluate on-site the positive results of this legislation. The idea is to persuade shop owners of other areas of the city centre to readapt their signs to the new regulation voluntarily.
<b>16. INFLUENCE OF COMMERCIAL SIGNAGE CONTROLS ON THE APPEARANCE OF THE CITY CENTRE</b>	
<b>OXFORD</b>	The implementation of commercial signage controls result in better quality design and non-standard approaches to corporate images. In this sense, commercial signs help to reinforce the historic appearance of the place but this influence is mainly noted in conservation areas and on listed buildings.
<b>GRAMADO</b>	The commercial signage controls (the actual and the new legislation) are approached as tools to promote an individual visual character to the city. According to the new law, commercial signage should not interfere on the natural and built environment, and should be applied to promote the city as a tourist attraction.
<b>PELOTAS</b>	The actual Code of Postures has a negative influence on the city centre image since it is not effective in controlling the visual pollution. The new commercial signage controls intend to promote the city centre appearance in order to attract people and reinforce the image of the city centre as an attractive place.
<b>17. MARKETING STRATEGIES APPLIED IN THE CITY CENTRE</b>	
<b>OXFORD</b>	The City Council is involved in this issue. Oxford is promoted as a historic, tourist and cosmopolitan centre through marketing strategies. These images are reinforced by aesthetic controls applied by the City Council. The main aspects of the built environment controlled or protected are related to alterations of historic buildings, public spaces, protection of trees and their replacement, streets surfaces, and appearance of new buildings. Guidelines to control commercial signage contribute to reinforcing the image of the city advertised by tourist folders, post cards, Internet websites and so on. This control helps developers and shop owners to understand what in design terms work to the city image. The Tourist Department of the City Council is involved on this issue, and the impact of commercial signage on listed buildings and conservation areas is taken into account by it.
<b>GRAMADO</b>	The City Council is completely involved in marketing the city through different kinds of marketing strategies. It also applies aesthetic controls related to the physical characteristics of built environment. In this sense, commercial signage controls are designed in order to create and enforce the image of Gramado as a tourist attraction known in Brazil as the "Brazilian Switzerland". The new commercial signage control has been designed to regulate not only commercial signs but all advertisements, which promote the city image (such as pamphlets, folders, internet website, and so on). The City Council assumes that people who visit Gramado prefer to spend time in a city centre where shopfronts do not harm the environment, and are in accordance with the image promoted of this place by marketing approaches.
<b>PELOTAS</b>	The City Council has been involved in marketing the city since 2001. This promotion has been done through photographs and postcards of the city centre. However, many times the images promoted by the City Council do not reflect the actual appearance of the city centre of Pelotas. The new commercial signage control has been designed in order to enforce the image of Pelotas as a historic and a tourist centre. This regulation is recognized as one important initiative to promote the city centre as an attractive historic and tourist destination. At the same time, the Department of Tourism of the City Council has been interested in the design of tourist signs. Architects from the Planning Department are designing these signs in order to promote the city as a historic attraction.
<b>18. COMMERCIAL SIGNS AS POSITIVE OR NEGATIVE ELEMENTS TO THE CITY CENTRE IMAGE</b>	
<b>OXFORD</b>	The negative commercial signs are always noted on unlisted buildings since the control implemented on this kind of building is less effective. On the other hand, in conservation areas, commercial signage reinforces the historic side of the city and the presence of non-multiple business. Commercial signs act as "addresses and way markers".
<b>GRAMADO</b>	The majority of signs are noted as positive to the city centre image. These elements match with the appearance of the city centre and reinforce the tourist image of the place.
<b>PELOTAS</b>	Commercial signs are negative influences to the city centre image. The new commercial signage control intends to make these media become positive features in the city through the implementation of regulations related to size, proportion, and colour of these signs. Then, shopfronts and window displays can enforce the image of Pelotas as a historic centre.
CONTINUATION ON THE NEXT PAGE.	



Continuation:	
<b>ISSUES RELATED TO THE COMMERCIAL SIGNAGE CONTROLS ADOPTED IN THE CITY CENTRES OF OXFORD, GRAMADO AND PELOTAS</b>	
<b>19. DEVELOPMENT OF NEW COMMERCIAL SIGNAGE CONTROLS</b>	
<b>OXFORD</b>	The new Local Plan 2001-2016 approved in November 2005.
<b>GRAMADO</b>	The new Local Plan was implemented in the end of 2006.
<b>PELOTAS</b>	The new project of law that has being developed because the current Code of Postures is too permissive. There is no prevision of when this new legislation will be approved.
<b>20. WHAT IS MISSING IN THE ACTUAL OR NEW LEGISLATION</b>	
<b>OXFORD</b>	A specific design guide that helps shop owners to design commercial signage in a very accurate way in relation to the issues that the City Council is looking at.
<b>GRAMADO</b>	The former legislation (not the actual Decree) did not have a focus on create an individual visual character to the city. The actual decree of law and the new legislation takes into account this aspect.
<b>PELOTAS</b>	According to the Code of Postures, two aspects are missing: guidelines to define how physical characteristics of commercial signs should be, and requirement for planning application to install of commercial signage. Both these aspects are considered by the new commercial signage control; however, it is still missing some simulation to illustrate how the appearance of the city centre will improve with the implementation of this new regulation.
<b>21. WHY A NEW LEGISLATION HAS BEEN PROPOSED</b>	
<b>OXFORD</b>	Update the last Local Plan, which was implemented in 1991.
<b>GRAMADO</b>	According to the aims of the City Council of reinforce the visual character of the city as the “Brazilian Switzerland”, the former legislation was too old and needed to be updated.
<b>PELOTAS</b>	The Code of Postures is too generic. There are no specific criteria to guide commercial signs. The researcher' Master dissertation (Portella, 2003) was used by the local prosecutor as a theoretical base to open a civil enquiry against the City Council. This fact contributes to committing the City Council to designing a new legislation to control commercial signage. A civil public action against the City Council was not approached yet because the prosecutor agreed to wait for the approval of the new commercial signage control.

### **6.2.1 Influence of marketing the city and urban tourism strategies on the design and control of commercial signs in the city centres of Oxford, Gramado, and Pelotas**

This section refers to research objective B. It explores the influence that strategies related to marketing the city and urban tourism concepts (see Chapter Three, sections 3.2.1 and 3.2.2) can have on the approach adopted by the local authorities to guide and control commercial signs. In light of this issue, presented below are the conclusions drawn from the data analysis of (i) the legislation and guidelines related to commercial signage controls, (ii) the transcription of the interviews conducted with City Council officers, and (iii) the systematic observations of commercial streets on-site and through photographs.

In Oxford, marketing the city and urban tourism strategies are applied to promote this city as a historic and tourist destination with a visual character built by preserved historic buildings. Postcards of the city centre illustrate this image that is held around the world (see Figure 6.7). In relation to the commercial signage approach adopted by the local

authority, the design and control of commercial signs in conservation areas and on listed buildings is driven by the importance of preserving the history heritage. Aesthetic controls defined by the current Local Plan (2001-2016) guide the layout of new shopfronts, advertisements, and window displays within the city centre. According to Policy RC 13 of this Plan, which regulates shopfronts (Oxford City Council, 2006, p.138), “planning permission will only be granted for new shopfronts whose design and materials respect the style, proportions and character of the existing buildings and enhance the streetscape”.

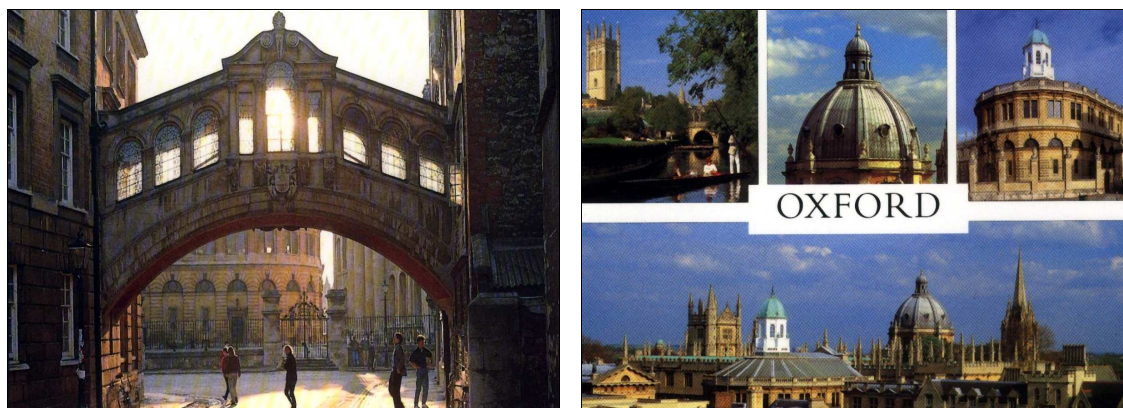


Figure 6.7: Postcards of Oxford promoting this city as a historic and tourist destination (Source: Oxford picture library).

In Gramado, the local authority has designed and adopted restrictive aesthetic controls related to building facades and commercial signs in order to create a historical theme environment of the city. This manufactured environment is also promoted through marketing the city and urban tourism strategies. The image of Gramado as the “Brazilian Switzerland” is advertised through posters, city guides, glossy brochures, postcards, movies, magazines, newspaper and so on (see Figure 6.8). The City Council adopts aesthetic policies, which require building facades to be designed in a “Neo-Bavarian” architectural style (see Appendix 2.2). Similarly, the signage of the entire city is designed to complement this style, and reinforce the manufactured character. This research recognises that the main problem with this kind of approach is that the creation of a manufactured image is most likely destroying the original local character and history of Gramado. This assumption is supported by Levi (2005, p.149), who argues that the important historical attributes of a place can be lost by the development of historical theme environments.

The idea of promoting Gramado as a city which is reminiscent of Alpine settings is inspired by the fact that the majority of its population are descendents of immigrants from

Switzerland, Germany and Italy, and the architectural style brought by them was mainly Bavarian (Daros & Barroso, 1995, pp.89-90). However, the results from the interview with the City Council officers show that the local authority supports the demolition of original buildings, and their replacement by contemporary architecture designed to look like the originals. This kind of architecture, which can be referred to as “pastiche” (Wehmeier, 2000, p.965), has been changing the identity of Gramado. The results from the systematic observations of commercial streets in Gramado indicate that, at least in the city centre, almost all original buildings have been demolished and replaced by their “clones”. Critics argue that the approach adopted by the local authority is wrong, and the visual character of Gramado should comprise the preservation of the historic heritage (Daros & Barroso, 1995, pp.403-408). However, Gramado is recognized as a very popular tourist destination in Brazil, suggesting that tourists may like the manufactured streetscape promoted by the local authority. This city has been experiencing increasing economic development, and the tourist industry has become the main source of jobs for local people.

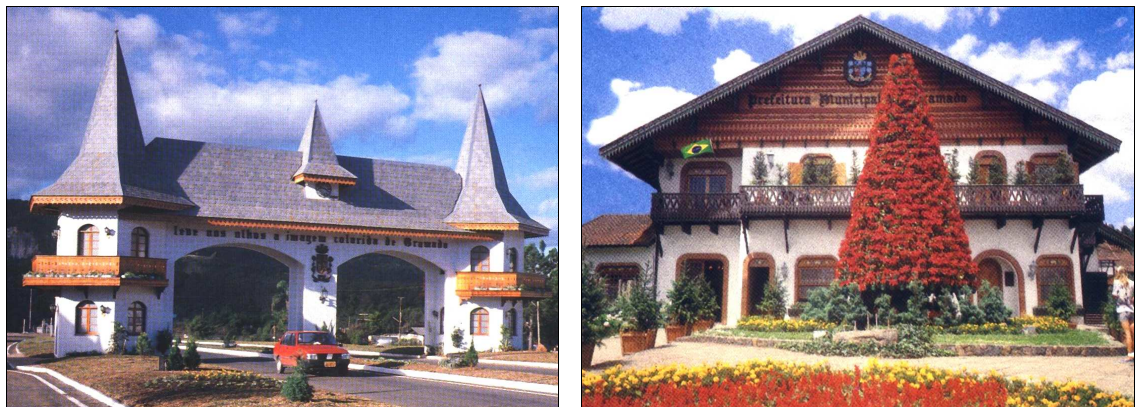


Figure 6.8: Postcards of Gramado promoting this city as a tourist destination characterized by buildings and signs inspired by the “Neo-Bavarian” style (Source: Gramado City Council).

A completely different scenario is evident in Pelotas. The findings from the systematic observations of commercial streets show that this city has a very strong historic character represented by colonial and eclectic buildings still reasonably untouched, apart from the visual pollution caused by commercial signs. However, as mentioned by the City Council officers during the interview session, marketing the city strategies to promote this place as a historic and a tourist destination have just recently been adopted by the local authority. The private sector has already been advertising this place as a well-preserved historic site through postcards, posters, pamphlets, and websites. However, this research recognizes that this advertised image remains largely fictional (see Figure 6.9). Field visits to the study area allowed the researcher to identify that the city centre of Pelotas is significantly

harmful by commercial signs, the maintenance of historic buildings is negligent, and some historic buildings have been abandoned. The fact is that, since 2005, the City Council has been committed to the design and application of controls to protect the historic character of the city, and to promote this place as a historic centre. Many building restoration projects have been implemented, and marketing strategies have also been applied. In this new era of the city centre management of Pelotas, a new commercial signage control has been designed to reduce the visual pollution caused by these media within the city's conservation areas. The implementation of this new control has only just begun, but, according to the City Council officers interviewed, it marks a new stage in which the local authority recognizes the importance of aesthetic controls to preserve and protect the historic heritage of Pelotas against the impacts of disordered commercial signs.












Figure 6.9: Postcards of the city centre of Pelotas promoting it as a preserved historic place. These pictures do not reflect the real appearance of the streetscape in this city centre, which is harmed by commercial signs (Source: Pelotas City Council).

### **6.2.2 Influence of commercial signage approaches on the streetscape of the city centres of Oxford, Gramado, and Pelotas**

This section refers to research objective C, and presents the main conclusions drawn from the data analysis of (i) the systematic observations of commercial streetscapes in the historic city centres of Oxford, Gramado, and Pelotas, and (ii) the documentation review, and archival records (old photographs and postcards showing commercial streets in each case study, and research-generated photographs). These results covered the following issues: (i) level of order among commercial signs and buildings, (ii) relationship between the aesthetic composition of these media and historic building facades, and (iii) general visual character of commercial street facades. The findings are presented in Table 6.4 and in the following paragraphs.

Table 6.4: General characteristics of the commercial streetscape in the historic city centres of Oxford, Gramado and Pelotas (Source: author).

	OXFORD	GRAMADO	PELOTAS
Order among commercial signs and buildings	 ORDERED	 ORDERED (but few irregular signs)	 DISORDERED
Relationship between the aesthetic composition of commercial signs and historic building facades	 In general, commercial signs are designed with regard to the aesthetic composition of historic building facades.	 In general, commercial signs are designed with regard to the aesthetic composition of the few old buildings from the early period of the city still preserved in the city centre.	 In general, commercial signs are designed without take into account the aesthetic composition of historic building facades.
General visual character of commercial street facades	 The visual character is mainly built by historic buildings. These buildings are preserved and protected by commercial signage controls.	 The visual character is mainly built by contemporary buildings. These buildings are classified as Neo-Bavarian (see Appendix 2.2), and designed to create the image of Gramado promote by the local authority as the "Brazilian Switzerland".	 The visual character is mainly built by historic buildings classified as Eclectic (see Appendix 2.2). The majority of these buildings are harmed by commercial signage.

In Oxford, shopfronts and window displays are ordered, and have been designed to respect the aesthetic composition of historic building facades and the historic character of the city. In Gramado, commercial signs are also ordered, but the appearance of the commercial streetscape has experienced many changes. The original visual character of the commercial streets in this city evident in old photographs is now replaced by contemporary buildings whose appearance is influenced by the local authority (see Figures 6.10 and 6.11). The City Council applies restrictive aesthetic controls to new buildings; these regulations define how building facades should be designed in the city centre ensuring that they are based on the Neo-Bavarian architectural style (see Appendix 2.2). These buildings have been changing the visual character of this city, and the design of commercial signs is reinforcing this transformation.



Figure 6.10: Old photographs showing the architectural style brought by the first immigrants to Gramado in 1910s (Source: author).











Figure 6.11: Buildings representing the “Neo-Bavarian” architectural style promoted by Gramado City Council. Main entrance of the city (left), and a typical building facade at Borges de Medeiros Avenue, the main commercial street in the city centre (right) (Source: author).

On the other hand, as highlighted earlier (see section 6.2.1), the original historic character of the city centre of Pelotas still remains; however, it is harmed by commercial signs. This problem began in the 1960s when the importation of new technologies and consumer products instigated the display of bigger and more luminous commercial signs in the city centre. Many of these media began to be manufactured with materials such as acrylic, metal and plastic, plus neon for illumination. These elements were designed to cover almost the whole of a building facade (Portella, 2003, pp.94-97). The first Local Plan of Pelotas, implemented in 1968, and the Code of Postures, implemented in 1970, do not include any guidelines for the protection of the historic heritage of the city. The analysis of these legislation showed that commercial signage controls were not part of the local authority's agenda at that time. The results from this analysis demonstrated that the local authority believed that to modernize the city meant to forget historic character and introduce modern design, including modern architecture, commercial signs, and billboards,

in the historic city centre. Consequently, since that period, the visual pollution in the historic city centre of Pelotas has been increasing each year.

A comparison of old and new photographs of commercial streetscapes in each case study helps to illustrate the visual transformation of the historic city centres of Oxford, Gramado, and Pelotas in terms of visual character and commercial signs (see Table 6.5).

Table 6.5: Comparison between old and new photographs of commercial streets in the historic city centres of Oxford, Gramado and Pelotas (Source: author).

<b>OXFORD</b>	<p style="text-align: center;"><b>High Street (one of the main commercial streets in Oxford city centre).</b></p> <p style="text-align: center;">1900s <span style="float: right;">2007</span></p> <div style="display: flex; justify-content: space-around;">   </div> <p style="text-align: center;">The historic character of this street is still preserved today.</p>
<b>GRAMADO</b>	<p style="text-align: center;"><b>Borges de Medeiros Avenue (the main commercial street in Gramado city centre).</b></p> <p style="text-align: center;">1950s <span style="float: right;">2007</span></p> <div style="display: flex; justify-content: space-around;">   </div> <p style="text-align: center;">Commercial signs are designed respecting the aesthetic composition of few old buildings from the early period of the city still preserved in the city centre.</p> <p style="text-align: center;">1940s <span style="float: right;">2007</span></p> <div style="display: flex; justify-content: space-around;">   </div> <p style="text-align: center;">The real identity of Borges de Medeiros Avenue, comprised of buildings market by the architectural style brought by the first immigrants, has been replaced for a new identity characterized by contemporary buildings known as “Neo-Bavarian” architecture.</p>
<b>PELOTAS</b>	<p style="text-align: center;"><b>Andrade Neves Street (the main pedestrian commercial street in Pelotas city centre).</b></p> <p style="text-align: center;">1870s <span style="float: right;">2007</span></p> <div style="display: flex; justify-content: space-around;">   </div> <p style="text-align: center;">Commercial signs harm historic buildings, and, consequently, the historic character of this street and the whole city centre as well.</p>

### 6.3 USER PERCEPTION AND EVALUATION OF COMMERCIAL SIGNAGE CONTROLS

This section presents the findings from questionnaire type B. The results, relating to research objective D, discuss the perception and evaluation of users from each case study in terms of (i) the necessity for commercial signage controls, (ii) the public participation in the development of these controls, and (iii) the physical aspects of the streetscape that need to be taken into account in these controls. Responses of users from Oxford, Gramado, and Pelotas, and lay people and professionals are compared, and working hypothesis A is tested.

Working hypothesis A: There are no differences between users, who live in places where different commercial signage approaches are applied, in terms of perception and evaluation of necessity for commercial signage controls, public participation in the development of these controls, and physical aspects that need to be taken into account in these controls.

#### **6.3.1 User perception and evaluation of the necessity for commercial signage controls and the public participation in the development of these controls**

The results from the data analysis of questionnaire type B show that the majority of users from Oxford, Gramado and Pelotas, where different commercial signage approaches are applied, agree that commercial signage controls are necessary in the city centre, and they would like to be consulted when these controls are developed (see Table 6.6). People who live in places where commercial signage is ordered (Oxford and Gramado) share the same views with people who live in a place where visual pollution caused by shopfronts and window displays is a problem (Pelotas). In each case study, the findings from a statistical analysis of similarities and differences between perception and evaluation of lay people and professionals show that the majority of users from both these groups share similar views: they agree that commercial signage controls are necessary in city centres, and they would like to be consulted when commercial signage controls are developed. There is no statistical difference between the perceptions and evaluations of these users <sup>2</sup> (see Table 6.7).

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<sup>2</sup> As already explained in Chapter Five, section 5.3.4.3, only significant results are presented in this investigation due to the limit of words of a PhD thesis. Results no significant (probability level > .05) are not showed in numbers such as  $\chi^2=1205.14$ ,  $DF=2$ , **sig.=0.09**. In cases like this, it is just reported as, for example, "there is no relationship between the variables".



Table 6.6: User perception and evaluation of the necessity of commercial signage controls and the desire to be consulted whilst these controls are developed (Source: fieldwork 2005).

Case study		Oxford	Gramado	Pelotas
Q1. Do you think that commercial signage controls are necessary in the city centre?	Yes	104 (91.23%)	118 (98.33%)	126 (99.21%)
	No	6 (5.26%)	2 (1.67%)	0
	I don't know	4 (3.51%)	0	1 (0.79%)
	Total	114 (100%)	120 (100%)	127 (100%)
Q2. Would you like to be consulted whilst commercial signage controls within the city centre are developed?	Yes	75 (65.79%)	108 (90%)	105 (82.68%)
	No	26 (22.80%)	8 (6.67%)	13 (10.24%)
	I don't know	13 (11.41%)	4 (3.33%)	9 (7.08%)
	Total	114 (100%)	120 (100%)	127 (100%)

Table 6.7: User perception and evaluation of the necessity of commercial signage controls and the desire to be consulted whilst these controls are developed - lay people and professionals (Source: fieldwork 2005).

Case studies	User group	Q1. Do you think that commercial signage controls are necessary in the city centre?			Q2. Would you like to be consulted whilst commercial signage controls within the city centre are developed?		
		Yes	No	I don't know	Yes	No	I don't know
Oxford	Lay people	47 (92.16%)	2 (3.92%)	2 (3.92%)	29 (56.86%)	17 (33.33%)	5 (9.80%)
	Professionals	57 (90.48%)	4 (6.35%)	2 (3.17%)	46 (73.01%)	9 (14.29%)	8 (12.70%)
	Total	104 (91.23%)	6 (5.26%)	4 (3.51%)	75 (65.79%)	26 (22.81%)	13 (11.40%)
Gramado	Lay people	77 (97.47%)	2 (2.53%)	0	69 (87.34%)	6 (7.59%)	4 (5.06%)
	Professionals	41 (100%)	0	0	39 (95.12%)	2 (4.87%)	0
	Total	118 (98.33%)	2 (1.67%)	0	108 (90%)	8 (6.67%)	4 (3.33%)
Pelotas	Lay people	75 (98.64%)	1 (1.32%)	0	60 (78.95%)	10 (13.16%)	6 (7.89%)
	Professionals	51 (100%)	0	0	45 (88.24%)	3 (5.88%)	3 (5.88%)
	Total	126 (99.21%)	1 (0.79%)	0	105 (82.68%)	13 (10.24%)	9 (7.08%)

The findings from this section also suggest that, in the case studies of Oxford, Gramado, and Pelotas, there is no relationship between user perception and evaluation of the necessity of commercial signage controls and user desire to be consulted when these controls are developed. In this regard, users who agree with the necessity of these controls do not necessarily want to get involved in this issue. This result is also verified when responses of lay people and professionals in these case studies were analysed.

### 6.3.2 Physical aspects of the streetscape that need to be taken into account in commercial signage controls

The majority of residents in the different case studies agree that commercial signage controls should comprise aspects related to (i) the appearance of buildings, (ii) the appearance of commercial signs, (iii) the historic buildings and public spaces, and (iv) the number of commercial signs. These four aspects are recognized as “very important” or “important” in commercial signage controls (see Figure 6.12 and Table 6.8).

Physical aspects that need to be taken into account in commercial signage controls in Oxford, Gramado and Pelotas.

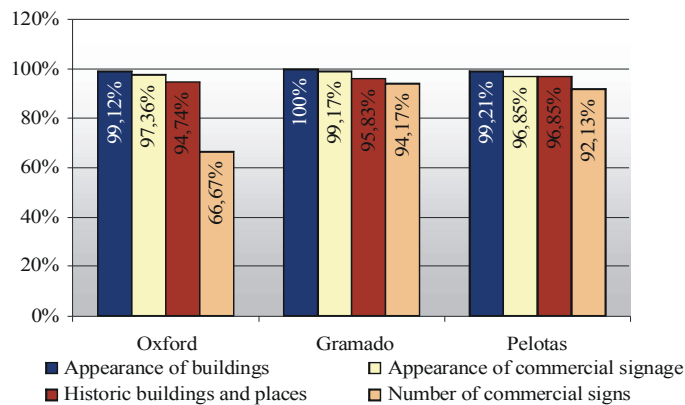


Figure 6.12: Aspects recognized by users from Oxford, Gramado and Pelotas as “very important” or “important” in the development of commercial signage controls (Source: fieldwork 2005).

Table 6.8: Aspects that need to be taken into account in commercial signage controls according to users from Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Q3. How important might be the (variable) in commercial signage controls to the city centre?		Very important	Important	Undecided	A little important	Not important	Mean score*
Oxford	Appearance of buildings	75 (65.79%)	38 (33.33%)	1 (0.88%)	0	0	1.35
	Appearance of commercial signage	58 (50.88%)	50 (43.86%)	4 (3.51%)	0	2 (1.75%)	1.57
	Historic buildings and places	96 (84.21%)	15 (13.16%)	0	3 (2.63%)	0	1.21
	Number of commercial signs	21 (18.42%)	55 (48.25%)	19 (16.67%)	17 (14.91%)	2 (1.75%)	2.33
	Others <sup>3</sup>	33 (28.95%)	0	0	0	0	-
Gramado	Appearance of buildings	80 (66.67%)	40 (33.33%)	0	0	0	1.33
	Appearance of commercial signage	88 (73.33%)	31 (25.83%)	1 (0.83%)	0	0	1.28
	Historic buildings and places	89 (74.17%)	24 (20%)	4 (3.33%)	2 (1.67%)	1 (0.83%)	1.35
	Number of commercial signs	80 (66.67%)	35 (29.17%)	3 (2.50%)	1 (0.83%)	1 (0.83%)	1.40
	Others	24 (20%)	1 (0.8%)	0	0	0	-
Pelotas	Appearance of buildings	84 (66.14%)	42 (33.07%)	1 (0.79%)	0	0	1.35
	Appearance of commercial signage	73 (57.48%)	50 (39.37%)	1 (0.79%)	3 (2.36%)	0	1.48
	Historic buildings and places	116 (91.34%)	7 (5.51%)	1 (0.79%)	3 (2.36%)	0	1.14
	Number of commercial signs	81 (63.78%)	36 (28.35%)	3 (2.36%)	6 (4.72%)	1 (0.79%)	1.50
	Others	22 (17.32%)	2 (1.6%)	0	0	0	-

\* The higher this value, the less important the aspect for users.

There are no statistical differences between users from Oxford, Gramado, and Pelotas in terms of perception and evaluation of the importance attributed to (i) appearance of buildings, (ii) appearance of commercial signs, and (iii) historic buildings and places. On the other hand, significant differences are found between users from Oxford, Gramado, and Pelotas in terms of perception and evaluation of the importance attributed to number of commercial signs (KW=45.955, DF=2, p=0.001). Respondents from Gramado (U=4835.5, N1=114, N2=120, two-tailed p=0.001) and Pelotas (U=5434, N1=114, N2=127, two-tailed p=0.001) tend to give more importance to number of commercial signs than respondents

<sup>3</sup> Questions Q3, Q4A; Q5; Q7; Q9; Q14A; Q25A of questionnaire type B had as an alternative of answer “others”. However, there were not significant patterns of answers related to this response, according to the perception and evaluation of users from the whole sample, Oxford, Gramado and Pelotas. In this case, this research just presents the total percentage of users who chose this alternative of answer.

from Oxford. This finding might suggest that: respondents who live in a country (Brazil) where an excessive number of shopfronts and window displays causes visual pollution tend to give more importance to the number of commercial signs than respondents who live in a country (England) where the number of commercial signs is controlled.

Furthermore, there are no statistical differences between lay people and professionals in Oxford, Gramado, and Pelotas in terms of perception and evaluation of the importance attributed to the appearance of buildings, appearance of commercial signage, historic buildings and places and number of commercial signs. In each case study, lay people and professionals have similar views in terms of the aspects that need to be taken into account in the development of commercial signage controls. In addition, one general consensus is highlighted between lay people and professionals from different case studies: 100% of lay users from Oxford, Gramado and Pelotas mention the appearance of buildings as a “very important” or “important” aspect (see Table 6.9).

Table 6.9: Aspects that need to be taken into account in commercial signage controls according to lay people and professionals from Oxford, Gramado and Pelotas (Source: fieldwork 2005).

		Q3. How important might be the (variable) in commercial signage controls to the city centre?	Very important	Important	Undecided	A little important	Not important	Mean score*
OXFORD	Lay people (51 users)	Appearance of buildings	38 (74.51%)	13 (25.49%)	0	0	0	1.25
		Appearance of commercial signage	28 (54.90%)	21 (41.17%)	0	0	2 (3.92%)	1.56
		Historic buildings and places	45 (88.24%)	3 (5.88%)	0	3 (5.88%)	0	1.24
		Number of commercial signs	10 (19.61%)	20 (39.22%)	12 (23.53%)	9 (17.64%)	0	2.39
		Others	17 (33.33%)	0	0	0	0	-
	Professionals (63 users)	Appearance of buildings	37 (58.73%)	25 (39.68%)	1 (1.58%)	0	0	1.43
		Appearance of commercial signage	30 (47.62%)	29 (46.03%)	4 (6.35%)	0	0	1.59
		Historic buildings and places	51 (80.95%)	12 (19%)	0	0	0	1.19
		Number of commercial signs	11 (17.46%)	35 (55.57%)	7 (11.11%)	8 (12.70%)	2 (3.17%)	2.29
		Others	13 (20.63%)	0	0	0	0	-
GRAMADO	Lay people (79 users)	Appearance of buildings	55 (69.62%)	24 (30.38%)	0	0	0	1.30
		Appearance of commercial signage	60 (75.95%)	19 (24.05%)	0	0	0	1.24
		Historic buildings and places	57 (72.15%)	16 (20.25%)	3 (3.80%)	2 (2.53%)	1 (1.27%)	1.40
		Number of commercial signs	50 (63.29%)	24 (30.38%)	3 (3.38%)	1 (1.27%)	1 (1.27%)	1.47
		Others	10 (12.66%)	0	0	0	0	-
	Professionals (41 users)	Appearance of buildings	25 (60.98%)	16 (39.02%)	0	0	0	1.39
		Appearance of commercial signage	28 (68.29%)	12 (29.27%)	1 (2.44%)	0	0	1.34
		Historic buildings and places	32 (78.05%)	8 (19.51%)	1 (2.44%)	0	0	1.24
		Number of commercial signs	30 (73.17%)	11 (26.83%)	0	0	0	1.27
		Others	12 (29.27%)	0	0	0	0	-
PELOTAS	Lay people (76 users)	Appearance of buildings	51 (67.11%)	25 (32.89%)	0	0	0	1.33
		Appearance of commercial signage	43 (56.58%)	32 (42.11%)	1 (1.32%)	0	0	1.45
		Historic buildings and places	69 (90.79%)	4 (5.26%)	1 (1.32%)	2 (2.63%)	0	1.16
		Number of commercial signs	52 (68.42%)	19 (25%)	0	4 (5.26%)	1 (1.32%)	1.46
		Others	8 (10.53%)	1 (1.3%)	0	0	0	-
	Professionals (51 users)	Appearance of buildings	33 (64.71%)	17 (33.33%)	1 (1.96%)	0	0	1.37
		Appearance of commercial signage	30 (58.82%)	18 (35.29%)	0	3 (5.88%)	0	1.53
		Historic buildings and places	47 (92.16%)	3 (5.88%)	0	1 (1.96%)	0	1.12
		Number of commercial signs	29 (56.86%)	17 (33.33%)	3 (5.88%)	2 (3.92%)	0	1.57
		Others	16 (31.37%)	1 (2.0%)	0	0	0	-

\* The higher this value, the less important the aspect for users.

### **6.3.3 Summary of the findings related to user perception and evaluation of commercial signage controls**

The findings presented above support working hypothesis A. The results show that users from different urban contexts agree that (i) commercial signage controls are necessary in the city centre, (ii) they would like to be consulted when commercial signage controls are developed, and (iii) commercial signage controls need to comprise aspects related to appearance of buildings, appearance of commercial signs, historic buildings and public spaces, and number of commercial signs. Lay people and professionals also share these views.

The only difference found between users from the different urban contexts relates to the level of importance attributed to the number of commercial signs in the development of commercial signage controls. Users from Brazil, where the excessive number of commercial signs is one of the main factors that increases visual pollution in historic city centres, tend to give more importance to the number of signs than users from England. This fact suggests that the user urban context influences user perception and evaluation of those aspects which are most important in the development of commercial signage controls (see Chapter Two, section 2.3.4). The results also show that there is no relationship between user perception and evaluation of the necessity for commercial signage controls and user desire to be consulted when these controls are developed.

## **6.4 USER PERCEPTION AND EVALUATION OF HISTORIC CITY CENTRES**

This section refers to research objective E presenting the findings from questionnaire type B. It presents the effects that different commercial signage approaches have on historic city centres through user perception and evaluation of (i) the appearance of historic city centres, (ii) the city centre functions, (iii) the city centre image, and (iv) the wayfinding through commercial signage. Responses of users from Oxford, Gramado and Pelotas, and lay people and professionals are compared, and working hypothesis B is tested.

Working hypothesis B: Historic city centres where different commercial signage approaches are applied are perceived and evaluated differently in terms of appearance, city centre functions, city centre image, and wayfinding through commercial signage.

## 6.4.1 User perception and evaluation of the appearance of historic city centres

### 6.4.1.1 User satisfaction with the appearance of historic city centres

The results from the statistical analysis of user satisfaction with the appearance of the city centres in the case studies show that: in Oxford and Gramado, where commercial signage controls are effective and the streetscape is ordered (see section 6.2), the city centres are evaluated positively by the majority of residents. On the other hand, in Pelotas, where commercial signage controls are not effective and the streetscape is disordered (see section 6.2), the city centre is evaluated negatively by the majority of residents. The largest group of residents in Oxford (78.07% of users) and Gramado (86.67% of users) agree that the city centre of their cities is “very beautiful” or “beautiful”. At the same time, the majority of residents in Pelotas evaluate the appearance of Pelotas city centre as “very ugly” or “ugly” (52.75% of users), and another significant parcel of respondents (40.16% of users) classify this centre as “neither beautiful nor ugly” (see Table 6.10). Statistical results demonstrated that residents in Oxford ( $U=290.5$ ,  $N1=114$ ,  $N2=127$ , two-tailed  $p=0.001$ ) and Gramado ( $U=1029.5$ ,  $N1=120$ ,  $N2=127$ , two-tailed  $p=0.001$ ) are more satisfied with the appearance of the city centre of their cities than residents in Pelotas are with the appearance of Pelotas city centre. There is no statistical difference between user satisfaction with the appearance of the city centres of Oxford and Gramado: in both cities, user satisfaction with the city centre is equally high.

Table 6.10: Satisfaction of residents in Oxford, Gramado and Pelotas with the appearance of the city centre of their cities (Source: fieldwork 2005).

Q4. How would you sum up the appearance of the city centre?	Case studies		
	Oxford	Gramado	Pelotas
Very beautiful	11(9.65%)	21(17.5%)	2(1.57%)
Beautiful	78(68.42%)	83(69.17%)	7(5.51%)
Neither beautiful nor ugly	25(21.93%)	16(13.33%)	51(40.16%)
Ugly	0	0	53(44.17%)
Very ugly	0	0	14(11.02%)
Total residents	114(100%)	120(100%)	127(100%)
Mean Score *	2.12	1.96	3.55

\* The lower this value, the higher user satisfaction.

There are no significant differences between lay people and professionals in each case study in terms of satisfaction with the appearance of the city centres of Oxford, Gramado, and Pelotas. The majority of lay people (Oxford: 76.47% of users; Gramado: 87.34% of users) and professionals (Oxford: 79.36% of users; Gramado: 85.36% of users) who are resident in Oxford and Gramado agree that the city centre of their cities is “very beautiful”

or “beautiful”. At the same time, a significant parcel of lay people (47.37% of users) and the majority of professionals (60.79% of users) who are residents in Pelotas evaluate the city centre of this city as “very ugly” or “ugly” (see Table 6.11).

Table 6.11: Satisfaction of residents in Oxford, Gramado and Pelotas with the appearance of the city centre of their cities – lay people and professionals (Source: fieldwork 2005).

	Q4. How would you sum up the appearance of the city centre?	User Group	
		Lay people	Professionals
Oxford	Very beautiful	5(9.80%)	6(9.52%)
	Beautiful	34(66.67%)	44(69.84%)
	Neither beautiful nor ugly	12(23.53%)	13(20.63%)
	Ugly	0	0
	Very ugly	0	0
	Total	51(100%)	63(100%)
	Mean score*	2.14	2.11
Gramado	Very beautiful	15(18.99%)	6(14.63%)
	Beautiful	54(68.35%)	29(70.73%)
	Neither beautiful nor ugly	10(12.66%)	6(14.63%)
	Ugly	0	0
	Very ugly	0	0
	Total	79(100%)	41(100%)
	Mean score*	1.94	2
Pelotas	Very beautiful	1(1.32%)	1(1.96%)
	Beautiful	7(9.21%)	0
	Neither beautiful nor ugly	32(42.11%)	19(37.25%)
	Ugly	31(40.79%)	22(43.14%)
	Very ugly	5(6.58%)	9(17.65%)
	Total	76(100%)	51(100%)
	Mean score*	3.42	3.75

\* The lower this value, the higher user satisfaction.

#### A. Aspects that influence user satisfaction with the appearance of historic city centres

The appearance of buildings, appearance of commercial signs, historic buildings and places, and number of commercial signs have a “very important” or “important” influence on user satisfaction with the appearance of the city centres of Oxford, Gramado, and Pelotas. This result suggests that these factors need to be taken into account in the development of commercial signage controls for historic city centres since they have relevant influence on how people perceive and evaluate the streetscape of different places.

In the city centres of Oxford and Gramado, where commercial signage controls are applied and the streetscape is ordered, the appearance of buildings and the historic buildings and places are the most important aspects that increase user satisfaction with these places. At the same time, in the city centre of Pelotas, where commercial signage controls are not effective and the streetscape is disordered, the appearances of buildings and commercial signs are the most influential aspects that decrease user satisfaction with this place (see Table 6.12 and Figure 6.13).

Table 6.12: Importance attributed to the aspects that influence resident satisfaction with the appearance of the historic city centres of Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Q4.1 How important to your answer above (Table 6.10) is the (variable)?		Oxford	Gramado	Pelotas
Appearance of buildings	Very important	76(66.67%)	87(100%)	76(59.84%)
	Important	38(33.33%)	30(25%)	40(31.50%)
	Undecided	0	0	1(0.79%)
	A little important	0	3(2.5%)	7(5.51%)
	Not important	0	0	3(2.36%)
	Mean Score*	1.33	1.33	1.59
Appearance of commercial signs	Very important	54(47.37%)	74(61.67%)	66(51.97%)
	Important	50(43.86%)	37(30.83%)	48(37.79%)
	Undecided	3(4.76%)	3(2.5%)	0
	A little important	7(6.14%)	5(4.17%)	8(6.30%)
	Not important	0	1(0.83%)	5(3.94%)
	Mean Score*	1.68	1.52	1.60
Historic buildings and places	Very important	94(82.46%)	83(69.17%)	90(70.87%)
	Important	16(12.28%)	29(24.17%)	17(13.38%)
	Undecided	1(1.59%)	2(1.67%)	5(3.94%)
	A little important	3(5.89%)	4(3.33%)	11(8.66%)
	Not important	0	2(1.67%)	4(3.15%)
	Mean Score*	1.24	1.44	1.72
Number of commercial signs	Very important	25(21.93%)	76(63.33%)	80(62.99%)
	Important	46(40.35%)	35(29.17%)	29(22.83%)
	Undecided	23(20.17%)	0	2(1.57%)
	A little important	17(14.91%)	7(5.83%)	10(7.87%)
	Not important	3(5.88%)	2(1.67%)	6(4.72%)
	Mean Score*	2.36	1.53	1.69
Total sample		114(100%)	120(100%)	127(100%)

\* The lower this value, the higher user satisfaction.

Aspects indicated as “very important” or “important” by users from Oxford (114 users), Gramado (120 users) and Pelotas (127 users)

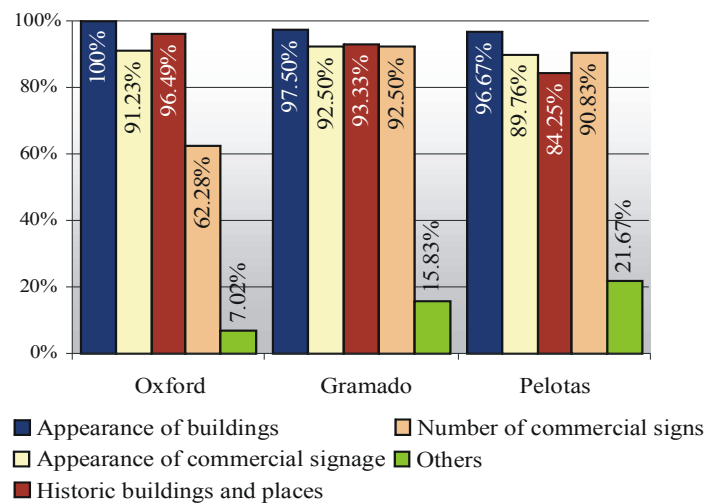


Figure 6.13: Importance attributed to the aspects that influence resident satisfaction with the appearance of the historic city centres of Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Number of commercial signs is mentioned as an aspect that influences resident satisfaction with the city centre by 62.28% of users from Oxford, while, in Gramado and Pelotas, this number increases to 92.50% and 90.83 % of users, respectively (see Table 6.12 above). These differences are statistically significant: number of commercial signs has more

influence on resident satisfaction with the city centres of Gramado and Pelotas than on resident satisfaction with the city centre of Oxford (KW=54.79, DF=2, p=0.001). This result suggest that the satisfaction of people who live in England, where a national approach is applied to control commercial signage in historic places, is less influenced by the number of commercial signs. This lesser influence might exist because users in England are usually not exposed to the negative effects that excessive numbers of commercial signs cause to the appearance of historic city centres. However, users who live in Brazil, where the majority of historic city centres are harmed by excessive numbers of shopfronts and window displays (Minami, 2001; Ohtake, 1982; Cauduro, 1981), tend to be more aware of the number of signs when the appearance of city centres are evaluated. In the city centre of Gramado, the restricted number of these media is recognized as “very important” or “important” in its influence on user satisfaction with this place (92.50% of users).

Additionally, 93.33% of residents in Gramado mention historic buildings and places as a “very important” or “important” aspect on their satisfaction with Gramado city centre. However, in this city there are no regulations to protect historic buildings and places, and the commercial signage approach adopted does not make any mention of the preservation of historic heritage. This finding suggests a weakness of the commercial signage control approach applied in Gramado. The protection of historic buildings and places needs to be included in this approach, since these aspects are recognized as influential on resident satisfaction with the historic city centre.

Statistical differences are found between residents in Oxford, Gramado, and Pelotas in terms of perception and evaluation of the level of importance attributed to historic buildings and places (KW=7.14, DF=2, p=0.03), and number of commercial signs (KW=54.79, DF=2, p=0.001) (see Table 6.13). Historic buildings and places have more influence on resident satisfaction with Oxford city centre than on resident satisfaction with Gramado and Pelotas city centres. At the same time, the number of commercial signs has more influence on resident satisfaction with Gramado and Pelotas city centres than on resident satisfaction with Oxford city centre. In light of these results, approaches to control commercial signs need to highlight the relevance of defining a limit to the number of shopfronts and window displays on commercial street facades. Moreover, as preserved historic buildings and places not harmed by these media have a positive influence on the



satisfaction of a large number of users with the appearance of Oxford city centre, a general commercial signage approach should be used to attempt to protect historic heritage.

Table 6.13: Differences between users from different case studies in terms of the importance attributed to the aspects that influence their satisfaction with the historic city centres of Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Users from	Significant differences found between users in terms of perception and evaluation of the importance attributed to
Oxford and Gramado	<ul style="list-style-type: none"> <li>• Historic buildings and places (U=5922.0, N1=114, N2=120, two-tailed p=0.02).</li> <li>• Number of commercial signs (U=3572.5, N1=114, N2=120, two-tailed p=0.001).</li> </ul>
Oxford and Pelotas	<ul style="list-style-type: none"> <li>• Historic buildings and places (U=6353.0, N1=114, N2=127, two-tailed p=0.002).</li> <li>• Number of commercial signs (U=5698.5, N1=114, N2=127, two-tailed p=0.001).</li> </ul>

In addition, when analysing user satisfaction with the appearance of the city centres, there are no significant differences between lay people and professionals in each case study in terms of perception and evaluation of the importance attributed to appearance of buildings, appearance of commercial signs, historic buildings and places, and number of commercial signs. These common views are also found between lay people and professionals from different case studies (see Table 6.14).

Table 6.14: Importance attributed to the aspects that influence user satisfaction with the appearance of the historic city centres of Oxford, Gramado and Pelotas – lay people and professionals (Source: fieldwork 2005).

Q4.1 How important to your answer above (Table 6.11) is the (variable)?		OXFORD		GRAMADO		PELOTAS	
		Lay people	Professionals	Lay people	Professionals	Lay people	Professionals
Appearance of buildings	Very important	41(80.39%)	35(55.56%)	57(72.15%)	30(73.17%)	46(60.53%)	30(58.82%)
	Important	10(19.61%)	28(44.44%)	20(25.32%)	10(24.39%)	23(30.26%)	17(33.33%)
	Undecided	0	0	0	0	0	1(1.96%)
	A little important	0	0	2(2.53%)	1(2.44%)	6(7.89%)	1(1.96%)
	Not important	0	0	0	0	1(1.32%)	2(3.92%)
	Mean score*	1.19	1.44	1.32	1.31	1.59	1.59
Appearance of commercial signage	Very important	31(60.78%)	23(36.51%)	48(60.76%)	26(63.41%)	37(48.68%)	29(56.86%)
	Important	18(35.29%)	32(62.75%)	25(31.65%)	12(29.27%)	29(38.16%)	19(37.25%)
	Undecided	0	3(4.76%)	3(3.80%)	0	0	0
	A little important	2(3.92%)	5(7.94%)	3(3.80%)	2(4.88%)	6(7.89%)	2(3.92%)
	Not important	0	0	0	1(2.44%)	4(5.26%)	1(1.96%)
	Mean score*	1.47	1.84	1.51	1.53	1.82	1.56
Historic buildings and places	Very important	46(90.20%)	48(76.19%)	53(67.09%)	30(73.17%)	54(71.05%)	36(70.59%)
	Important	2(3.92%)	14(22.22%)	20(25.32%)	9(21.95%)	9(11.84%)	8(15.67%)
	Undecided	0	1(1.59%)	1(1.26%)	1(2.44%)	3(3.95%)	2(3.92%)
	A little important	3(5.89%)	0	3(3.80%)	1(2.44%)	7(9.21%)	4(7.84%)
	Not important	0	0	2(2.53%)	0	3(3.95%)	1(1.96%)
	Mean score*	1.21	1.25	1.49	1.34	1.63	1.54
Number of commercial signs	Very important	15(29.41%)	10(15.87%)	46(58.23%)	30(73.17%)	47(61.84%)	33(64.71%)
	Important	19(37.25%)	27(42.86%)	28(35.44%)	7(17.07%)	17(22.37%)	12(23.53%)
	Undecided	9(17.65%)	14(22.22%)	0	0	0	2(3.92%)
	A little important	5(9.80%)	12(19.04%)	4(5.06%)	3(7.32%)	7(9.21%)	3(5.88%)
	Not important	3(5.88%)	0	1(1.26%)	1(2.44%)	5(6.58%)	1(1.96%)
	Mean score*	1.25	2.44	1.55	1.49	1.76	1.56
Total		51(100%)	63(100%)	79(100%)	41(100%)	76(100%)	51(100%)

\* The lower this value, the higher the importance attributed to the aspects that might influence user satisfaction.

#### 6.4.1.2 User perception and evaluation of order among commercial signs

In the city centre of Pelotas, where commercial signage controls are not effective and the streetscape is disordered (see section 6.2), the majority of residents sum up commercial signage as “disordered” or “very disordered” (88.98% of users). On the other hand, in the city centre of Oxford, where commercial signage controls are effective and the streetscape is ordered (see section 6.2), the majority of residents sum up commercial signage as “very ordered” or “ordered” (57.02% of users). When analysing the city centre of Gramado, where this kind of control is also effective but approached in a different way compared to Oxford (see section 6.2), the majority of residents evaluate commercial signage as “neither ordered nor disordered” (64.17% of users) (see Table 6.15 and Figure 6.14). These differences between users from Oxford, Gramado, and Pelotas in terms of perception and evaluation are statistically significant (KW=232.05, DF=2, p=0.001). According to their evaluations, commercial signage in Oxford is seen as more ordered than in Gramado (U=5064.0, N1=114, N2=120, two-tailed p=0.001) and Pelotas (U=448.0, N1=114, N2=127, two-tailed p=0.001), while commercial signage in Gramado is seen as more ordered than in Pelotas (U=791.0, N1=120, N2=127, two-tailed p=0.001). The findings suggest that different commercial signage approaches result in different user perception and evaluation of order among commercial signs. For example, in Gramado where, although the City Council is fully committed to enforcing respect for commercial signage controls by shop owners, some irregular signs can be noticed along the main commercial street avenue (section 6.2). In this regard, these irregular signs can have been a contributory factor, which decreases user perception and evaluation of order in Gramado city centre.

Table 6.15: User perception and evaluation of order among commercial signs in the city centres of Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Q6. How would you sum up the commercial signage in the city centre?			
Case studies:	Oxford	Gramado	Pelotas
Very ordered	9(7.89%)	3(2.5%)	0
Ordered	56(49.12%)	37(30.83%)	2(1.57%)
Neither ordered nor disordered	49(42.98%)	77(64.17%)	12(9.45%)
Disordered	0	3(2.5%)	64(50.39%)
Very disordered	0	0	49(38.58%)
Mean Score*	2.35	2.67	4.26
Total	114(100%)	120(100%)	127(100%)
* The lower this value, the more ordered the commercial signs.			

Order among commercial signs in the city centres of Oxford, Gramado and Pelotas according to users from Oxford (114 users), Gramado (120 users), and Pelotas (127 users)

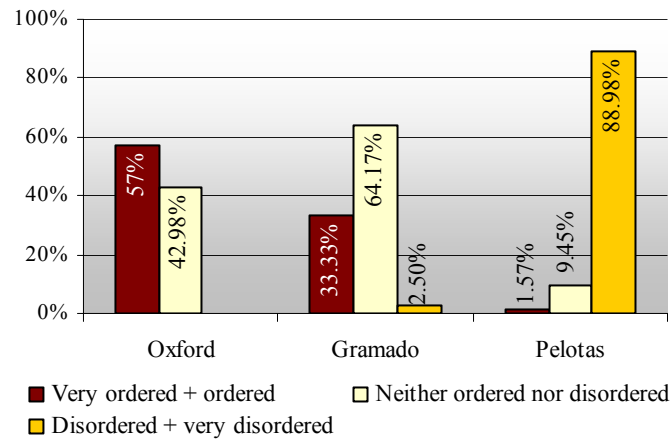


Figure 6.14: User perception and evaluation of order among commercial signs in the city centres of Oxford, Gramado, and Pelotas (Source: fieldwork 2005).

*A. User perception and evaluation of order among commercial signs and user satisfaction with the appearance of historic city centres*

With regard to the case studies of Gramado and Pelotas, there is a correlation between user perception and evaluation of order among commercial signs and user satisfaction with the appearance of the city centre (Gramado: Spearman,  $\rho=0.31$ ,  $p=0.001$ ; Pelotas: Spearman,  $\rho=0.38$ ,  $p=0.001$ ). The results from this analysis suggest that the higher the user perception and evaluation of order among commercial signs, the higher the user satisfaction with the appearance of the city centre. In Gramado, the largest number of users who agree that the city centre is “very beautiful” or “beautiful” sum up the commercial signage as “neither ordered nor disordered” (50.83% of users), while another group of users sum up these media as “very ordered” or “ordered”. On the other hand, in Pelotas, the majority of users who classify the city centre as “ugly” or “very ugly” sum up the commercial signage as “disordered” or “very disordered”. There is no correlation between these two variables when responses of users from the case study of Oxford are analysed. However, the findings demonstrate that the majority of people who evaluate Oxford city centre as “very beautiful” or “beautiful” (78.07% of users) sum up commercial signage as “very ordered” or “ordered” (46.49% of users) (see Table 6.16). In this context, a general commercial signage approach should encourage design guidelines to order commercial signs, which will increase satisfaction of users from different urban contexts with the appearance of commercial streetscapes.

Table 6.16: User satisfaction with the appearance of the city centre and user perception and evaluation of order among commercial signs (Source: fieldwork 2005).

City	Q4. How would you sum up the appearance of the city centre?	Q6. How would you sum up the commercial signs in the city centre?			Total Q4
		Very ordered + ordered	Neither ordered nor disordered	Disordered + very disordered	
Oxford	Very beautiful + beautiful	53(46.49%)	36(31.58%)	0	89(78.07%)
	Neither beautiful nor ugly	12(10.53%)	13(11.40%)	0	25(21.93%)
	Ugly + very ugly	0	0	0	0
	Total Q6	65(57.02%)	49(42.98%)	0	114(100%)
Gramado	Very beautiful + beautiful	40(33.33%)	61(50.83%)	3(2.5%)	104(86.67%)
	Neither beautiful nor ugly	0	16(13.33%)	0	16(13.33%)
	Ugly + very ugly	0	0	0	0
	Total Q6	40(33.33%)	77(64.17%)	3(2.5%)	120(100%)
Pelotas	Very beautiful + beautiful	1(0.79%)	1(0.79%)	7(5.51%)	9(7.09%)
	Neither beautiful nor ugly	1(0.79%)	9(7.09%)	41(32.28%)	51(40.16%)
	Ugly + very ugly	0	2(1.57%)	65(51.18%)	67(52.75%)
	Total Q6	2(1.57%)	12(9.45%)	113(88.98%)	127(100%)

Table 6.5.1 in Appendix 6.5 presents this table with the categories of answers not clustered.

### 6.4.1.3 Commercial signs as elements to reinforce the historic and/or the commercial appearance of historic city centres

The results of this research suggest that shopfronts and window displays reinforce the commercial appearance of city centres even when these media are designed to preserve the historic character of the city centre. The majority of residents in Oxford (93.33% of users), Gramado (70.81% of users), and Pelotas (97.64% of users) agree that the commercial signage reinforces the commercial appearance of the city centre more than the historic appearance of the city centre in their cities (see Table 6.17).

Table 6.17: User perception and evaluation of commercial signage as an element to reinforce the historic and/or the commercial appearance of the city centre (Source: fieldwork 2005).

Q8. Do you think that commercial signage reinforces more the historic or the commercial appearance of the city centre?	Case study			Total
	Oxford	Gramado	Pelotas	
More the commercial appearance	83(72.81%)	112(93.33%)	124(97.64%)	319(88.36%)
More the historic appearance	8(7.02%)	0	0	8(2.22%)
The commercial and historic appearance equally	23(20.17%)	8(6.67%)	3(2.36%)	34(9.42%)
Total	114(100%)	120(100%)	127(100%)	361(100%)
Mean Score*	2.13	2.07	2.02	2.07

\* The lower this value, the more the commercial signs reinforce the commercial appearance of city centres.

There are statistical differences between residents in Oxford, Gramado and Pelotas in terms of perception and evaluation of commercial signs as elements to reinforce the historic and/or the commercial appearance of the city centre of their cities (KW=7.195, DF=2, p=0.03). According to residents' answers, commercial signs reinforce the commercial appearance in the city centre of Pelotas more than in the city centre of Oxford (U=6445.5, N1=114, N2=127, two-tailed p=0.02). In addition, some residents in Oxford mention that the commercial signage reinforces the historic and the commercial appearance of Oxford city centre simultaneously (20.17% of users), while less than ten

percent of residents share this view when analysing the city centre of Pelotas (2.36% of users). The findings also demonstrate that the highest number of users who agree that commercial signage reinforces the commercial appearance of the city centre is in Pelotas, where commercial signage controls are ineffective and historic buildings are harmed by these media. At the same time, Oxford city centre, where commercial signage controls are applied and the preservation of historic buildings is one priority of these controls, has the lowest number of users who agree that commercial signage reinforces the commercial appearance of the city centre.

*A. Commercial signs as elements to reinforce the historic and/or the commercial appearance of historic city centres and user satisfaction with the appearance of historic city centres*

There is no relationship between user perception and evaluation of commercial signage as an element to reinforce the historic and/or the commercial appearance of the city centre, and user satisfaction with the city centre appearance. In Oxford and Gramado, where commercial signage controls are applied and the streetscape is ordered (see section 6.2), the majority of users who evaluate the city centre as “very beautiful” or “beautiful” agree that commercial signage reinforces the commercial appearance of these places (Oxford: 58.77% of users; Gramado: 80% of users). At the same time, in Pelotas, where commercial signage controls are ineffective and the streetscape is disordered (see section 6.2), all users who evaluate the city centre as “very ugly” or “ugly” agree that commercial signage reinforces the commercial appearance of this place (52.75% of users) (see Table 6.18).

Table 6.18: User satisfaction with the appearance of the city centre and user perception and evaluation of commercial signage as an element to reinforce the historic and/or the commercial appearance of the city centre (Source: fieldwork 2005).

Case study	Q8. Do you think that commercial signage reinforces more the historic and/or the commercial appearance of the city centre?	Q4. How would you sum up the appearance of the city centre?			Total Q8
		Very beautiful + beautiful	Neither beautiful nor ugly	Ugly + very ugly	
Oxford	More the commercial appearance	67(58.77%)	16(14.04%)	0	83(72.81%)
	More the historic appearance	6(5.26%)	2(1.75%)	0	8(7.02%)
	The commercial and historic appearance equally	16(14.04%)	7(6.14%)	0	23(20.17%)
	Total Q4	89(78.07%)	25(21.93%)	0	114(100%)
Gramado	More the commercial appearance	96(80%)	16(13.33%)	0	112(31.02%)
	More the historic appearance	0	0	0	0
	The commercial and historic appearance equally	8(6.67%)	0	0	8(2.22%)
	Total Q4	104(86.67%)	16(13.33%)	0	120(100%)
Pelotas	More the commercial appearance	9(7.09%)	48(37.79%)	67(52.75%)	124(97.64%)
	More the historic appearance	0	0	0	0
	The commercial and historic appearance equally	0	3(2.36%)	0	3(2.36%)
	Total Q4	9(7.09%)	51(40.16%)	67(52.75%)	127(100%)

Table 6.5.2 in Appendix 6.5 presents this table with the categories of answers in question 4 not clustered.

#### 6.4.1.4 Aspects of the streetscape that make historic city centres attractive places

The results from the analysis of perception and evaluation of users from Oxford, Gramado, and Pelotas show that: appearance of buildings, appearance of commercial signs, historic buildings and places, and numbers of commercial signs are recognized as relevant aspects in making the city centre an attractive place. The majority of residents in each case study agree that these four aspects are “very important” or “important” in making the city centre of their cities an attractive place. In terms of the mean score values, according to residents in Oxford, Gramado and Pelotas, the most important aspect in making the city centre an attractive place is the appearance of buildings, while the least important aspect is the number of commercial signs (see Table 6.19).

Table 6.19: Importance attributed to the aspects to the streetscape that make the city centres of Oxford, Gramado and Pelotas attractive places (Source: fieldwork 2005).

Q9. How important is the (variable) in making the city centre an attractive place?		Case studies		
		Oxford	Gramado	Pelotas
Appearance of buildings	Very important + important	114(100%)	120(100%)	124(97.64%)
	Undecided	0	0	1(0.79%)
	A little important + not important	0	0	2(1.57%)
	Mean score*	1.19	1.15	1.20
Appearance of commercial signage	Very important + important	105(92.11%)	108(90%)	121(95.28%)
	Undecided	7(6.14%)	1(0.83%)	0
	A little important + not important	2(1.75%)	11(9.17%)	6(4.72%)
	Mean score*	1.58	1.56	1.38
Historic buildings and places	Very important + important	112(98.25%)	107(89.17%)	122(96.06%)
	Undecided	2(1.75%)	7(5.83%)	0
	A little important + not important	0	6(5%)	5(3.94%)
	Mean score*	1.25	1.59	1.28
Number of commercial signs	Very important + important	82(71.93%)	97(80.83%)	111(87.40%)
	Undecided	20(17.54%)	2(1.67%)	1(0.79%)
	A little important + not important	12(10.53%)	21(17.5%)	15(11.81%)
	Mean score*	2.23	1.79	1.65
Total sample		114(100%)	120(100%)	127(100%)
* The lower this value, the more important the variable to users. Table 6.5.3 in Appendix 6.5 presents this table with the categories of answers not clustered.				

The findings from this section suggest that in the city centres where commercial signage controls are effectively applied (Oxford and Gramado), users tend to mention aspects that are already important in making those centres attractive places. However, users from Pelotas, where this kind of control is not effective and visual pollution is a problem, tend to mention as important the aspects that could be improved to make the city centre an attractive place. These issues were taken into account in the interpretation of the results presented below.

There are statistical differences between users from Oxford, Gramado, and Pelotas in terms of perception and evaluation of the importance attributed to historic buildings and places

(KW=10.02, DF=2,  $p=0.007$ ), and number of commercial signs (KW=6.52, DF=2,  $p=0.04$ ). Users from Gramado tend to give less importance to historic buildings and places in making the city centre an attractive place than users from Oxford (U=6213.0, N1=120, N2=114, two-tailed  $p=0.004$ ) and Pelotas (U=7112.0, N1=120, N2=127, two-tailed  $p=0.05$ ). At the same time, users from Pelotas tend to give more importance to the number of commercial signs in making the city centre an attractive place than users from Oxford (U=6263.0, N1=127, N2=114, two-tailed  $p=0.009$ ). There is no difference between users from the two Brazilian case studies in terms of the level of importance attributed to the number of commercial signs. These results suggest that the way that commercial signage is approached can influence user perception and evaluation of those aspects considered most important in making the city centre an attractive place. Gramado, where historic buildings and places are not the main landmarks in the city centre due to the design approach adopted by the local authority, is the case study where the lowest numbers of users mention historic buildings and places as an important aspect in making this centre an attractive place. In Pelotas, where commercial signage controls are ineffective and an excessive number of commercial signs increase visual pollution, the number of commercial signs is seen as more important to make this centre an attractive place than in Oxford. These results suggest that users who live in a country where the majority of cities are harmed by excessive numbers of commercial signs (Brazil) are more aware of the importance of controlling this issue for making city centres attractive places. In Oxford, because this aspect is already controlled by commercial signage guidelines, the largest number of users tend to focus on other aspects of the streetscape, such as the appearance of buildings and historic buildings and places.

*A. Aspects that make city centres attractive places and user satisfaction with the appearance of city centres, and user perception and evaluation of order among commercial signs*

The findings of this section suggest that in Gramado, the higher the user satisfaction with the appearance of the city centre, the higher the importance attributed to (i) the appearance of commercial signs (Spearman,  $\rho=0.28$ ,  $p=0.002$ ) and (ii) the number of commercial signs (Spearman,  $\rho=0.19$ ,  $p=0.04$ ) in making the city centre an attractive place. This result suggests that the commercial signage approach adopted in Gramado has achieved its objective of controlling the appearance and number of commercial signs in order to create a place evaluated positively by users. In Pelotas, the lower the user satisfaction with the

appearance of the city centre, the higher the importance attributed to the appearance of commercial signs to make this city centre an attractive place (Spearman,  $\rho = -0.21$ ,  $p = 0.02$ ). In this case, this result suggests that to increase user satisfaction with the historic city centre of Pelotas, commercial signage controls need to be applied to regulate the appearance of shopfronts and window displays and, consequently, reduce visual pollution.

Furthermore, in Gramado, the higher the user perception and evaluation of order among commercial signs, the higher the importance attributed to historic buildings and places in making Gramado city centre an attractive place (Spearman,  $\rho = 0.11$ ,  $p = 0.03$ ). This result might suggest that when commercial signage is ordered, users tend to focus their attention on historic buildings and places. It is relevant to note that the city centre of Gramado has very few remaining original buildings from the early period of the city (see section 6.2.2), and in this city there are no regulations to protect the historic heritage. In this regard, this result can be related to some comments made by respondents when the questionnaire was being filled in. Some residents recognized the importance of historic buildings and places in making the city centre an attractive place. They also complained about the approach adopted by the local authority that does not protect the historic character of Gramado and, at the same time, promotes a manufactured image of this city through contemporary buildings and design of commercial signs.

#### **6.4.2 User perception and evaluation of city centre functions**

The results from the data analysis of questionnaire type B show that city centres perceived positively and negatively in terms of appearance are recognized by residents as places of "leisure". In the city centres of Oxford and Gramado, where commercial signage controls are applied and the streetscape is ordered (see section 6.2), 98.25% of users (Oxford) and 94.17% of users (Gramado) recognize "leisure" as a "very important" or "important" function of these centres. At the same time, 96.06% of users suggest "leisure" as a "very important" or "important" function of the city centre of Pelotas, where commercial signage controls are not effective and the streetscape is disordered (see Table 6.20). Different reasons can be attributed to these results, but the conclusion here is that ordered and disordered city centres can both be perceived as places of "leisure".

The findings from the case studies of Oxford and Gramado can be explained by the literature review, which indicates that places evaluated as positive by their residents tend to



be used as places of leisure (see Chapter Three, section 3.2). Taking the findings from the case study of Pelotas into consideration, the city centre might be perceived as a place of leisure because it provides the kinds of entertainment (such as cinemas, museums, theatres, and department stores), which cannot be found in other areas of this city. Consequently, even with several historic buildings that are harmed a lot by commercial signs, this city centre still attracts people because of the activities that it offers.

Table 6.20: User perception and evaluation of the importance attributed to the city centre functions in Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Q5. Regarding your personal experience, how important to you is the following city centre function:		Case studies		
		Oxford	Gramado	Pelotas
Leisure (visit; shop; linger in)	Very important + important	112 (98.25%)	113 (94.17%)	122 (96.06%)
	Undecided	0	1 (0.83%)	0
	A little important + not important	2 (1.75%)	6 (5%)	5 (3.94%)
	Mean score*	1.04	1.11	1.08
Work	Very important + important	67 (58.77%)	110 (91.67%)	110 (86.61%)
	Undecided	9 (7.89%)	3 (2.50%)	3 (2.36%)
	A little important + not important	38 (33.33%)	7 (5.83%)	14 (11.02%)
	Mean score*	1.74	1.14	1.24
Passing through	Very important + important	74 (64.91%)	98 (81.67%)	94 (74.02%)
	Undecided	16 (14.04%)	0	7 (5.51%)
	A little important + not important	24 (21.05%)	22 (18.33%)	26 (20.47%)
	Mean score*	1.56	1.37	1.46
Total		114 (100%)	120 (100%)	127 (100%)

\* The lower this value, the more important the variable for users.  
Table 6.5.4 in Appendix 6.5 presents this table with the categories of answers not clustered.

#### 6.4.2.1 City centre functions and user satisfaction with the appearance of historic city centres

Two opposite findings are verified from the statistical analysis in terms of user perception and evaluation of the importance attributed to city centre functions and user satisfaction with city centre appearance. In Oxford, the higher the user satisfaction with the city centre appearance, the higher the importance attributed to this area as a place of “leisure” (Spearman, rho=0.18, p=0.05). At the same time, in Pelotas, the lower the user satisfaction with the city centre appearance, the higher the importance attributed to this area as a place of “leisure” (Spearman, rho=-0.24, p=0.007). In Gramado, there is no correlation between these two variables. However, user responses suggest the following: the majority of users who evaluate Gramado city centre as “very beautiful” or “beautiful” (86.67% of users) indicate “leisure” as a “very important” or “important” city centre function (80.83% of users) (see Table 6.21). These results confirm that leisure is an important city centre function even in places that are not evaluated positively in terms of appearance. To better understand these findings in relation to the case studies of Oxford and Pelotas, this investigation explores whether there are any correlations between the physical aspects that

influence user satisfaction with the appearance of the city centres of Oxford and Pelotas, and the level of importance attributed to “leisure” as a city centre function in these case studies.

In Oxford, where the appearance of commercial signs is controlled in order to protect the historic character of the city centre, the higher the influence of the appearance of commercial signs (Spearman,  $\rho=0.21$ ,  $p=0.03$ ) and historic buildings and places (Spearman,  $\rho=0.31$ ,  $p=0.02$ ) on user satisfaction with this city centre, the higher the importance attributed to “leisure” as a city centre function. In Pelotas, where commercial signage is disordered and historic buildings are harmed by these media, the higher the influence of the appearance of commercial signs on user satisfaction with this city centre, the lower the importance attributed to “leisure” as a city centre function (Spearman,  $\rho=-0.23$ ,  $p=0.009$ ). These results suggest that user perception and evaluation of city centres as places of “leisure” (i) can be increased by the presence of commercial signs when these media do not harm historic buildings and places, and (ii) can be decreased by commercial signs when these media harm the streetscape. The findings also indicate that in Pelotas other factors are responsible for increasing the importance of this city centre as a place of “leisure”. As explained previously (see section 6.4.2), the concentration of activities in this centre, which cannot be found in other areas of the city, is likely to be one factor.

Table 6.21: User satisfaction with the appearance of the city centre and user perception and evaluation of the importance attributed to the city centre functions (Source: fieldwork 2005).

City	Q5. Regarding your personal experience, how important to you is the following city centre functions:		Q4. How would you sum up the appearance of the city centre?			Total Q5
			Very beautiful + beautiful	Neither beautiful nor ugly	Ugly + very ugly	
Oxford	Leisure (visit; shop; linger in)	Very important + important	88(77.19%)	24(21.05%)	0	112(98.25%)
		Undecided	0	0	0	0
		A little important + not important	1(0.88%)	1(0.88%)	0	2(1.75%)
	Work	Very important + important	53(46.49%)	14(12.28%)	0	67(58.77%)
		Undecided	7(6.14%)	2(1.75%)	0	9(7.89%)
		A little important + not important	29(25.44%)	9(7.89%)	0	38(33.33%)
	Pass through	Very important + important	59(51.75%)	15(13.16%)	0	74(64.91%)
		Undecided	11(9.65%)	5(4.39%)	0	16(14.04%)
		A little important + not important	19(16.67%)	5(4.39%)	0	24(21.05%)
	Total Q4		89(78.07%)	25(21.93%)	0	114(100%)
Gramado	Leisure (visit; shop; linger in)	Very important + important	97(80.83%)	16(13.33%)	0	113(94.17%)
		Undecided	1(0.83%)	0	0	1(0.83%)
		A little important + not important	6(5%)	0	0	6(5%)
	Work	Very important + important	94(78.33%)	16(13.33%)	0	110(91.67%)
		Undecided	3(2.5%)	0	0	3(2.5%)
		A little important + not important	7(5.83%)	0	0	7(5.83%)
	Pass through	Very important + important	86(71.67%)	12(10%)	0	98(81.67%)
		Undecided	0	0	0	0
		A little important + not important	18(15%)	4(3.33%)	0	22(18.33%)
	Total Q4		104(86.67%)	16(13.33%)	0	120(100%)

CONTINUATION ON THE NEXT PAGE.

City		Q5. Regarding your personal experience, how important to you is the following city centre functions:	Q4. How would you sum up the appearance of the city centre?			Total Q5
			Very beautiful + beautiful	Neither beautiful nor ugly	Ugly + very ugly	
Pelotas	Leisure (visit; shop; linger in)	Very important + important	9(7.09%)	48(37.80%)	65(8%)	122(96.06%)
		Undecided	0	0	0	0
		A little important + not important	0	3(2.36%)	2(1.57%)	5(3.94%)
	Work	Very important + important	8(6.30%)	43(33.86%)	59(46.46%)	110(86.61%)
		Undecided	1(0.79%)	2(1.57%)	0	3(2.36%)
		A little important + not important	0	6(4.72%)	8(6.30%)	14(11.02%)
	Pass through	Very important + important	8(6.30%)	38(29.92%)	48(37.79%)	94(74.02%)
		Undecided	1(0.79%)	5(3.94%)	1(0.79%)	7(5.51%)
		A little important + not important	0	8(6.30%)	18(14.17%)	26(20.47%)
	Total Q4			9(7.09%)	51(40.16%)	67(52.75%)

Table 6.5.5 in Appendix 6.5 presents this table with the categories of answers not clustered.

#### 6.4.2.2 City centre functions and user perception and evaluation of order among commercial signs

In the case studies of Oxford and Gramado, there is no correlation between user perception and evaluation of order among commercial signs and user perception and evaluation of the importance attributed to city centre functions. However, user responses indicate that, in Oxford, the majority of users who agree that the commercial signage is “very ordered” or “ordered” indicate “leisure” (56.14% of users) as a “very important” or “important” city centre function. In Gramado, the majority of respondents who perceive and evaluate the commercial signage as “neither ordered nor disordered” evaluated “leisure” (60% of users) as a “very important” or “important” city centre functions (see Table 6.22).

Table 6.22: User perception and evaluation of order among commercial signage and user perception and evaluation of the importance attributed to the city centre functions (Source: fieldwork 2005).

City		Q5. Regarding your personal experience, how important to you is the following city centre functions:	Q6. How would you sum up the commercial signage in the city centre?			Total Q5
			Very ordered + ordered	Neither ordered nor disordered	Disordered + very disordered	
Oxford	Leisure (visit; shop; linger in)	Very important + important	64(56.14%)	48(42.11%)	0	112(98.25%)
		Undecided	0	0	0	0
		A little important + not important	1(0.88%)	1(0.88%)	0	2(1.75%)
	Work	Very important + important	42(36.84%)	25(21.93%)	0	67(58.77%)
		Undecided	7(6.14%)	2(1.75%)	0	9(7.89%)
		A little important + not important	16(14.04%)	22(19.30%)	0	38(33.33%)
	Pass through	Very important + important	39(34.21%)	35(30.70%)	0	74(64.91%)
		Undecided	11(9.65%)	5(4.39%)	0	16(14.04%)
		A little important + not important	15(13.16%)	9(7.89%)	0	24(21.05%)
	Total Q6			9(7.89%)	56(49.12%)	49(42.98%)
Gramado	Leisure (visit; shop; linger in)	Very important + important	38(31.67%)	72(60%)	3(2.5%)	113(94.17%)
		Undecided	1(0.83%)	0	0	1(0.83%)
		A little important + not important	1(0.83%)	5(4.17%)	0	6(5%)
	Work	Very important + important	38(31.67%)	69(57.50%)	3(2.5%)	110(91.67%)
		Undecided	1(0.83%)	2(1.67%)	0	3(2.5%)
		A little important + not important	1(0.83%)	6(5%)	0	7(5.83%)
	Pass through	Very important + important	32(26.67%)	63(52.5%)	3(2.5%)	98(81.67%)
		Undecided	0	0	0	0
		A little important + not important	8(6.67%)	14(11.67%)	0	22(18.33%)
	Total Q6			3(2.5%)	37(30.83%)	77(64.17%)

CONTINUATION ON THE NEXT PAGE.

Continuation:						
City	Q5. Regarding your personal experience, how important to you is the following city centre functions:	Q6. How would you sum up the commercial signage in the city centre?			Total Q5	
		Very ordered + ordered	Neither ordered nor disordered	Disordered + very disordered		
Pelotas	Leisure (visit; shop; linger in)	Very important + important	1(0.79%)	11(8.66%)	110(86.61%)	122(96.06%)
		Undecided	0	0	0	0
		A little important + not important	1(0.79%)	1(0.79%)	3(2.36%)	5(3.94%)
	Work	Very important + important	2(1.57%)	12(9.45%)	96(75.59%)	110(86.61%)
		Undecided	0	0	3(2.36%)	3(2.36%)
		A little important + not important	0	0	14(11.02%)	14(11.02%)
	Pass through	Very important + important	1(0.79%)	10(7.87%)	83(65.35%)	94(74.02%)
		Undecided	1(0.79%)	0	6(4.72%)	7(5.51%)
		A little important + not important	0	2(1.57%)	24(18.90%)	26(20.47%)
Total Q6		0	2(1.57%)	12(9.45%)	127(100%)	

Table 6.5.6 in Appendix 6.5 presents this table with the categories of answers not clustered.

At the same time, in Pelotas, a correlation is found between user perception and evaluation of order among commercial signage and user perception and evaluation of the importance attributed to “leisure” as a city centre function (Spearman rho=-0.20, p=0.02). This result suggests that the lower the user perception and evaluation of order among commercial signage, the higher the importance attributed to “leisure” as a city centre function. In this case, users who indicated “leisure” as a “very important” or “important” city centre function sum up commercial signage as “very disordered” or “disordered” (86.61% of users). The findings of this section suggest that a relationship between order among commercial signs and use of city centres as places of “leisure” can exist when shopfronts and window displays are disordered. This can also be related to the results shown in section 6.4.2, which indicate that in the city centre of Pelotas there is a concentration of activities related to “leisure” that cannot be found in other areas of this city.

### 6.4.3 User perception and evaluation of city centre image

The results of this section suggest that in city centres where different commercial signage approaches are applied, users perceive distinct images of these places. Images promoted by the local authority of Oxford and Gramado, through the application of marketing the city and urban tourism strategies and aesthetic controls, are perceived by residents in these cities. The city centre of Oxford, where commercial signage controls aim to protect the historic character of the city centre and the local authority is involved in promoting this area as a historic and tourist place (see Table 6.3 in section 6.2), is mentioned by the majority of residents as a historic (98.24% of users), commercial (92.98% of users), tourist (89.47% of users) and cosmopolitan centre (52.63% of users). This last function can be related to the cosmopolitan character of the Oxford population (see section 6.1.1.2). The

city centre of Gramado, where commercial signage controls aim to order commercial street facades and reinforce the character of the city promoted as a tourist destination, is mentioned by the majority of residents as a commercial (94.17% of users) and tourist centre (92.50% of users).

The city centre of Pelotas is recognized by the majority of its residents as a commercial (96.85% of users), historic (81.89% of users) and tourist centre (52.75% of users). Even with the majority of historic buildings significantly harmed by commercial signs, this city centre is still recognized by residents as a historic and tourist place (see Table 6.23). These results suggest that there is high potential for this area to become a prosperous historic site and tourist attraction.

Table 6.23: User perception and evaluation of the image of the city centres of Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Q7. You would describe the city centre as a:		City centre		
		Oxford	Gramado	Pelotas
Historic centre	Strongly agree + agree	112(98.24%)	17(14.17%)	104(81.89%)
	Undecided	2(1.75%)	2(1.67%)	2(1.57%)
	Disagree + strongly disagree	0	101(84.17%)	21(16.54%)
	Mean Score*	1.45	3.88	2.03
Commercial centre	Strongly agree + agree	106(92.98%)	113(94.17%)	123(96.85%)
	Undecided	5(4.39%)	1(0.83%)	0
	Disagree + strongly disagree	3(2.63%)	6(5%)	4(3.15%)
	Mean Score*	1.65	1.63	1.55
Tourist centre	Strongly agree + agree	102(89.47%)	111(92.5%)	67(52.75%)
	Undecided	8(7.02%)	0	14(11.02%)
	Disagree + strongly disagree	4(3.51%)	9(7.5%)	46(36.22%)
	Mean Score*	1.54	1.68	2.66
Cosmopolitan centre	Strongly agree + agree	60(52.63%)	33(27.5%)	24(18.90%)
	Undecided	17(14.91%)	20(16.67%)	26(20.47%)
	Disagree + strongly disagree	37(32.46%)	67(55.83%)	77(60.63%)
	Mean Score*	2.63	3.39	3.59
Total sample		114(100%)	120(100%)	127(100%)
* The lower this value, the more important the city centre image. Table 6.5.7 in Appendix 6.5 presents this table with the categories of answers not clustered.				

Statistical differences are found between residents in Oxford, Gramado and Pelotas in terms of the perception and evaluation they have of the image of the city centre in their cities as: historic (KW=185.63, DF=2, p=0.001), tourist (KW=56.28, DF=2, p=0.001), and cosmopolitan (KW=40.30, DF=2, p=0.001). These differences are found between residents in Oxford and Gramado (historic: U=491.5, N1=114, N2=120, two-tailed p=0.001; cosmopolitan: U=4473.0, N1=114, N2=120, two-tailed p=0.001), Oxford and Pelotas (historic: U=5342.0, N1=114, N2=127, two-tailed p=0.001; cosmopolitan: U=4073.0, N1=114, N2=127, two-tailed p=0.001; tourist: U=3797.5, N1=114, N2=127, two-tailed p=0.001), and Pelotas and Gramado (historic: U=2186.0, N1=114, N2=120, two-tailed p=0.001; tourist =4527.0, N1=114, N2=120, two-tailed p=0.001). These results indicate

that: (i) the city centre of Oxford is perceived and evaluated as more historic and cosmopolitan than the city centres of Gramado and Pelotas, (ii) the city centre of Oxford is perceived and evaluated as more tourist-focussed than the city centre of Pelotas, and (iii) the city centre of Pelotas is perceived and evaluated as more historic and less tourist-focussed than the city centre of Gramado.

#### 6.4.3.1 Commercial signs as positive or negative elements of the city centre image

In Oxford and Gramado, where commercial signage controls are effective and the streetscape is ordered (see section 6.2), the majority of residents agree that the commercial signage is a positive element of the city centre image (Oxford: 67.54% of users; Gramado: 50.83% of users). At the same time, in Pelotas, where commercial signage controls are ineffective and the streetscape is disordered (see section 6.2), the majority of users evaluate the commercial signage as a negative element of the city centre image (74.02% of users) (see Table 6.24). These results correspond with the views of the City Council officers who were asked about the influence of these media on the image of the city centres of Oxford, Gramado, and Pelotas during the interviews (see section 6.2, Table 6.3, item 18).

Table 6.24: User perception and evaluation of commercial signage as a positive or negative element of the city centre image (Source: fieldwork 2005).

Q10. Do you think that the commercial signage in the city centre is positive or negative element of the image of the city centre?	Case studies			Total sample
	Oxford	Gramado	Pelotas	
Positive	77(67.54%)	61(50.83%)	10(7.87%)	148(40.99%)
Negative	20(17.54%)	37(30.83%)	94(74.02%)	151(41.83%)
I don't know	17(14.91%)	22(18.33%)	23(18.11%)	62(17.17%)
Total	114(100%)	120(100%)	127(100%)	361(100%)
Mean Score*	1.47	1.68	2.10	1.76

\* The lower this value, the more positive commercial signage to city centre image.

There are statistical differences between residents in Oxford, Gramado, and Pelotas in terms of perception and evaluation of commercial signage as a positive or negative element of the city centre image (KW=58.99, DF=2, p=0.001). These differences are placed between residents in Oxford and Gramado (U=3938.5, N1=114, N2=120, two-tailed p=0.009), Oxford and Pelotas (U=3488.5, N1=114, N2=127, two-tailed p=0.001), and Gramado and Pelotas (U=2414.0, N1=120, N2=127, two-tailed p=0.001). These findings suggest that: (i) the commercial signage in Oxford is perceived and evaluated as more positive than the commercial signage in Gramado and Pelotas, and (ii) the commercial signage in Pelotas is perceived and evaluated as more negative than the commercial signage in Oxford and Gramado.

In this regard, the way that commercial signage controls are approached influences user perception and evaluation of the effect of these media as positive or negative elements of the city centre image. The results also suggest that user perception and evaluation of commercial signage as a positive or negative element of the city centre image can be influenced by how the local authority deals with shop owners who do not respect commercial signage controls. As discussed in section 6.2, (i) in Pelotas the local authority does not have any control over irregular signs, (ii) in Gramado some irregular signs in the city centre have been found because the City Council has been unsuccessful in convincing a few shop owners to support and respect the legislation, and, (iii) on the other hand, in Oxford irregular signs have not been found in the city centre because the City Council has total control over irregular signs.

*A. Commercial signs as positive or negative elements of the city centre image and user satisfaction with the appearance of historic city centres*

Taking into account the responses of residents in Gramado, there is a significant relationship between user perception and evaluation of commercial signage as a positive or negative element of the city centre image and user satisfaction with the appearance of the city centre (KW=8.07, DF=2, p=0.02). This result suggests that users who evaluate the appearance of the city centre positively tend to agree that commercial signage is a positive element of the city centre image. Although there is no significant relationship between these variables when responses of residents in Oxford and Pelotas are analysed, the results of the analysis of frequencies suggest that: in Oxford, where commercial signage controls are applied and the streetscape is ordered, the majority of residents who evaluate the city centre as “very beautiful” or “beautiful” agree that the commercial signage is a positive element of the city centre image (55.26% of users). In addition, in Pelotas, where commercial signage controls are not effective and the streetscape is disordered, the majority of residents who evaluate the city centre as “very ugly” or “ugly” agree that the commercial signage is a negative element of the city centre image (42.52% of users) (see Table 6.25).

Table 6.25: User satisfaction with the appearance of the city centre and user perception and evaluation of commercial signage as a positive or negative element of the city centre image (Source: fieldwork 2005).

Case study	Q4. How would you sum up the appearance of the city centre?	Q10. Do you think that the commercial signage in the city centre is a positive or negative element of the image of the city centre?			
		Positive	Negative	I don't know	Total Q4
Oxford	Very beautiful + beautiful	63(55.26%)	14(12.28%)	12(10.53%)	89(78%)
	Neither beautiful nor ugly	14(3.88%)	6(5.26%)	5(4.38%)	25(21.93%)
	Ugly + very ugly	0	0	0	0
	Total Q10	77(67.54%)	20(17.54%)	17(14.91%)	114(100%)
Gramado	Very beautiful + beautiful	57(47.50%)	30(25.08%)	17(14.16%)	104(86.67%)
	Neither beautiful nor ugly	4(3.33%)	7(5.83%)	5(4.17%)	16(13.33%)
	Ugly + very ugly	0	0	0	0
	Total Q10	61(50.83%)	37(30.83%)	22(18.33%)	120(100%)
Pelotas	Very beautiful + beautiful	0	6(4.72%)	3(2.36%)	9(7.09%)
	Neither beautiful nor ugly	6(4.72%)	34(26.77%)	11(8.66%)	51(40.16%)
	Ugly + very ugly	4(3.15%)	54(42.52%)	9(7.08%)	67(52.75%)
	Total Q10	10(7.87%)	94(74.02%)	23(18.11%)	127(100%)

Table 6.5.8 in Appendix 6.5 presents this table with the categories of answers not clustered.

*B. Commercial signs as positive or negative elements of the city centre image and user perception and user evaluation of order among commercial signs*

The findings of this section suggest that in places where different commercial signage approaches are applied, distinct relationships can be found between user perception and evaluation of commercial signage as a positive or negative element of the city centre image, and user perception and evaluation of order among commercial signs. There is a significant relationship between these variables when responses of residents in Oxford (KW=8.23, DF=2, p=0.02), Gramado (KW=11.61, DF=2, p=0.003) and Pelotas (KW=13.98, DF=2, p=0.001) are analysed.

In Oxford, where commercial signage controls are applied and the preservation of historic buildings is the main issue that drives the design of these controls (see section 6.2), the majority of residents who agree that the commercial signage is a positive element of the city centre image (67.54% of users) evaluate these media as “very ordered” or “ordered” (44.74% of users). On the other hand, in Gramado, where commercial signage controls are applied and the promotion of a specific Alpine character drives the design of these controls (see section 6.2), residents who agree that the commercial signage is a positive element of the city centre image (50.83% of users) are divided between those who evaluate these media as “very ordered” or “ordered” (24.17% of users), and those for whom they are “neither ordered nor disordered” (25.83% of users). In Pelotas, where commercial signage controls are ineffective and historic buildings are harmed by signs (see section 6.2), the majority of residents who agree that the commercial signage is a negative element of the city centre image (74.02% of users) evaluate these media as “very disordered” or



“disordered” (69.28% of users) (see Table 6.26).

Table 6.26: User perception and evaluation of commercial signage as a positive or negative element of the city centre image and user perception and evaluation of order among commercial signs (Source: fieldwork 2005).

Case study	Q6. How would you sum up the commercial signage in the city centre?	Q10. Do you think that the commercial signage in the city centre is a positive or a negative element of the image of the city centre?			
		Positive	Negative	I don't know	Total Q6
Oxford	Very ordered + ordered	51(44.74%)	8(7.02%)	6(5.26%)	65(57.01%)
	Neither ordered nor disordered	26(22.81%)	12(10.53%)	11(9.65%)	49(42.98%)
	Disordered + very disordered	0	0	0	0
	Total Q10	77(67.54%)	20(17.54%)	17(14.91%)	114(100%)
Gramado	Very ordered + ordered	29(24.17%)	7(5.83%)	4(3.33%)	40(33.33%)
	Neither ordered nor disordered	31(25.83%)	28(23.33%)	18(15%)	77(64.17%)
	Disordered + very disordered	1(0.83%)	2(1.67%)	0	3(2.50%)
	Total Q10	61(50.83%)	37(30.83%)	22(18.33%)	120(100%)
Pelotas	Very ordered + ordered	1(0.79%)	0	1(0.79%)	2(1.57%)
	Neither ordered nor disordered	1(0.79%)	6(4.72%)	5(3.94%)	12(9.45%)
	Disordered + very disordered	8(6.30%)	88(69.28%)	17(13.38%)	113(88.98%)
	Total Q10	10(7.87%)	94(74.02%)	23(18.11%)	127(100%)

Table 6.5.9 in Appendix 6.5 presents this table with the categories of answers not clustered.

#### 6.4.4 User perception and evaluation of wayfinding through commercial signage

The results from the statistical analysis of questionnaire type B suggest that commercial signs help wayfinding even in city centres where these media are disordered. The majority of residents in Oxford (77.19% of users), Gramado (55.83% of users) and Pelotas (54.33% of users) mention that commercial signage helps them to navigate through the city centre of their cities. However, there are statistical differences between users from these three case studies in terms of perception and evaluation of commercial signs as elements that help wayfinding (KW=16.239, DF=2, p=0.001). These differences occur between residents in Oxford and Gramado (U=5379.0, N1=114, N2=120, two-tailed p=0.001), and in Oxford and Pelotas (U=5584.0, N1=114, N2=127, two-tailed p=0.001). Comparing the mean score values (see Table 6.27), the commercial signage in the city centre of Oxford helps wayfinding more than it does in the city centres of Gramado and Pelotas. These primary results suggest that commercial signs will help users to navigate through city centres more in places where these media are higher ordered. In Oxford city centre, the commercial signage is ordered, while in Gramado city centre few irregular signs can be seen, and in Pelotas city centre these media are disordered (see Table 6.4 in section 6.2.2).

Table 6.27: User perception and evaluation of commercial signage as an element that helps, or not, navigation through the city centre (Source: fieldwork 2005).

Q11. Does commercial signage help you to navigate through the city centre?	Case studies			Total
	Oxford	Gramado	Pelotas	
Yes	88(77.19%)	67(55.83%)	69(54.33%)	224(62.05%)
No	26(22.81%)	53(44.17%)	58(45.67%)	137(37.95%)
Mean score *	1.23	1.44	1.46	1.38
Total	114(100%)	120(100%)	127(100%)	361(100%)

\* The lower this vale, the more commercial signage helps wayfinding.

6.4.4.1 Wayfinding through commercial signage in historic city centres and user satisfaction with the appearance of historic city centres

There is a significant relationship between user satisfaction with the appearance of city centres, and user perception and evaluation of commercial signage as an element that helps wayfinding in these places according to responses of residents in Oxford (U=914.0, N1=88, N2=26, two-tailed p=0.05), Gramado (U=1309.0, N1=67, N2=53, two-tailed p=0.002) and Pelotas (U=1630.0, N1=69, N2=58, two-tailed p=0.05). In Oxford and Gramado, the majority of residents who agree that commercial signs help their wayfinding evaluate the city centre as “very beautiful” or “beautiful” (Oxford: 62.28% of users; Gramado: 52.5% of users). On the other hand, in Pelotas, the majority of residents who say that commercial signage helps their navigation through the city centre evaluate the appearance of this place as “neither beautiful nor ugly” (26.77% of users), “ugly” or “very ugly” (24.41% of users) (see Table 6.28). These results show that in city centres where commercial signage controls are applied and the streetscape is ordered (Oxford and Gramado), users who agree that commercial signage helps their wayfinding are satisfied with the appearance of the city centre. On the other hand, in a city centre where commercial signage controls are inefficient and the streetscape is disordered (Pelotas), users who agree that commercial signage helps their wayfinding are not satisfied with the appearance of the city centre. In this regard, the results suggest that even in places perceived and evaluated as negative in terms of appearance, commercial signage is recognized as an element that helps users’ spatial orientation.

Table 6.28: User perception and evaluation of commercial signage as an element that helps, or not, navigation through the city centre and user satisfaction with the appearance of the city centre (Source: fieldwork 2005).

Case studies	Q4. How would you sum up the appearance of the city centre?	Q11. Does commercial signage help you to navigate through the city centre?		
		Yes	No	Total Q4
Oxford	Very beautiful + beautiful	71(62.28%)	18(15.79%)	89(78.07%)
	Neither beautiful nor ugly	17(14.91%)	8(7.02%)	25(21.93%)
	Ugly + very ugly	0	0	0
	Total Q11	88(77.19%)	26(22.81%)	114(100%)
Gramado	Very beautiful + beautiful	63(52.5%)	41(34.17%)	104(86.67%)
	Neither beautiful nor ugly	4(3.33%)	12(10%)	16(13.33%)
	Ugly + very ugly	0	0	0
	Total Q11	67(55.83%)	53(44.17%)	120(100%)
Pelotas	Very beautiful + beautiful	4(3.15%)	5(3.94%)	9(1.07%)
	Neither beautiful nor ugly	34(26.77%)	17(13.39%)	51(40.16%)
	Ugly + very ugly	31(24.41%)	36(28.35%)	67(52.75%)
	Total Q11	69(54.33%)	58(45.67%)	127(100%)

Table 6.5.10 in Appendix 6.5 presents this table with the categories of answers not clustered.

#### 6.4.4.2 Wayfinding through commercial signage in historic city centres and user perception and evaluation of order among commercial signs

There is a significant relationship between user perception and evaluation of commercial signage as an element that helps wayfinding in city centres, and user perception and evaluation of order among commercial signs according to responses of residents in Oxford (U=869.0, N1=88, N2=26, two-tailed p=0.04), Gramado (U=1442.0, N1=67, N2=53, two-tailed p=0.03) and Pelotas (U=1574.5, N1=69, N2=58, two-tailed p=0.02). In Oxford, the majority of residents who agree that commercial signage helps their wayfinding (77.19% of users) sum up these media as “very ordered” or “ordered” (49.13% of users). In Gramado, residents who mention that commercial signage helps their wayfinding (55.83% of users) are divided between those who sum up these media as “very ordered” or “ordered” (24.17% of users), and “neither ordered nor disordered” (29.17% of users). On the other hand, in Pelotas, the majority of residents who agree that the commercial signage helps their wayfinding (54.33% of users) evaluate these media as “disordered” or “very disordered” (47.24% of users) (see Table 6.29).

The findings from the case study of Oxford suggest that ordered commercial signs help user’s navigation through the city centre. On the other hand, the results from Gramado show that ordered commercial signs are not a guarantee that these media will help wayfinding, as 44.17% of residents in this city say that these signs do not help their spatial orientation in the city centre. At the same time, disordered commercial signs do not necessarily hinder people’s spatial orientation, as 54.33% of residents in Pelotas agree that these media do help their wayfinding.

Table 6.29: User perception and evaluation of commercial signage as an element that helps, or not, navigation through the city centre and user perception and evaluation of order among commercial signs (Source: fieldwork 2005).

Case studies	Q6. How would you sum up the commercial signage in the city centre?	Q11. Does commercial signage help you to navigate through the city centre?		Total Q6
		Yes	No	
Oxford	Very ordered + ordered	56(49.13%)	9(7.89%)	65(57.02%)
	Neither ordered nor disordered	32(28.07%)	17(14.91%)	49(42.98%)
	Ugly + very ugly	0	0	0
	Total Q11	88(77.19%)	26(22.81%)	114(100%)
Gramado	Very ordered + ordered	29(24.17%)	11(9.17%)	40(33.33%)
	Neither ordered nor disordered	35(29.17%)	42(35%)	77(64.17%)
	Disordered + very disordered	3(2.5%)	0	3(2.5%)
	Total Q11	67(55.83%)	53(44.17%)	120(100%)
Pelotas	Very ordered + ordered	1(0.78%)	1(0.79%)	2(1.57%)
	Neither ordered nor disordered	8(6.30%)	4(3.15%)	12(9.45%)
	Disordered + very disordered	60(47.24%)	53(41.73%)	113(88.98%)
	Total Q11	69(54.33%)	58(45.67%)	127(100%)

Table 6.5.11 in Appendix 6.5 presents this table with the categories of answers not clustered.

### **6.4.5 Summary of the findings related to user perception and evaluation of historic city centres**

The findings presented in the previous sub-sections support working hypothesis B: historic city centres where different commercial signage approaches are applied are perceived and evaluated differently in terms of appearance, city centre functions, city centre images, and wayfinding through commercial signs. Based on this, the following main results were found:

*a. Findings related to user perception and evaluation of the appearance of historic city centres (section 6.4.1):*

1. According to the perception and evaluation of residents in the three case studies, the findings show that in city centres where commercial signage controls are effective (Oxford and Gramado), user satisfaction with the appearance of these places is positive, while in a city centre where commercial signage controls are not effective (Pelotas), user satisfaction with the appearance of this place is negative. With regard to these results, there are no differences between lay people and professionals in terms of perception and evaluation.
2. Findings from the analysis of perception and evaluation of residents in Oxford, Gramado, and Pelotas show that in cities where different commercial signage control approaches are adopted, different aspects of the streetscape will influence user satisfaction with the appearance of the city centre. In this respect, there are no differences between lay people and professionals in terms of perception and evaluation. The findings suggest that (i) in Brazil, where the majority of historic cities are harmed by an excessive number of commercial signs, the number of commercial signs has more influence on user satisfaction with the appearance of the city centre than other features of the streetscape, while (ii) in England, where commercial signage controls are effective and the streetscape is ordered and characterised by preserved historic buildings, the historic buildings and places have more influence on user satisfaction with the appearance of the city centre than other features of the streetscape.
3. According to the responses of residents in Oxford and Pelotas, in a city centre where commercial signage controls are effective (Oxford), commercial signs are evaluated as ordered, while in a city centre where commercial signage controls are not effective (Pelotas), commercial signs are evaluated as disordered. At the same time, in Gramado,

where commercial signage controls are effective, the majority of residents sum up the commercial signs as “neither ordered nor disordered”. This result can be related to the fact that in Gramado there are irregular signs along the main commercial street of the city centre (see section 6.2). Analysing the responses of users from Gramado and Pelotas, the findings suggest that: the higher the user perception and evaluation of order among commercial signs, the higher the user satisfaction with the appearance of the city centre. A correlation between user perception and evaluation of order among commercial signs, and user satisfaction with the appearance of the city centre is not found in the case study of Oxford, but the analysis of frequencies suggests the same pattern found in the case studies of Gramado and Pelotas.

4. Findings from the analysis of responses of users from the three case studies suggest that commercial signs reinforce the commercial appearance of historic city centres even in places where these media are designed to reinforce the historic character of these city centres. The results from this analysis also show that there is no relationship between user perception and evaluation of commercial signage as an element that reinforces the historic or/and the commercial appearance of city centres, and user satisfaction with the appearance of city centres.

5. Findings from the analysis of responses of users from Oxford, Gramado and Pelotas suggest that in cities where different commercial signage control approaches are adopted, different aspects of the streetscape will be recognised as important in making the city centre an attractive place. The lowest number of users who mention historic buildings and places as relevant aspects that make the city centre an attractive place are from Gramado, where historic buildings are not the main feature of the city centre due to the design approach adopted by the local authority. At the same time, the number of commercial signs is more important in making the city centre an attractive place for users from Pelotas than for users from Oxford. Residents in Pelotas, where the majority of buildings are harmed by excessive numbers of commercial signs, tend to be more aware of the importance of controlling this issue. On the other hand, in Oxford, where the number of commercial signs is already controlled by commercial signage guidelines and legislation, users tend to focus on other aspects of the streetscape, such as the appearance of buildings and historic buildings and places.

6. According to responses of users from Gramado and Pelotas, there is a correlation between user satisfaction with the appearance of the city centre, and user perception and evaluation of the importance attributed to aspects that make the city centre an attractive place. In Gramado, the higher the user satisfaction with the city centre appearance, the higher the importance attributed to the appearance and numbers of commercial signs in making the city centre an attractive place. In Pelotas, the lower the user satisfaction with the city centre appearance, the higher the importance attributed to the appearance of commercial signs in making this city centre a future attractive place. The findings indicate that in Gramado the commercial signage approach has achieved its objective of creating a place perceived and evaluated positively by users. They also demonstrate that a future commercial signage approach adopted in Pelotas should control the appearance of shopfronts and window displays in order to increase user satisfaction with the city centre.

7. Findings from the analysis of responses of users from Gramado show that there is a correlation between user perception and evaluation of order among commercial signs, and the importance attributed by users to aspects that make the city centre an attractive place. This result demonstrates that in Gramado, where commercial signage is ordered, users tend to focus their attention on historic buildings and places as important aspects in making the city centre attractive. This fact suggests that the commercial signage approach adopted in Gramado should take into account the protection of historic buildings, because these buildings have a significant influence on user perception and evaluation of order in the city centre.

*b. Findings related to user perception and evaluation of city centre functions (section 6.4.2):*

1. Results related to the case studies of Oxford and Gramado suggest that city centres where commercial signage controls are effective are perceived and evaluated as places of “leisure”. However, results from the case study of Pelotas show that a city centre where commercial signage controls are not effective and the streetscape is disordered can also be perceived and evaluated as a place of “leisure”. This last finding suggests that when a city centre offers entertainment (such as cinemas, museums, theatres and department stores), which cannot be found in other areas of the city, this centre will be perceived and evaluated as a place of leisure even when visual pollution is a problem.

2. Results from the case study of Oxford suggest that the higher the importance attributed to “leisure” as a city centre function, the higher the user satisfaction with the appearance of the city centre. However, in Pelotas, the higher the importance attributed to “leisure” as a city centre function, the lower the user satisfaction with the appearance of the city centre. These results suggest that leisure is an important city centre function even in places not perceived and evaluated as positive by residents. As previously mentioned, this may also indicate that other factors, such as concentration of entertainment, can increase the importance of city centres as places of “leisure”.

3. Findings from the analysis of responses of residents in Oxford, Gramado and Pelotas show that a relationship between user perception and evaluation of order among commercial signs, and user perception and evaluation of city centres as place of “leisure” can exist when shopfronts and window displays are disordered. Results from the case study of Pelotas show that the higher the importance attributed to “leisure” as a city centre function, the lower the user perception and evaluation of order among commercial signs.

*c. Findings related to user perception and evaluation of city centre images (section 6.4.3):*

1. According to responses of users from Oxford, Gramado and Pelotas, in places where different commercial signage control approaches are adopted, users perceive different city centre images. Reflecting the aims of the commercial signage control approaches adopted by the local authority in each case study, the city centre of Oxford is recognized as a historic, commercial, tourist and cosmopolitan centre, and the city centre of Gramado is perceived as a commercial and tourist centre. Even with the majority of historic buildings significantly harmed by commercial signs in Pelotas, its city centre is recognized by residents as a commercial, historic, and tourist centre. This last result demonstrates the potential of Pelotas to become a successful tourist attraction. At the same time, the results show that the city centre of Oxford is perceived as more historic and cosmopolitan than the city centres of Gramado and Pelotas, and more tourist-focussed than the city centre of Pelotas. In addition, the city centre of Pelotas is perceived as more historic and less tourist-focussed than the city centre of Gramado.

2. Results from the analysis of responses of users from the case studies of Oxford, Gramado and Pelotas suggest that in city centres where commercial signage controls are effective, commercial signs are evaluated as positive elements of the city centre image,

while in a city centre where commercial signage controls are not effective, commercial signs are evaluated as negative elements of the city centre image. Reflecting the way that commercial signage controls are approached in each case study, these findings show that (i) the commercial signage in the city centre of Oxford is evaluated more positively than the commercial signage in the city centres of Gramado and Pelotas; and (ii) the commercial signage in the city centre of Pelotas is evaluated more negatively than the commercial signage in the city centres of Oxford and Gramado.

3. According to responses of residents in Gramado, there is a relationship between user perception and evaluation of commercial signage as a positive element of the city centre image, and (i) user satisfaction with the appearance of the city centre, and (ii) user perception and evaluation of order among commercial signs. In Gramado, users who evaluate the appearance of the city centre positively tend to agree that commercial signs are positive elements of the city centre image. There is no significant relationship between these variables when the case studies of Oxford and Pelotas are analysed; however, the analysis of frequencies of user responses in these case studies suggests the same pattern found in the case study of Gramado. The findings also show that in places where different commercial signage approaches are adopted, distinct associations can be found between user perception and evaluation of commercial signage as a positive or negative element of the city centre image, and order among commercial signs. Users who agree that commercial signs are positive elements of the city centre image evaluate these media as “very ordered”, “ordered”, or “neither ordered nor disordered”, while users who agree that commercial signs are negative elements of the city centre image evaluate these media as “very disordered” or “disordered”.

*d. Findings related to user perception and evaluation of wayfinding through commercial signage (section 6.4.4):*

1. Results from the analysis of responses of residents in Oxford and Gramado suggest that in city centres where commercial signage controls are effective, commercial signs help people to find their way around the city centre. However, the results from the case study of Pelotas indicate that commercial signs can also help wayfinding when these media are disordered. Findings from the case studies of Oxford and Gramado suggest that users, who agree that commercial signage helps wayfinding, tend to be satisfied with the city centre appearance and evaluate these media as ordered. However, the results from the case study



of Pelotas show that the majority of residents in this city agree that commercial signs help them to find their way around the city centre, but evaluate this centre as “neither beautiful nor ugly”, “ugly”, or “very ugly”.

## 6.5 CONCLUSION

This chapter presented the findings from (i) the qualitative analysis of documentation review, archival records, interviews (research objective B), and systematic observation of physical characteristics of commercial street facades on-site and through photographs (research objective C), and (ii) the quantitative analysis of questionnaire type B (research objectives D and E). This conclusion highlights the main issues related to (i) the operation of commercial signage controls in different urban contexts, and (ii) user perception and evaluation of these controls and their effects on the historic city centres of Oxford, Gramado and Pelotas. In the following paragraphs, the results are used to answer the research questions set out below.

- *Research Question 1:* Which aspects of the operation of commercial signage controls need to be taken into account in the development of a general commercial signage approach applied to the historic city centres of different urban contexts?
- *Research Question 2:* Which physical characteristics of commercial signs and buildings need to be taken into account in the development of a general commercial signage approach applied to the historic city centres of different urban contexts?
- *Research Question 3:* Are there common perceptions and evaluations between users from different urban contexts in terms of commercial signage controls and the appearance of commercial street facades in historic city centres?

With regard to research question 1, the results from the qualitative analysis (see section 6.2) suggest that the following eight main aspects of the operation of commercial signage controls should be taken into account in the development of a general commercial signage approach applicable to historic city centres of different urban contexts:

1. The protection of historic buildings and places and the promotion of the commercial appearance of historic city centres: the protection of historic buildings and places should be the priority of commercial signage controls applied in historic city centres of different

urban contexts. Based on the perception and evaluation of users from the three case studies, usually commercial signs reinforce the commercial appearance of places even in city centres where commercial signage controls are applied to protect the historic heritage. This fact suggest that a general commercial signage approach should recommend that controls and guidance be designed to (i) protect the historic character of places and, at the same time, (ii) reinforce the commercial image of historic city centres in a positive manner. The results of this chapter demonstrate that to reinforce the commercial appearance of historic centres is not considered to be something that is negative by users, as it does not decrease user satisfaction with the appearance of these places. The findings support what was discussed in the literature review (see Chapter Three, section 3.1.1): commercial signs are important elements in the contemporary streetscape, and they are recognized as such by users from different urban contexts. The challenge facing local authorities is to handle pressures between commercial interests and preservation of historic heritage in order to create places perceived and evaluated positively by different users (see Chapter Three, section 3.2).

2. Political context: the findings in this chapter demonstrate that the implementation of a national commercial signage approach is fundamental in countries like Brazil, where every time a new local authority is elected, laws implemented by the previous administration are usually modified or forgotten. This happens because of different political views, interests, and political ideologies between parties. A national approach can ensure the adoption of commercial signage controls by local authorities from distinct political parties providing a long term commitment. Every City Council would be responsible for the application of commercial signage controls in order to protect the historic heritage, and avoid visual pollution in historic city centres. The positive example verified by the case study of Oxford, as well as the other cities discussed in Chapter Four (Leeds, Dartmouth, Exeter, Bath and York) demonstrate that a national commercial signage approach helps local authorities to design and apply shopfront and advertisement controls.

3. Public participation: a general commercial signage approach should include the participation of the local community in the development of commercial signage controls. As shown in this chapter, users from different countries and cities where different commercial signage approaches are applied would like to be consulted when these controls are being developed. As supported by the literature review (see Chapter Four, section 4.4),

users who participate in the development of commercial signage controls tend to get involved in the process of implementation of these regulations, helping the local authority to identify irregular signs in the city centre. In Oxford and Gramado, for example, local people are consulted during the development of commercial signage controls, and later they help the City Council to identify shop owners who do not comply with these regulations. On the other hand, in Pelotas, where the local community is not consulted during the process of the development of commercial signage controls, residents are not committed to supporting these regulations. This chapter highlights that the dialogue between local authority and local community is essential for the successful implementation of any commercial signage control.

4. Persuading shop owners to support commercial signage controls: the findings in this chapter suggest that three initiatives can be recommended by a general commercial signage approach to persuade shop owners to support commercial signage controls - (i) public meetings open to members of the local community, City Council officers, and shop owners to discuss commercial signage controls, (ii) election of a mediator, who could be a link between shop owners and the local authority, in order to reach agreement related to commercial activities and preservation of historic heritage, and (iii) definition of a pilot area in the city centre to test commercial signage guidelines. This last initiative could help shop owners, and other groups in society, evaluate the improvement of the appearance of commercial streetscapes through the application of commercial signage controls on-site.

5. Guidelines described in objective terms: commercial signage guidelines should regulate physical characteristics of signs, such as “size”, “proportion”, “colour” and “materials”, through objective terms. Subjective expressions such as “harmonious shopfronts” and “signs should be adequate for building facades” should not be included in commercial signage controls. Subjective expressions lead to ambiguous regulations because, for example, signs evaluated as “harmonious” by some users can be evaluated as “not harmonious” by others. In the case study of Pelotas, the definition of what is an “adequate” shopfront in the central area depends on the individual interpretation of each planning officer because of the subjective expressions applied in the current commercial signage regulation. This problem is also identified in aesthetic controls applied in the United States as discussed in Chapter Two (see section 2.3.3).

6. Planning applications to install new commercial signs: shop owners should need to apply for permission of the local authority to install any kind of commercial signage in historic city centres. As a result, the City Council can determine whether the new media are appropriate in regard to the historic context of the city. A general commercial signage approach can recommend that physical aspects of new commercial signs, such as size, shape, proportion, colour, text fonts, materials, relationship with surrounding areas and between the sign and building facades, be described and illustrated in planning applications. This kind of recommendation is already implemented by the City Councils of Oxford and Gramado; however, in Pelotas this control is usually not required by the local authority. As a result, the visual pollution of this historic city is an increasing problem.

7. Commercial signage approaches working with marketing the city and urban tourism strategies: commercial signage controls should be designed to promote the image of the city centre that residents desire to see. Then, this image can be reinforced by the local authority through marketing the city and urban tourism strategies. In this regard, commercial signage controls need to be designed partly as a tool to promote the desired city centre image, and help shop owners to understand what commercial signage designs will work to reinforce this image. In the case studies of Oxford and Gramado, commercial signage controls and marketing the city strategies are approached to promote these cities as tourist destinations attracting visitors, potential residents and investors. This kind of approach has already been discussed in Chapter Four (see section 4.4.3), where initiatives implemented by the local authorities of Rio de Janeiro, Sao Paulo, Sao Luiz and Salvador in Brazil were analysed. In addition, the findings from the case study of Oxford show that marketing the city and urban tourism strategies can influence the design and control of commercial signs with particular focus on the preservation of historic heritage. This research recognizes that the image promoted by marketing strategies in historic city centres needs to emphasize the historic appearance of these places, and not just its commercial function.

8. Local guides describing how commercial signs need to be designed: a general commercial signage approach should recommend that each historic city has a local guidance document that explains how commercial signs ought to be designed to preserve the visual quality and historic character of the place. This guide should be designed by the local authority with the involvement of the local community, civic societies, and private

sectors. This guidance could help shop owners to understand how to design commercial signs in accordance with local legislation. In this guide, illustrations showing how a street facade in the city centre would look after the implementation of commercial signage controls could be used as a tool to convince shop owners to support regulations related to shopfronts and window displays. In the case of Oxford, there is a short guide that helps shop owners to design commercial signs; however, this is simply based on PPG 19 (Great Britain, 1992), which is the national commercial signage approach adopted in England. At the present time, Oxford does not have a specific local guide for designing commercial signs.

Taking into account the issues presented above as a theoretical background for the operation of commercial signage controls in historic city centres, the main findings from the quantitative analysis of user perception and evaluation of commercial signage controls and their effects on historic city centres (see section 6.4) are highlighted in the next paragraphs. These results help to answer research questions 1 and 2; the findings shown in the next paragraph also help to answer research question 3, as they are based on the common views found between users from the different urban contexts.

1. The findings presented in this chapter suggest that a general approach to controlling commercial signage should take into account the fact that users from the three case studies, where different commercial signage control approaches are applied, agree that: (i) commercial signage controls are necessary in historic sites, (ii) they would like to participate in the development of these controls, and (iii) they believe that the appearance of buildings and commercial signs, the historic buildings and places, and the number of commercial signs are relevant issues in the design of these controls. The findings also demonstrate that user urban context may influence user perception and evaluation of the aspects that should be considered in the development of commercial signage controls. In this regard, a general commercial signage approach should recommend that local authorities first need to investigate which physical aspects of the streetscape need be taken into account in the development of local commercial signage controls with regard to the perception and evaluation of residents.

2. Different commercial signage approaches clearly influence user perception and evaluation of city centre appearance, city centre image, and wayfinding through

commercial signage. The findings in this chapter suggest that the application of commercial signage controls can improve the appearance of city centres, as user satisfaction with the appearance of these places is higher when these controls are effective. As discussed in the literature review (see Chapter Two, section 2.2) and supported by the results in this chapter, one way to increase user satisfaction with historic city centres is to promote order among commercial signs. The findings also show that commercial signs are such important features in historic centres that even in places where visual pollution is a problem, these media help wayfinding. However, this chapter shows that these media will help users to navigate through their city centres in places where commercial signs are ordered more than in places where they are disordered.

3. Historic city centres offer a variety of activities, which are usually not found in other areas of the city. Findings from the case study of Pelotas suggest that this fact can contribute to making historic city centres become recognized as places of “leisure” even when visual pollution is a problem. This fact reinforces the importance of the social and economic functions of these city centres, and the potential of these places in becoming pleasant leisure centres according to the perception and evaluation of residents. As shown by the literature review (see Chapter Four, section 4.2), users prefer to go to places where the appearance is evaluated positively. In this regard, a general commercial signage approach can help to improve the appearance of historic city centres, which are already recognized as areas of leisure.

4. The way that commercial signage controls are approached can influence how users sum up city centre images. Oxford city centre, where commercial signage controls aim to protect the historic heritage and the City Council is involved in promoting this area as a historic and tourist place, is recognized as a historic, commercial, tourist and cosmopolitan centre by users. Moreover, Gramado city centre, where commercial signage controls ignore the importance of historic heritage, is not recognized as historic. According to residents in Gramado, this city centre is a commercial and tourist area reflecting the aims of the commercial signage control approach adopted by the local authority.

When the appearance of Gramado city centre is evaluated, historic buildings and places influence user satisfaction. This result shows that a commercial signage approach, which takes into account the protection of historic buildings and places, should be adopted in this

city, as historic heritage has a significant influence on resident satisfaction with the appearance of this city centre. At the same time, Pelotas city centre, where the streetscape is harmed by commercial signs, is recognized as a commercial, historic and tourist centre by users. Even with the majority of historic buildings significantly harmed by commercial signs, this city centre is still perceived as a historic and tourist place. These findings support the idea that a general commercial signage approach should emphasize the importance of protecting historic buildings and places, in order to avoid replacing the historic character of city centres with manufactured images, which simply reflect commercial and tourist interests.

5. Findings from the analysis of responses of users from Oxford, Gramado and Pelotas suggest that the application of effective commercial signage controls (i) results in commercial signage that is perceived and evaluated as a positive element of historic city centre images, (ii) increase user satisfaction with the appearance of historic city centres, (iii) make the appearance of buildings and the historic buildings and places be perceived and evaluated as positive elements of historic city centres, and (iv) stimulate users to perceive and evaluate the appearance of buildings and the historic buildings and places as important elements in making historic city centres attractive places. The findings also suggest that effective commercial signage controls contribute in making (i) buildings and commercial signs become points of visual reference in historic city centres, helping wayfinding, and (ii) city centres attractive places. In this regard, this research assumes that the design and implementation of a general commercial signage approach for historic city centres can help to increase (i) positively user perception and evaluation of the appearance of commercial signs, and (ii) user satisfaction with the appearance of historic city centres.

The next chapter explores whether users from different urban contexts have similar preferences and levels of satisfaction when the appearance of the commercial street facades in the sample (see Table 5.3 in Chapter Five) is analysed. Chapter Seven also investigates which physical aspects of these street facades influence user responses. Finally, it presents the findings obtained from the focus group discussion (see Chapter Five, section 5.3.3.5).

## Chapter Seven

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### Perception and evaluation of commercial streetscapes by users from different urban contexts

#### MAIN STRUCTURE OF CHAPTER SEVEN

7.1 Introduction.

7.2 User perception and evaluation of the appearance of commercial street facades.

7.3 Perception and evaluation of residents in the city where the commercial streets evaluated negatively are located.

7.4 Conclusion.

#### 7.1 INTRODUCTION

This chapter addresses two of the research objectives of this thesis:

a. Research objective F: Analysis of preferences and satisfactions of users from different urban contexts in terms of (i) the appearance of commercial street facades where distinct commercial signage approaches are applied, and (ii) the physical characteristics of these streets that might influence those responses.

b. Research objective G: In a city where the appearance of commercial streetscapes are evaluated negatively, investigation of the perception and evaluation of residents in terms of the following issues: (i) which factors contribute to increasing visual pollution in the city centre and what can be done to reduce this problem, (ii) the relationship between commercial signage and building facades in the historic city centre, and (iii) whether residents' evaluations of commercial street facades of their city coincide with evaluations of the same streetscapes by users from other places.

The introduction of this chapter explores whether the media representation chosen in this research, colour photomontages, is an effective substitute to analyse user perception and evaluation of commercial streetscapes on-site. According to the literature (such as Stamps, 1993; Stamps & Miller, 1993; and Sanoff, 1991), colour photomontages are an effective visual representation to explore user perception and evaluation of the built environment. However, as this thesis deals with a sample of users from different urban contexts, an investigation was made in order to see whether perception and evaluation of users from the



three case studies could be affected by the representation of the street facades in the sample through colour photomontages.

Next, this chapter is divided into two main sections. The first part presents the findings from the quantitative data analysis of questionnaire type B. This section refers to research objective F, and tests the following general assumption: while some visual preferences in the built environment may be influenced by the user’s urban context, others (universals) may be common to the majority of people from different countries and may be useful to define general principles that guide preference and satisfaction. Similarities and differences between responses of users from different case studies, countries, and user groups (lay people and professionals) are analysed. This section presents the results related to (i) user preferences for commercial street facades, (ii) user satisfaction with the appearance of commercial street facades, (iii) user choices for the best and the worst commercial street facades in terms of appearance, and (iv) user perception and evaluation of physical features of those street facades that influence users’ choices. The first section of this chapter is designed to answer research questions 2 and 3 by testing proposition 3 and working hypothesis C (see Table 7.1). Sub-hypotheses emerged from this working hypothesis were designed to guide the statistical analysis (see Appendix 7.1); the results from the statistical testing of these sub-hypotheses are presented in this chapter as findings related to working hypothesis C.

Table 7.1: Propositions and working hypotheses tested in Chapter Seven (Source: author).

<b>PROPOSITION AND WORKING HYPOTHESIS TESTED IN SECTION ONE OF THIS CHAPTER</b>	
<b>Proposition 3:</b> There is a relationship between the commercial signage approach adopted in historic city centres and user perception and evaluation of the appearance of commercial street facades and physical aspects of the streetscape that influence those responses.	<b>Working hypothesis C:</b> Commercial street facades in historic city centres where different commercial signage approaches are applied are perceived and evaluated differently in terms of their appearance and physical aspects of the streetscape that influence user responses.
<b>PROPOSITION AND WORKING HYPOTHESIS TESTED IN SECTION TWO OF THIS CHAPTER</b>	
<b>Proposition 4:</b> Taking into consideration the appearance of the commercial street facades chosen as the worst streets in terms of appearance, there is a relationship between perception and evaluation of residents in the city where these streets are placed and perception and evaluation of users from other cities.	<b>Working hypothesis D:</b> Residents in a city, where the commercial street facades chosen as the worst streets in terms of appearance are placed, and users from other cities share the same perception and evaluation in terms of the appearance of these streets.

The second section of this chapter presents the qualitative results from the focus group discussion (research objective G), and tests proposition 4 and working hypothesis D (see Table 7.1 above). This section analyses the perception and evaluation of residents in the city where the street facades in the sample chosen as the worst streets in terms of appearance are located. This also highlights the lack of interest of shop owners to

participate in discussions about visual pollution. The results from this section help to answer research questions 1, 2 and 3.

To conclude, this chapter highlights the characteristics of the commercial signage controls applied in the street facades evaluated positively and negatively by users from the different urban contexts. This also summarizes the physical characteristics of commercial signs and buildings that influence user perception and evaluation of the appearance of those street facades. Proposals to reduce visual pollution in historic city centres are also discussed.

### **7.1.1 Comparison between user responses to questionnaires type A and type B**

Questionnaire type A was applied in order to analyse whether the media representation adopted in this research to represent the commercial street facades in the sample serves as an adequate substitute to analyse user perception and evaluation of commercial streetscapes on-site (see Chapter Five, section 5.3.3.3, B). In this regard, user perception and evaluation of commercial street facades observed on-site (sample A), and user perception and evaluation of the same commercial street facades observed through colour photomontages (sample B) were compared. In this analysis, statistical tests were not carried out because of the extreme difference between the sample size of users who answered questionnaire type A (sample A = 33 users) and questionnaire type B (sample B = 361 users). The analysis was based on the comparison between (i) the mean score values and (ii) the frequencies of user responses to each question in both questionnaires.

The findings from this analysis suggest that the majority of users from both samples have similar responses in relation to: (i) the appearance of the commercial street facades in the sample, (ii) those factors that influence their evaluation of the appearance of these commercial street facades, (iii) beauty, interest, order, colour, and complexity in relation to the commercial street facades, (iv) the number of commercial signs and the coverage of buildings by these media, (v) the number of buildings harmed by commercial signs, (vi) the variation of commercial signs and buildings, (vii) the influence of commercial signs on the appearance of historic buildings, and (viii) the relationship between commercial signs and building form. Appendix 7.2 presents the mean scores values related to user responses to questionnaires type A and B, and the frequencies of user responses to questionnaire type A. Frequencies related to user responses to questionnaire type B are presented in this

chapter and Chapter Eight. With regard to user responses to the open questions, the results from both types of questionnaires were very similar. The findings from this analysis demonstrated that colour photomontage serves as an adequate substitute to analyse perception and evaluation of users from different urban contexts, when the appearance of commercial and historic streetscapes are studied. These findings agree with the studies of Stamps and Miller (1993), Stamps (1993), and Sanoff (1993).

## 7.2 USER PERCEPTION AND EVALUATION OF THE APPEARANCE OF COMMERCIAL STREET FACADES

This section refers to research objective F presenting the findings from questionnaire type B. User preferences and satisfactions with regard to the appearance of the commercial street facades in the sample are analysed. Physical characteristics of these streets that might influence user responses are also explored. Perception and evaluation of users from Oxford, Gramado and Pelotas, and lay people and professionals are compared. In this section, the following working hypothesis is tested:

Working hypothesis C: Commercial street facades in historic city centres where different commercial signage approaches are applied are perceived and evaluated differently in terms of their appearance and physical aspects of the streetscape that influence user responses.

### 7.2.1 User preferences for commercial street facades

Taking into account the analysis of user responses of the whole sample (361 respondents), the findings suggest that the highest user preference is related to the appearance of streets 1 and 2 (see Figure 7.1 and Table 7.2). Both these streets are located in Oxford city centre, where commercial signage controls are applied in order to preserve the historic heritage and the streetscape is ordered (see Chapter Six, section 6.2.2). Taking into account the analysis of the physical characteristics of these streets (see Appendix 5.7), street 1 has high complexity, whilst street 2 has the second lowest complexity when compared to the streets in the sample. In addition, street 1 has 2.70% of the street facade covered by commercial signs, and 0.31 square meters of commercial signs per linear street meter, while street 2 has 5.62% of the street facade covered by commercial signs, and 0.68 square meters of commercial signs per linear street meter. As a result, this research suggest that (i) high or

low complexity when associated with ordered streetscape is a positive aspect of commercial street facades, and (ii) a maximum of 5.62% of a street facade covered by commercial signs, and a maximum of 0.68 square meters of commercial signs per linear street meter are features of commercial street facades, which are perceived and evaluated by users in a positive way.



STREET 1



STREET 2

Figure 7.1: Streets 1 and 2 in Oxford city centre (Source: fieldwork 2005).

Streets 6 and 5 are ranked as the most negative street facades in the sample in terms of appearance by the majority of users from the whole sample (see Figure 7.2 and Table 7.2). Both these streets are located in Pelotas city centre, where commercial signage controls are ineffective and historic buildings are harmed by shopfronts and window display (see Chapter Six, section 6.2.2). Taking into account the analysis of the physical characteristics of these streets (see Appendix 5.7), both these streets have a low final level of commercial signage and building variation when compared to other streets in the sample. Moreover, street 5 has 11.31% of the street facade covered by commercial signs, and 0.85 square meters of commercial signs per linear street meter, while street 6 has 9.11% of the street facade covered by commercial signs, and 1.00 square meters of commercial signs per linear street meter. As a result, this research suggests that (i) low variation of commercial signs and buildings when associated with visual pollution is a negative aspect of commercial street facades, and (ii) a minimum of 9.11% of a street facade covered by commercial signs, and a minimum of 0.85 square metres of these media per linear street metre are features of commercial street facades perceived and evaluated by users in a negative way.



STREET 5



STREET 6

Figure 7.2: Streets 5 and 6 in Pelotas city centre (Source: fieldwork 2005).

Table 7.2: Ranking of the commercial street facades from one (users like the most) to six (users like the least) - the whole sample (361 users) (Source: fieldwork 2005).

Q12. Rank the streets from 1 (I most like) to 6 (I least like):	Street 1	Street 2	Street 3	Street 4	Street 5	Street 6
1 - I most like	146(40.44%)	80(22.16%)	109(30.19%)	24(6.65%)	2(0.55%)	0
2	83(22.99%)	116(32.13%)	61(16.90%)	83(22.99%)	14(3.88%)	5(1.39%)
3	89(24.65%)	61(16.90%)	77(21.33%)	96(26.59%)	28(7.76%)	8(2.22%)
4	39(10.80%)	99(27.42%)	73(20.22%)	99(27.42%)	20(5.54%)	32(8.86%)
5	3(0.83%)	5(1.39%)	27(7.48%)	30(8.31%)	140(38.78%)	156(43.21%)
6 - I least like	1(0.28%)	0	14(3.88%)	29(8.03%)	157(43.49%)	160(44.32%)
Mean score*	2.09	2.53	2.69	3.32	5.08	5.27
Total sample	361 (100%)					

\* The lower this value, the higher user preference.

Comparing the mean score values related to user answers in each case study (see Table 7.3), respondents from Oxford, Gramado and Pelotas rank the commercial street facades located in Pelotas city centre (streets 5 and 6) as the worst streets in terms of appearance. At the same time, the commercial street facades located in Oxford city centre (streets 1 and 2) are ranked as the best streets by users from Oxford and Pelotas. Street 3, in Gramado where commercial signage controls are effective and designed to reinforce the visual character of the city promoted as the “Brazilian Switzerland” (see Chapter Six, section 6.2.2), is ranked as the best street by residents in this city, while street 1 is put in second place as the best street by them (see Figure 7.3).

Table 7.3: Ranking of the commercial street facades from one (users like the most) to six (users like the least) - users from Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Q12. Rank the streets from 1(most like) to 6 (least like):		Street 1	Street 2	Street 3	Street 4	Street 5	Street 6
Oxford	1 - I most like	70(61.40%)	12(10.53%)	28(24.56%)	4(3.51%)	0	0
	2	18(15.79%)	43(37.72%)	19(16.67%)	22(19.30%)	10(8.77%)	2(1.75%)
	3	22(19.30%)	18(15.79%)	19(16.67%)	37(32.46%)	17(14.91%)	0
	4	4(3.51%)	39(34.21%)	24(21.05%)	23(20.18%)	7(6.14%)	18(15.79%)
	5	0	2(1.75%)	15(13.16%)	16(14.04%)	43(37.72%)	38(33.33%)
	6 - I least like	0	0	9(7.89%)	12(10.53%)	37(32.46%)	56(49.13%)
	Mean score*	1.65	2.79	3.05	3.54	4.7	5.28
Total of sample	114 (100%)						

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Continuation:							
Q12. Rank the streets from 1 (most like) to 6 (least like):		Street 1	Street 2	Street 3	Street 4	Street 5	Street 6
Gramado	1 - I most like	34(28.33%)	22(18.33%)	54(45%)	9(7.5%)	1(0.83%)	0
	2	31(25.83%)	29(24.17%)	17(14.17%)	43(35.83%)	1(0.83%)	0
	3	39(32.5%)	23(19.17%)	27(22.5%)	27(22.5%)	2(1.67%)	1(0.83%)
	4	16(13.33%)	46(38.33%)	19(15.83%)	35(29.17%)	2(1.67%)	2(1.67%)
	5	0	0	2(1.67%)	2(1.67%)	56(46.67%)	60(50%)
	6 - I least like	0	0	1(0.83%)	4(3.33%)	58(48.33%)	57(47.5%)
	Mean score*	2.3	2.77	2.18	2.92	5.37	5.44
Total of sample	120 (100%)						
Pelotas	1 - I most like	42(33.07%)	46(36.22%)	27(21.26%)	11(8.66%)	1(0.79%)	0
	2	34(26.77%)	44(34.65%)	25(19.68%)	18(14.17%)	3(2.36%)	3(2.36%)
	3	28(22.05%)	20(15.75%)	31(24.41%)	32(25.20%)	9(7.08%)	7(5.51%)
	4	19(14.96%)	14(11.02%)	30(23.62%)	41(32.28%)	11(8.66%)	12(9.45%)
	5	3(2.36%)	3(2.36%)	10(7.87%)	12(9.45%)	41(32.28%)	58(45.67%)
	6 - I least like	1(0.79%)	0	4(3.15%)	13(10.24%)	62(48.82%)	47(37.02%)
	Mean score*	2.29	2.07	2.87	3.5	5.16	5.09
Total of sample	127 (100%)						

\* The lower this value, the higher user preference.



STREET 3

Figure 7.3: Street 3 in Gramado city centre (Source: fieldwork 2005).

Statistical differences are found between preferences of users from Oxford, Gramado and Pelotas when analysing the appearance of street 1 (KW=29.29, DF=2, p=0.001), street 2 (KW=31.38, DF=2, p=0.001), street 3 (KW=22.85, DF=2, p=0.001), street 4 (KW=16.51, DF=2, p=0.001), street 5 (KW=16.71, DF=2, p=0.001), and street 6 (KW=7.19, DF=2, p=0.027) (Table 7.4). The statistical results show that: (i) users from Pelotas prefer streets 2 (located in Oxford) and 6 (located in Pelotas), (ii) users from Oxford prefer streets 1 (located in Oxford) and 5 (located in Pelotas), and (iii) users from Gramado prefer streets 3 and 4 (located in Gramado) (see Table 7.4). This analysis does not identify the causes of these differences, but this research suggests that familiarity with the streetscape and symbolic meanings attributed to buildings might influence responses of users, when the appearance of the streets located in their cities is evaluated. When questionnaire type B was being administered, for example, many residents in Gramado mentioned that buildings 1 and 3 in street 3 are culturally and historically important to this city. This is because the first is the main theatre of the city, where national and international events are organized every year, and the second is a building dating from 1954, year when Gramado was recognized as a city. This last building suffered some alterations, such as removal of original doors and windows, but the main structure is still preserved (see Figure 7.4). Users from Gramado mentioned that these were the reasons for them preferring street 3.

Table 7.4: Differences between users from the different case studies in terms of the rank of the commercial street facades from one (users like the most) to six (users like the least) (Source: fieldwork 2005).

Streets	Differences between responses of users from	Tendencies
Street 1	Oxford and Gramado (U=4388, N1=114, N2=120, two-tailed p=0.001), and Oxford and Pelotas (U=4966, N1=114, N2=127, two-tailed p=0.001).	Street 1 is evaluated more positively by users from Oxford than by users from Gramado and Pelotas.
Street 2	Oxford and Pelotas (U=4664, N1=114, N2=127, two-tailed p=0.001), and Gramado and Pelotas (U=5080, N1=120, N2=127, two-tailed p=0.001).	Street 2 is evaluated more positively by users from Pelotas than by users from Oxford and Gramado.
Streets 3 and 4	Oxford and Gramado (street 3:U=4705.5, N1=114, N2=120, two-tailed p=0.001; street 4:U=5092, N1=114, N2=120, two-tailed p=0.001), and Gramado and Pelotas (street 3:U=5446, N1=120, N2=127, two-tailed p=0.001; street 4:U=5675, N1=120, N2=127, two-tailed p=0.001).	Streets 3 and 4 are evaluated more positively by users from Gramado than by users from Oxford and Pelotas.
Street 5	Oxford and Gramado (U=4930, N1=114, N2=120, two-tailed p=0.001), and Oxford and Pelotas (U=5764.5, N1=114, N2=127, two-tailed p=0.004).	Street 5 is evaluated more positively by users from Oxford than by users from Gramado and Pelotas.
Street 6	Gramado and Pelotas (U=6242, N1=120, N2=127, two-tailed p=0.007).	Street 6 is evaluated more positively by users from Pelotas than by users from Gramado.



Figure 7.4: The main theatre of Gramado (left) and a building dating from 1954, year when Gramado was recognized as a city (right) (Source: author).

With regard to the findings from the analysis of responses of users from Oxford and Pelotas, this research suggests that user urban context might also influence user preferences for commercial street facades. The majority of streets in the city centre of Pelotas combine historic and ordinary buildings, but usually the former are harmed by the latter. As a result, the aesthetic composition of street 2, where commercial signs and ordinary buildings do not harm historic building facades (see Table 5.7.1 in Appendix 5.7), might be the reason why users from Pelotas evaluate this street in a positive way. Moreover, they might prefer street 2 because it represents an example of how historic buildings, ordinary buildings and commercial signs can coexist without visual pollution. In addition, users from Oxford, where the streetscape is characterized by preserved historic buildings, tend to evaluate street facades where historic buildings characterize the streetscape more positively than users from the other case studies, even when these buildings are harmed by commercial signs.

7.2.1.1 Preferences of lay people and professionals in each case study

The results from the analysis of preferences of lay people and professionals in each case study show that the appearance of the commercial street facades in Gramado is more popular with lay people than with professionals. The Alpine visual character of the streetscape in Gramado (see Chapter Six, section 6.2.2) is more accepted by lay users. This might be the reason that makes Gramado such a popular national tourist destination in the perception of many tourists across Brazil (Daros & Barroso, 1995, p.30). On the other hand, professionals tend to prefer the appearance of the street facades characterized by historic buildings, even when these buildings are harmed by visual pollution (see Table 7.5).

Table 7.5: Mean scores values related to the rank of the commercial street facades from one (users like the most) to six (users like the least) - lay people and professionals from Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Q12. Rank the streets from 1(most like) to 6(least like):		Street 1	Street 2	Street 3	Street 4	Street 5	Street 6
Oxford	Lay people	1.82	3.10	2.59	3.14	4.78	5.57
	Professionals	1.51	2.54	3.43	3.86	4.63	5.05
Gramado	Lay people	2.30	2.99	2.09	2.66	5.46	5.49
	Professionals	2.32	2.37	2.34	3.41	5.22	5.34
Pelotas	Lay people	2.38	2.28	2.62	3.17	5.30	5.25
	Professionals	2.16	1.80	3.24	4.00	4.94	4.86
* The lower this value, the higher user preference. Table 7.3.1 in Appendix 7.3 presents the frequencies related to lay people and professional answers.							

Statistical differences are found between preferences of lay people and professionals when analysing the appearance of the commercial street facades in the sample (see Table 7.6). The following results are found: (i) in Oxford, professionals prefer streets 1, 2 and 6, while lay people prefer streets 3 and 4; (ii) in Gramado, professionals prefer street 2, while lay people prefer street 4; and (iii) in Pelotas, professionals prefer streets 2 and 6, while lay people prefer streets 3 and 4. Looking at similarities between these user groups in each case study, there is no statistical difference when analysing street 5: this street is one of the worst streets in terms of appearance according to lay people and professionals. In addition, other common views are found between these user groups in the case studies of Gramado and Pelotas: (i) in Gramado, the largest group of lay people and professionals ranks streets 5 and 6 as the worst streets in terms of appearance, and streets 1 and 3 as the best streets in terms of appearance, and (ii) in Pelotas, street 1 is one of the best streets in terms of appearance according to lay people and professionals (see Table 7.5 above).



Table 7.6: Differences between lay people and professionals in terms of the rank of the commercial street facades from one (users like the most) to six (users like the least) - users from Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Streets	Differences between lay people and professionals in terms of preferences for commercial street facades		
	Oxford - 114 users	Gramado - 120 users	Pelotas - 127 users
1	U=1302.5, N1=51, N2=63, two-tailed p=0.04.	No differences.	No differences.
2	U=1161, N1=51, N2=63, two-tailed p=0.007.	U=1156, N1=79, N2=41, two-tailed p=0.007.	U=1488.5, N1=76, N2=51, two-tailed p=0.02.
3	U=1107, N1=51, N2=63, two-tailed p=0.004.	No differences.	U=1480.5, N1=76, N2=51, two-tailed p=0.02.
4	U=1170.5, N1=51, N2=63, two-tailed p=0.011.	U=1037.5, N1=79, N2=41, two-tailed p=0.001.	U=1307.5, N1=76, N2=51, two-tailed p=0.001.
5	No differences.	No differences.	No differences.
6	U=1104.5, N1=51, N2=63, two-tailed p=0.002.	No differences.	U=1509, N1=76, N2=51, two-tailed p=0.02.

### 7.2.2 User satisfaction with commercial street facades

Taking into account the analysis of responses of users from the whole sample (361 users), the results show that the majority of respondents “really like” or “like” streets 1, 2, 3 and 4, in this particular order. At the same time, they “do not like” or “really do not like” streets 6 and 5, in this particular order (see streets in Appendix 5.11). The mean scores values show that the highest user satisfaction is related to the appearance of street 1, while the lowest user satisfaction is related to the appearance of street 6 (see Table 7.7).

Table 7.7: User satisfaction with the appearance of the commercial street facades - the whole sample (361 users) (Source: fieldwork 2005).

Q13. Do you like the appearance of the >street< ?	Street 1	Street 2	Street 3	Street 4	Street 5	Street 6
I really like	154(42.66%)	123(34.07%)	127(35.18%)	96(26.59%)	7(1.94%)	0
I like	196(54.29%)	212(58.73%)	170(47.09%)	154(42.66%)	39(10.80%)	26(7.20%)
I don't know	7(1.94%)	20(5.54%)	32(8.86%)	42(11.63%)	42(11.63%)	45(12.47%)
I don't like	4(1.11%)	6(1.66%)	28(7.76%)	57(15.79%)	191(52.91%)	206(57.06%)
I really don't like	0	0	4(1.11%)	12(3.32%)	82(22.71%)	84(23.27%)
Mean score*	1.61	1.75	1.93	2.27	3.84	3.96

\* The lower this value, the higher user satisfaction.

The physical aspects of the streetscape that might influence user satisfaction with the appearance of street 1 can be related to the commercial signage approach adopted in Oxford city centre, which is designed to protect the historic heritage of the city centre. Moreover, users might like this street because it has the lowest percentage of street facade covered by commercial signs (2.70%) when compared to the other streets in the sample, and only 0.31 square meters of commercial signs per linear street metre. Associated with these characteristics, the combination of ordered streetscape, high complexity and preserved historic buildings might be increasing user satisfaction. The results related to user satisfaction with the appearance of streets 5 and 6, located in the case study of Pelotas, suggest that visual pollution caused by shopfronts and window displays decreases

satisfaction of users from different urban contexts. At the same time, when comparing the mean scores values related to both these streets (see Table 7.7 above), this research suggests that the following characteristics of street 5 (see Appendix 5.7) might be increasing user satisfaction with this street, when compared to street 6: (i) the similarity in building heights, (ii) the lower variation of commercial signs and buildings, and (iii) the presence of a well preserved historic building in the middle of the street facade (see Figure 7.5). In addition, the fact that street 6 has the second highest percentage of street facade covered by commercial signs (9.11%) and the highest square metres of commercial signs per linear street metre (three times more than street 1) when compared to the other streets in the sample might be decreasing user satisfaction with this street more than the combination of the physical characteristics identified in street 5.



Figure 7.5: Identification of a well preserved historic building in street 5 (Source: author).

The analysis of responses of users from each case study (see Table 7.8) shows that the majority of users from Oxford, Gramado and Pelotas “really like” or “like” the commercial street facades where commercial signage controls are effective and the streetscape is ordered (streets 1, 2, 3 and 4). At the same time, they “do not like” or “really do not like” the street facades where these controls are ineffective and the streetscape is disordered (streets 5 and 6). The highest user satisfaction is noted with (i) street 1 by users from Oxford, (ii) street 3 by users from Gramado, and (iii) street 2 by users from Pelotas. As discussed in section 7.2.1 (above), these results might be related to user familiarity with the streetscape, symbolic meanings attributed to buildings, or user urban context. On the other hand, in the three case studies, the lowest user satisfaction is associated with the appearance of street 6.

Table 7.8: User satisfaction with the appearance of the commercial street facades - users from Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Q13. Do you like the appearance of the >street<?		Case studies				Case studies		
		Oxford	Gramado	Pelotas		Oxford	Gramado	Pelotas
Street 1	I really like	55(48.25%)	49(40.83%)	50(39.37%)	Street 4	24(21.05%)	44(36.67%)	28(22.05%)
	I like	57(50%)	67(55.83%)	72(56.69%)		46(40.35%)	55(45.83%)	53(41.73%)
	I don't know	2(1.75%)	4(3.33%)	1(0.78%)		19(16.67%)	4(3.33%)	19(14.96%)
	I don't like	0	0	4(3.15%)		20(17.54%)	16(13.33%)	21(16.54%)
	I really don't like	0	0	0		5(4.39%)	1(0.83%)	6(4.72%)
	Mean score*	1.54	1.63	1.68		2.44	1.96	2.4

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Q13. Do you like the appearance of the >street<?		Case studies			Case studies			
		Oxford	Gramado	Pelotas	Oxford	Gramado	Pelotas	
Street 2	I really like	24(21.05%)	40(33.33%)	59(46.45%)	Street 5	6(5.26%)	0	1(0.78%)
	I like	75(65.79%)	74(61.67%)	63(49.60%)		12(10.53%)	3(2.5%)	24(18.90%)
	I don't know	13(11.40%)	5(4.17%)	2(1.57%)		23(20.18%)	10(8.33%)	9(7.08%)
	I don't like	2(1.75%)	1(0.83%)	3(2.36%)		50(43.86%)	81(67.5%)	60(47.24%)
	I really don't like	0	0	0		23(20.17%)	26(21.67%)	33(25.98%)
	Mean score*	1.94	1.73	1.6		3.63	4.08	3.79
Street 3	I really like	29(25.44%)	64(53.33%)	34(26.77%)	Street 6	0	0	0
	I like	48(42.11%)	52(43.33%)	70(55.12%)		9(7.89%)	1(0.83%)	16(12.60%)
	I don't know	19(16.67%)	1(0.83%)	12(9.45%)		26(22.81%)	9(7.5%)	10(7.87%)
	I don't like	15(11.81%)	3(2.5%)	10(7.87%)		54(47.37%)	83(69.17%)	69(54.33%)
	I really don't like	3(2.36%)	0	1(0.78%)		25(21.93%)	27(22.5%)	32(25.19%)
	Mean score*	2.25	1.53	2.01		3.83	4.13	3.92

\* The lower this value, the higher user satisfaction.

There are statistical differences between users from Oxford, Gramado and Pelotas in terms of satisfaction with the appearance of street 2 (KW=20.63, DF=2, p=0.001), street 3 (KW=39.16, DF=2, p=0.001), street 4 (KW=15.42, DF=2, p=0.001), street 5 (KW=9.23, DF=2, p=0.001) and street 6 (KW=6.63, DF=2, p=0.036) (see streets in Appendix 5.11). These findings show that: (i) users from Oxford evaluate streets 5 and 6 more positively than users from Gramado, (ii) users from Gramado evaluate streets 3 and 4 more positively than users from the other case studies, and (iii) users from Pelotas evaluate street 2 more positively than users from Oxford. Again, these results can be related to (i) user familiarity with the streetscape and symbolic meanings attributed to buildings when residents in Gramado evaluated streets 3 and 4 (both located in Gramado), and (ii) user urban context when residents in Pelotas evaluated streets 2, and residents in Oxford evaluated streets 5 and 6. In this last case, users from Oxford, where the streetscape is characterized by historic buildings, tend to evaluate streets 5 and 6 characterized by historic buildings more positively than users from the other case studies. Moreover, users from Pelotas, where the majority of streetscapes are comprised of historic and ordinary buildings, tend to evaluate street 2, composed of historic and ordinary buildings, more positively than users from the other case studies (see Table 7.9).

Table 7.9: Differences between users from Oxford, Gramado and Pelotas in terms of satisfaction with the appearance of the commercial street facades (Source: fieldwork 2005).

Streets	Differences between responses of users from:	Tendencies:
Street 2	Oxford and Pelotas (U=5132.5, N1=114, N2=127, two-tailed p=0.001).	Street 2 is evaluated more positively by users from Pelotas than by users from Oxford.
Streets 3 and 4	Oxford and Gramado (street 3: U=4081, N1=114, N2=120, two-tailed p=0.001; street 4: U=5126.5, N1=114, N2=120, two-tailed p=0.001); and Gramado and Pelotas (street 3: U=5149.0, N1=120, N2=127, two-tailed p=0.001; street 4: U=5867.5, N1=120, N2=127, two-tailed p=0.001).	Streets 3 and 4 are evaluated more positively by users from Gramado than by users from Oxford and Pelotas.
Street 5	Oxford and Gramado (U=5338, N1=114, N2=120, two-tailed p=0.001).	Street 5 is evaluated more positively by users from Oxford than by users from Gramado.
Street 6	Oxford and Gramado (U=5591, N1=114, N2=120, two-tailed p=0.006).	Street 6 is evaluated more positively by users from Oxford than by users from Gramado.

7.2.2.1 Satisfaction of lay people and professionals in each case study

Similar results relating to the study of user preferences (see section 7.2.1.2) are found when lay people and professionals satisfaction with the appearance of the commercial street facades is analysed. The findings suggest that the appearance of the street facades located in Gramado is more popular with lay people than with professionals. When questionnaire type B was being filled out, (i) lay users mentioned the order among commercial signs and the “Neo-Bavarian” architectural style of the buildings in streets 3 and 4 as positive elements, (ii) while professionals noted the aesthetic composition of historic buildings in streets 1, 2, 5 and 6 as positive elements (see Table 7.10).

Table 7.10: The mean scores values related to the satisfaction of lay people and professionals with the appearance of the commercial street facades – users from Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Q13. Do you like the appearance of the >street<?		Street 1	Street 2	Street 3	Street 4	Street 5	Street 6
Oxford	Lay people	1.59	1.92	1.90	2.06	3.82	4.08
	Professionals	1.49	1.95	2.54	2.75	3.48	3.63
Gramado	Lay people	1.68	1.77	1.44	1.76	4.11	4.14
	Professionals	1.51	1.63	1.68	2.34	4.02	4.12
Pelotas	Lay people	1.74	1.71	1.86	2.16	3.97	4.03
	Professionals	1.59	1.43	2.24	2.76	3.51	3.76
* The lower this value, the higher user satisfaction. Table 7.3.2 in Appendix 7.3 presents frequencies related to lay people and professional answers.							

Statistical differences are found between satisfaction of lay people and professionals with the appearance of the commercial street facades (see Table 7.11). These results suggest the following tendencies: (i) in Oxford, streets 3 and 4 are evaluated more positively by lay people than by professionals, while street 6 is evaluated more positively by professionals than by lay people, (ii) in Gramado, street 4 is evaluated more positively by lay people than by professionals, and (iii) in Pelotas, street 4 is evaluated more positively by lay people than by professionals, while streets 2 and 5 are evaluated more positively by professionals than by lay people. At the same time, there is no statistical difference between lay people and professionals in terms of satisfaction with the appearance of street 1: in the three case studies, users from both these groups “really like” or “like” this street. In the case studies of Oxford and Gramado, similarities are also found when streets 2 and 5 are evaluated: both groups “really like” or “like” street 2, and “really do not like” or “do not like” street 5. In the case studies of Gramado and Pelotas, lay people and professionals “really like” or “like” street 3, and “really do not like” or “do not like” street 6. The mean score values also suggest a common view between lay people and professionals in the three case studies: both these user groups are less satisfied with the appearance of street 6. In addition, in

Oxford, lay people and professionals are most satisfied with the appearance of street 1, and in Pelotas, both these groups are most satisfied with the appearance of street 2.

Table 7.11: Differences between lay people and professionals in terms of satisfaction with the appearance of the commercial street facades - users from Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Streets	Oxford - 114 users	Gramado - 120 users	Pelotas - 127 users
1	No differences	No differences	No differences
2	No differences	No differences	U=1459, N1=76, N2=51, two-tailed p=0.008
3	U=1100.5, N1=51, N2=63, two-tailed p=0.002	No differences	No differences
4	U=1051, N1=51, N2=63, two-tailed p=0.001	U=1111, N1=79, N2=41, two-tailed p=0.002	U=1409, N1=76, N2=51, two-tailed p=0.006
5	No differences	No differences	U=1555, N1=76, N2=51, two-tailed p=0.043
6	U=1155, N1=51, N2=63, two-tailed p=0.006	No differences	No differences

### 7.2.3 User perception and evaluation of commercial street facades as the best and the worst streets in terms of appearance

#### 7.2.3.1 Commercial street facades chosen as the best streets in terms of appearance

The findings of this section show that a significant number of users chose street 1 as the best street in terms of appearance: 42.38% of users from the whole sample, 63.16% of users from Oxford, 32.50% of users from Gramado, and 33.07% of users from Pelotas (see Table 7.12). At the same time, users from Gramado and Pelotas are divided among those who chose streets 2 or 3: 42.50% of users from Gramado indicated street 3, while 35.43% of users from Pelotas indicated street 2. As discussed earlier (see section 7.2.1.2), user familiarity with the streetscape and symbolic meanings attributed to buildings can be influencing perception and evaluation of users from Gramado when street 3 is evaluated, while user urban context can be influencing perception and evaluation of users from Pelotas when street 2 is evaluated (see Figures 7.1 and 7.3).

Table 7.12: Commercial street facades chosen as the best streets in terms of appearance by users from the whole sample, Oxford, Gramado and Pelotas (Source: fieldwork 2005).

	Streets	The whole sample	Oxford	Gramado	Pelotas
Q14. The street that you LIKE THE MOST is:	Street 1	<b>153(42.38%)</b>	<b>72(63.16%)</b>	<b>39(32.50%)</b>	<b>42(33.07%)</b>
	Street 2	74(20.50%)	10(8.77%)	19(15.83%)	<b>45(35.43%)</b>
	Street 3	106(29.36%)	28(24.56%)	<b>51(42.50%)</b>	27(21.26%)
	Street 4	25(6.93%)	4(3.51%)	10(8.33%)	11(8.66%)
	Street 5	3(0.83%)	0	1(0.83%)	2(1.57%)
	Street 6	0	0	0	0
	Total	361(100%)	114(100%)	120(100%)	127(100%)

Statistical differences are found between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of the street facades they like the most (KW=22.68, DF=2,

$p=0.001$ ). These differences are placed between users from Oxford and Gramado ( $U=4683.0$ ,  $N_1=114$ ,  $N_2=120$ , two-tailed  $p=0.001$ ), and Oxford and Pelotas ( $U=5449.0$ ,  $N_1=114$ ,  $N_2=127$ , two-tailed  $p=0.001$ ). While the majority of respondents from Oxford chose street 1 as the best street, users from Gramado are divided between streets 1 and 3, and users from Pelotas are divided between streets 1 and 2.

The influence of the commercial signage control approaches adopted in the city centres of Oxford and Gramado on the appearance of the commercial streets of these cities (see Chapter Six, section 6.2.2) might be related to user choices for streets 1, 2 and 3 as the best streets in terms of appearance. This research also assumes that other factors can be influencing user perception and evaluation of the appearance of these streets. In this regard, the following combinations of the physical characteristics of these streets (see Appendix 5.7) might be affecting user responses:

a. **Street 1**, chosen as the best street in terms of appearance by 153 users from the whole sample, has (i) the highest final level of complexity when compared to streets 2 and 3, (ii) the largest number of historic buildings not harmed by commercial signs, (iii) the lowest percentage of street facade covered by commercial signs (2.70% of the street facade), (iv) the second lowest value of square metres of commercial signs per linear street metre ( $0.31\text{m}^2/\text{m}$ ), and (v) the highest variation of commercial signs when compared to the other street facades in the sample. The buildings in this street are classified as Medieval and Tudor, Building stones, Georgian and Art deco; they have three or four stories, flat or hip roof, and 50% of them are symmetrical (see Appendix 5.7).

b. **Street 3**, chosen as the best street in terms of appearance by 106 users from the whole sample, has (i) a high final level of complexity, (ii) the second lowest percentage of street facade covered by commercial signs (3.48% of the street facade), (iii) the lowest value of square metres of commercial signs per linear street metre ( $0.25\text{m}^2/\text{m}$ ), and (iv) a high variation of commercial signs when compared to the other street facades in the sample. The buildings in this street are classified as “Neo-Bavarian” architectural style; they have one or two storeys, the most of them have hip roofs with gable, and 70% are symmetrical or partially symmetrical (see Appendix 5.7). Furthermore, vegetation in front gardens and attached on building facades as decoration differentiates this street from the others in the sample (see Figure 7.6).



Figure 7.6: Vegetation in front gardens or attached on building facades is a common feature in street 3 (Source: author).

c. **Street 2**, chosen as the best street in terms of appearance by 74 users from the whole sample, has (i) the second lowest final level of complexity, (ii) the second largest number of historic buildings not harmed by commercial signs, (iii) the third lowest percentage of street facade covered by commercial signs (5.62% of the street facade), (iv) 0.68 square metres of commercial signs per linear street metre, and (v) the second highest variation of commercial signs when compared to the other street facades in the sample (see Appendix 5.7). The visual character of this street is very similar to the visual character of street 1; however, the main difference between these streets lies in the presence of a modern building in street 2 (see Figure 7.7). Some users, mainly from Pelotas, perceive and evaluate this building as a positive feature of this street facade. A respondent from Pelotas case study wrote the following comment on his questionnaire: “building 6 respects the features of the old buildings in terms of the building heights and the proportion of windows and doors, helping the preservation of the city centre’s history”.



Figure 7.7: Example of an ordinary building (building 6) inserted in a street facade characterized by historic buildings – street 2 in Oxford city centre (Source: author).

Taking into account the results of user choices for the best commercial street facades in terms of appearance (see Table 7.12 above), this research suggests that, in general, the combination of the physical characteristics identified in street 1 is evaluated more positively than the combination of the physical characteristics identified in streets 3 and 2.

At the same time, this study suggests that the combination of the physical characteristics identified in street 3 is more popular with users from Gramado, while the combination of the physical characteristics identified in street 2 is more popular with users from Pelotas.

*A. Perception and evaluation of lay people and professionals in each case study*

Taking into account the findings from each case study, there is a consensus between a significant number of lay people and professionals about the choice for street 1 as the best commercial street facade in terms of appearance. The findings also show that street 3 pleases a significant number of lay people, while street 2 pleases a significant group of professionals. According to the responses of users from Oxford (U=1151.5, N1=51, N2=63, two-tailed p=0.002), the following differences are found between lay people and professionals in terms of perception and evaluation of the commercial street facades: the majority of users from both these groups chose street 1 as the best street in terms of appearance (50.98% of lay people; 73.02% of professionals), but a significant group of lay users (37.25% of users) also chose street 3 as the best street in terms of appearance (see Table 7.13). There is no statistical difference between lay people and professionals from the case studies of Gramado and Pelotas in terms of perception and evaluation of the commercial street facades. In Gramado, a significant number of lay people and professionals chose street 3 (lay people: 46.84% of users; professionals: 34.15% of users) and street 1 (lay people: 36.71% of users; professionals: 24.39% of users) as the best commercial street facades. In Pelotas, a significant number of users from both these groups chose street 1 (31.58% of lay people; 35.29% of professionals) and street 2 (30.26% of lay people; 43.14% of professionals) as the best streets in terms of appearance (see Table 7.13 and Figures 7.1 and 7.3).

Table 7.13: Commercial street facades chosen as the best streets in terms of appearance by lay people and professionals from Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Street	Oxford		Gramado		Pelotas	
	Lay people	Professionals	Lay people	Professionals	Lay people	Professionals
Street 1	26(50.98%)	46(73.02%)	29(36.71%)	10(24.39%)	24(31.58%)	18(35.29%)
Street 2	2(3.92%)	8(12.70%)	6(7.59%)	13(31.70%)	23(30.26%)	22(43.14%)
Street 3	19(37.25%)	9(14.28%)	37(46.84%)	14(34.15%)	19(25%)	8(15.69%)
Street 4	4(7.84%)	0	7(8.86%)	3(7.32%)	10(13.16%)	1(1.96%)
Street 5	0	0	0	1(2.44%)	0	2(3.92%)
Street 6	0	0	0	0	0	0
Total	51(100%)	63(100%)	79(100%)	41(100%)	76(100%)	51(100%)



7.2.3.2 Commercial street facades chosen as the worst streets in terms of appearance

The majority of users from the whole sample (361 users) chose street 5 (41.27% of users) and street 6 (46.81% of users) as the worst streets in terms of appearance. The majority of people from Oxford (54.39% of users) and Gramado (50.83% of users), and a significant number of respondents from Pelotas (36.22% of users) chose street 6 as the worst street in terms of appearance. At the same time, the largest number of users from Pelotas (50.39% of users), and a significant number of respondents from Gramado (45% of users) chose street 5 as the worst street in terms of appearance (see Table 7.14 and Figure 7.2).

Table 7.14: Commercial street facades chosen as the worst streets in terms of appearance by users from the whole sample, Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Streets	The whole sample	Oxford	Gramado	Pelotas
Street 1	0	0	0	0
Street 2	0	0	0	0
Street 3	11(3.05%)	7(6.14%)	1(0.83%)	3(2.36%)
Street 4	32(8.86%)	14(12.28%)	4(3.33%)	14(11.02%)
Street 5	<b>149(41.27%)</b>	31(27.19%)	<b>54(45%)</b>	<b>64(50.39%)</b>
Street 6	<b>169(46.81%)</b>	<b>62(54.39%)</b>	<b>61(50.83%)</b>	46(36.22%)
Total	361(100%)	114(100%)	120(100%)	127(100%)

Statistical differences are found between users from Oxford, Gramado and Pelotas in terms of their choices for the worst street facades in terms of appearance (KW=7.536, DF=2, p=0.02). These differences are placed between users from Gramado and Pelotas (U=6208.5, N1=120, N2=127, two-tailed p=0.005): street 6 is evaluated more negatively by users from Gramado than by users from Pelotas. Taking into account the responses of residents in Pelotas related to street 6 (located in Pelotas), this research assumes that user familiarity with the streetscape and/or symbolic meanings attributed to buildings might be influencing user perception and evaluation of the appearance of this street.

This study also suggests that the effects of the commercial signage control approach adopted in Pelotas on the appearance of the commercial street facades in this city might be influencing user choices for streets 5 and 6 (located in Pelotas) as the worst streets in terms of appearance. In the city centre of Pelotas, commercial signage controls are ineffective, visual pollution is a problem, and the streetscape is disordered and characterized by historic buildings harmed by shopfronts and window displays (see Chapter Six, section 6.2.2). Comparing user responses with the physical characteristics of streets 5 and 6 (see Appendix 5.7), this research assumes that the following combinations of physical aspects can also be influencing user perception and evaluation of the appearance of these streets:

a. **Street 6**, chosen as the worst street in terms of appearance by 169 users from the whole sample, has (i) a moderate variation of commercial signs and buildings (as a group), (ii) the second largest number of historic buildings harmed by commercial signs, (iii) the second highest percentage of street facade covered by commercial signs (9.11% of the street facade), (iv) the highest value of square metres of commercial signs per linear street metre (1.00m<sup>2</sup>/m), and (v) the lowest level of variation of commercial signs when compared to the other street facades in the sample. The buildings in this street are classified as Eclectic, Contemporary boxes and Art nouveau; they have one or two storeys, almost all of them have flat roofs, and 63% of the buildings are symmetrical or partially symmetrical (see Appendix 5.7).

b. **Street 5**, chosen as the worst street in terms of appearance by 149 users from the whole sample, has (i) the lowest variation of commercial signs and buildings, (ii) the largest number of historic buildings harmed by commercial signs, (iii) the highest percentage of street facade covered by commercial signs (11.31% of the street facade), (iv) the second highest value of square metres of commercial signs per linear street metre (0.85m<sup>2</sup>/m), and (v) the second lowest level of variation of commercial signs when compared to the other street facades in the sample. The visual character of this street is very similar to the visual character of street 6 but the main difference between both these streets lies in the number of storeys; 67% of the buildings in street 6 have two or three storeys, while all buildings in street 5 have one or two stories. In addition, a well preserved historic building in the middle of street 5 (see Figure 7.5) might influence users dislike street 6 more. The buildings in street 5 are classified as Eclectic, Contemporary boxes and Art nouveau, and all of them are symmetrical or partially symmetrical (see Appendix 5.7).

Taking into account the results of user choices for the worst commercial street facades in terms of appearance (see Table 7.14 above), this research suggest that the combination of the physical characteristics identified in street 6 is more negative than the combination of the physical characteristics identified in street 5. This conclusion is based on the fact that a significant number of users from the whole sample, Oxford, Gramado and Pelotas chose street 6 as the worst in terms of appearance instead of street 5. At the same time, this study suggests that, in general, the physical characteristics of both these streets decrease user satisfaction and, consequently, should be avoided in commercial streetscapes in different urban contexts.

*A. Perception and evaluation of lay people and professionals in each case study*

The findings from the analysis of perception and evaluation of lay people and professionals show a common view between the majority of lay people from Oxford (76.47% of users) and Gramado (56.96% of users), and a significant number of lay people from Pelotas (42.11% of users): these users chose street 6 as the worst street in terms of appearance. At the same time, the majority of lay users from Pelotas chose street 5 as the worst street in terms of appearance (52.63% of users). With regard to the professional group, a large number of users from Gramado (51.22% of users) and Pelotas (47.06% of users) chose street 5 as the worst street in terms of appearance, while users from Oxford are divided between those who chose street 5 (36.51% of users) and who chose street 6 (36.51% of users) as the worst streets in terms of appearance (see Table 7.15 and Figure 7.2).

Table 7.15: Commercial street facades chosen as the worst streets in terms of appearance by lay people and professionals from Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Street	Oxford		Gramado		Pelotas	
	Lay people	Professionals	Lay people	Professionals	Lay people	Professionals
Street 1	0	0	0	0	0	0
Street 2	0	0	0	0	0	0
Street 3	4(7.84%)	3(4.76%)	0	1(2.44%)	1(1.32%)	2(3.92%)
Street 4	0	14(22.22%)	1(1.27%)	3(7.32%)	3(3.95%)	11(21.57%)
Street 5	8(15.69%)	23(36.51%)	33(41.77%)	21(51.22%)	40(52.63%)	24(47.06%)
Street 6	39(76.47%)	23(36.51%)	45(56.96%)	16(39.02%)	32(42.11%)	14(27.45%)
Total	51(100%)	63(100%)	79(100%)	41(100%)	76(100%)	51(100%)

There are statistical differences between lay people and professionals from Oxford ( $U=970.5$ ,  $N_1=51$ ,  $N_2=63$ , two-tailed  $p=0.001$ ), Gramado ( $U=1273.0$ ,  $N_1=79$ ,  $N_2=41$ , two-tailed  $p=0.03$ ) and Pelotas ( $U=1444.5$ ,  $N_1=76$ ,  $N_2=51$ , two-tailed  $p=0.007$ ) in terms of their choices for the worst commercial street facades. In the three case studies, street 6 is chosen as the worst street by more lay people than professionals. As a result, this research suggests that one or more of the following characteristics of street 6 can affect lay users more negatively than professionals in terms of perception and evaluation of the appearance of commercial street facades: (i) higher commercial signage variation, (ii) higher building variation, (iii) higher number of commercial signs, (iv) higher percentage of street facade covered by commercial signs, (v) higher percentage of buildings harmed by these media, and (vi) higher amount of square metres of commercial signs per linear street metre.

7.2.3.3 Number of lay people and professionals that classify the commercial street facades

As a result of the criteria adopted in this research to select respondents to answer

questionnaire type B (see Chapter Five, section 5.2.3), the sample size of users in each case study varies as well the number of lay people and professionals. Taking into account the users who chose streets 1, 2 and 3 as the best streets in terms of appearance, and streets 5 and 6 as the worst streets in terms of appearance, the identification of how many users are lay people and professionals can help to reveal similarities and differences between both these user groups in terms of preference for commercial streetscapes. Analysing user choices for the best commercial street facades in terms of appearance, the results confirm what was discussed earlier in this chapter (see sections 7.2.3.1 and 7.2.3.2): street 3 is more popular with lay people, since the majority of users who chose this street as the best street are from this group (see Table 7.16).

The findings also suggest that street 1 pleases a higher proportion of (i) professionals in Oxford and (ii) lay people in Gramado, and both these user groups in Pelotas. With regard to street 2, in Pelotas there is a balance between preferences of lay people and professionals: the total sample of users who chose this street as the best is divided between both these groups. These results demonstrate that the physical characteristics of the street facades located in Oxford (streets 1 and 2) call attention of both user groups in Pelotas. With regard to the street facades chosen as the worst in terms of appearance, the findings suggest that, in the Brazilian case studies, the physical characteristics of street 5 influence the perception and evaluation of lay people more negatively than the perception and evaluation of professionals. In Gramado and Pelotas, street 5 is chosen as the worst street in terms of appearance by more lay people than professionals, while, in Oxford, the opposite situation is found (see Table 7.16).

Table 7.16: Lay people and professionals from Oxford, Gramado and Pelotas who chose streets 1, 2 and 3 as the best, and streets 5 and 6 as the worst streets in terms of appearance (Source: fieldwork 2005).

		Q14. The street that you like the most is:						Q25. The street that you like the least is:			
		Street 1		Street 2		Street 3		Street 5		Street 6	
	Total sample	User group:	Total sample	User group:	Total sample	User group:	Total sample	User group:	Total sample	User group:	
Oxford	72 (100%)	Lay people 26(36.11%)	10 (100%)	Lay people 2(20%)	28 (100%)	Lay people 19(67.86%)	31 (100%)	Lay people 8(25.81%)	62 (100%)	Lay people 39(62.90%)	
		Professionals 46(63.89%)		Professionals 8(80%)		Professionals 9(32.14%)		Professionals 23(74.19%)		Professionals 23(37.09%)	
Gramado	39 (100%)	Lay people 29(74.36%)	19 (100%)	Lay people 6(31.58%)	51 (100%)	Lay people 37(72.55%)	54 (100%)	Lay people 33(61.11%)	61 (100%)	Lay people 45(73.77%)	
		Professionals 10(25.64%)		Professionals 13(68.42%)		Professionals 14(27.45%)		Professionals 21(38.89%)		Professionals 16(26.23%)	
Pelotas	42 (100%)	Lay people: 24(57.14%)	45 (100%)	Lay people: 23(51.11%)	27 (100%)	Lay people: 19(70.37%)	64 (100%)	Lay people: 40(62.50%)	46 (100%)	Lay people: 32(69.56%)	
		Professionals: 18(42.86%)		Professionals: 22(48.89%)		Professionals: 8(29.63%)		Professionals: 24(37.5%)		Professionals: 14(30.43%)	

## **7.2.4 Physical aspects that influence user perception and evaluation of commercial street facades as the best and the worst streets in terms of appearance**

### 7.2.4.1 Physical aspects of the commercial street facades chosen as the best streets in terms of appearance

The majority of respondents from the whole sample, Oxford, Gramado and Pelotas agree that the appearance of buildings, the appearance of commercial signs, the historic buildings, and the numbers of commercial signs have a “very important” or “important” influence on their choices for streets 1, 2, and 3 as the best commercial street facades in terms of appearance (see Tables 7.17, 7.18 and 7.19).

At the same time, with regard to user choices for street 1 as the best street in terms of appearance, there are statistical differences between users from Oxford, Gramado and Pelotas in terms of the level of importance attributed to the historic buildings and places (KW=6.696, DF=2, p=0.03) and the number of commercial signs (KW=11.183, DF=2, p=0.004). When the appearance of this street was evaluated, the historic buildings were more important for users from Oxford than for users from Gramado (U=1051.0, N1=72, N2=39, two-tailed p=0.009), while the number of commercial signs was more important for users from Gramado (U=1104.0, N1=72, N2=39, two-tailed p=0.05) and Pelotas (U=997.5, N1=72, N2=42, two-tailed p=0.001) than for users from Oxford. These results might be related to user urban context: this research suggests that, when the appearance of a commercial street is evaluated, the historic buildings have more influence on the perception and evaluation of users who live in a place where the commercial streetscape is characterized by well preserved historic buildings (Oxford). On the other hand, the number of commercial signs has more influence on the perception and evaluation of users who live in a country (Brazil) where the majority of historic city centres are harmed by excessive numbers of shopfronts and window displays.

Comparing the mean score values related to user answers (see Table 7.17), common views are found between users from the three case studies, when street 1 is chosen as the best street in terms of appearance: (i) the appearance of buildings is the most influential aspect on the perception and evaluation of users from Oxford, Gramado and Pelotas, and (ii) the appearance of commercial signs is the third most influential aspect on the perception and evaluation of users from Oxford and Gramado, and the second most influential aspect on the perception and evaluation of users from Pelotas.

Table 7.17: Aspects of the streetscape that influence user choices for street 1 as the best street in terms of appearance (Source: fieldwork 2005).

Aspects of the streetscape that influence user evaluation of street 1					
Q14.1 How important to your answer above is the (variable) ●:		The whole sample	Oxford	Gramado	Pelotas
Appearance of buildings	Very important	123(80.39%)	59(81.94%)	30(76.92%)	34(80.95%)
	Important	28(18.30%)	13(18.06%)	9(23.08%)	6(14.29%)
	Undecided	1(0.65%)	0	0	1(2.38%)
	A little important	1(0.65%)	0	0	1(2.38%)
	Not important	0	0	0	0
	Mean score*	1.22	1.18	1.23	1.26
Appearance of commercial signage	Very important	79(51.63%)	32(44.44%)	20(51.28%)	27(64.28%)
	Important	62(40.52%)	35(48.61%)	17(43.59%)	10(23.81%)
	Undecided	4(2.61%)	3(4.17%)	0	1(2.38%)
	A little important	8(5.23%)	2(2.78%)	2(5.13%)	4(9.52%)
	Not important	0	0	0	0
	Mean score*	1.61	1.65	1.59	1.57
Historic buildings	Very important	101(66.01%)	53(73.61%)	20(51.28%)	28(66.67%)
	Important	41(26.80%)	18(25%)	14(35.89%)	9(21.43%)
	Undecided	5(3.27%)	1(1.39%)	2(5.13%)	2(4.76%)
	A little important	5(3.27%)	0	2(5.13%)	3(7.14%)
	Not important	1(0.65%)	0	1(2.56%)	0
	Mean score*	1.46	1.28	1.72	1.52
Number of commercial signs	Very important	65(42.48%)	21(29.17%)	19(48.72%)	25(59.25%)
	Important	53(34.64%)	28(38.89%)	13(33.33%)	12(28.57%)
	Undecided	6(3.92%)	6(8.33%)	0	0
	A little important	27(17.65%)	16(22.22%)	6(15.39%)	5(11.90%)
	Not important	2(1.31%)	1(1.39%)	1(2.57%)	0
	Mean score*	2.01	2.28	1.90	1.64
Total		153(100%)	72(100%)	39(100%)	42(100%)
* The lower this value, the more important the variable for users.					
● This question is related to the following previous question: Q14. The street that you like the most is:					

With regard to user choices for street 3 as the best street in terms of appearance, there are statistical differences between users from Oxford, Gramado and Pelotas in terms of the importance attributed to the appearance of buildings (KW=11.930, DF=2, p=0.003). When the appearance of street 3 was evaluated, the appearance of buildings was more important for users from Gramado (U=486.0, N1=28, N2=51, two-tailed p=0.001) and Pelotas (U=268.0, N1=28, N2=27, two-tailed p=0.02) than for users from Oxford. These results suggest that the “Neo-Bavarian” architectural style influences the perception and evaluation of users in Brazil more than in England. When questionnaire type B was being filled in, some users from Oxford mentioned that they did not like the appearance of buildings in street 3 because “they do not look Brazilian”. In this regard, the results can be related to stereotypical images that these users have of Brazil. As already discussed in Chapter Three (see section 3.2.1.1), once formed, stereotypes are an important category in environmental cognition. Usually, these concepts are resistant to change and supply summaries of an understanding of cities.

Comparing the mean score values related to user answers (see Table 7.18), when street 3 was chosen as the best street in terms of appearance, the following factors influenced on

the perception and evaluation of users from Oxford, Gramado and Pelotas, in this particular decreasing order of importance: (i) the number of commercial signs, (ii) the appearance of commercial signs, and (iii) the historic buildings. This last factor can be related to buildings 1 and 3 mentioned as culturally and historically important by residents in Gramado (see section 7.2.1.1 and Figure 7.4).

Table 7.18: Aspects of the streetscape that influence user choices for street 3 as the best street in terms of appearance (Source: fieldwork 2005).

Aspects of the streetscape that influence user evaluation of street 3					
Q14.1 How important to your answer above is the (variable)●:		The whole sample	Oxford	Gramado	Pelotas
Appearance of buildings	Very important	84(79.25%)	16(57.14%)	45(88.24%)	23(85.19%)
	Important	20(18.87%)	10(35.71%)	6(11.76%)	4(14.81%)
	Undecided	2(1.88%)	2(7.14%)	0	0
	A little important	0	0	0	0
	Not important	0	0	0	0
	Mean Score*	1.23	1.50	1.12	1.15
Appearance of commercial signage	Very important	46(43.40%)	11(39.29%)	27(52.94%)	8(29.63%)
	Important	51(48.11%)	14(50%)	22(43.14%)	15(55.56%)
	Undecided	2(1.88%)	0	1(1.96%)	1(3.70%)
	A little important	3(2.83%)	0	1(1.96%)	2(7.41%)
	Not important	4(3.77%)	3(10.71%)	0	1(3.70%)
	Mean Score*	1.75	1.93	1.53	2.00
Historic buildings	Very important	37(34.91%)	5(17.85%)	22(43.14%)	10(37.04%)
	Important	27(25.47%)	9(32.14%)	12(23.53%)	6(22.22%)
	Undecided	23(21.70%)	8(28.57%)	10(19.61%)	5(18.52%)
	A little important	15(14.15%)	5(17.86%)	7(13.73%)	3(11.11%)
	Not important	4(3.77%)	1(3.57%)	0	3(11.11%)
	Mean Score*	2.26	2.57	2.04	2.37
Number of commercial signs	Very important	51(48.11%)	15(53.57%)	25(49.02%)	11(40.74%)
	Important	39(36.79%)	8(28.57%)	20(39.22%)	11(40.74%)
	Undecided	2(1.89%)	0	2(3.92%)	0
	A little important	14(13.21%)	5(17.86%)	4(7.89%)	5(18.52%)
	Not important	0	0	0	0
	Mean Score*	1.8	1.82	1.71	1.96
Total		106(100%)	28(100%)	51(100%)	27(100%)
* The lower this value, the more important the variable for users.					
● This question is related to the following previous question: Q14. The street that you like the most is:					

Statistical analysis was not carried out to explore whether there are differences between users from Oxford, Gramado and Pelotas in terms of the importance attributed to the aspects of the streetscape that influenced their choices for street 2 as the best street in terms of appearance. This is because the total number of users from Oxford (10 users) and Gramado (19 users) who chose this street as the best street in terms of appearance is too small, making the results of statistical tests unreliable. Therefore, only the mean score values related to the responses of users from the whole sample (361 users) and Pelotas (45 users) were analysed (see Table 7.19). As verified in street 1, the results from this analysis show that the most influential aspects on user choices for street 2 as the best street in terms of appearance are the appearance of buildings and the historic buildings.

Table 7.19: Aspects of the streetscape that influence user choices for street 2 as the best street in terms of appearance (Source: fieldwork 2005).

Aspects of the streetscape that influence user evaluation of street 2					
Q14.1 How important to your answer above is the (variable) ●:		The whole sample	Oxford	Gramado	Pelotas
Appearance of buildings	Very important	49(66.22%)	5(50%)	13(68.42%)	31(68.89%)
	Important	25(33.78%)	5(50%)	6(31.58%)	14(31.11%)
	Undecided	0	0	0	0
	A little important	0	0	0	0
	Not important	0	0	0	0
	Mean Score*	1.34	1.50	1.32	1.31
Appearance of commercial signage	Very important	44(59.46%)	3(30%)	11(57.89%)	30(66.67%)
	Important	22(29.73%)	2(20%)	7(36.84%)	13(28.89%)
	Undecided	2(2.70%)	2(20%)	0	0
	A little important	6(8.11%)	3(30%)	1(5.26%)	2(4.44%)
	Not important	0	0	0	0
	Mean Score*	1.62	2.50	1.53	1.51
Historic buildings	Very important	38(51.35%)	3(30%)	7(36.84%)	28(62.22%)
	Important	29(39.19%)	6(60%)	11(57.89%)	12(26.67%)
	Undecided	4(4.05%)	0	0	4(8.89%)
	A little important	3(4.05%)	1(10%)	1(5.26%)	1(2.22%)
	Not important	0	0	0	0
	Mean Score*	1.59	1.90	1.74	1.42
Number of commercial signs	Very important	41(55.41%)	3(30%)	10(52.63%)	28(62.22%)
	Important	21(28.38%)	2(20%)	8(42.11%)	11(24.44%)
	Undecided	4(5.41%)	2(20%)	0	2(4.44%)
	A little important	8(10.81%)	3(30%)	1(5.26%)	4(8.89%)
	Not important	0	0	0	0
	Mean Score*	1.72	2.50	1.58	1.60
Total		74(100%)	10(100%)	19(100%)	45(100%)
* The lower this value, the more important the variable for users.					
● This question is related to the following previous question: Q14. The street that you like the most is:					

#### 7.2.4.2 Physical aspects of the commercial street facades chosen as the worst streets in terms of appearance

The majority of respondents from the whole sample, Oxford, Gramado and Pelotas agree that the appearance of buildings, the appearance of commercial signs, the historic buildings, and the number of commercial signs have a “very important” or “important” influence on their choices for streets 5 and 6 as the worst commercial street facades in terms of appearance (see Tables 7.20 and 7.21). However, significant differences are found between users from Oxford, Gramado and Pelotas in terms of the importance attributed to the number of commercial signs (street 5: KW=15.890, DF=2, p=0.001; street 6: KW=27.361, DF=2, p=0.001) when the appearance of these streets is evaluated. These differences lie between users from Oxford and Gramado (street 5: U=487.0, N1=31, N2=54, two-tailed p=0.001; street 6: U=1038.5, N1=62, N2=61, two-tailed p=0.001), and Oxford and Pelotas (street 5: U=608.0, N1=31, N2=64, two-tailed p=0.001; street 6: U=895.5, N1=62, N2=46, two-tailed p=0.001). When the appearance of streets 5 and 6 were evaluated, the number of commercial signs was more important for users from Gramado and Pelotas than for users from Oxford. In this regard, this research suggests that



user urban context might influence user perception and evaluation of the appearance of commercial street facades as the number of commercial signs is mainly mentioned by respondents from Brazil, where the majority of historic city centres are harmed by excessive numbers of shopfronts and window displays.

On the other hand, the appearance of buildings, the appearance of commercial signs and the historic buildings have a similar influence on the perception and evaluation of users from the three case studies, when analysing the appearance of streets 5 and 6. In this regard, comparing the mean score values related to user answers (see Tables 7.20 and 7.21), these aspects were mentioned by users from Oxford, Gramado and Pelotas in the following decreasing order of importance: the appearance of commercial signs, the appearance of buildings, and the historic buildings.

Table 7.20: Aspects of the streetscape that influence user choices for street 5 as the worst street in terms of appearance (Source: fieldwork 2005).

Aspects of the streetscape that influence user evaluation of street 5					
Q25.1 How important to your answer above is the (variable)●:	The whole sample	Oxford	Gramado	Pelotas	
Appearance of buildings	Very important	87(58.39%)	20(64.52%)	27(50%)	40(62.50%)
	Important	43(28.86%)	6(19.35%)	22(40.74%)	15(23.44%)
	Undecided	2(1.34%)	2(6.45%)	0	0
	A little important	10(6.71%)	3(9.68%)	2(3.70%)	5(7.81%)
	Not important	7(4.70%)	0	3(5.56%)	4(6.25%)
	Mean Score*	1.70	1.61	1.74	1.72
Appearance of commercial signage	Very important	116(77.85%)	21(67.74%)	41(75.93%)	54(84.38%)
	Important	31(20.81%)	10(32.26%)	12(22.22%)	9(14.06%)
	Undecided	0	0	0	0
	A little important	2(1.34%)	0	1(1.85%)	1(1.56%)
	Not important	0	0	0	0
	Mean Score*	1.25	1.32	1.28	1.19
Historic buildings	Very important	62(41.61%)	13(41.94%)	21(38.89%)	28(43.75%)
	Important	49(32.89%)	12(38.71%)	19(35.19%)	18(28.13%)
	Undecided	8(5.37%)	1(3.23%)	5(9.26%)	2(3.13%)
	A little important	16(10.74%)	2(6.45%)	4(7.41%)	10(15.63%)
	Not important	14(9.40%)	3(9.68%)	5(9.26%)	6(9.38%)
	Mean Score*	2.13	2.03	2.13	2.19
Number of commercial signs	Very important	91(61.07%)	9(29.03%)	38(70.37%)	44(68.75%)
	Important	45(30.20%)	17(54.84%)	13(24.07%)	15(23.44%)
	Undecided	5(3.36%)	3(9.68%)	1(1.85%)	1(1.56%)
	A little important	7(4.70%)	2(6.45%)	1(1.85%)	4(6.25%)
	Not important	1(0.67%)	0	1(1.85%)	0
	Mean Score*	1.54	1.94	1.41	1.45
Total	149(100%)	31(100%)	54(100%)	64(100%)	
* The lower this value, the more important the variable for users.					
● This question is related to the following previous question: Q25. The street that you like the least is:					

Table 7.21: Aspects of the streetscape that influence user choices for street 6 as the worst street in terms of appearance (Source: fieldwork 2005).

Aspects of the streetscape that influence user evaluation of street 6					
Q25.1 How important to your answer above is the (variable)●:	The whole sample	Oxford	Gramado	Pelotas	
Appearance of buildings	Very important	90(53.25%)	33(53.23%)	32(52.46%)	25(54.35%)
	Important	61(36.09%)	26(41.94%)	17(27.87%)	18(39.13%)
	Undecided	1(0.59%)	1(1.61%)	0	0
	A little important	10(5.92%)	1(1.61%)	8(13.11%)	1(2.17%)
	Not important	7(4.14%)	1(1.61%)	4(6.56%)	2(4.35%)
	Mean score*	1.72	1.56	1.93	1.63
Appearance of commercial signage	Very important	113(66.86%)	38(61.29%)	45(73.77%)	30(65.22%)
	Important	53(31.36%)	23(37.10%)	15(24.59%)	15(32.61%)
	Undecided	1(0.59%)	0	1(1.64%)	0
	A little important	1(0.59%)	1(1.61%)	0	0
	Not important	1(0.59%)	0	0	1(2.17%)
	Mean score*	1.37	1.42	1.28	1.41
Historic buildings	Very important	60(35.50%)	20(32.26%)	24(39.34%)	16(34.78%)
	Important	52(30.77%)	18(29.03%)	16(26.23%)	18(39.13%)
	Undecided	19(11.24%)	13(20.97%)	1(1.64%)	5(10.87%)
	A little important	24(14.20%)	9(14.52%)	12(19.67%)	3(6.52%)
	Not important	14(8.28%)	2(3.23%)	8(13.11%)	4(8.70%)
	Mean score*	2.29	2.27	2.41	2.15
Number of commercial signs	Very important	100(59.17%)	22(35.48%)	47(77.05%)	31(67.39%)
	Important	50(29.59%)	25(40.32%)	12(19.67%)	13(28.26%)
	Undecided	4(2.37%)	3(4.84%)	1(1.64%)	0
	A little important	8(4.73%)	6(9.68%)	0	2(4.35%)
	Not important	7(4.14%)	6(9.68%)	1(1.64%)	0
	Mean score*	1.65	2.18	1.30	1.39
Total		169(100%)	62(100%)	61(100%)	46(100%)
* The lower this value, the more important the variable for users.					
● This question is related to the following previous question: Q25. The street that you like the least is:					

### 7.2.5 Summary of the findings related to user perception and evaluation of the appearance of commercial street facades

The findings presented in the above sub-sections confirm working hypothesis C: commercial street facades in historic city centres where different commercial signage approaches are applied are perceived and evaluated differently in terms of their appearance and the physical aspects of the streetscape that influence user responses. Based on this, the following main results, which are related to common views between users from the different urban contexts, were found:

1. Results from the analysis of perception and evaluation of users from Oxford and Pelotas show that the commercial street facades, where commercial signage controls are effective and the streetscape is ordered and characterized by preserved historic buildings, are ranked as the best streets in terms of appearance (street 1 and 2). At the same time, street 3, where commercial signage controls are effective and the streetscape is characterized by contemporary buildings, is ranked as the best street by residents in Gramado. Comparing these user preferences with the physical characteristics of each street facade (see Appendix 5.7), this research suggests that (i) higher or lower complexity when associated with

ordered streetscape is a positive aspect of commercial street facades, and (ii) a maximum of 5.62% of a street facade covered by commercial signs, and a maximum of 0.68 square metres of commercial signs per linear street metre are aspects of the streetscape evaluated positively by users from different urban contexts. The results in this chapter also suggest that user familiarity with a particular streetscape, and historic or cultural meanings attributed to buildings might influence user perception and evaluation of commercial streetscapes. For example, users who live in Pelotas, where the majority of commercial streets comprise historic and ordinary buildings and, in general, the former are harmed by the latter, (see Chapter Six, section 6.2.2), tend to prefer street 2. In this street, commercial signs and ordinary buildings do not harm the historic building facades (see discussion in section 7.2.3.1).

2. Findings from the analysis of perception and evaluation of users from Oxford, Gramado and Pelotas suggest that the commercial street facades, where commercial signage controls are ineffective and the streetscape is disordered and characterized by historic buildings harmed by commercial signs, are ranked as the worst streets in terms of appearance (streets 5 and 6). Comparing the user preferences with the physical characteristics of these street facades (see Appendix 5.7), this research suggests that a minimum of 9.11% of a street facade covered by commercial signs, and a minimum of 0.85 square metres of commercial signs per linear street metre are aspects of the streetscape evaluated negatively by users from different urban contexts. This study also suggests that lower variation of commercial signs and buildings and disordered commercial signage can affect user preferences. In addition, this chapter shows that users who live in places characterized by preserved historic buildings tend to prefer street facades where historic buildings characterize the streetscape, even when these buildings are harmed by commercial signs.

3. Results from the analysis of responses of users from Oxford, Gramado and Pelotas show that the majority of users from different urban contexts “really like” or “like” the commercial street facades where commercial signage controls are effective (streets 1, 2, 3, and 4). This research shows that satisfaction of users from the different case studies is high with the appearance of street 1. This result can be related to the positive influence of the commercial signage control approach adopted in Oxford on the streetscape of this city. Moreover, users might like street 1 because it has the lowest percentage of street facade covered by commercial signs when compared to the other streets in the sample, and just

0.31 square metres of commercial signs per linear street metre. Moreover, its ordered streetscape, high complexity and preserved historic buildings might account for the increased user satisfaction.

4. Results from the analysis of perception and evaluation of users from Oxford, Gramado and Pelotas show that the majority of users from different urban contexts “really do not like” or “do not like” the commercial street facades where commercial signage controls are ineffective (streets 5 and 6). The findings in this chapter show that users from different urban contexts are less satisfied with the appearance of street 6. This result suggests that disordered commercial signage, which harms historic building facades, and higher variation of commercial signs and buildings decrease satisfaction of users from the different case studies. In addition, 9.11% of a street facade covered by commercial signs, and 1.00 square metres of commercial signs per linear street metre might have a negative impact on user perception and evaluation of the appearance of commercial street facades. The findings also show differences between users from the different case studies in terms of user satisfaction with the appearance of the commercial street facades in the sample; this research assumes that these differences can be related to user familiarity with the streetscape, symbolic meanings attributed to buildings, and user urban context.

5. Findings from the analysis of perception and evaluation of users from Oxford, Gramado and Pelotas show that the commercial street facade characterized by ordered commercial signage, preserved historic buildings, and high complexity when compared to the other streets in the sample is chosen as the best street in terms of appearance by users from the different case studies (street 1). A significant group of users from Gramado and Pelotas also chose streets 3 and 2 as the best streets in terms of appearance. This last result can be related to user familiarity with the streetscape and symbolic meanings attributed to buildings when residents in Gramado evaluate street 3 (located in Gramado), and user urban context when residents in Pelotas evaluate street 2 (located in Oxford).

6. Results from the analysis of perception and evaluation of users from Oxford, Gramado and Pelotas show that the commercial street facade characterized by disordered commercial signage, historic buildings harmed by these media, and higher variation of commercial signs and buildings when compared to street 5 is chosen as the worst street in terms of appearance by users from the different case studies (street 6). At the same time, a

significant group of users from Oxford, Gramado and Pelotas chose street 5 as the worst street in terms of appearance. The results also suggest that responses of residents in Pelotas, related to the appearance of street 6 (located in Pelotas), can be influenced by user familiarity with the streetscape and/or symbolic meanings attributed to the buildings.

7. Findings from the analysis of perception and evaluation of users from Oxford, Gramado and Pelotas indicate differences between lay people and professionals in terms of perception and evaluation of the commercial street facades chosen as the best and the worst streets in terms of appearance. The visual character of the streetscape in Gramado, which comprises contemporary buildings and commercial signs, tends to be more popular with lay people than with professionals. On the other hand, professionals tend to prefer street facades characterized by historic buildings, even when these buildings are harmed by commercial signs. The results also indicate that street 6 is chosen as the worst street facade by more lay people than professionals. In this regard, this research suggests that one or more of the following aspects of street 6 can affect the perception and evaluation of lay users more negatively than the perception and evaluation of professionals: (i) higher commercial signage variation, (ii) higher building variation, (iii) higher number of commercial signs, (iv) higher percentage of street facade covered by signage, (v) higher percentage of buildings harmed by these media, and (vii) higher amount of square metres of commercial signs per linear street metre. Similarities between lay people and professionals in terms of their choices for the best and the worst commercial street facades in terms of appearance are also found (i) in Oxford, when the appearance of streets 1, 2 and 5 is analysed, (ii) in Gramado, when the appearance of streets 1, 2, 3, 5, and 6 is analysed, and (iii) in Pelotas, when the appearance of streets 1, 3, and 6 is analysed.

8. Taking into account user choices for the best and the worst commercial street facades, the results from the analysis of responses of users from Oxford, Gramado and Pelotas suggest that: when commercial streetscapes are evaluated, (i) historic buildings tend to be more important for users who live in Oxford, where the city centre is characterized by preserved historic buildings, while (ii) the number of commercial signs tend to be more important for users from the Brazilian case studies, where the excessive numbers of commercial signs is one of the main causes of visual pollution in many cities (see Chapter Four, section 4.2, and Chapter Six, section 6.2.2). In addition, the “Neo-Bavarian” architectural style influences the perception and evaluation of users from Brazil more

positively than the perception and evaluation of users from England. Some users from Oxford mentioned that they did not like the appearance of buildings in street 3 because “the buildings do not look Brazilian”. This impression can be related to stereotypical images that these users have of Brazil.

### 7.3 PERCEPTION AND EVALUATION OF RESIDENTS IN THE CITY WHERE THE COMMERCIAL STREETS EVALUATED NEGATIVELY ARE LOCATED

This section refers to research objective G, and presents the findings from the qualitative analysis of the focus group discussion. This focus group explored the perception and evaluation of residents in the case study where the commercial street facades chosen as the worst streets in terms of appearance are located (streets 5 and 6); it was conducted in the case study of Pelotas. This section discusses (i) which factors contribute to increasing visual pollution in the historic city centre of Pelotas, and what can be done to reduce this problem, (ii) the relationship between commercial signage and building form in this historic city centre, and (iii) whether residents’ evaluations of the commercial street facades in Pelotas, streets 5 and 6, coincide with the evaluations of these streets by users from Oxford and Gramado. In this respect, the following working hypothesis is tested:

Working hypothesis D: Residents in a city, where the commercial street facades chosen as the worst streets in terms of appearance are placed, and users from other cities share the same perception and evaluation in terms of the appearance of these streets.

The date, location, theme, and objectives of the focus group discussion, as well as general information about the participants are presented in Table 7.22. All participants were very interested in the discussion, there were no dominant personalities during the debate, and all of them felt comfortable whilst interacting with each other (see Figure 7.8). The involvement of City Council officers allowed a fully understanding about the current commercial signage control adopted in Pelotas, the Code of Postures, and the new regulation that has been designed by the local authority. The support given by the School of Architecture and Urban Planning of the Federal University of Pelotas, and the local newspaper of Pelotas, “Diario Popular”, was very important to the organization of the event. An article introducing the researcher to the local community and persuading residents in Pelotas to participate in the focus group discussion was published (see section 5.6.4 in Appendix 5.6).

Table 7.22: Date, location, theme, objectives and participants of the focus group discussion (Source: fieldwork 2005).

FOCUS GROUP DISCUSSION CARRIED OUT IN THE CASE STUDY OF PELOTAS			
DATE AND LOCAL	THEME	OBJECTIVES OF THE DISCUSSION	PARTICIPANTS
Date: 10/08/2005. Local: School of Architecture and Urban Planning of the Federal University of Pelotas.	The relationship between commercial signage and building form in the historic city centre of Pelotas.	a. Identify what residents think about the relationship between commercial signage and building form in the historic city centre of Pelotas b. Identify whether residents agree with the perception and evaluation of users from the other case studies about the commercial street facades in Pelotas. c. Identify the factors that contribute to increase visual pollution in the city centre, and what can be done to reduce it. d. Discuss the lack of interest of shop owners in debating the problem of visual pollution.	City Council officers; students of law and architecture; lecturers of law, civil engineer, architecture and edification technician schools; university staff; professionals who have offices and/or offer services in the city centre (such as lawyers, architects, urban planners, philosophers, historian, dentists, agronomists, journalists and so on). The record of presence is presented in Appendix 5.16.



Figure 7.8: Focus group discussion. The support material shown to the participants is on the table (photographs and postcards of Pelotas, and the objectives of the focus group) (Source: author).

### **7.3.1 User perception and evaluation of the relationship between commercial signage and building form**

The participants of the focus group discussion indicate that the relationship between commercial signage and building form in the historic city centre of Pelotas is negative. They agree with the results obtained from questionnaire type B, which show that users from different urban contexts evaluate the commercial street facades located in Pelotas as the worst streets in the sample in terms of appearance (see section 7.2.3.2). The majority of them suggest that those evaluations are the result of (i) the current commercial signage control adopted in Pelotas, the Code of Postures, that is too permissive (for example, shop owners can install new commercial signs without the knowledge of the City Council), and (ii) the attitude of the local authority in dealing with shop owners who display commercial signs that harm building facades.

The City Council officers, who participated in the discussion, mentioned that asking shop owners to remove irregular signs can create “a heavy atmosphere in the local community” (this same argument was mentioned by Pelotas City Council officers during the interview session, see Chapter Six, section 6.2). In this regard, the other participants in the focus group argue that it is just an excuse to not apply in practice commercial signage controls. On the other hand, the officers said that it is difficult to ask shop owners to remove their signs without the support of commercial signage controls, which regulate the physical characteristics of shopfronts and advertisements, such as size, colour and proportion. According to them, planning officers need the support of an effective legislation to approach shop owners; otherwise the decision of what is an “appropriate” sign becomes a subjective matter. The current commercial signage control applied in Pelotas is described through subjective expressions (see Chapter Two, section 2.3.3; and Appendix 6.4).

In this regard, the participants of the focus groups discussion recognize that the lack of an effective commercial signage approach, which controls the physical characteristics of commercial signs, is another factor that increases the visual pollution in the historic city centre of Pelotas. City Council officers explained that a new commercial signage control that attempts to regulate the physical characteristics of these media has been designed. However, the other participants in the focus group discussion did not know about this initiative because a public meeting to discuss the development of this regulation had not been organized by the City Council. According to these participants, the lack of public



meetings, which would allow members of the local community to get involved in the development of commercial signage controls, is another negative aspect of the approach adopted by Pelotas City Council to control shopfronts and window displays.

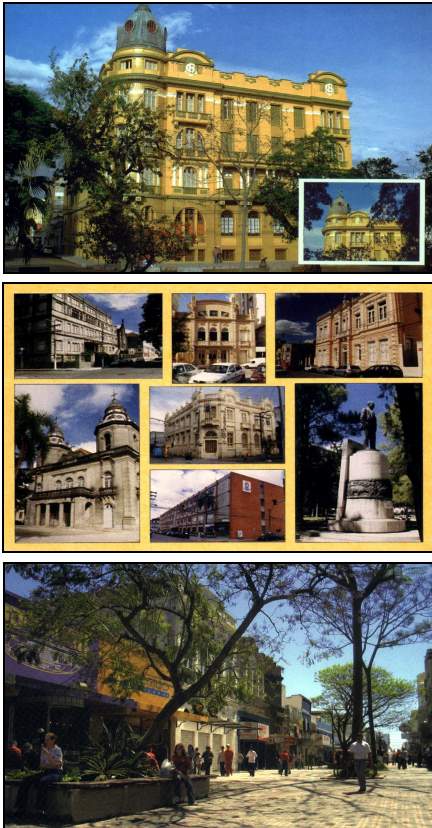

The participants also suggest that the lack of interest of shop owners in discussing the negative effects that visual pollution causes to the city centre is another factor that increases the disorder of commercial signs in Pelotas. According to them, this lack of interest is one of the main reasons that make the implementation of commercial signage controls difficult in Pelotas. In general, shop owners do not understand that an ordered city centre may attract more people, and, consequently, increase their profits (Portella, 2003, pp.46-47). In this regard, the participants of the focus group believe that it is necessary to convince this user group that ordered commercial signs will improve the appearance of the streetscape in the city centre, and consequently this improvement will increase the social and economic vitality of the whole place. City Council officers said that to persuade shop owners to get involved in the development of the new commercial signage control has been one of their aims. However, their initiatives to get these people involved have been always ignored by the majority of shop owners. According to these officers, invitation letters and telephone calls inviting shop owners to come to the City Council to discuss the new commercial signage control were not well received by them.

Results from the discussion related to the support material presented to the participants (photographs and postcards of Pelotas city centre, see Chapter Five, section 5.3.3.5) show that residents in Pelotas would like the appearance of the city centre to be similar to the images advertised by postcards. They mentioned that the postcards do not reflect the actual appearance of the historic city centre of Pelotas. A participant said: “these media just illustrate a few historic buildings still preserved and do not show the chaos created by commercial signs that is the main characteristic of the city centre at present moment” (see Table 7.23 below). Participants suggest that the implementation of an effective commercial signage control is one of the main tools to improve the appearance of the city centre, and make this place similar to the image promoted by the postcards.

From the discussion relating to what can be done to reduce the visual pollution in the historic city centre of Pelotas, eight proposed actions were suggested by the participants (see section 7.3.1.1 below). At the end of the focus group discussion, these actions were put into a document, which was sent to the head of the Planning Department of Pelotas

City Council. Later, this document was adopted by the City Council as a theoretical argument to support the new commercial signage control designed for the historic core. On 24<sup>th</sup> August 2005, the researcher participated in a public meeting with the City Councillors to discuss the importance of this new commercial signage control designed to preserve the historic heritage of Pelotas. This meeting was broadcast on local TV, and helped to gain the support of the local community<sup>1</sup>.

Table 7.23: Postcards and photographs of the historic city centre of Pelotas in 2007 illustrating two opposite images of the appearance of this place (Source: author).

POSTCARDS OF PELOTAS CITY CENTRE (2007)	PHOTOGRAPHS OF PELOTAS CITY CENTRE (2007)
	

7.3.1.1. Eight proposed actions to decrease the visual pollution in the historic city centre

1. *The persuasion of shop owners to support commercial signage controls:* one of the main conclusions of the focus group discussion is that the shop owners need to get involved in discussions related to (i) the problems caused by the visual pollution in the historic city centre of Pelotas, and (ii) the importance of commercial signage controls as tools to improve the appearance of this city centre. To get the involvement of these users, two

<sup>1</sup> The public meeting with the City Councillors can be seen on the CD disc attached to this thesis (Appendix 7.4).

actions were suggested by the participants of the focus group:

a1. Publication of articles in local newspapers, distribution of pamphlets to shop owners, and promotion of debates broadcast on local TV. The objective here is to promulgate the negative effects caused by the visual pollution, and the positive results that ordered commercial signs can bring to historic city centres in terms of tourist and economic development.

a2. Design of a handbook, which introduces to the local community the main issues taken into account in the new commercial signage control that has been designed by the local authority. This handbook should be distributed to shop owners and all members of society interested in this subject. In England, there is a print guide, which explains the guidelines proposed by PPG19 (Great Britain, 1992). Some copies of this guide were shown to the participants of the focus group, and all of them agreed that it is a good way to help shop owners to understand the issues taken into account in commercial signage controls, and what in terms of design does not affect the historic character of places.

After the implementation of these actions, the participants of the focus group suggested the application of the following initiative:

a3. Organization of workshops to (i) discuss with shop owners the physical characteristics of commercial signs that should be regulated by commercial signage controls, and (ii) showing, through examples of other cities, that ordered commercial signs improve the appearance of city centres, attract more visitors, and, consequently, increase the social and economic vitality of these places (Portella, 2003; Scenic America, 1999). These meetings might be organized by the City Council and the local universities. These entities might contact in person the head of the two main commercial societies in Pelotas, “Associação Comercial” and “Camara de Dirigentes Logistas”, in order to commit these organizations to engaging their associates to participate in these discussions. The meetings should be open to all members of the local community, and be advertised by the local media.

2. *The application of a commercial signage control approach, which takes into account the character of the whole city centre:* a commercial signage control approach, which focuses just on individual buildings and does not take into account their surrounding areas, can be a

contributory factor to decreasing the visual quality of historic city centres. This is seen in Pelotas where, even when historic building facades are free of signs, commercial signs on their adjacent buildings harm their appearance. The design of commercial signage controls should take into account the character of the whole historic city centre.

*3. The use of computer simulations to illustrate how the appearance of the city centre will be improved with the implementation of commercial signage controls:* simulations of street facades in the city centre showing how the appearance of this area will improve with the implementation of effective commercial signage controls can be printed out in local guides, and distributed to the local community. This kind of visual appeal can persuade shop owners to support commercial signage controls proposed by the local authority.

*4. The delimitation of “street models” in order to test commercial signage controls:* the implementation of commercial signage controls on one or two street facades in the city centre can allow shop owners and the local community to evaluate the improvement of the appearance of commercial streetscapes on-site. Consequently, shop owners from other streets might want to volunteer to adopt the guidelines proposed by the City Council. This action can also help the local authority to analyse how shopfronts and window displays can be designed with regard to the preservation of the historic heritage on-site. The participants of the focus group suggested that these “street models” should be selected by the City Council with the support of the local shop owners. The City Council can give financial support to the shop owners in these streets to adapt their commercial signs to the proposed guidelines. In initiatives already implemented to control visual pollution in some Brazilian historic city centres, such as in Rio de Janeiro, the local authority gives exemption of IPUT (equivalent of the Council Tax in England) to owners who agree to restore and preserve the historic character of their properties according to the local commercial signage regulation (see Chapter Four, section 4.4.3.1).

*5. The control of physical characteristics of commercial signs and the definition of a maximum percentage of building facade that can be covered by these media:* commercial signage controls should be designed in order to (i) regulate physical characteristics of shopfronts and window displays (such as size, colour, shape and location on facades), and (ii) define a maximum percentage of a building facade that can be covered by these media. In this regard, simulations of 3%, 5% and 10% of a historic building facade covered by commercial signs were shown to the participants of the focus group. Looking at these

simulations, the majority of them indicated that a maximum of 3% of the building facade covered by these media is the best alternative to the historic city centre of Pelotas (see Figure 7.9). However, the new commercial signage regulation designed by the City Council of Pelotas defines a maximum limit of 5% of a building facade covered by commercial signs. City Council officers presented in the focus group said that a maximum of 3% is the best option; however, they believe that shop owners will not respect this limit. This fact supports what was discussed earlier (section 7.3.1, and Chapter Six, section 6.2): the City Council does not have a strong enough position to enforce commercial signage controls to be respected by shop owners. This research recognizes that this attitude is affecting even the design of the new commercial signage control.

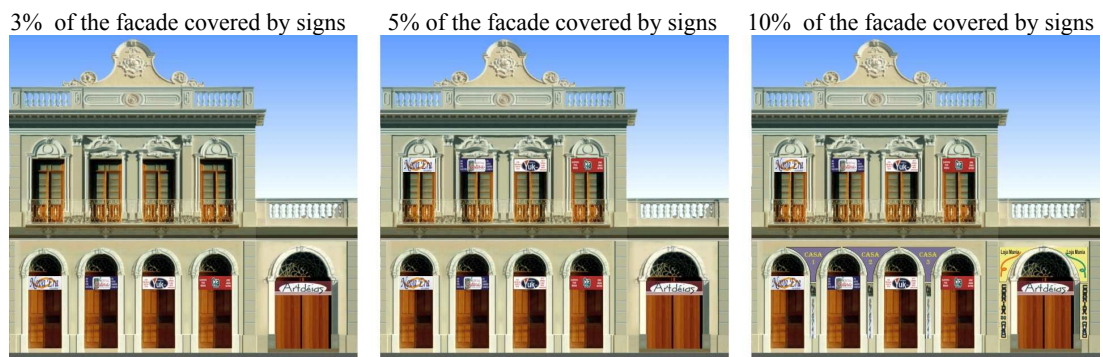


Figure 7.9: Simulations showing three levels of percentage of a historic building facade covered by signs. The participants of the focus group preferred the first option (Source: fieldwork 2005).

6. *The control of the quantity of information displayed on commercial signs:* a limit on the amount of information promulgated by commercial signs should be considered in commercial signage controls. The shopfront, for example, should be designed to communicate the name of the shop. Additional information, such as “here you have the best price in the city”, “great deals” and “good value”, should not be allowed in shopfronts, and limited in window displays (see Figure 7.10).



Figure 7.10: Examples of buildings where shopfronts are displayed to advertise the name of the shop, the products on sale, facilities of payment and so on. Pelotas, Brazil (Source: author).

7. *The fragmentation of a building facade by colour and commercial signs should be avoided:* the fragmentation of a building facade by colour and/or commercial signs due to commercial purposes should not be allowed. Usually, when more than one shop is located in one historic building, shop owners in Pelotas tend to divide the building facade into different parts using colours and commercial signs (see Figure 7.11). They believe that it helps consumers identify each shop; however, according to the participants in the focus group, it just contributes to decreasing the visual quality of the building and the historic city centre. The results of the focus group discussion show that colours and commercial signs of different shops located in the same building should be designed as a group.



Figure 7.11: Historic building facades fragmented by signs and colours in the city centre of Pelotas, Brazil (Source: author).

8. *The involvement of the local universities in discussions about visual pollution:* lectures and informal discussions organized among students and lectures in order to debate the consequences that visual pollution can bring to historic city centres is an initiative that can be promoted by the local universities; Pelotas has two Schools of Architecture and Urban Planning and one School of Publicity. This kind of discussion can contribute to making students aware about the problem of visual pollution, and pro-active in terms of avoiding this in their future professional projects. It is interesting to note that this thesis is the result of a preliminary academic work developed by the researcher when she was a student of architecture in the Federal University of Pelotas, Brazil.

### 7.3.2 Summary of the findings from the focus group discussion

The findings presented in the above sub-sections support working hypothesis D: residents in a city where the commercial street facades chosen as the worst streets in terms of appearance are located and users from other cities share the same perception and evaluation of the appearance of these streets. The residents in Pelotas agreed with the

results obtained from questionnaire type B, which show that users from Oxford and Gramado evaluate the commercial street facades in Pelotas as the worst streets in terms of appearance. The findings from the focus group discussion identify five aspects that contribute to increasing the visual pollution in Pelotas city centre: (i) the legislation is too permissive, (ii) the attitude of the local authority in dealing with the removal of irregular signs, (iii) the lack of effective commercial signage controls described in objective terms, (iv) the lack of interest of shop owners in discussing the negative effects that the visual pollution is causing to Pelotas city centre, and (v) the lack of public meetings to allow the local community to get involved in the development of commercial signage controls. The findings also show that the participants in the focus group (i) evaluate as negative the relationship between commercial signage and building form in Pelotas city centre, and (ii) recognize that implementation of commercial signage controls is one way to make the appearance of this city centre similar to the image promoted by the postcards of this city.

The results from the focus group discussion also suggest eight general proposed actions, which can be adopted to decrease the visual pollution in Pelotas historic city centre, and extended to historic city centres in general: (i) the persuasion of shop owners to support commercial signage controls, (ii) the application of a commercial signage control approach, which takes into account the character of the whole city centre, (iii) the use of computer simulations to illustrate how the appearance of the city centre can be improved with the implementation of commercial signage controls, (iv) the delimitation of “street models” in the city centre in order to test commercial signage controls, (v) the control of physical characteristics of commercial signs and the definition of a maximum percentage of building facade that can be covered by these media, (vi) the control of the quantity of information displayed on commercial signs, (vii) the avoidance of the fragmentation of building facades by colours and commercial signs, and (viii) the involvement of the local universities in discussions about visual pollution.

## 7.4 CONCLUSION

This chapter presented the findings from (i) the quantitative analysis of questionnaires type A and type B, and (ii) the qualitative analysis of the focus group discussion. The main results from the quantitative analysis (see section 7.2) are highlighted in the next paragraphs. These are based on the common perceptions and evaluations found between

users from the different urban contexts, and are used to answer the research questions set out below.

- *Research Question 2:* Which physical characteristics of commercial signs and buildings need to be taken into account in the development of a general commercial signage approach applied to the historic city centres of different urban contexts?
- *Research Question 3:* Are there common perceptions and evaluations between users from different urban contexts in terms of commercial signage controls and the appearance of commercial street facades in historic city centres?

1. The evidence presented in this chapter shows that people from different urban contexts evaluate negatively the appearance of street facades where commercial signage controls are ineffective and the streetscape is disordered and characterized by historic buildings harmed by commercial signs. On the other hand, users from different urban contexts evaluate positively the appearance of street facades where commercial signage controls are applied to preserve the historic heritage and the streetscape is ordered and characterized by preserved historic buildings. A street facade where commercial signage controls are effective and the streetscape is characterized by contemporary buildings is also evaluated positively by people; mainly by residents in the city where this street is located.

2. Comparing the results from the analysis of user perception and evaluation of the appearance of commercial street facades with the physical characteristics of these streets, this research suggests that: a general commercial signage approach should take into account that the conjunction of the following factors can influence positively preference and satisfaction of users from different urban contexts - (i) a maximum of 5.62% of street facade covered by commercial signs, (ii) a maximum of 0.68 square metres of these media per linear street metre, (iii) ordered commercial signage, and (iv) high or low variation of buildings and commercial signs. At the same time, this approach should take into account that (i) a minimum of 9.11% of a street facade covered by commercial signs, (ii) a minimum of 0.85 square metres of commercial signs per linear street metre, (iii) visual pollution, and (iv) higher or lower variation of commercial signs and buildings are factors associated with the street facades evaluated negatively by users from the three case studies.

3. The results in this chapter also suggest that (i) user familiarity with a particular



streetscape, (ii) symbolic meanings attributed to buildings, and (iii) user urban context influence user perception and evaluation of the appearance of commercial street facades. In this regard, these three aspects should be considered in the development of a general commercial signage approach to historic city centres. The investigation of how residents evaluate the appearance of commercial streets in historic city centres, with regard to the influence of these three non-physical variables on their responses, should be the first analysis recommended in a general approach to the development of local commercial signage controls.

4. The findings in this chapter also suggest a series of physical characteristics of commercial streetscapes that influence the perception and evaluation of users from the three case studies in the same way. These characteristics can be used in a general commercial signage approach as potential guidelines to promote commercial streetscapes evaluated positively by users from different urban contexts.

a. Visual pollution decreases user satisfaction more when associated with a high variation of commercial signs and buildings, a high percentage of street facade covered by commercial signs ( $\geq 9.11\%$  of the street facade), a high percentage of buildings harmed by these media ( $\geq 33\%$  of buildings or  $46\%$  of a street facade), and a high value of square metres of commercial signs per linear street metre ( $\geq 0.85\text{m}^2$  of signs per linear street metre).

b. Users who prefer commercial streets characterized by preserved historic buildings do not sympathize with commercial streets characterized by contemporary buildings and commercial signs designed to build a manufactured character of a historic city. In this regard, an approach that aims to promote manufactured visual character of historic city centres should be avoided.

c. Streetscapes comprising a mix of historic and ordinary buildings influence positively the perception and evaluation of users, mainly when ordinary buildings are designed respecting the features of historic buildings, such as their height and proportion of windows and doors.

d. Users do not like the appearance of street facades characterized by (i) disordered commercial signs, (ii) low variation of commercial signs and buildings, and (iii) historic buildings harmed by these media. In this case, the combination of these features should

- be avoided in commercial streetscapes of historic city centres.
- e. A combination of a high percentage of street facade covered by commercial signs ( $\geq 9.11\%$ ) and a high percentage of buildings harmed by these media ( $\geq 33\%$  of buildings or  $46\%$  of a street facade) is evaluated as less negative than a combination of a high value of square metres of commercial signs per linear street metre ( $\geq 0.85\text{m}^2$  of signs per linear street meter) and a high variation of buildings and commercial signs. This finding suggests that the definition of a maximum square metre of commercial signs per linear street metre, and the design of controls related to the variation of commercial signs and buildings are important issues that should be considered in the development of a general commercial signage approach to historic city centres.
- f. Factors related to the visual character of commercial street facades, such as building styles, roof line, presence of vegetation, and spaces between buildings (see Chapter Two, section 2.4.2.1, item B4), seem to influence user perception and evaluation of the appearance of commercial streetscapes. Therefore, a general commercial signage approach should recommend that, before local authorities begin to design local regulations, they need to evaluate the influence of the current visual character of commercial streetscapes on residents' perceptions and evaluations.
- g. Commercial streetscapes mainly characterized by historic buildings influence user perception and evaluation of these places in a positive way, even when visual pollution is a problem. So, the preservation of these buildings is one of the most important issues that should be considered in the development of commercial signage controls.
5. The findings in this chapter suggest that a general commercial signage approach should take into account (i) the appearance of buildings, (ii) the appearance of commercial signs, (iii) the historic buildings, and (iv) the number of commercial signs as factors that influence the perception and evaluation of users from different urban contexts, when the appearance of commercial streetscapes is evaluated. The evidence from this research also demonstrate that user urban context influence the importance attributed to these aspects by users, when commercial streets are evaluated. When the appearance of commercial street facades are evaluated, historic buildings have more influence on the perception and evaluation of users from Oxford than on the perception and evaluation of users from the other case studies. This may happen because in Oxford commercial signage controls are applied in order to preserve the historic heritage, and the streetscape is characterized by

preserved historic buildings. At the same time, the number of commercial signs has more influence on the perception and evaluation of users from Brazil (Gramado and Pelotas), where the majority of historic city centres are harmed by an excessive number of shopfronts and window displays, than on the perception and evaluation of users from Oxford. The perception and evaluation of users from Gramado, where historic buildings are not landmarks in the streetscape due to the aesthetic approach adopted by the local authority, are influenced more by the appearance of commercial signs than by the presence of historic buildings.

These findings suggest that a general approach to control commercial signage in historic city centres should recommend that, in each particular urban context, specific aspects of the streetscape might be given more emphasis in order to attend to the residents' perception needs. Therefore, this approach should recommend that local authorities investigate which physical characteristics of commercial streetscapes most influence the perception and evaluation of residents. Having this knowledge as a starting point, local authorities can manage these characteristics to reinforce the historic character of city centres.

Next, two main results from the qualitative data analysis of the focus group discussion (see section 7.3) are highlighted in order to answer research questions 1 (set out below), 2 and 3 (mentioned at the beginning of this section).

- *Research Question 1:* Which aspects of the operation of commercial signage controls need to be taken into account in the development of a general commercial signage approach applied to the historic city centres of different urban contexts?
1. The evidence from this research suggests five factors that can increase visual pollution in historic city centres. These factors can be used in the operation of a general commercial signage approach as negative scenarios that should be avoided by local authorities in different urban contexts. This research also identifies eight proposed actions that, according to user perception and evaluation, can improve the appearance of historic city centres, and convince shop owners and members of local communities to support commercial signage controls (see Table 7.24). These proposals can be used in the operation of a general commercial signage approach as strategies to reduce visual pollution in historic city centres of different urban contexts already affected by this problem.

Table 7.24: Factors related to the visual pollution in a historic city centre according to user perception and evaluation of commercial streetscapes (Source: fieldwork 2005).

FACTORS THAT CAN INCREASE VISUAL POLLUTION	INITIATIVES THAT CAN DECREASE VISUAL POLLUTION
<ol style="list-style-type: none"> <li>1. Legislation is too permissive.</li> <li>2. Attitude of the local authority in dealing with the removal of irregular signs.</li> <li>3. Lack of effective commercial signage controls described in objective terms.</li> <li>4. Lack of interest of shop owners in discussing the negative effects that the visual pollution is causing to the historic city centre.</li> <li>5. Lack of public meetings to allow the local community to get involved in the development of commercial signage controls.</li> </ol>	<ol style="list-style-type: none"> <li>1. Persuasion of shop owners to support commercial signage controls.</li> <li>2. Application of a commercial signage control approach, which takes into account the character of the whole city centre.</li> <li>3. Use of computer simulations to illustrate how the appearance of the city centre can be improved with the implementation of commercial signage controls.</li> <li>4. Delimitation of “street models” in the city centre in order to test commercial signage controls.</li> <li>5. Control of physical characteristics of commercial signs and the definition of a maximum percentage of building facade that can be covered by these media.</li> <li>6. Control of the quantity of information displayed on commercial signs.</li> <li>7. Avoidance of the fragmentation of building facades by colours and commercial signs.</li> <li>8. Involvement of local universities in discussions about visual pollution.</li> </ol>

2. This chapter shows that users from Oxford and Gramado and residents in Pelotas, where commercial signage harms historic buildings and causes disorder, share the same perception and evaluation, when the appearance of the commercial streets in Pelotas were analysed. In this regard, the fact that common views were found between users from these three different urban contexts suggests that the development of a general commercial signage approach, which helps national, regional and local authorities of different historic city centres design and implement commercial signage controls, is an essential initiative that should be integrated within urban design approaches.

The next and last chapter of the findings explores which physical characteristics of commercial signs and building facades are evaluated positively and negatively by users from the different case studies and countries.

## Chapter Eight

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### Perception and evaluation of physical characteristics of commercial signs and buildings by users from different urban contexts

#### MAIN STRUCTURE OF CHAPTER EIGHT

8.1 Introduction.

8.2 User perception and evaluation of beauty, interest, order, colour, and complexity in commercial street facades.

8.3 User perception and evaluation of commercial signage and building variation in commercial street facades.

8.4 User perception and evaluation of number of commercial signs and percentage of building facade covered by these media.

8.5 User perception and evaluation of the relationship between commercial signage and building facade.

8.6 Conclusion.

#### 8.1 INTRODUCTION

This chapter addresses the following research objective:

a. Research objective H: Analysis of user perception and evaluation of commercial street facades where different commercial signage approaches are applied in terms of (i) beauty, interest, order, colour and complexity, (ii) variation of commercial signs and buildings, (iii) number of commercial signs and percentage of building facades covered by these media, and (iv) relationship between the aesthetic composition of commercial signs and building facades.

This chapter presents the findings from the quantitative analysis of questionnaire type B. This analysis complements the results obtained in Chapter Seven by identifying the specific physical characteristics of commercial signs and buildings that influence positively and negatively the perception and evaluation of users from different urban contexts. This analysis takes into account the commercial street facades chosen as the best (streets 1, 2 and 3) and the worst (streets 5 and 6) streets in terms of appearance (see Chapter Seven, section 7.2). First, this chapter analyses user perception and evaluation of the appearance of these commercial street facades in terms of the aesthetic dimensions of beauty and interest, and the physical aspects of order, colour variation, and complexity.

Next, with regard to the appearance of those streets, this chapter investigates user perception and evaluation of (i) the commercial signage and building variation, (ii) the number of commercial signs, (iii) the percentage of building facades covered by these media, and (iv) the relationship between the aesthetic composition of commercial signs and building facades. The analysis of this last factor explores user perception and evaluation of (i) the presence and number of buildings harmed by commercial signs, (ii) the influence of shopfronts and window displays on the appearance of historic buildings, and (iii) the positive and negative physical characteristics of commercial signs and buildings that stand out in an individual's mind first, when the commercial street facades are evaluated. This chapter also compares the user responses related to the appearance of the street facades in the sample with the physical characteristics of these streets in order to identify the aspects of the streetscape that influence user perception and evaluation of commercial streets.

This chapter tests proposition 5 and working hypothesis E (see Table 8.1), and the results from this testing are used to answer research questions 2 and 3. Sub-hypotheses developed from working hypothesis E were designed to guide the statistical analysis (see Appendix 8.1). The results from the statistical testing of these are presented in this chapter as findings related to working hypothesis E. The following general assumption is also tested: while some visual preferences in the built environment may be influenced by the user urban context, others (universals) may be common to the majority of people from different countries and may be useful to define general principles that guide preference and satisfaction.

Table 8.1: Proposition and working hypothesis tested in Chapter Eight (Source: author).

PROPOSITION	WORKING HYPOTHESIS
<p><b>Proposition 5:</b> There is a relationship between commercial street facades chosen as the best and the worst streets in terms of appearance and user perception and evaluation of (i) beauty, interest, order, colour and complexity, (ii) variation of commercial signs and buildings, (iii) number of commercial signs and percentage of building facades covered by these media, and (iv) relationship between the aesthetic composition of commercial signage and building facades.</p>	<p><b>Working hypothesis E:</b> Commercial street facades chosen as the best and the worst streets in terms of appearance are perceived and evaluated differently in terms of (i) beauty, interest, order, colour and complexity, (ii) variation of commercial signs and buildings, (iii) number of commercial signs and percentage of building facades covered by these media, and (iv) relationship between aesthetic composition of commercial signage and building facades.</p>

To conclude, this last chapter of the findings identifies the aspects of the operation of commercial signage controls and the physical characteristics of commercial signs and buildings that should be taken into account in the development of a general commercial signage approach applicable to historic city centres in different urban contexts.

## 8.2 USER PERCEPTION AND EVALUATION OF BEAUTY, INTEREST, ORDER, COLOUR, AND COMPLEXITY IN COMMERCIAL STREET FACADES

This section presents the findings from the analysis of user perception and evaluation of (i) beauty, (ii) interest, (iii) order, (iv) colour, and (v) complexity, when the appearance of streets 1, 2 and 3 (chosen as the best streets in terms of appearance) and streets 5 and 6 (chosen as the worst streets in terms of appearance) are evaluated. This analysis refers to research objective H, and compares responses of users from Oxford, Gramado, and Pelotas. The first part of working hypothesis E (identified below in bold letters) is tested in this section.

Working hypothesis E: **Commercial street facades chosen as the best and the worst streets in terms of appearance are perceived and evaluated differently in terms of (i) beauty, interest, order, colour and complexity**, (ii) variation of commercial signs and buildings, (iii) number of commercial signs and percentage of building facades covered by these media, and (iv) relationship between aesthetic composition of commercial signage and building facades.

### 8.2.1 User perception and evaluation of beauty in commercial street facades

The majority of users from the whole sample, Oxford, Gramado and Pelotas perceive and evaluate the commercial street facades chosen as the best streets in terms of appearance (streets 1, 2 and 3) as “very beautiful” or “beautiful”, and the commercial street facades chosen as the worst streets in terms of appearance (streets 5 and 6) as “very ugly” or “ugly” (see Table 8.2).

Table 8.2: User perception and evaluation of beauty when the appearance of streets 1, 2, 3, 5 and 6 are analysed - users from the whole sample, Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Q15/Q26. Rate the street >x< along the following scale:		Street facades chosen as the BEST:			Street facades chosen as the WORST:	
		Street 1	Street 2	Street 3	Street 5	Street 6
The whole sample	Very beautiful + beautiful	143(93.46%)	69(93.24%)	96(90.57%)	15(10.07%)	11(6.51%)
	Neither beautiful nor ugly	8(5.23%)	5(1.39%)	7(1.94%)	28(18.79%)	34(19.53%)
	Ugly + very ugly	2(1.31%)	0	3(0.83%)	106(71.14%)	125(73.96%)
	Total	153(100%)	74(100%)	106(100%)	149(100%)	169(100%)
	Mean score*	1.54	1.51	1.52	3.95	4.07
Oxford	Very beautiful + beautiful	62(86.11%)	10(100%)	20(71.43%)	0	2(3.23%)
	Neither beautiful nor ugly	8(11.11%)	0	5(17.86%)	5(16.13%)	14(22.58%)
	Ugly + very ugly	2(2.78%)	0	3(10.71%)	26(83.87%)	46(74.19%)
	Total	72(100%)	10(100%)	28(100%)	31(100%)	62(100%)
	Mean score	1.85	1.80	2.21	4.10	3.98

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Q15/Q26. Rate the street >x< along the following scale:		Street facades chosen as the BEST:			Street facades chosen as the WORST:	
		Street 1	Street 2	Street 3	Street 5	Street 6
Gramado	Very beautiful + beautiful	39(100%)	18(94.73%)	51(100%)	13(24.07%)	7(11.48%)
	Neither beautiful nor ugly	0	1(5.26%)	0	12(22.22%)	12(19.67%)
	Ugly + very ugly	0	0	0	29(53.70%)	42(68.85%)
	Total	39(100%)	19(100%)	51(100%)	54(100%)	61(100%)
	Mean score*	1.28	1.32	1.23	3.56	4.00
Pelotas	Very beautiful + beautiful	42(100%)	41(91.12%)	25(72.59%)	2(3.13%)	2(4.35%)
	Neither beautiful nor ugly	0	4(8.89%)	2(7.41%)	11(17.19%)	7(15.22%)
	Ugly + very ugly	0	0	0	51(79.69%)	37(80.43%)
	Total	42(100%)	45(100%)	27(100%)	64(100%)	46(100%)
	Mean score*	1.26	1.53	1.37	4.20	4.04

\* The lower this value, the more beautiful the commercial street facade.  
Table 8.2.1 in Appendix 8.2 presents this table with the categories of answers not clustered.

When the responses of users from the whole sample (361 users) are analysed, there is no statistical difference between streets 1, 2 and 3, and streets 5 and 6 in terms of user perception and evaluation of beauty. At the same time, significant differences are found between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of street 1 (KW=28.992, DF=2, p=0.001), street 3 (KW=31.460, DF=2, p=0.001), and street 5 (KW=6.649, DF=2, p=0.001). These findings suggest that resident familiarity with the streetscape might be influencing user perception and evaluation of streets 1 and 3: (i) the appearance of street 1, which is located in Oxford, tends to be seen as less beautiful by users from Oxford than by users from the other case studies, and (ii) the appearance of street 3, which is located in Gramado, tends to be seen as more beautiful by users from Gramado than by users from the other case studies. In addition, the majority of users from Oxford, Gramado and Pelotas classify street 5 as “very ugly” or “ugly” but some respondents from Gramado also tend to evaluate this street as “neither beautiful nor ugly”, and “very beautiful” or “beautiful” (see Tables 8.2, above, and 8.3). In this regard, when the questionnaire was being filled in, residents in Gramado mentioned that they like street 5 due to the presence of historic buildings; mainly the well preserved building in the middle of the street facade (see Chapter Seven, Figure 7.5). This fact shows that users who live in a city where historic buildings are not landmarks, because of the aesthetic control approach adopted by the local authority, tend to value historic buildings of other places, even when these are harmed by commercial signs.

Table 8.3: Differences between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of beauty (Source: fieldwork 2005).

	Case studies	Statistic results	Tendencies
Street 1	Oxford and Gramado	U=1209.0, N1=72, N2=39, two-tailed p=0.02.	Street 1 tends to be seen as more beautiful by users from Gramado and Pelotas than by users from Oxford.
	Oxford and Pelotas	U=1302.0, N1=72, N2=42, two-tailed p=0.01.	

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Continuation:			
	Case studies	Statistic results	Tendencies
Street 3	Oxford and Gramado	U=510.0, N1=28, N2=51, two-tailed p=0.001.	Street 3 tends to be seen as more beautiful by users from Gramado than by users from Oxford and Pelotas.
	Gramado and Pelotas	U=637.5, N1=51, N2=27, two-tailed p=0.05.	
Street 5	Oxford and Gramado	U=552.0, N1=31, N2=54, two-tailed p=0.002.	Street 5 tends to be seen as uglier by users from Oxford and Pelotas than by users from Gramado.
	Gramado and Pelotas	U=1219.5, N1=54, N2=64, two-tailed p=0.001.	

## 8.2.2 User perception and evaluation of interest in commercial street facades

For the majority of users from the whole sample, Oxford, Gramado and Pelotas, the commercial street facades chosen as the best streets in terms of appearance (streets 1, 2 and 3) are perceived and evaluated as “very interesting” or “interesting”, while the commercial street facades chosen as the worst streets in terms of appearance (streets 5 and 6) are perceived and evaluated as “very boring” or “boring” (see Table 8.4).

Table 8.4: User perception and evaluation of interest when the appearance of streets 1, 2, 3, 5 and 6 are analysed - users from the whole sample, Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Q15/Q26. Rate the street >x< along the following scale:		Street facades chosen as the BEST:			Street facades chosen as the WORST:	
		Street 1	Street 2	Street 3	Street 5	Street 6
The whole sample	Very boring + boring	4(2.61%)	6(8.11%)	11(10.38%)	89(60.14%)	99(58.58%)
	Neither boring nor interesting	12(7.84%)	5(6.76%)	17(16.04%)	33(22.14%)	29(17.16%)
	Interesting + very interesting	137(89.54%)	63(85.14%)	78(73.59%)	27(18.24%)	41(24.26%)
	Total	153(100%)	74(100%)	106(100%)	149(100%)	169(100%)
	Mean score*	4.39	4.24	4.09	2.29	2.46
Oxford	Very boring + boring	1(1.39%)	0	5(17.86%)	18(58.06%)	37(59.68%)
	Neither boring nor interesting	8(11.11%)	0	5(17.86%)	5(16.13%)	10(16.13%)
	Interesting + very interesting	63(87.50%)	10(100%)	18(64.29%)	8(25.81%)	15(24.19%)
	Total	72(100%)	10(100%)	28(100%)	31(100%)	62(100%)
	Mean score*	4.22	4.2	3.61	2.48	2.47
Gramado	Very boring + boring	3(7.69%)	2(10.53%)	2(3.92%)	28(51.85%)	39(63.93%)
	Neither boring nor interesting	1(2.56%)	0	6(11.76%)	16(29.63%)	6(9.84%)
	Interesting + very interesting	35(89.74%)	17(89.47%)	43(84.32%)	10(18.52%)	16(26.23%)
	Total	39(100%)	19(100%)	51(100%)	54(100%)	61(100%)
	Mean score*	4.41	4.53	4.45	2.39	2.38
Pelotas	Very boring + boring	0	4(8.89%)	4(14.81%)	44(68.75%)	23(50%)
	Neither boring nor interesting	3(7.14%)	5(11.11%)	6(2.22%)	11(17.19%)	13(28.26%)
	Interesting + very interesting	39(92.86%)	36(80%)	17(62.96%)	9(14.06%)	10(21.74%)
	Total	42(100%)	45(100%)	27(100%)	64(100%)	46(100%)
	Mean score*	4.64	4.13	3.93	2.09	2.54

\* The lower this value, the more boring the commercial street facade.  
Table 8.2.2 in Appendix 8.2 presents this table with the categories of answers not clustered.

There is no statistical difference between streets 1, 2 and 3, and streets 5 and 6 in terms of user perception and evaluation of interest, when the responses of users from the whole sample (361 users) are analysed. At the same time, significant differences are found between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of street 3 (KW=15.636, DF=2, p=0.001): the appearance of this street, which is located in Gramado, tends to be seen as more interesting by users from Gramado than by users from

the other case studies. In this regard, this research suggests that resident familiarity with the streetscape influences user perception and evaluation of interest (see Table 8.5).

Table 8.5: Differences between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of interest (Source: fieldwork 2005).

	Case studies	Statistic results	Tendencies
Street 3	Oxford and Gramado	U=510.0, N1=28, N2=51, two-tailed p=0.001	Street 3 tends to be seen as more interesting by users from Gramado than by users from Oxford and Pelotas.
	Gramado and Pelotas	U=637.5, N1=51, N2=27, two-tailed p=0.05	

### 8.2.3 User perception and evaluation of order in commercial street facades

For the majority of users from the whole sample, Oxford, Gramado and Pelotas, the commercial street facades chosen as the best streets in terms of appearance (streets 1, 2 and 3) are perceived and evaluated as “very ordered” or “ordered”, while the commercial street facades chosen as the worst streets in terms of appearance (streets 5 and 6) are perceived and evaluated as “very disordered” or “disordered” (see Table 8.6).

Table 8.6: User perception and evaluation of order when the appearance of streets 1, 2, 3, 5 and 6 are analysed - users from the whole sample, Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Q15/Q26. Rate the street >x< along the following scale:		Street facades chosen as the BEST:			Street facades chosen as the WORST:	
		Street 1	Street 2	Street 3	Street 5	Street 6
The whole sample	Very ordered + ordered	103(67.32%)	66(89.19%)	82(77.36%)	18(12.08%)	20(11.83%)
	Neither ordered nor disordered	40(26.14%)	7(9.46%)	20(18.87%)	23(15.44%)	29(17.16%)
	Chaotic + very chaotic	10(6.53%)	1(1.35%)	4(3.78%)	108(72.48%)	120(71.01%)
	Total	153(100%)	74(100%)	106(100%)	149(100%)	169(100%)
	Mean score*	2	1.45	1.83	3.98	4.02
Oxford	Very ordered + ordered	30(41.66%)	6(60%)	15(53.57%)	7(22.58%)	12(19.35%)
	Neither ordered nor disordered	34(47.22%)	4(40%)	8(28.57%)	2(6.45%)	7(11.29%)
	Chaotic + very chaotic	8(11.11%)	0	5(17.85%)	22(70.97%)	43(69.35%)
	Total	72(100%)	10(100%)	28(100%)	31(100%)	62(100%)
	Mean score*	2.54	2.1	2.5	3.87	3.85
Gramado	Very ordered + ordered	37(94.87%)	19(100%)	40(78.43%)	2(3.70%)	3(4.92%)
	Neither ordered nor disordered	1(2.56%)	0	11(21.57%)	13(24.07%)	13(21.31%)
	Chaotic + very chaotic	1(2.56%)	0	0	39(72.22%)	45(73.77%)
	Total	39(100%)	19(100%)	51(100%)	54(100%)	61(100%)
	Mean score*	1.56	1.11	1.69	4.13	4.18
Pelotas	Very ordered + ordered	36(85.72%)	41(91.11%)	26(96.29%)	9(14.06%)	5(10.87%)
	Neither ordered nor disordered	5(11.90%)	3(6.67%)	1(3.70%)	8(12.50%)	9(19.57%)
	Chaotic + very chaotic	1(2.38%)	1(2.22%)	0	47(73.44%)	32(69.57%)
	Total	42(100%)	45(100%)	27(100%)	64(100%)	46(100%)
	Mean score*	1.48	1.44	1.41	3.91	4.04

\* The lower this value, the more ordered the commercial street facade.  
Table 8.2.3 in Appendix 8.2 presents this table with the categories of answers not clustered

There are significant differences between streets 1, 2 and 3 (KW=18.027, DF=2, p=0.001) in terms of user perception and evaluation of order, when the responses of users from the whole sample (361 users) are analysed. In this regard, street 2 is seen as more ordered (U=3864.0, N1=153, N2=74, two-tailed p=0.001) than street 1 (U=3723.0, N1=153, N2=74, two-tailed p=0.001). This result can be related to the final level of complexity of

these street facades. According to the method applied in this research to calculate the complexity of commercial streetscapes, street 1 has higher complexity than street 2 (see Chapter Five, section 5.3.3.2). In this sense, the results from user responses agree with the literature review, which says that: high complexity can decrease user perception and evaluation of order (see Chapter Two, section 2.4.2.1). Significant differences are also found between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of street 1 (KW=40.043, DF=2, p=0.001) and street 3 (KW=16.534, DF=2, p=0.001). Street 1, which is located in Oxford, tends to be seen as less ordered by users from Oxford than by users from the other case studies, while street 3, which is located in Gramado, tends to be seen as more ordered by users from Gramado than by users from the other case studies (see Table 8.7). In this regard, this research suggests that, as verified when user perception and evaluation of beauty (section 8.2.1) and interest (section 8.2.2) were analysed, resident familiarity with the streetscape influences user perception and evaluation of order.

Table 8.7: Differences between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of order (Source: fieldwork 2005).

	Case studies	Statistic results	Tendencies
Street 1	Oxford and Gramado	U=670.0, N1=72, N2=39, two-tailed p=0.001	Street 1 tends to be seen as more ordered by users from Gramado and Pelotas than by users from Oxford.
	Oxford and Pelotas	U=843.0, N1=72, N2=42, two-tailed p=0.001	
Street 3	Oxford and Gramado	U=509.0, N1=72, N2=39, two-tailed p=0.009	Street 3 tends to be seen as more ordered by users from Gramado than by users from Oxford and Pelotas.
	Gramado and Pelotas	U=565.5, N1=72, N2=39, two-tailed p=0.04	

### 8.2.4 User perception and evaluation of colour variation in commercial street facades

The results from the analysis of user perception and evaluation of colour variation suggest that the commercial street facades chosen as the best (streets 1, 2 and 3) and the worst (streets 5 and 6) streets in terms of appearance can be perceived and evaluated as colourful or colourless (see Table 8.8).

Table 8.8: User perception and evaluation of colour variation when the appearance of streets 1, 2, 3, 5 and 6 are analysed - users from the whole sample, Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Q15/Q26. Rate the street >x< along the following scale:		Street facades chosen as the BEST:			Street facades chosen as the WORST:	
		Street 1	Street 2	Street 3	Street 5	Street 6
The whole sample	Very colourful + colourful	47(30.72%)	13(17.57%)	75(70.75%)	117(78.52%)	73(43.20%)
	Neither colourful nor colourless	65(42.48%)	21(28.38%)	25(23.58%)	24(16.11%)	49(28.99%)
	Colourless + very colourless	41(26.79%)	40(54.05%)	6(5.65%)	8(5.37%)	47(27.81%)
	Total	153(100%)	74(100%)	106(100%)	149(100%)	169(100%)
	Mean score*	2.96	3.51	2.08	1.64	2.71

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Q15/Q26. Rate the street >x< along the following scale:		Street facades chosen as the BEST:			Street facades chosen as the WORST:	
		Street 1	Street 2	Street 3	Street 5	Street 6
Oxford	Very colourful + colourful	26(36.11%)	7(70%)	26(92.85%)	22(70.97%)	16(25.81%)
	Neither colourful nor colourless	35(48.61%)	3(30%)	2(7.14%)	9(29.03%)	20(32.26%)
	Colourless + Very colourless	11(15.28%)	0	0	0	26(41.94%)
	Total	72(100%)	10(100%)	28(100%)	31(100%)	62(100%)
	Mean score*	2.74	2.3	1.86	1.77	3.15
Gramado	Very colourful + colourful	14(35.89%)	5(26.32%)	29(56.86%)	39(72.22%)	26(42.62%)
	Neither colourful nor colourless	15(38.46%)	4(21.05%)	18(35.29%)	10(18.52%)	18(29.51%)
	Colourless + very colourless	10(25.64%)	10(63.15%)	4(7.84%)	5(9.26%)	17(27.87%)
	Total	39(100%)	19(100%)	51(100%)	54(100%)	61(100%)
	Mean score*	2.87	3.53	2.25	1.81	2.75
Pelotas	Very colourful + colourful	7(16.66%)	3(6.66%)	20(74.08%)	56(87.50%)	31(67.39%)
	Neither colourful nor colourless	15(35.71%)	14(31.11%)	5(18.52%)	5(7.81%)	11(23.91%)
	Colourless + very colourless	20(47.62%)	28(62.22%)	2(7.41%)	3(4.69%)	4(8.70%)
	Total	42(100%)	45(100%)	27(100%)	64(100%)	46(100%)
	Mean score*	3.43	3.78	1.96	1.44	2.07

\* The lower this value, the more colourful the commercial street facade.  
Table 8.2.4 in Appendix 8.2 presents this table with the categories of answers not clustered.

When the responses of users from the whole sample (361 users) are analysed, statistical differences are found between streets 1, 2 and 3 ( $KW=72.606$ ,  $DF=2$ ,  $p=0.001$ ), and streets 5 and 6 ( $U=6558.5$ ,  $N1=149$ ,  $N2=169$ , two-tailed  $p=0.001$ ) in terms of user perception and evaluation of colour variation. According to these results, (i) street 1 tends to be seen as more colourful than street 2 ( $U=4063.0$ ,  $N1=153$ ,  $N2=74$ , two-tailed  $p=0.001$ ), (ii) street 3 tends to be seen as more colourful than street 1 ( $U=4444.0$ ,  $N1=153$ ,  $N2=106$ , two-tailed  $p=0.001$ ) and street 2 ( $U=1342.5$ ,  $N1=74$ ,  $N2=106$ , two-tailed  $p=0.001$ ), and (iii) street 5 tends to be seen as more colourful than street 6.

The previous analysis of the physical characteristics of the street facades in the sample (see Appendix 5.7) shows that street 2 is the least colourful street when compared to the other streets in the sample; this result converges with the perception and evaluation of the majority of users (54.05%), as they classify street 2 as “very colourless” or “colourless”. On the other hand, streets 1 and 3 have similar levels of colour variation according to the previous analysis of their physical characteristics (see Appendix 5.7); however, these streets have different levels of colour variation according to user perception and evaluation. Street 1 is evaluated as “neither colourful nor colourless” by 42.48% of users, and as “very colourful” or “colourful” by 30.72% of users, while street 3 is evaluated as “very colourful” or “colourful” by 70.75% of respondents. In this regard, this research suggests that the chromatic combination identified in street 3 (yellow-orange hues, hot and medium colours and harmony by light-dark contrast) can increase user perception and evaluation of colour variation, while the chromatic combination identified in street 1 (brown-red hues, hot and light colours and harmony by contrast) can divide users between

those who evaluate the streetscape as “neither colourful nor colourless”, “very colourful”, or “colourful”.

The results related to the street facades chosen as the worst streets in terms of appearance show that: street 5 is evaluated as “very colourful” or “colourful” (78.52% of users), while street 6 is evaluated as “neither colourful nor colourless”, and “colourless” or “very colourless” (56.80% of users). These results converge with the previous analysis of the physical characteristics of these street facades, which indicate that street 5 has higher colour variation than street 6 (see Appendix 5.7). In this regard, this research suggests that the chromatic combination identified in street 5 (white and yellow-orange hues, hot and medium colours and harmony by contrast) can increase user perception and evaluation of colour variation more than the chromatic combination identified in street 6 (blue-purple hues in cold and light colours, green-yellow hues in cold and medium colours, brown-red hues in hot and light colours and monochromatic harmony).

Analysing and comparing perceptions and evaluations of users from each case study, the following results are found:

1. There are significant differences between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of colour variation in street 1 (KW=11.447, DF=2, p=0.003) and street 6 (KW=20.633, DF=2, p=0.001). Street 1, which is located in Oxford, tends to be seen as more colourful by users from Oxford than by users from the other case studies, while street 6, which is located in Pelotas, tends to be seen as more colourful by users from Pelotas than by users from the other case studies (see Table 8.9). In this regard, as verified when user perception and evaluation of beauty (section 8.2.1), interest (section 8.2.2) and order (section 8.2.3) were analysed, this research suggests that resident familiarity with the streetscape influences user perception and evaluation of colour variation.

Table 8.9: Differences between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of colour variation (Source: fieldwork 2005).

	Case studies	Statistic results	Tendencies
Street 1	Oxford and Gramado	U=586.5, N1=72, N2=39, two-tailed p=0.02	Street 1 tends to be seen as more colourless by users from Gramado and Pelotas than by users from Oxford.
	Oxford and Pelotas	U=950.0, N1=72, N2=42, two-tailed p=0.001	
Street 6	Oxford and Pelotas	U=730.0, N1=62, N2=46, two-tailed p=0.001	Street 6 tends to be seen as more colourful by users from Pelotas than by users from Oxford and Gramado.
	Gramado and Pelotas	U=998.0, N1=62, N2=46, two-tailed p=0.005	

2. Common views are found between users from Oxford and Gramado in terms of perception and evaluation of colour variation in street 1: a significant number of users from both these cities evaluate street 1 as “very colourful” or “colourful” (Oxford: 36.11% of users; Gramado: 35.89% of users). On the other hand, a significant number of respondents from Pelotas evaluate street 1 as “colourless” or “very colourless” (47.62% of users). These results suggest that user urban context can be influencing perception and evaluation of colour variation. A significant number of residents in Pelotas, where hot and medium-strong colours are intense in commercial streetscapes (Portella, 2003), tend to evaluate the chromatic combination identified in street 1 (yellow-orange hues, hot and medium colours and harmony by light-dark contrast) as colourless.

3. The majority of users from Pelotas and Gramado evaluate street 2 as “very colourless” or “colourless”; users from Oxford have different responses, but the sample size (10 users) from this case study is not large enough to suggest a new tendency.

4. There are common views between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of colour variation in streets 3 and 5. The majority of users from these case studies evaluate these streets as “very colourful” or “colourful”. This result suggest that the chromatic combinations identified in street 3 (yellow-orange hues, hot and medium colour and harmony by light-dark contrast) and street 5 (white and yellow-orange hues, hot and medium colour and harmony by contrast) tend to increase colour variation according to the perception and evaluation of users from different urban contexts.

5. A large group of respondents from Oxford (41.94% of users) agree that street 6 is “colourless” or “very colourless”. At the same time, the majority of people from Pelotas (67.39% of users) and a large proportion of users from Gramado (42.62% of users) evaluate this street as “very colourful” or “colourful”. These results suggest that the chromatic combination identified in street 6 (blue-purple hues in cold and light colours, green-yellow hues in cold and medium colours, brown-red hues in hot and light colours, and monochromatic harmony) increase the perception and evaluation of colour variation of users from Brazil more than of users from England. At the same time, user familiarity with the streetscape can be influencing some user responses: street 6, which is located in Pelotas, tends to be seen as more colourful by residents in Pelotas than by residents in Gramado and Oxford (see Table 8.9 above).

## 8.2.5 User perception and evaluation of complexity in commercial street facades

The results from the analysis of user perception and evaluation of complexity suggest that the commercial street facades chosen as the best (streets 1, 2 and 3) and the worst (streets 5 and 6) streets in terms of appearance are perceived and evaluated as complex or simple (see Table 8.10).

Table 8.10: User perception and evaluation of complexity when the appearance of streets 1, 2, 3, 5 and 6 are analysed - users from the whole sample, Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Q15/Q26. Rate the street >x< along the following scale:		Street facades chosen as the BEST:			Street facades chosen as the WORST:	
		Street 1	Street 2	Street 3	Street 5	Street 6
The whole sample	Very complex + complex	75(49.02%)	14(18.96%)	32(30.19%)	55(36.91%)	50(29.58%)
	Neither complex nor simple	37(24.18%)	24(32.43%)	36(33.96%)	57(38.26%)	66(39.05%)
	Simple + very simple	41(26.80%)	36(48.65%)	38(35.85%)	37(25.83%)	53(31.36%)
	Total	153(100%)	74(100%)	106(100%)	149(100%)	169(100%)
	Mean score*	2.71	3.43	3.14	2.88	3.08
Oxford	Very complex + complex	44(61.11%)	4(40%)	17(60.71%)	7(22.58%)	11(17.74%)
	Neither complex nor simple	18(25%)	5(50%)	6(21.43%)	18(58.06%)	29(46.77%)
	Simple + very simple	10(13.89%)	1(10%)	5(17.85%)	6(19.35%)	22(35.48%)
	Total	72(100%)	10(100%)	28(100%)	31(100%)	62(100%)
	Mean score*	2.35	2.7	2.54	3.00	3.35
Gramado	Very complex + complex	11(28.21%)	4(21.06%)	9(17.64%)	18(33.33%)	16(26.23%)
	Neither complex nor simple	11(28.21%)	7(36.84%)	19(37.25%)	21(38.89%)	21(34.43%)
	Simple + very simple	17(43.60%)	8(42.11%)	23(45.10%)	15(27.78%)	24(39.34%)
	Total	39(100%)	19(100%)	51(100%)	54(100%)	61(100%)
	Mean score*	3.18	3.37	3.43	3.07	3.25
Pelotas	Very complex + complex	20(47.61%)	6(13.33%)	6(22.22%)	30(46.88%)	23(50%)
	Neither complex nor simple	8(19.05%)	12(26.67%)	11(40.74%)	18(28.13%)	16(34.78%)
	Simple + very simple	14(33.33%)	27(60%)	10(37.04%)	16(25%)	7(15.22%)
	Total	42(100%)	45(100%)	27(100%)	64(100%)	46(100%)
	Mean score*	2.88	3.62	3.22	2.66	2.50

\* The lower this value, the more complex the commercial street facades.

Table 8.2.5 in Appendix 8.2 presents this table with the categories of answers not clustered.

There are significant differences between streets 1, 2 and 3 (KW=20.009, DF=2, p=0.001) in terms of user perception and evaluation of complexity, when the responses of users from the whole sample (361 users) are analysed. In this regard, street 2 is evaluated as less complex than street 1 (U=3723.0, N1=153, N2=74, two-tailed p=0.001). According to user perception and evaluation (see Table 8.10 above), street 1 is evaluated as “very complex” or “complex” (49.02% of users), while street 2 is evaluated as “very simple” or “simple” (48.65% of users). These results converge with the findings obtained from the application of the method adopted in this research to calculate complexity of commercial streetscapes (see Chapter Five, section 5.3.3.2), which show that street 1 has the second highest level of complexity and street 2 has the second lowest level of complexity when compared to the other streets in the sample.

At the same time, when comparing the findings obtained from the method applied in this

research to calculate complexity and the user perception and evaluation of complexity, a difference is found in relation to the appearance of street 3. According to this method, street 3 has the third highest level of complexity, when compared to the other streets in the sample (see Appendix 5.7). However, respondents evaluate this street as “very complex” or “complex” (30.19% of users), “neither complex nor simple” (33.96% of users), and “very simple” or “simple” (35.85% of users). In this regard, taking into account the physical characteristics of this street (see section 5.7.2.2, item D2 in Appendix 5.7), this research suggests that when a street facade is comprised of buildings similar in visual character and architectural style, some users will perceive this similarity as simplicity<sup>1</sup> in terms of street facade. Therefore, street 3 is not evaluated as “complex” or “very complex” by the majority of users from the whole sample.

There are no statistical differences between streets 5 and 6 in terms of user perception and evaluation of complexity, when the responses of users from the whole sample (361 users) are analysed. A significant number of these respondents classify both these streets as “very complex” or “complex”, “neither complex nor complex”, and “simple” or “very simple”<sup>2</sup> (see Table 8.10 above). The findings from the method applied to calculate complexity (see Chapter Five, section 5.3.3.2) suggest that street 5 has a lower final level of commercial signage and buildings variation than street 6. In this regard, the results from user perception and evaluation suggest that some physical characteristics of the commercial signs and buildings of streets 5 and 6 balance this difference. Therefore, users classify the level of variation of commercial signs and buildings in both these streets as the same. This research suggests that user perception and evaluation of variation in street 5 is increased because, when compared to street 6, this street has (i) higher commercial signage variation in terms of size, number of chromatic groups, position in relation to facades, size of images, and size of letters, and (ii) higher building variation in terms of fenestration, presence of horizontal and vertical partitions, and colour. On the other hand, user perception and evaluation of variation in street 6 is decreased because, when compared to street 5, this street has (i) lower commercial signage variation in terms of chromatic

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<sup>1</sup> The concept of similarity rests either on exact or approximate repetitions of physical features of buildings. In regard to the results of this research, simplicity refers to lack of variation.

<sup>2</sup> Here is presented the percentage of users who indicate the level of complexity of streets 5 and 6 (questionnaire type B, question 26, see Appendix 5.8). As the researcher did not know which streets would be chosen as the best and the worst in terms of appearance, the scale “complex/simple” was used in the questionnaire. However, as already discussed earlier (see Chapter Two; section 2.4.2.1), the term “complexity” is not applied to interpret the findings related to streets 5 and 6. Both these streets are tending to disorder (see Chapter Five, Table 5.7), and order is a pre-requisite to complexity in this research. Therefore, user responses to streets 5 and 6 are interpreted as variation of physical characteristics of commercial signs and buildings.



contrast between letters and sign background, and size of images, and (ii) lower building variation in terms of turns of shape perimeter, overall proportion of windows and doors, articulation, roof line, colour, and facade details.

Moreover, the following results are found when analysing and comparing perception and evaluation of users from each case study:

1. Significant differences are found between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of street 1 (KW=12.768, DF=2, p=0.002) and street 3 (KW=10.791, DF=2, p=0.05). These results show that street 1, which is located in Oxford, tends to be seen as more complex by residents in this city than by residents in Gramado, while street 3, which is located in Gramado, tends to be seen as simpler by residents in this city than by residents in the other case studies (see Table 8.11). In this regard, as verified when user perception and evaluation of beauty (section 8.2.1), interest (section 8.2.2), order (section 8.2.3), and colour variation (section 8.2.4) were analysed, resident familiarity with the streetscape influences user perception and evaluation of complexity.

Table 8.11: Differences between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of complexity (Source: fieldwork 2005).

	Case studies	Statistic results	Tendencies
Street 1	Oxford and Gramado	U=844.0, N1=72, N2=39, two-tailed p=0.001	Street 1 tends to be seen as more complex by users from Oxford than by users from Gramado.
Street 3	Oxford and Gramado	U=385.0, N1=72, N2=39, two-tailed p=0.001	Street 3 tends to be seen as less complex by users from Gramado than by users from Oxford and Pelotas.
	Gramado and Pelotas	U=230.0, N1=39, N2=27, two-tailed p=0.008	

2. A significant number of users from Oxford (61.11% of users) and Pelotas (47.61% of users) evaluate street 1 as “very complex” or “complex”. At the same time, 43.6% of users from Gramado and 33.33% of users from Pelotas evaluate this street as “very simple” or “simple”. In this regard, as discussed earlier in this section, this result can be related to the fact that some users tend to perceive similarity as simplicity in terms of streetscape when a street facade is comprised of buildings similar in visual character and architectural style.

3. The largest proportion of users from Pelotas (60% of users) and a significant number of users from Gramado (42.11% of users) agree that street 2 is “very simple” or “simple”. In addition, a significant number of users from Gramado and Pelotas evaluate street 3 as “neither complex nor simple” (Gramado: 37.25% of users; Pelotas: 40.74% of users) and “very simple” or “simple” (Gramado: 45.10% of users; Pelotas: 37.04% of users). On the

other hand, the majority of users from Oxford (60.71% of users) evaluate street 3 as “very complex” or “complex”. In this regard, as suggested when street 1 was analysed, streets 2 and 3 comprise similar buildings in visual character and architectural style, and, it might cause a significant group of users to perceive similarity as simplicity in terms of street facade.

4. The majority of users from Oxford (58.06%) and a significant number of respondents from Gramado (38.89% of users) agree that street 5 is “neither complex nor simple”. At the same time, 46.88% of users from Pelotas evaluate this street as “very complex” or “complex”. Comparing these findings with the physical characteristics of street 5, this research suggests that one or more of the following aspects of this street might have a higher influence on the perception and evaluation of users from Pelotas than on the perception and evaluation of users from Oxford and Gramado: (i) high variation of commercial signs in terms of size, number of chromatic groups, arrangement in relation to facades, size of images, and size of letters, and (ii) high variation of buildings in terms of fenestration, presence of horizontal and vertical partitions, and colours. In addition, as mentioned earlier, user familiarity with the streetscape can be influencing the responses of users from Pelotas when they evaluate street 5, which is located in this city.

5. A significant number of users from Oxford and Gramado classify street 6 as “neither complex nor simple” (Oxford: 46.77% of users; Gramado: 34.43% of users), and as “very simple” or “simple” (Oxford: 35.48% of users; Gramado: 39.34% of users). On the other hand, a large number of respondents from Pelotas are divided between those who classify this street as “very complex” or “complex” (50% of users) and as “neither complex nor simple” (34.78% of users). Comparing these findings with the physical characteristics of street 6, this research suggests that one or more of the following aspects of this street might have a higher influence on the perception and evaluation of users from Oxford and Gramado than on the perception and evaluation of users from Pelotas: (i) low commercial signage variation in terms of chromatic contrast between letters and sign background, and size of images in relation to sign background, and (i) low building variation in the number of turns in facade perimeters, overall proportion of windows and doors, facade articulation, roof line, colour, and facade details. In addition, as mentioned earlier, user familiarity with street 6, which is located in Pelotas, can be influencing the perception and evaluation of residents in Pelotas.

### **8.2.6 Summary of the findings related to user perception and evaluation of beauty, interest, order, colour, and complexity in commercial street facades**

The findings presented in the above sub-sections support the first statement of working hypothesis E: commercial street facades chosen as the best and the worst streets in terms of appearance are perceived and evaluated differently in terms of beauty, interest, order, colour and complexity. The results also show that user perception and evaluation of colour variation and complexity do not follow a standard. Based on this, the following main results were found:

1. The results from the analysis of responses of users from Oxford, Gramado and Pelotas show that the commercial street facades chosen as the best streets in terms of appearance are evaluated as beautiful, interesting and ordered, while the commercial street facades chosen as the worst streets in terms of appearance are evaluated as ugly, boring and disordered. The findings also demonstrate that these streets can be evaluated as simple or complex, and as colourful or colourless by users from different urban contexts.

The findings from this analysis also identify four chromatic combinations that can influence perception and evaluation of users from different urban contexts: (i) yellow-orange hues, hot and medium colours and harmony by light-dark contrast can increase evaluation of colour variation, while (ii) brown-red hues, hot and light colours and harmony by contrast can divide users between those who evaluate streets as “neither colourful nor colourless” and as “very colourful” or “colourful”. The results also suggest that the user urban context influence evaluation of colour variation: a significant number of respondents who live in Pelotas, where hot and medium-strong colours are intense in commercial streetscapes, tend to evaluate the first chromatic combination mentioned above as colourless. Moreover, according to user perception and evaluation, the findings show that the chromatic combination of (i) white and yellow-orange hues, hot and medium colours and harmony by contrast can increase evaluation of colour variation more than the chromatic combination of (ii) blue-purple hues in cold and light colour, green-yellow hues in cold and medium colours, brown-red hues in hot and light colours and monochromatic harmony. In this regard, this last chromatic combination tends to increase evaluation of colour variation of users from Brazil more than of user from England.

Evidence presented in this chapter also show that some users might perceive similarity as

simplicity in terms of street facade when this is comprised of buildings similar in visual character and architectural style. In addition, the findings demonstrate that the following combinations of physical aspects have different influences on user perception and evaluation of complexity (or variation, when analysing streets tending to disorder). Higher commercial signage variation in size, number of chromatic groups, arrangement in relation to facades, size of images, and size of letters, and higher building variation in fenestration, presence of horizontal and vertical partitions, and colour can increase user perception and evaluation of complexity (or variation). On the other hand, lower commercial signage variation in chromatic contrast between letters and sign background, and size of images, and lower building variation in the turns of shape perimeter, overall proportion of windows and doors, articulation, roof line, colour, and facade details can decrease user perception and evaluation of complexity (or variation). The results also demonstrate that this last combination of lower commercial signage and building variation has higher influence on the responses of users from Oxford and Gramado, decreasing their evaluation of complexity (or variation) than on the responses of users from Pelotas.

2. Significant similarities are found between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of beauty (street 6), interest (streets 1, 5 and 6), order (streets 5 and 6), colour variation (streets 3 and 5), and variation of the physical features of the streetscape (street 5). In addition, significant differences are found between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of beauty (streets 1, 3 and 5), interest (street 3), order (streets 1 and 3), colour (streets 1 and 6), and complexity (streets 1 and 3). These results also show that resident familiarity with the streetscape and user urban context might influence user perception and evaluation of these attributes.

### 8.3 USER PERCEPTION AND EVALUATION OF COMMERCIAL SIGNAGE AND BUILDING VARIATION

This section presents the results from the analysis of user perception and evaluation of commercial signage and building variation, when the appearance of streets 1, 2 and 3 (chosen as the best streets in terms of appearance) and streets 5 and 6 (chosen as the worst streets in terms of appearance) are evaluated. This analysis refers to research objective H (see section 8.1), and compares responses of users from Oxford, Gramado, and Pelotas. The second part of working hypothesis E (identified below in bold letters) is tested in this section.

Working hypothesis E: **Commercial street facades chosen as the best and the worst streets in terms of appearance are perceived and evaluated differently in terms of (i) beauty, interest, order, colour and complexity, (ii) variation of commercial signs and buildings, (iii) number of commercial signs and percentage of building facades covered by these media, and (iv) relationship between aesthetic composition of commercial signage and building facades.**

### 8.3.1 Commercial signage and building variation in commercial street facades

The results from the analysis of responses users from the whole sample (361 users) indicate that the commercial street facades chosen as the best streets in terms of appearance (streets 1, 2 and 3) are evaluated as having “very low”, “low”, or “moderate” commercial signage variation, and “very high”, “high”, or “moderate” building variation. On the other hand, the commercial street facades chosen as the worst streets in terms of appearance (streets 5 and 6) are evaluated as having “very high”, “high”, or “moderate” commercial signs variation, and “very high”, “high”, or “moderate” building variation (see Table 8.12). The findings also indicate that the method applied in this research to calculate complexity in commercial streetscapes by analysing the variation of commercial signs and buildings (see Chapter Five, section 5.3.3.2) produces results, which, in general, conform to user perception and evaluation of commercial signage and building variation.

Table 8.12: User perception and evaluation of the variation of commercial signs and buildings – users from the whole sample (Source: fieldwork 2005).

Q20/Q31. Mark the alternative that best describes the street:		Street facades chosen as the BEST:			Street facades chosen as the WORST:	
		Street 1	Street 2	Street 3	Street 5	Street 6
The variation of commercial signage is:	Very high + high	22(14.38%)	0	39(36.79%)	127(85.24%)	156(92.30%)
	Moderate	47(30.72%)	31(41.89%)	46(43.40%)	15(10.07%)	10(5.92%)
	Low + very low	84(54.90%)	43(58.1%)	21(19.81%)	7(4.7%)	3(1.78%)
	Total	153(100%)	74(100%)	106(100%)	149(100%)	169(100%)
	Mean score*	3.56	3.73	2.80	1.74	1.70
The variation of buildings is:	Very high + high	75(49.02%)	21(28.38%)	44(41.51%)	72(48.32%)	64(37.87%)
	Moderate	65(42.48%)	37(50%)	51(48.11%)	55(36.91%)	89(52.66%)
	Low + very low	13(8.50%)	16(21.62%)	11(10.37%)	22(14.76%)	16(9.46%)
	Total	153(100%)	74(100%)	106(100%)	149(100%)	169(100%)
	Mean score*	2.44	2.89	2.63	2.54	2.62

\* The lower this value, the higher the commercial signage and building variation.  
Table 8.2.6 in Appendix 8.2 presents this table with the categories of answers not clustered.

#### 8.3.1.1 Similarities and differences between commercial street facades in terms of commercial signage variation

Taking into consideration the perception and evaluation of users from the whole sample

(361 users), there are significant differences between streets 1, 2 and 3 in terms of commercial signage variation (KW=47.467, DF=2, p=0.001). These differences are placed between streets 2 and 3 (U=1829.0, N1=74, N2=106, two-tailed p=0.001), and streets 1 and 3 (U=4854.5, N1=153, N2=106, two-tailed p=0.001). According to users, street 3 has the highest commercial signage variation, followed by streets 1 and 2.

The majority of users evaluate street 1 (54.90% of users) and street 2 (58.10% of users) as having “very low” or “low” commercial signage variation, while 43.40% of respondents classify street 3 as having “moderate” commercial signage variation (see Table 8.12 above). Reviewing the results from the method applied in this research to calculate complexity in commercial streetscapes (see Appendix 5.7), streets 1 and 3 have almost the same level of commercial signage variation, while street 2 has the second lowest level of commercial signage variation when compared to the other streets in the sample. Although the level of commercial signage variation, defined by this method, of streets 1 and 3 is similar, some differences are found between the physical characteristics of these streets (see Appendix 5.7). Street 3 has higher commercial signage variation in size, arrangement in relation to facades, location on facades, presence of images, and size of letters and images in relation to sign background. In this regard, this research suggests that these factors might be increasing user perception and evaluation of commercial signage variation in street 3.

According to the perception and evaluation of users from the whole sample (361 users), there is no statistical difference between streets 5 and 6 in terms of commercial signage variation. According to the results from the method applied in this research to calculate complexity in commercial streetscapes, street 5 has lower commercial signage variation than street 6. However, the majority of respondents agree that both these streets have “very high” or “high” commercial signage variation (see Table 8.12 above). In this regard, this research suggests that the following characteristics of street 5 can be increasing user perception and evaluation of commercial signage variation: in comparison to street 6, street 5 has higher commercial signage variation in size, number of chromatic groups, arrangement in relation to facades, size of images in relation to sign background, and size of letters.

*A. Similarities and differences between users from Oxford, Gramado, and Pelotas in terms of perception and evaluation of commercial signage variation*

There is no statistical difference between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of commercial signage variation, when the appearance of streets 1, 2, 3, 5, and 6 is evaluated. In relation to street 1, the majority of users from Oxford (51.40% of users), Gramado (56.40% of users) and Pelotas (59.60% of users) agree that this street has “very low” or “low” commercial signage variation. In relation to street 2, the majority of users from Pelotas (64.40% of users) and Oxford (60% of users), and a significant proportion of respondents from Gramado (42.10% of users) agree that this street has “very low” or “low” commercial signage variation. At the same time, a significant number of users from Pelotas (35.60% of users) and Oxford (40% of users), and the majority of users from Gramado (57.90% of users) recognize a “moderate” variation in street 2. In relation to street 3, a significant number of respondents from Oxford (35.70% of users), Gramado (45.10% of users) and Pelotas (48.10% of users) agree that street 3 has “moderate” commercial signage variation, while another group of users from these case studies indicate “high” or “very high” commercial signage variation (Oxford: 42.90% of users; Gramado: 36.20% of users; Pelotas: 25.90% of users). In relation to streets 5 and 6, the majority of users from Oxford (street 5: 83.87% of users; street 6: 98.39% of users), Gramado (street 5: 88.89% of users; street 6: 93.44% of users) and Pelotas (street 5: 82.81% of users; street 6: 82.61% of users) agree that both these streets have “very high” or “high” commercial signage variation (see Table 8.13).

Table 8.13: User perception and evaluation of commercial signage variation - users from Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Streets		The variation of commercial signage is:	Sample of users from		
			Oxford	Gramado	Pelotas
Street facade chosen as the BEST:	Street 1	Very high + high	19(26.40%)	1(2.60%)	2(4.80%)
		Moderate	16(22.20%)	16(41%)	15(35.70%)
		Low + very low	37(51.40%)	22(56.40%)	25(59.60%)
		Total	72(100%)	39(100%)	42(100%)
		Mean score*	3.22	3.87	3.83
	Street 2	Very high + high	0	0	0
		Moderate	4(40%)	11(57.90%)	16(35.60%)
		Low + very low	6(60%)	8(42.10%)	29(64.40%)
		Total	10(100%)	19(100%)	45(100%)
		Mean score*	3.60	3.47	3.87
	Street 3	Very high + high	12(42.90%)	20(36.20%)	7(25.90%)
		Moderate	10(35.70%)	23(45.10%)	13(48.10%)
		Low + very low	6(21.40%)	8(15.70%)	7(25.90%)
		Total	28(100%)	51(100%)	27(100%)
		Mean score*	2.61	2.75	3.11
CONTINUATION ON THE NEXT PAGE.					

Streets		The variation of commercial signage is:	Continuation:		
			Sample of users from		
			Oxford	Gramado	Pelotas
Street facade chosen as the WORST:	Street 5	Very high + high	26(83.87%)	48(88.89%)	53(82.81%)
		Moderate	1(3.23%)	6(11.11%)	8(12.50%)
		Low + very low	4(12.90%)	0	3(4.69%)
		Total	31(100%)	54(100%)	64(100%)
		Mean score*	1.97	1.59	1.75
	Street 6	Very high + high	61(98.39%)	57(93.44%)	38(82.61%)
		Moderate	1(1.61%)	3(4.92%)	6(13.04%)
		Low + very low	0	1(1.64%)	2(4.35%)
		Total	62(100%)	61(100%)	46(100%)
		Mean score*	1.77	1.61	1.72

\* The lower this value, the higher commercial signage variation.  
Table 8.2.7 in Appendix 8.2 presents this table with the categories of answers not clustered.

### 8.3.1.2 Similarities and differences between commercial street facades in terms of building variation

Taking into consideration the perception and evaluation of users from the whole sample (361 users), there are significant differences between streets 1, 2 and 3 in terms of building variation (KW=13.409, DF=2, p=0.001). These differences are placed between streets 1 and 2 (U=4097.0, N1=153, N2=74, two-tailed p=0.001), and streets 2 and 3 (U=3212.0, N1=74, N2=106, two-tailed p=0.02). According to users, street 1 has higher building variation than street 2, and street 3 has higher building variation than street 2.

These results confirm the findings obtained from the method applied in this research to calculate complexity in commercial streetscapes (see Appendix 5.7). Findings from this method show that street 2 has the lowest building variation, when compared to streets 1 and 3. The majority of users from the whole sample (50% of users) agree that street 2 has moderate variation, while, in relation to streets 1 and 3, respondents are divided between those who mention a “very high” or “high” (street 1: 49.02% of users; street 3: 41.51% of users) and a “moderate” (street 1: 42.48% of users; street 3: 48.11% of users) building variation (see Table 8.12 above).

In addition, there is no statistical difference between streets 5 and 6 in terms of building variation, when the responses of users from the whole sample (361 users) were analysed. In both these streets, users are divided between those who mention a “very high” or “high” (street 5: 48.32% of users; street 6: 37.87% of users), and a “moderate” building variation (street 5: 36.91% of users; street 6: 52.66% of users). Taking into account the results from the method applied to calculate complexity in commercial streetscapes (see Appendix 5.7), street 5 has lower building variation than street 6. However, some differences can be seen



between the physical characteristics of buildings in both these streets. In this regard, this research suggests that higher building variation in number of turns of facade shape perimeter, facade width, facade details, percentage of fenestration on building facade, overall proportion of windows and doors, presence of horizontal or vertical partition on building facade, and colour might increase user perception and evaluation of building variation in street 5.

*A. Similarities and differences between users from Oxford, Gramado, and Pelotas in terms of perception and evaluation of building variation*

Statistical differences are found between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of building variation in street 1 (KW=33.967, DF=2, p=0.001) and street 3 (KW=27.169, DF=2, p=0.001). These differences are placed between users from Oxford and Gramado (street 1: U=736.0, N1=72, N2=39, two-tailed p=0.001; street 3: U=233.0, N1=28, N2=51, two-tailed p=0.001), and Oxford and Pelotas (street 1: U=772.0, N1=72, N2=42, two-tailed p=0.001; street 3: U=189.5, N1=28, N2=27, two-tailed p=0.001). In both these streets, the building variation is seen as higher by users from Oxford than by users from the Brazilian case studies.

Statistical differences are not found between users from the two Brazilian case studies in terms of perception and evaluation of building variation. In relation to street 1, the majority of users from Gramado (59% of users) and Pelotas (52.40% of users) mention a “moderate” building variation, while the majority of users from Oxford (73.30% of users) mention a “very high” or “high” building variation. In relation to street 3, the majority of users from Oxford (82.10% of users) agree that this street has “very high” or “high” building variation, while the largest number of respondents from Gramado (70.60% of users) agree that this street has “moderate” building variation. In addition, users from Pelotas indicate that street 3 has a “moderate”, “very high” or “high”, and “very low” or “low” building variation (see Table 8.14). These results suggest that, in the case of street 1, user familiarity with the streetscape can be influencing user perception and evaluation of building variation: residents in Oxford have a higher perception and evaluation of building variation in street 1, which is located in Oxford, than users from the other case studies. In addition, in the case of street 3, the findings can be related to user tolerance of complexity: people who live in different places can have different levels of tolerance to the variation of physical characteristics of the streetscape. In this regard, building variation seen as high by

users from Oxford can be seen as moderate or low by users from Gramado and Pelotas.

Table 8.14: User perception and evaluation of building variation - users from Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Streets		The variation of buildings is:	Sample of users from		
			Oxford	Gramado	Pelotas
Street facades chosen as the BEST:	Street 1	Very high + high	52(72.30%)	11(28.20%)	12(28.50%)
		Moderate	20(27.80%)	23(59%)	22(52.40%)
		Low + very low	0	5(12.90%)	8(19.10%)
		Total	72(100%)	39(100%)	42(100%)
		Mean score*	1.97	2.85	2.86
	Street 2	Very high + high	3(30%)	4(21.10%)	14(31.10%)
		Moderate	7(70%)	11(57.90%)	19(42.20%)
		Low + very low	0	4(21.10%)	12(26.60%)
		Total	10(100%)	19(100%)	45(100%)
		Mean score*	2.50	3.00	2.93
	Street 3	Very high + high	23(82.10%)	11(21.60%)	10(37%)
		Moderate	5(17.90%)	36(70.60%)	10(37%)
		Low + very low	0	4(7.90%)	7(25.90%)
		Total	28(100%)	51(100%)	27(100%)
		Mean score*	1.93	2.88	2.89
Street facades chosen as the WORST:	Street 5	Very high + high	10(32.26%)	31(57.41%)	31(48.44%)
		Moderate	12(38.71%)	22(40.74%)	21(32.81%)
		Low + very low	9(29.03%)	1(1.85%)	12(18.75%)
		Total	31(100%)	54(100%)	64(100%)
		Mean score*	2.97	2.28	2.56
	Street 6	Very high + high	10(16.13%)	28(45.90%)	26(56.52%)
		Moderate	40(64.52%)	31(50.82%)	18(39.13%)
		Low + very low	12(19.35%)	2(3.28%)	2(4.35%)
		Total	62(100%)	61(100%)	46(100%)
		Mean score*	3.05	2.43	2.30
* The lower this value, the higher the building variation.					
Table 8.2.8 in Appendix 8.2 presents this table with the categories of answers not clustered.					

### 8.3.2 Control of commercial signage and building variation

In order to analyse whether the control of commercial signage and building variation should be integrated into a general commercial signage approach to historic city centres, this section explores whether there are correlations between user perception and evaluation of commercial signage and building variation and (i) user satisfaction with the appearance of the street facades in the sample, and (ii) user perception and evaluation of beauty, interest, order, colour and complexity in relation to these streets. In addition, this section analyses whether there are correlations between user perception and evaluation of commercial signage variation and user perception and evaluation of building variation.

Taking into account the results presented in Table 8.15, there are correlations between user satisfaction with the appearance of street facades and user perception and evaluation of commercial signage variation in these streets. Findings related to streets 1, 2, 3, 5 and 6 show the same tendency: the higher the user satisfaction with the appearance of street facade, the lower the user perception and evaluation of commercial signage variation. The

findings related to streets 1, 3, 5 and 6 also indicate that: the higher the user perception and evaluation of commercial signage variation, the higher the user perception and evaluation of building variation. These results suggest that the control of variation of physical characteristics of commercial signs is fundamental to increasing user satisfaction with the appearance of commercial streetscapes. These findings also demonstrate that to control commercial signage variation, the variance of physical characteristics of building facades needs to be taken into account, as it influences on user evaluation of commercial signage variation.

Table 8.15: Correlations found between user satisfaction with commercial street facades and user perception and evaluation of commercial signage and building variation (Source: fieldwork 2005).

VARIABLES:	Variable B: user perception and evaluation of commercial signage variation			
	The whole sample	Oxford	Gramado	Pelotas
<b>Variable A: user satisfaction with the appearance of street facades</b>	<b>Street 2:</b> Spearman, rho= - 0.22, p=0.03. <b>Street 5:</b> Spearman, rho= - 0.27, p=0.001.	<b>Street 3:</b> Spearman, rho= - 0.45, p=0.002. <b>Street 5:</b> Spearman, rho= - 0.55, p=0.01. <b>Street 6:</b> Spearman, rho= - 0.33, p=0.008.	<b>Street 1:</b> Spearman, rho= - 0.37, p=0.02.	none
<b>Variable C: user perception and evaluation of building variation</b>	<b>Street 1:</b> Spearman, rho= 0.34, p=0.001. <b>Street 3:</b> Spearman, rho= 0.33, p=0.001. <b>Street 5:</b> Spearman, rho= 0.26, p=0.001. <b>Street 6:</b> Spearman, rho= 0.32, p=0.001.	<b>Street 1:</b> Spearman, rho= 0.29, p=0.01. <b>Street 5:</b> Spearman, Oxford: rho= 0.43, p=0.02.	<b>Street 3:</b> Spearman, rho= 0.61, p=0.001. <b>Street 6:</b> Spearman, rho= 0.50, p=0.001.	<b>Street 1:</b> Spearman, rho= 0.41, p=0.006. <b>Street 3:</b> Spearman, rho= 0.39, p=0.04. <b>Street 5:</b> Spearman, rho= 0.32, p=0.01.
	Variable C: user perception and evaluation of building variation			
	The whole sample	Oxford	Gramado	Pelotas
<b>Variable A: user satisfaction with the appearance of street facades</b>	none	none	none	none

Taking into account the results presented in Tables 8.16 and 8.17, there are correlations between user perception and evaluation of commercial signage and building variation in the street facades and user perception and evaluation of beauty, interest, order, colour, and complexity in relation to these streets. The following tendency is verified when different street facades are analysed: the higher the user perception and evaluation of commercial signage and building variation, the less beautiful, the less ordered, the more boring, the more colourful and the more complex the commercial street facade. This result demonstrates that the variation of commercial signs and buildings needs to be controlled in order to increase user perception and evaluation of beauty, interest, and order. Moreover, the findings related to colour variation and complexity show the coherence of user responses since, according to the literature review (see Chapter Two, section 2.4.2.1), high variation of commercial signs and buildings increases colour variance and complexity in

street facades.

Table 8.16: Correlations found between user perception and evaluation of commercial signage variation and user perception and evaluation of beauty, interest, order, colour, and complexity (Source: fieldwork 2005).

User perception and evaluation of:	Variable A: user perception and evaluation of commercial signage variation			
	The whole sample	Oxford	Gramado	Pelotas
<b>Variable B: beauty</b>	<b>Street 5:</b> Spearman, rho=-0.18, p=0.002.	<b>Street 1:</b> Spearman, rho=-0.32, p=0.007.	<b>Street 6:</b> Spearman, rho=-0.38, p=0.003	<b>Street 5:</b> Spearman, rho=-0.37, p=0.003.
<b>Variable C: interest</b>	<b>Street 1:</b> Spearman, rho=0.19, p=0.002. <b>Street 2:</b> Spearman, rho=0.26, p=0.003. <b>Street 3:</b> Spearman, rho=0.21, p=0.03.	<b>Street 3:</b> Spearman, rho=0.68, p=0.001.	<b>Street 6:</b> Spearman, rho=0.28, p=0.03	<b>Street 2:</b> Spearman, rho=0.31, p=0.04.
<b>Variable D: order</b>	<b>Street 5:</b> Spearman, rho=-0.44, p=0.001. <b>Street 6:</b> Spearman, rho=-0.28, p=0.001.	<b>Street 1:</b> Spearman, rho=-0.27, p=0.02. <b>Street 5:</b> Spearman, rho=-0.69, p=0.001. <b>Street 6:</b> Spearman, rho=-0.33, p=0.009.	<b>Street 5:</b> Spearman, rho=-0.54, p=0.001.	none
<b>Variable E: colour</b>	<b>Street 1:</b> Spearman, rho=0.28, p=0.001. <b>Street 5:</b> Spearman, rho=0.20, p=0.01. <b>Street 6:</b> Spearman, rho=0.21, p=0.007.	<b>Street 1:</b> Spearman, rho=0.34, p=0.003. <b>Street 3:</b> Spearman, rho=0.47, p=0.01.	<b>Street 6:</b> Spearman, rho=0.32, p=0.01	<b>Street 5:</b> Spearman, rho=0.34, p=0.006.
<b>Variable F: complexity</b>	<b>Street 5:</b> Spearman, rho=0.18, p=0.02.	<b>Street 1:</b> Spearman, rho=0.30, p=0.01.	<b>Street 1:</b> Spearman, rho=0.36, p=0.03. <b>Street 3:</b> Spearman, rho=0.42, p=0.002.	none

Table 8.17: Correlations found between user perception and evaluation of building variation and user perception and evaluation of beauty, interest, order, colour, and complexity (Source: fieldwork 2005).

User perception and evaluation of:	Variable A: user perception and evaluation of building variation			
	The whole sample	Oxford	Gramado	Pelotas
<b>Variable B: beauty</b>	<b>Street 1:</b> Spearman, rho=-0.19, p=0.02. <b>Street 3:</b> Spearman, rho=-0.41, p=0.001.	<b>Street 5:</b> Spearman, rho=-0.55, p=0.001). <b>Street 6:</b> Spearman, rho=-0.36, p=0.004.	none	<b>Street 5:</b> Spearman, rho=-0.30, p=0.02.
<b>Variable C: interest</b>	<b>Street 1:</b> Spearman, rho=0.18, p=0.02. <b>Street 3:</b> Spearman, rho=0.23, p=0.009.	none	<b>Street 3:</b> Spearman, rho=0.30, p=0.03.	none
<b>Variable D: order</b>	<b>Street 1:</b> Spearman, rho=-0.37, p=0.001; street 3: rho=-0.41, p=0.001. <b>Street 5:</b> Spearman, rho=-0.26, p=0.001. <b>Street 6:</b> Spearman, rho=-0.20, p=0.01.	<b>Street 3:</b> Spearman, rho=-0.42, p=0.03. <b>Street 5:</b> Spearman, rho=-0.43, p=0.02. <b>Street 6:</b> Spearman, rho=-0.31, p=0.02.	none	none
<b>Variable E: colour variation</b>	<b>Street 1:</b> Spearman, rho=0.24, p=0.003. <b>Street 6:</b> Spearman, rho=0.29, p=0.001.	none	<b>Street 6:</b> Spearman, rho=0.41, p=0.001.	<b>Street 5:</b> Spearman, rho=0.34, p=0.006.
<b>Variable F: complexity</b>	<b>Street 1:</b> Spearman, rho=0.30, p=0.001. <b>Street 3:</b> Spearman, rho=0.31, p=0.001. <b>Street 5:</b> Spearman, rho=0.16, p=0.05.	<b>Street 5:</b> Spearman, rho=0.45, p=0.01.	<b>Street 3:</b> Spearman, rho=0.40, p=0.003.	none

### **8.3.3 Summary of the findings related to commercial signage and building variation**

The findings presented in the above sub-sections support the second part of working hypothesis E: commercial street facades chosen as the best and the worst streets in terms of appearance are perceived and evaluated differently in terms of variation of commercial signs and buildings. Based on this, the following main results were found:

1. Results from the analysis of perception and evaluation of users from Oxford, Gramado and Pelotas show that (i) the commercial street facades chosen as the best streets in terms of appearance are evaluated as having moderate commercial signage and building variation, and (ii) the commercial street facades chosen as the worst streets in terms of appearance are evaluated as having high commercial signage and building variation. Findings also show that (i) ordered streetscapes can be classified as having “very low” or “low” commercial signage variation, and “very high” or “high” building variation, and (ii) disordered streetscapes can be classified as having “moderate” commercial signage variation, and “moderate” building variation.

2. Findings from the analysis of responses of users from Oxford, Gramado and Pelotas demonstrate that the method applied in this research to calculate complexity in commercial streetscapes produces results which, in general, converge with the perception and evaluation of users from different urban contexts. The findings also suggest that: higher commercial signage variation (i) in size, arrangement in relation to facades, location on facades, presence of images, size of letters and size of images in relation to sign background, or (ii) in size, number of chromatic groups, arrangement in relation to facades, size of letters and size of images in relation to sign background can increase user perception and evaluation of commercial signage variation. Moreover, higher building variation in the number of turns in facade shape perimeter, facade width, facade details, fenestration, overall proportion of windows and doors, presence of horizontal or vertical partition on building facades, and colour can increase user perception and evaluation of building variation.

3. Results from the analysis of (i) commercial signage variation in streets 1, 2, 3, 5, and 6, and (ii) building variation in streets 5 and 6 show that there are common views between users from different urban contexts in terms of perception and evaluation. At the same time, statistical differences are found between users from Oxford, Gramado and Pelotas in

terms of perception and evaluation of building variation in streets 1 and 3. In this regard, this research suggests that user familiarity with the streetscape and user tolerance with levels of complexity can influence user perception and evaluation of building variation. As discussed in the literature review (see Chapter Two, section 2.4.1), this research assumes that people who live in different places may have different levels of tolerance to the variation of physical characteristics of buildings.

4. Results from the analysis of responses of users from Oxford, Gramado and Pelotas show that there is a correlation between user perception and evaluation of commercial signage and building variation and (i) user satisfaction with the appearance of street facades, and (ii) user perception and evaluation of beauty, interest, order, colour and complexity in relation to these streets. The findings also demonstrate that there is a correlation between user perception and evaluation of commercial signage variation and user perception and evaluation of building variation. Based on the responses of users from different urban contexts, this research suggests that the control of commercial signage variation is fundamental to increasing user satisfaction with the appearance of commercial street facades. The findings demonstrate that to control commercial signage variation, the variance of physical characteristics of building facades needs to be taken into account. The results also indicate that the variation of commercial signs and buildings should be controlled in order to increase user perception and evaluation of beauty, interest, and order.

#### 8.4 USER PERCEPTION AND EVALUATION OF THE NUMBER OF COMMERCIAL SIGNS AND THE PERCENTAGE OF BUILDING FACADES COVERED BY THESE MEDIA

This section presents the findings from the analysis of user perception and evaluation of the number of commercial signs and the percentage of building facades covered by these media, when the appearance of streets 1, 2 and 3 (chosen as the best streets in terms of appearance) and streets 5 and 6 (chosen as the worst streets in terms of appearance) are evaluated. This analysis refers to research objective H, and compares responses of users from Oxford, Gramado, and Pelotas. The third part of working hypothesis E (identified below in bold letters) is tested in this section.

Working hypothesis E: **Commercial street facades chosen as the best and the worst streets in terms of appearance are perceived and evaluated differently in terms of (i)**

beauty, interest, order, colour and complexity, (ii) variation of commercial signs and buildings, (iii) **number of commercial signs and percentage of building facades covered by these media**, and (iv) relationship between aesthetic composition of commercial signage and building facades.

#### 8.4.1 The number of commercial signs and the percentage of building facades covered by these media in commercial street facades

The commercial street facades chosen as the best streets in terms of appearance (streets 1, 2 and 3) are perceived and evaluated by the majority of users from the whole sample (361 users) as having a “moderate” number of commercial signs, and a “small”, “very small”, or “moderate” coverage of building facades by these media. At the same time, the commercial street facades chosen as the worst streets in terms of appearance (streets 5 and 6) are perceived and evaluated by the majority of users from the whole sample as having “many” or “very many” commercial signs, and “very much” or “a lot” of coverage of building facades by these media (see Table 8.18).

Table 8.18: User perception and evaluation of the number of commercial signs and the percentage of building facades covered by these media - users from the whole sample (Source: fieldwork 2005).

Streets		Street facades chosen as the BEST:			Street facades chosen as the WORST:	
		Street 1	Street 2	Street 3	Street 5	Street 6
Q18/Q29. The number of commercial signs in the street is:	Very many + many	61(39.87%)	15 (20.27%)	20(18.86%)	133 (89.26%)	157 (92.90%)
	Moderate	85 (55.56%)	52 (70.27%)	65 (61.32%)	14 (9.40%)	12 (7.10%)
	Few + very few	7 (4.57%)	7 (9.46%)	21 (19.81%)	2 (1.34%)	0
	Total	153(100%)	74(100%)	106(100%)	149(100%)	169(100%)
	Mean score*	2.58	2.89	3.06	1.23	1.14
Q21/Q32. The coverage of buildings by commercial signs is:	Very much + a lot	7 (4.58%)	1(1.35%)	8 (7.55%)	136 (91.28%)	160 (94.68%)
	Moderate	70 (45.75%)	17 (22.97%)	59 (55.66%)	8 (5.37%)	7 (4.14%)
	Small + very small	76 (49.67%)	56 (75.67%)	39 (36.79%)	5 (3.36%)	2 (1.18%)
	Total	153(100%)	74(100%)	106(100%)	149(100%)	169(100%)
	Mean score*	3.59	3.96	3.38	1.21	1.12

\* The lower this value, the higher the number of signs and coverage of buildings by commercial signage.  
Table 8.2.9 in Appendix 8.2 presents this table with the categories of answers not clustered.

With regard to the results shown in Table 8.18, this research suggests that user perception and evaluation of the number of commercial signs has been influenced by the percentage of street facade coverage by these media. In street 1, which has 46 signs, 55.56% of users mention a “moderate” number of commercial signs, while in street 2, which has only 25 signs, 70.27% of users also mention a “moderate” number of commercial signs. In street 5, which has even fewer signs (20 signs), 89.27% of users indicate “many” or “very many” commercial signs. The same perception and evaluation is verified in street 6, which has almost the same number of signs as street 1 (street 6 has 40 signs).

The findings from the analysis of user perception and evaluation of streets 1, 2, and 3 show that: street 2, which has the highest percentage of street facade covered by commercial signs (5.62% of the street facade) and the highest value of square metres of these media per linear street metre (0.68 m<sup>2</sup>/m) when compared to streets 1 and 3, is perceived and evaluated by the majority of users as having the lowest percentage of building facades coverage by commercial signs. On the other hand, a significant parcel of respondents indicate that street 1 (45.75% of users) and street 3 (55.66% of users) have a “moderate” percentage of building facades coverage by commercial signs. However, both these streets have a lower percentage of street facade covered by these media (street 1: 2.70% of the street facade; street 3: 3.48%) and a lower amount of square metres of commercial signs per linear street metre when compared to street 2 (street 1: 0.31 m<sup>2</sup>/m; street 3: 0.25m<sup>2</sup>/m). In this regard, one plausible explanation for this result is related to the location of shopfronts on building facades. In street 2, almost all shopfronts are aligned and located on the top part of the ground floor of every building facade, while in streets 1 and 3 there is more variety in relation to this aspect (see Figure 8.1). Therefore, this research suggests that user perception and evaluation of the amount of building facades covered by commercial signs can be decreased by the display of almost all shopfronts of a street facade on similar zones of facades of different buildings.



Figure 8.1: The majority of shopfronts in street 2 are located on the top part of the ground floor of the building facades leaving the upper floors almost free of signs (Source: author).

The findings related to streets 5 and 6 suggest that: streets with 9.11% or more of the street facade covered by commercial signs, and 0.85m<sup>2</sup> or more of commercial signs per linear street metre are perceived and evaluated by users from the whole sample as having “very much” or “a lot” of coverage of building facades by commercial signs.

#### 8.4.1.1 Similarities and differences between users from Oxford, Gramado, and Pelotas: perception and evaluation of the number of commercial signs and the percentage of building facades covered by these media

With regard to the commercial street facades chosen as the worst streets in terms of



appearance (streets 5 and 6), there is no statistical difference between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of the number of commercial signs. The majority of users from these case studies agree that streets 5 and 6 have “many” or “very many” commercial signs (see Table 8.19). Significant differences are found between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of the number of commercial signs in street 1 (KW=42.147, DF=2, p=0.001) and street 3 (KW=9.719, DF=2, p=0.008). Users from Oxford tend to indicate a higher number of commercial signs in street 1, which is located in Oxford, than users from Gramado (U=723.000, N1=72, N2=39, two-tailed p=0.001) and Pelotas (U=633.000, N1=72, N2=42, two-tailed p=0.001). In Oxford, 65.27% of users agree that street 1 has “very many” or “many” commercial signs, while 76.92% of users from Gramado and 71.43% of users from Pelotas agree that this street has a “moderate” number of commercial signs. In relation to street 3, which is located in Gramado, users from this city tend to mention a higher number of commercial signs than users from Pelotas (U=728.500, N1=51, N2=27, two-tailed p=0.002). In Gramado, 27.45% of users agree that this street has “very many” or “many” commercial signs, while in Pelotas no users share this view.

A statistical analysis was not carried out to explore whether there are differences between users from the three case studies in terms of perception and evaluation of the number of commercial signs in street 2 because the total sample of users from Oxford (10 users) and Gramado (19 users) is too small. However, the analysis of frequencies of user responses shows that, as verified when street 1 was analysed, users from Oxford have higher perception and evaluation of the number of commercial signs than users from Gramado and Pelotas (see Table 8.19). In this regard, resident familiarity with the streetscape might be influencing the perception and evaluation of users from Oxford, as street 2 is located in this city.

Table 8.19: User perception and evaluation of the number of commercial signs - users from Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Streets:		Q18/29. The number of commercial signs in the street is:	Sample of users from:		
			Oxford	Gramado	Pelotas
Streets chosen as the BEST:	Street 1	Very many + many	47(65.27%)	8(20.51%)	6(14.29%)
		Moderate	25(24.72%)	30(76.92%)	30(71.43%)
		Few + very few	0	1(2.56%)	6(14.28%)
		Total	72(100%)	39(100%)	42(100%)
		Mean score*	2.21	2.82	3.00
	Street 2	Very many + many	8(80%)	0	7(15.56%)
		Moderate	2(20%)	16(84.21%)	34(75.56%)
		Few + very few	0	3(15.79%)	4(8.89%)
		Total	10(100%)	19(100%)	45(100%)
		Mean score*	2.2	3.16	2.93

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Streets:		Q18/29. The number of commercial signs in the street is:	Continuation:		
			Sample of users from:		
			Oxford	Gramado	Pelotas
Streets chosen as the BEST:	Street 3	Very many + many	6(21.29%)	14(27.45%)	0
		Moderate	17(60.71%)	30(58.82%)	18(66.67%)
		Few + very few	5(17.85%)	7(13.72%)	9(33.33%)
		Total	28(100%)	51(100%)	27(100%)
		Mean score*	3.07	2.88	3.37
Streets chosen as the WORST:	Street 5	Very many + many	28(90.33%)	51(94.44%)	54(84.38%)
		Moderate	1(3.23%)	3(5.56%)	10(15.63%)
		Few + very few	2(6.45%)	0	0
		Total	31(100%)	54(100%)	64(100%)
		Mean score*	2.06	1.63	1.67
	Street 6	Very many + many	55(88.71%)	60(98.36%)	42(91.30%)
		Moderate	7(11.29%)	1(1.64%)	4(8.70%)
		Few + very few	0	0	0
		Total	62(100%)	61(100%)	46(100%)
		Mean score*	1.98	1.48	1.7

\* The lower this value, the higher the number of commercial signs.  
Table 8.2.10 in Appendix 8.2 presents this table with the categories of answers not clustered.

There is no statistical difference between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of the percentage of building facades covered by commercial signs in streets 3 and 5. The majority of users from these case studies agree that street 3 has a “moderate” percentage of building facades covered by commercial signs, and street 5 has “very many” or “a lot” of the percentage of building facades covered by these media (see Table 8.20). There are significant differences between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of the percentage of building facades covered by commercial signs in street 1 (KW=16.057, DF=2, p=0.001) and street 6 (KW=6.735, DF=2, p=0.03). In street 1, which is located in Oxford, users from this city tend to recognize a higher percentage of building facades covered by commercial signs than users from Gramado (U=875.000, N1=72, N2=39, two-tailed p=0.001) and Pelotas (U=1030.500, N1=72, N2=42, two-tailed p=0.002). On the other hand, in street 6, which is located in Pelotas, users from Oxford (U=1128.5, N1=61, N2=46, two-tailed p=0.001) and Gramado (U=1147.0, N1=62, N2=46, two-tailed p=0.001) tend to recognize a higher percentage of building facades covered by commercial signs than users from Pelotas.

In this regard, this research recognizes that these results can be influenced by resident familiarity with the streetscape and user urban context. People who live in Brazil, where in many city centres the percentage of building facades covered by shopfronts and window displays is high, might perceive and evaluate as low the coverage of 2.70% (street 1) to 5.62% (street 2) of a street facade by these media. In addition, in the case of street 6, the perception and evaluation of people who live in Oxford and Gramado, where the percentage of building facades covered by commercial signs is much lower than in Pelotas, might be affected by the amount of 9.11% of a street facade (street 6) covered by these

media more than the perception and evaluation of users from Pelotas.

A statistical analysis was not carried out to explore whether there are differences between users in terms of perception and evaluation of the percentage of building facades covered by commercial signs in street 2 because the sample of users from Oxford and Gramado is too small. However, the analysis of frequencies of user responses indicates the same tendency verified when street 1 was analysed: users from Oxford tend to recognize a higher percentage of building facades covered by commercial signs in street 2 than users from the other case studies.

Table 8.20: User perception and evaluation of the percentage of building facades covered by commercial signs - users from Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Streets:		Q21/32. The coverage of building facades by commercial signage is:	Sample of users from:		
			Oxford	Gramado	Pelotas
Street facades chosen as the BEST:	Street 1	Very much + a lot	4(5.56%)	0	3(7.14%)
		Moderate	45(62.5%)	13(33.33%)	12(28.57%)
		Small + very small	24(31.94%)	26(66.67%)	27(64.29%)
		Total	72(100%)	39(100%)	42(100%)
		Mean score*	3.33	3.85	3.79
	Street 2	Very much + a lot	0	0	1(2.22%)
		Moderate	5(50%)	4(21.05%)	8(17.78%)
		Small + very small	5(50%)	15(78.95%)	36(89%)
		Total	10(100%)	19(100%)	45(100%)
		Mean score*	3.60	3.89	4.07
	Street 3	Very much + a lot	3(10.71%)	4(7.84%)	1(3.70%)
		Moderate	19(67.86%)	28(54.90%)	12(44.44%)
		Small + very small	6(21.42%)	19(37.25%)	14(51.85%)
		Total	28(100%)	51(100%)	27(100%)
		Mean score*	3.21	3.35	3.59
Street facades chosen as the WORST:	Street 5	Very much + a lot	29(93.55%)	52(96.30%)	55(85.94%)
		Moderate	2(6.45%)	1(1.85%)	5(7.81%)
		Small + very small	0	1(1.85%)	4(6.24%)
		Total	31(100%)	54(100%)	64(100%)
		Mean score*	1.77	1.69	1.81
	Street 6	Very much + a lot	62(100%)	61(100%)	37(80.44%)
		Moderate	0	0	7(15.22%)
		Small + very small	0	0	2(4.35%)
		Total	62(100%)	61(100%)	46(100%)
		Mean score*	1.82	1.59	1.87

\* The lower this value, the higher the coverage of buildings by commercial signs.  
Table 8.2.11 in Appendix 8.2 presents this table with the categories of answers not clustered.

#### 8.4.1.2 User perception and evaluation of the number of commercial signs and the percentage of building facades covered by these media, and user satisfaction with the appearance of commercial street facades

The findings from the statistical analysis of user responses show that there is no relationship between user perception and evaluation of the number of commercial signs and user satisfaction with the appearance of the commercial street facades in the sample. This result is found (i) in relation to streets 1, 2 and 3, when responses of users from the whole sample (361 users) are analysed, and (ii) in relation to streets 1 and 3, when responses of users from Oxford, Gramado and Pelotas are analysed.

However, correlations are found between these variables (i) in relation to street 2, when responses of users from Pelotas are analysed, and (ii) in relation to streets 5 and 6, when responses of users from the whole sample, Oxford and Pelotas are analysed (see Table 8.21). In all these cases, the same tendency is verified: the higher the user perception and evaluation of the number of commercial signs, the lower the user satisfaction with the appearance of the commercial street facade. In this regard, this research suggests that user perception and evaluation of the number of commercial signs is influenced by the percentage of street facade coverage by these media. This conclusion is based on the fact that the same tendency is found when streets with very different number of commercial signs are analysed. For example, street 2 has the second lowest number of commercial signs (25 signs) when compared to the other streets in the sample, but the highest percentage of street facade covered by these media (5.62% of the street facade) when compared to streets 1 and 3. On the other hand, street 5 has the lowest number of commercial signs (20 signs) and the highest percentage of street facade covered by these media (11.31% of the street facade) when compared to the other streets in the sample. And, street 6 has the second highest number of commercial signs (40 signs) and the second highest percentage of street facade covered by these media (9.11% of the street facade) when compared to the other streets in the sample.

If the number of shopfronts and window displays had a real impact on user satisfaction with the appearance of commercial street facades, a correlation between user perception and evaluation of the number of commercial signs and user satisfaction with the appearance of the commercial street facade should be found in relation to street 1. This street has the highest number of commercial signs (46 signs), when compared to the other streets in the sample. However, this street is chosen as one of the best street facades in terms of appearance, while one of the street facades chosen as the worst in terms of appearance (street 5) has the lowest number of commercial signs (20 signs), when compared to the other streets in the sample.

Table 8.21: Correlations found between user perception and evaluation of the number of commercial signs and user satisfaction with the commercial street facades - users from the whole sample, Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Variable B: user satisfaction with the appearance of > street <	Variable A: user perception and evaluation of the number of commercial signs
Street 2	Pelotas: Spearman, rho= - 0.33, p=0.02.
Street 5	All sample: Spearman, rho= - 0.35, p=0.01. Oxford: Spearman, rho= - 0.48, p=0.01. Pelotas: Spearman, rho= - 0.32, p=0.01.
Street 6	All sample: Spearman, rho= - 0.33, p=0.01. Oxford: Spearman, rho= - 0.40, p=0.01. Pelotas: Spearman, rho= - 0.38, p=0.01.

Taking into account user perception and evaluation of the percentage of building facades covered by commercial signs, the following tendency is verified when streets 2, 5 and 6 are analysed: the higher the user perception and evaluation of coverage of buildings by commercial signs, the lower the user satisfaction with the appearance of the commercial street facade (see Table 8.22). It is relevant to note that street 1, chosen by the highest number of users from the whole sample as the best street in terms of appearance, has the lowest coverage of building facades by commercial signs (2.70% of the street facade), while street 6, chosen by the highest number of users from the whole sample as the worst street in terms of appearance, has the second highest coverage of building facades by these media (9.11% of the street facade). These findings help to support the idea that user satisfaction with the appearance of commercial street facades is influenced by the percentage of building facades covered by these media, and not by the number of shopfronts and window displays.

In this regard, this research suggests that a general commercial signage approach applicable to historic city centres should recommend a maximum percentage of street facade, which can be covered by shopfronts and window displays without interfering with the user satisfaction with the appearance of commercial streetscapes. Reflecting on what was suggested by the participants of the focus group discussion (see Chapter Seven, section 7.3.1.1), a maximum of 3% of each building facade covered by commercial signs might be taken as an acceptable limit to historic city centres. Moreover, the results from Chapter Seven (sections 7.2.1 and 7.2.2) show that the street facades evaluated positively by users have a maximum of 0.68 m<sup>2</sup> of commercial signs per linear street metre. This limit can also be integrated into a general commercial signage approach.

Table 8.22: Correlation found between user perception and evaluation of the percentage of building facades covered by commercial signs and user satisfaction with the commercial street facades - users from the whole sample, Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Variable B: user satisfaction with the appearance of > street <	Variable A: user perception and evaluation of the percentage of building facades covered by commercial signs
Street 2	All sample: Spearman, rho=-0.27, p=0.02. Pelotas: Spearman, rho=-0.21, p=0.01.
Street 5	All sample: Spearman, rho=-0.35, p=0.001. Oxford: spearman, rho=-0.54, p=0.001. Gramado: spearman, rho=-0.21, p=0.02. Pelotas: spearman, rho=-0.28, p=0.002.
Street 6	All sample: Spearman, rho=-0.35, p=0.001. Oxford: rho=-0.65, p=0.001. Gramado: rho=-0.21, p=0.02. Pelotas: rho=-0.20, p=0.03.

8.4.1.3 User perception and evaluation of the number of commercial signs and the percentage of building facade covered by these media, and the aspects that influence user choices for the best and the worst commercial street facades in terms of appearance

The findings from the statistical analysis of user responses show that, when streets 2 and 3 are analysed: the lower the user perception and evaluation of the number of commercial signs and the percentage of building facades covered by these media, the higher the influence attributed to the appearance of buildings, the appearance of commercial signs, and the number of commercial signs on user choices for these streets as the best streets in terms of appearance (see Table 8.23). In this regard, this research assumes that, in street facades where user perception and evaluation of the number of commercial signs and the percentage of building facades covered by these media is low, the appearance and number of commercial signs are perceived and evaluated as positive elements of the streetscape. Analysing perception and evaluation of users in relation to street 5 and 6, the findings demonstrate that: the higher the user perception and evaluation of the number of commercial signs and the percentage of building facades covered by these media, the higher the influence attributed to historic buildings, the appearance of commercial signs, and the number of commercial signs on user choices for these streets as the worst streets in terms of appearance (see Table 8.23). In this regard, this research assumes that commercial signs are mentioned because they are negative features of the streetscape, and historic buildings are mentioned because they are harmed most obviously by shopfronts and window displays.

Relating these results with the ones presented earlier (see section 8.3.2.1), this research recognizes that a general commercial signage approach to historic city centres needs to take into account that, by controlling the percentage of building facades covered by commercial signs, the positive influence of the appearance of buildings, the appearance of commercial signs, and the number of these signs on user satisfaction with commercial streetscapes can increase.

Table 8.23: Correlations found between user perception and evaluation of the number of commercial signs and the percentage of building facades covered by these media, and the aspects that influence user choices for street facades as the best and the worst streets in terms of appearance (Source: fieldwork 2005).

Variable C: aspects that influence user choices for street facades	Variable A: user perception and evaluation of the number of commercial signs	Variable B: user perception and evaluation of the percentage of building facades covered by commercial signs
Appearance of buildings	Street 2 - All sample: Spearman, rho= - 0.24, p=0.04; Pelotas: Spearman, rho= - 0.41, p=0.005.	Street 3 - Gramado: Spearman, rho= - 0.30, p=0.03.

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Continuation:		
Variable C: aspects that influence user choices for street facades	Variable A: user perception and evaluation of the number of commercial signs	Variable B: user perception and evaluation of the percentage of building facades covered by commercial signs
Appearance of buildings (continuation)	<b>Street 3</b> - All sample: Spearman, rho= - 0.22, p=0.02; Oxford: Spearman, rho= - 0.43, p=0.02.	
Appearance of commercial signs	<b>Street 2</b> - All sample: Spearman, rho= - 0.25, p=0.03. <b>Street 6</b> - All sample: Spearman, rho= 0.26, p=0.001; Gramado: Spearman, rho= 0.43, p=0.001.	<b>Street 3</b> - Oxford: Spearman, rho= - 0.77, p=0.001. <b>Street 5</b> - All sample: Spearman, rho= 0.25, p=0.002; Gramado: Spearman, rho= 0.33, p=0.01.
Historic buildings	<b>Street 6</b> - Gramado: Spearman, rho= 0.33, p=0.02.	<b>Street 5</b> - All sample: Spearman, rho= 0.40, p=0.03.
Number of commercial signs	<b>Street 2</b> - All sample: Spearman, rho= - 0.30, p=0.009). <b>Street 3</b> - All sample: Spearman, rho= - 0.27, p=0.005; Oxford: Spearman, rho= - 0.41, p=0.03; Gramado: Spearman, rho= - 0.36, p=0.009.	<b>Street 2</b> - Oxford: Spearman, rho= - 0.64, p=0.001. <b>Street 3</b> - All sample: Spearman, rho= 0.27, p=0.005. <b>Street 5</b> - All sample: Spearman, rho= 0.26, p=0.001; Pelotas: Spearman, rho= 0.29, p=0.02. <b>Street 6</b> - Pelotas: Spearman, rho= 0.39, p=0.008.

### 8.4.2 Summary of the findings related to the number of commercial signs and the percentage of building facades covered by these media

The findings discussed in the above sub-sections support the third section of working hypothesis E: commercial street facades chosen as the best and the worst streets in terms of appearance are perceived and evaluated differently in terms of the number of commercial signs and the percentage of building facades covered by these media. Based on this, the following main results were found:

1. Results from the analysis of perception and evaluation of users from Oxford, Gramado and Pelotas show that: (i) the commercial street facades chosen as the best streets in terms of appearance are evaluated as having “very many”, “many”, or “moderate” number of commercial signs, and “moderate”, “small”, or “very small” coverage of building facades by these media, and (ii) the commercial street facades chosen as the worst streets in terms of appearance are evaluated as having “many” or “very many” number of commercial signs, and “very much” or “a lot” of coverage of building facades by these media.
2. The results presented in the above sub-sections suggest that user perception and evaluation of the number of commercial signs is influenced by the percentage of building facades covered by these media. The evidence also indicates that user perception and evaluation of the percentage of building facades covered by commercial signs decreases when almost all shopfronts of a street facade are located on similar zones of facades of different buildings: for example, when all shopfronts of a street facade are located above the shop windows of every building facade. The findings also suggest that a minimal of 9.11% of a street facade covered by commercial signs and a minimal of 0.85 m<sup>2</sup> of these

media per linear street metre are perceived and evaluated by users from different urban contexts as “very much” or “a lot” of building facades covered by commercial signs.

3. Findings from the analysis of perception and evaluation of users from Oxford, Gramado and Pelotas show that there are common views between users from different urban contexts in terms of perception and evaluation of the number of commercial signs and the percentage of building facades covered by these media. With regard to user perception and evaluation of the number of commercial signs, common views are found between users from Oxford, Gramado and Pelotas when streets 5 and 6 are analysed. With regard to user perception and evaluation of building facades covered by these media, common views are found between users from Oxford, Gramado and Pelotas when streets 3 and 5 are analysed.

4. Significant differences are found between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of the number of commercial signs in streets 1 and 3. Differences are also found between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of the coverage of building facades by these media in streets 1 and 6. In this regard, this research suggests that these results are influenced by resident familiarity with the streetscape and user urban context. People who live in Brazil, where the percentage of building facades covered by shopfronts and window displays is high in many city centres, might perceive and evaluate as low the coverage of 2.70% to 5.62% of a street facade by these media. In addition, the perception and evaluation of people who live in cities where the percentage of building facades covered by shopfronts and window displays is much lower than in Pelotas might be affected by 9.11% of a street facade covered by these media more than the perception and evaluation of users from Pelotas.

5. When the responses of users (i) from the whole sample are analysed in relation to streets 1, 2 and 3, and (ii) from Oxford, Gramado and Pelotas are analysed in relation to streets 1 and 3, the evidence shows that: there is no relationship between user perception and evaluation of the number of commercial signs and user satisfaction with the appearance of commercial street facades. However, the results from the analysis of responses of users (i) from Pelotas, when street 1 is analysed, and (ii) from the whole sample, Oxford and Pelotas, when streets 5 and 6 are analysed support the idea that: user satisfaction with the appearance of commercial street facades is influenced by the percentage of building facades covered by these media, and not by the number of shopfronts and window displays.



6. The following tendency is found when responses of users from the whole sample, Pelotas and Oxford are analysed: the lower the user perception and evaluation of the number of commercial signs, the higher the importance attributed to the appearance of buildings on user choices for the best commercial street facade in terms of appearance. In addition, the following tendency is found when responses of users from Gramado are analysed: the lower the percentage of building facades covered by commercial signs, the higher the importance attributed to the appearance of buildings on user choices for the best commercial street facade in terms of appearance. The results also indicate that when user perception and evaluation of the number of commercial signs and the percentage of building facades covered by these media is low, the influence of the appearance and the number of commercial signs on user evaluation of commercial streetscapes is positive.

7. The following tendency is found when responses of users from the whole sample, Oxford, Gramado and Pelotas are analysed: the higher the user perception and evaluation of the number of commercial signs and the percentage of building facade covered by these media, the higher the importance attributed to the appearance and the number of commercial signs on user choices for the worst commercial street facades in terms of appearance. At the same time, the findings suggest that when user perception and evaluation of the number of commercial signs and the percentage of building facades covered by these media is high, the influence attributed to historic buildings on user evaluation of the appearance of commercial streetscapes is negative. In this regard, historic buildings might be mentioned because they are harmed most obviously by shopfronts and window displays.

This research assumes that a general commercial signage approach to historic city centres should take into account that when the percentage of building facades covered by commercial signs is controlled, the appearance of buildings and commercial signs, the historic buildings, and the number of commercial signs are factors that increase user satisfaction with the appearance of commercial streetscapes. A maximum of 3% of each building facade covered by commercial signs is recognized as an acceptable limit in historic centres, as suggested by users in the focus group discussion (see Chapter Seven, section 7.3). In addition, taking into account the physical characteristics of the street facades evaluated positively by users, a maximum of 0.68 square metres of commercial signs per linear street metre can also be recommended to be applied in historic city centres.

## 8.5 USER PERCEPTION AND EVALUATION OF THE RELATIONSHIP BETWEEN COMMERCIAL SIGNS AND BUILDING FACADE

This section presents the findings from the analysis of user perception and evaluation of the relationship between the aesthetic composition of commercial signs and building facades, when the appearance of streets 1, 2 and 3 (chosen as the best streets in terms of appearance) and streets 5 and 6 (chosen as the worst streets in terms of appearance) are evaluated. This analysis refers to research objective H, and compares responses of users from Oxford, Gramado, and Pelotas. The fourth part of working hypothesis E (identified below in bold letters) is tested in this section.

Working hypothesis E: **Commercial street facades chosen as the best and the worst streets in terms of appearance are perceived and evaluated differently in terms of (i) beauty, interest, order, colour and complexity, (ii) variation of commercial signs and buildings, (iii) number of commercial signs and percentage of building facades covered by these media, and (iv) relationship between aesthetic composition of commercial signage and building facades.**

### **8.5.1 User perception and evaluation of the presence and the number of buildings harmed by commercial signs**

Taking into account the responses of users from the whole sample (361 users), the results show that commercial street facades evaluated positively in terms of appearance (streets 1, 2 and 3) can have buildings harmed by commercial signs but these are “very few” or “few”. On the other hand, commercial street facades evaluated negatively in terms of appearance (streets 5 and 6) have buildings harmed by these media, and these are “very many” or “many” (see Table 8.24). In this regard, a comparison between these findings and the number of buildings previously identified in this research as harmed by commercial signs in each street facade (see Table 5.7.3 in Appendix 5.7) suggests that: (i) two or less buildings harmed by commercial signs, representing 4% or less of the street facade, are perceived and evaluated by users as “very few” or “few”, while (ii) two or more buildings harmed by these media, representing 46% or more of the street facade, are perceived and evaluated by users as “very many” or “many”.

Table 8.24: User perception and evaluation of the presence and the number of buildings harmed by commercial signs - users from the whole sample (Source: fieldwork 2005).

Streets		Streets chosen as the BEST:			Streets chosen as the WORST:	
		Street 1	Street 2	Street 3	Street 5	Street 6
Q19/Q30 Is the appearance of any building harmed by commercial signage?	Yes	<b>87(56.86%)</b>	23(31.08%)	<b>77(72.64%)</b>	<b>149(100%)</b>	<b>168(99.41%)</b>
	No	66(43.14%)	<b>51(68.92%)</b>	29(27.36%)	0	1(0.59%)
	Total	153(100%)	74(100%)	106(100%)	149(100%)	169(100%)
	Mean score*	1.43	1.69	1.27	1.07	1.01
Q19.1/Q31.1 If YES, how many?	Very many	0	0	0	<b>50(33.56%)</b>	<b>51(30.36%)</b>
	Many	0	0	1(1.29%)	<b>85(57.05%)</b>	<b>113(67.26%)</b>
	Moderate	8(9.19%)	1(4.35%)	31(40.26%)	6(4.03%)	4(2.38%)
	Few	<b>25(28.74%)</b>	<b>9(39.13%)</b>	<b>20(25.97%)</b>	8(5.37%)	0
	Very few	<b>54(62.07%)</b>	<b>13(56.52%)</b>	<b>25(32.47%)</b>	0	0
	Total	87(100%)	23(100%)	77(100%)	149(100%)	168(100%)
Mean score*	4.53	4.52	3.87	1.81	1.73	

\* The lower this value, the higher the presence and number of buildings harmed by commercial signs.

Analysing the perception and evaluation of users from the whole sample, there are significant differences between streets 1, 2 and 3 in terms of the number of buildings harmed by commercial signs (KW=30.537, DF=2, p=0.001). Street 3 is evaluated as having more buildings harmed by commercial signs than street 2 (U=1829.0, N1=74, N2=106, two-tailed p=0.001) and street 1 (U=4854.5, N1=153, N2=106, two-tailed p=0.001). At the same time, common evaluations are found when streets 5 and 6 are analysed.

The majority of respondents mention that: there are no buildings harmed by commercial signs in street 2 (68.92% of users), while there are buildings harmed by these media in street 1 (56.86% of users) and street 3 (72.64% of users). When analysing user responses to the question Q16 of questionnaire type B (“indicate the main positive and negative characteristics of the commercial signs”), two negative characteristics of the commercial signs in street 3 are mentioned by 30% of users: the size and location of the signage on buildings 4 and 9 (see Figure 8.2). At the same time, there are no negative characteristics of the commercial signs in streets 1 and 2 mentioned by ten percent or more users. In this regard, to understand why the majority of users recognize buildings harmed by commercial signs in street 1, the focus of the analysis needs to be made on user comments related to the question Q23 of questionnaire type B (“identify the building with the commercial signage that you like the least”). When the respondents identified the buildings that they like the least in street 1, some of them mentioned a set of aspects that make four buildings harmed by commercial signs in this street (see Table 8.25 and Figure 8.3). Consequently, these aspects might influence user evaluation of the presence of buildings harmed by commercial signs in this street.



Figure 8.2: Commercial signs evaluated as negative in street 3 – a sign displayed on the roof of building 4 (left), and a sign displayed on the lateral wall of building 9 (right) (Source: author).

Table 8.25: Factors that make users perceive and evaluate buildings as harmed by commercial signs in street 1- users from the whole sample (Source: fieldwork 2005).

PROBLEM	USER COMMENTS
<b>Fragmentation of the building facade into two disconnected parts – ground floor and upper floor. <sup>1</sup></b>	<p><b>Building 1:</b> “The ground floor does not match with the upper floors. Shopfronts and shop facade layouts fragment the ground floor into three different parts, which do not match with the upper floors.”</p> <p><b>Building 3:</b> “The ground floor is fragmented by commercial signs. Shopfronts of Starbucks and Adecco shops are not designed considering the building as a whole.”</p>
<b>Commercial signs do not get people’s attention.</b>	<p><b>Building 6:</b> “The shopfront is dull and boring. This does not get people’s attention.”</p>
<b>Size (too big) and colour (too bright) of shop window displays.</b>	<p><b>Building 14:</b> “Shop window displays are the main negative aspects of this building. They cover almost all shop windows, and the red colour is too bright.”</p>
<sup>1</sup> This problem was discussed in Chapter Four (see section 4.2).	



Figure 8.3: Buildings harmed by commercial signs in street 1 according to responses of users from the whole sample (Source: author).

### 8.5.1.1 Similarities and differences between users from Oxford, Gramado and Pelotas: perception and evaluation of the presence and the number of buildings harmed by commercial signs

Statistical differences are not found between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of (i) the presence of buildings harmed by commercial signs in streets 3, 5 and 6, and (ii) the number of buildings harmed by these media in streets 1, 3, 5 and 6. The majority of users from each case study mention that there are buildings harmed by commercial signs in streets 3, 5 and 6. They also indicate that these

buildings are “very few” or “few” in streets 1 and 3, and “very many” or “many” in streets 5 and 6 (see Tables 8.26 and 8.27).

Table 8.26: Presence and number of buildings harmed by commercial signs in the street facades chosen as the best streets in terms of appearance - users from Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Q19. Is the appearance of any building harmed by commercial signage?	Street 1			Street 2			Street 3		
	Oxford	Gramado	Pelotas	Oxford	Gramado	Pelotas	Oxford	Gramado	Pelotas
Yes	51(70.83%)	19(48.72%)	17(40.48%)	8(80%)	2(10.53%)	13(28.89%)	22(78.57%)	39(76.47%)	16(59.26%)
No	21(29.17%)	20(51.28%)	25(59.52%)	2(20%)	17(89.47%)	32(71.11%)	6(21.43%)	12(23.53%)	11(40.74%)
Total	72(100%)	39(100%)	42(100%)	10(100%)	19(100%)	45(100%)	28(100%)	51(100%)	27(100%)
Mean score*	1.29	1.51	1.60	1.20	1.89	1.71	1.21	1.24	1.41
Q19.1 If YES, how many?	Oxford	Gramado	Pelotas	Oxford	Gramado	Pelotas	Oxford	Gramado	Pelotas
Very many + many	0	0	0	0	0	0	0	1(2.56%)	1(6.25%)
Moderate	5(9.80%)	1(5.26%)	2(11.76%)	0	0	1(7.69%)	8(36.36%)	18(46.15%)	5(31.25%)
Very few + few	46(90.19%)	18(94.73%)	15(88.24%)	8(100%)	2(100%)	12(92.31%)	14(63.64%)	22(56.41%)	10(62.5%)
Total	51(100%)	19(100%)	17(100%)	8(100%)	2(100%)	13(100%)	22(100%)	39(100%)	16(100%)
Mean score*	4.45	4.68	4.59	4.75	4.00	4.46	3.95	3.85	3.81

\* The lower this value, the higher the presence and number of buildings harmed by commercial signs.  
Table 8.2.12 in Appendix 8.2 presents the second part of this table with the categories of answers not clustered.

Table 8.27: Presence and number of buildings harmed by commercial signs in the street facades chosen as the worst streets in terms of appearance - users from Oxford, Gramado and Pelotas (Source: fieldwork 2005).

Q30. Is the appearance of any building harmed by commercial signs?	Street 5			Street 6		
	Oxford	Gramado	Pelotas	Oxford	Gramado	Pelotas
Yes	31(100%)	54(100%)	64(100%)	62(100%)	61(100%)	46(100%)
No	0	0	0	0	0	0
Total	31(100%)	54(100%)	64(100%)	62(100%)	61(100%)	46(100%)
Mean score*	1.00	1.20	1.00	1.00	1.00	1.02
Q30.1 If YES, how many?	Oxford	Gramado	Pelotas	Oxford	Gramado	Pelotas
Very many + many	29(93.55%)	51(94.44%)	55(85.95%)	62(100%)	61(100%)	41(91.11%)
Moderate	0	1(1.85%)	5(7.81%)	0	0	4(8.89%)
Very few + few	2(6.45%)	2(3.70%)	4(6.25%)	0	0	0
Total	31(100%)	54(100%)	64(100%)	62(100%)	61(100%)	45(100%)
Mean score*	1.97	1.74	1.80	1.74	1.67	1.80

\* The lower this value, the higher the presence and number of buildings harmed by commercial signs.  
Table 8.2.13 in Appendix 8.2 presents the second part of this table with the categories of answers not clustered.

Statistical differences are found between users from the different case studies in terms of perception and evaluation of the presence of buildings harmed by commercial signs in street 1 (KW=11.32, DF=2, p=0.04). These differences are placed between users from Oxford and Gramado (U=1093.5, N1=72, N2=39, two-tailed p=0.02), and Oxford and Pelotas (U=1053.0, N1=72, N2=42, two-tailed p=0.02). The majority of users from Oxford (70.83% of users) recognize buildings harmed by commercial signs in street 1, while the majority of users from the two Brazilian case studies mention that there are no buildings harmed by these media in this street (Gramado: 51.28% of users; Pelotas: 59.52% of users). In this regard, this research suggests that: (i) user familiarity with the streetscape can be influencing the responses of residents in Oxford, when street 1, which is located in

Oxford, is evaluated, and, (ii) the fact that users from Gramado and Pelotas live in a country where many buildings are harmed by commercial signs in historic cities can be influencing their responses, when street 1, which is comprised of preserved historic buildings, is evaluated. These findings support the idea that a general commercial signage approach to historic city centres needs to take into account the influence of both these non-physical variables on user perception and evaluation of commercial streetscapes.

In relation to street 2, statistical tests were not carried out to explore whether there are differences between responses of users from the three case studies because the sample of users from Oxford (10 users) and Gramado (19 users) is too small, making the validity of these tests questionable. Taking into account only the analysis of frequencies of user responses, the majority of users from Pelotas (71.11% of users) and Gramado (89.47% of users) agree that there are no buildings harmed by commercial signs in street 2. The largest proportion of users from Oxford has the opposite perception, however, this sample size is insufficient to suggest a new tendency. In addition, the majority of users from Pelotas (92.31% of users) and all users from Oxford and Gramado, who mention that there are buildings harmed by commercial signs in this street, agree that these are “few” or “very few” (see Table 8.26 above).

#### 8.5.1.2 User perception and evaluation of the presence and the number of buildings harmed by commercial signs and user satisfaction with the commercial street facades

Taking into account responses of users from the whole sample (361 users), the results show that there is no relationship between user perception and evaluation of the presence of buildings harmed by commercial signs and user satisfaction with the appearance of commercial street facades, when streets 1, 2 and 3 are evaluated. On the other hand, there is a relationship between these variables when street 5 ( $U=464.5$ ,  $N1=346$ ,  $N2=14$ , two-tailed  $p=0.001$ ) and street 6 ( $U=547.0$ ,  $N1=346$ ,  $N2=14$ , two-tailed  $p=0.001$ ) are analysed. In this regard, the higher the user perception and evaluation of the presence of buildings harmed by commercial signage, the lower the user satisfaction with the appearance of the commercial street facades.

There is no relationship between user perception and evaluation of the number of buildings harmed by commercial signs and user satisfaction with the appearance of streets 1, 2 and 3. At the same time, when streets 5 and 6 are analysed, the findings show that the higher the

user perception and evaluation of the number of buildings harmed by commercial signage, the lower the user satisfaction with the appearance of the commercial street facades (street 5: Spearman,  $\rho = -0.39$ ,  $p=0.001$ ; street 6: Spearman,  $\rho = -0.35$ ,  $p=0.005$ ). These results suggest that when there are few buildings harmed by commercial signs (4% or less of the street facade, see section 8.5.1), the presence and the number of buildings harmed by these media do not affect user satisfaction with the appearance of commercial street facades. However, when there are many buildings harmed by commercial signs (46% or more of the street facade, see section 8.5.1), the presence and the number of buildings harmed by these media decrease user satisfaction with the appearance of commercial streetscapes.

*A. Similarities and differences between users from Oxford, Gramado, and Pelotas: perception and evaluation of the presence and the number of buildings harmed by commercial signs and user satisfaction with the commercial street facades*

The analysis of responses of users from Oxford, Gramado and Pelotas show that there is no relationship between user perception and evaluation of the presence of buildings harmed by commercial signs and user satisfaction with the appearance of the commercial street facades, when streets 1, 2 and 3 are analysed. Statistical analysis (Mann-Whitney Test) was not carried out to explore whether user perception and evaluation of the presence of buildings harmed by commercial signs influence user satisfaction with the appearance of streets 5 and 6; this analysis cannot be performed on empty groups and all users from the three case studies recognize the presence of buildings harmed by commercial signs in both these streets. Taking into account only the analysis of frequencies of user responses, all respondents, who mention that there are buildings harmed by shopfronts and window displays in streets 5 and 6, are not satisfied with the appearance of these streets.

Furthermore, there is no relationship between user perception and evaluation of the number of buildings harmed by commercial signs and user satisfaction with the appearance of the commercial street facades, when the responses of users from Gramado are analysed in relation to streets 5 and 6. On the other hand, focusing on the responses of users from Oxford in relation to both these streets, the following tendency is verified: the higher the user perception and evaluation of the number of buildings harmed by commercial signs, the lower the user satisfaction with the appearance of the commercial street facades (street 5: Spearman,  $\rho = -0.36$ ,  $p=0.05$ ; street 6: Spearman,  $\rho = -0.34$ ,  $p=0.007$ ). Moreover,

when analysing the responses of users from Pelotas in relation to street 6, the results show this same tendency (Spearman, rho= - 0.36, p=0.01).

### 8.5.2 User perception and evaluation of the influence of commercial signs on the appearance of historic buildings

The results presented in this section are based on the analysis of user responses to streets 1, 2, 5 and 6. Street 3 is not considered in this analysis because 90.57% of users from the whole sample (361 users) indicate that there are no historic buildings in this street.

Statistical differences are not found between users from the whole sample, Oxford, Gramado and Pelotas in terms of perception and evaluation of the influence of commercial signs on the appearance of historic buildings in streets 1, 2, 5 and 6. The majority of these users agree that in the commercial street facades chosen as the best streets in terms of appearance (streets 1 and 2), commercial signs do not interfere with the appearance of historic buildings; they mention that these media make these buildings “neither beautiful nor ugly”. On the other hand, in the commercial street facades chosen as the worst streets in terms of appearance (streets 5 and 6), users mention that commercial signs interfere negatively with the appearance of historic buildings; they say that these media make these buildings “very ugly” or “ugly” (see Table 8.28). In this regard, this research suggests that the results from the application of the criteria defined in Chapter Two (section 2.4.1) to identify buildings harmed by commercial signs (see Table 5.7.3 in Appendix 5.7) converge with the majority of user perception and evaluation: according to user responses, (i) the influence of commercial signs on historic buildings previously classified by this research as harmed by commercial signs is negative, while (ii) the influence of commercial signs on historic buildings previously classified by this research as not harmed by commercial signs is neutral or positive.

Table 8.28: Influence of commercial signs on the appearance of historic buildings according to user perception and evaluation (Source: fieldwork 2005).

Sample of users from:	Q22/Q33. The commercial signs make the appearance of the historic buildings (marked with a cross on the poster showed to respondents):	Streets chosen as the BEST:		Streets chosen as the WORST:	
		Street 1	Street 2	Street 5	Street 6
The whole sample	Very beautiful + beautiful	32(20.92%)	15(20.27%)	0	1(0.59%)
	Neither beautiful nor ugly	116(75.82%)	57(77.03%)	10(6.71%)	11(6.51%)
	Ugly + very ugly	5(3.26%)	2(2.70%)	139(93.29%)	157(98.74%)
	Total	153(100%)	74(100%)	149(100%)	169(100%)
	Mean score*	2.78	2.80	4.36	4.27

CONTINUATION ON THE NEXT PAGE.



Continuation:					
Sample of users from:	Q22/Q33. The commercial signs make the appearance of the historic buildings (marked with a cross on the poster showed to respondents):	Streets chosen as the BEST:		Streets chosen as the WORST:	
		Street 1	Street 2	Street 5	Street 6
Oxford	Very beautiful + beautiful	15(20.84%)	3(30%)	0	0
	Neither beautiful nor ugly	57(79.17%)	7(70%)	1(3.33%)	2(3.23%)
	Ugly + very ugly	0	0	30(96.77%)	60(96.77%)
	Total	72(100%)	10(100%)	31(100%)	62(100%)
	Mean score*	2.74	2.70	4.39	4.37
Gramado	Very beautiful + beautiful	9(23.08%)	3(15.79%)	0	1(1.64%)
	Neither beautiful nor ugly	29(74.36%)	16(84.21%)	6(11.11%)	4(6.55%)
	Ugly + very ugly	1(2.56%)	0	48(88.89%)	56(91.80%)
	Total	39(100%)	19(100%)	54(100%)	61(100%)
	Mean score*	2.74	2.74	4.41	4.18
Pelotas	Very beautiful + beautiful	8(19.51%)	9(20%)	0	0
	Neither beautiful nor ugly	29(70.73%)	34(75.56%)	3(4.69%)	5(10.86%)
	Ugly + very ugly	4(9.76%)	2(4.44%)	61(95.31%)	41(89.13%)
	Total	41(100%)	45(100%)	64(100%)	46(100%)
	Mean score*	2.90	2.84	4.31	4.26

\* The higher this value, the more negative the influence of commercial signs on the appearance of historic building. Table 8.2.14 in Appendix 8.2 presents this table with the categories of answers not clustered.  
Ps: Street 3, chosen as one of the best streets in terms of appearance, does not have historic buildings.

### 8.5.2.1 The influence of commercial signs on the appearance of historic buildings and user perception and evaluation of commercial street facades

When the appearance of the commercial street facades in the sample is evaluated by users from different urban contexts, a relationship between the following variables is found: (i) the importance attributed by users to physical characteristics of the streetscape when they chose the best and the worst street facades in terms of appearance, and (ii) user perception and evaluation of the influence of commercial signs on the appearance of historic buildings. In addition, there is a relationship between this last variable and user perception and evaluation of beauty, interest, order, colour variation, and complexity in relation to the appearance of those street facades.

Taking into account user responses in relation to the street facades chosen as the best in terms of appearance (streets 1 and 2), the following tendency is found: the more positive the influence of commercial signs on the appearance of historic buildings, (i) the more important the influence of the historic buildings and the appearance and number of commercial signs on user choices for these street facades as the best streets in terms of appearance, and (ii) the more interesting and the less colourful the street facades. Taking into account user responses in relation to the street facades chosen as the worst in terms of appearance (streets 5 and 6), the following tendency is found: the more negative the influence of commercial signs on the appearance of historic buildings, (i) the more important the influence of the appearance of buildings and the appearance and number of

commercial signs on user choices for these street facades as the worst streets in terms of appearance, and (ii) the less ordered, the more colourful, and the more complex the street facades (see Table 8.29).

These findings show that when the influence of commercial signs on the appearance of historic buildings is not negative, historic buildings and commercial signs are recognized as positive features of commercial street facades, and commercial street facades are seen as more interesting and less colourful. On the other hand, the results demonstrate that when the influence of commercial signs on the appearance of historic buildings is negative, buildings in general and commercial signs are recognized as negative features of commercial street facades. The findings also indicate that, by reducing the negative influence of commercial signs on the appearance of historic buildings, user perception and evaluation of beauty and order is increased.

Table 8.29: Correlations found between user perception and evaluation of the influence of commercial signs on the appearance of historic buildings, the importance attributed to aspects that influence user evaluation of street facades, and user perception and evaluation of beauty, interest, order, colour variation and complexity (Source: fieldwork 2005).

Correlation		Variable A: user evaluation of the influence of commercial signs on the appearance of historic buildings
<b>Variable B: aspects that influence user evaluation of the appearance of street facades</b>	Appearance of buildings	<b>Street 5</b> - Oxford: Spearman, rho= -0.51, p=0.004.
	Appearance of commercial signs	<b>Street 1</b> - Gramado: Spearman, rho=0.41, p=0.01. <b>Street 2</b> - The whole sample: Spearman, rho=0.25, p=0.03. <b>Street 6</b> - The whole sample: Spearman, rho= -0.15, p=0.05; Oxford: Spearman, rho=-0.27, p=0.03; Gramado: Spearman, rho=-0.29, p=0.02; Pelotas: Spearman, rho=-0.56, p=0.001.
	Historic buildings	<b>Street 1</b> - Oxford: Spearman, rho=0.25, p=0.04. <b>Street 6</b> - The whole sample: Spearman, rho=-0.45, p=0.001; Oxford: Spearman, rho=-0.41, p=0.001; Gramado: Spearman, rho=-0.61, p=0.001.
	Number of commercial signs	<b>Street 1</b> - Oxford: Spearman, rho= 0.31, p=0.009. <b>Street 2</b> - The whole sample: Spearman, rho=0.23, p=0.05; Pelotas: Spearman, rho=0.37, p=0.01. <b>Street 5</b> - Oxford: Spearman, rho=-0.38, p=0.03. <b>Street 6</b> - The whole sample: Spearman, rho=-0.23, p=0.005; Gramado: Spearman, rho=-0.27, p=0.04.
<b>Variable C: user evaluation of -</b>	Beauty	<b>Street 6</b> - Oxford: Spearman, rho=0.32, p=0.02.
	Interest	<b>Street 2</b> - The whole sample: Spearman, rho=-0.28, p=0.02; Pelotas: Spearman, rho=-0.34, p=0.02.
	Order	<b>Street 5</b> - All sample: Spearman, rho=0.19, p=0.02; Oxford: Spearman, rho=0.56, p=0.001. <b>Street 6</b> - Pelotas: Spearman, rho=0.36, p=0.01.
	Colour variation	<b>Street 1</b> - The whole sample: Spearman, rho=-0.34, p=0.04. <b>Street 5</b> - The whole sample: Spearman, rho=-0.22, p=0.006; Gramado: Spearman, rho=-0.42, p=0.002. <b>Street 6</b> - The whole sample: Spearman, rho=-0.17, p=0.03; Gramado: Spearman, rho=-0.37, p=0.008.
	Complexity	<b>Street 5</b> - Oxford: Spearman, rho=-0.61, p=0.001.
<b>TENDENCIAS VERIFICADAS EN CADA CALLE SEGUN LAS CORRELACIONES ESTADISTICAS</b>		
<p><b>Street 1:</b> the more positive the influence of commercial signs on the appearance of historic buildings, the more important the influence of the historic buildings, and the appearance and number of commercial signs on user choices for street 1 as the best street in terms of appearance. The more positive the influence of commercial signs on the appearance of historic buildings, the less colourful street 1.</p> <p><b>Street 2:</b> the more positive the influence of commercial signs on the appearance of historic buildings, the more important the influence of the appearance and number of commercial signs on user choices for street 2 as the best street in terms of appearance. The more positive the influence of commercial signs on the appearance of historic buildings, the more interesting street 2.</p>		
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Continuation:
<b>TENDENCIES VERIFIED IN EACH STREET ACCORDING TO THE STATISTICAL CORRELATIONS</b>
<p><b>Street 5:</b> the more negative the influence of commercial signs on the appearance of historic buildings, the more important the influence of the appearance of buildings and number of commercial signs on user choices for street 5 as the worst street in terms of appearance. The more negative the influence of commercial signs on the appearance of historic buildings, the more disordered, colourful, and varied street 5.</p> <p><b>Street 6:</b> the more negative the influence of commercial signs on the appearance of historic buildings, the more important the influence of the appearance and number of commercial signs and the historic buildings on user choices for street 6 as the worst street in terms of appearance. The more negative the influence of commercial signs on the appearance of historic buildings, the uglier, the less ordered, and the more colourful street 6.</p>

### **8.5.3 Positive and negative physical characteristics of commercial signs and buildings that stand out in a person’s mind first when commercial street facades are evaluated**

The results of this section confirm what was discussed in the literature review (see Chapter Two, section 2.3.3): users tend to use subjective terms to describe the streetscape. Expressions such as “adequate”, “harmonious”, “attractive”, and “inappropriate” were used by the respondents to describe the commercial signs and buildings of the commercial street facades in the sample. These terms simply indicate what users felt when the commercial street facades were evaluated, but do not identify the physical characteristics of the commercial signs and buildings that caused these impressions. This research tries to link these user responses to the physical characteristics of the commercial signs and buildings in each street facade (see Appendix 5.7). In this analysis, user answers to the open questions 16, 17, 27, and 28 of questionnaire type B were grouped into categories, and the results presented below are based on the frequencies that these categories were mentioned. The findings are related to the physical characteristics indicated by ten percent or more of the respondents.

#### 8.5.3.1 Physical characteristics of commercial signs in the street facades chosen as the best streets in terms of appearance: streets 1, 2 and 3

According to responses of users from the whole sample (361 users), the most mentioned categories related to the positive characteristics of commercial signs in streets 1, 2 and 3 are: “commercial signage does not harm buildings” and “identification of shops and information”. “Discreet commercial signage” is also mentioned when the signage in streets 1 and 2 is evaluated. At the same time, differences are found with regard to the categories mentioned in streets 1, 2 and 3: (i) “commercial signage does not harm buildings” is the most indicated positive category of the commercial signs in street 1, (ii) “ordered and standard commercial signage” is the most indicated positive category of the commercial

signs in street 2, and (iii) “identification of shops and information” is the most indicated positive category of the commercial signs in street 3 (see Figure 8.4). User answers related to these categories are presented in Appendix 5.14.

Almost all these categories refer to subjective expressions used by respondents to describe the commercial signs in the street facades (see Table 8.30). However, in street 2, two categories refer to physical characteristics of these media: (i) size and (ii) location of commercial signs on facades (see Figure 8.4). In this regard, this research suggests that commercial signs stand out in people’s minds as positive elements of commercial streetscapes when the majority of shopfronts and window displays are “very small” and “small” (area  $\leq 3\text{m}^2$ ) and displayed on similar zones of facades of different buildings.

Categories related to the positive characteristics of commercial signs mention by users from the whole sample. Street 1– 153 users (100%); Street 2 – 74 users (100%); Street 3 – 106 users (100%)

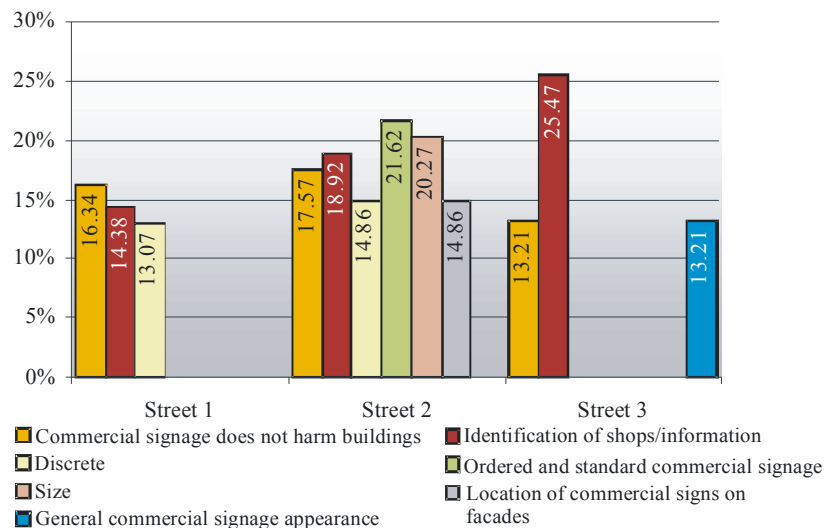


Figure 8.4: Categories related to the positive characteristics of commercial signs in streets 1, 2 and 3 - users from the whole sample (Source: fieldwork 2005).

Table 8.30: Main responses of users related to the three most mentioned categories of positive characteristics of commercial signs in streets 1, 2 and 3 (Source: fieldwork 2005).

<b>COMMERCIAL SIGNAGE DOES NOT HARM BUILDINGS</b>
Commercial signs complement buildings. Commercial signs are not too detached from building facades. Harmony between commercial signs and facades. The relationship between shopfronts and buildings is not negative. Commercial signage does not interfere with buildings.
<b>IDENTIFICATION OF SHOPS AND INFORMATION</b>
Easy identification of shops. Commercial signage helps consumers identify where the commercial sector of the city is located. Commercial signs indicate sale items. Information. Commercial signs advertise shops and products on sale.
<b>DISCREET COMMERCIAL SIGNAGE</b>
Discreet shopfronts. Commercial signs allow the buildings to be priority; sober.

Taking into account negative characteristics of commercial signs, two categories are mentioned by users from the whole sample when street 3 is evaluated: the size and the location of the signage on buildings 4 and 9 (see Figure 8.2).

*A. Similarities and differences between users from Oxford, Gramado, and Pelotas: perception and evaluation of the physical characteristics of commercial signs in streets 1, 2 and 3*

Five categories related to the positive characteristics of commercial signs are mentioned by users from England and Brazil, when one or more street facades in the sample are evaluated: (i) “commercial signage does not harm buildings” (street 1), (ii) “identification of shops and information” (street 1), (iii) “ordered and standard commercial signage” (street 2), (iv) “size” (streets 2 and 3), and (v) “general commercial signage appearance” (street 3). In addition, users from the Brazilian case studies mention (i) “discreet commercial signage” when the signs in street 1 are analysed, and (ii) “good legibility of signs” when the signs in street 2 are analysed (see Table 8.31). User answers related to these categories are summarized in Table 8.32, and presented in more detail in Appendix 5.14.

Table 8.31: Categories related to the positive characteristics of commercial signs indicated by users from Oxford, Gramado and Pelotas – streets 1, 2 and 3 (Source: fieldwork 2005).

Categories related to the positive characteristics of commercial signs:		Oxford	Gramado	Pelotas
Street 1	Commercial signage does not harm buildings	14(19.44%)	1(2.56%)	10(23.81%)
	Size	8(11.11%)	3(7.69%)	4(9.52%)
	Discreet commercial signage	5(6.94%)	4(10.26%)	11(26.19%)
	General commercial signage appearance	9(12.50%)	1(2.56%)	4(9.52%)
	Identification/ information of shops	1(1.39%)	12(30.77%)	10(23.81%)
	Ordered and standard commercial signage	6(8.33%)	5(12.82%)	3(7.69%)
Total sample		72(100%)	39(100%)	42(100%)
Street 2	General commercial signage appearance	2(20%)	0	0
	Commercial signage does not harm buildings	0	4(21.05%)	9(20%)
	Size	0	2(10.53%)	13(28.89%)
	Discreet commercial signage	0	2(10.53%)	0
	Good legibility of signs	0	2(10.53%)	5(11.11%)
	Identification/ information of shops	0	6(31.58%)	0
	Ordered and standard of commercial signage	1(10%)	6(31.58%)	9(20%)
Total sample		10(100%)	19(100%)	45(100%)
Street 3	Commercial signage does not harm buildings	2(7.14%)	5(9.80%)	7(25.93%)
	Size	3(10.71%)	1(1.96%)	5(18.52%)
	Discreet commercial signage	0	2(3.92%)	5(18.52%)
	General commercial signage appearance	3(10.71%)	9(17.65%)	2(7.41%)
	Identification/ information of shops	3(10.71%)	14(27.45%)	6(6.90%)
	Ordered and standard of commercial signage	3(10.71%)	2(3.92%)	4(14.81%)
	Number of signs	7(25%)	1(1.96%)	2(7.41%)
Total sample		28(100%)	51(100%)	27(100%)
This table presents the categories mentioned by ten percent or more users from one or more case studies.				

Table 8.32: Main responses of users from Oxford, Gramado and Pelotas related to the most mentioned categories of positive characteristics of commercial signs in streets 1, 2, and 3 (Source: fieldwork 2005).

<b>ORDERED AND STANDARD COMMERCIAL SIGNAGE (related to streets 2 and 3)</b>
Commercial signage looks ordered. Commercial signage is not confusing; there is no visual pollution. All shopfronts follow a standard. Uniform commercial signage.
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Continuation:
<b>SIZE (related to streets 2 and 3)</b>
Quite constrained in scale; small commercial signage. Commercial signage does not cover buildings too much. Right scale. Size. Commercial signage is not too big. Ordered commercial signage in size.
<b>DISCREET COMMERCIAL SIGNAGE (related to street 1)</b>
Discreet commercial signage allowing buildings to be priority; sober commercial signage. Discreet commercial signage, it does not interfere on buildings appearance. Size, colour and lettering style are discreet.
<b>GOOD LEGIBILITY OF SIGNS (related to street 2)</b>
Clean signs; letters and images are very visible. Good visualization of texts.
<b>GENERAL COMMERCIAL SIGNAGE APPEARANCE (related to street 3)</b>
Commercial signage is very attractive and neatly arranged. Beautiful, good-taste, tasteful and bold. Overall structure of commercial signage. Commercial signage looks well designed. Design and style. Commercial signage is a positive element of the streetscape.
Ps: Answers related to “commercial signage does not harm buildings” and “identification of shops and information” were already described in Table 8.30.

A comparison between the responses of users related to the categories described in objective terms (size, discreet commercial signage, and good legibility of commercial signs) and the physical characteristics of the commercial signs in streets 1, 2 and 3 (see Appendix 5.7) suggests the following considerations:

a. “Size” - commercial signs previously classified by this research as “very small” or “small” (area  $\leq 3 \text{ m}^2$ ; see Table 5.7.5 in Appendix 5.7) tend to be evaluated positively by users from different urban contexts.

b. “Discreet commercial signage” - taking into account user responses related to this category, signs previously classified by this research as “very small” or “small” (area  $\leq 3\text{m}^2$ ), chromatic congruence between signs and building facades, and predominant lettering style classified as type 4 (Sans Serif) might be evaluated as positive features in commercial streets by users from different urban contexts.

c. “Good legibility of signs” - taking into account perception and evaluation of users from different urban contexts, this research suggests that one or more of the following physical aspects of commercial signs tends to help user legibility of texts : (i) chromatic contrast between letters and sign background classified as level 3, (ii) lettering styles classified as type 2 (Modern) and type 4 (Sans Serif), (iii) height of letters classified as high (height  $\geq 0.55 \text{ cm}$ ), and (iv) predominant sign background in relation to size of letters, or balance between size of letters and size of sign background (see Table 5.7.5 in Appendix 5.7).

At the same time, as mentioned by users from the whole sample, two categories related to negative characteristics of commercial signs are mentioned by ten percent or more users when street 3 is analysed. The size and the location of the signage on buildings 4 and 9 are seen as negative by 30% of users from Oxford (see Figure 8.2).

### 8.5.3.2 Physical characteristics of commercial signs in the street facades chosen as the worst streets in terms of appearance: streets 5 and 6

Analysing responses of users from the whole sample (361 users), “size” is the most mentioned category related to the negative characteristics of the commercial signs in streets 5 and 6. “Disordered commercial signage”, “colour”, “general commercial signage appearance”, “number of commercial signs”, and “buildings harmed by commercial signage” are also indicated as negative aspects of these media in both these streets (see Figure 8.5). User answers related to these categories are summarized in Table 8.33, and presented in detail in Appendix 5.14.

Categories related to the negative characteristics of commercial signs mentioned by users from the whole sample. Street 5 – 149 users (100%); Street 6 – 169 users (100%)

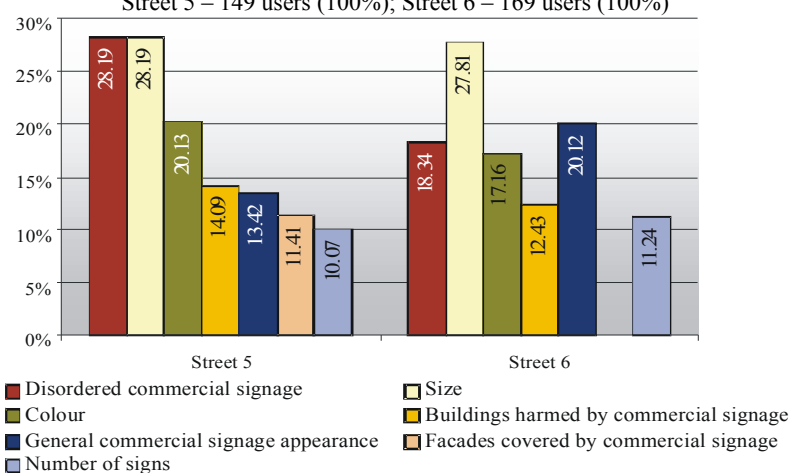


Figure 8.5: Categories related to the negative characteristics of commercial signs in streets 5 and 6 - users from the whole sample (Source: fieldwork 2005).

Table 8.33: Main responses of users from the whole sample related to the most mentioned categories of negative physical characteristics of commercial signs in streets 5 and 6 (Source: fieldwork 2005).

All categories are related to streets 5 and 6.		
DISORDERED COMMERCIAL SIGNAGE	GENERAL COMMERCIAL SIGNAGE APPEARANCE	COLOUR
Commercial signage promotes mess on the streetscape. Lack of standards (mainly in terms of letter style). Commercial signage damages the appearance of streets. Commercial signage is chaotic; it harms the aesthetic composition of facades giving impression of chaos. Disordered.	Advertising; signs. Bad taste; ugly; cheap; garish. Bland shutters. Design/style. Lack of creativity; lack of aesthetic. Commercial signage is not very attractive; unattractive. Some commercial signs are negative and do not match with the streetscape. Some commercial signs are too prominent. Commercial signage is too aggressive. Visual appeal; commercial appealing.	Colour attracts too much attention; too bright; too glaring; colour and style are too shock. Too colourful - negative contrast; too busy colours; colourful. Colour variation; different colours. Colourless. Colours do not blend with buildings. Colours in general. Too strong colours.
SIZE	NUMBER OF COMMERCIAL SIGNS	BUILDINGS HARMED BY COMMERCIAL SIGNAGE
Bad-proportioned sizes. Commercial signage is too big. Too much variety in sizes.	More than one shopfront per building; too many shopfronts on one building. Number of commercial signs. Too many commercial signs.	Historic buildings harmed by commercial signs. Commercial signage overpowers buildings. Some commercial signs do not fit into buildings. Commercial signage damages buildings and, consequently, the city.

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Continuation:
<b>FACADES COVERED BY COMMERCIAL SIGNAGE</b>
Commercial signage covers partially windows and doors. Commercial signage covers facades too much; shopfronts hide architectural beauty. Commercial signage covers the majority of ground and first floors of some building facades.

Taking into account user responses (see Table 8.33 above), the physical characteristics of commercial signs related to the following categories are mainly described in subjective terms: “disordered commercial signage”, “general commercial signage appearance”, and “buildings harmed by commercial signage”. In these cases, it is difficult to identify the physical characteristics of these media that influence user perception and evaluation of the appearance of the commercial street facades. At the same time, user responses to the following categories can be linked to the physical characteristics of the commercial signs in street 5 and 6 (see Appendix 5.7): “colour”, “size”, and “number of commercial signs”. In this regard, the following considerations are made:

a. “Colour” - with regard to the chromatic groups previously identified by this research in each street facade (see Figure 5.7.1 in Appendix 5.7), the majority of commercial signs in streets 5 and 6 are classified into the groups H, I and M (see Figure 8.6). In this regard, this research suggests that when the majority of commercial signs are in red and yellow hues, hot and medium colours and white is used as the colour of sign backgrounds, user perception and evaluation of the appearance of commercial street facades can negatively be affected.

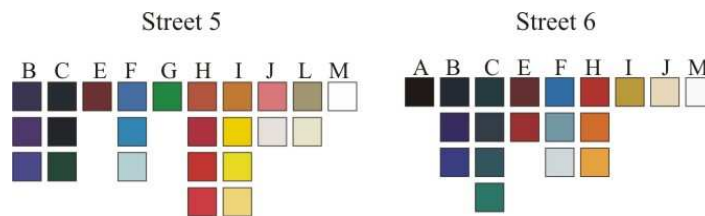


Figure 8.6: Chromatic groups of the commercial signs in streets 5 and 6 (Source: author).

b. “Size” - the majority of users complain that the commercial signs in streets 5 and 6 are too big. According to the previous analysis of the physical characteristics of the street facades in the sample (see Appendix 5.7), 30% of the signs in street 5, and 73% of the signs in street 6 are classified as “big” ( $4.50\text{m}^2 < \text{area} \leq 10\text{m}^2$ ) or “very big” ( $\text{area} > 10\text{m}^2$ ). In this regard, this research suggests that, in a street facade, a minimal amount of 30% of shopfronts and window displays classified as “big” or “very big” can negatively affect user perception and evaluation of the appearance of commercial street facades.

c. “Number of signs” and “facades covered by commercial signage” - as discussed in



section 8.4, user perception and evaluation of the number of commercial signs can be influenced by the percentage of building facades covered by these media. Analysing the physical characteristics of streets 5 and 6 (see Appendix 5.7), this research suggests that a minimum of 9.11% of a street facade covered by commercial signs and a minimum of 0.85 m<sup>2</sup> of these media per linear street metre can negatively affect user perception and evaluation of the appearance of commercial street facades.

Although user responses related to the category “buildings harmed by commercial signage” are mainly described in subjective terms, one conclusion can be made: a minimum amount of 46% of a street facade harmed by shopfronts and window displays negatively affect user perception and evaluation of the appearance of commercial street facades. This is because street 5 has 44% of its buildings harmed by commercial signs, representing 56% of its street facade, and street 6 has 33.33% of its buildings harmed by these media, representing 46% of its street facade (see Table 5.7.1 in Appendix 5.7).

Taking into account the positive characteristics of the commercial signs in streets 5 and 6, only one category is noted by ten percent or more users from the whole sample: “identification of shops and information” (20% of users). This result suggest that when the appearance of commercial street facades is evaluated negatively, the only aspect of commercial signs recognized as positive by users is related to the functions of these media, as identification of shops and information (see Chapter Three, section 3.1.1.2).

#### *A. Similarities and differences between users from Oxford, Gramado and Pelotas: perception and evaluation of the physical characteristics of commercial signs in streets 5 and 6*

The results of this section show that there are common views between users from different urban contexts. Four categories related to the negative physical characteristics of the commercial signs in streets 5 and 6 are mentioned by users from England and Brazil: (i) “general commercial signage appearance”, (ii) “colour”, (iii) “buildings harmed by commercial signage”, and (iv) “size”. Common views are also found between users from the two Brazilian case studies when both these street facades are evaluated: they mention “number of commercial signs” and “disordered commercial signage”. In addition, users from Gramado and Pelotas mention “facades covered by commercial signage” when street 5 is evaluated, and “ordinary commercial signage” when street 6 is evaluated (see Table

8.34). All these categories are the same mentioned by users from the whole sample. In this regard, a comparison between user responses related to these and the physical characteristics of the commercial signs in streets 5 and 6 has already been explored in section 8.5.3.2.

Table 8.34: Categories related to the negative characteristics of commercial signs indicated by users from Oxford, Gramado and Pelotas – streets 5 and 6 (Source: fieldwork 2005).

Categories related to the negative characteristics of commercial signs:		Oxford	Gramado	Pelotas
Street 5	General commercial signage appearance	4(12.90%)	6(11.11%)	8(12.50%)
	Colour	11(35.48%)	9(16.67%)	10(15.63%)
	Number of signs	0	7(12.96%)	8(12.50%)
	Facades covered by commercial signage	0	6(11.11%)	11(17.19%)
	Disordered commercial signage	0	18(33.33%)	24(37.50%)
	Buildings harmed by commercial signage	4(12.90%)	7(12.96%)	10(15.63%)
	Size	4(12.90%)	9(16.67%)	29(45.31%)
	Total sample	31(100%)	54(100%)	64(100%)
Street 6	General commercial signage appearance	19(30.65%)	7(11.48%)	5(10.87%)
	Colour	9(14.52%)	9(14.75%)	11(23.91%)
	Number of signs	4(6.45%)	7(11.48%)	8(17.39%)
	Disordered commercial signage	4(6.45%)	14(22.95%)	10(21.74%)
	Buildings harmed by commercial signage	7(11.29%)	7(11.48%)	7(15.22%)
	Size	11(17.74%)	20(32.79%)	15(32.61%)
	Ordinary commercial signage	7(11.29%)	0	0
	Total sample	62(100%)	61(100%)	46(100%)

This table presents the categories mentioned by ten percent or more users from one or more case studies.

Taking into account the positive characteristics of the commercial signs in streets 5 and 6 recognized by users from each case study, as found when responses of users from the whole sample were analysed, the findings show: when the appearance of commercial street facades is evaluated negatively, the only aspect of commercial signs recognized as positive by users from different urban contexts is related to the functions of these media, as identification of shops and information (Oxford: 20% of users; Gramado: 20% of users; Pelotas: 25% of users).

### 8.5.3.3 Physical characteristics of buildings in the street facades chosen as the best streets in terms of appearance: streets 1, 2 and 3

Analysing responses of users from the whole sample (361 users), the three most mentioned categories related to the positive characteristics of buildings in streets 1, 2 and 3 are: (i) “buildings height and streetscape skyline”, (ii) “good conservation”, and (iii) “general building appearance”. Taking into account the street facades characterized by historic buildings (streets 1 and 2), “historic character and presence of historic buildings” is another category noted by users (see Figure 8.7). Table 8.35 summarizes user answers related to these categories, and Appendix 5.14 presents these in more detail.

Categories related to the positive characteristics of building mentioned by users from the whole sample. Street 1– 153 users (100%); Street 2 – 74 users (100%); Street 3 – 106 users (100%)

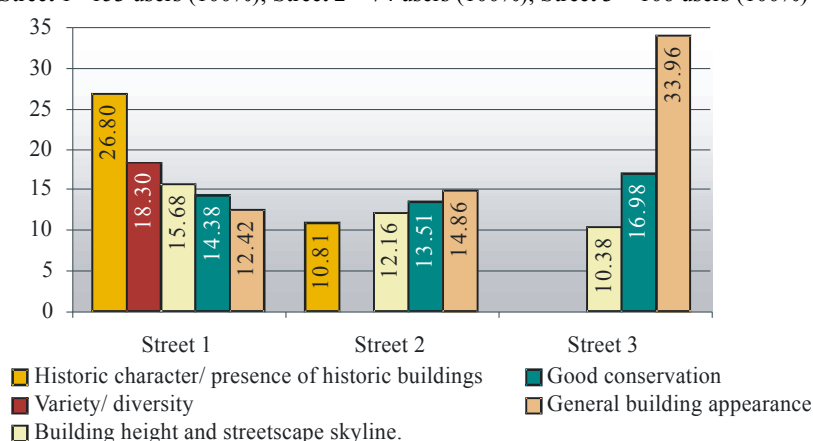


Figure 8.7: Categories related to the positive characteristics of buildings in streets 1, 2 and 3 - users from the whole sample (361 users) (Source: fieldwork 2005).

Table 8.35: Main responses of users from the whole sample related to the most mentioned categories of positive physical characteristics of buildings in streets 1, 2 and 3 (Source: fieldwork 2005).

<b>BUILDING HEIGHTS AND STREETScape SKYLINE</b>
Roofscape; the rooftop of Starbucks Coffee: the Chester style (street 1). Low buildings; buildings not high (street 3). Buildings with similar height (streets 2 and 3). Building coronations (sometimes in angle and flat) do not allow monotony (streets 1 and 3). Harmony in height and volume; relation among building heights. Building height does not vary very much; similar height; height limit mainly on ground floor. Height; skyline. Heterogeneity with some height limits. Interesting roofline; some skylines are interesting (streets 1, 2 and 3).
<b>GOOD CONSERVATION</b>
Architectural aspects preserved; historic importance recognized because of the preservation of historic buildings; preserved historic buildings; old buildings are well preserved. They have been restored; conservation of buildings; good-maintenance (streets 1 and 2). Cleanliness. They look well kept (painted) (street 3).
<b>GENERAL BUILDING APPEARANCE</b>
All buildings put together form a lovely sight. The buildings increase the beauty of the streetscape. Opulent architecture; the architecture is well-designed. Architecture; buildings appearance. Appealing buildings; attractive (streets 1 and 2). Suitable architecture to the city. Beautiful architecture; nice architecture; cool buildings. Buildings follow an architectural style. Germanic building appearance. Interesting architecture. Architecture "pacing" (street 3).
<b>HISTORIC CHARACTER AND PRESENCE OF HISTORIC BUILDINGS</b>
Historic value; historic identity; buildings reflect the history of the place. Historic buildings; historic/original facades; historic structure. Buildings look traditional; traditional architecture. The street has buildings which are benchmarks for all centuries (streets 1 and 2).

A comparison between the responses of users related to the categories described in objective terms (building heights and streetscape skyline, good conservation, and historic character and presence of historic buildings) and the physical characteristics of the buildings in streets 1, 2 and 3 (see Appendix 5.7) suggests the following considerations:

a. "Building heights and streetscape skyline" - the following combinations of physical characteristics of buildings in commercial street facades tend to be evaluated positively by users:

(i) with regard to the results related to street 1, high complexity in terms of building

- silhouette, skyline characterized as asymmetry level two (main turns on shape perimeter  $\leq 5$ ) and height of buildings classified between 9.29 and 11.97 meters (see Table 5.7.8 in Appendix 5.7);
- (ii) with regard to the results related to street 2, low complexity in terms of building silhouette, skyline characterized as asymmetry level three (main turns on shape perimeter  $< 4$ ) and height of buildings classified between 11.97 and 14.65 meters (see Table 5.7.8 in Appendix 5.7); and
- (iii) with regard to the results related to street 3, high complexity in terms of building silhouette, skyline characterized as asymmetry level one (main turns on shape perimeter  $\geq 6$ ), and height of the buildings classified between 3.93 and 6.61 meters (see Table 5.7.8 in Appendix 5.7).
- b. “Good conservation” - commercial street facades comprised of ordinary buildings in good maintenance (painted and clean) and preserved historic buildings are evaluated positively by users.
- c. “Historic character and presence of historic buildings” - commercial street facades characterized by preserved historic buildings are evaluated positively by users. This result is related to the fact that 93% of the buildings in street 1, and 67% of the buildings in street 2 are historic and preserved, and both these streets are evaluated positively by users.

Taking into account responses of users from the whole sample, the results show that there are no negative physical characteristics of buildings in streets 1 and 2. However, three categories related to negative aspects of the buildings in street 3 are indicated by them: “general building appearance” (51.53% of users), “building heights and streetscape skyline” (32.38% of users), and “lack of historic buildings” (58.89% of users). The analysis of user responses related to these categories suggests that the following physical aspects can negatively affect user perception and evaluation of the appearance of commercial street facades: (i) lack of difference between shops and residencies in terms of building facade typology, (ii) buildings at the corners of a street facade too high in relation to the other buildings in the street (see Figure 8.8), and (iii) replacement of historic buildings for contemporary designs in order to recreate the visual character of a city.

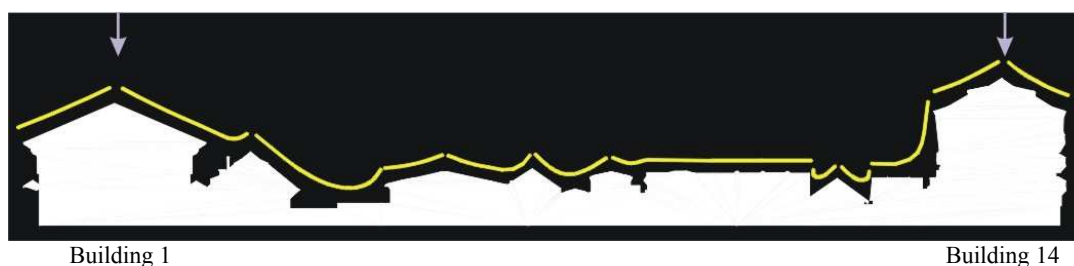


Figure 8.8: Buildings at the corners of street 3 are recognized by users from the whole sample as too high in relation to the other buildings in this street (Source: author).

*A. Similarities and differences between users from Oxford, Gramado and Pelotas: perception and evaluation of the physical characteristics of buildings in streets 1, 2 and 3*

The findings can be sorted under five categories related to the positive characteristics of buildings mentioned by ten percent or more users from England (Oxford) and Brazil (Gramado and Pelotas), when one or more commercial street facades are evaluated: (i) “general building appearance” and “good conservation” are noted in street 3, (ii) “building heights and streetscape skyline” and “historic character and presence of historic buildings” are noted in streets 1 and 2, and (iii) “variety/diversity” is noted in streets 2 and 3. Ten percent or more of users from the two Brazilian case studies also mention: (i) “general building appearance” when street 1 is evaluated, (ii) “good conservation” of buildings when streets 1 and 2 are evaluated, (iii) “building heights and streetscape skyline” when street 3 is evaluated, and (iv) “colours” of buildings when street 3 is evaluated (see Table 8.36).

Table 8.36: Categories related to the positive characteristics of buildings indicated by users from Oxford, Gramado and Pelotas - streets 1, 2 and 3 (Source: fieldwork 2005).

Categories related to the positive characteristics of buildings:		Oxford	Gramado	Pelotas
Street 1	Variety/ diversity	23(31.94%)	1(2.56%)	4(9.52%)
	Historic character and presence of historic buildings	20(27.78%)	11(28.21%)	8(19.05%)
	Height (skyline)	12(16.67%)	6(15.38%)	6(14.28%)
	General building appearance	5(6.95%)	9(23.08%)	5(11.90%)
	Good conservation	3(4.17%)	9(23.07%)	10(23.81%)
	Colours	2(2.78%)	5(12.82%)	3(7.14%)
	Order/ standard	0	3(7.69%)	5(11.90%)
	Total sample	72(100%)	39(100%)	42(100%)
Street 2	Historic character/ presence of historic buildings	2(20%)	0	6(13.33%)
	Height (skyline)	2(20%)	4(21.05%)	3(6.67%)
	Details	2(20%)	0	0
	Scale	2(20%)	0	0
	Variety/ diversity	1(10%)	2(10.53%)	3(6.67%)
	Rhythm	1(10%)	0	1(2.22%)
	Good conservation	0	4(21.05%)	6(13.33%)
	Mix of old and new buildings	0	4(21.05%)	1(2.22%)
	Local character/ identity	0	3(15.82%)	1(2.22%)
Simplicity	0	3(15.79%)	2(4.44%)	
General building appearance	0	2(10.53%)	0	

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		Continuation:		
Categories related to the positive characteristics of buildings:		Oxford	Gramado	Pelotas
Street 2	Discreet	0	2(10.53%)	1(2.22%)
	Unity	0	2(10.53%)	2(4.44%)
	Colours	0	1(5.26%)	6(13.33%)
	Order/ standard	0	1(5.26%)	5(11.11%)
	Total sample	10(100%)	19(100%)	45(100%)
Street 3	General building appearance	6(21.43%)	23(45.10%)	7(25.93%)
	Variety/ diversity	5(17.86%)	1(1.96%)	3(11.11%)
	Presence of green areas	5(17.86%)	3(5.88%)	1(3.70%)
	Mix of old and new buildings	5(17.86%)	0	0
	Good conservation	6(21.43%)	8(15.69%)	7(25.93%)
	Materials/ texture	3(10.71%)	2(3.92%)	0
	Height (skyline)	0	8(15.69%)	3(11.11%)
	Colours	0	7(13.73%)	3(11.11%)
Total sample	28(100%)	51(100%)	27(100%)	

This table presents categories mentioned by ten percent or more of users from one or more case studies.

As verified when responses of users from the whole sample were analysed, three categories related to negative physical aspects of the buildings in street 3 are mentioned by users from Oxford: “general buildings appearance” (35% of users), “building heights and streetscape skyline” (22% of users), and “lack of historic buildings” (40% of users).

#### 8.5.3.4 Physical characteristics of buildings in the street facades chosen as the worst streets in terms of appearance: streets 5 and 6

Only two categories related to negative physical characteristic of the buildings in streets 5 and 6 are mentioned by ten percent or more users from the whole sample: “general building appearance” and “colour” (see Figure 8.9). Table 8.37 summarizes user answers related to these categories, and Appendix 5.14 presents these in more detail.

Categories related to the negative characteristics of buildings mentioned by users from the whole sample. Street 5 – 149 users (100%); Street 6 – 169 users (100%)

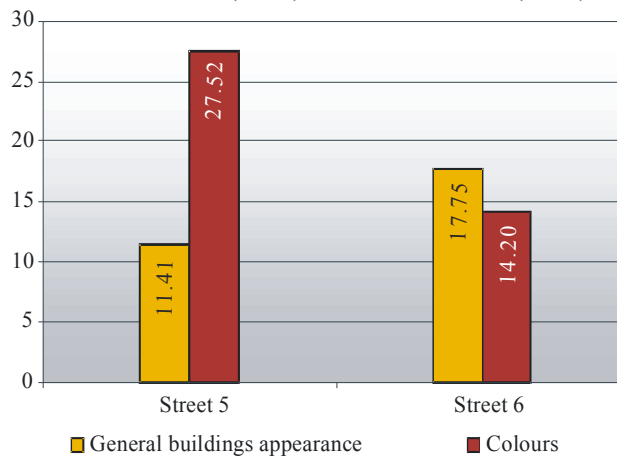


Figure 8.9: Categories related to the negative characteristics of buildings in streets 5 and 6 - users from the whole sample (361 users) (Source: fieldwork 2005).

Table 8.37: Main responses of users from the whole sample related to the most mentioned categories of negative physical characteristics of buildings in streets 5 and 6 (Source: fieldwork 2005).

GENERAL BUILDING APPEARANCE	COLOURS
<p>Design/style; style of some buildings; general appearance of some buildings. Some buildings are very ugly; ugly buildings (streets 5 and 6).</p> <p>Lack of aesthetic. No interesting buildings. The actual appearance of some buildings interfere with the streetscape (buildings 1, 2, 7), but it happens because of the commercial signs (street 5).</p> <p>Dislike some architectural styles. No control over building styles. No active ground floor. Some buildings interfere with the streetscape. Ugly buildings excluding building 6 (street 6).</p>	<p>Colours in disharmony with building styles; not harmonious colours. Fragmentation of building facade into two different parts by colours (e.g. street 5: buildings 1 and 2; street 6: buildings 2 and 5) (streets 5 and 6).</p> <p>Aggressive colours. Colours add too little value to buildings. Colours of some buildings. Colours of buildings at the left side of the block are too bright. Colours of buildings too far away from each other if we think about the chromatic disc. Different colours. Disordered colours; no colour combination; lack of uniformity. Strong colours. Colours are not suitable for historic buildings. The way that buildings are painted. Too many colours. Too many strong colours with too much variation. Ugly colours; colours are awful (street 5).</p> <p>Colours could be more colourful; colourless. Colours of some buildings (e.g. building 2). Mainly an ugly green colour (building 6). Mix-up of colours (street 6).</p>

Comparing the user responses related to both these categories (see Table 8.37) with the physical characteristics of the buildings in streets 5 and 6 (see Appendix 5.7), the following considerations are made in this research:

- a. “General building appearance” - street facades characterized by disordered streetscape and buildings harmed by commercial signs, and comprised of buildings classified as “Contemporary Box” (see Appendix 2.2) tend to be evaluated negatively by users from different urban contexts. Taking into account the architectural style of buildings, streets 5 and 6 are comprised of buildings classified as “Contemporary Box”, which affect user satisfaction with the appearance of historic city centres (Portella, 2003).
  
- b. “Colour” - the chromatic combinations identified on the building facades in street 5 (white and yellow-orange hues in hot and medium colours and harmony by contrast) and street 6 (blue-purple hues in cold and light colours, green-yellow hues in cold and medium colours, brown-red hues in hot and medium colours and monochromatic harmony) can negatively affect user perception and evaluation of commercial streetscapes. Building facades fragmented by colours can also negatively affect user perception and evaluation of commercial streetscapes.

When streets 5 and 6 are evaluated, “historic character and presence of historic buildings” is mentioned by more than ten percent of users from the whole sample (street 5: 57% of users; street 6: 60% of users) as a positive characteristic of the buildings in both these streets. In this regard, historic buildings are positive features of commercial streetscapes,

even when these buildings are harmed by commercial signs. In relation to street 5, this research assumes that a well preserved historic building in the middle of the street facade can also be influencing user responses (see Chapter Seven, Figure 7.5). In addition, when street 5 is evaluated, “building heights and streetscape skyline” is another category mentioned by users as a positive characteristic of the buildings (30% of users). In this regard, this research suggests that (i) similar buildings in height and (ii) streetscape skyline classified as asymmetry level three (main turns on shape perimeter < 4) are recognized by users as positive elements in commercial street facades (see Figure 8.10, and Table 5.7.9 in Appendix 5.7).



Figure 8.10: Presence of similar buildings in height is a positive characteristic of the buildings in street 5 (Source: author).

*A. Similarities and differences between users from Oxford, Gramado and Pelotas: perception and evaluation of the physical characteristics of buildings in streets 5 and 6*

The results from the analysis of responses of users from each case study show that: when street 5 is evaluated by users from Gramado and Pelotas, and street 6 is evaluated by users from Oxford and Pelotas, “colour” is the most mentioned category related to negative characteristics of the buildings in both these streets. The following categories are also indicated by users from one case study, when both these commercial street facades are analysed: “buildings harmed by commercial signage” is mentioned by users from Pelotas, and “general building appearance” is mentioned by users from Oxford (see Table 8.38).

Table 8.38: Categories related to the negative characteristics of buildings indicated by users from Oxford, Gramado and Pelotas - streets 5 and 6 (Source: fieldwork 2005).

Categories related to the negative characteristics of buildings:		Oxford	Gramado	Pelotas
Street 5	Building colours	2(6.45%)	16(29.63%)	23(35.94%)
	Harmed buildings	2(6.45%)	4(7.41%)	13(20.31%)
	General building appearance	8(25.81%)	5(9.26%)	4(6.25%)
	Lack of conservation	0	2(3.70%)	8(12.50%)
	Total sample	31(100%)	54(100%)	64(100%)
Street 6	Building colours	12(19.35%)	6(9.84%)	6(13.04%)
	Harmed buildings	0	6(9.84%)	10(21.74%)
	General building appearance	25(40.32%)	2(3.28%)	3(6.52%)
	Boring/ monotonous	7(11.29%)	1(1.64%)	0
	Height of buildings (skyline)	9(14.52%)	1(1.64%)	0
	Lack of space between buildings	0	7(11.48%)	1(2.17%)
	Disordered buildings	2(3.23%)	1(1.64%)	5(10.87%)
Total sample	62(100%)	61(100%)	46(100%)	

This table presents categories mentioned by ten percent or more of users from one or more case studies.



Taking into account the responses of users from Oxford, Gramado and Pelotas (see Table 8.38) and the physical characteristics of the buildings in streets 5 and 6 (see Appendix 5.7), the following results are highlighted. These suggest that user urban context is influencing user perception and evaluation of the appearance of both these commercial street facades.

a. Respondents from Oxford, where the city centre is characterized by high complexity, mention the following categories as negative characteristics of the buildings in street 6: “boring/monotonous streetscape” and “similar height of buildings and streetscape skyline”. Taking into account these categories and the physical characteristics of buildings in street 6 (see section 5.7.2.2 in Appendix 5.7), this research suggests that low variation of (i) turns on street facade shape perimeter (five main turns), (ii) facade details, (iii) texture of buildings (facing or revetment of facades), (iv) overall proportion of windows and doors, and (v) colour might affect the perception and evaluation of users from Oxford more than the perception and evaluation of users from the other case studies. In this regard, this research suggests that the majority of buildings of a street facade classified between 6.61 to 9.29 meters of height, all buildings with flat roof, and the street facade silhouette classified as asymmetry level two (main turns on shape perimeter  $\leq 5$ ) are aspects of the streetscape evaluated negatively by users from Oxford.

b. Users from Gramado, where space between buildings is a common characteristic of the city centre (see Figure 8.11), mention “lack of space between buildings” as a negative aspect of the buildings in street 6. In addition, users from Pelotas, where the city centre is characterized by disordered streetscapes and lack of building conservation, mention “lack of conservation” and “disordered buildings” as negative aspects of the buildings in streets 5 and 6.

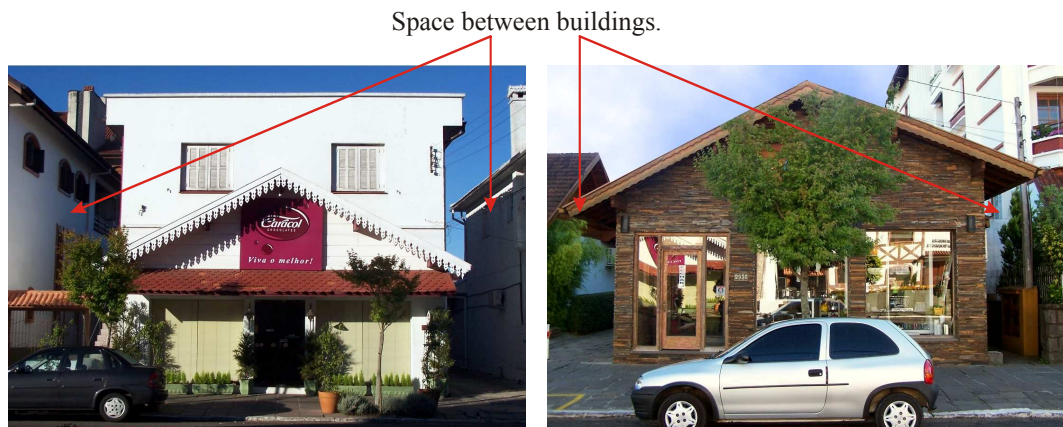


Figure 8.11: Space between buildings is a common characteristic of the city centre of Gramado (Source: author).

As discussed when responses of users from the whole sample were analysed, ten percent or more of users from Oxford, Gramado and Pelotas mention “historic character and presence of historic buildings” as a positive characteristic of the buildings in street 5 (Oxford: 10% of users; Gramado: 42% of users; Pelotas: 52% of users) and street 6 (Oxford: 46% of users; Gramado: 37% of users; Pelotas: 18% of users). In addition, when street 5 is evaluated, “building heights and streetscape skyline” is another category mentioned by users as a positive characteristic of the buildings (Oxford: 25% of users; Gramado: 27% of users; Pelotas: 35% of users).

#### **8.5.4 Buildings noted by users as the best and the worst in terms of the relationship between commercial signs and building facade**

There are no statistical differences between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of the buildings that they like the most and like the least due to the relationship between commercial signs and building facade. The majority of users from the three case studies like and dislike the same buildings (see Table 8.39). Taking into account the buildings that the majority of users like the most and the least in streets 3 and 5, it is relevant to note that there is no commercial signage on these building facades (see buildings in Appendix 5.11). This research assumes that (i) in street 3, building 1 is mentioned because of the cultural symbolic meaning attributed by users to this, it is the main theater of the city (see Chapter Seven, figure 7.4), and (ii) in street 5, building 5 is mentioned because this is the only preserved historic building and unharmed by commercial signs in this street (see Chapter Seven, figure 7.5). In this regard, the results from the analysis presented in this section when related to both these streets refer to the second buildings that users like the most as there are commercial signs on these facades.

With regard to the physical characteristics of the buildings that the majority of users like the most and the least, which were identified by the researcher during field visits to the study areas in each case study and by respondents when answering the open questions of questionnaire type B (see Table 8.40 and Appendices 5.7 and 5.14), this research suggests that a general commercial signage approach to historic city centres should take into account that:

- a. Commercial signs should be designed in order to respect the aesthetic composition of building facades – these media cannot cover features of building silhouette, facade

details and facade articulation; at the same time, these media need to get people’s visual attention. Physical characteristics of commercial signs such as size, material, lettering type and size, colour, and location on facades should be designed to complement the aesthetic composition of building facades.

b. Commercial signs should be designed with respect to the aesthetic composition of the whole building facade (ground floor and upper floors). The relationship between ground floor and upper floors needs to be preserved. Standard signs, such as franchise signs, cannot be encouraged in historic city centres; these signs need to be designed according to the visual character of each particular place.

c. Billboards and banners displayed on building facades and/or roofs should not be allowed in historic city centres.

d. When more than one shop is located in one building, the commercial signs of these shops should be designed as a group, and the aesthetic composition of the whole building facade should be taken into account in their design. The fragmentation of building facades by colours and signs, and the elimination of (i) original features (such as doors, windows and details) or (ii) aesthetic composition of historic building facades cannot be allowed. These issues were also recognized by the participants of the focus group discussion (see Chapter Seven, section 7.3.1.1).





Table 8.39: Buildings that users like the most and like the least in terms of the relationship between commercial signs and building facade (Source: fieldwork 2005).

Q23/24/34/35. Identify the building that you >x< regarding the relationship between commercial signage and building facade:			The whole sample	Oxford	Gramado	Pelotas
Street 1	LIKE THE MOST	<b>Building 11</b>	<b>43(28.10%)</b>	<b>18(25%)</b>	<b>12(30.77%)</b>	<b>13(30.95%)</b>
		Building 4	27(17.65%)	15(20.83%)	5(12.82%)	7(16.67%)
		Building 2	17(11.11%)	8(11.11%)	6(15.38%)	3(7.14%)
		Building 10	14(9.15%)	11(15.28%)	2(5.13%)	1(2.38%)
		Building 8	13(8.50%)	6(8.33%)	2(5.13%)	5(11.90%)
	LIKE THE LEAST	Building 12	11(7.19%)	3(4.17%)	6(15.38%)	2(4.76%)
		<b>Building 3</b>	<b>55(35.95%)</b>	<b>20(27.78%)</b>	<b>15(38.46%)</b>	<b>20(47.62%)</b>
		Building 14	31(20.26%)	8(11.11%)	14(35.90%)	9(21.43%)
		Building 1	23(15.03%)	11(15.28%)	2(5.13%)	10(23.81%)
	Total sample *		153(100%)	72(100%)	39(100%)	42(100%)
Street 2	LIKE THE MOST	<b>Building 1</b>	<b>31(41.89%)</b>	<b>7(70%)</b>	<b>7(36.84%)</b>	<b>17(37.78%)</b>
		Building 2	18(24.32%)	1(10%)	6(31.58%)	11(24.44%)
		Building 5	9(12.16%)	0	2(10.53%)	7(15.56%)
		Building 4	9(12.16%)	2(20%)	3(15.79%)	4(8.89%)
		Building 3	6(8.11%)	0	1(5.26%)	5(11.11%)
	Total sample *		74(100%)	10(100%)	19(100%)	45(100%)
This table presents buildings mentioned by ten percent or more users from one or more case studies.						
* It is the total sample of respondents from each case study including users who did not answer the question.						
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		Continuation:				
Q23/24/34/35. Identify the building that you >x< regarding the relationship between commercial signage and building facade:		The whole sample	Oxford	Gramado	Pelotas	
Street 2	LIKE THE LEAST	<b>Buildings 3 and 4</b>	<b>31(41.89%)</b>	<b>7(70%)</b>	<b>7(36.84%)</b>	<b>17(37.78%)</b>
		Building 6	24(32.43%)	2(20%)	<b>7(36.84%)</b>	15(33.33%)
		Building 2	9(12.16%)	1(10%)	2(10.53%)	6(13.33%)
		Building 1	5(6.75%)	0	2(10.53%)	3(6.67%)
Total sample *		74(100%)	10(100%)	19(100%)	45(100%)	
Street 3	LIKE THE MOST	<b>Building 1</b>	<b>35(33.02%)</b>	<b>13(46.43%)</b>	<b>16(31.37%)</b>	<b>6(22.22%)</b>
		Building 3	23(21.70%)	6(21.43%)	12(23.53%)	5(18.52%)
		Building 6	18(16.98%)	3(10.71%)	10(19.61%)	5(18.52%)
		Building 2	11(10.38%)	0	7(13.73%)	4(14.81%)
		Building 5	6(5.67%)	4(14.29%)	1(1.96%)	1(3.70%)
		Building 8	6(5.67%)	0	3(5.88%)	3(11.11%)
	LIKE THE LEAST	<b>Building 4</b>	<b>74(69.81%)</b>	<b>18(64.29%)</b>	<b>34(66.67%)</b>	<b>22(81.48%)</b>
		Building 3	5(4.72%)	3(10.71%)	1(1.96%)	1(3.70%)
		Building 10	4(3.77%)	3(10.71%)	1(1.96%)	0
	Total sample *		106(100%)	28(100%)	51(100%)	27(100%)
Street 5	LIKE THE MOST	<b>Building 5</b>	<b>53(35.57%)</b>	<b>15(48.39%)</b>	<b>22(40.74%)</b>	<b>16(25%)</b>
		Building 3	25(16.78%)	5(16.13%)	9(16.67%)	11(17.19%)
		Building 6	10(6.71%)	4(12.90%)	3(5.56%)	3(4.69%)
		Building 2	10(6.71%)	0	6(11.11%)	4(6.25%)
	None	10(6.71%)	0	0	10(15.63%)	
	LIKE THE LEAST	<b>Building 1</b>	<b>64(42.95%)</b>	<b>14(45.16%)</b>	<b>22(40.74%)</b>	<b>28(43.75%)</b>
		Building 7	33(22.14%)	11(35.48%)	21(38.89%)	1(1.56%)
Total sample *		149(100%)	31(100%)	54(100%)	64(100%)	
Street 6	LIKE THE MOST	<b>Building 1</b>	<b>69(40.83%)</b>	<b>25(40.32%)</b>	<b>28(45.90%)</b>	<b>16(34.78%)</b>
		Building 4	35(20.71%)	8(12.90%)	12(19.67%)	15(32.61%)
		Building 6	33(19.53%)	16(25.81%)	10(16.39%)	7(15.22%)
	LIKE THE LEAST	<b>Building 2</b>	<b>101(59.76%)</b>	<b>32(51.61%)</b>	<b>39(63.93%)</b>	<b>30(65.22%)</b>
		Building 3	24(14.20%)	11(17.74%)	10(16.39%)	3(6.52%)
		Building 5	14(8.28%)	5(8.06%)	4(6.56%)	5(10.87%)
		Building 4	10(5.91%)	9(14.52%)	0	1(2.17%)
Total sample *		169(100%)	62(100%)	61(100%)	46(100%)	

This table presents buildings mentioned by ten percent or more users from one or more case studies.  
 \* It is the total sample of respondents from each case study including users who did not answer the question.

Table 8.40: General physical characteristics of the buildings that the majority of users like the most and like the least in terms of the relationship between commercial signs and building facade (Source: fieldwork 2005).

	BUILDINGS THAT USERS LIKE THE MOST		BUILDINGS THAT USERS LIKE THE LEAST	
	Building	General physical characteristics	Building	General physical characteristics
<b>STREET 1</b>	<p><b>Building 11</b></p> 	Commercial signage is integrated with the aesthetic composition of the building facade. The sign does not cover elements related to building silhouettes, facade details, and facade articulation.	<p><b>Building 3</b></p> 	The commercial signs of the two shops located in this building do not take account of the aesthetic composition of the building as a whole (this issue was already mentioned in Table 8.25 of this Chapter).
<b>STREET 2</b>	<p><b>Building 1</b></p> 	Commercial signs from both shops do not interfere with the aesthetic composition of the building facade and do not fragment the ground floor.	<p><b>Buildings 3 and 4</b></p> 	Both buildings have standard commercial signs and similar ground floor design. At the same time, they have completely different upper floors. This shows that the commercial signs are designed without considering the aesthetic composition of each building.

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Continuation:				
	BUILDINGS THAT USERS LIKE THE MOST		BUILDINGS THAT USERS LIKE THE LEAST	
	Building:	General physical characteristics:	Building:	General physical characteristics:
<b>STREET 3</b>	<b>Building 3</b> 	Commercial signage is part of the aesthetic composition of the building facade. Size, material, lettering type and size, colour and location on facade are designed to complement the “Neo-Bavarian” style of the building.	<b>Building 4</b> 	A billboard displayed on the roof and a banner located on the body of the facade are the main negative aspects of this building. This study suggests that size, location on building facade, and colour are the main negative features of these signs.
<b>STREET 5</b>	<b>Building 3</b> 	The ground floor is not fragmented by the commercial sign. This media does not harm the aesthetic composition of the building facade, and does not cover elements related to building silhouette, facade details, and facade articulation. The main positive characteristics of the commercial sign can be related to size, location on facade, and colour.	<b>Building 1</b> 	The most negative aspect of this building can be related to the fragmentation of the ground floor by colour and commercial signs. The building is treated as three different blocks: shop owners do what they want with their “part of facade”. The following commercial signage aspects are also negative features: size, location and arrangement on facade, colour and promotion signs painted on facade walls.
<b>STREET 6</b>	<b>Building 1</b> 	Commercial signage does not harm the aesthetic composition of the building façade, and does not cover elements related to silhouette, facade details and articulation. The main positive characteristics of the commercial signs are: size, colour, and location on facade.	<b>Building 2</b>  Part D	The main negative characteristic of this building is the fragmentation of the facade by colour and commercial signs. Alteration of original windows and doors, and the total elimination of the aesthetic composition of the building facade at its right side (part D of façade, see picture on the left) contribute to this fragmentation. This research also shows that size, colour, and location on facade are the main negative features of the commercial signs in this building.

### 8.5.5 Summary of the findings related to the relationship between commercial signage and building facade

The findings discussed in the above sub-sections support the fourth section of working hypothesis E: commercial street facades chosen as the best and the worst streets in terms of appearance are perceived and evaluated differently in terms of the relationship between aesthetic composition of commercial signage and building facades. Based on this, the following main results were found:

1. Taking into account responses of users from the whole sample, Oxford, Gramado and Pelotas, the findings show that the commercial street facades chosen as the best streets in

terms of appearance may have buildings harmed by commercial signs, but these are “very few” or “few”, while the commercial street facades chosen as the worst streets in terms of appearance have buildings harmed by commercial signs and these are “very many” or “many”. The results also suggest that two or less buildings harmed by commercial signs, representing 4% or less of the street facade, are perceived and evaluated as “very few” or “few”, while two or more buildings harmed by these media, representing 46% or more of the street facade, are perceived and evaluated as “very many” or “many”. In addition, the findings suggest that the following physical characteristics related to commercial signs can increase user perception and evaluation of buildings harmed by these media: (i) size (too big in relation to the proportion of building facade), (ii) location on facades (on roof and/or blank lateral walls of buildings), (iii) disconnection between the aesthetic composition of building ground floor and upper floor due to commercial signs and colours, (iv) commercial signs not separate enough from building facade and, consequently, not getting people attention, (v) colour (too bright) of shop window displays, (vi) disordered commercial signs, and (vii) colour of commercial signs not in accordance with colour of building facade.

2. Common views are found between users from Oxford, Gramado and Pelotas in terms of perception and evaluation of the presence of buildings harmed by commercial signs in streets 3, 5 and 6, and the number of buildings harmed by these media in streets 1, 3, 5 and 6. Analysing the perception and evaluation of users from the whole sample, Oxford and Pelotas, the results related to streets 5 and 6 suggest that: the higher the user perception and evaluation of the presence and the number of buildings harmed by commercial signs, the lower the user satisfaction with the appearance of commercial street facades. The findings also suggest that when just few buildings (10% or less of buildings in a street facade) are harmed by commercial signs, the presence and the number of buildings harmed by these media does not influence user satisfaction with the appearance of commercial street facades.

3. Findings related to the perception and evaluation of the majority of users from the whole sample, Oxford, Gramado and Pelotas show that (i) in the commercial street facades chosen as the best streets in terms of appearance, users agree that commercial signs do not interfere with the appearance of historic buildings, and (ii) in the commercial street facades chosen as the worst streets in terms of appearance, users agree that commercial signs

interfere with the appearance of historic buildings. The results also show that, when the influence of commercial signs on the appearance of historic building is positive or neutral, (i) historic buildings and commercial signs are seen as positive features of commercial streetscapes, and (ii) commercial street facades are seen as more interesting and less colourful. At the same time, when the influence of commercial signs on the appearance of historic buildings is negative, buildings and commercial signs are seen as negative features of commercial streetscapes. The findings also indicate that, by reducing the negative influence of commercial signs on the appearance of historic buildings, user perception and evaluation of beauty and order increase.

4. When responses of users from Oxford, Gramado and Pelotas are analysed, the findings show that there are similarities between users from different urban contexts in terms of (i) the positive and negative physical characteristics of commercial signs and buildings mentioned by them, and (ii) the buildings that they like the most and like the least due to the relationship between commercial signs and building facades, when the commercial street facades in the sample are evaluated. Table 8.41 summarizes the physical characteristics of commercial signs and buildings that influence the perception and evaluation of users from different urban contexts in the same way. Taking these characteristics into account, this research suggests general recommendations that can improve the appearance of commercial streetscapes (see Table 8.41). The data summarized in this table refer to the results discussed in sections 8.5.3 and 8.5.4.

Table 8.41: Physical characteristics of commercial signs and buildings that influence user perception and evaluation of the appearance of commercial street facades (Source: fieldwork 2005).

COMMERCIAL SIGNS	BUILDINGS
<p style="text-align: center;"><u>POSITIVE CHARACTERISTICS</u></p> <ul style="list-style-type: none"> <li>● <b>Size:</b> when the majority of shopfronts and window displays are “very small” or “small” (area <math>\leq 3\text{m}^2</math>), and displayed on similar zones of facades of different buildings in a streetscape, commercial signs tend to stand out in users’ mind as positive elements of commercial street facades.</li> <li>● <b>Discrete commercial signage:</b> signs classified as “very small” or “small” (area <math>\leq 3\text{m}^2</math>), colour of signs in congruence with colour of facades, and predominant lettering style classified as type 4 (Sans serif) tend to be evaluated positively by users.</li> <li>● <b>Good legibility of signs:</b> the following aspects tend to help user legibility of texts in commercial signs - chromatic contrast between letters and sign background classified as level 3 (see Chapter Two, section 2.4.2.1, A1), lettering style classified as type 2 (Modern) and type 4 (Sans Serif), height of letters</li> </ul>	<p style="text-align: center;"><u>POSITIVE CHARACTERISTICS</u></p> <ul style="list-style-type: none"> <li>● <b>Building heights and streetscape skyline:</b> three different combinations of physical characteristics tend to be positively evaluated by users: <ul style="list-style-type: none"> <li>(i) high complexity in terms of building silhouette, skyline characterized as asymmetry level two (main turns on shape perimeter <math>\leq 5</math>), and height of buildings between 9.29m and 11.97m;</li> <li>(ii) low complexity in terms of building silhouette, skyline characterized as asymmetry level three (main turns on shape perimeter <math>&lt; 4</math>), and height of buildings between 11.97m and 14.65m; and</li> <li>(iii) high complexity in terms of building silhouette, skyline categorized as asymmetry level one (main turns on shape perimeter <math>\geq 6</math>), and height of buildings between 3.93m and 6.61m.</li> </ul> </li> <li>● <b>Good conservation:</b> streetscapes comprised of buildings in good-maintenance (painted and clean) and well preserved historic buildings are positively evaluated by users.</li> </ul>
CONTINUATION ON THE NEXT PAGE.	

Continuation:	
COMMERCIAL SIGNS	BUILDINGS
<u>POSITIVE CHARACTERISTICS</u>	<u>POSITIVE CHARACTERISTICS</u>
(continuation): classified as big (height $\geq 0.55$ cm), and predominant sign background or balance between size of letters and size of sign background.	<ul style="list-style-type: none"> <li>• <b>Historic character and presence of historic buildings:</b> street facades comprised of a minimum of 67% of well preserved historic buildings are positively evaluated by users.</li> </ul>
<u>NEGATIVE CHARACTERISTICS</u>	<u>NEGATIVE CHARACTERISTICS</u>
<ul style="list-style-type: none"> <li>• <b>Colour:</b> in a street facade, the majority of commercial signs in red and yellow hues and in hot and medium colours, and white as the colour of commercial sign backgrounds can negatively affect user evaluation of commercial streetscapes.</li> <li>• <b>Size:</b> in a street facade, a minimal amount of 30% of shopfronts and window displays classified as “big” (<math>4.50 \text{ m}^2 &lt; \text{area} \leq 10 \text{ m}^2</math>) or “very big” (<math>\text{area} &gt; 10 \text{ m}^2</math>) can negatively affect user evaluation of commercial streetscapes.</li> <li>• <b>Number of commercial signs and percentage of street facade covered by these media:</b> a minimum of 9.11% of a street facade covered by commercial signs, and a minimum of <math>0.85 \text{ m}^2</math> of commercial signs per linear street metre can negatively affect user evaluation of commercial streetscapes.</li> <li>• <b>Buildings harmed by commercial signs:</b> a minimum amount of 46% of a street facade harmed by shopfronts and window displays can negatively affect user evaluation of commercial streetscapes.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Colour:</b> the following chromatic combinations identified in the building facades in streets 5 and 6 can negatively affect user evaluations of commercial streetscapes: <ul style="list-style-type: none"> <li>(i) white and yellow-orange hues in hot and medium colours, and harmony by contrast; and</li> <li>(ii) blue-purple hues in cold and light colours, green-yellow hues in cold and medium colours, brown-red hues in hot and medium colours, and monochromatic harmony.</li> </ul> </li> <li>Building facades fragmented by colours can also negatively affect user evaluation of commercial streetscapes.</li> <li>• <b>User tolerance to building variation:</b> low variation of (i) turns on street facade shape perimeter, (ii) facade details, (iii) textures of building, (iv) overall proportion of windows and doors, and (v) colour can negatively affect user evaluation of commercial streetscapes. Commercial street facades comprised of similar buildings in height (between 6.61 to 9.29 meters), all buildings with flat roof, and a streetscape silhouette classified as asymmetry level two (main turns on shape perimeter <math>\leq 5</math>) can be negatively evaluated by users.</li> <li>• <b>General building appearance:</b> buildings harmed by commercial signs, presence of buildings categorized as “Contemporary Box”, and/or lack of difference between shops and residencies in terms of building facade typology are aspects of commercial street facades evaluated negatively by users.</li> <li>• <b>Building heights and streetscape skyline:</b> buildings at the corners of a street facade too high in relation to the other buildings of the street facade are evaluated negatively by users.</li> <li>• <b>Lack of historic buildings:</b> replacement of historic buildings for contemporary design in order to recreate the visual character of the city is evaluated negatively by users.</li> </ul>
<u>WHAT CAN IMPROVE THE APPEARANCE OF COMMERCIAL AND HISTORIC STREETSAPES</u>	
<ul style="list-style-type: none"> <li>• Commercial signs designed to respect the aesthetic composition of building facades, but also to get people’s attention. Physical characteristics of commercial signs, such as size, material, lettering type and size, colour, and location on facades, need to be designed to complement the aesthetic composition of building facades.</li> <li>• Commercial signs cannot cover aspects related to building silhouette, facade details, and building articulation.</li> <li>• Commercial signs designed with regard to the whole building facade (ground floor and upper floors). The relationship between ground floor and upper floor needs to be preserved, and standard signs displayed on buildings should not be encouraged in historic city centres.</li> <li>• Billboards displayed on building roofs, and banners displayed on building facades cannot be allowed in historic city centres.</li> <li>• When more than one shop is located in one building, the commercial signs of these shops should be designed as a group, and the aesthetic composition of the whole building facade should be taken into account in their design. The fragmentation of facades by colours and signs, and the elimination of original features or the aesthetic composition of historic building facades cannot be allowed.</li> </ul>	

## 8.6 CONCLUSION

This chapter presented the findings from the analysis of user perception and evaluation of the physical characteristics of commercial signs and buildings in the commercial street



facades chosen as the best (streets 1, 2 and 3) and the worst (streets 5 and 6) in terms of appearance. The findings are based on the common perceptions and evaluations found between users from the different urban contexts, and are used to answer the research questions set out below.

- *Research Question 2:* Which physical characteristics of commercial signs and buildings need to be taken into account in the development of a general commercial signage approach applied to the historic city centres of different urban contexts?
- *Research Question 3:* Are there common perceptions and evaluations between users from different urban contexts in terms of commercial signage controls and the appearance of commercial street facades in historic city centres?

1. Taking into account the responses of users from the different case studies, the evidence suggests two common views: (i) commercial street facades, where different commercial signage approaches are applied but shopfronts and window displays are ordered, are evaluated as beautiful, interesting and ordered, while (ii) commercial street facades, where commercial signage controls are not effective and shopfronts and window displays are disordered, are evaluated as ugly, boring and chaotic. These results are supported by the literature review (see Chapter Two, section 2.2), which says that: disordered streetscapes tend to be evaluated negatively by users. The findings also suggest that commercial street facades with ordered commercial signage and low or high colour variation and complexity are evaluated positively by users from different urban contexts. However, high colour variation and complexity are recognized as negative features in commercial streetscapes when associated with disordered commercial signage.

In this regard, this research suggests that, taking into account views of users from different urban contexts, a general commercial signage approach to historic city centres needs to be designed in order to increase user perception and evaluation of beauty, interest and order in relation to commercial streetscapes. The findings in this chapter also show that the level of colour variation and complexity needs to be controlled according to the physical characteristics of each particular place. This control can preserve the individual historic character of places, and promote city centres seen as interesting and ordered by users. In addition, this study suggests that this general approach needs to take into account that users can perceive “similarity” as “simplicity” when the level of complexity of commercial street

facades is evaluated. For example, commercial street facades, which are comprised of buildings similar in visual character and architectural style, tend to be seen as not complex, even when the variation between the physical characteristics of their buildings (such as number of stories, roof line and building symmetry) is high. In this regard, this issue needs to be considered in controls related to the variation of commercial signs and buildings.

2. The findings in this chapter demonstrate that the level of variation of commercial signs and buildings needs to be taken into account in the development a general commercial signage approach to historic city centres. The results show that high or moderate variation of commercial signs and buildings when associated with lack of order among shopfronts and window displays can create commercial street facades evaluated negatively by users from different urban contexts. This general commercial signage approach should take into account that by decreasing commercial signage variation, user satisfaction with the appearance of commercial street facades and user perception and evaluation of beauty, interest and order in relation to these streets will increase. At the same time, the variation of commercial signs and buildings needs to be taken into account as a group, as there is a relationship between user perception and evaluation of these variables: the higher the user perception and evaluation of commercial signage variation, the higher the user perception and evaluation of building variation. The results also suggest that user perception and evaluation of commercial signage variation can increase with high variation of the following aspects of signs: size, arrangement in relation to facades, location on facades, presence of images, size of letters and images in relation to size of sign background, lettering size, and number of chromatic groups. In addition, the findings demonstrate that user perception and evaluation of building variation can increase with high variation of the following aspects of buildings: number of turns in silhouette perimeter, width of buildings, facade details, fenestration, overall proportion of windows and doors, presence of horizontal or vertical partition on facades, and colour. As these physical characteristics influence user perception and evaluation of commercial signage and building variation more than others, they should be considered in a general commercial signage approach in order to control the variation of commercial signs and buildings.

3. The findings in this chapter reinforce the idea discussed in the literature review (see Chapter Two, section 2.3.4) that user perception and evaluation of the built environment can be influenced by (i) user familiarity with a particular type of streetscape, (ii) symbolic

meanings attributed to buildings, and (iii) user urban context. In this research, the influence of these aspects is mainly seen when residents evaluate the appearance of commercial street facades located in their cities. The findings also show that people who live in different places can have different levels of tolerance to the variation of physical characteristics of commercial signs and buildings. In this regard, a general commercial signage approach to historic city centres should recommend that local regulations related to the control of commercial signage and building variation must take into account residents' perceptions and evaluations. Having identified the most appropriate levels of commercial signage and building variation according to residents' views, the local authority can begin to design commercial signage controls.

4. The results in this chapter suggest that a general commercial signage approach to historic city centres should recommend that before the design of local commercial signage controls, a chromatic analysis of the commercial street facades needs be carried out. Taking into account that colour can be used to strengthen the image of historic places by giving emphasis to features such as landmarks, this general approach should recommend the local authority to analyse the level of colour variation of the commercial streetscapes in the city centre, and investigate whether users are satisfied with this. This approach needs also to point out that users from different urban contexts can have different tolerances to colour variation; the results of this research indicate that people who live in places where high colour variation is predominant in commercial streetscapes tend to be less sensitive to certain chromatic combinations.

This chapter shows that different chromatic combinations in commercial street facades influence user perception and evaluation of the appearance of these places in different ways. For instance, certain chromatic combinations (always considering commercial signs and buildings as a group) should be encouraged in a city centre if the aim of the local authority is to increase the colour variation of this place. With regard to the perception and evaluation of users from Oxford, Gramado and Pelotas, this study suggests that: (i) brown-red hues in hot and light colours and monochromatic harmony or harmony by light-dark contrast tend to decrease colour variation, while (ii) yellow-orange hues in hot and medium colours and harmony by light-dark contrast tend to increase colour variation. This study also indicates that brown-red hues in hot and light colours and harmony by contrast can divide users between those who perceive a more colourful or a more colourless streetscape.

At the same time, the findings show that a street facade characterized by blue-purple hues in cold and light colours, green-yellow hues in cold and medium colours, brown-red hues in hot and light colours and monochromatic harmony tend to increase perception and evaluation of colour variation of users from England more than of users from Brazil. In this regard, this research believes that user urban context influence user perception and evaluation of colour variation.

5. The results in this chapter show that the method applied in this research to calculate complexity in commercial streetscapes by analysing the variation of commercial signs and buildings (see Chapter Five, section 5.3.3.2) produces results that, in general, converge with user perception and evaluation of complexity when the appearance of commercial street facades is evaluated. In this regard, this method can be integrated into a general commercial signage approach in order to monitor levels of complexity in commercial streetscapes. This method can also be adopted to predict whether the level of complexity of a street facade, in terms of commercial signage and building variation, will increase with the insertion of new commercial signs or buildings. For example, the results from the application of this method could identify whether a new commercial sign would increase the complexity of a street facade too much, before this sign was displayed in the city centre. If these results indicated that the complexity would be increased too much with the insertion of this new sign, the local authority could ask the shop owner to re-design the media. This research recognizes this method as a potential tool to help the preservation of historic heritage in city centres, and to avoid the decrease of user satisfaction with the appearance of these places.

6. Taking into account responses of users from different urban contexts, this study suggests that user perception and evaluation of the percentage of building facades covered by commercial signs can influence user satisfaction with the appearance of commercial street facades. On the other hand, there is no relationship between user perception and evaluation of the number of commercial signs and user satisfaction with the appearance of commercial street facades. This chapter also shows that user perception and evaluation of the number of commercial signs can be influenced by the percentage of street facade coverage by these media. Taking into consideration the common views found between users from the different case studies, this research suggests that a general commercial signage approach to historic city centres should highlight that 9% or more of a street

facade covered by commercial signs, and 0.85 or more square metres of commercial signs per linear street metre are figures evaluated negatively by users in historic streetscapes. In addition, this general approach needs to take into account the location of commercial signs on building facades. The evidence shows that when almost all shopfronts of a street facade are located in similar zones of the facades of different buildings, user perception and evaluation of the percentage of building facades covered by commercial signs decrease (see Figure 8.1).

7. Taking into account the common views found between users from the three case studies, a general commercial signage approach to historic city centres should recommend the maximum percentage of a street facade, which can be covered by commercial signs. This recommendation can guarantee that the percentage of building facades coverage by commercial signs does not interfere with user satisfaction and user perception and evaluation of order in relation to the appearance of commercial streetscapes. The results from the focus group discussion (see Chapter Seven, section 7.3.1.1) suggest that a maximum of 3% of each historic building facade covered by commercial signs is an acceptable limit in historic city centres. The findings related to the street facades evaluated positively in terms of appearance also suggest that a maximum of 0.68 square metres of commercial signs per linear street metre is seen as a positive characteristic of commercial streetscapes.

8. A general commercial signage approach should take into account that user perception and evaluation of the number of commercial signs and the percentage of building facades covered by these media influence user perception and evaluation of buildings and commercial signs, when the appearance of commercial street facades is evaluated. The evidence presented in this chapter shows that when user perception and evaluation of the number of commercial signs and the percentage of building facades covered by these media is low, buildings and commercial signs are recognized as positive elements of commercial street facades. On the other hand, when user perception and evaluation of the number of commercial signs and the percentage of building facades covered by these media is high, commercial signs are recognized as negative elements of commercial street facades.

9. The following six scenarios are identified in this chapter as buildings harmed by

commercial signs according to the perception and evaluation of users from the different case studies:

- (i) commercial signs covering totally or partially elements of building silhouette, facade details and facade articulation;
- (ii) disconnection between building ground floor and upper floors due to the design of commercial signs and the layout of shops in the ground floor;
- (iii) posters in bright colours covering shop windows;
- (iv) commercial signs not separate enough from building facades; as a result, these media do not get people's attentions;
- (v) commercial signs painted on blank lateral walls of buildings or located on roofs of building as billboards; and
- (vi) aesthetic composition of building facades fragmented by commercial signs and/or colours.

At the same time, the findings show that the commercial street facades chosen as the best streets in terms of appearance have buildings harmed by commercial signs but these are "very few" or "few" (4% or less of the street facade), while the commercial street facades chosen as the worst streets in terms of appearance have buildings harmed by these media, and these are "very many" or "many" (46% or more of the street facade). In this regard, user perception and evaluation of buildings harmed by commercial signs needs to be decreased in order to not interfere on user satisfaction with the appearance of commercial street facades. Consequently, those six scenarios, which are recognized by users from different urban contexts as buildings harmed by signs, should be considered in a general commercial signage approach as situations that must be avoided in historic city centres.

10. The results in this chapter also suggest that the criteria adopted in this research to identify buildings harmed by commercial signs (see Chapter Two, section 2.4.1) should be taken into account in the development of a general commercial signage approach. They can be used to guide local authorities to design commercial signage controls in historic city centres. This general approach should also recommend that shopfronts and window displays be designed so as not to interfere with the aesthetic composition of historic buildings; the effect of these media on these building facades should be neutral. The findings show that, in the commercial street facades evaluated positively by users in terms of appearance, commercial signs make historic buildings "neither beautiful nor ugly".

Furthermore, this general approach needs to highlight that, when commercial signs do not harm historic buildings and their surrounding areas, historic buildings and commercial signs are recognized as positive features of commercial streetscapes by users from different urban contexts.

11. Common views are found between users from the different case studies when analysing the positive and negative physical characteristics of commercial signs and buildings that stand out in people's minds first when the appearance of commercial street facades is evaluated. In addition, the majority of users from the three case studies recognize the same buildings as the ones they like the most and like the least due to the relationship between commercial signs and building facades. In this regard, the findings of this chapter identify a set of physical characteristics of commercial signs and buildings that influences perception and evaluation of users from different urban contexts in the same way. These physical characteristics (already summarized in Table 8.41) can be taken into account by a general commercial signage approach and be used to design general guidelines to help national, regional and local authorities from different urban contexts to control commercial signage in historic city centres. In this regard, this general commercial signage approach can help to promote historic city centres being perceived and evaluated positively by users from different places.

The next chapter sets out the main conclusions and final remarks of this thesis. It summarizes the main findings obtained from Chapters Six, Seven and Eight into aspects of the operation of commercial signage controls and physical characteristics of commercial signs and buildings that need to be taken into account in the development of a general commercial signage approach applicable to historic city centres of different urban contexts.

## Chapter Nine

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### Conclusion and Final Remarks

#### MAIN STRUCTURE OF CHAPTER NINE

- 9.1 Introduction.
- 9.2 Reviewing the research problem, questions, aim and objectives.
- 9.3 Answering the research questions.
- 9.4 Theoretical and original contribution to the knowledge.
- 9.5 Evaluating the methodology and further investigations.

#### 9.1 INTRODUCTION

This chapter reviews the research problem, the research questions, the aim, and the objectives of this study. Next, it presents the final conclusions of the thesis addressing the findings discussed in Chapters Six, Seven and Eight in order to answer the research questions. At the end, this chapter highlights the theoretical and original contribution to the knowledge, evaluates the research methodology, and suggests further investigations.

#### 9.2 REVIEWING THE RESEARCH PROBLEM, QUESTIONS, AIM AND OBJECTIVES

This Ph.D. research was related to the visual pollution of historic city centres focusing on the damage caused to the visual quality of these places by shopfronts and window displays. It was found that there is a lack in the literature of any evidence which might relate the aspects of the operation of commercial signage controls and the physical characteristics of commercial streetscapes to the perception and evaluation of users from different urban contexts. The literature review in this thesis discussed many theoretical concepts, which show what users tend to prefer in terms of the aesthetic composition of building facades; the Gestalt is the best known theory related to these concepts. However, it was found that there is no scientific evidence that indicates universal views between users from different urban contexts in terms of the aesthetic compositions of commercial signs. This study showed that different commercial signage control approaches are applied in distinct places, but usually these initiatives are not based on principles derived from studies of perception and evaluation of users from different places. With regard to this context, this thesis explored the assumption that if common views between users from different urban contexts



can be found, these can be integrated with principles defined by urban design theories and applied in the development of a general commercial signage approach to historic city centres of different countries.

The research problem was defined as the lack of a general approach to guide and control commercial signs in historic city centres based on the perception and evaluation of users from different urban contexts. The Environment Behavioural research approach, which contemplates questions about user perception and evaluation of the built environment, and a multiple method survey design were adopted to solve this problem. From the research problem were derived the following research questions:

**Research Question 1:** Which aspects of the operation of commercial signage controls need to be taken into account in the development of a general commercial signage approach applied to the historic city centres of different urban contexts?

**Research Question 2:** Which physical characteristics of commercial signs and buildings need to be taken into account in the development of a general commercial signage approach applied to the historic city centres of different urban contexts?

**Research Question 3:** Are there common perceptions and evaluations between users from different urban contexts in terms of commercial signage controls and the appearance of commercial street facades in historic city centres?

The aim of this research was to identify those aspects of the operation of commercial signage controls and physical characteristics of commercial signage and buildings that need to be taken into account in the development of a general commercial signage approach. This investigation assumed that this approach could help national, regional and local authorities of different urban contexts design and implement commercial signage controls. In this regard, the research objectives for answering the research questions were defined as follows:

A. Development of a theoretical and conceptual framework by defining working concepts related to (i) visual quality and user perception and evaluation of the built environment, (ii) formal and symbolic factors that influence aesthetic judgments, and (iii) issues linked to the operation of commercial signage controls in city centres such as consumer culture, city centre management, marketing the city and urban tourism, and by reviewing current commercial signage approaches adopted in different urban contexts.

B. Investigation of what issues are involved in the operation of commercial signage controls adopted in a historic city centre of a country where a national commercial signage approach is applied to help local authorities to guide and control commercial signs, and in historic city centres of a country where there is no national commercial signage approach to help local authorities to design and apply commercial signage controls.

C. Identification of the influence of different commercial signage approaches on the streetscape of historic city centres in terms of (i) order among commercial signs and buildings, (ii) the relationship between aesthetic composition of these media and historic building facades, and (iii) general visual character of commercial street facades.

D. Analysis of user perception and evaluation of commercial signage controls in historic city centres with regard to the (i) necessity of commercial signage controls, (ii) public participation in the development of these controls, and (iii) physical aspects that need to be taken into account in these controls.

E. Evaluation of the effects that different commercial signage approaches have on historic city centres through residents' perceptions and evaluations of the (i) appearance of the historic city centre, (ii) city centre functions, (iii) city centre image, and (iv) wayfinding through commercial signs.

F. Analysis of preferences and satisfactions of users from different urban contexts in terms of (i) the appearance of commercial street facades where distinct commercial signage approaches are applied, and (ii) the physical characteristics of these streets that might influence those responses.

G. In a city where the appearance of commercial streetscapes are evaluated negatively, investigation of the perception and evaluation of residents in terms of the following issues: (i) which factors contribute to increasing visual pollution in the city centre and what can be done to reduce this problem, (ii) the relationship between commercial signage and building facades in the historic city centre, and (iii) whether residents' evaluations of commercial street facades of their city coincide with evaluations of the same streetscapes by users from other places.

H. Analysis of user perception and evaluation of commercial street facades where different

commercial signage approaches are applied in terms of (i) beauty, interest, order, colour and complexity, (ii) variation of commercial signs and buildings, (iii) number of commercial signs and percentage of building facades covered by these media, and (iv) relationship between the aesthetic composition of commercial signs and building facades.

I. From the results obtained from the above objectives, identification of which aspects involved in the operation of commercial signage controls and physical characteristics of commercial signs and buildings need to be taken into account in the development of a general commercial signage approach inapplicable to historic city centres in different urban contexts.

This research was based on the premise that the potential of historic city centres to satisfy the expectations of users from different urban contexts is influenced by (i) the way that commercial signage controls are approached by local authorities, and (ii) the presence or absence of certain physical characteristics of commercial signs and buildings. This research argued that user perception and evaluation of commercial and historic city centres can be relevant indicators of the performance of commercial signage approaches applied in these places. In this context, a multiple case study approach was adopted for the empirical investigation; three case studies were selected: the cities of Oxford (England), Gramado, and Pelotas (Brazil). The empirical results from this research were considered more potent when the findings from two or all case studies supported the same conclusions.

### 9.3 ANSWERING THE RESEARCH QUESTIONS

Having the results of the analysis presented in Chapters Six, Seven, and Eight, it is now possible to return to the research questions and summarise responses to them. Each of the research questions is taken in turn.

#### **9.3.1 Answering research question 1: aspects of the operation of commercial signage controls that need to be taken into account in the development of a general commercial signage approach**

Eight specific issues related to the operation of commercial signage controls were identified as factors that need to be taken into account in the development of a general commercial signage approach to historic city centres. These issues work as

recommendations to help national, regional, and local authorities of different urban contexts design and implement commercial signage controls. They were defined from the analysis of (i) the commercial signage control approaches adopted in the different historic city centres, and (ii) the perception and evaluation of users from the different urban contexts of the city centres of their cities (see Chapters Six and Seven).

A) Issue One – The protection of historic buildings and places and the promotion of the commercial appearance of historic city centres: this present research showed that, according to user perception and evaluation, commercial signs reinforce the commercial appearance of places even in city centres where commercial signage controls are approached to protect the historic heritage. It was demonstrated that reinforcing the commercial appearance of historic city centres is not necessarily considered a negative aspect by users from different urban contexts; this does not decrease user satisfaction with the appearance of historic city centres. The findings supported what was discussed in Chapter Three (section 3.1.1.1): users recognize that commercial signage is an important element of the contemporary streetscape, and local authorities should be able to manage the pressures between commercial interests and preservation of historic heritage in the design of commercial signage controls. In this regard, a general commercial signage approach should recommend that guidance be designed to protect the visual quality and historic character of places and, at the same time, promote the commercial image of historic city centres in a positive way.

B) Issue Two - Political context: this research showed that the implementation of a national commercial signage approach is fundamental in countries like Brazil where, each time that a new local government is elected, legislation implemented by the previous authorities are usually either modified or just forgotten. In this regard, a national approach could enforce the adoption of commercial signage controls by local governments of different political parties in a long term commitment. Every City Council would be encouraged to apply commercial signage controls in order to protect the historic character and avoid visual pollution in historic city centres. The positive examples provided by the case study of Oxford and the cities discussed in Chapter Four (Leeds, Dartmouth, Exeter, Bath, and York) demonstrated that a national commercial signage approach can help local authorities in the design and application of shopfronts and advertisement controls.

C) Issue Three - Public participation: this present research suggested that a general commercial signage approach needs to ensure local community participation in the development of commercial signage controls. The findings from this study demonstrated that users from different urban contexts and where distinct commercial signage approaches are applied would like to be consulted whilst these controls are being developed. As argued in Chapter Four (see sections 4.4.2 and 4.4.3) and verified in the empirical investigation, users who participate in the development of commercial signage regulations tend to get involved in the process of implementation of these controls, helping local authorities identify irregular signs in the city centre. In the case studies of Oxford and Gramado, for example, residents are consulted during the development of commercial signage controls, and subsequently they help the City Council to identify whether shop owners have been respecting these controls. On the other hand, in the case study of Pelotas, where the local community is not consulted during the process of the development of commercial signage controls, residents do not feel committed in the support of the control of these regulations. This research demonstrated that the dialogue between local authorities and communities is essential for the successful implementation of any commercial signage control.

D) Issue Four – Persuading shop owners to support commercial signage controls: this research showed that a general commercial signage approach should recommend three possible actions to persuade shop owners to support commercial signage controls: (i) organization of public meetings involving members of the local community, City Council officers and shop owners in order to discuss commercial signage controls, (ii) election of a mediator, who could be a link between shop owners and local authorities in order to discuss interests related to commercial activities and preservation of local character, and (iii) definition of a pilot study area in the city centre in order to test commercial signage guidelines. This last measure can help shop owners and other groups in society evaluate the improvement of the appearance of commercial streetscapes through the application of commercial signage controls on-site.

E) Issue Five - Guidelines described in objective terms: according to the findings of this research, a general commercial signage approach should recommend that commercial signage guidelines regulate physical characteristics of signs through objective terms such as “size”, “proportion” and “colour”. Subjective expressions, such as “harmonious shopfronts” and “signs should be adequate for building facades”, should not form part of

commercial signage controls. The use of these kinds of subjective expressions becomes ambiguous regulations because signs perceived as “harmonious” by some users can be perceived as “not harmonious” by others. In the case study of Pelotas, for example, the definition of what is an adequate shopfront in the central area depends on the individual interpretation of each planning officer because of subjective expressions applied in the current commercial signage guidelines. This problem was also found in commercial signage controls applied in some American cities (see Chapter Two, section 2.3.3).

F) Issue Six - Planning applications to install new signs: this research suggested that shop owners should have to obtain the permission of local authorities to install any new commercial signs in historic city centres, so that the City Council can analyse whether these new media are appropriate for the historic context. According to this thesis, a general commercial signage approach could recommend that physical aspects of new commercial signs such as size, shape, proportion, colour, fonts of texts, materials, relationship with surrounding areas and between signage and building form, be described and illustrated on planning applications. This recommendation is already implemented by the local authorities of the case studies of Oxford and Gramado. However, in Pelotas this is usually not required by the City Council. As a result, the findings from the empirical investigation showed that the visual pollution of the historic city centre of Pelotas is an increasing problem.

G) Issue Seven - Commercial signage approaches working together with marketing the city and urban tourism strategies: according to this research, a general commercial signage approach should recommend that commercial signage controls promote the image of the historic city centre that residents desire to see, and help shop owners understand what will work to reinforce this image in terms of commercial signage design. This image should also be reinforced by the local authority through marketing the city and urban tourism strategies. The empirical investigation showed that in the case study of Oxford, for example, commercial signage controls and marketing the city and urban tourism strategies are approached together to promote the city as a historic centre and a tourist destination attracting visitors, potential residents, and investors. This kind of approach was also identified in Rio de Janeiro, Sao Paulo, Sao Luiz, and Salvador in Brazil (see Chapter Four, section 4.4.3). Furthermore, as discussed in Chapter Three (see section 3.2.1), this research highlighted that marketing the city and urban tourism strategies can influence the

design and control of commercial signage with particular focus on the preservation of historic heritage. As found in this research, historic buildings strongly influence resident satisfaction with the appearance of historic city centres in different urban contexts. In this regard, this investigation suggested that the image promoted by marketing the city and urban tourism strategies in historic city centres should emphasize the historic appearance of these centres, and not just their commercial functions.

H) Issue Eight - Local guidance document describing how commercial signs need to be designed: this research suggested that a general commercial signage approach should recommend that each historic city has a local guidance document that explains how commercial signs can be designed to preserve the visual quality and historic character of the place. This guide should be designed by the local authority with the involvement of the local community, civic societies, and private sectors. This initiative could help shop owners to understand how to design commercial signs in accordance with local legislation. In this guide, illustrations showing how a street facade in the city centre would look after the implementation of commercial signage controls can be used as a tool to convince shop owners to support regulations related to shopfronts and window displays.

The results of this thesis also suggested five main issues related to the operation of commercial signage controls, which need to be taken into account in the development of a general commercial signage approach. These were based on user perception and evaluation of commercial signage controls and city centre appearance, and are as follows:

1. This research suggested that a general approach to control commercial signage needs to take into account that users from different urban contexts, where different commercial signage controls are applied, agree that commercial signage controls are necessary in historic cities, they would like to participate in the development of these controls, and they believe that the appearance of buildings and commercial signs, historic buildings and places and number of commercial signs are relevant elements in the design of these controls. The findings also showed that user urban context influences perception and evaluation of the factors that should be considered in the development of commercial signage controls (see Chapter Six, section 6.3.2). In this regard, it was demonstrated that a general commercial signage approach needs to recommend local authorities to investigate which physical aspects of commercial streetscapes should be taken into account in the

development of local commercial signage controls according to residents' perceptions and evaluations of their city.

2. This research suggested that a general approach to control commercial signage needs to take into account that the way commercial signage controls are designed can influence how residents perceive and evaluate (i) city centre appearance, (ii) city centre functions, (iii) city centre image, and (iv) wayfinding through commercial signs. The results of this investigation suggested that the application of commercial signage controls improve the appearance of city centres; the satisfaction of users from different urban contexts with the appearance of city centres is higher where commercial signage controls are effective, the streetscape is ordered, and buildings are not harmed by commercial signs. As discussed in Chapter Two (see section 2.2) and showed by the findings from the empirical investigation, one way to increase satisfaction of users from different urban contexts with the appearance of historic city centres is to promote order among commercial signs. The results also demonstrated that commercial signs are important features in historic city centres helping users to navigate through the centre in ordered places more than in disordered places.

This research demonstrated that historic city centres are recognized by users as places of leisure, even when visual pollution is a problem. The results suggested that this happens because historic city centres have concentrations of activities, which in general cannot be found in other areas of the city. This fact reinforces the importance of the social and economic role of city centres and the potential of these places to become pleasant leisure centres according to perception and evaluation of residents. As made clear by Chapter Four (see section 4.4), users prefer to go to places seen as positive in terms of appearance. In this regard, this research highlighted that a general commercial signage approach can contribute to the control of commercial signs and the promotion of city centres, already recognized as places of leisure, as areas evaluated positively in terms of appearance by users from different urban contexts.

This research also suggested that the way in which commercial signage controls, and marketing the city and urban tourism strategies are approached influence how residents sum up city centre images. For example, Oxford city centre, where commercial signage controls protect the historic character of the city centre and the City Council is involved in



promoting this area as a historic and tourist place, is recognized by users as a historic and tourist centre. At the same time, Gramado city centre, where commercial signage controls ignore the importance of historic buildings and the City Council is involved in promoting the city as the “Brazilian Switzerland”, is not recognized by users as a historic centre. According to residents, Gramado city centre is a commercial and tourist area.

However, the findings from the empirical investigation showed that when the appearance of Gramado city centre is evaluated, historic buildings and places do influence user satisfaction. In this case, the commercial signage approach and the marketing the city and urban tourism strategies adopted in this city should consider these aspects, as they influence resident satisfaction (see Chapter Six, section 6.4.3). In this regard, this research also suggested that a general commercial signage approach needs to emphasize the importance of protecting historic buildings and places in order to avoid the visual quality and character of historic city centres being associated with images which simply reflect commercial and tourist interests.

3. Findings from the empirical investigation suggested that the application of effective commercial signage controls make commercial signs be perceived and evaluated by residents as positive elements in historic city centres. The results also showed that effective commercial signage controls can increase user satisfaction with the appearance of historic city centres, and make the appearance of buildings, and historic buildings and places be evaluated as positive elements in these places. In addition, the research demonstrated that aesthetic controls related to the appearance and number of commercial signs can contribute to certain buildings and commercial signs becoming points of visual reference in historic city centres, helping wayfinding and making these centres attractive places (see Chapter Six, section 6.4.3). In this regard, this research suggested that a general commercial signage approach should recommend the design and implementation of commercial signage controls in historic city centres in order to (i) increase user satisfaction with the appearance of commercial signs and commercial streetscapes as a whole, and (ii) promote certain buildings and commercial sign as visual points of reference for users.

4. Results from the empirical investigation demonstrated that (i) user familiarity with streetscapes, (ii) symbolic meanings attributed to buildings by users, and (iii) user urban context influence user perception and evaluation of the appearance of commercial

streetscapes (see Chapter Seven, section 7.4). In this regard, this research suggested that identification of how residents perceive and evaluate commercial streets in terms of the influence of these three non-physical variables on their responses should be the first analysis recommended in a general approach to the development of local commercial signage controls by local authorities in historic cities.

5. Finally, this research identified five factors that can increase visual pollution in historic city centres (see Table 7.24 in Chapter Seven). These factors can be used in the operation of a general commercial signage approach as negative scenarios that should be avoided by local authorities in different urban contexts. The findings also suggested eight possible proposed actions that can improve the appearance of historic city centres, according to the perception and evaluation of users from a city where visual pollution is an increasing problem (see Table 7.24). These actions can be addressed into a general commercial signage approach as strategies to reduce visual pollution in historic city centres of different urban contexts already affected by this problem. Some of these measures can help to convince shop owners and the local community to support the implementation of commercial signage controls.

### **9.3.2 Answering research question 2: physical characteristics of commercial signs and buildings that need to be taken into account in the development of a general commercial signage approach**

The findings from this research identified twelve main issues related to physical characteristics of commercial signs and buildings, which need to be taken into account in the development of a general commercial signage approach applicable to historic city centres. These were based on the common views found between users from the different urban contexts, and are as follows:

1. Order among commercial signs and preservation of historic buildings are fundamental requisites in order to have commercial streetscapes, in historic cities, that are perceived and evaluated positively by users from different urban contexts. This research showed that people from different urban contexts evaluate negatively street facades where commercial signage controls are ineffective and the streetscape is disordered and characterized by historic buildings harmed by shopfronts and window displays. On the other hand, users from different urban contexts evaluate positively commercial street facades where

commercial signage controls are applied in order to preserve the historic character of the place and the streetscape is ordered and characterized by preserved historic buildings (see Chapter Seven, section 7.2.5).

2. A comparison between the results from the analysis of user perception and evaluation of commercial street facades and the physical characteristics of these streets suggested that: a general approach to control commercial signage needs to take into account that the amount of street facade covered by commercial signs, the square metres of commercial signs per linear street metre, and the order among commercial signs can influence user perception and evaluation of commercial streetscapes. This research showed that a small amount of street facade covered by commercial signs ( $\leq 5.62\%$  of the street facade), 0.68 or less square metres of commercial signs per linear street metre, and ordered commercial signs are physical characteristics of the street facades evaluated positively by users from different urban contexts. At the same time, a large amount of street facade covered by commercial signs ( $\geq 9.11\%$  of the street facade), 0.85 or more square metres of commercial signs per linear street metre, and disordered commercial signs are physical characteristics of the street facades evaluated negatively by users from different urban contexts (see Chapter Seven, section 7.2.5).

3. This research identified a series of physical characteristics of commercial streetscapes that influence the perception and evaluation of users from the different case studies in the same way (see Chapter Seven, section 7.4). These physical characteristics can be used by a general commercial signage approach in order to promote commercial streetscapes that are evaluated positively by users from different urban contexts.

a. Visual pollution decreases user satisfaction more when associated with a (i) high variation of commercial signs and buildings, (ii) high percentage of street facade covered by commercial signs ( $\geq 9.11\%$  of the street facade), (iii) high percentage of buildings harmed by these media ( $\geq 33\%$  of buildings or  $46\%$  of a street facade), and (iv) high square metre of commercial signs per linear street metre ( $\geq 0.85 \text{ m}^2$  of signs per street metre).

b. Users who prefer commercial street facades characterized by preserved historic buildings do not sympathize with commercial street facades characterized by contemporary buildings and commercial signs designed to create a manufactured

- character of a place. In this regard, in historic city centres, commercial signage control approaches which promote fake historic architecture or historical theme urban sites need to be avoided. In addition, commercial streetscapes characterized by disordered commercial signs, low variation of commercial signs and buildings, and historic buildings harmed by these media should also be avoided in historic cities; according to users from different urban contexts, these streetscapes are evaluated as being worse than commercial streets characterized by fake historic architecture.
- c. Commercial streetscapes characterized by a mix of historic and ordinary buildings influence the perception and evaluation of users in a positive way, mainly when ordinary buildings are designed with regard to the features of the historic buildings, such as height and proportion of windows and doors.
  - d. A combination of a high percentage of street facade covered by commercial signs ( $\geq 9.11\%$  of the street facade) and a high percentage of buildings harmed by these media ( $\geq 33\%$  of buildings or  $46\%$  of a street facade) is perceived as less negative than a combination of a high value of square metres of commercial signs per linear street metre ( $\geq 0.85\text{m}^2$  of signs per linear street metre) and a high variation of buildings and commercial signs. This result reinforces the importance of defining a maximum limit of square metre value of commercial signs per linear street metre, and the necessity to apply controls related to the variation of commercial signs and buildings in historic city centres.
  - e. Physical features related to the visual character of commercial street facades, such as building style, roof line, presence of vegetation and spaces between buildings, can influence user perception and evaluation of commercial streetscapes. In this regard, a general commercial signage approach should recommend that before local authorities begin to design commercial signage regulations, they need to evaluate the influence of the actual visual character of commercial streetscapes on user perception and evaluation.
  - f. Commercial streetscapes mainly characterized by historic buildings influence positively user perception and evaluation, even when visual pollution is evident. In this regard, the preservation of these buildings is one of the most important issues that should be considered in the development of commercial signage controls.
4. This research showed that a general commercial signage approach needs to take into

account the appearance of buildings and commercial signs, the historic buildings, and the number of commercial signs as relevant aspects that influence user perception and evaluation of commercial streetscapes. This thesis also demonstrated that user urban context influences the importance attributed by users to some of those aspects. For example, the presence of historic buildings is more important for users from Oxford, where the streetscape is characterized by preserved historic buildings, while the number of commercial signs is more important for users from Brazil, where the majority of historic city centres are harmed by an excessive number of commercial signs. In this regard, this research suggested that a general approach to control commercial signage in historic city centres should clarify that, for each particular urban context, specific aspects need to be given more attention in order to optimize residents' perception needs. This general approach should recommend local authorities to investigate which physical characteristics of commercial streetscapes most influence the perception and evaluation of residents. Having this knowledge as a starting point, these authorities can manage these features to reinforce the visual quality and character of places (see Chapter Six, section 6.3.2).

5. The physical characteristics of commercial signs and buildings presented in Chapter Eight (see Table 8.41) can be used in a general commercial signage approach as guidelines to help national, regional and local authorities from different urban contexts to design local commercial signage controls. These guidelines can help to promote historic city centres be perceived and evaluated positively by users from different urban contexts.

6. The results of this research, supported by the literature review (see Chapter Two), showed that streetscapes where commercial signage controls are ineffective are evaluated as ugly, boring, and disordered by users from the different urban contexts. On the other hand, streetscapes where commercial signage controls are effective are evaluated as beautiful, interesting, and ordered by users from the different urban contexts (see Chapter Eight, section 8.2.6). These findings demonstrated that the development and application of a general commercial signage approach to historic city centres can help to increase user perception and evaluation of beauty, interest, and order in relation to the appearance of commercial streetscapes in different urban sites.

In terms of user perception and evaluation of colour variation and complexity, this research showed that there are no standard views: commercial street facades evaluated positively

and negatively in terms of appearance can be perceived as having high or low colour variation and complexity. The findings also demonstrated that high colour variation and complexity are recognized as negative features of commercial streetscapes when commercial signage is disordered (see Chapter Eight, section 8.2.6). Moreover, this research suggested that a general commercial signage approach needs to take into account that the level of colour variation and complexity should be controlled according to the physical characteristics of each particular place. This control will help to preserve the visual quality and historic character of city centres, and promote interesting and ordered streetscapes. This thesis also demonstrated that a general commercial signage approach should take into account that users from different urban contexts tend to perceive similarity as simplicity in terms of commercial streetscapes. Streetscapes comprised of buildings similar in visual character and architectural style tend to be evaluated as not complex, even when the variation of physical characteristics of their buildings is high. In this regard, when the level of commercial signage and building variation of street facades is analysed, a general commercial signage approach needs to clarify this issue for local authorities.

7. This research demonstrated that a general commercial signage approach applicable to historic city centres should recommend a chromatic analysis of commercial street facades. Assuming that colour can be used to strengthen the image of historic places by giving emphasis to features such as landmarks, this approach can suggest that, before the design of commercial signage controls, local authorities need to analyse the colour variation of commercial streetscapes and investigate whether users are satisfied with this. This approach needs to also point out that users from different urban contexts can have distinct tolerances to colour variation. People who live in cities where high colour variation is predominant in the streetscape tend to be less sensitive to certain chromatic combinations. For example, in a street facade the combination of blue-purple hues in cold and light colours, green-yellow hues in cold and medium colours, brown-red hues in hot and light colours and monochromatic harmony tend to increase the perception and evaluation of colour variation of users from Oxford case study more than of users from the Brazilian case studies (see Chapter Eight, section 8.2.4).

This thesis identified that different chromatic combinations (taking commercial signs and buildings as a group) have distinct influences on user perception and evaluation of commercial streetscapes. According to the perception and evaluation of users from the

different case studies, this research showed that (i) brown-red hues in hot and light colours and monochromatic harmony or harmony by light-dark contrast tend to decrease colour variation, while (ii) yellow-orange hues in hot and medium colours and harmony by light-dark contrast tend to increase colour variation. The results from this study also showed that brown-red hues in hot and light colours and harmony by contrast can divide users between those who perceive a more colourful or colourless streetscape. In this regard, certain chromatic combinations should be encouraged in city centres if the aim of the local authority is to increase the colour variation of these places.

8. This research suggested that the level of variation of commercial signs and buildings should be taken into account in the development of a general commercial signage approach to historic city centres. The findings from the empirical investigation demonstrated that by decreasing commercial signage variation, user satisfaction with the appearance of commercial street facades and user perception and evaluation of beauty, interest, and order increase. At the same time, variation of commercial signs and buildings should be taken into account in a general commercial signage approach as a group as there is a relationship between user perception and evaluation of these variables, where the higher the user perception and evaluation of commercial signage variation, the higher the user perception and evaluation of building variation.

This research also showed that user perception and evaluation of commercial signage variation can increase with the high variation of one or more of the following aspects of signs: size, arrangement in relation to facades, location on facades, presence of images, size of letters and images in relation to size of sign background, lettering size, and number of chromatic groups. In addition, user perception and evaluation of building variation can increase with the high variation of one or more of the following aspects of buildings: number of turns in silhouette perimeter, width of buildings, facade details, fenestration on facades, overall proportion of windows and doors, presence of horizontal or vertical partitions on facades, and colour (see Chapter Eight, section 8.2.6). As these physical characteristics seem to influence user perception and evaluation of commercial signage and building variation more than others, this research suggested that they need to be highlighted in a general commercial signage approach in order to control commercial signage and building variation with regard to views of users from different urban contexts.

9. The method applied in this research to calculate complexity of commercial streetscapes by analysing the variation of commercial signs and buildings (see Chapter Five, section 5.3.3.2) produced results which, in general, converged with user perception and evaluation of complexity when the commercial street facades were evaluated (see Chapter Eight, section 8.2.5). This research suggested that this method can be integrated into a general commercial signage approach in order to monitor levels of complexity of commercial street facades in historic city centres. The results from the application of this method can help to identify whether new commercial signs or buildings will increase the complexity of a street facade too much, before the new signs or buildings are displayed or built in a historic city centre. For example, if the results from this method suggest that the complexity of a commercial street facade will increase too much with the insertion of a new commercial sign, the local authority will have strong justification to ask the shop owner to re-design the sign. The application of this method can contribute to (i) preserve the historic heritage of historic city centres, and (ii) increase user satisfaction with these places.

10. Findings of this study showed that user perception and evaluation of the percentage of building facades covered by commercial signage influence user satisfaction with the appearance of commercial street facades. According to the common views found between users from the different urban contexts, a general commercial signage approach to historic city centres should recommend the maximum percentage of building facades, which can be covered by commercial signs. This recommendation can guarantee that the percentage of building facades coverage by these media does not interfere with user satisfaction with the appearance of commercial streetscapes. Taking into account the results from the focus group discussion (see Chapter Seven, section 7.3.1.1), a maximum of 3% of each building facade covered by commercial signs can be taken as an acceptable limit for historic city centres. This research also suggested that this general approach needs to control the coverage of building facades by commercial signs in order to increase user evaluation of beauty and order in historic city centres.

Moreover, the evidence showed that, in a street facade when almost all shopfronts are located in similar zones of the facades of different building, user perception and evaluation of the percentage of building facades covered by commercial signs decrease (see Chapter Eight, section 8.4.1). In this regard, this research suggested that a general commercial



signage approach to historic city centres needs to take into account the location of commercial signs on building facades.

This research also showed that a general commercial signage approach needs to take into account that user perception and evaluation of the number of commercial signs and the percentage of building facades covered by these media influence user perception and evaluation of buildings and commercial signs in commercial street facades. For example, when user perception and evaluation of the number of commercial signs and the percentage of building facades covered by these media is low, buildings and commercial signs are evaluated as positive features of commercial streetscapes. On the other hand, when user perception and evaluation of the number of commercial signs and the percentage of building facades covered by these media is high, commercial signs are evaluated as negative features of commercial streetscapes (see Chapter Eight, section 8.4.1.3).

11. This research identified six relationships between commercial signs and buildings recognized by users from different urban contexts as “buildings harmed by these media”: (i) commercial signs covering totally or partially elements of building silhouette, facade details, and/or facade articulation, (ii) disconnection between the building ground floor and upper floors due to design of commercial signs and layout of shops in the ground floor, (iii) posters in bright colours covering shop windows, (iv) shopfronts not separated enough from building facades, so they do not get people’s attention, (v) commercial signs painted on blank lateral walls of buildings, and (vi) aesthetic composition of building facades fragmented by commercial signs and/or colours (see Chapter Eight, section 8.5). At the same time, the findings of this research showed that the commercial street facades chosen as the best streets in terms of appearance can have buildings harmed by commercial signs but these are “very few” or “few”, while the commercial street facades chosen as the worst streets in terms of appearance have buildings harmed by these media and these are “very many” or “many”. This research suggested that user perception and evaluation of buildings harmed by commercial signs need be decreased in order to not affect user satisfaction with the appearance of commercial street facades. Consequently, those six situations recognized by users from different urban contexts as “buildings harmed by signs” can be integrated into a general commercial signage approach as scenarios that must be avoided in historic city centres.

12. This research demonstrated that in commercial street facades evaluated positively in terms of appearance, commercial signs make historic buildings “neither beautiful nor ugly”, while in commercial street facades evaluated negatively in terms of appearance, commercial signs make historic buildings “very ugly” or “ugly”. In addition, it was found that users from the different case studies and countries perceive and evaluate as negative the influence of commercial signs on historic buildings previously recognized as harmed by this research (see Table 5.7.3 in Appendix 5.7). In this regard, the criteria adopted in this research to identify buildings harmed by commercial signs (see Chapter Two, section 2.4.1) can be used in a general commercial signage approach as a guide to help local authorities in the design of commercial signage controls. This approach should also recommend that shopfronts and window displays need to be designed not to interfere with the aesthetic composition of historic buildings; the effect of these media on these buildings should be neutral. Furthermore, this general approach needs to highlight that when commercial signs do not harm historic buildings and their surrounding areas, buildings and commercial signs are recognized as positive features of commercial streetscapes by users from different urban contexts (see Chapter Eight, section 8.5.5).

### **9.3.3 Answering research question 3: common perceptions and evaluations between users from different urban contexts in terms of commercial signage controls and the appearance of commercial street facades**

Common perceptions and evaluations were found between users from the different urban contexts in terms of commercial signage controls, city centre appearance, city centre functions, city centre image, wayfinding through commercial signs, and appearance of commercial street facades. The results, discussed in sections 9.3.1 and 9.3.2, are based on the common views found between users from the different case studies. This research suggested that these views can be applied to develop a general theory to control commercial signage in historic city centres of different urban contexts. Taking this subject and the evidence presented in Chapters Six, Seven and Eight, the main findings of this research can be highlighted in four items:

1. Users from the case studies where commercial signs are ordered and do not harm building facades (Oxford and Gramado) and residents in Pelotas case study, where commercial signs are disordered and harm historic buildings, share the same perception and evaluation in terms of the appearance of the commercial street facades located in

Pelotas; these street facades are perceived and evaluated negatively by them (see Chapter Seven, section 7.3.1). This fact supports the idea that universal views between users from different urban contexts can exist in terms of perception and evaluation of the appearance of commercial streetscapes. In this regard, this research suggested that the development of a general commercial signage approach, which helps national, regional and local authorities of different urban contexts design and implement commercial signage controls, is an essential initiative that should be integrated into principles defined by urban design theories.

2. When the appearance of commercial street facades was evaluated, common views were found between users from the different urban contexts in terms of the positive and negative physical characteristics of commercial signs and buildings mentioned by them. This research also showed that the majority of users from the three case studies indicated the same buildings as the one they like the most and the one they like the least due to the relationship between commercial signs and building facades. The factors related to these common views, which are summarized in Chapter Eight (see Table 8.41), can be considered as probable guidelines in a general commercial signage approach to help the development of local commercial signage controls.

3. When the appearance of commercial street facades was evaluated, this research found common perceptions and evaluations between lay people and professionals from different urban contexts. At the same time, this research showed that a manufactured street character promoted by contemporary buildings and commercial signs tends to be more popular with lay people than with professionals. These latter users tend to prefer street facades characterized by historic buildings, even when these buildings are harmed by commercial signs (see Chapter Seven, section 7.2.5).

4. As mentioned in section 9.3.1 (item 4), the findings from this thesis also confirmed that some users, when evaluating the appearance of commercial streetscapes, tend to be influenced by three non-physical variables: (i) user familiarity with streetscape, (ii) symbolic meanings attributed to buildings by users, and (iii) user urban context (see Chapter Eight, section 8.2.6). The influence of these aspects on user responses were mainly noted when residents evaluated the commercial street facades of their city. This research suggested that these variables should be taken into account by the local authority in the

development of commercial signage controls. In addition, it was found that people who live in different places can have different levels of tolerance to variation of physical characteristics of commercial signs and buildings (see Chapter Eight, section 8.3.3). In this sense, a general commercial signage approach to historic city centres should recommend that local regulations related to the control of commercial signage and building variation needs to take into account residents' perceptions and evaluations. Having identified, for example, the most appropriate level of commercial signage and building variation according to residents' perceptions and evaluations, local authorities are well placed to design commercial signage controls.

To conclude, the findings of this research confirmed the following general assumption: while some visual preferences in the built environment may be influenced by the user's urban context, others (universals) may be common to the majority of people from different countries and may be useful in defining general principles that guide preference and satisfaction (see discussion in Chapter Two, section 2.3.4).

#### 9.4 THEORETICAL AND ORIGINAL CONTRIBUTION TO THE KNOWLEDGE

The importance of this Ph.D. research was justified in its concern with the issue of the control commercial signs in historic city centres of different countries in order to create commercial streetscapes that are perceived and evaluated positively by users from different backgrounds. The search for common views between users from different urban contexts in terms of perception and evaluation of commercial signage controls, historic city centres, and commercial street facades, helped to identify factors that should be taken into account in the control of these media. These factors, discussed in the above sections, form the theoretical background to the development of a general commercial signage approach, which can help national, regional, and local authorities design and implement commercial signage controls in historic city centres. The idea of a general commercial signage approach for different urban contexts did not ignore the fact that each place has its own particularities. This research assumed that the role of this approach is to recommend (i) general guidelines related to the operation of commercial signage controls, and (ii) design principles of commercial signs and buildings that create commercial streetscapes evaluated positively by different users. In this regard, the research findings can help in the combat of visual pollution caused by shopfronts and window displays in historic city centres already

damaged by this problem, and in the prevention of this issue in historic city centres in the future

This thesis provided evidence for further theoretical discussions in the Environment Behavioural research field. The findings demonstrated that some visual preferences, related to commercial streetscapes, were based on the process of user perception (perceptual constancy) more than on the process of user cognition. This is because standard judgments related to the appearance of commercial streetscapes were found between users from different urban contexts and backgrounds. In this regard, this research has begun to fill the gap in the literature of what relates the operation of commercial signage controls and the physical characteristics of commercial streetscapes to the perception and evaluation of users from different urban contexts. This study has found that there are universal perceptions among users from different cities, countries, and user groups (lay people and professionals) in relation to the aesthetic composition of commercial streetscapes. Very few studies of user preference and satisfaction in relation to the appearance of commercial streetscapes have been conducted by researchers, with the exception of Nasar (1988) and Nasar and Hong (1999); but these works are based on individual case studies. The theoretical and original contribution to knowledge of this Ph.D. research lies in its combination of research methods and techniques of data collection and analysis (see Chapter Five) used to answer the research questions through an empirical investigation carried out in three case studies located in two different countries.

The results from this thesis also showed that some visual preferences are more related to the process of user cognition. Some user responses in relation to commercial streetscapes were influenced by (i) professional background, (ii) resident familiarity with particular streetscapes, (iii) symbolic meaning attributed to buildings by residents, and (iv) user urban contexts. In this sense, this research suggested that these four non-physical variables cannot be ignored in the design of commercial signage controls. These variables need to be accommodated in any design process in order to create successful urban spaces based on user evaluation. These findings support what was discussed in Chapter Two (see section 2.3.4).

In terms of colour variation, this research developed a method to analyse and classify colours of commercial signs; colours of letters and sign backgrounds were grouped into

categories according to their hues, saturation, and temperature (see Appendix 5.7, section 5.7.2.1). Similar approach was already applied by other researchers when analysing building facades (such as by Michael Albert-Vanel and Jean-Philippe Lenclos) but this thesis is the first piece of scientific work where this kind of approach is used in the study of the colour of shopfronts and window displays. The chromatic contrast between letters and sign backgrounds was also analysed through the identification of four different levels of contrast. It is hoped that the theoretical concepts and methods developed and applied in this thesis to analyse the effects of colour on user perception and evaluation of commercial streetscapes (see Chapter Two, section B5) can help further research in the topic of visual pollution caused by commercial signs in historic city centres.

## 9.5 EVALUATING THE METHODOLOGY AND FURTHER INVESTIGATIONS

The adoption of a multiple method survey design which combined different sorts of methods showed itself to be useful in providing data to answer the research questions. The ambition of this study was not to find the single best method to answer the research questions, but to identify an appropriate combination of methods and techniques of gathering appropriate data. The combination of documentation review and archival records, systematic observation of physical characteristics of commercial street facades on-site and through photographs, questionnaires, interviews, and focus group proved to be more than adequate to explore (i) how the operation of commercial signage controls is approached in different cities and countries, and (ii) the perception and evaluation of users from different urban contexts in terms of commercial signage controls, historic city centres, and commercial streetscapes.

In addition, the adoption of a multiple case study approach was fundamental in providing sufficient data to answer the research questions. The choice of developing the empirical investigation in two different countries also allowed for a better understanding of the application of techniques to get people involved in surveys. Depending on the urban and cultural context in which potential users live, some techniques will be more successful than others. For example, in the English context, letters, e-mails, and posters displayed in public areas were sufficient to get volunteers to answer the research questionnaires. On the other hand, these techniques did not work in Brazil. In the Brazilian context, people are more likely to participate in surveys if these are promoted by the local media (newspapers and/or

broadcast TV). Only after articles were published in local newspapers explaining the aim of this Ph.D. study, did volunteers contact the researcher to answer the questionnaires. So, it proved to be worthwhile to conduct a pilot study to search for the most appropriate techniques to get people involved in surveys before undertaking the fieldwork. Clearly, this can save money and time.

Taking into account the focus group discussion carried out in the case study of Pelotas, the number of participants (22 users) exceeds the maximum limit recommended by the literature (see Coolican, 2004; Bryman, 2004; Sommer & Sommer, 2002; Morgan & Krueger, 1998). This was the result of the technique applied to get people involved in this event; as discussed in Chapter Five, articles were published in local newspapers inviting residents to participate. For the purpose of this research, the sample size did not cause any problems as all the objectives of the focus group were achieved (see Chapter Seven, section 7.3). However, if the research was carried out again, one possible option would be the division of the participants into two or three smaller groups.

Moreover, as one of the purposes of this research was to identify common views between users who live in different cities and not between users from different nationalities, the sample criteria did not take into account nationality as a variable that could exclude or include users in the sample. As a result, people from 21 different nationalities answered questionnaire type B in England. Responses of these users just helped to support the assumption that universal perceptions in terms of the appearance of commercial streetscapes exist between people from different backgrounds. However, in a future investigation which may focus in identifying differences between views of users from different nationalities, a maximum limit for the number of nationalities could be integrated into the sample criteria.

Evaluating the perceptual/cognitive scales applied in the research questionnaires, the findings of this study demonstrated that there is no significant difference between user responses to the following pair of answers: “chaotic and very chaotic”; “colourless and very colourless”; and “simple and very simple”. In this regard, this research suggests that in future studies a pilot study should be advised to investigate the correct gradient of words to be used in the following perceptual/cognitive five point scales: ordered-chaotic; colourful-colourless; and complex-simple.

A possible future stage of research in the topic of “visual pollution caused by shopfronts and window displays in historic city centres” might be the application of this research methodology to other case studies and countries in order to test whether the same universal perceptions and evaluations found here can be verified. So, if the findings of this Ph.D. thesis can be found consistently between users from other urban contexts, then urban design principles that incorporate user perception and evaluation of (i) commercial signage controls, (ii) historic city centres, and (iii) appearance of historic and commercial streetscapes can be addressed as theoretical concepts to combat visual pollution in historic cities around the world. In terms of practical recommendations which can help local authorities design commercial signage controls, this research suggests that questionnaires, interviews, and focus group discussions are useful methods to explore residents’ perceptions and evaluations. These methods should be applied before the design of commercial signage controls begin, and the findings from these should be used as a theoretical background to the development of commercial signage guidelines.

In addition, taking into account the investigation of user preference and satisfaction with the appearance of historic and commercial streetscapes, a further stage of the research methodology could be the non-selection of residents in the cities where the streets are located. This could allow the exploration of user preferences and satisfactions without the influence of resident familiarity with particular streetscapes and symbolic meanings attributed to buildings. These non-physical variables proved to have an influence on the responses of some users in this research.

Further investigation into the subject of visual pollution could also be conducted in order to explore how commercial signage controls might be developed in city centres where the historic component is not a dominant issue. Application of the same methodology used in this thesis in places where the visual character of commercial streetscapes is mainly carried or deliberately constructed through commercial signage, such as in Las Vegas, Times Square in New York, and Hong Kong, might produce different results from the ones verified here. In these cases, the signage itself constitutes the architecture, and therefore very different issues related to the operation of commercial signage controls might be taken into account in such places than have been the focus of this research.