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The Azores region airspace liberalization and Its Territorial Cohesion

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Master In Political Economy

Supervisor:

PhD José Manuel Esteves Henriques, Integrated Researcher, ISCTE - Instituto
Universitário de Lisboa

September, 2023



CIÊNCIAS SOCIAIS
E HUMANAS

Department of Political Economy

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Resumo

Esta dissertação procura proporcionar uma visão sobre efeitos na coesão territorial dos Açores desde a liberalização do espaço aéreo. Os Açores são uma região autónoma de Portugal localizada no Oceano Atlântico Norte, que é constituída por nove ilhas e caracterizada por ter concentração demográfica e económica em duas delas. Com uma dependência histórica da agricultura e pecuária de pequena escala e, posteriormente, de transferências vindas da República e da União Europeia, os Açores procuraram diversificar a sua economia, liberalizando o espaço aéreo em 2015, tentando promover o desenvolvimento do turismo. Esta pesquisa procura, assim, responder à questão de saber se esta decisão política contribuiu positivamente para a coesão territorial da região, sendo a coesão territorial um objetivo político defendido pela União Europeia.

O estudo utiliza uma metodologia que combina métodos de análise regional, bem como uma análise de vários indicadores nas nove ilhas do arquipélago. Foram recolhidos dados em dimensões relevantes, como dados de turismo, demografia, economia e mercado de trabalho, e procurou-se fazer uma comparação de como esses indicadores evoluíram em cada uma das ilhas e nos Açores como um todo.

Os resultados indicam que a liberalização do espaço aéreo não parece ter contribuído positivamente para a coesão territorial da região. Isto porque a concentração das atividades turísticas é sentida maioritariamente em São Miguel. Além disso, as tendências de concentração demográfica e económica não foram significativamente alteradas. Estas questões podem levantar preocupações sobre o futuro da coesão territorial na região se esta estratégia de desenvolvimento continuar a ser seguida.

Palavras-Chave: Açores, Coesão Territorial, Liberalização do espaço aéreo

Abstract

This dissertation tries to provide insight into the effects on the territorial cohesion following airspace liberalization in the Azores, an autonomous region of Portugal, composed of nine islands, with demographic and economic concentration on two of them, which is located in the North Atlantic Ocean. With an historical dependence on small scale agriculture and later on from transfers coming from the Republic and the European Union, the Azores tried to diversify its economy by liberalizing airspace in 2015 in an effort to promote tourism development. This research thus tries to address the question of whether this policy decision has made a positive contribution to the region's territorial cohesion, a policy objective endorsed by the European Union.

The study uses a methodology that combines methods of regional analysis as well as a detailed and nuanced examination of several indicators at island level. The study collected data on several relevant dimensions, such as tourism data, demographics, economy and labour market, and tries to compare how these have evolved in each island, and with the Azores as a whole.

The findings reveal that airspace liberalization does not seem to have made a positive contribution to the region's territorial cohesion. This is especially so because a concentration of touristic activities is felt in São Miguel. Also, the demographic and economic concentration trends have not been significantly altered. These matters may raise concerns about the future of territorial cohesion in the region if this development strategy continues to be followed.

Keywords: Azores, Territorial Cohesion, Airspace Liberalization

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1. Introduction

1.1. Background and context

The Azores is one of two autonomous regions of Portugal, alongside Madeira. It's located in the North Atlantic Ocean, 1643Km away from Lisbon and 1925 Km away from Newfoundland in Canada. Besides being very isolated, it's also composed of nine islands, which are very disperse in space. The Azores is considered an outermost region of the European Union.

Generally, the Azorean economy has had an historical dependency from agriculture and livestock and, later on, from transfers coming from the Portuguese Republic and the EU, which combined came to represent 50% of the region's budget. By the turn of the century, tourism was beginning to gain relevance, but it was still considered an underdeveloped sector. This was because, before 2015, SATA International and TAP Air Portugal were the only airlines that were allowed to travel into the region, apart from some charter flights, essentially monopolizing Azorean airspace, which made fares too high for possible visitors. In this scenario, it may be of no surprise that, at this point, there was a lot of pressure, especially coming from companies that had businesses related to tourism, for airspace liberalization in the region.

So, in 2015, airspace was liberalized in the Azores, which brought a lot of changes to the region. From that point on, the number of visitors to Azores increased substantially, and so did the Revenue Per Available Room. A lot of other businesses flourished around tourism, such as restaurants, bars, apartment rentals for tourists, rent-a-car, catering services, tourism entertainment, among others.

1.2. Research Question and Objectives

Both the Azorean Government and economists in the region seem to believe that increasing development of the Azores will be attained by growing the tourism sector, in order to try to achieve economic convergence with Portugal and the European Union. The argument is that the State should promote worker qualification, investment attraction and territorial planning according to the needs of the industry. However, the excessive dependency on this sector can also have negative effects: low wages, seasonality, increase of price of real estate. Also, as the pandemic crisis has shown, it can be a big risk to be relying only on the tourism industry, given the exterior dependence the sector has.

Having this in mind, one could question if this is the most adequate strategy from the point of view of diminishing outside dependency and increasing territorial cohesion. The central question is that territorial cohesion has been inscribed as a core policy objective of the European Union, alongside economic cohesion and social cohesion, with the signature of the Lisbon Treaty in 2007. Even though the document doesn't clearly define territorial cohesion, it's understood as the reduction of disparities in the development of the regions, the promotion of a more harmonious development throughout all of Europe's regions, paying attention to the territorial effects of macroeconomic, social and of non-traditional development policies. The territorial cohesion agenda in Europe is rooted in two influential spatial planning agendas, the French and German traditions; and the principle of territorial cohesion implies a new paradigm in which to look at development, in the understanding that the challenges that regions have to face for their development are not independent from their context, which implies that solutions must be unique, differentiated and specific to each territorial unit. This principle gets a lot of different theoretical contributions through time, being further established with the release of the Barca Report (2009), in which it is recognized that for an efficient resource mobilization and to take advantage of the region's full potential, it is fundamental what is called a *place-based approach* to development, which comes into connection to the paradigm shift that came around the end of the 70's.

The initial theoretical contributions to the paradigm shift to development are the strategies of endogenous development that started being presented by Stohr and Tödting in the end of the 70's. This paradigm has as the main goal the satisfaction of the basic needs of the whole population, through mobilization of the society, municipalities and other agents of those regions, with an efficient utilization of the region's resources. Therefore, in this paradigm, the notion of development goes well beyond just economic growth, paying attention to social and spatial disparities and regional self-determination. This way of looking at development is characterized for being *bottom-up*, since the development strategy should be defined by society itself, having in mind the goals of satisfying the basic needs of the population, promoting small scale economic activities, efficient resource mobilization and utilization of adequate technology.

Having all of this in mind, this research is deemed relevant due to a lack of a debate about development alternatives for the Azores and also as to whether the benefits of opening up to tourism, since airspace liberalization, have been beneficial to all islands in the region, or just some. In this sense, the research question that will guide the investigation being done in this work is: has airspace liberalization in the Azores made a positive contribution to the territorial cohesion of the region?

1.3. Main goals and outline of the study

It is the goal of this work to make a positive contribution for the debate on the development of the Azores and to do a thorough analysis of the effects of airspace liberalization in the territorial cohesion of the region. In the next section it will be made a discussion about how to define territorial cohesion, where the concept gets its roots from, how it is understood in Europe, and the main debates regarding its understanding and operationalization. This part will be followed by an examination of the context of the Azores, and how the notion of territorial cohesion will be applied to it in this work's framework. Afterwards, the methodology used in this research, in an effort to try to answer the research question will be explained in detail. Subsequently, the results of the investigation, followed by a discussion of the findings will be done. This dissertation will then end with the concluding remarks.

2. Literature Review

2.1. What is territorial cohesion?

2.1.1. Introduction

In this part of the work, it will be attempted to describe the concept of territorial cohesion that will be used in the context of this research. With the signature of the Lisbon Treaty, Territorial Cohesion has been officially recognized the status of a political objective to be promoted by the European Union. But given the existing diversity, complexity and ambiguity of the concept, it is important to clarify it before moving forward, because it is fundamental to explain the context in which the concept will be used. First, the two main traditions on which the concept is rooted will be presented followed by a discussion of how the concept has evolved in Europe. This is of relevance because it's important that the debate on territorial cohesion, and by association this research, remains in the context of the European Model of Society (Nosek, 2017). Then, a presentation of the different views and approaches to the concept and how to better operationalize it will be made. This section will conclude

with how territorial cohesion is understood in the context of this work, since it's being applied to a region with very unique characteristics and specificities.

2.1.2. Roots and Evolution of Territorial Cohesion

According to Davoudi (2007), the European spatial policy has its roots on two influent traditions, the first being the French tradition of *aménagement du territoire*, which is seen as “regional economic approach to planning”. This approach generally shows interest for equity, reflecting the concerns of the French egalitarian tradition. On the other hand, the German tradition is concerned with balancing development with the capacity of the land, being a more holistic approach based on Heidegger's philosophical attachment to nature. The territorial cohesion agenda reflects both these traditions, which are themselves rooted in the European Social Model.

But, as it has been mentioned, there is a lot of diversity and ambiguity regarding the concept of territorial cohesion. Jouen (2008), for example, argues that the territorial cohesion approach is rooted on three main principles: 1) reducing geographically related disparities, 2) ensuring the coherence between sectoral policies and 3) strengthening the ties between territories. Camagni (2007, p.2)., on the other hand, states that territorial cohesion is just the “territorial dimension of sustainability”. However, not only between scholars is there diversity regarding the concept. Even in the European Union, in its institutions and official documents, there is ambiguity and there have been changes in how the concept has been understood. Even with the signature of the Lisbon Treaty, when territorial cohesion became an official policy goal, the concept cohesion is not explicitly given in the document. However, in the Third European Cohesion Report it is stated that “the concept of territorial cohesion extends beyond the notion of economic and social cohesion by both adding and reinforcing it”, adding that the goal is to pursue a “more balanced development by reducing existing disparities, preventing territorial imbalances and by making both sectoral policies which have a spatial impact and regional policy more coherent”, further reinforcing that “people should not be disadvantaged by where they happen to live or work in the Union” (Faludi, 2006, p.670).

It's taking this into account that the principle of territorial cohesion is in close relation to the debate of social models, since it adds a new dimension to it, extending it from just individuals and social groups to places and territories. It's an understanding that the development trajectories of territories are dependent on the type of social models and

that an individual's life chances are dependent not only on the social models, but also on the quality of the places and territories that they happen to live in.

2.1.3. Main theoretical approaches to territorial cohesion

The principle of territorial cohesion implies a new way in which development is looked at. It's also in close relation and gets initial contributions from the strategies of endogenous development that started being presented by Stöhr and Tödtling in the late 70's, in which the main ideas are that regional development should be driven in a bottom-up manner by endogenous actors and factors, with the goal of satisfying the basic needs of the population by efficiently mobilizing the region's resources.

This way of approaching development has then incorporated many elements and contributions through time, supporting the paradigm shift mentioned above. Some of these theoretical contributions to territorial development started being implemented during the 80's and 90's, such as the strategies of "retreat to subsistence", locality studies, strategies of valuing "social capital", "territorially integrated development" strategies, "institutionalist and realistic" perspectives of regional development and local development strategies are some examples. These theoretical contributions support a change in paradigm by emphasizing capacity for action and transformation as conditions for local development (Henriques, 2016).

Territorial Cohesion was further established by a communication released by the European Commission in 2008 called *Green Paper on Territorial Cohesion: Turning Territorial Diversity into strength*, where it's stated that territorial cohesion is about trying to pursue a harmonious development in all places and creating conditions for citizens to be able to create value from the specific characteristics of the territory. This communication also mentions that competitiveness is dependent on the context, namely on the capability of the people and companies in the region to make the best and most efficient use of the resources in the territory and also on the capability of establishing connections with other regions, since we live in a globalized and interdependent world. The Green Book on territorial cohesion stresses the importance of coordination between sectoral and territorial policies, for the increasing need of integrated approaches, partnerships and multilevel governance and also for public policies to take into account their territorial impact.

Another important contribution is the *place-based* approach to development suggested by Fabrizio Barca in his independent report *An Agenda for a Reformed Cohesion Policy: a place-based approach to meeting European Union challenges and expectations* (2009). This approach to development is also concerned with regional disparities and promoting a harmonious development between regions. It further acknowledges that relying solely on the market forces is inadequate to deal with the problems of poverty and social exclusion in our society but also that the solutions relying solely on financial redistribution promoted by the state are insufficient. It also has in mind that each region's problems are not independent from their context and so the development strategies should take into account each region's specificities. This should be done by promoting cooperation between regions and establishing a system of multilevel governance, with vertical and horizontal integration, possibly requiring exogenous intervention for its establishment, which then should pay attention to the spatial effects of macroeconomic, sectoral and public policies. It is in this sense that, having so much in common, one can come to the conclusion that there is a very big connection between the concepts of territorial cohesion in Europe, the strategies of endogenous development and the place-based approach.

2.1.4. Perspectives and Challenges in Operationalizing Territorial Cohesion

But being an official policy objective with so many characteristics attached to the concept, it has been a challenge to take territorial cohesion into a practical form and make it operational. In this sense, the creation for example of the European Structural and Investment Funds can be considered a step forward. However, when trying to assess and analyse the trajectory of spatial development, there have been major challenges and difficulties in trying to transform these ideas into analytical propositions and indicators for policy options, sometimes due to lack of data, especially on the social and environmental dimensions. Also, as discussed, particular concepts like “cohesion”, “integration” and “partnerships”, “polycentricity” or “growth poles” are broadly understood and some lack precise definitions and meanings.

However, there have been attempts in the European Union to try to analyse, measure and monitor the progress of territorial cohesion in its territory. Some of these examples are the European Commission Reports, the European Spatial Development Perspective (ESDP) in 1999 and the European Spatial Planning Observation Network (ESPON). These documents and programmes are important as they show that territorial cohesion

could be emerging as a rationale for organising European economy, society and space. However, they are not without criticism. Davoudi (2007), for example, argues that even though ESPON can be considered a step forward in European research in trying to understand, measure and operationalize the concept of territorial cohesion, it is still too economically driven, focusing more on the economic dimension, which, according to him, makes the research program too technical and rational. This can be considered a problem because, if the goal is breaking with the current hegemonic paradigm, this concept can become attached to a technical-rational way of thinking and becoming engulfed in the European agenda of economic integration and liberalization. Taking this into account, Davoudi (2007) calls for the need to add not only more indicators besides the commonly used GDP and unemployment rate, but also to add qualitative in-depth analysis to complement the research.

Following a similar line of logic, Abrahams (2014) criticizes European programmes like ESPON for being too “essentialist” rather than pragmatic. By essentialist, Abrahams means “that a concept can be defined according to a set of coherent, essential traits and these traits can be used as the basis for measurement and assessment tools” (p.2147). In his view, this essentialist way of looking at territorial cohesion tries to provide one single universal and essential meaning to the concept, with unchangeable characteristics and dimensions, making it overlook key lines of enquiry, such as context. It is added that this kind of approach bears the risk of not encouraging innovative responses to problems but instead being about just setting goals for policy makers to achieve. Abrahams (2014) argues that, for these reasons, organizations like ESPON, instead of being concerned with setting a set of unique dimensions that define territorial cohesion, should be taking a more pragmatic approach of considering what the concept might do and does/has done. Tödting-Schönhofer and Kinsella (2008) seem to follow this line of reasoning, arguing that attempting to measure territorial cohesion isn’t something that can be done just relying on quantitative data and indicators, adding that “any territorial reflection needs not only to take into account the features of the specific region (...) but also the room for manoeuvre of the relevant territorial entity” (p.6). In short, these authors seem to be pointing out that there is a paradox between what they consider a rational and/or essentialist approach and the definition of territorial cohesion, since the over reliance on pre-defined concepts and quantitative indicators, in their view, has the

danger to be appropriated by the current hegemonic development paradigm since it doesn't seem to give enough importance to context.

On the other side of the same argument are those who state that, in order to pursue territorial development, it is fundamental to define a set of dimensions, indicators and/or indexes on which to measure territorial cohesion, in order to make them a reference and be useful for policy makers. Medeiros (2016), for example, argues that the non-existence of a well-defined and general methodology for measuring territorial cohesion deters scholars from pursuing that kind of research. In his view, territorial cohesion has four dimensions, which should be viewed as the main pillars of the concept, which are then subdivided in components. The main dimensions of territorial cohesion, for Medeiros, are socio-economic cohesion, environmental sustainability, polycentricity and cooperation/governance. In his view, having this kind of approach in mind will make it more achievable to make measurements on the trajectory of territorial cohesion in the European Union territory. Camagni (2007) seems to be on the same argument, proposing a clear definition of "territorial cohesion as the territorial dimension of sustainability" (p.6). For him, territorial cohesion is complementary to economic and social cohesion and regards sustainability which, in his argument, has four different dimensions: the technological, the behavioural, the diplomatic and the territorial dimension. So, in this sense, territorial cohesion concerns the efficient and environmental-friendly spatial distribution of human activities of the sustainability goals and has three main components. Territorial quality concerns things as working environment, quality of living and access to services; territorial efficiency regards competitiveness of the territory and the efficient and use of natural resources such as energy and land. Territorial identity is about the presence of social capital and competitive advantage in the territory.

On the middle ground of the debate seem to be Zaucha and Bohme (2020), for instance. For these authors, measuring and quantifying territorial cohesion can be possible and advantageous. They still stress however how context dependent it may be, arguing that there must be a discussion about the context before setting key dimensions for assessing territorial cohesion of a given area.

It is worth noting at this point that even among those who agree on the merits and advantages of measuring and operationalizing territorial cohesion don't seem to be in agreement about which are the best indicators for assessing it. Fabrizio Barca, the

author who wrote the report that proposed the *place-based* approach to development for the European Union, published a work in 2011 called *Outcome Indicators And Targets: Towards a New System Of Monitoring And Evaluation in EU Cohesion Policy*, in which a set of indicators are proposed to measure and operationalize territorial cohesion and the progress of Europe 2020 objectives. Medeiros et. all (2022), even though supporting quantitative approaches to study the trends of territorial cohesion, argue for the creation of aggregated indexes on its four previously identified dimensions.

It could be argued that this approach of trying to measure territorial cohesion is more in line with the previously mentioned French tradition of *aménagement du territoire*. As Faludi (2004) argues, even though territorial cohesion as it is understood today shows concerns with sustainability and the coordination of policies with territorial impact, initially at least in the French tradition it wasn't so. *Aménagement du territoire* can be seen originally as the “regional economic approach to spatial planning” (Faludi, 2004, p. 1354), in which the initial concerns were on regional economic development, reducing inequalities, controlling the growth of Paris and the population loss of small towns and rural areas.

2.1.5. Contextualization of the Research Framework

In this sense, the approach being taken in this work will be carried more towards the French approach, rather than the German, which is more concerned with co-ordination, relating to the comprehensive integrated approach. Thus, the path being taken in this research will be more in line with the principles of *amenagement du territoire*, which cares for pursuing balanced development for all the territory concerned. Taking this into account, a new dimension is being given to the socioeconomical analysis by territorializing it, taking seriously the principle that no individual should be at a disadvantage by where they happen to live or work.

What seems to be clear is that in any analysis of territorial cohesion it has to be taken into account the importance of context. If not so, it wouldn't even be worth talking about a paradigm shift of approaching development, since it's the current one that seems to have a one size fit all approach to development. In this sense, in the next section the context of the Azores will be explained along with the dimensions that will be studied.

2.2. The context of the Azores

2.2.1. Overview

The Azores is an archipelago composed of nine islands located in the North Atlantic Ocean. It's approximately 1643Km away from Lisbon and 1925Km away from Newfoundland in Canada, being one of the two autonomous regions of Portugal. Besides being very isolated from any continental land, the islands are very dispersed from one another, comprising a total of sea surface area of 954496 Km², making it one of the largest exclusive economic zones of the European Union. Because of such geographical dispersion, the islands are divided into three different groups, relating to their proximity: the eastern group, composed of São Miguel and Santa Maria; the central group is formed by Terceira, Faial, Pico, Graciosa and São Jorge while Flores and Corvo form the western group. As an autonomous region since 1976, the Azores have their own government with its own budget and with powers on taxation, economic and social development and international treaties that might concern the region.

The isolation of the islands from any continental mainland and amongst themselves provides additional challenges for development, attractiveness and territorial cohesion. Being small, remote, with challenging topography and climate, besides geographically disperse and economically dependent on a certain number of products, brings some additional constraints to development that would not otherwise be felt. For these reasons, the Azores are considered an outermost region of the EU by article 349° of the Treaty on the Functioning of the European Union.

2.2.2. Before airspace liberalization

According to Fortuna (2016), in 1974, before being granted the status of Autonomous Region, the Azorean economy was characterised for being very dependent from what was still an almost only subsistence and smallholding agriculture and livestock. But, around the year 2000, the region's economy had already gone through major changes, being driven not only because it became an Autonomous Region in 1976 but also stimulated by the fact that Portugal joined the European Union in 1986. By this time, even though it was still noticeable the strong agriculture and livestock tradition in the region, the economy was going through rapid changes boosted by the transfers coming from the European Union and the Republic, which transformed it into one which was dependent from the public sector, but in which tourism was starting to gain bigger relevance. The industry in the region is mostly of the agro-industry type but, due to transportation costs, it makes the products less competitive for exportation, so tourism

was seen as a sector with potential for the development of the region, which is not uncommon for insular territories of small dimensions with economic competitiveness problems.

Tourism in the region was seen as a sector with potential for the development of Azores because around this time, before 2015, the air transport sector in the region was working under a system of Public Service Obligations, which means that the only two airlines that could fly from the Portuguese mainland cities of Lisbon and Oporto into the Azores were TAP Air Portugal and Sata International, with the exception of some charter flights from Europe, which means that these two airlines essentially had the monopoly of air traffic into the region. At this point, there were two different fares: one for the visitors coming into the region and another, cheaper one for the residents of the Azores. This was considered by many as the main reason for the tourism sector underdevelopment in the islands, as the lack of competition between airlines was blamed for the high fares, which were considered too expensive for possible visitors. For this reason, it may be of no surprise that there was a lot of demand, especially from entities related to tourism, such as hotels and restaurant operators, for airspace liberalization in the region.

2.2.3. After airspace liberalization

Following these demands, airspace was thus liberalized in 2015 in the Azores, which brought what some would call a small revolution to the islands. Immediately after the liberalization, Ryanair and Easyjet started flying to São Miguel and Terceira from Lisbon and Oporto, and the number of guests increased by over 100.000 in 2015 alone, which made the annual average growth rate regarding the number of guests jump to 25.7% while the annual average growth rate regarding the number of nights spent in a particular destination increased to 26,8%, both between the years of 2014 and 2016 (Vieira et al, 2019). Besides hotels, many other economic activities benefitted from the increase in passenger flow, such as restaurants, rent-a-car, catering, tourist entertainment, among many others.

It seems that this approach to development based on the tourism industry in the region is to be kept in the future. The development of the sector after the pandemic seems to be a priority, as confirmed in the Government's Action Plan for the Sustainability of the Azores Destination. In line with this view, the regional government has proceeded to a number of tax reductions in order to try to promote entrepreneurship, attract investment

and dynamize the economy. This approach seems to be supported by some economists in the region. Fortuna (2016) writes that tourism is the most privileged sector on which to make the economy develop. Vieira et al (2019) argue that deregulation and airline diversification is a suitable policy to achieve both tourism growth and economic diversification. Castanho et al (2020) also argue that tourism can have a positive contribution to the region, claiming that it is important for attracting investment and investors to Azores, which are inherent to sustainable development. For Zsembera (2018), the development of tourism was mostly positively felt but, on the other hand, states that there still is debate in the region into whether the process of liberalization had more positive or negative effects.

2.2.4. Theoretical assumptions supporting airspace liberalization

It could be argued that the line of reasoning supporting airspace liberalization is closely related to the assumptions of the current hegemonic paradigm. The functionalist paradigm (Henriques,1990), which has its roots on the neoclassical economic theories, assumes that development begins only in certain sectors and geographical areas, and then, with time, spreads through space and to other sectors. In this sense, development strategies should focus on a very small number of sectors, which would then create impulses on other sectors. In this paradigm, development is basically achieved through economic growth, for which is fundamental the territorial division of labour and inter-regional trade. This way of thinking seems to be in line with the reasoning supporting airspace liberalization, which assumes that there is no problem if, for example, tourism increase is felt overwhelmingly in one region or island as opposed to others. The “new” paradigm, mentioned before, further established in Europe with the release of the Green Paper and of the Barca Report, implicitly assumes the insufficiencies of traditional regional economic policy and has as fundamental values the satisfaction of the basic needs of the whole population, with a selective economic growth oriented towards redistribution, with development strategies including more involvement of the population with their territorial identity in mind. From this point of view, there could be some pernicious effects that could foreseeably come attached to the policy decision of airspace liberalization in the Azores.

Moniz & Simão (2019) highlight some of the negative effects that a pursuit of economic growth through the development of the touristic sector can have on insular territories. Some of those identified are, for example, increase of garbage, pollution and

environmental degradation; the increase of the cost of living, especially when it comes to property, rent and real estate; high economic leakages; excessive dependency from touristic operators from outside; danger of monoculture and seasonality, with low work demand during low season and excessive working hours during high seasons, which may impact family, cultural and religious lifestyle.

Having all of this in mind, and also the French tradition of *aménagement du territoire* on which the concept of territorial cohesion is rooted, one could arguably understand the research question, which is “Has the airspace liberalization in the Azores made a positive contribution to the territorial cohesion in the region?” as trying to understand if the premises of the new paradigm are being contemplated with that decision. It’s important to note that territorial cohesion was inscribed as a policy objective for the European Union since 2007, and airspace liberalization happened in the region only in 2015. Furthermore, the Azorean Government recognizes the importance of the principle of territorial cohesion, having as a policy goal the promotion of it, alongside sustainable development. This is of relevance because, in the year of the liberalization, in 2015, there was already a demographic concentration on only two islands, with 56% of the Azorean population living in São Miguel, 23% in Terceira, while the other 21% living in the other seven islands. Similarly, when it comes to GDP distribution per island, in 2014, 58.2% was concentrated in São Miguel, 21,5% in Terceira, with the remaining being divided amongst the other seven islands. Also, as Zsembera (2018) has noted, the increase of visitors to the region that happened during the year of 2015, immediately after the liberalization, was felt most especially in São Miguel, only slightly in Terceira and barely on the remaining islands.

2.2.5. Dimensions for assessing territorial cohesion in the Azores

In the light of all of this, and being territorial cohesion not only a scientific, but also a political matter, since it implies a paradigm shift in the way development is looked at, it’s important to limit the research to what are considered the most decisive questions or dimensions for the Azores, considering not only the broadness of the concept but also the time at disposal to conduct the research.

The first dimension that will be looked at will be is one related to tourism, since this is the most obvious consequence of airspace liberalization. Indicators such as the number of guests and the number of stays will be collected, analysed and compared in how they have behaved in the different islands. The next dimension that will be looked at is

demographics. For Simões Lopes (2001), studying population it's always at the core of the regional studies. Tödting-Schönhofer and Kinsella (2008), also write that “demographic factors also have direct impact of territorial cohesion” (p.9). The Azorean Government also recognizes the importance of this dimension, stating that demographic disparities are intimately connected to economic disparities, noting that all islands have been losing population, but stressing that this is especially concerning for those islands that already had low population numbers. In this sense, the population in percentage and in absolute numbers will be looked at, but also important indicators such as the natural balance and migration, in order to try to better understand how the population dynamics changed in the last decade in each island.

Subsequently, the most traditional ones, such as economic and labour market dimensions, will be assessed. Even though it can be argued that, especially the economic dimension, does not meet the purpose of breaking with the current hegemonic paradigm, it's still used not only by economists in the region to measure how the Azorean economy is behaving, but also they're still featured and given much importance in the European Cohesion Reports. Also, the job structure of every island is significant to be studied, to see how airspace liberalization and opening up to tourism impacted the labour market. This is of relevance because, as it has been discussed, the literature points to several downsides of working in the sector, such as seasonality and low wages, which may have big impacts in people's lives.

The next section will explain in detail the methodology that will be employed in order to try to answer the research question.

3. Methodology

3.1. Study design, main dimensions and indicators and data collection

This study involves analysing the impact of airspace liberalization on the territorial cohesion of the Azores region, by looking at the most relevant dimensions, referred to in the literature review. In that sense, it can be considered a single case study.

In order to achieve this goal, the strategy is to use quantitative data and look at several indicators, examine and analyse them in two different points in time: one before airspace liberalization, which happened in 2015, and one after. In most cases, the years chosen will be 2014, just before airspace liberalization and 2019, after liberalization but before the COVID-19 crisis. However, due to some data unavailability for the two years

mentioned, the periods in time used can be slightly different. The indicators that will be analysed will, as explained in the previous section, fall under four different dimensions.

The first dimension that will be analysed will be tourism, since this is the most obvious consequence of this policy decision. In this dimension the data collected will include the following indicators: disembarked passengers by airplane, number of guests and stays, total hospitality capacity, number of hotels and their profits, and also profits of restaurants and number of non-traditional accommodation options. The second dimension will be demography. The indicators collected for this dimension include both the population distribution and in absolute numbers, and also the natural balance and migration data, as to try to have a better understanding of the demographic dynamics. The next dimension will be the economic one, and this will include the GDP distribution per island, the purchasing power per head and the Gross Added Value per sector. The fourth and final dimension, regarding the labour market, will feature data on unemployment rates, total employed population, employed population per sector of activity, with a focus on the tertiary sector, and also average number of workers working in the hospitality industry.

The data used is of the secondary type, since it was collected from three organizations and institutes, one at regional and two at national level. At the regional level, data was collected from Serviço Regional de Estatística dos Açores (SREA). At national level, data was gathered from Instituto Nacional de Estatística (INE) and Pordata.

In order to complement and gain more insight into the data collected, interviews were also conducted with five people of interest who could provide detailed information regarding some aspects concerning the results obtained.

3.2. Analytical method

The data was collected at island level, as these will be the territorial units given attention to in this research. For the population numbers, however, data was initially collected at municipal level and subsequently aggregated by island, using census information. Having the French tradition in mind, with concerns about equity of development among territories, the method, even though it's a single case study of the Azores region, will include a comparative analysis of the different islands in the archipelago, focusing on the indicators mentioned before. The methodology employed

in this work required creativity, in the sense that the methods were chosen and adapted to be applied in a context of scarce existing information.

The methodological strategy will sometimes be structured around simple percentage analysis. The Dunn method will be mostly used. It's a method suggested by Simões Lopes (2001), which is very suitable to study if imbalances on certain indicators have been diminished or exacerbated throughout the regions of a certain country, keeping in mind that in this study the Azores are being treated as the “country”, and its islands as the regions. This method was proposed by Edgard Dunn, in 1959, and it allows to compare the behaviour of an indicator in each region, island in this case, with the real behaviour of the total of the regions as a whole. This way, having two points in time as reference, one before and one after the liberalization, one is able to compare the real behaviour that happened in each region with the patterned behaviour, that is, the one that should happen for imbalances to have remained unchanged. The method provides variations in absolute numbers, but also a relative variation. In this case, the one the island represents, as a percentage, to the Azores as a whole.

If $x_i^0 (i= 1,2,\dots,n)$ and $x^0 = \sum_i x_i^0$ are the values registered of variable x , in the first referenced point in time being analysed, for island i and for the region as a whole, and if x_i^1 and x^1 are the values of the same indicator in the second referenced point in time, what has to be done is compare each x_i^1 with $\hat{x}_i^1 = x_i^0(1 + \delta)$ in which δ is the growth rate between the two points in time:

$$\delta = \frac{x^1 - x^0}{x^0}$$

Which means that \hat{x}_i^1 is the value of indicator x that island i should have in moment 1 if the already existing imbalances in moment 0 had remained unchanged. The absolute variations ($\Delta_i = x_i^1 - \hat{x}_i^1$) and relative variations ($\frac{\Delta_i}{\hat{x}_i^1}$) cancel each other out, because:

$$\sum \hat{x}_i^1 = \sum x_i^1 = x^1$$

Using the Dunn method will enable to determine if any imbalances that may have existed prior to liberalization have been exacerbated or improved. Applying it to look at

the behaviour of several indicators on different islands, one is examining whether there is convergence or divergence in these indicators throughout the region.

But also some other methods of regional analysis suggested by Lopes (2001) were employed in an effort to draw more coherent conclusions. The Location Quotient (LQ) was applied. It's an index that relates the relative importance of a certain indicator in a region, island in this case, with the relative importance of the same indicator in the islands as a whole. If x_{ij} is the value for indicator x , in sector j , in island i , then the Location Quotient is calculated as follows:

$$LQ_{ij} = \frac{x_{ij}/x_j}{x_i/x}$$

The Location Quotient was used in order to gain a deeper understanding of the impact of non-traditional accommodation options in each island. The location quotient enables a comparative analysis between the availability of beds in these new forms of accommodation because it allows to compare the relative significance of an indicator within a specific island and its relative significance in the whole region. The indexes' range goes from a minimum of zero to an undefined maximum, having 1 as reference, which will be the value of the quotient for the whole Azores region. A higher location quotient value means a higher occurrence of the phenomenon, which in this case is the relative number of beds available in non-traditional forms of accommodation versus the total number of available beds in the island.

The specialization index was also applied in this study. Using the same symbology that was used for the Location Quotient and if x_{ij} is, for example, the number of workers in island i in sector j , with x_j being the number of workers in sector j in the whole region and x_i and x being the total number of workers in island i and in the whole region, the specialization index for each island (E_i) is calculated as displayed below:

$$E_i = \frac{\sum_j \left| \frac{x_{ij}}{x_i} - \frac{x_j}{x} \right|}{2}$$

This method was used on the workers per sector data. Applying it allows to have a better understanding of how airspace liberalization has influenced each island's labour market by comparing with the broader Azores context. The goal is to try to establish if

there is overspecialization on the services sector due to tourism increase or, on the other hand, if this process contributed to job diversification. The Specialization Index can help in this analysis, as it aids in assessing if an island's economy is tending towards increased specialization in comparison to the regional trend. A value near zero indicates lack of specialization, while a value close to one suggests high specialization in the island.

Another strategy that was employed was the shiftshare method. If δ is the growth registered in the whole region, δ_i the growth registered in island i and δ'_i the growth the island should have registered had it behaved as the whole region, then $D_i = \delta_i - \delta$. This method has two components, which explain the island's performance in relation to the region in the D_i column. The structural component ($\delta_i - \delta$) shows the impact of the island's structural characteristics on its sectors dynamism, while the regional component ($\delta_i - \delta'_i$) contrasts the actual performance of the island's sectors with what would have happened had they behaved as the patterned performance of the whole Azores region. Using the Shiftshare method deepens the analysis of the Azorean labour market by enhancing the understanding of employment growth or decline in light of regional trends or distinctively dynamic sectors. A positive value suggests a better performance than the regional patterned behaviour, while a negative one indicates a worse dynamism across the three economic sectors, when comparing with the region as a whole.

To complement and gain better understanding of some of the results obtained, five people in positions of interest were interviewed for the purpose of this work. A former Regional Secretary of Tourism and Sustainability of the Government of the Azores, a representative of UGT-A (União Geral dos Trabalhadores – Açores) at Conselho Económico e Social dos Açores and an owner of a travel agency in Terceira answered questions by mail. Interviews by videocall were made with an Economics Professor at Universidade dos Açores and with a manager at a leading real estate agency in the Azores. These interviews had the purpose of gaining information and trying to explain the dynamics of some of the indicators mentioned above.

The goal was then, after the data collection and application of the methods, to provide a detailed and nuanced analysis of the behaviour of the indicators, including those related to tourism and try to explain the similarities, differences in their behaviour and analyse if there is any relation among them, with the aid of the answers obtained from the

interviews. When studying territorial cohesion in Portugal, some other studies have also used quantitative methods. For instance, Medeiros conducted such an analysis in 2011, albeit without including the Azores in the study. Araújo, on the other hand, extended his analysis to include the Azores in 2014. Even though the former doesn't include the Azores, the latter does. However, the approach made by Araújo, for example, is not the goal of this research. The author calculated an index for a predetermined set of dimensions that compose territorial cohesion and, subsequently, averaged those indexes to get an index of territorial cohesion for each region. This is by no means meant to be a critic, but to highlight that even when using quantitative methods to assess territorial cohesion, there are many different strategies that can be employed to analyse the same thematic.

3.3. Limitations

The main limitations of this approach are explained ahead. First, it's impossible to provide causality. One can come to the conclusion that territorial cohesion has either improved or worsened, but still, it is difficult to attribute it to airspace liberalization alone by using this kind of methodology. Secondly, some may consider that a very short time has passed since airspace liberalization in the Azores to come to a definite conclusion. Also, when using this strategy, one can only account for if existing imbalances have been exacerbated or diminished. This means that it doesn't provide information on disparities that may already exist when taking the first point of reference. Fourth, some may consider this strategy too economically driven, rationalistic or essentialist, as Davoudi or Abrahams put it. On the other hand, it can be argued that the methodology being employed uses the best possible methods with the data that exists, exhausting the availability of indicators to try to understand the path of territorial cohesion in the region. Furthermore, this approach can provide insight into the trajectory of territorial cohesion within the Azores region, as it examines whether different islands are moving towards a similar level of development or diverging in their development trajectories. Additionally, this approach can help identify which indicators are diverging among the islands, which can inform policy decisions aimed at promoting greater territorial cohesion.

Overall, by doing percentage analysis and using other methods of regional analysis as suggested by Professor Simões Lopes to try to interpret changes in key indicators before

and after liberalization, the aim is to provide a detailed and nuanced understanding of the effects of liberalization in the region. This could help to identify differences and similarities between islands and to assess the extent to which the region is experiencing balanced territorial development.

The next section concerns the main results of the research.

4. Results

As mentioned in the methodology section, the methods used allow to make a comparison between the real behaviour of a certain indicator in each region, or island in this case, and the patterned behaviour, which means the behaviour registered in the whole Azores region. This way, we can conclude if the unbalances, which may already exist, have increased or diminished, regarding the indicator in question. In this sense, the analysis will begin with indicators that relate to the tourism industry, to try to gain a sense if airspace liberalization and tourism growth were spread evenly throughout the islands. After that, it will be important to check if there have been consequences not only at the demographic and economic levels but also at the level of jobs; and if these have been felt differently across the archipelago.

4.1 Tourism

As it was referred to in the literature review, airspace liberalization in the Azores brought an immediate and great increase of visitors to the region. There was, however, some concern that this increase of visitors to the islands was being overwhelmingly felt in Terceira, but especially in São Miguel. To check if there is a valid reason for these concerns, data was collected on the number of disembarked passengers by airplane by island, in the years before airspace liberalization and the covid-19 pandemic. This information is displayed below in Table 1.

Table 1: Disembarked passengers by air traffic

Air traffic disembarked passengers						
	2014	2019	Real Growth Rate	2019 Pattern	Absolute Variation	Relative Variation
Santa Maria	33012	46069	39,55%	61932	-15863	-14,41%
São Miguel	471971	994638	110,74%	885438	109200	99,20%
Terceira	215143	359893	67,28%	403617	-43724	-39,72%
Graciosa	19040	28219	48,21%	35720	-7501	-6,81%
São Jorge	24264	39960	64,69%	45520	-5560	-5,05%
Pico	37474	71181	89,95%	70303	878	0,80%
Faial	82615	122829	48,68%	154989	-32160	-29,22%
Flores	22066	36648	66,08%	41397	-4749	-4,31%
Corvo	2600	4357	67,58%	4878	-521	-0,47%
					0	
Total Azores:	908185	1703794	87,60%	1703794	110078	0,00%

Source: SREA

As one can see by looking at Table 1, disembarked passengers in the Azores increased by 87,6% between 2014 and 2019. However, as one can confirm, this increase of disembarked passengers by airplane was not close to being spread evenly throughout the islands. In fact, it seems that the concerns that the increase in air passenger flow would be especially felt in São Miguel and not in the remaining islands were mostly confirmed, as the island experienced an increase of more than 110% in air passenger flow, the highest of all the islands. Furthermore, when looking at the relative variation column, it is noticeable that the biggest island in the archipelago concentrates 99.2% of the positive relative variation, which goes to show just how the air passenger traffic increase was overwhelmingly felt in São Miguel. The only other island that had an increase in air passenger flow that was higher than the Azores as a whole was Pico, but only slightly. Maybe surprisingly, Terceira has a variation that was lower than the region as a whole, with a relative variation that comes close to the -40%.

It's also very important to see how this increase in air passenger arrivals in the islands materialized in terms of number of guests and stays, since these are arguably responsible for bringing revenues and jobs, especially when it comes to the hotel industry. Table 2 below shows the evolution of guests per island between the years 2014 and 2019.

Looking at table 2, it would not be too farfetched to assume that there was indeed an increase of the total number of guests across the nine islands in the Azores, with the total growth rate in the region registering 145,12% in this regard. However, the growth rates vary across the islands, with only 3 of them having more guests in 2019 than the patterned prevision: São Miguel, Pico and Flores. All the other islands had growth rates

that were inferior to that registered in the Azores, with São Miguel concentrating more than 97% of the relative variation, and with an even higher growth rate or real variation than both Pico and Flores.

Table 2: Number of guests

	Total number of guests					
	2014	2019	Real Growth Rate	Pattern 2019	Absolute Variation	Relative Variation
Santa Maria	11416	16456	44,15%	27983	-11527	-16,09%
São Miguel	226166	624093	175,94%	554388	69705	97,32%
Terceira	67351	143545	113,13%	165094	-21549	-30,09%
Graciosa	4740	7946	67,64%	11619	-3673	-5,13%
São Jorge	11001	23416	112,85%	26966	-3550	-4,96%
Pico	23180	57647	148,69%	56820	827	1,15%
Faial	45092	79524	76,36%	110532	-31008	-43,29%
Flores	6880	17955	160,97%	16865	1090	1,52%
Corvo	623	1212	94,54%	1527	-315	-0,44%
					0	
Total Azores:	396449	971794	145,12%	971794	71622	0,00%

Source: SREA

To complement the information provided by this table, it is also important to see if the number of stays follows the same pattern as the number of guests per island. The next table (Table 3) displays the number of stays by island for the same period.

The number of stays in the Azores increased by approximately 144,5% in the region, comparing 2019 to 2014, a growth rate similar to the one registered for the total number of guests. Regarding the number of stays, besides the 3 islands that were mentioned for having positive absolute variations regarding the number of guests, also Terceira has one regarding number of stays, despite not being so when it comes to the number of guests. This might be an indication that tourists are preferring to spend more time in Terceira when they visit the Azores, at the expense of other islands. This can be advantageous for Terceira, as the island's businesses might be able to increase revenues without such an increase in the number of visitors, which might lighten some of the pernicious effects that a huge increase of visitors to an insular territory might have.

Santa Maria, Graciosa, São Jorge, Faial and Corvo seem to be, at this stage, the losers in the Azores region, regarding disembarked air traffic passengers, number of guests, and number of stays, as these islands, in all the indicators referred to, show a growth rate that is inferior to that which was registered in the Azores region and though, have a negative relative variation. On the opposite side of the same coin is São Miguel, which not only has growth rates that are higher of that of the Azores, but also concentrates most of the positive relative variation on all indicators.

Table 3: Total number of stays

	Total number of stays					
	2014	2019	Real Growth Rate	Pattern 2019	Absolute Variation	Relative Variation
Santa Maria	33913	47894	41,23%	82902	-35008	-28,75%
São Miguel	803713	2073282	157,96%	1964717	108565	89,17%
Terceira	157941	391980	148,18%	386095	5885	4,83%
Graciosa	12611	19673	56,00%	30828	-11155	-9,16%
São Jorge	25640	58747	129,12%	62678	-3931	-3,23%
Pico	67186	170301	153,48%	164240	6061	4,98%
Faial	107985	193250	78,96%	263975	-70725	-58,09%
Flores	20608	51617	150,47%	50377	1240	1,02%
Corvo	1650	3101	87,94%	4034	-933	-0,77%
					0	
Total Azores:	1231247	3009845	144,46%	3009845	121752	0,00%

Source: SREA

As it was referred to in the literature review, in the section regarding the context of the Azorean archipelago, it was mentioned that airspace liberalization and tourism growth provided an opportunity for the proliferation of new businesses, such as hotels and restaurants, among others. It is important to understand if the increase of guests and stays across the Azores was accompanied by an increase in the number of beds available. Table 4 presents the number available beds per island in the region, in 2014 and 2019.

The number of available beds more than doubled in the Azores since the liberalization, going from roughly 9500 to over 25000, with a growth rate of 164,82%. The islands in which airspace liberalization seems to have spawned into a bigger increase in the number of beds were São Jorge and Pico, way higher than the ones registered for guests and stays in the same islands, as mentioned above. In the case of São Jorge, this seems particularly unjustified, since the island registers negative relative variations regarding guests and stays, but a 20% positive one when it comes to number of beds. In total number of beds, only Santa Maria, Terceira, Graciosa and Faial had growth rates that didn't keep up with that of the Azores as a whole, with Graciosa not even keeping up with its own increase in number of guests and stays.

Table 4: Total hospitality capacity (number of beds)

	Total hospitality capacity (number of beds)					
	2014	2019	Real Growth Rate	Pattern 2019	Absolute Variation	Relative variation
Santa Maria	368	529	43,75%	975	-446	-21,32%
São Miguel	5130	13944	171,81%	13585	359	17,17%
Terceira	1887	4083	116,38%	4997	-914	-43,75%
Graciosa	214	284	32,71%	567	-283	-13,53%
São Jorge	203	957	371,43%	538	419	20,07%
Pico	601	2743	356,41%	1592	1151	55,11%
Faial	890	1910	114,61%	2357	-447	-21,39%
Flores	223	738	230,94%	591	147	7,06%
Corvo	18	60	233,33%	48	12	0,59%
					0	
Total Azores:	9534	25248	164,82%	25248	2089	0,00%

Source: SREA

The increase in the number of beds was predictably driven by an increase in hotel numbers in the region following airspace liberalization and by extending the supply of houses and apartments for tourists, also referred to as non-traditional hospitality accommodations. In the following part, this will be analysed. Table 5 shows the number of hotels per island in the years 2014 and 2019.

As one can see looking at Table 5, in the last line regarding the Azores, the number of hotels in the region jumped almost 22%, from 82 to 100, a total of 18, being half of those in São Miguel. The number of hotels in São Miguel did increase at a higher rate than in the Azores, but it was in São Jorge and Pico that the tendency was more increasingly felt, with the two islands having a percentage increase in hotels that was much higher than that of the Azores.

These three islands mentioned concentrate all the positive variation in the archipelago, with Pico weighing almost 60%, which means that in the remaining 6 islands the number of new hotels didn't keep up with the region as a whole. Emphasis can be given to Terceira, which has minus two new hotels than it should have had the island grown at the same rhythm as the Azores as a whole in this regard, concentrating almost 45% of the negative variation.

Table 5: Number of traditional hotel establishments

	Number of Hotel Establishments					
	2014	2019	Real Growth Rate	Pattern 2019	Absolute Variation	Relative Variation
Santa Maria	4	4	0,00%	5	-1	-17,91%
São Miguel	38	47	23,68%	46	1	13,43%
Terceira	19	21	10,53%	23	-2	-44,28%
Graciosa	3	3	0,00%	4	-1	-13,43%
São Jorge	3	5	66,67%	4	1	27,36%
Pico	5	9	80,00%	6	3	59,20%
Faial	6	7	16,67%	7	0	-6,47%
Flores	3	3	0,00%	4	-1	-13,43%
Corvo	1	1	0,00%	1	0	-4,48%
					0	
Total Azores:	82	100	21,95%	100	5	0,00%

Source: SREA

Next, it is important to look at the revenues of the hotel establishments. It was stated in the literature review that revenues did increase, but it is arguably important for the territorial cohesion of the region to understand if these were equally distributed among the islands. Table 6 below expresses the revenues of traditional hotel establishments across the islands in the archipelago, in 2014 and 2019.

The revenues of the hotel establishments in the Azores region did grow remarkably in the five-year period being looked at. In fact, they more than doubled, achieving a growth rate of more than 130% in the region as a whole. However, this number is heavily influenced by the growth rate of just one island in this regard, which is, quite unsurprisingly, São Miguel, having more than a 165% increase in hotel revenues between 2014 and 2019.

This number is even more astonishing because São Miguel is in fact the only island with a bigger growth rate than the Azores as a whole regarding the profits of hotel establishments, which makes it concentrate 100% of the relative variation, with all the other islands having negative ones, with Corvo even presenting a negative growth rate in the hotel revenue in the period. The other islands that have been having problems keeping up with the region as a whole are Terceira and Faial, with -32% and -35% relative variations respectively, and also Graciosa, with the second lowest growth rate in the region.

Another business opportunity that was provided by airspace liberalization in the Azores was that of restaurants. For the same reason that it is important to understand if revenues of hotel establishments are being equally distributed among the islands it's

arguably important to look at those of restaurants. They can be look at in table 7, with the exception of Corvo, as data is not provided by SREA.

Table 6: Profits of traditional Hotel Establishments (values at current prices)

Profits of Hotel Establishments (values at current prices)						
	2014	2019	Real Growth Rate	Pattern 2019	Absolute Variation	Relative Variation
Santa Maria	839 334 €	1 256 850 €	49,74%	1 965 941 €	- 709 091 €	-8%
São Miguel	29 330 741 €	77 809 956 €	165,28%	68 700 312 €	9 109 644 €	100%
Terceira	6 352 082 €	11 930 377 €	87,82%	14 878 247 €	- 2 947 870 €	-32%
Graciosa	511 795 €	613 329 €	19,84%	1 198 759 €	- 585 430 €	-6%
São Jorge	666 331 €	1 281 290 €	92,29%	1 560 723 €	- 279 433 €	-3%
Pico	2 053 073 €	3 882 540 €	89,11%	4 808 837 €	- 926 297 €	-10%
Faial	4 114 299 €	6 408 697 €	55,77%	9 636 771 €	- 3 228 074 €	-35%
Flores	677 950 €	1 257 812 €	85,53%	1 587 937 €	- 330 125 €	-4%
Corvo	74 691 €	71 622 €	-4,11%	174 946 €	- 103 324 €	-1%
Total Azores:	44 620 296 €	104 512 473 €	134,23%	104 512 473 €	9 109 644 €	0,00%

Source: SREA

In the period between 2014 and 2019, the revenues of restaurants in the Azores region more than doubled, with an increase of more than 107%. But, once again, looking at the table below, it's hard to argue that have been equally distributed among the nine islands, since there seems to be an overwhelming concentration of the increase of restaurant revenues in São Miguel, as it happened with other indicators before, in this case concentrating almost 88% of the positive relative variation.

Table 7: Restaurant Revenues (values at current prices)

Restaurant Revenues (values at current prices)						
	2014	2019	Real Growth Rate	Pattern 2019	Absolute Variation	Relative Variation
Santa Maria	76 452 €	281 629 €	268,37%	158 313 €	123 316 €	6,78%
São Miguel	7 763 236 €	17 673 763 €	127,66%	16 075 744 €	1 598 019 €	87,89%
Terceira	1 103 294 €	1 696 389 €	53,76%	2 284 649 €	- 588 260 €	-32,36%
Graciosa	135 867 €	55 368 €	-59,25%	281 347 €	- 225 979 €	-12,43%
São Jorge	54 392 €	209 416 €	285,01%	112 632 €	96 784 €	5,32%
Pico	475 532 €	774 184 €	62,80%	984 709 €	- 210 525 €	-11,58%
Faial	983 460 €	1 261 741 €	28,30%	2 036 503 €	- 774 762 €	-42,61%
Flores	162 560 €	318 029 €	95,64%	336 622 €	- 18 593 €	-1,02%
Corvo	0	0	0,00%	0	0	0,0%
Total Azores:	10 754 793 €	22 270 519 €	107,08%	22 270 519 €	1 818 119 €	0,00%

Source: SREA

The other islands that had an increase in restaurant revenues that was higher than the Azores as a whole were Santa Maria and São Jorge, with both the islands more than tripling their restaurant revenues in the five-year period being looked at. On the other hand, the other islands that weren't able to keep up with the region as a whole in this

regard were Terceira, Graciosa, Pico, Faial and Flores, with emphasis going to Terceira and Faial, with negative relative variations of -32,36% and -42,61%, respectively.

Another kind of opportunity that showed up for some residents of the islands with airspace liberalization was that of non-traditional hospitality accommodations, which are houses or apartments that are rented for small periods to tourists visiting the islands. These arguably have an impact in the satisfaction of the resident's needs, because they reduce the number of houses and apartments that are available for locals, which can raise the price of real estate. In this sense, it is important for territorial cohesion to see if this phenomenon is happening in some islands more than in others. This information is exposed below in Table 8.

As it possible to see when looking at Table 8, the increase in the number of these alternative accommodations for tourist rental increased astonishingly in the region, by more than 1425%! The island with the smallest percentage increase in this regard was Santa Maria, with a growth rate of 277,78% between 2019 and 2014. On the other hand, with the biggest growth rate in the availability of this type of accommodation in the Azores is Terceira, with a growth rate 4262,50%.

Table 8: Number of non-traditional hospitality accommodations

	Number of non-traditional hospitality accommodations					
	2014	2019	Real Growth Rate	Pattern 2019	Absolute Variation	Relative Variation
Santa Mar	9	34	277,78%	137	-103	-17,77%
São Miguel	61	1285	2006,56%	931	354	60,96%
Terceira	8	349	4262,50%	122	227	39,04%
Graciosa	1	13	1200,00%	15	-2	-0,39%
São Jorge	7	70	900,00%	107	-37	-6,33%
Pico	29	349	1103,45%	442	-93	-16,06%
Faial	28	146	421,43%	427	-281	-48,35%
Flores	9	83	822,22%	137	-54	-9,34%
Corvo	1	5	400,00%	15	-10	-1,76%
					0	
Total Azor	153	2334	1425,49%	2334	581	0,00%

Source: SREA

Terceira and, once again, São Miguel, are the only islands with growth rates in this regard that are higher than the one registered for the Azores. All the other islands, despite showing very high growth rates, still couldn't keep up with the region as a whole, which is influenced by the very big ones registered in São Miguel and Terceira. It would seem that the latter is taking advantage of the increasing number of stays mostly by an increase in the number of this new types of accommodation, as opposed to

an increase in hotels and number of beds, as Terceira didn't grow as much as the Azores in both these indicators, but greatly surpasses the region in the number of these new forms of accommodation. If this suggestion turns out to be confirmed, it could be expected that the price of renting and real estate in both the islands to increase substantially, at least in the most touristic or central areas. In São Miguel, this fact is already being noticed, as confirmed by in interviews with a manager and real estate agent and by a member of UGT-A (Attachments A and E).

In order to have a better understanding of how these forms of non-traditional accommodation have made an impact in each island, it could be useful to make a comparison between the availability of beds in these new forms of accommodations and in traditional hotels. For this purpose, the location quotient will be used. It's an index that makes a comparison between the relative importance of an indicator in a region (island in this case), and the relative importance of the same indicator in the total of the regions. In this sense, the minimum value it can amount to is 0, having no maximum. However, 1 is the reference number. The higher the location quotient value for the island, the higher it is considered to be the location degree of the phenomenon which, in this case, is the number of available beds in non-traditional accommodations in the total of available beds, per island, in 2020. The results can be checked in the table below.

Table 9: Location Quotient - Number of beds in non-traditional accommodations vs total hospitality capacity

	Location Quotient - Number of beds in non traditional acomodations vs traditional hospitality (2020)										
Islands:	Santa Maria	São Miguel	Terceira	Graciosa	São Jorge	Pico	Faial	Flores	Corvo	Azores	
Number of beds in non traditional acomodations in 2020	145	8098	2059	55	624	1978	997	458	22	14436	
Total hospitality capacity in 2020	470	11886	3832	194	1028	2780	1872	703	60	22825	
Location Quotient 2020	0,48779131	1,0772238	0,849561	0,448255	0,959744	1,124982	0,84208	1,030087	0,5797428	1	

Source: Made using data provided by SREA

As it is possible to see by looking at the above table, the data doesn't exactly match what was found in table 8, in which it could be seen that only São Miguel and Terceira had a higher percentage increase of non-traditional forms of accommodation than the Azores as a whole. Looking at the table above, we can see that the share of beds in non-traditional forms of accommodation in the total availability of beds is high in São Miguel and Flores, but even higher in Pico. This data seems to suggest that the situation regarding the housing market may not be as previous as the previous table had shown, however this might mean that difficulties regarding the housing market, especially when it comes to renting for locals, could also be felt in other islands besides São Miguel and

Terceira, specifically Flores and Pico. This situation could lead to a necessity of policy responses that address housing availability in these islands, which could certainly have an impact on the region's territorial cohesion.

Having taken information about indicators regarding the tourism industry, now it will be important to look at the ones regarding demography, the economy and those of jobs, and see if there is any connection among them. In the next section, the demographic dynamics in the region will be looked at.

4.2. Demography

As it has been stated before, the Azores have been characterized for an economic but also a demographic concentration on two of its nine islands: São Miguel and Terceira. It would arguably be beneficial for the region's territorial cohesion to reduce both the economic and demographic disparities that exist between the islands. With this in mind, this section will be an effort to try to understand if these trends have been altered with airspace liberalization in the Azores. The table below shows the population distribution among the islands using data collected in the Census, from the years 2011 and 2021, before and after the liberalization, with a ten-year period in between.

As it is possible to see from looking at Table 10, one can come to the conclusion that the population distribution trends have not been significantly altered in the 10-year period being analysed. However, one can notice that only three islands increased their weight in the population distribution in the archipelago, and two of them belonging to the eastern group: Santa Maria and São Miguel. However, this trend was much more felt in the latter rather than in the former, since São Miguel shows a 0,52 percentage point (p.p.) variation while Santa Maria increased its weight in the population distribution by just 0,04 p.p. The other island that has a positive variation in this regard is Pico, in the central group, with a 0,14 p.p. increase, being the only island in which the tendency in the rest of the archipelago is being contradicted.

On the other hand, we have all the other islands, those from the central and western groups in the Azores, with the exception of Pico, losing weight in the population distribution in the archipelago. This effect seems to be more problematic in the central group, especially in Terceira and São Jorge, since their variation in this regard is -0,35 and -0,17 p.p. respectively. In the western group, both islands lost weight in population

distribution, but in none of the islands the situation seems to be as complicated as the one seemingly being felt in Terceira and São Jorge, for instance.

To better understand these dynamics, it would also be interesting to see how the population in absolute numbers have changed, and to see if these changes were the result of natural causes, meaning the difference between new births and deaths, or instead the outcome of migration movements in the islands. Table 11 shows the population in absolute numbers in all the islands in the Azores, using the Dunn method to look at the variations.

The first thing that is noticeable is that the Azores has lost, in total, as a region, 4,2% of its population in the period being analysed. This should be seen with concern because, as Fortuna (2016) puts it, looking at population in absolute numbers can be an indicator of the region's economy capacity to fixate its families and attract people by means of job creation. From this point of view, this could be seen as a cause of concern, given that the population of the region had been growing since 1991.

Table 10: Population distribution

Population Distribution	2011	2021	Variation (p.p.)
Santa Maria	2,25%	2,29%	0,04
São Miguel	55,86%	56,38%	0,52
Terceira	22,87%	22,52%	-0,35
Graciosa	1,78%	1,73%	-0,05
São Jorge	3,72%	3,54%	-0,17
Pico	5,73%	5,87%	0,14
Faial	6,08%	6,06%	-0,01
Flores	1,54%	1,45%	-0,09
Corvo	0,17%	0,16%	-0,01
Azores	100,00%	100,00%	

Source: INE/Pordata

This circumstance of population loss was experienced throughout all the islands in the archipelago, with no exception, since not one of them experienced a populational increase. However, this phenomenon was felt more harshly in some islands than in others. Confirming Table 10, only Santa Maria, São Miguel and Pico lost population at a rate that was lower than that of the Azores. All the other islands lost population at a rate that was higher than that of the region as a whole. The islands from the western group seem to be in a particularly problematic situation, contradicting the indication of table 10, given that Flores and Corvo have the lowest growth rate variation in the archipelago, close to the -10% for both.

Table 11: Population

	Population			Pattern 2021	Absolute Variation	Relative Variation
	2011	2021	Real Growth Rate			
Santa Maria	5552	5406	-2,6%	5319	87	5%
São Miguel	137856	133288	-3,3%	132069	1219	75%
Terceira	56437	53234	-5,7%	54068	-834	-51%
Graciosa	4391	4090	-6,9%	4207	-117	-7%
São Jorge	9171	8373	-8,7%	8786	-413	-25%
Pico	14148	13879	-1,9%	13554	325	20%
Faial	14994	14331	-4,4%	14365	-34	-2%
Flores	3793	3428	-9,6%	3634	-206	-13%
Corvo	430	384	-10,7%	412	-28	-2%
					0	
Total Azores:	246772	236413	-4,2%	236413	1631	0%

Source: INE/Pordata

In the eastern group, both islands were able to, albeit still losing population, not as much as in the Azores as a whole. With a 75% positive relative variation, there doesn't seem to be a reversal of the trends of demographic concentration in São Miguel. As it has been seen in the previous subheading of this research, tourism activity seems to be concentrating in São Miguel, and the same trend can be seen for demographic indicators, which don't appear to be changing since airspace liberalization.

However, it's arguable that to fully understand the demographic dynamics of each island, and of the region as a whole, one would have to break down the change of population numbers into natural balance and migrations. This has to do with Fortuna's argument (2016) that the population movements are connected with the region's capacity of job creation, and therefore, to be attractive for the fixation of families. The Table below, Table 12, breaks down the population dynamics into natural balance and migration for each island, for the four years before airspace liberalization (2011-2014) and the four years immediately after (2016-2019).

Table 12: Natural Population Balance and Migration Balance

	Natural Population Balance			Migration Balance			
	2011-2014	2016-2019	Growth Rate	2011-2014	2016-2019	Growth Rate	
Santa Maria	-18	-19	5,56%	Santa Maria	-63	-50	-20,63%
São Miguel	1393	801	-42,50%	São Miguel	-2691	-2889	7,36%
Terceira	-119	-382	221,01%	Terceira	-943	-1063	12,73%
Graciosa	-114	-86	-24,56%	Graciosa	-52	-4	-92,31%
São Jorge	-168	-199	18,45%	São Jorge	-134	-122	-8,96%
Pico	-228	-222	-2,63%	Pico	83	145	74,70%
Faial	-95	-123	29,47%	Faial	-167	-143	-14,37%
Flores	-87	-106	21,84%	Flores	-66	-60	-9,09%
Corvo	-9	-18	100,00%	Corvo	-8	4	-150,00%
Total Azores:	555	-398	-171,71%	Total Azores:	-4041	-4182	3,49%

Source: SREA/Pordata

The Azores have gone from having a positive natural population balance in the years 2011 to 2014 to having a negative one in the period immediately after the liberalization. As it is possible to see, only São Miguel has experienced more births than deaths in either of the four-year periods being looked at. Yet, the natural balance number has decreased in the island. Still, one could argue that this reality is contributing to the fact that São Miguel represents 75% of the positive relative variation in the population in absolute numbers (Table 11). All the other islands, except São Miguel, have had negative natural balances for the two periods analysed, with only Graciosa and Pico having a higher number in the second period analysed than in the first.

When it comes to migration numbers, with the exception of Pico, all islands have had a negative balance in the 2011-2014 period. In the 2016-2019 period, besides Pico, also Corvo has had a positive balance in this regard. All the other islands show negative balances for both periods. However, for almost all islands, in the 2016-2019 period, the number has become less negative, with two notable exceptions: São Miguel and Terceira. These two islands have lost more population through the migration in the second period than in the first. If the population movements are somewhat connected to region's capacity for job creation and thus, to be attractive for the fixation of families, then one would expect that more population would fixate where there was a bigger increase of the tourism industry, given the expected growth in available jobs. However, this doesn't seem to be the case, as both these islands are losing more population now through migration dynamics than they were before airspace liberalization. This seems to be counterintuitive, since one of the biggest arguments for the growth of the tourism industry is the increase of available jobs. One could argue that maybe the massive increase of non-traditional hospitality options can be a decisive factor for the increasing number of people leaving these islands, reducing accommodation options for locals and having a contribution for the increase of the price of real estate. Another possible explanation is the low attractiveness of jobs connected to the hospitality industry. The next section will concern economic indicators.

4.3. Economy

As it has been stated before in the literature review, in the subheading regarding the context of the Azores, the region has been by a big concentration of population, but also of economic activities, especially on two islands, being São Miguel and Terceira. These islands concentrated, in 2014, 58,2% and 21,5% of the region's total GDP, respectively.

In this sense, it's arguably of relevance to the Azores territorial cohesion to understand in what measure airspace liberalization has had any contribution in increasing or diminishing this discrepancy. Table 13 shows the GDP percentage per island, in the year 2014, and the estimate of the year 2018 made available by SREA.

From analysing table 13 below, one can argue that after the liberalization, these trends have not been significantly changed, since São Miguel, even though a slight decrease, still concentrates more than 58% of the region's GDP, with Terceira even increasing its GDP percentage by 0.43% in 4 years, coming close to concentrating 22% of the Azorean total.

Table 13: GDP distribution per island

GDP distribution (%)			
	2014	2018 (Pre)	Variation (p.p.)
Santa Maria	2,76%	2,85%	0,09
São Miguel	58,17%	58,11%	-0,06
Terceira	21,52%	21,95%	0,43
Graciosa	1,48%	1,44%	-0,04
São Jorge	3,34%	3,08%	-0,26
Pico	5,02%	4,85%	-0,17
Faial	6,23%	6,28%	0,05
Flores	1,32%	1,22%	-0,10
Corvo	0,16%	0,21%	0,05
Total Azores:	1,00	1,00	0,00

Source: SREA

Besides Terceira, also Santa Maria, Faial and Corvo increased their percentage in the total GDP of the region. On the other hand, showing an opposite tendency, besides São Miguel, also Graciosa, São Jorge, Pico and Flores have seen the value of their economy lose weight in the Azores as a whole. The cases of São Jorge and Pico are of special concern, with each of them losing 0,26 and 0,17 p.p. Especially Pico since, in the central group, it was the island which had highest positive variation in disembarked passengers by airplane, number of stays, number of hotels and available beds. It was also the island in the central group in which the population loss wasn't felt as harshly. It's also noticeable how Santa Maria and Faial, despite showing a negative relative variation regarding almost all tourism indicators analysed in this work, manage to increase the weight of its economy in the total of the region.

In the context of this analysis, it's also arguably very important to also look at how GDP per head has evolved in each island in the region. This information is displayed in the table below. It's important to state that the GDP data provided by SREA, is calculated having two different base indexes for the two years being looked at, so any conclusion has to take this into consideration. Even with this lack of detail of the data provided by this official statistics institution for this indicator, it can be argued that it is too relevant to be left out of this analysis. The information can be consulted in the table below.

Looking at the table below, one can see that, in the four-year period being analysed, the GDP per capita of the Azores region grew by a total close to 15%.

Table 14: GDP per capita

GDP per capita (in thousands of euros)			
	2014	2018	Growth Rate
Santa Maria	18,629	21,592	15,91%
São Miguel	16,017	18,059	12,75%
Terceira	13,920	16,935	21,66%
Graciosa	12,756	14,514	13,78%
São Jorge	13,578	15,753	16,01%
Pico	13,467	15,160	12,58%
Faial	15,862	18,414	16,09%
Flores	13,623	14,364	5,44%
Corvo	16,499	19,523	18,33%
Total Azores:	15,264	17,550	14,98%

Source: Made using data provided by SREA

In all the islands, this indicator grew, even though the growth rate varied across the region. São Miguel, Graciosa, Pico and Flores experienced a growth rate inferior to that of the whole of the region. The cases of Flores and São Miguel are surprising, as Flores only grew by 5.44% in this period, and São Miguel because one would initially expect that the massive concentration of touristic activities in this island would translate into a much higher growth compared to the other islands, which doesn't seem to be the case. On the other hand, the islands in which the GDP per capita increased more than in the Azores as a whole were Santa Maria, Terceira, São Jorge, Faial and Corvo.

It is important, however, to stress, that looking at the GDP dynamics of each island in the region as a whole might not be enough to begin to understand how economic well-being of the population is being altered differently across the islands since airspace liberalization in 2015. In that respect, the purchasing power per capita of all the islands

will be analysed, in the years of 2013 and 2019, as the data for 2014 is not made available by INE. This information is exposed below in Table 15.

As it is possible to see from looking at the variation column of Table 15, in all the islands of Azores the purchasing power of the population has increased, which might suggest that airspace liberalization has had a positive impact in the material well-being of the Azorean population. However, this growth happened at very different rhythms, which does not indicate a reduction of economic disparities.

For example, in São Miguel, Graciosa and Corvo, this indicator grew by roughly 5%, in the second case even surpassing it. On the other hand, in Santa Maria and Faial, the growth of this indicator, which is seen by Pordata as an approximate measure for material well-being of the population, has been marginal, not even reaching the 0,5% in both cases. It's curious how these two islands are the same that were mentioned before for their increasing GDP percentage in the whole regional economy.

Table 15: Purchasing power per capita

	Purchasing power per capita		
	2013	2019	Growth Rate (%)
Santa Maria	89,4	89,7	0,34%
São Miguel	85,0	89,2	4,94%
Terceira	85,4	88,0	3,04%
Graciosa	71,8	75,6	5,29%
São Jorge	79,1	81,1	2,53%
Pico	79,1	81,4	2,91%
Faial	90,3	90,7	0,44%
Flores	79,9	81,8	2,38%
Corvo	71,6	74,9	4,61%
Total Azores:	81,3	83,6	2,84%

Source: Pordata

It's also very important to understand how airspace liberalization and opening up to tourism has had an impact on the sectoral structure of each island's economy. This is of relevance to the territorial cohesion of the region, in the sense that for example, as the covid-19 pandemic crisis has shown, it can be a very big risk to be dependent on only one industry, even more in one that is so reliant on the exterior such as tourism, leaving which is already a vulnerable region with even bigger concerns regarding its development. Because of this reasoning, it's of relevance to see how each sector's weight in each island's economy has changed with airspace liberalization. This information can be consulted below, on Table 16. The data is from year 2014 and 2018,

the latter being based on a prevision calculated by SREA. By analysing it, one can see the changes of the weight of each sector on the Gross Added Value in the Azores region as well as in all the islands. One can see that in the Azores the weight of the services sector has increased by 1.71 percentage points through the four-year period from 2014 to 2018, at the expense of the other two sectors almost equally.

However, this phenomenon is based on what was felt mostly on the two biggest islands, São Miguel and Terceira. One can argue that this might have something to do with the increased relevance of tourism to these islands' economy.

Table 16: Sectorial Gross Added Value (%)

	Sectorial GAV (%)								
	2014			2018 (pre)			Variation (p.p)		
	I	II	III	I	II	III	I	II	III
Santa Maria	3,00%	4,20%	92,80%	2,80%	4,00%	93,20%	-0,2	-0,2	0,4
São Miguel	10,10%	15,30%	74,60%	8,90%	14,30%	76,80%	-1,2	-1	2,2
Terceira	10,80%	9,60%	79,60%	9,30%	7,70%	83,00%	-1,5	-1,9	3,4
Graciosa	9,10%	8,30%	82,60%	13,60%	8,80%	77,60%	4,5	0,5	-5
São Jorge	11,40%	11,70%	76,90%	12,90%	10,30%	76,80%	1,5	-1,4	-0,1
Pico	10,40%	6,40%	83,20%	12,00%	10,10%	77,90%	1,6	3,7	-5,3
Faial	6,70%	5,60%	87,70%	6,60%	4,70%	88,70%	-0,1	-0,9	1
Flores	4,00%	5,00%	91,00%	7,50%	4,00%	88,50%	3,5	-1	-2,5
Corvo	5,20%	6,10%	88,70%	4,90%	23,50%	71,60%	-0,3	17,4	-17,1
Azores	9,81%	12,35%	77,85%	8,98%	11,45%	79,56%	-0,83	-0,9	1,71

Source: SREA

The other two islands who experienced increase in the weight of the service sector were Santa Maria and Faial, but only slightly. On the other hand, one can see that in Corvo, the service sector's weight in the GAV of the island has decreased massively, by more than 17 percentage points. In Graciosa and Pico there was also a decrease in the weight of the service sector, with the former increasing the weight of the agriculture sector and the latter on industry. The next section will be regarding the labour market.

4.4. Labour Market

One of the proposals of this study is to analyse the impact of airspace liberalization across the different islands in the Azores, and arguably one of the main consequences it has is on the labour market. After all, the business opportunities that reportedly appeared immediately after the liberalization will supposedly have demand for labour, so it is important to analyse the consequences of this. Even though opening up to the tourism industry can arguably provide an opportunity for economic growth, economic diversification and job availability increase, it also, as Moniz & Simão (2019) have

shown, can bring jobs that are seasonal, require low skills and have low wages, with sometimes excessive work hours which may impact cultural, religious and family life. In this sense, it's important to understand how the different islands are being affected by this tendency.

The first indicator that will be looked at will be the unemployment rate, as this is not only one of the main indicators used by the European Commission to measure the trajectory of territorial cohesion in the European Union in the Cohesion Reports, but also by Fortuna (2016) when attempting to assess how the Azorean economy is evolving. The data regarding unemployment rates by island is only made available for the years 2011 and 2021 by Pordata, as SREA does not collect this information. In this case, the variation columns will be displayed in percentage points, as opposed to a growth rate, for an easier analysis, as in this table the indicator is a percentage. The data is displayed below, in Table 17.

Table 17: Unemployment rate

Unemployment rate				
	2011	2021	Island Variation (p.p)	Variation to ARR (p.p)
Santa Maria	8,7%	3,7%	-5	-0,8
São Miguel	13,0%	8,4%	-4,6	-0,4
Terceira	9,6%	6,1%	-3,5	0,7
Graciosa	9,6%	5,7%	-3,9	0,3
São Jorge	7,6%	3,2%	-4,4	-0,2
Pico	6,8%	3,9%	-2,9	1,3
Faial	8,6%	3,8%	-4,8	-0,6
Flores	6,9%	2,9%	-4	0,2
Corvo	6,3%	4,4%	-1,9	2,3
Total Azores:	11,1%	6,9%	-4,2	0

Source: Pordata

As it is possible to see by looking at Table 17, the unemployment rate decreased not only in the Azores as a whole, but also in each island individually, in the course of the ten-year period being analysed. It's important to note at this point that in both years being looked at the region was being affected by two international crises, the financial crisis in 2011 and the COVID-19 crisis in 2021. Even so, one can see that the islands in which the unemployment rate decreased the most were Santa Maria and Faial. This is in a way surprising given the facts that it was in São Miguel where the tourism growth was mostly felt in the region and also because the island also had the highest unemployment rate in 2011, still retaining the spot in 2021. The islands in which this indicator didn't diminish at all as much as the region as a whole were Corvo and Pico. Pico's case is

especially curious, since the island felt an increase in number of disembarked passengers, hotels and beds and also number of stays higher than the region as a whole, which should translate in more jobs available in the island.

Looking just at the unemployment rate can be a limited approach, however, given the fact the Azores as whole and each island individually has lost population. So, following this line of logic, it's important to also take a look at the total number of employed population throughout the islands. Table 18 expresses this data, also for the years 2011 and 2021, for the same reasons mentioned above for Table 17.

One can notice by looking a Table 18 that the total employed population in the Azores increased by 3.2%, which is remarkable given the total loss of population of 4.2% in the region.

Table 18: Employed population

	Employed population					
	2011	2021	Real Growth Rate	Pattern 2021	Absolute Variation	Relative variation
Santa Maria	2 289	2 559	11,80%	2362	197	16%
São Miguel	55 352	58 093	4,95%	57124	969	80%
Terceira	24 304	23 981	-1,33%	25082	-1101	-91%
Graciosa	1 738	1 843	6,04%	1794	49	4%
São Jorge	3 830	3 878	1,25%	3953	-75	-6%
Pico	5 910	6 247	5,70%	6099	148	12%
Faial	6 822	6 885	0,92%	7040	-155	-13%
Flores	1 645	1 691	2,80%	1698	-7	-1%
Corvo	237	219	-7,59%	245	-26	-2%
					0	
Total Azores:	102127	105396	3,20%	105396	1215	0,00%

Source: Pordata

The island with the highest growth rate in this regard is, quite surprisingly, Santa Maria, as this was not expectable given how the island performed regarding the tourism indicators. Unsurprisingly as well is the growth of São Miguel and Pico in this regard. On the other hand, it's very curious that the total number of employed population in Terceira and Corvo have decreased. This fact, in Terceira, could maybe be attributed to the demographic dynamics, since the island also has the most negative relative variation regarding the total number of population in absolute numbers.

Another one of the pernicious effects that Moniz & Simão (2019) also reference from opening up to tourism, especially in small insular territories, besides the ones already mentioned in the beginning of this subheading, is the danger of monoculture. Especially when it comes to tourism, since it's a sector with a very high dependence on the

exterior, making a region which is very dependent on it more vulnerable to crisis happening anywhere in the world, as the COVID-19 pandemic has shown. In this sense, it is important to look at the employment structure by sector and by island, to try to understand in which islands the job structure is more vulnerable to this kind of scenario. Table 19 below displays the number of workers per sector per island, in years 2011 and 2021. It shows that the number of people with jobs in the tertiary sector has increased in all the nine islands. This fact surely has been influenced by airspace liberalization and the opening up of new businesses relating to tourism, such as hotels and restaurants, which absorbed workers coming from construction, for example, as explained by a member of UGT-A (Attachment E). In the Azores, the number of people working in the tertiary sector increased by almost 12%, while at the same time not only decreasing in both the other sectors, but also when still losing a total of 4,2% of the population.

The islands that didn't keep up with the region as a whole in the increasing relevance of the tertiary sector on employment were Faial, São Jorge and Terceira, all from the central group, as in these islands the employment growth in the service sector grew but didn't reach the 12% increase felt in the region.

Table 19: Number of employed people per sector

	Number of workers by sector						
	2011			2021			Growth Rate Sector III
	I	II	III	I	II	III	Growth Rate Sector III
Santa Maria	178	375	1736	160	333	2066	19,01%
São Miguel	4338	11478	39536	3767	9482	44844	13,43%
Terceira	1886	4868	17550	1584	3664	18733	6,74%
Graciosa	241	386	1111	224	337	1282	15,39%
São Jorge	471	995	2364	470	809	2599	9,94%
Pico	754	1442	3714	662	1062	4523	21,78%
Faial	523	1089	5210	393	931	5561	6,74%
Flores	204	359	1082	142	255	1294	19,59%
Corvo	41	58	138	17	26	176	27,54%
Total Azores	8636	21050	72441	7419	16899	81078	11,92%

Source: Pordata

On the other hand, in all the other islands the increased importance of the service sector increased at a higher rate than the region as a whole. Using the data from the number of workers per sector, it's possible to use other methods to try to establish how airspace liberalization has impacted each island's labour market, comparing with the Azores as a whole. The goal is to try to understand if any island is overspecializing in the services sector comparing to the others, due to the tourism increase. For this purpose, the Specialization Index and the Shiftshare methods will be applied. The Specialization Index can be useful to evaluate if an island's economy is becoming more specialized,

comparing with the region’s behaviour. In this index, if the result is zero, or close to it, it means that there is absence of specialization in that island comparing with the pattern of Azores. The closer it is to 1, the more specialized is the island regarding the region. The results of the calculations can be checked below on table 20. These seem to suggest that none of the islands labour market is becoming overly specialized, when compared to the pattern of the Azores.

Table 20: Specialization Index (2021)

Specialization Index (2021)	Ei
Santa Maria	0,038
São Miguel	0,006
Terceira	0,012
Graciosa	0,074
São Jorge	0,099
Pico	0,045
Faial	0,038
Flores	0,014
Corvo	0,042

Source: Made using data provided by Pordata

It may be surprising to see that, according to these results, São Miguel and Terceira seem to be the least specialized economies in the Azores, which could mean that opening up to tourism in the Azores ended up contributing to job diversification, with these effects being felt mostly on these two islands. On the other hand, the island which seems to have the most specialized job structure is São Jorge, as the number of people employed in first sector decreased by only one individual in the past ten years, which might indicate that job diversification promoted by the growth of the tourism industry hasn’t reached São Jorge as it has other islands.

Using the same data, one could try to use, as mentioned above, the Shiftshare method, which is useful to try to understand how every island’s employment growth or decline is influenced by regional trends and its unique economic composition and competitive dynamics. In this way, in the Shiftshare method there are two components, which explain the Di column, which indicates how each island’s performance is compared to the one of the whole region. They are the structural component and the regional component. The structural component reflects the expected effects of the structural characteristics at the regional level; while the regional component contrasts the actual

behaviour of the island with what should have happened if its sectors had behaved as the patterned evolution registered in the region. The table is displayed below.

Table 21: Shiftshare

	$D_i = \delta_i - \bar{\delta}$	Structural Component = $\delta^*i - \bar{\delta}$	Regional Component = $\delta_i - \delta^*i$
Santa Maria	0,0859	0,0151	0,0708
São Miguel	0,0175	0,0012	0,0163
Terceira	-0,0453	0,0037	-0,0490
Graciosa	0,0284	-0,0191	0,0475
São Jorge	-0,0195	-0,0270	0,0075
Pico	0,0250	-0,0232	0,0482
Faial	-0,0228	0,0168	-0,0395
Flores	-0,0040	-0,0141	0,0101
Corvo	-0,1080	-0,0352	-0,0727

Source: Made using data provided Pordata

From looking at the table, one can see that Santa Maria shows the highest D_i value, meaning that its sectors employment outperformed the ones of the Azores as a whole. São Miguel, Graciosa and Pico also show positive values in this column. Santa Maria, São Miguel, Terceira and Faial display positive structural components, which suggests that their unique characteristics enhance their performance. The regional component column indicates that Santa Maria, Graciosa and Pico are performing much better than expected based on regional trends, while Terceira, Faial and Corvo exhibit negative regional components, which implies underperformance in employment compared to regional trends.

To try to have a better understanding of the extent of the influence of airspace liberalization and consequential growth of the tourism industry in the increase of weight of the service sector in total employment in the region, it's relevant to also look, for example, at the number of people working in the hospitality industry in all the islands in the region.

The table below (Table 22) expresses the total number of workers working in traditional hospitality industry by island, in 2014 and 2019. When looking at it one can notice that, since airspace liberalization, there was an increase of people working in the traditional hotels in the region, which amounts to 59.1%, even though there was a decrease of population in the Azores and the total increase of employed population was of 3.2%, so this effect becomes even more relevant. However, this effect was felt only in São Miguel, when compared to the other islands.

Even though all the islands, with the exception of Graciosa (with a negative growth rate in this regard) and Corvo, experienced an increase in the number of people working,

São Miguel represents 100% of the relative variation felt in the whole region, which means that the worker increase in the traditional hospitality industry, which once again can have several negative consequences identified by the literature, was overwhelmingly felt on this island, probably affecting the lifestyle of many of its inhabitants. In São Miguel, a high increase in the price of real estate is already noted, with the local population having less capability of buying a house due to an increase in foreign investment, which can be directly linked to airspace liberalization, as stated by the interviewed manager at a leading real estate company in the Azores (Attachment A).

Curious case is that of Terceira, which has the biggest negative relative variation in the region, even though increasing the total number of hotel workers by more than 32%.

Table 22: Average of workers working in traditional hotels

Average of workers working in traditional hotels						
	2014	2019	Real Growth Rate	Pattern 2019	Absolute Divergence	Relative Divergence
Santa Maria	38	47	23,68%	60	-13	-8%
São Miguel	942	1670	77,28%	1499	171	100%
Terceira	245	325	32,65%	390	-65	-38%
Graciosa	36	19	-47,22%	57	-38	-22%
São Jorge	26	35	34,62%	41	-6	-4%
Pico	50	80	60,00%	80	0	0%
Faial	115	152	32,17%	183	-31	-18%
Flores	31	32	3,23%	49	-17	-10%
Corvo	1	1	0,00%	2	-1	0%
					0	
Total Azores	1484	2361	59,10%	2361	172	0%

Source: SREA

This most likely has to do with the fact that the island has a smaller number of guests, but a higher number of stays when comparing to the Azores as a whole, which is a tendency that requires less work hours, since there are less check-ins, check-outs and rooms to be cleaned if guests are staying for longer periods.

Having looked at indicators related to tourism, demographics, economy and jobs in two points in time, one before and one after airspace liberalization, in the next section of this work the findings obtained and exposed in this results section will be discussed keeping in mind the concepts and arguments shared in the literature review.

5. Discussion

When looking at the results, and taking into consideration the methods applied, it's difficult to come to a definite conclusion as to whether territorial cohesion in the Azores has improved or instead suffered negative consequences from airspace liberalization. This has to do with the fact that a number of dimensions have been looked at, having in

mind not only the concept of territorial cohesion but also the context of the Azores; and also that the aim of this work was never to produce an index that would immediately inform us on the answer to the research question, but to attempt to produce an informative, detailed and nuanced analysis of the evolution of territorial cohesion in the Azores region in the course of airspace liberalization and the changes that followed. In this sense, the answer to the research question would hardly ever be a simple ‘yes’ or ‘no’.

With this difficulty in mind, even though it can be hard to say, with the available data, that the region’s territorial cohesion suffered negative consequences from airspace liberalization, it would be even more difficult to argue that it made a positive contribution to it. In this sense, the answer to the research question would be more inclined towards a “no”, because we can’t clearly tell that airspace liberalization contributed positively to the region’s territorial cohesion.

When it comes to tourism, even though it is arguable that all islands experienced increases in most indicators, it’s also defensible that the effects were felt especially, as expected, in São Miguel, which concentrates the biggest increase in number of disembarked passengers by plane, guests, stays, hospitality workers and revenues in general. Hospitality revenues increased in the region as a whole by roughly 134%, but in São Miguel they increased by 165%. All the other islands not even reaching 95%, making São Miguel concentrate 100% of the positive variation in this regard. In this sense, it would be very difficult to argue that the growth of the tourism industry, taking into account the indicators studied, has been distributed evenly in the archipelago, since all of them point to an overwhelming growth of the sector in the region to be concentrated in São Miguel, which raises concerns regarding territorial cohesion in the Azores.

Also, it seems that tourists that come to Azores are tending to prefer to stay more time in Terceira at the expense of other islands in the central group, since it has a negative variation regarding the number of guests but a positive one regarding the number of stays, a phenomenon that is exclusive to this island. The islands that don’t seem to be keeping up with the region as a whole are Santa Maria, Graciosa and Faial, showing negative variations on number of guests, stays and hospitality workers and revenues. Pico, on the other hand, seems to be benefitting from airspace liberalization and consequential opening up to tourism, with higher growth rates in number of guests and

stays than the Azores in general. However, the even higher increase of number of available beds and hotels, which exceeds the growth rate of guests and stays in the island, may be cause for concern, as this may cause an oversupply of accommodation, possibly reducing prices. In fact, the profits of hotel establishments in the island have increased by almost 90% in the period being looked at but, according to the Dunn method, had the island behaved as the region as a whole, it could have been even higher. In this sense, it would be advisable not to increase the availability of beds in the island, at least for a period of time.

Terceira, with a negative variation on disembarked passengers by airplane, average of number of hotel workers, number of available beds, number of hotels and their profits, seems to be, on the other hand, taking advantage of the increasing number of stays by providing non-traditional accommodation options, as this island is, besides São Miguel, the only one with a positive variation in this indicator. In fact, in Terceira, the number of this type of accommodations raised by more than 4000%, going from 8 to 349. It's useful to remind that this type of accommodations are normally houses or apartments, that are taken out of the housing market in order to be rented to visitors of the region. This might result in high price increase of housing which, in turn, means a general impoverishment of the local population, if wages do not rise in the same level. This situation should be viewed with special concern regarding the islands of São Miguel and Terceira, while also paying attention to the cases of Pico and Flores.

The demographic trends in the ten-year period analysed did not significantly alter the population concentration in the islands, which remains heavily concentrated in São Miguel and Terceira. Even though the Azores as a whole, and each island individually, lost population, with the most notorious cases being Flores and Corvo, the most remote islands from the western group. These two islands are undergoing a demographic haemorrhage, with each of them experiencing population losses close to 10%, which should be viewed with concern and as a challenge for the region's territorial cohesion, as only São Jorge, in the central group, comes close to losing the same population percentage in the Azores. On the other side of the same coin, Santa Maria and São Miguel, both from the Eastern Group, and Pico, don't seem to be losing population at the same rhythm of the Azores as a whole. However, in São Miguel, this is happening not due to migration dynamics, but because of natural balance, which remains positive in the island. In fact, São Miguel lost more people through migration dynamics in the

2016-2019 period than it did in the 2011-2014 one, before the liberalization, which puts into question the suggestion that the growth of the tourism industry is ideal for fixation of families in the region to live and work.

At the economic distribution level, GDP concentration trends have not been significantly altered either, albeit Terceira increasing its weight in the total regional GDP while São Jorge's is decreasing at the highest rate. Still, in this regard, Pico seems to be the most curious case, benefitting a lot in when it comes to increase of visitors to the island and supply of accommodation, but still not able to increase its weight in the whole of the economy of the Azores, which makes one wonder if airspace liberalization and opening up to tourism is the right policy to try to promote a more balanced distribution of economic activities in the archipelago. While this concentration of economic activity in São Miguel and Terceira has not significantly changed after the liberalization, the purchasing power per capita has increased across all the islands, even if at different rates. This suggests that the liberalization has had some positive impact on the economic well-being of the population throughout the region, even if it has not necessarily resulted in a more equitable distribution of economic activity and, therefore, territorial cohesion.

Airspace liberalization has also had an impact in the economic structure of the Azores, with the tertiary sector gaining generally increased importance in the Gross Added Value of almost all the islands. This phenomenon is being felt especially, as expected, in São Miguel and Terceira and not as much in the rest of the region, with the notorious case of Corvo, in which the tertiary sector lost 17% of its weight in favour of the secondary sector. This increase in the weight of the service sector in the Gross Added Value in the tertiary sector could be evidence of the impact of airspace liberalization in the region. However, the effect of the policy is not being equally felt across all the islands, with some experiencing more significant changes than others. For instance, São Miguel and Terceira have felt the impact of airspace liberalization more than other islands in this regard. These changes highlight the need for policymakers to take a different approach to assess the Azores' economy to ensure a more balanced development.

At the labour market level, it's remarkable that the unemployment rate has decreased in the Azores as a whole and in each island individually, even if in Terceira and Corvo the

total number of employed people has decreased, which can maybe be attributed do demographic dynamics. Also, the number of workers and the weight of the service sector in the employment structure has increased in every island in the Azores, while agriculture and industry have decreased, which can raise concerns regarding the dependency on the exterior. Furthermore, in almost all the islands (with the exception of Corvo and Graciosa) it's noticeable the increase in absolute numbers of workers in the traditional hospitality industry, even despite all the islands losing population, which shows how increasingly relevant the sector has become for the labour market in the region. One could argue that this is because of economic diversification and job creation brought in by airspace liberalization but also that it brings seasonality, low wages and disruptions to family and social life. The main point is that this effect has been felt very differently across the region, with only São Miguel and Pico (slightly), growing more than the Azores as a whole, with the former concentrating very close to 100% relative variation. The concentration of these type of jobs in specific islands, as evidenced by the disproportionate increase of workers in São Miguel compared to other islands, can certainly contribute to job diversification, but it may also create imbalances and inequalities in terms of employment opportunities and living standards across the region, which could be viewed as a problem taking into consideration the policy goal of territorial cohesion.

It can certainly be argued from the results obtained that the effects of airspace liberalization and the venture into tourism development in the Azores were felt quite differently across the islands. In Santa Maria, Graciosa and Faial, the data shows that the islands performed worse than the region as a whole in all tourism indicators, albeit Terceira and Faial performing better at GDP per head and unemployment rate. On the other hand, São Miguel is performing better in all tourism indicators, but performing worse in GDP per head and migration balance, which can contradict the argument of economists in the region that tourism development is crucial for performing better in economic growth, unemployment rates and for the fixation of people in the territory. São Jorge also seems to be losing in most tourism indicators, but still performs better than the region as a whole in GDP per head, unemployment rate and migration balance. Pico seems to be performing better than the Azores in most tourism indicators and in all demographic ones, suggesting that it was a winner in this process. However, the data seems to show that the island also wasn't able to keep up with the region as a whole at

GDP per head and unemployment rate, even if it performed better in most tourism indicators. Flores and Corvo in the western group, also don't seem to be doing as well as the region as a whole regarding tourism, but with Corvo still performing better regarding GDP per head and purchasing power per capita.

All in all, the unbalanced trends don't seem to be being reversed by airspace liberalization. In fact, a concentration of activities can arguably be felt especially in São Miguel. This suggests that the islands are experiencing differently the growth of the tourism industry in the region, which can raise concerns for the future of territorial cohesion in the Azores.

Having all of this in mind, one could ask if there are any development strategies that align with the theoretical and conceptual assumptions rooted in the paradigm shift recognized in the Lisbon Treaty and the Barca Report that could be applied in the islands that are not being able to keep up with the region as a whole, in order to mitigate the unbalanced trends that followed airspace liberalization, given the fact that the growth of the tourism sector is being felt differently across the islands in the archipelago, thereby raising significant problems when trying to achieve the policy goal of territorial cohesion in the region.

One of the premises of the paradigm shift mentioned above is that the goal of development is not about achieving economic growth, and that the priority shouldn't be trying to increase exports, a line of reasoning that supported airspace liberalization and opening up to tourism in the region. This suggestion was confirmed by the former regional government member and the economics professor interviewed for the purpose of this research (Attachments B and C). This way is in close relation to the old paradigm, as opposed to the new one, which has as one of the main premises that development is about the satisfaction of the basic needs of the whole population, while exhausting the local production capacity. In this sense, public policies should be focusing, for example, on promoting equal access to services across all the region, since some islands lack health care services, while others are experiencing an increase of price of real estate and increased difficulty in accessing housing. Both these issues were reported in the interviews conducted and are examples of basic needs not being met by the population, which should be viewed with concern by policymakers in the region.

Another premise of the new paradigm of looking at development that encompasses the concept of territorial cohesion is about creating conditions for citizens to be able to create value from the characteristics of the territory. This premise hasn't been being contemplated in the tourism planning in the Azores region, according to Moniz & Simão (2019). In their study, they conclude that the tourism planning in the Azores follows a conventional methodology, in which stakeholders in the region are consulted in a very minimalist way. These findings were not contradicted in the answers provided by the member of UGT-A and the owner of the travel agency in Terceira (Attachments D and E). It's also argued by the mentioned study that some stakeholders argue that tourism planning in the Azores has been being thought and planned having in mind the region as a whole, not being made plans for each island individually, which ultimately ends up ignoring each island's characteristics and specificities. For these reasons, it's argued that a more effective participation in tourism planning by the various stakeholders should be improved in the region, which would be crucial to better plan in a way that takes into account each island's characteristics and needs. Furthermore, greater participation of the various stakeholders in the region in this process can be very beneficial in the integration and resolution of various issues at the social, environmental, cultural, political and economic levels so that tourism can grow in the region in a sustainable, harmonious and equitable way among the islands, that fits the needs and expectations of society regarding the sector and promoting economic diversification.

One of the practical ways this could arguably be done is by building agency and new forms of governance where municipalities have a central role to play (Henriques, 1990, 2006). As it was mentioned before in this work, one of the premises of the new paradigm is not only the recognition of the ineffectiveness and inefficiencies of market mechanisms to deal with the satisfaction of the needs of the whole population, but also that public policies promoted by a central state have been insufficient. Given that citizens tend to have more confidence in governments at regional and local levels than at national or European, and the context-dependency of underdevelopment and poverty, it's arguable that Municipalities can play a central role promoting integrated approaches, at horizontal and vertical levels, facilitating synergies between different local and regional sectors and agents, and partnerships between levels of government. This approach could lead, for example, to government supporting entrepreneurship that

takes into account and makes use of the specific characteristics of each island and promoting a transport system that benefits all, but especially the smaller islands, when it comes to accessibility and product availability. This could result in the possibility of citizens to create value from the specific characteristics of the territory, with innovative approaches that would be more efficient mobilizing the region's resources and promoting the development of each island individually and also, with appropriate cooperation and synergies, of the Azores region as a whole.

It is reasonably very difficult to do a complete and thorough analysis of the development of territorial cohesion of the Azores with the conditions available for this work. Some lack of data available at the island territorial level may cause additional difficulties when analysing the trajectory of spatial development in the region. For this reason, arguably more data should be produced and provided, maybe even also at municipal level. Further research on the subject of Territorial Cohesion of the Azores could also focus, for example, on trying to understand if planning in the region is becoming more decentralized, with more active participation of all regional and local agents and stakeholders in political decision-making regarding development and also on researching which social groups in each island benefited from the process of airspace liberalization and which didn't, and how the living dynamics of the local population have changed since this political decision. Another important topic could be the study of transportation dynamics between the islands in the region, as accessibility to products and services, especially related to health, can be considered of major importance to territorial cohesion, even more in a region with the characteristics of the Azores. The next section concerns the concluding remarks.

6. Concluding Remarks

The goal of this work has been to try to answer the research question: “Has airspace liberalization made a positive contribution to the territorial cohesion of the Azores region?”. This is the guiding question of this work, which has to do with the fact that territorial cohesion has been an official political objective to be pursued by the European Union, since the signature of the Lisbon Treaty in 2007, while airspace liberalization happened in the region in 2015, given that tourism was considered by many as an underdeveloped sector in the Azores, with the lack of airline competition being considered as the main reason for this underdevelopment.

In the first section of this work, it was made a discussion about the concept of territorial cohesion. Given that there are so many different debates, not only on how to understand this concept, but also how to operationalize it, it was essential to start this work by approaching this definition, as to justify the framework that has been applied.

It was established that European territorial cohesion agenda is marked by two influential planning traditions. The French tradition of *aménagement du territoire*, which is seen as “regional economic approach to planning”, with concerns for equity, and the German tradition, with concerns for coordination and balancing development with the capacity of the land. The territorial cohesion agenda reflects the concerns of both these traditions.

In this sense, it was explained that territorial cohesion implies a new way in which development is looked at and gets its initial theoretical contributions from the strategies of endogenous development presented in the end of the 70’s. These argue that regional development should be driven in a bottom-up manner, by local actors and factors, with the goals of efficiently mobilizing the region’s resources and of satisfaction of the basic needs of the whole of the population. Among other theoretical contributions, this new paradigm gains more importance in the EU with the release of the Green Paper on Territorial Cohesion, in 2008, and the Barca Report, in 2009.

Afterwards, the debates on the operationalization of territorial cohesion were presented and discussed, with the conclusion that, even though there are lots of disagreements between scholars on how to better operationalize territorial cohesion, context is very important and must always be taken into account. Next, the context of the Azores was given, alongside a discussion of what ultimately led to the policy decision of airspace liberalization in the region.

In light of all of this, and of the pernicious effects that an over reliance on tourism can have, especially on small insular territories, one could arguably reframe the research question as an effort to try to understand if the premises of the new paradigm are being contemplated with this decision. In this sense, the relevance of this study is trying to conclude if all the islands in the archipelago are benefitting equally from airspace liberalization and consequential tourism growth, and also try to make a positive contribution to the debate on the development on the region, since the government and economists in the Azores seem to agree that tourism growth in the region is a suitable strategy for to pursue economic growth.

In order to try to answer the research question, an approach that can be considered more leaning towards French approach was taken. This consisted in the collection of data regarding a set of indicators at the island level, in two points in time, one before and one after airspace liberalization, relating to four dimensions: tourism, demography, economy and jobs. The goal was then to compare the behaviour of these indicators in each island, with the region as a whole and amongst themselves. The objective was to do a detailed and nuanced analysis of the behaviour of these indicators, while trying to confirm if there was any connection between their behaviour and examining if there has been convergence or divergence in those indicators. Afterwards, the main limitations of the approach were presented, while still arguing that this approach can still provide some useful insight into the trajectory of the territorial cohesion in the Azores.

The approach taken and the results obtained indicate, even though it's difficult to provide a definite conclusion, that territorial cohesion doesn't seem to have improved in the Azores since airspace liberalization. In that sense, the answer to the initial research question seems to be that no, this policy decision didn't make a positive contribution to the territorial cohesion in the Azores.

When it comes to tourism data, all the indicators point to a concentration of activities in São Miguel. The other islands didn't witness the same levels of growth in these indicators. Furthermore, in the central group, Terceira and Pico seem to be benefitting more from this process comparing to the other islands. What seems clear is that the growth of tourism has not been evenly distributed among the islands, as confirmed in some of the interviews conducted (Attachments D and E). The concentration of tourism development on some islands can also lead to imbalances in housing prices and living standards. All of these situations can raise problems for the region's territorial cohesion.

Demographically, population remained very concentrated in São Miguel and Terceira, with both islands in the western group experiencing significant population loss. The economic distribution also didn't change significantly, with GDP concentration remaining relatively stable. Although there was an overall increase in purchasing power per capita, indicating some positive impact on the economic well-being of the population, one can't say it necessarily led to a more equitable distribution of economic activities and territorial cohesion.

The liberalization of airspace did affect the economic structure and the labour market of the Azores, with the service sector gaining importance in most islands. However, these changes were not equally felt across all the islands and some experienced more significant shifts than others. When it comes to the labour market, the unemployment rate decreased through the Azores, and the service sector's weight in employment increased across the region. In this regard, the concentration of jobs in the hospitality industry in São Miguel may have contributed to job diversification in the island, as suggested by the Specialization Index results.

Overall, the findings indicate that the unbalanced trends observed before airspace liberalization have not been reversed. In light of this, the discussion follows with a suggestion that includes the application of different development strategies to try to at least mitigate these imbalances and promote a more balanced development across the region, taking into consideration the unique characteristics and potential of these islands, and concludes with suggestions for further research on the topics of the Azores airspace liberalization and its territorial cohesion.

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Attachment A

Interview with a manager at a leading real estate agency in the Azores

Q1: Did airspace liberalization have an impact on housing prices and the real estate business in São Miguel? And on the other islands? (Terceira)

A1: Housing prices increased significantly, primarily due to liberalization. Almost all visitors coming to the Azores pass through São Miguel, which means there are more people in this island. People end up buying real estate for reasons like safety, climate, among others, which translates into price differences because there is much more demand, and the supply has not increased. However, property prices in São Miguel still remain below those in Lisbon or Porto.

Banks also have an influence. Negative interest rates for a long time, and foreigners took advantage of them. At a certain point, the Bank of Portugal started demanding that people must have 10% of the property's value as a deposit for loans, which further disadvantaged the local population since foreigners generally have more financial means.

Q2: How do you rate the purchasing power of the local population on each island when it comes to buying or renting a home? Do you think this situation has evolved since 2015?

A2: The local population has lost purchasing power, and foreign investment is mostly made with their own capital. Foreign investment has increased significantly in recent years, and Azoreans have lost purchasing power. When it comes to buying, it has decreased as explained before, directly due to liberalization. In the rental market, it has also decreased, but indirectly, in the sense that locals have lost the purchasing power to buy property, which favours those who already have financial capacity. So, those who already have that capacity buy and rent.

Attachment B

Interview with Economics Professor at Universidade dos Açores

Q1: Do you think that the airspace liberalization in the Azores was a positive decision for the region's development?

A1: Absolutely! It was one of the major hindrances to development. It increased tourism and, consequently, export capacity. It was important for attracting tourists. Tourism is a growing sector internationally, and it makes sense to invest in growing sectors rather than stagnant ones. It's the only sector where we can grow. It's important for exports, while at the same time using endogenous capacity and natural resources. It has a spillover effect on other sectors (trickle-down effect) and it allows for the revitalization of more rural areas (more so in some islands than in others).

Q2: Do you think that airspace liberalization in the Azores was a positive decision for its territorial cohesion?

A2: Yes! For some islands like Flores, Graciosa, or Santa Maria, there are few opportunities for growth if not through tourism. It's important for retaining people and preventing them from leaving the smaller islands. Other sectors are difficult to grow on these islands because they require economies of scale. São Miguel has the capacity for that, and tourism doesn't need scale, and marketing for niches that take advantage of each island's potential is easy with digitization.

Q3: How has academic research at the University of the Azores contributed to understanding the trajectory of territorial cohesion in the region?

A3: It hasn't because it's not of interest to researchers. Only what is publishable in international journals matters. (e.g., biodiversity, things related to nature). Even in economics, only international scenarios are of interest.

Q4: What do you think are the top priorities and challenges in research on the trajectory of territorial cohesion in the Azores? In your opinion, are there key indicators to pay attention to when conducting this analysis?

A4: It's important to study territorial cohesion. In my opinion, the main area is access to services. In this matter, some things are better, but there is still much to be done. It's mainly necessary to improve healthcare throughout the islands. There are significant

asymmetries in access to services, not so much in education, but mainly in healthcare. It's necessary, even though I'm not sure how, to improve primary care on the various islands of the Azores (except Faial, Terceira, and São Miguel).

Q5: Do you believe there could be a disproportionate increase in the number of beds on some islands when compared to the number of visitors they receive? What effects can this have?

A5: That's not the issue. It's actually the opposite. There seasonality is very much felt. There is a lack of beds and cars during the high season. In the low season, there are significant problems that are strongly felt, but they are compensated for by the surplus in the high season. During the low season, there are low occupancy rates, which significantly reduce prices. In the high season, there is a lack of capacity.

Attachment C

Interview with a former member of the Government of the Azores

Q1: What were the main reasons that led to the political decision of airspace liberalization?

A1: I only joined the Regional Government of the Azores in November 2016, airspace liberalization had already taken place in March 2015 (São Miguel) between the Azores and mainland Portugal, as well as with Madeira. Nevertheless, I don't hold back in stating that the main reason for this change was to ensure, for the islands that demonstrated the ability to forgo public service obligations, greater capacity to attract other air operators that could provide more competitive market conditions with increased supply and more affordable prices. Additionally, it was expected to capture the attention of airlines commonly known as low-cost carriers, which, in addition to meeting the two aforementioned conditions (more seats and lower prices), also function as significant promotional vehicles.

Q2: Do you think this decision had positive effects on the region? And for all the islands equally?

A2: Yes, I have no doubts about the benefits of this decision for the Azores. It's particularly evident in the tourism sector. Statistics easily confirm this. For example, overnight stays increased from 1.2 million in 2014 to over 3 million in 2019. Similar trends can be observed in other classic indicators, such as the number of guests or tourist spending. On the supply side, there has been significant investment in the sector, both in traditional hotels and in local lodging, resulting in an increase in available accommodations. However, it's not just the tourism sector that has experienced clear growth. Other sectors, such as agriculture, construction, not to mention tradinh, restaurants, car rentals, or tourism activities on land and at sea, have also greatly benefited from this dynamic. Moreover, across all these sectors, we have seen a growing number of diverse entrepreneurial initiatives, allowing economic gains to be more evenly distributed throughout society. Additionally, it's important to highlight the impact on the mobility of Azoreans. Around the same time or in the same year, the policy of social mobility subsidies was implemented, allowing residents of the Azores and Madeira to travel to and from mainland Portugal and between the islands at a capped cost, with reimbursement for the difference between the actual ticket cost paid

and the defined ceiling. Regarding the equitable growth of all the islands, especially in terms of tourist attraction, efforts were made to ensure that no island was disadvantaged in terms of visitor access and pricing. This was achieved by offering free transfers, guaranteeing that the arrival price for any island would be the same, regardless of whether the island had direct connections to outside the region or not. I consider this to be an extremely important measure to increase the attractiveness of islands without direct external connections (unfortunately, it has been discontinued more recently). However, it's important to note that positioning the Azores as a whole and each of its islands specifically is an ongoing effort that should continue to appeal to the unique strengths and offerings of each island.

Q3: In your opinion, what measures could be taken to ensure a positive evolution of territorial cohesion in the region?

A3: The current major challenges that, in my opinion, face regional tourism development and, by extension, the economic development of the Azores, are related to sustaining tourist flows. This includes consolidating the current flows and capturing new markets that align with the region's positioning strategy. Additionally, there's a need to address the challenges posed by seasonality, especially considering the excellent climatic conditions in the Azores for tourism all year.

To ensure territorial cohesion, it's essential to work on what each island has to offer and on their communication strategy, while maintaining the overarching identity of the Azores, which ends up strengthening the uniqueness of each island. Beyond tourism, sectors like agro-industry, maritime activities, and even more recently, space-related initiatives, show significant growth potential.

To achieve these goals, it's crucial to attract human capital and counteract the population decline trends to meet the workforce demands in various sectors. We need to be attractive not only to tourists but also to individuals and businesses looking to establish themselves, work, or invest in these islands. This can be achieved through various government tools, including: ensuring quality public services in all islands, particularly in education, healthcare, and culture; improving accessibility; offering investment incentives and efficient management of the fiscal differentiations we have available. In our specific case, I believe that we should intensify efforts to position and identify the region as a Sustainable Tourism Destination. We must recognize that this obligation, as a society,

can also be a tremendous opportunity. This opportunity should not be wasted with mere rhetoric but requires concrete action.

Attachment D

Interview with an owner of a travel agency in Terceira

Q1: In your opinion, did airspace liberalization have a positive impact on the development of tourism in the central group?

A1: I believe that liberalization brought good things; there is no doubt that the Central Group has seen an increase in tourists, which is good for our economy.

Tourism is the most relevant sector of economic activity, improving the well-being of citizens in various ways, through job creation, wealth generation, investments, innovation, heritage restoration, preservation of nature, promotion of culture, among others. However, it also brings some disadvantages for residents due to the challenges that have arisen as the influx of tourists has increased, such as: shortage of available seats on flights to and from the region and inter-island; difficulty in securing reservations at restaurants for lunch and dinner; lack of food products in supermarkets (only in July and August); parking difficulties and crowded beach areas.

Q2: Do you think that there has been a disproportionate influx of tourists on any island compared to others?

A2: In Graciosa, without a doubt, due to the lack of air and mainly maritime connections from São Jorge, Pico, and Faial.

Q3: What impact has tourism had on the local community on the different islands in terms of service availability or employment, for example?

A3: There has been the creation of services in various areas, but the quality of these services has declined significantly. There is job availability, but there is a lack of qualified workers and labour force. Hiring has become very challenging in all sectors, especially those related to tourism, primarily due to the work schedules that include weekends.

Q4: Do you think that various stakeholders from the different islands in the region, especially tourism operators, are consulted in the tourism planning of the Azores?

R4: We are consulted, but most of the time, it's not done in a timely manner. The deadline they require for answers is too short for us to express our opinion, and it's almost always done during high season.

Attachment E

Interview with a representative of UGT-A in Conselho Económico e Social dos Açores

Q1: Do you think that the working conditions for employees have improved or worsened in the Azores airspace liberalization?

A1: Airspace liberalization brought more economic activity, and consequently, more employment opportunities. Regarding working conditions, it's a relative matter and depends on the specific context. If we consider it from the perspective of workplace health and safety, I would say that conditions have improved as the employment shifted from the construction industry, which was affected by the economic crisis, to other sectors like tourism. These sectors generally offer better working conditions. However, the working conditions can vary significantly depending on the employer and the specific workplace.

Q2: Do you think the housing conditions for workers have improved or worsened in the Azores since airspace liberalization?

A2: The housing conditions have worsened for several reasons. While it's true that there's been increased demand for housing from foreigners and a growing trend of converting properties into tourist accommodations (Alojamento Local), there has been a lack of focus on creating affordable housing. As a result, the housing market has become unbalanced, with demand exceeding supply. It's important to note that Alojamento Local has allowed for the restoration of many properties that were deteriorating and that would otherwise have continued to deteriorate.

Q3: Do you think there are winners and losers in Azorean society as a result of this airspace liberalization process?

A3: Politically, there is a debate about who allowed this liberalization and the resulting economic development being pursued. In reality, the winners are those who directly or indirectly benefit from this liberalization, particularly in the tourism, production, and service sectors. The losers are those who are not benefiting (or believe they are not benefiting) and complain about the negative impact of increased tourism on what they used to enjoy, such as tranquillity, which they feel they have lost.

Q4: Do you see the same trend in all the islands?

A4: Yes, initially it allowed access to any island at the same cost, and now with the Azores fare, it allows for greater internal tourism flow. It is important to note that tourism development is not harmonious across the 9 islands, with the same happening in other archipelagos, but there has been some "intelligence" in some islands to diversify and introduce products for tourists to consume in high-flow areas. This is an indirect way of capitalizing on tourism.

Q5: Do you think that the various stakeholders from the different islands in the region, including the workers, are consulted in the tourism planning of the Azores?

A5: Specifically, the workers themselves are not consulted, but workers' organizations are, and they are represented in various institutions, for example the Concelho de Ilha.