Urban Sustainability: Q Method Application to Five Cities of the Azorean Islands

Sustentabilidade Urbana: Aplicação da Metodologia Q em Cinco Cidades do Arquipélago dos Açores

Ana Fuentes Sánchez

anuska1583@hotmail.com

Centre for Ecology, Evolution and Environmental Changes (cE3c)/Azorean Biodiversity Group (ABG), MSc. in Management and Conservation of Nature. University of the Azores

Tomaz Ponce Dentinho

tomaz.lc.dentinho@uac.pt

CEEAplA - Centro de Estudos de Economia Aplicada do Atlântico and the University of the Azores, Lecturer at the University of the Azores

Ana Moura Arroz

ana.mm.arroz@uac.pt

Centre for Ecology, Evolution and Environmental Changes (cE3c)/Azorean Biodiversity Group (ABG) and the University of the Azores, Lecturer at the University of the Azores

Rosalina Gabriel

rosalina.ma.gabriel@uac.pt

Centre for Ecology, Evolution and Environmental Changes (cE3c)/Azorean Biodiversity Group (ABG) and the University of the Azores, Lecturer at the University of the Azores

Abstract/ Resumo

Are perspectives on urban sustainability forged by global context or influenced by local contexts or by personal features? To respond to this question the Q method approach is used to identify the main perspectives of urban sustainability in five Azorean cities and compare them with the local context. Results show that: a) urban contexts, rather than personal features, exert a strong influence on the sustainable perspectives of the stakeholders; b) positive perspectives on sustainable development are always assumed by respective municipal employees; and c) social worries are often more relevant than environmental problems. Summing up, even for global problems, such as urban sustainability, people's awareness is strongly influenced by local context and by issues that can be addressed locally reinforcing the concept of place-based policies having a say.

Será a sustentabilidade urbana forjada pelo contexto global ou mais influenciada pelos contextos locais ou por características pessoais? Recorreu-se à metodologia Q para identificar as principais perspectivas de sustentabilidade urbana em cinco cidades açorianas. Os resultados mostram que: a) são os contextos urbanos, e não as características pessoais, a exercer maior influência nas perspectivas dos stakeholders; b) os funcionários municipais dos respectivos municípios assumem sempre as perspetivas mais positivas; por fim c) as preocupações sociais são mais prevalecentes que os problemas ambientais. Resumindo, mesmo para problemas globais, como a sustentabilidade urbana, a consciência pública é fortemente influenciada pelo contexto local e por questões que podem ser geridas localmente reforçando a ideia de que

são necessárias políticas específicas para cada sítio.

1. INTRODUCTION

Global sustainability issues, such as global warming, migration, urbanization, biodiversity loss and others (UN, 2012, 2016), are repeatedly referred to in the literature as global challenges for environmental sustainability of large cities (e.g. Kennedy et al., 2015; Liu et al., 2015; Fuertes Eugenio & Gatica, 2008). Nevertheless, small and medium size cities, although existing in larger numbers, receive comparatively less attention, and there is a risk that their inhabitants and leaders are losing sight of the issues at stake. The question is whether sustainable development topics are forged by the global context, as often is seen in literature, or, otherwise, if the worries of urban sustainability are more influenced and framed by local contexts. This paper addresses these questions by analysing different perspectives on urban sustainability supported by the inhabitants of five cities of the Azores, a remote archipelago located in the middle of North Atlantic, thus providing information to place-based policies (Neumark & Simpson, 2015) focused on the agenda for smarter sustainable cities (Batty, 2013).

Environmental, economic and social changes can have major impacts on small remote islands, which justifies the urgency to look at sustainable development issues in those places. On one hand, archipelagos and small islands are seen as extremely vulnerable to global change while on the other hand, these territories also share specificities that provide the potential to identify local specificities of resilience and sustainability (see discussion in Philpot, Gray & Stead, 2015). Either way, there are always opportunities to implement new measures or development strategies (Costa et al., 2006) and the knowledge provided by comparative studies can be helpful in other situations. The question is that whether, beyond the vulnerability of small cities to external global influences, there is, in the perspectives of their stakeholders, the specificity of the local context and local resilience that play a crucial role in urban sustainability of each city?

The concept of sustainable development, one that "*meets the needs of the present without compromising the ability of future generations to meet their own needs*" (WCED, 1987:1), attained a large consensus among different stakeholders, but the best way to deliver it is still a matter of discussion.

Besides maintaining that everybody have the same inherent dignity regarding freedom, justice and peace (UN, 1948), this paper assumes a conceptual framework where sustainable development results from the interaction among the three dimensions of sustainability that take place "*only when management goals and actions are simultaneously ecologically viable, economically feasible, and socially desirable*" (Campbell & Heck, 1999:75). In addition, it is expected that the issues of sustainable development be influenced by local contexts, since these vary from city to city, and so do public goods and nuisances related to them.

It is proposed that urban sustainability is "*a desirable state of urban conditions that persists overtime*" (Adinyra et al., 2007:2), responding to the development aims regarding the economic, social and environmental aspects and stressing that achievements are made to last (Shen et al., 2011). From a spatial perspective, that complements the time perspective, sustainable development should allow "*local population* [to] *attain and keep an acceptable, and not decreasing, level of welfare without endangering the opportunities of the inhabitants of adjacent areas*" (Castro Bonaño, 2003:4). In sum, a sustainable city is able to re-invent itself, to improve, and consequently, improve the life of its inhabitants, promoting regeneration and respect for the environment, social cohesion, education for peace and cultural integration (CdS, 2012).

Sensitive indicators of sustainability are often used to compare different cities (Quiroga Rayen, 2001; Gallopin, 2006); those indicators represent attributes of the urban system that may refer to urbanism, public security, environment, culture, education, economy, funding, governance, migration, public participation, poverty and the current development level. Many resources such as the "Compendium of Sustainable Development Indicators Initiatives" (http://www.iisd.org) and the "Community Indicators Consortium" (http://communityindicators.net/) provide access to comparable well-being data. However, it is still difficult to benchmark the data collected in many towns and cities against others (Gourley et al., 2013), since sustainable indicators have not stabilized, especially for small and medium-dimension cities (Durán, 2012; Fuentes Sánchez, 2013). Thus, discarding the idea of universal indicators, it is convenient to use those that are the most appropriate to the locality, focusing on key issues and helping to understand and measure their progress (Agenda 21 de la Rioja, 2002:10).

Which cities could claim to be fully sustainable? This is a complex topic and much more work needs to be done to established a good baseline for the characterization, analysis and evaluation of cities. In fact, each city must face different challenges, pursue different targets, and be acted upon based on different human capabilities. When baselines are poor or lacking, sustainability indicators missing, and providers appear unsure or doubtful of the best course of action, one solution is to study the perspectives of different stakeholders to inform policy improvement.

In this work, people from different Azorean cities, were surveyed to express their perspectives of sustainable development in their localities. In fact, the knowledge of the attitudes and values of the citizens may be very helpful in interpreting the development of each city. "*Identifying discourses within and across different sustainability stakeholders (viewed as more or less coherent ways that people understand a specific issue) can aid progress in developing and implementing sustainability and resource management policies, through identifying barriers to, or potential alignments with, policy*" (Curry et al., 2012:624).

Cities on the Archipelago of the Azores, a Portuguese Autonomous Region, are convenient real models for studying urban sustainability, due to their remoteness, small size, and

sense of belonging connected to insularity. Besides this, they share a similar history and culture, but differ in particular island' contexts. The main objective of this study is to inventory the perspectives of the residents regarding sustainability issues of the Azorean cities they inhabit. The long-term purpose of this study is to help build cities that are more sustainable, that is to say, in the words of Tanguay et al. (2009), liveable (more comfortable), viable (more resourceful), and fair (less biased).

2. THE AZORES

2.1 Study area – The Azorean cities

The Autonomous Region of the Azores has geographical, social, economic and environmental characteristics that distinguish it from other Portuguese and European territories. This archipelago is composed of nine volcanic islands located in the middle of the North Atlantic Ocean and is extended between 36° 55´- 39° 43´ North latitude and 24° 45´ - 31°17´ West longitude (Forjaz, 2004).

The nine Azorean islands are divided in three main groups: Flores and Corvo (Western group); Faial, Pico, São Jorge, Graciosa and Terceira (Central group); and São Miguel and Santa Maria (Eastern group). These islands have variable sizes, ranging between 17 km² (Corvo) and 745 km² (São Miguel). The total area of the islands is 2.323 km² and the highest (density – 106.2inhab/km²) (SREA, 2012). The population of three islands represents 85% of total population of the archipelago: São Miguel (56%), Terceira (23%) and Faial (6%).

Due to its humid and temperate climate (Azevedo et al., 2001), remoteness and relatively recent human occupation, these islands have a rich biodiversity (Borges et al., 2010) with high biological, ecological, conservation and scientific interest. The islands are also very interesting from a socio-economic and cultural perspective, including UNESCO heritage sites such as Angra do Heroísmo (Terceira Island) and the Landscape of Pico Island Vineyard Culture. Furthermore, Graciosa, Corvo, Flores and São Jorge islands, are recognized as Biosphere Reserves and there are also 13 Ramsar sites and the Azores Geopark (https://en.unesco.org/).

The economy of the Azores presents a typical configuration of a small insular and peripheral region, with strong outsourcing (50%; SRAF, 2007). Although, in recent years,

tourism has been considered as an emerging specialization sector (PE, 2017) traditional specialization (fisheries and livestock) remains fundamental, with milk production as the most dynamic and relevant agricultural sector in the region.

There are five cities in the Azores: Ponta Delgada and Ribeira Grande[1] located on São Miguel Island; Angra do Heroísmo and Praia da Vitória on Terceira Island, and Horta on Faial Island. These cities are the focus of this study, and although all of them belong to the same Region, are insular and have small dimensions, they present many differences in size, history, economy, environment and society (Table 1).

Table 1. Summary of the most important characteristics regarding each of the five Azorean cities in this study.

SUSTAINABILITY INDICATORS	SÃO MIGUEL		TERCEIRA		FAIAL
	Ponta Delgada	Ribeira Grande	Angra do Heroísmo	Praia da Vitória	Horta
Population [1]	40661	12663	8654	3958	5553
Male	Female [1]	0,48	0,50	0,47	0,48	0,47
Metropolitan area (km^2) [1]	20,6	8,3	4,8	3,7	2,9
Centuries of Antiquity	5	1	5	1	2
Population density (inhab / km^2) [1]	1974	1526	1803	1070	1915
Aging index (pop.>64 years / pop.<14 years) [1]	74	45	164	95	128
Illiteracy rate (pop.>9 years without read or write) (%) [1]	3,03	5,86	3,1	4,09	2,68
Activity rate (%) [1]	49,05	46,69	46,35	47,02	49,04
Unemployment rate of resident population 15-24 (%) [1]	35,99	36,36	29,77	33,02	26,36
Rate of damaged buildings in need of extensive repair (%) [1]	2,01	1,68	1,45	3,24	1,63
Green area (approximate) (%) [2]	1,65%	0,16%	0,63%	3,24%	2,76%
Water consumption per day per person (L)[2]	408	450	1063	1105	844
Urban waste collected per person in the council per year (kg) [2]	559	482	730	464	552

[1]Source: INE – Instituto Nacional de Estatística. Cidades Portuguesas: Um Retrato Estatístico – 2011; [2]Source: SREA – Serviço Regional de Estatística dos Açores

When, after standardizing the distributions of these indicators (subtracting the average and dividing by the standard deviation), they are subjected to a Principal Component Analysis, different profiles of sustainable development emerge, according to their social, economic and environmental dimensions (Figure 1). Angra do Heroísmo and Ribeira Grande oppose in terms of the social sustainability, especially regarding the illiteracy rate; Ponta Delgada stands out due to its high economic potential, being bigger and denser and having a more dynamic labour market than all the other cities, mostly opposing to Horta. Finally, Praia da Vitória appears to have the best environmental performance associated with high green area and low urban waste per person.

This classification of the Azorean Cities allows the analysis of the perspectives of the residents on their cities perceived form the Q Method approach: Would residents of Ribeira Grande like to improve their social conditions? Will the residents of the various cities try to obtain the economic capacities of Ponta Delgada or the social services of Angra do Heroísmo?

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[1] "Lagoa", in São Miguel Island, was classified as a city in 2012, and is not included in this study.

Figure 1 : Classification of the sustainable development of Azorean Cities based on Principal Component Analysis of Social, Economic and Environmental Data.
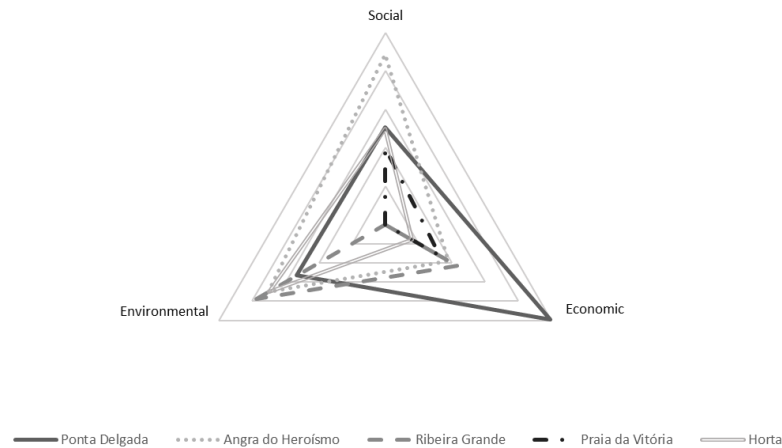
3. METHODOLOGY

Q method aims to grasp the subjectivity of human beings, while simultaneously defining a rigorous and scientific method (Stephenson, 1953). Q method combines the skills of qualitative and quantitative research traditions (Brown, 1996), using data that cannot be measured in conventional ways (e.g. a person´s feelings, opinions or solutions) and data that can be measured and reported in numeric terms (Amin, 2000). Although this method can quantify and simplify values, its most important advantage, is the possibility of capturing the perception of respondents about any theme (Gil & Guimarães, 2011). This method conciliates the typical systematic approach from quantitative methods and the depth and opportunity to study small samples (Ellingsen et al., 2010).

The Q method was chosen for this study because it helps to extract social perspectives from individual perspectives on a particular topic. Besides this, this method estimates the subjectivity of the respondents using statistical quantifiable techniques. Q method has been applied by several authors in order to identify perspectives on citizenship, public interest, environmental policies and quality of participatory processes (Webler et al., 2001). It has also been used for investigating environmental perspectives (Robbins & Krueger, 2000; Fuentes-Sánchez, 2013; Zabala, Sandbrook & Mukherjee, 2018) and motivating factors in resource decision making (Webler et al., 2001), as well as in sustainable development and sustainability matters (Curry et al., 2012).

This method has various key steps: a) concourse; b) Q-sample; c) design of the pyramid; d) P-sample; e) Q –sort and f) analysis.

In the "concourse", it is necessary to search and collect all the available information in order to represent what is thought about the issue under research. In this study, qualitative indicators of urban sustainability (defined by Castro Bonaño, 2002), urban sustainability indicators criteria (defined in Local Agenda 21) and the observation of Azorean cities' needs (Fuentes-Sánchez et al., 2011) were considered. Using that information, the selected urban sustainability indicators were urbanism; the city's current development level and public security; environment; culture and education; economy; funding and governance; migration; public participation; and poverty.

After the concourse, Q-statements were defined (Q-sample) and the sentences were presented to respondents. Q-Statements should be concise but formulated in a way that interviewees would be able to show their agreement or disagreement with the presented idea and should never contain contradictory concepts (Amin, 2000). The Q-sample was built based on existing statements (Fuentes-Sánchez et al., 2011) (Table 3). The sample should include a third of the total number of the Q-Statements, and must never exceed the total number of Q-statements.

Afterwards, the pyramid (Figure 2) was designed in order to accommodate a single sentence in the extremes. In the far left (position -4) respondents place the phrase that, according to their point of view, less represents the city

and in the far right (+4) place the phrase they think best represents the city.

It should be emphasized that, in contrast with the traditional statistical methods, the quality of Q method results depends less on the size of the sample and more on its diversification. In this study, an intentional convenience sample (P-sample) was selected and composed by 13 persons per city (a third of 39 [number of Q statements]; with a total of 65 persons). This sample was collected to represent different social groups: three civil servants working in the City Hall, three academics, two representatives of associations, two representatives of traders and three other citizens (e.g. senior citizens, immigrants, unemployed, housewives). This group of people, belonging to different social groups, was chosen in order to represent the different realities and needs of Azorean society. Within each group, people were randomly selected according to their interest and/or availability to participate in the study.

After this, respondents were asked to rank Q-statements (Q sort) according to the importance they attach to them, using a pyramidal scheme. Each Q-statement was printed in a small card and the complete set was presented, shuffled, to the respondents.

Figure 2: Sorting grid in this study.
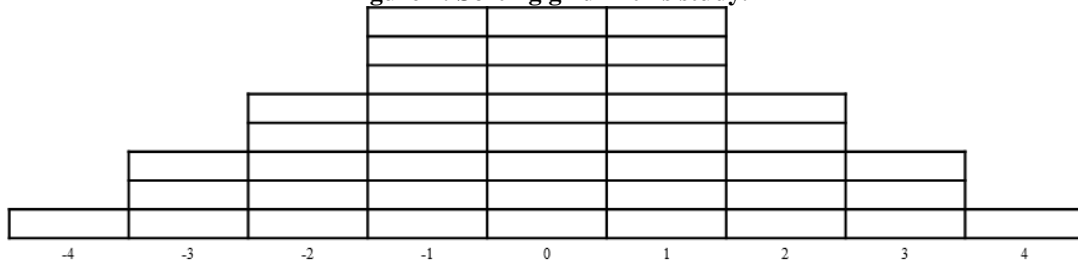
The collected data was analysed (Analysis) using the Principal Component Analysis (PCA), with varimax factor rotation, performed with the program PQMethod v. 2.11. The PCA reduced the 13 individual perspectives into factors, groups or social perspectives. The interpretation was made for each factor and further compared with the others, to define the points of agreement and disagreement. That is to say, people (as individuals) are correlated to each other, and remain in the same factored groups, when sharing similar points of view, according to the way they rank Q-statements in the pyramid (Barbosa et al., 1998; Brown, 1993). The Q factor analysis was performed using varimax rotation with automatic flagging of the defining sorts. The best solution of the statistical analysis yielded three different factors that explain most of the variance.

In addition to the Q-method, and at the beginning of the meeting with each participant, all the interviewees had to respond to an open question: "What are the most important issues for your city?" After the sorting, the participants were also asked to additional information regarding the analysed theme. Both data sets were used in the analysis, and answers were used to complement and understand each factor obtained by the Q-analysis, however, the interpretation emphasis was given by the Q-methodology. The answers about important issues of the city, and the comments received after the ranking of the Q statements, served as validation of the Q Methodology.

Data treatment was performed by a mixed methodology (Q-method and Interview), according to an Embedded Design (Figure 3).

In an embedded design (Creswell & Plano Clark, 2007), the researcher uses one type of data in a supportive role to the other method. The distinctive element in this embedded design is the Q methodology that frames the overall emphasis and direction in our research. The supplemental data set (list of issues referred to as important to the city) was collected to enhance the overall study, before the ranking of the Q-statements. In this type of study, both forms of data were employed to address different aspects of the research, not to compare and contrast one with the other (Plano Clark et al., 2008).

Figure 3: Embedded design
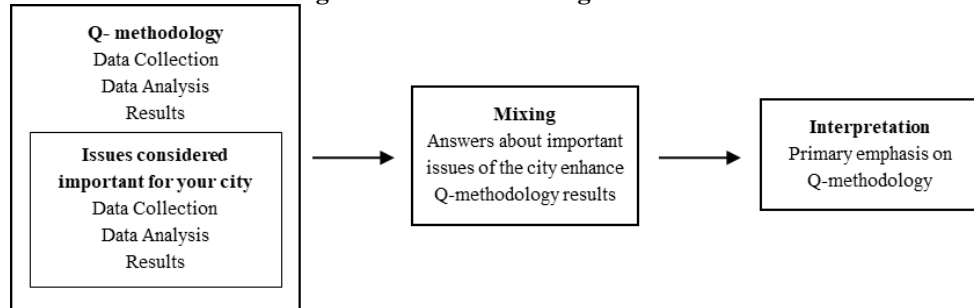
adapted from Plano Clark et al., 2008

4. RESULTS

Sixty-five participants (32 women and 33 men), aged between 19-75 years (Table 2) sorted the 39 Q-statements. The sample was stratified by city (n=13) and social role of the respondents (three civil servants working in the City Hall, three academics, two representatives of associations, two representatives of traders and three other citizens [e.g. senior citizens, immigrants, unemployed, housewives]), but each city presents uneven distributions in terms of age, gender and education level.

Table 2. Socio-demographic characteristics of the participants (n=65)

	Gender		Age (years)			Level of education		
	F	M	19 - 34	35 – 49	50 - 75	Elementary or Secondary	Bachelor's degree	Master's or doctoral degree
SMI - Ponta Delgada	9	4	4	9		2	9	2
SMI - Ribeira Grande	7	6	2	10	1	3	8	2
TER - Angra do Heroísmo	6	7	4	7	2	4	6	3
TER - Praia da Vitória	6	7	6	5	2	1	10	2
FAI – Horta	4	9	3	5	5	5	5	3
TOTAL	**32**	**33**	**19**	**36**	**10**	**15**	**38**	**12**

(SMI, São Miguel; TER, Terceira; FAI, Faial, F, female; M, male).

The results of the Q-Method analysis will be presented for each of the three different factors found in each city. Each factor is described both with a label and a brief explanation, portraying the essence of each view; these narratives are supported by the both the valuation of the Q-statements and the information gathered in the interviews (Tables 3 and 4).

Table 3 Q-Statements (s) used in this study, indicating the preliminary grouping of statements (cf. Fuentes et. al., 2011) and the position (p) occupied in the ideal pyramid for each perspective (N=65).

	Nº	Q-STATEMENTS	PDL A	PDL B	PDL C	RG A	RG B	RG C	AH A	AH B	AH C	PV A	PV B	PV C	HOR A	HOR B
URB	1	It is better to live outside the city instead of urban areas.	0	-1	**2**	**-3**	**2**	**1**	**-1**	1	1	1	-1	-1	-1	-1
	2	The historic centre needs urban action.	**1**	**3**	**-1**	3	**0**	3	**3**	**1**	**-1**	-2	-1	**3**	**1**	3
	3	There are many empty houses in the historic centre.	2	**3**	1	**3**	**-2**	**2**	2	**1**	3	**-4**	0	-1	**-1**	4
	4	The citizens are satisfied with the beauty of the streets and buildings of the historic centre.	**-2**	**0**	**3**	**2**	-1	-1	**-1**	2	2	-1	1	0	**0**	1
	5	It is best to rehabilitate urban centres than to continue to use non-residential land on the outskirts of the city.	**3**	**-1**	**2**	2	1	1	**3**	3	**2**	-1	**2**	0	**2**	**0**
D&S	6	Actions by the city are maintained over time and ensure a long lasting change.	0	**-3**	0	-1	**0**	-2	-2	-2	-1	0	0	-1	-1	-1
	7	In this city, there are NO public safety issues.	-1	-2	-2	-2	-4	**0**	-1	1	-1	-1	-1	**2**	**3**	-1
	8	The city is clean.	0	0	**3**	**2**	-1	-1	**-4**	**2**	**0**	**3**	1	1	**3**	0
ENV	9	Air pollution is a serious problem in the city.	**-3**	**0**	**-4**	**-4**	-1	-2	**0**	-4	-4	-3	-2	**-4**	**-4**	**-2**
	10	Noise pollution is a serious problem in the city.	1	1	**-3**	**-3**	0	-1	**0**	-3	-3	-2	**0**	-2	**-3**	-1
	11	This city is committed to the fight against climate change.	-3	-2	-2	-2	-3	**-1**	-3	-2	**-3**	**2**	**-3**	**-3**	-1	**-4**
D&S	12	Health services in the city are sufficient in both quantity and quality.	-1	**-3**	0	-1	-2	-2	**-3**	**1**	**-1**	-1	-2	-3	**3**	-3
ENV	13	If we want sustainable cities, we will have to reduce energy consumption.	1	**-1**	2	1	2	0	1	1	1	2	3	2	**2**	**3**
	14	There is a lack of recycling points in the city.	**0**	**3**	1	**0**	2	**-4**	1	-2	0	0	0	0	**-3**	**2**
C&E	15	The residents of this city are pleased with the cultural infrastructures (concert halls, museums, libraries ...).	0	1	2	**2**	0	1	0	0	**-2**	4	3	**1**	1	**-2**
	16	People are the main source of an intelligent territory.	**4**	**-4**	**-1**	4	**-2**	3	**2**	**4**	**0**	1	**2**	1	4	**1**
	17	This city accepts and integrates well social and cultural diversity.	**-1**	1	0	0	**3**	-1	-1	2	1	1	1	**4**	2	**0**
	18	The priority for the city should be to increase the availability and quality of educational infrastructures.	**3**	**0**	**-1**	0	**3**	0	2	3	**-2**	-1	-1	**1**	-2	**1**

	#	Statement															
ECO	19	There are few job opportunities in this city.	0	1	0	**1**	4	2	**4**	**-3**	**1**	1	1	**2**	**-1**	**2**
	20	There are no houses at affordable prices.	0	2	0	**-2**	2	2	**0**	**-2**	**3**	-1	**1**	-1	**-2**	2
	21	The city is innovative in its context and has components of excellence.	-1	-1	**1**	**-2**	1	**-3**	-2	-1	-1	2	1	**-2**	0	**-2**
	22	The process of housing and urban rehabilitation includes additional measures related to employment and other problems.	-1	-2	-1	-1	1	0	**1**	**-3**	-1	**2**	**-2**	0	0	**1**
F&G	23	The rehabilitation of houses is more profitable than new construction.	2	1	**-2**	0	0	1	0	0	**-2**	0	2	**-2**	-1	0
	24	If we think about house rehabilitation, the future resale value should be considered.	1	2	0	1	1	1	1	**-1**	0	-2	-1	0	-2	**0**
	25	We should encourage the rehabilitation and revitalization instead of building new houses.	**3**	0	0	1	0	**-1**	3	3	**1**	**-2**	**2**	**-1**	2	2
	26	The concentration of economic activity in the city improves its infrastructure and public services.	1	0	**4**	**3**	**-2**	0	**2**	**-1**	**1**	-1	0	0	1	**-2**
	27	Municipalities should issue a sustainability report.	1	1	1	0	-1	0	**2**	0	0	**0**	3	3	1	1
MIG	28	The budget for the integration of migrants is appropriate.	-2	**1**	-1	-1	-1	-1	-1	0	-2	-2	**0**	-2	-2	-1
	29	The foreign presence is beneficial to the city.	2	2	1	**0**	1	2	1	**0**	3	3	**1**	3	1	2
	30	Foreigners are well integrated in the city.	**-2**	2	2	1	1	0	-1	1	0	2	**-1**	2	**2**	0
PP	31	There is a network of associations representing all sectors of the population.	-1	-1	-1	**-2**	0	1	**-2**	**-1**	**1**	0	**-4**	1	**0**	-3
	32	The dialogue between public authorities and social organizations contributes to social cohesion.	1	**-1**	3	1	**-1**	2	1	2	2	1	**0**	2	1	1
	33	The citizens are the protector of the environment and their city.	**2**	**0**	**-3**	-1	-1	-2	1	2	2	**3**	-2	**1**	1	**-2**
	34	The residents believe in the concept of sustainable development and good practices.	-1	**-2**	-1	**-1**	-2	-3	-3	**-1**	-2	**0**	-2	-2	0	**-3**
	35	The population is willing to engage in more sustainable policies in the city, for the harmonious growth of society and the env.	-3	-3	-2	-1	-3	-2	0	-1	-1	-3	-3	**-1**	-1	0
POV	36	In this city, poverty is a problem.	-2	**4**	-3	1	2	4	**-2**	-2	-3	**-3**	**2**	1	**-3**	-1
	37	There are programs of solidarity and volunteering aimed at vulnerable groups.	**-2**	2	1	**0**	3	3	**-1**	**0**	**4**	1	-1	-1	-2	**1**
	38	The problems of poverty and social inequality in this city have been successfully resolved.	-4	-2	-2	-3	-3	-3	-2	0	0	1	-3	-3	0	**-1**
	39	To solve the problems of marginalization in the cities contributes to sustainable development.	2	**-1**	1	2	1	1	0	-1	**2**	0	**4**	0	0	**3**

C&E: Culture & Education; D&S: Current Development Level & Public Security; ECO: Economy; ENV: Environment; F&G: Funding & Governance; MIG: Migration; POV: Poverty; PP: Public Participation; URB: Urbanism. The positions of the distinguishing (dist.) Q-statements are printed in bold.

Table 4. Relevant quotes from the 65 stakeholders, when answering the question "What are the most important issues in your city?"

		PONTA DELGADA: São Miguel Island
PDL A	CS 3	1. Urban management (commercial urban centre vs residential urban centre) causes many conflicts of interest 2. The cleaning and the lack of pollution. 3. The lack of Public Participation on subjects of interest 4. A balanced management between social and economic aspect.
	At 2	Waste Management; Leisure areas related to the environment and culture.// Cultural problem (the main problem of the city) due to education received; Rehabilitate in this city is not profitable.
	Ci 3	Public transport; New opportunities of job.
	Ac 1	Spatial planning; A better relationship between the municipality and the regional government// There is a weak dialogue between the Regional Government and the Municipality; - It is necessary to promote dialogue in order to grow in sustainability.
	Ac 2	Urban regeneration; Traffic; Heritage Protection.
	Ac 3	Quality of service water supply; Collection and processing of urban solid waste; Mobility; Transport; Quality of public spaces.
PDL B	At 1	Ecology and waste treatment, Housing, Transport; Cultural activity; food self-sufficiency
	Ci 2	There is a difference in living standards and sharp economic ranks. I mean, you can see many people on the street who live in conditions of "poverty" while there are great houses in many parts of the city. We should improve the level of education (especially at university level)// A good recovery and maintenance of the tourist parts. The environment is a tourist resource.
	PE 2	Weaknesses: convivial urban places; cultural tourism; mobility. Strengths: thirst for knowledge; Recognition of opportunity; Ease of communication with municipal services. // There is motivation to start, but there is no continuation.
PDL C	CS 1	Spatial planning; Mobility; Safety; Cleaning.
	CS 2	Spatial planning; Safety; Environment.
	PE 1	Space management (mobility of people and cars); Access of town (to and from various points); Culture (better use of spaces, museums, promotion).
		RIBEIRA GRANDE: São Miguel Island
RG A	Ac 3	Job creation, particularly for young people; Occupation of families that are receiving social insertion income for a few years; Accessible public transport: price, regularity; Promotion of public activities encouraging public participation; Safety. // Not addressing drug addiction especially alcohol which leads to lack of employment and academic training; There is a (high) school dropout; There are marginal phenomena which results in lack of security; There is a refusal of help services for people abandoned (marginal), who do not want integration into society.
	Ci 1	Safety; Harmony; Management.
	CS 2	Heritage; landscape; active population.
	CS 3	Good cleaning of streets and other public places; Good special garbage collection; Correct separation of solid urban waste by municipalities.
	PE 1	Help to innovate the traditional trade; Attract people to the city centre.
RGB	Ac 1	Sustainable development.
	At 2	Creation of support projects and guidance to families (Parental Training); Spaces for young people can spend more time (at weekends and leisure time); More police in the city. // Lack of jobs and services; Lack of education (in young people); Addiction problems which creates problems in the family, economy and job search. There is assistance to families, but they do not know how to manage the support; lack of education in society.
	PE 2	Culture; Gastronomy; Events; Diversity. // Lack of education in society.
RG C	Ac 1	Social welfare; Supporting existing community// There are projects or reconciliation programs with huge investments, but sometimes do not get the desired results or participation; Unemployment; Lack of education, but not only the formal level.
	Ci 2	Employment; Tourism; Education; Sustainable development; Accessibility support services to the population; Activities for young people and retirees in their leisure time
	Ci 3	Parking; Green spaces; Spaces for Entertainment.
	CS 1	Creating jobs; Increase employment by creating incentives for young entrepreneurs; Creation of accommodation places, at the moment there is no hotel in the city; Hotel as the main objective of tourism development and tourism growth. Requalification of the whole coastal zone; Requalify the beach "Praia do Monte Verde" Providing recreational places and nightlife venues for the young people.
	At 1	Studies to support tourism and create a dynamic (non-existent) of a "positive" city with a natural and built heritage of great value. Revitalizing the city in its urban dimension, Valuing the built heritage. //There is a lack of a future policy in all aspects: social, environmental, cultural

		ANGRA DO HEROÍSMO: Terceira Island
AH A	Ac 1	Urban rehabilitation; Tourist attraction; Cultural and social animation); Volunteering; Promoting the historic centre; Sea.
	Ci 2	The city's heritage is wrongly valued and its aesthetics is not being defended (eg: new public library).
	CS 3	The problem of termites is urgent, the population is afraid. The built heritage is in danger. It is urgent to implement processes to eliminate termites that are available to people.
	PE 1	Better accesses; Rehabilitation of buildings; Create solutions so the city can grow; A shopping centre is needed.
	PE 2	I have live downtown for 35 years. Currently I do not know what the city needs. I only know that my city died.
AH B	Ac 2	Parking; Renewing the traditional trade; Creating night' activities to be attractive social life (theatre, cinema etc.).
	Ci 1	More cultural program: film cycles, exhibitions, theater, concerts; Public transport adapted to people's needs; business hours adapted to the needs of the population: workers; students; Reviewing the library and other public cultural institutions schedules
	CS 1	Continuing improved living conditions, Interconnection with the outside.
	CS 2	Mobility (traffic); Architectural (urbanization) and houses in ruins; Promotion of "Angra- heritage city"; Cleaning; Cultural Promotion, Revitalization of the business.
AH C	Ac 3	Social and cultural dynamism; Coexistence among citizens; Revitalization of the urban centre; Increased economic activities in the city centre; Traffic conditioning; To live life on the streets!
	Ci 3	Culture; Tourism; Interface with the sea; Garden.
	At 1	Functionality; Cleaning.
	At 2	Deteriorated buildings; Houses not existing, expensive and degraded; Traffic and parking poorly defined and chaotic.
		PRAIA VITÓRIA: Terceira Island
PV A	Ac 3	Differentiated waste collection in more places; More police in the streets by night; Development of trade; More jobs.
	CS 2	Job creation; Modernization of trade; Sustainable tourism in order to provide an increase in the economy and development (but not mass tourism); Traditions (hold).
	CS 3	Development of local economic activities; Job creation; Quality of life
PV B	Ac 1	Efficient waste management; Good communication between the municipality and "citizens"; Good transit management; Street cleaning; organized parking area; Paving of streets.
	Ac 2	Requalification of abandoned buildings, Collection of urban solid waste; Associations created or lack of community associations that allow integration and support for young people from disadvantaged families, Integration or replacement of unemployed for more than two years; in community activities or in helping community development activities.
	At 1	Quality of public consumption water; More containers for solid waste. It is a city where political power is trying to overlap about everything and everyone and restrict the freedom of cultural and social associations.
	At 2	Sustainability; Environment; Increase the tourism potential, History; Remedying the ecological mistakes of the past; American presence (or American military presence), Ocean port.
	PE 2	Pedestrian mobility; Offering (or Supplying) local products (Horticulture), Limiting the use of cars, Cleaning (not only increase the services, we must also educate the population); More cultural activities (diversified offer); Lack of public transport missing, outdated trade.
PV C	Ci 1	I believe that my city could change many things (or aspects); Regarding "Praia Ambiente" I think it does not work well in relation to waste collection and street cleaning; The pruning of trees was too late this year.
	Ci 1	Energizing; Sustainability; Cleaning.
	PE 1	Spatial planning; Unemployment; Environment (problem with waste)

		HORTA: Faial Island
HOR A	Ac 1	Spatial planning / Architecture; Employment; Viability of the Communities// A major limitation is transports (air and sea).
	CS 1	Urbanism; spatial planning; Transport; Cultural and Natural patrimony
	CS 2	Developing information and training plan to the population on the issue of sustainability
	CS3	Spatial Planning; Sustainable development; Environmental quality.
	At 1	Preserving the heritage, Recovering the housing, The problems of our city are the urban rehabilitation and the lack of people in the city centre.
	At 2	Creating and preserving of jobs, particularly in emerging, innovative and sustainable niche markets, Dissemination capacity and cultural activities in various ways; Restoration and valuation of built/ architectural heritage as a factor that influences the permanence of inhabitants in the city centre preventing people's exodus to neighboring areas of the city or even to rural villages. However, the departure of more people to the villages also has a positive perspective since it comes from areas prone to desertification. Public safety is fundamental and basic infrastructures.
HOR B	Ac 3	Public works properly implemented; Vertical and horizontal signs on the roads; Sufficient knowledge and availability of clarification citizens from public institutions, citizens have to assume responsibility of their city.
	Ci 3	A society with opportunities is needed in order to develop different activities; unemployment; Improve the quality of market; Improve agriculture (explore more the lands); Finish the wharf work.
	Ci 2	Less cars.
	PE 1	Preserving the old buildings; Recovering the cultural heritage; Creating spaces at the port for maritime tourist activities; More pedestrian streets; More afforestation.
	PE 2	Environment; Safety; Improve the means of transport; New opportunities for young people.

Ac, Academic; At, Activist; Ci, Citizen; CS, Civil Servant at the City Hall; PE, Private Employee

Thus, the main differences among the perspectives of each city were the result of the application of the Q methodology and the interviews that, nonetheless, reinforced the main ideas obtained in the Q analysis.

4.1 Ponta Delgada city: São Miguel Island

The factor analysis revealed three perspectives; together they explained 61% of total variance. One participant, "citizen 1", loaded on both perspectives A (0.547) and B (0.557), not fitting in either one

4.1.1 Perspective A – A fair city promoting conviviality

This perspective is defined by six participants: three academics, one activist, one citizen and one civil servant. Explaining 31% of total variance, this was by far the dominant discourse regarding Ponta Delgada.

Considering the extreme ranking statements for this group (Table 3) their main interests are the urban centre and people. The city centre ($s^2 5 p^3$-3; s4p-2) and its revitalization (s25p3) are a priority. They think that all citizens need to be involved in city politics (s16p4; s35p-3; s33p2). Besides these, they are concerned with the social vulnerability of immigrants and other at risk groups (s38p-4; s37p-2; s30p-2), claiming that they are not well accepted in Ponta Delgada. In order to promote equity, they advocate education and the improvement of educational services (s18p3). During the interviews, these proponents have also emphasized urban regeneration and spatial planning as well as the improvement of urban services (e.g. waste management and mobility). The analysis of relevant quotes and of the distinguishing Q-statements show that the proponents' priority is the revitalization of the city centre, seen as a place where citizens can be with each other, sharing experiences and promoting social integration. Perhaps they think that the revitalization of the city centre can contribute to social justice.

To sum up, this perspective shows a city focused on the revitalization of its centre, in order to promote conviviality and leisure. Additionally, this group wants to achieve social cohesion and bridge social inequity.

4.1.2 Perspective B – A liveable city where urban development should be a priority

Three participants: one activist, one citizen and one private employee, this factor significantly loaded on this group; accounting for 16% of total explained variance.

None of the eight statements placed in the extreme positions denote a positive view about the city or its management policies (Table 3). The highest and lowest ranking statements, which are also distinguishing statements, reveal that participants do not trust in the current management of the city (s12p-3; s6p-3; s14p3), or in their co-citizens, to change that dynamic (s16p-4; s35p-3; s34p-2); the city is perceived as a vicious place, where no sustainable development occurs. In addition, they are worried about the historical centre (s3p3; s2p3) and poverty (s36p4). When citizens were asked about important issues in their city, these emphasized complementary topics to the Q-statements, such as the promotion of cultural and environmental tourism, mobility problems, the improvement of cultural activities, and the creation of convivial places. Both relevant quotes and Q-statements assent that Ponta Delgada undergoes poor management in different areas (e.g. waste management, health services) and that poverty is an important problem in the city.

In summary, perspective B, described Ponta Delgada as a city with poor management, which causes poverty (perhaps the main concern) and degradation of the historic centre. Participants propose urban revitalization and improvement of tourist offer as a way to solve these problems.

4.1.3 Perspective C – A viable city where there is no real need to change, only to preserve

This perspective, which is defined by two civil servants and one private employee, explained 14% of total variance.

The highest and lowest ranking statements for this factor (Table 3), which are also distinguishing statements, describe Ponta Delgada as a pleasant city to live in, a place without substantial environmental (s9p-4; s10p-4) or social (s36p-3) problems. Besides which, citizens wish to increase the economic activity in the city (s26p4). Unlike Perspective B, these

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[2] s – statement

[3] p – position

participants have a good opinion about Ponta Delgada, considering it a comfortable city to live in (s4p3). No negative aspects are stressed in this perspective. Complementary matters to the Q-statements, such as spatial planning, safety and mobility issues were referred to by respondents as the most important topics in Ponta Delgada.

In summary, perspective C represents Ponta Delgada as a city that does not need changes; it just needs to proceed as it is, with residential areas outside the urban centre, but concentrating the socio-economic activities there. To increase their well-being, these participants would like better mobility, which is in line with their wish to improve space management.

4.2 Ribeira Grande city: São Miguel Island

The factor analysis revealed three perspectives, including the 13 interviewees; the model accounts for 58% of the sample's variance.

4.2.1 *Perspective A – Economic development is necessary if we want the progress in the city*

Five participants loaded significantly on this perspective: two civil servants, one citizen, one private employee and one academic; the factor explained 24% of total variance.

According to this perspective (Table 3), the historic centre needs to be revitalized (s3p3) given that respondents consider it important to have people living there (s1p-3) and people´s presence in a territory is important in order to develop the city (s16p4). No environmental problems (s9p-4; s10p-3) are identified, but social inequality (s38p-3) is prevalent. When asked about important issues in their city, citizens emphasized management, economical activities in the centre, safety and drug addiction, especially to alcohol. The latter is seen as a major problem, leading to social issues such as unemployment, dropping out of school, marginality and lack of public safety.

In conclusion, this group considered that the city centre of Ribeira Grande requires revitalization (economic development as well as urban action) in order to solve the problems of drug addition, social inequality and poverty. In order to achieve this, people empowerment is required.

4.2.2 *Perspective B – Social development and progress are required in the city*

This factor is defined by one private employee, one activist and one academic and explained 15% of total variance.

As demonstrated by the ranking of statements (Table 3), education and culture (s18p3) are the main issues around which the city should regroup since their lack causes poverty and economic, behavioural and safety problems (s19p4; s35p-3; s7p-4). However, respondents grouped in this factor do not trust in the citizens to start the implementation of the necessary changes. In this case, relevant quotes and Q-statements agree that social education and the existence of help programs have to be a priority in the city.

To summarize, this group described Ribeira Grande as an unsafe city, inhabited by poorly educated people, without autonomy, this leading to poverty and economic problems.

4.2.3 *Perspective C – A fair city that needs an extreme renovation*

One activist, one civil servant, two citizens and one academic significantly loaded on this perspective and explained 19 % of total variance.

In this perspective, in accordance with the ranking of the statements (Table 3), the main concern regarding Ribeira Grande is poverty (s36p4) and its associated problems (e.g. marginalization, social inequality). Besides this, respondents consider that the historic centre needs changes (s2p3). Even though believing in people´s capacity to improve the cities development, they are deeply suspicious of their citizens. A total renovation of the city is seen as essential to lead to a sustainable future. Unlike the other perspectives, in this group there are not a lot of distinguishing statements (only eight; five of them occupying central positions), which could mean that participants are not very identified with the city. Additionally, citizens recognised as essential programmes focused on helping, educating, and facilitating employment in Ribeira Grande. The need to create and improve tourism services is also referred to by most of the respondents when asked to mention the most relevant quotes.

To sum up, these participants believe that Ribeira Grande is presently an unresponsive

city in need of a huge intervention to be able to overcome poverty and rehabilitate the historic centre, improving social education and employment.

4.3 Angra do Heroísmo city: Terceira Island

Factor analysis revealed three perspectives which explained 55 % of the variance sample.

4.3.1 Perspective A – A viable city where urban rehabilitation is necessary

This perspective, which is defined by one civil servant, two private employees, one academic and one citizen, explained 22% of total variance.

The extreme ranking statements (Table 3) show that this perspective focuses on the management of Angra do Heroísmo (s12p-3; s38p-2), emphasising unemployment (s19p4) and general waste (s8p4). Urban rehabilitation and heritage (s2p3; s5p3; s25p3) are very important topics in this perspective, both in the Q-sort and in the interviews. A pessimistic view towards the city pervades these participants (e.g. "*I only know that my city died.*").

In summary, this factor discloses that mismanagement causes degradation in the city centre, which needs urgent rehabilitation and social revitalization, including employment policies.

4.3.2 Perspective B – A viable city that ensures the quality of life of the citizens promoting cultural development

This factor, which is defined by two civil servants, one academic and one citizen, explained 17% of total observed variance.

Taking into account the ranking statements for this factor (Table 3), Angra do Heroísmo is described as a city without environmental problems (s9p-4; s10p-3; s8p2), and, contrary to the previous perspective, with employment opportunities (s19p-3). In this perspective, there is the belief that people may trigger the necessary changes in the city (s16p4), but educational services should be improved (s18p3). Stakeholders further consider that urban rehabilitation is necessary (s5p3; s25p3). Unlike other perspectives, many distinguishing statements occupy central positions, which could mean that participants do

not identify huge problems in Angra do Heroísmo, or if they do, those are not reflected by the Q-statements. In fact, relevant issues mentioned by the members of this group include the enhancement of people´s quality of life and welfare, and also the renovation of trade and the creation and improvement of cultural activities, which add extra information to this perspective.

In short, this factor described Angra do Heroísmo as a city without deep social, economic and environmental problems, but in need of cultural revitalization and architectural rehabilitation.

4.3.3 Perspective C – A fair city promoting conviviality and social integration

Two activists, one academic and one citizen loaded on perspective C of Angra do Heroísmo, which explained 16% of total variance.

Considering the ranking of the statements (Table 3), participants loaded in this factor express concern regarding minorities and their integration in the society (s37p4; s39p2). They also consider that improving cultural offerings is important (s15p-2) and express interest in the historic centre and its rehabilitation (s3p3; s5p2). Although they do not refer to any environmental problems (s9p-4; s10p-3), these stakeholders consider that the city should be more pro-active in policies to combat climate change. During the interviews, citizens emphasized the need of cultural activities to improve conviviality and quality of life. Besides these, they highlight the relevance of avoiding degradation of the city centre and promoting social dynamism in order to contribute to the development of the city. In addition, people identified mobility problems in Angra do Heroísmo, referring to traffic and lack of parking lots.

In conclusion, the members of this perspective defined Angra do Heroísmo as a city with problems of social integration and cultural apathy. For these reasons, they consider it essential to improve support programs to social minorities and cultural offerings, especially in the city centre.

4.4 Praia da Vitória city: Terceira Island

The three groups obtained, explain 53% of the sample's variance. A civil servant did not

load into any perspective, although his views are shared by perspective A (0.511) and C (0.532).

4.4.1 Perspective A – A liveable city that must continue to improve and ensure the comfort of their citizens

This factor, which is defined by two civil servants and one academic, explained 15% of total variance (the least dominant group).

Considering the extreme statements (Table 3), Praia da Vitória is described as a city without noteworthy problems (s3p-4; s8p3; s36p-3; s9p-3), inhabited by happy citizens (s15p4) who need to take care of their city (s33p3) and be involved in sustainable policies (s35p-3). In the interview, these citizens emphasized the need for local development (particularly in trading) and the creation of employment, complementing the Q-methodology results.

To summarize, both Q-statements and relevant quotes present Praia da Vitória as a city that needs to improve residents' quality of life, generate employment and promote local development (develop trade and improve urban management); and in which citizens should take care of the city.

4.4.2 Perspective B – Social progress and social cohesion are necessary if we want sustainable development

One private employee, two activists and two academics loaded on perspective B for Praia da Vitória, which explained 19% of total variance.

According to the ranking statements (Table 3), the members that loaded in this factor focus on marginalization (s39p4; s38p-3) which leads to poverty (s36p2). Stakeholders loading in this perspective argue that the urban centre needs an intervention (s25p2; s5p2) and consider that the residents must be more involved with their city and its problems (s31p-4; s35p-3; s13p3; s33p-2). During the interview, citizens emphasized complementary issues such as mobility (pedestrian and cars), waste management and the clean aspect of the city.

Briefly, Praia da Vitória is described as a city where marginalization leads to poverty, and where neither of these problems is solved. Both Q-statements and relevant quotes establish that

the city centre needs revitalization, and the residents should be involved in this change.

4.4.3 Perspective C – A liveable city that does not believe on the sustainability project

This perspective, which is defined by one private employee and three citizens, explained 19% of total variance.

In accordance with the ranking statements (Table 3), individuals loaded in this factor consider creation of employment (s19p2), improvement of health and educational services (s12p-3), and eradication of poverty and social inequality (s38p-3) as priorities in the city. Besides these, they recognise that the historic centre needs an urban intervention (s2p3). These citizens argue that the city encourages, accepts and integrates cultural diversity. This may be related to the good integration of the American military base, located in Lajes (a civil parish near Praia da Vitória), that has been a source of jobs and income for residents. On the other hand, this may also be attributed to the attraction of tourism to the city (e.g. birdwatchers). Both in the Q-statements and the interview, citizens emphasized a clean aspect and waste collection as important issues in their city, questioning environmental management. Furthermore, they believe that the city is not committed to fight climate change.

In short, Praia da Vitória was described as a city with serious problems such as poverty, unemployment and inadequate health services. Participants consider that the city centre needs an intervention and that the environmental management must improve. In addition, this perspective frames Praia da Vitória as not innovative and with low expectations regarding sustainability.

4.5 Horta city: Faial island

Three perspectives were obtained in Horta, explaining 58% of the sample's variance. Nevertheless, perspective C, including just two citizens, is bipolar, with one individual loading as positive and the other as negative. After analyzing the distinguishing Q-statements, given the non-normality of the ideal pyramid and the small size of the group, it was decided not to pursue with further analysis of that perspective.

4.5.1 Perspective A – A liveable city that is fine, but has to build a strategy for sustainability

This perspective is defined by three civil servants, two activists and one academic, and explained 24% of total variance.

Analyzing the extreme statements (Table 3) which are also distinguishing statements, Horta is described as a city without noteworthy problems: there are no environmental problems (s9 p-4; s10p-3; s14p-3; s8p3), no poverty (s36p-3) and people are trusted as valuable to shape the territory (s16p4). During the interviews, the topics that the citizens have emphasized were spatial planning, employment, transports and education for sustainability. For this perspective, relevant quotes complete the information of Q-statements.

In conclusion, Horta is defined as a fine city in which to live, although in need of building a strategy to reach sustainability. For this group, the city should develop the urban centre, create jobs, improve transport and educate for sustainability.

4.5.2 Perspective B – Environmental responsibility not only to this city but to the world

This perspective, which is defined by five citizens - two private employees, two citizens and one academic, explained 21% of total variance.

In accordance with the highest and lowest ranking statements (Table 3), participants of this perspective show concerns with global problems such as unemployment (s19p2), degradation of urban centres (s3p4; s2p3), social exclusion (s39p3), health services (s12p-3), and several environmental issues (s13p3; s11p-4; s14p2; s34p-3). In addition, citizens have remarked that employment, mobility, improvement of infrastructures and facilities, for locals and tourists, are important issues in their city.

To sum up, this factor frames Horta in the global world. Stakeholders detect the current problems of all cities (e.g. lack of employment, global change, transports, management of urban infrastructures) and consider that Horta needs engaged citizens to pursue adequate policies.

5. DISCUSSION

Most cities were built under the unsustainable assumption of infinite resources, leading to limitless waste production and endless competition, degrading local environment, our planet and humanity. Given this, it is important to stimulate a debate about different ways to improve quality of life and promote sustainable futures (Table 5).

The aim of this study was to characterize different perspectives regarding the sustainable development of small, peripheral and insular cities. Taking into account the diagram that represents the different dimensions of sustainable development (Tanguay, 2009; SEP, 2018), it is possible to recognize six city models approaching Sustainable Development: i) well-economically developed city (economic driven); ii) social progressive cities (socially driven); iii) environmental responsible cities (environmentally driven); iv) fair cities (driven by economic and social issues); v) liveable cities (driven by social and environmental issues) and vi) viable cities (driven by environmental and economic issues). An equilibrated perspective would integrate all the dimensions of the sustainable development, and would thus be found in the confluence of the circles, but no such perspectives were identified in the data.

The 14 factors resulting from the Q-sort applied to the five Azorean cities were distinguished as different perspectives regarding their sustainability (Table5; Figure 4). The largest group, "Environmental/Social", includes four perspectives and there are two groups, purely "Economic" and purely "Environmental", represented by one perspective each.

A model city focused on economic development essentially pursues values related to the financial and commercial dynamism. City centres operate as hubs of economic opportunity and engines of growth, relying on innovative services. Ribeira Grande is the only Azorean city that includes a perspective, which points to this scenario (RG A).

Figure 4: Venn diagram representing the standard dimensions of sustainable development, and their combinations, for the different perspectives of Azorean cities.
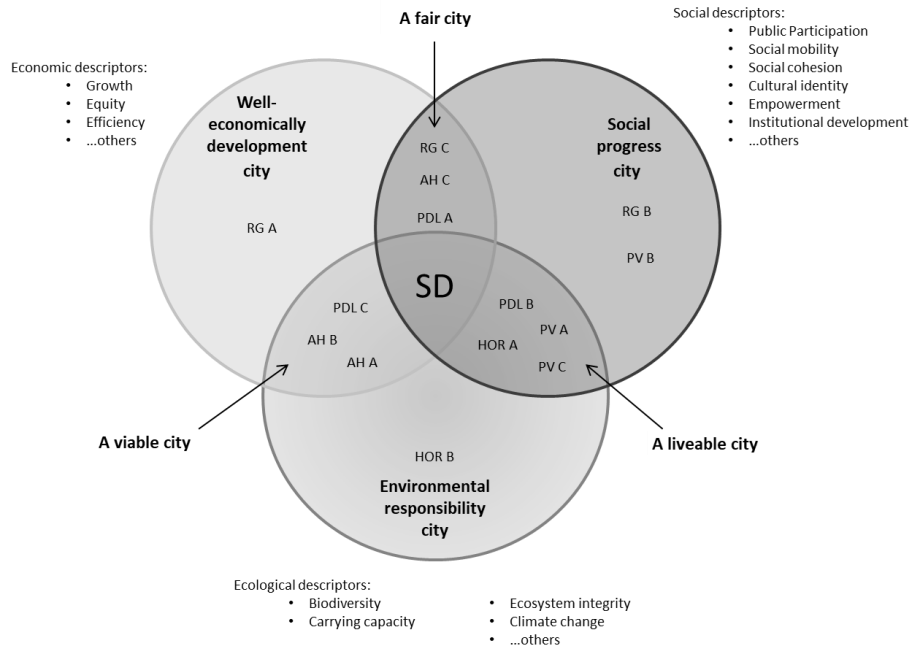
(Adapted from Campbell & Heck, 1999; Tanguay, 2009; SEP, 2018). PDL: Ponta Delgada; RG: Ribeira Grande; AH: Angra do Heroísmo; PV: Praia da Vitória; HOR: Horta; SD: Sustainable Development

A city that aims to promote social progress is focused on the resolution of serious social problems such as poverty, conflicts, addictions and marginalization of the citizens, creating programs to improve social mobility and citizenship towards social cohesion and integration, thus fostering cultural identity. Two perspectives are included here, Praia da Vitória (PV B) and Ribeira Grande (RG B). The former emphasizes the promotion of social progress, where citizens believe that it is necessary to fight marginalization, chiefly among young people from disadvantaged families. The latter highlight social issues regarding essential services, such as housing, social education, safety and inclusiveness. Indeed, the interviewed residents of Ribeira Grande would like to improve their social and economic conditions, according to the described weaknesses in their city (Figure 1).

Perspectives based on environmental responsibility, are in line with the goals of urban sustainable development around the world (Kennedy et al., 2015), namely the improvement of environmental practices, such as the reduction of environmental impact, reduction of resource consumption and waste and the promotion of recycling. Only one perspective (HOR B) aimed to reach this goal. In fact, Figure 1 shows that the strongest pillar in Horta is the environment, which may account for both

perspectives found in this city, that do not acknowledge major green problems there.

A fair city is a city free from discrimination and dishonesty and looking for justice, impartiality and equality. The challenge is to build a society facing inequality and respects diversity. Social cohesion requires basic levels of social equity, based on the right to work and to have remuneration that guarantees access to goods and services for a decent life.

Three perspectives, from three different cities, lie in this sphere. Perspective C of Ribeira Grande (RG C) is focused on social well-being and economic prosperity by means of increasing the attractiveness of city centre and the improvement of its spatial and functional quality. Besides this, the creation of economic and social programs to support the community are a priority for the city. In a similar way, perspective C of Angra do Heroísmo (AH C) argues that it is necessary to foster programs to help social minorities. Perspective A of Ponta Delgada (PDL A), looks for social justice among all inhabitants, and equal opportunities in society.

A liveable city is a city where people are integrated and connected and where the dialogue is the best way to rise to different challenges. In other words, "*an urban system that contributes to the physical, social and mental well-being and personal development of all its inhabitants*" (Timmer & Seymoar, 2005:32), thus creating

opportunities for citizens to be together and socialize. A liveable and high quality urban environment depends not only on the absence of noise and pollution, but also on the fruition of the natural territory, with its surroundings of green and blue spaces. Environmental awareness (ecological behaviour, environmental attitudes and moral responsibility) and social interactions are the main goals to pursue. Liveable cities belong to their citizens, and are considered as the places where they live, rest, communicate and share experiences.

Four perspectives, of three different cities, are included in this group. Perspectives A and C of Praia da Vitória (PV A and PV C) aim to combine environmental management and planning, in order to improve citizens' quality of life. Respondents consider that to reach sustainable development in Praia da Vitória, social equity and the quality of the urban environment should be improved. Physical and social environment are two aspects of the same reality: accessibility to green spaces and parks for recreation is an important aspect of the liveability of Praia da Vitória, as are the goods and services that natural systems provide, such as clean air, water, and food. In perspective A, the main challenge is to create an environment that integrates and satisfies the demand of all their citizens – especially, to ensure the improvement of the quality of life, welfare and comfort. On the other hand, in perspective C, both inclusiveness (social integration and cohesion) and authenticity (preservation of the urban environment) are important. Perspective A of Horta (HOR A) emphasizes the need to create and to develop a sustainability strategy, raising the need to inform and educate the population. Perspective B in Ponta Delgada (PDL B) highlights the management of the urban environment and the involvement of their citizens in those endeavours, as the best way to ensure quality of life, and decrease poverty and social degradation.

The interactions of economic and environmental elements are the key idea in a <u>viable city</u>. It is essential to understand that the urban capital assets, including the natural assets, are integrated and interdependent elements in the urban context. To deal with this challenge, it is necessary to achieve an effective management, based on the renewal and adaptation of financial goods and on the sustainable operation and use of existing resources.

Perspectives A and B from Angra do Heroísmo and Perspective C from Ponta Delgada

emphasize these issues. Perhaps, the citizens that chose a viable city recognise that their city is at the limit, almost crossing over the capacity of the system. Not only do the environmental aspects influence the economy of the city, but also its economic viability is vital to the future, contributing to its sustainability. For instance, perspective C in Ponta Delgada aims to aggregate different infrastructures in the centre – such as trade and public services. Perspective A of Angra do Heroísmo also focuses on the revitalization of the city centre, bringing more people there, creating more employment and economic development. On the other hand, perspective C of the same city envisages a city with better cultural services, that would allow the social revitalization of the centre. In fact, all perspectives of Angra do Heroísmo included the economy as an important component to improve the city's sustainability, which is in line with the description of the city (Figure 1), where the economical aspect is presented as the weakest pillar.

None of these perspectives described above ensures either the quality of life or sustainability for the citizens of the Azorean cities. For instance, a given city or municipality may indeed promote a good quality of life for their citizens, yet this lifestyle may not necessarily be viable or equitable; on the other hand, a city may reduce the energy bill, but people may not be satisfied with the lighting of the city centre. Thus, a full discussion of all perspectives here disclosed and what they mean to the cities is needed before it will be possible to implement the necessary changes.

In conclusion comparing the cities where concerns are more homogeneous, there are Horta (Faial Island) and Praia da Vitória (Terceira Island) followed by Angra do Heroísmo. The first focuses mainly on environmental issues, although one of the perspectives congregates also social concerns (HOR A). These two perspectives differ substantially from most of the others, since urban issues are analysed in a more transversal way, and not only from Horta's viewpoint. This may be connected with the long-standing tradition of receiving foreigners (e.g. sailors), or with the lack of connection between the different stakeholders and their city.

The second, Praia da Vitória, focuses in the social progress considering integrity and capacity of ecosystems and show high environmental awareness. These perspectives enumerate and relate the different topics that are considered

necessary to change their city towards urban sustainability but, apart from perspective C, do not emphasize problems of urban heritage or rehabilitation of the urban center. This may be due to the adaption of Praia to receive American soldiers and their families, which triggered a renovation of the housing facilities, and or to their relatively new status as a city.

Regarding Angra do Heroísmo, is noteworthy that the three perspectives focus on the urban centre, and its rehabilitation is perceived as a priority. It is obvious that there is a strong feeling of Angra as the "heritage capital of the Azores", which infuses all stakeholders with great care for its conservation. Mostly, the stakeholders seek a viable city and one perspective emphasizes a fair city.

Also for Ribeira Grande (São Miguel Island), two of the three perspectives, A and C, place the revitalization of the (historic) urban centre as key factors for solving problems related to the idea of economic development and a just city. The main issue is the integration of

people in the city, improving their education, cultural capital and income.

However, Ponta Delgada stands out as more heterogeneous. On one hand, it is clear that the three perspectives focus on the recovery of the urban centre, both in terms of social regeneration and as urban rehabilitation. It is agreed that a compact city centre will help in solving the various problems of the city and allowing for their evolution. On the other hand, the different perspectives of Ponta Delgada reveal a kind of tension between what is most desirable: quality of life, equity or viability.

Therefore, in this study it was verified that the concerns and needs detected in the cities of the Azores related to urban sustainability, are different from place to place. This indicates that in order to achieve sustainable development it is necessary to create and implement strategies and policies informed at the local level. The global concept of sustainability provides general lines of action, however these need to be reinvented in order to become effective in each community.

Table 5. Summary of the 14 perspectives of sustainability describing the five cities of the Azores after using Q-method and analysing the interviews.

CITY	PONTA DELGADA			RIBEIRA GRANDE			ANGRA DO HEROÍSMO			PRAIA DA VITÓRIA			HORTA	
	PERSPECTIVE A	PERSPECTIVE B	PERSPECTIVE C	PERSPECTIVE A	PERSPECTIVE B	PERSPECTIVE C	PERSPECTIVE A	PERSPECTIVE B	PERSPECTIVE C	PERSPECTIVE A	PERSPECTIVE B	PERSPECTIVE C	PERSPECTIVE A	PERSPECTIVE B
Desirable SD frame	A fair city	A liveable city	A viable city	Economic development	Social progress	A fair city	A viable city	A viable city	A fair city	A liveable city	Social progress	A liveable city	A liveable city	Environmental responsibility
Interpretative Metaphor	CONVIVIALITY (SOCIAL JUSTICE)	URBAN DEVELOPMENT OR EVOLUTION	PRESERVE NO NEED TO CHANGE	PROGRESS	SOCIAL DEVELOPMENT & PROGRESS	EXTREME RENOVATION (MAKEOVER)	URBAN REHABILITATION	CULTURAL DEVELOPMENT (ARCHITECTURAL)	CONVIVIALITY	CONTINUING THE IMPROVEMENT	INTEGRATE IN SOCIETY	NOT BELIEVE IN SUSTAINABILITY PROJECT	DEVELOPING FOR SUSTAINABILITY	FRAME OUR CITY IN THE GLOBAL WORLD
FOCUS	Social	Social	Environment	Economic	Social	Social	Environment	Economic	Social	Environment	Social	Environment	Environment	Environment
PROBLEMS	Scattered city; lack of social integration	Bad management causes poverty and degradation	Do not exist	Scattered city without Dynamism	Lack of education & autonomy leads to poverty and economic problems	Unresponsive city	Mismanagement causes degradation of the centre city, unemployment	No economical & environmental problems	Lack of social integration; cultural apathy	Improve quality of life	Marginalization involve poverty	Poverty; lack of employment; the city is not innovative	Do not exist	Global problems are not addressed: global changes, unemployment & security
SOLUTION	People education & city centre revitalization	City centre urbanistic revitalization	Maintain as it is: live outside and concentrate socio-economic activity in the centre	City centre revitalization People as resources	Social education	Tourist recovery of centre & coastal zone	City centre rehabilitation and/or social revitalization	City centre rehabilitation & cultural revitalization	Support programs to social minorities & improve cultural offer	Develop commerce & urban management	City centre revitalization; public involvement	City centre intervention Increase health services	Develop the sustainable city	Improve education & cultural infrastructures more employment; urban rehabilitation
KEY-IDEA	City centre as shared space	We need a compact city	The city is fine	The centre is the heart of the city.	Society needs intervention	Without intervention there is no future	The city centre is degraded	The city is fine, but can improve	Let's enjoy the city streets	Citizens take care of the city	The recovery of our city needs all of us	City falls short of expectations	Our city is fine	The city needs active citizenship
INTERVIEW ISSUES	Urban regeneration and planning; waste management; mobility	Improve urban management	Spatial planning, management and mobility	Management and drug addition	Programmes to help groups in risk	Programmes to help, employment, tourism & services for the population	Urban rehabilitation & heritage	Cultural activities & services would promote the quality of life	Cultural and social dynamism	Local development & employment	Urban participative management	Improve environmental management	Develop the city centre: urbanism, transports, employment & education for sustainability	Improve infrastructures, mobility and facilities for locals and tourists
PARTICIPANTS	3 academics, 1 activist, 1 citizen & 1 civil servant	1 activist, 1 citizen & 1 private employee	2 civil servants & 1 private employee	2 civil servants, 1 citizen, 1 private employee & 1 academic	1 private employee, 1 activist & 1 academic	1 activist, 1 civil servant, 2 citizens & 1 academic	1 civil servant, 2 private employees, 1 academic & 1 citizen,	2 civil servants, 1 academic & 1 citizen	2 activists, 1 academic & 1 citizen	2 civil servants & 1 academic	1 private employee; 2 activists & 2 academics	1 private employee & 3 citizens	3 civil servants;2 activists & 1 academic	2 private employees; 2 citizens & 1 academic

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