

ALGARVE SUSTAINABLE TOURISM OBSERVATORY (AlgSTO)

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of Sustainable Tourism
Observatories



Technical information

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Foreword

The pandemic context that still ravages the world, with the powerful and undeniable impact it had in all economic sectors, especially in the tourism area, has underlined the importance of projects like the Algarve Sustainable Tourism Observatory (AlgSTO).

In fact, apart from all the issues (and corresponding outcome) related to public health, safety and companies' struggle for survival, two major topics seem to have taken a redoubled importance in this scenario: the need to have valid, timely and reliable information to support the decision process and the vital importance of addressing sustainability matters (of companies, projects, destinations).

In truth, the pandemic advent highlighted something that was already clear: the world is in a constant state of mutation, which makes the tasks of managers and decision makers extremely demanding. The complexity in which this process is encircled can only be mitigated with data that allow response to the challenges with which those who have the faith of organizations in their hands are faced in a daily basis.

In a similar fashion, sustainability is no longer a cliché, used in an almost meaningless way, and has become a basic requirement, both from demand and the offer sides, with everyone knowing or mentioning the 17 Sustainable Development Goals as a guideline.

It is precisely this context, elevated by the pandemic advent, that reinforces the importance of the creation of the AlgSTO as a support tool to the institutional and private sectors in a region that has its main economic activity.

In spite of the reinforced recognition of the project and of its importance to the sector, it was also this pandemic frame, with all the restrictions and constraints it imposed, that decelerated its swift organization and implementation. In fact, despite the continuation of the operation, some delays were noticed in the essential networking with regional organizations, which limited, for example, the gathering of the necessary input for the activity of the Observatory. This issue was eventually sorted in late 2021.

Therefore, it is our expectation that the AlgSTO, which has its still short life coinciding with the COVID-19 pandemic, will take on a more stable and fluid activity in 2022 and

wishing also that this will be the year when the pandemic frame is overcome, thus allowing the return to stability.

Executive Summary

The region of Algarve is recognized as a high-quality tourist destination, having received several awards and distinctions. It is much sought after by visitors, both national and foreign, making this sector the largest contributor to the region's gross domestic product. Currently, the foreign tourist demand is mainly concentrated in five markets, with the most prominent position occupied by the British market. Furthermore, the region has been asserting itself as a tourist destination oriented towards specific products: 'sun-and-sea', golf, business tourism, nature tourism and residential tourism.

On the other hand, even though growth in this sector provided benefits in terms of generating wealth, income and jobs in the region, it has also brought to the surface concerns regarding some negative impacts: on environmental resources, on the Algarve's economy and on the Society as a whole. These concerns call for the existence of an organizational structure, capable of providing permanent monitoring of regional tourist activity. In the case of the Algarve, such organization is the Algarve Sustainable Tourism Observatory (AlgSTO), recently created, whose development is the central idea contained in this report. AlgSTO's adhesion to UNWTO-INSTO represents a step forward in the Observatory's visibility and credibility, as a coordinating and supervising entity in the processes of monitoring regional tourist activities.

The mission committed to the AlgSTO is, thus, the improvement of processes designed to the adoption of sustainable practices, within the framework of Algarve tourism activities. Namely, the decision-making processes leading to the creation of a healthier, greener, more resilient and regenerated tourist destination, offering a better quality of life, better means of mobility, more safety, and even improved environmental parameters (e.g., better waste management, efficient use of resources, air and water quality).

As addressed in the previous report, to make its mission effective, AlgSTO will need to study, analyse and monitor tourism performance in different areas of sustainability. In addition, to be able to anticipate the future evolution of the variables that determine tourism activity in the Region, 11 scientifically validated forecasting instruments are used, and a set of hypothetical but realistic scenarios are developed. A tool that will

prove critical in the accomplishment of the aforementioned objective is the so-called Decision Support System (SAD), an online platform whose purpose is to receive, store and process statistical data, which will serve as a basis for the construction of a vast set of indicators involving high levels of temporal and geographic disaggregation. It will also be an instrument capable of supporting the production of forecasts and the scenarios foreseen in the AlgSTO set of objectives. An important feature of SAD is to assume the involvement of a wide range of regional stakeholders, whose role is that of data providers and, at the same time, users of processed information, in particular in the form of sustainability performance indicators, as well as forecast figures.

The report provides detailed information regarding 11 areas of sustainability that UNWTO-INSTO considers as a mandatory requisite for national observatories to become members of the Organization. In addition, two other areas that the Observatory considers of special interest to the Algarve have been incorporated. The option for the 13 areas of sustainability was subordinated to the requirement to characterize four fundamental dimensions of tourism sustainability: social, economic, environmental and destination management. The measurement of tourism sustainability levels, together with the areas thus defined, translated in the construction of 45 indicators, all of them endorsed by the ETIS (European Tourism Indicators System for Sustainable Destination Management), and according to their relevance in the perspective of a selected set of regional stakeholders. This report also includes new data regarding residents' satisfaction with tourism and insights on tourists' satisfaction. All these sustainability areas are grouped into the four aforementioned sustainability dimensions.

Despite all the effort made by the work team in obtaining the statistical information required for the operationalization of the selected indicators, it was not always possible to do so. Specifically: the levels of disaggregation of the indicators, both temporal and geographical, were not carried out in accordance with the team's intentions. In addition, an update exercise involving some figures entered in last year's report was made impossible due to the effects of the COVID-19 pandemic.

One aspect to recall is the lack of information to measure a large number of environmental variables. This is a clear weakness that will need to be overcome as quickly as possible.

In general, the application of the selected indicators to the available data gave rise to a first characterization of the levels of sustainability of Algarve tourism (in pre-pandemic time), although such an exercise cannot be considered as complete. The results confirm some of the perceptions that are common to entities that regularly deal with the tourism sector in the Algarve. Namely: a growing trend of tourist intensity, more accentuated in coastal areas, where the main accommodation structures are concentrated; higher levels of tourist density in coastal municipalities of relatively small physical size; confirmation of the existence of well-marked seasonal cycles, although in the last decade there has been a slight slowdown in the annual distribution of the number of overnight stays. However, this movement was not matched by other critical variables, such as employment. It is important to note that in indicators using data from 2020 onwards, clearly show that a significant drop has occurred in every sector, with the greatest changes in the coastal areas in the period of highest tourist activity. These values are even lower than the ones registered during the 2008 crisis, showing the impact that Tourism activity has on region's employment.

The emergence of the health crisis brought on by the COVID-19 disease, had a negative effect on all sectors of activity, across all countries of the World. Such unprecedented reductions in activity, in the historical record of Algarve tourism, were shown in a transversal way in all markets of origin of tourist flows, but with particular intensity in the British market, which, as is known, represents the main contributor to the region's tourism. In contrast, flows of domestic origins were the least affected by the crisis.

In the previous report, it was discussed that the occurrence of the COVID-19 crisis may represent an opportunity to rethink the tourism development models that prevail in the Region as well as to formulate solutions to sustainability problems whose recognition is consensual. This task will surely receive the best attention from AlgSTO, taking into consideration the set problems the Region is currently facing.

1

Algarve profile



1. Algarve profile

1.1 Identity

The Algarve is the southernmost region of Portugal occupying an area of 4 997 km². With 467 475 residents it's the Portuguese region with the highest population growth in the last 10 years (+3.7%). Its population density is 93.5 per km².

It has a network of aerial, road, railroad and maritime infrastructures that, altogether, open the region to Europe and to the World. Its main doorway is Faro International Airport which on a national level is the second biggest in what concerns air traffic. The A1 (to Lisbon) and A22 (regional) motorways are its main road accesses.

Considered main strong points:

- Mild weather conditions throughout the year, with over 3000 hours of sunshine and low rainfall;
- 318 km of coastline with coves, cliffs, sea caves, and rocky or wide golden sandy beaches, along with a clear, lukewarm and calm sea, which makes the Algarve region to be considered the best beach destination in the world;
- Natural areas occupying 70% of the Algarvian Coast and 37% of its territory inserted in natural reservations, nature parks or protected landscape areas, suggestive of open-air activities throughout the whole year, like walking trails (Via Algarviana, GR15, Rota Vicentina), bicycle riding (Ecovia) or birdwatching;
- A diversified tourist offer, based on a variety of accommodation facilities, transportation, entertainment (wide range of hotel offer, recognized quality of its services, 40 golf courses considered to be among the best in the world, marinas, sports and cultural facilities, a wide range of events throughout the year);
- Hospitable population, speaking several languages and always ready to welcome, and to unveil its history and traditions, arts and crafts, folklore, its gastronomy based essentially on the Mediterranean Diet, which is part of the UNESCO's World Heritage.

1.2 Economic data and the weight of tourism

The Algarve is a region where the tertiary sector has a big weight, therefore being the one that presents itself as the main employment generator, and where the highlights are the tourism sector companies. Of the employed population of the Algarve (91.7% of the active population), in 2020 about 85% work in tertiary sector companies, 11.2 % in the secondary sector and 3.8% in the primary sector.

The weight of the regional GVA in the activity sector “wholesale and retail commerce; repair of vehicles and motorcycles; transportation and storage; restaurant and accommodation activities” was in 2019 of 38.9%. The second biggest contribution to the regional GVA in 2019 was “Real Estate Activities” with 17.0%.

The contribution of the Algarve to the national GDP was, in 2020, of 4.4% (provisional data). In the same year, already affected by the COVID-19 pandemic, the Algarve represented 30.6% of total bed nights and 32.6% of bed capacity in Portugal.

1.3 Main source markets

Considering the origin of external demand, while in 2019 United Kingdom, Germany, Ireland, Netherlands and France represented 60.6% of the overall nights spent by non-resident tourists in the Algarve, in 2020 Ireland gave place to Spain in this top five source markets.

Despite the sharp drop in tourist flows from these and other markets directly related with the travel restrictions during 2020 and 2021, in terms of strategy, this has not yet changed the Algarve tourism market rating that is still divided in 20 incoming markets grouped into three different types: priority (which are already matured and consolidated in the region, and for its weight in the market and/or potential for growth, justify priority of action); wager (markets that are not yet consolidated and which require a different strategy in order to increase demand); to monitor (those which still don't have a high demand in the region, but have a growth potential).

Table 1: Market rating matrix

Markets	Rating		
	Priority markets	Wager markets	Markets to monitor
United Kingdom	X		
Portugal	X		
Germany	X		
Ireland	X		
Netherlands	X		
France	X		
Spain	X		
Belgium		X	
Poland		X	
Canada		X	
USA		X	
Italy		X	
Sweden		X	
Switzerland		X	
Brazil		X	
Austria		X	
Denmark		X	
Norway			X
Finland			X
Russia			X

Source: Algarve Tourism Board.

1.4 Tourism products

Concerning main tourism products/segments the Algarve has identified 19 as follows:

1. Sun and Sea;
2. Golf;
3. Meeting Industry & Corporate;
4. Nature Tourism;
5. Residential Tourism;

6. Gastronomy and Wine;
7. Cultural and landscaping Touring;
8. Health & well-being Tourism;
9. Sports Tourism;
10. Nautical Tourism;
11. Accessible Tourism;
12. Senior Tourism;
13. Cruises tourism;
14. Campervan Tourism;
15. Cinema and audio-visual Tourism;
16. Luxury Tourism;
17. LGBTQIA+;
18. Weddings;
19. Digital Nomads.

1.5 Development Strategy

The development strategy set for the Algarve is based in three axis which reflect the vision and the critical factors for the success of the region and for which a set of action plans and strategic projects are programmed:



Source: Algarve Tourism Board.

- Axis A – Competitiveness – The intervention in this axis is aimed at enabling the region to present itself in a differentiated and unique fashion in the global market;
- Axis B – Quality – this axis is aimed at presenting a set of projects that contribute to the qualification and consolidation of the supply;
- Axis C – Contribution for the 2030 Agenda – The action plans and their corresponding strategic projects will contemplate interventions that promote the development of sustainable tourism in the region, lending their contribution so that the tourism in the region asserts itself as a development engine and territorial and social cohesion.

The Observatory for Sustainable Tourism in the Algarve allows us to monitor the tourism development in the areas of economic, social and environmental sustainability.

2

AlgSTO, Tourist activity in Algarve and the pandemic in 2021



2. AlgSTO, Tourist activity in Algarve and the pandemic in 2021

2.1 AlgSTO and the COVID-19 pandemic

As previously reported, the formal inception of AlgSTO occurred in March of 2019, with scheduled activities only starting in 2020. The postponing of the activities was intended to allow the regional stakeholders to be introduced to the project and achieve a wide regional engagement.

The outbreak of the COVID-19 pandemic proved to have a significant impact in the process of AlgSTO, at the time still on a very initial stage of development, without yet a consolidated structure.

The effectiveness of the purposed approach within the regional partnership was seriously challenged by the restrictions on circulation and numbers allowed in meetings, or elsewhere generalized lockdown measures adopted by the Government, that unquestionably compromised the essential contacts to the necessary data production.

Nevertheless, 2020 was considered a very positive year. With broader activities lessen, it was possible to strengthen the foundations of the observatory by constructing a better reflexion on our own role and reach, and also develop close relationships within the national network of observatories.

During 2021, a year also affected by the same COVID-19 restrictions, it was still possible to set a milestone for AlgSTO. Intended to normalize all projected activities, and after reaching a consensus with all the partners, the network and operational regulatory framework for the regional observatory were officially formalized.

2.2 Impact of the COVID-19 pandemic in Algarve tourism

With all major regional tourism KPI available until October, the influence of the COVID-19 pandemic has been unarguably felt throughout the sector, affecting its value-chain and impacting the socio-economic ecosystem in almost unprecedented levels.

The Algarve, as with most tourism reliant destinations for job and wealth creation, struggled with mitigation measures countering said dependence.

Though national and regional tourism institutions were prompt on reacting to this adverse environment, the opportunity of setting collaborative networks for developing innovative and sustainable initiatives, was a key factor to roadmap coordinated and successful strategies towards boosting economy, competitiveness and resilience, ensuring a recovery already demonstrated on results achieved.

Though the numbers indicate a full recovery still ahead of us, as countries gradually lift their restrictions and tourism slowly restarts, 2021 was a step away from the performance of the previous year, at regional level.

Passenger arrivals at Faro International Airport were 35.5% higher than in 2020, 2.8 million besting the 2.1 million then registered.

With data available until October, the main regional inbound markets, such as the UK (37.9%), France (33.2%), Spain (17.1%) and also internal demand (30.9%) all performed above the 2-digit mark higher than the year before. Opposingly, Germany (-19.3%) and The Netherlands (-20.8%) had lesser registered bed nights than in 2020.

The total profit of tourism sector, with 2 months to account for, was 698.2 million EUR, almost 52% more than in the previous year, but still away from the 1.226 million EUR mark in 2019. The accommodation profit also performed above 2020 (54.7%), already achieving 536.1 million comparing with the full 909.6 million EUR of 2019.

In line with bed nights, the number of guests slowly built up during 2021 and, at the moment of release of this report, already achieved a solid 2.5 million mark, 29.3% more than in 2020 (1.9 million).

As health must be a priority and health protocols protecting communities and travellers alike, while supporting workers, must be firmly in place, only a collective action across the public and private sectors will be able to create job opportunities, through innovation and creative strategies.

Companies, jobs and, consequently, families suffered the most during the height of the pandemic reflecting on the loss of livelihoods, mostly depending on tourism. During 2021, tourism related unemployment still reflected the impact of COVID-19 effects and measures determined by international governments. Nevertheless, from May on, the

unemployment rate was lower (ranging from -12% in May, to -39% in October) than in 2020. When comparing with 2019 numbers, the performance falls over 150% more, mainly during the high season registering 265%, 245%, 206% and 164% from June to September.

2.3 Tourism performance indicators in the Algarve – January to October

2.3.1 Guests

The registered number of guests in the Algarve, from January to October 2021, was 2.45 million, which represented a 29.3% growth considering the same period of the previous year, as reported in Table 2 and Figure 1.

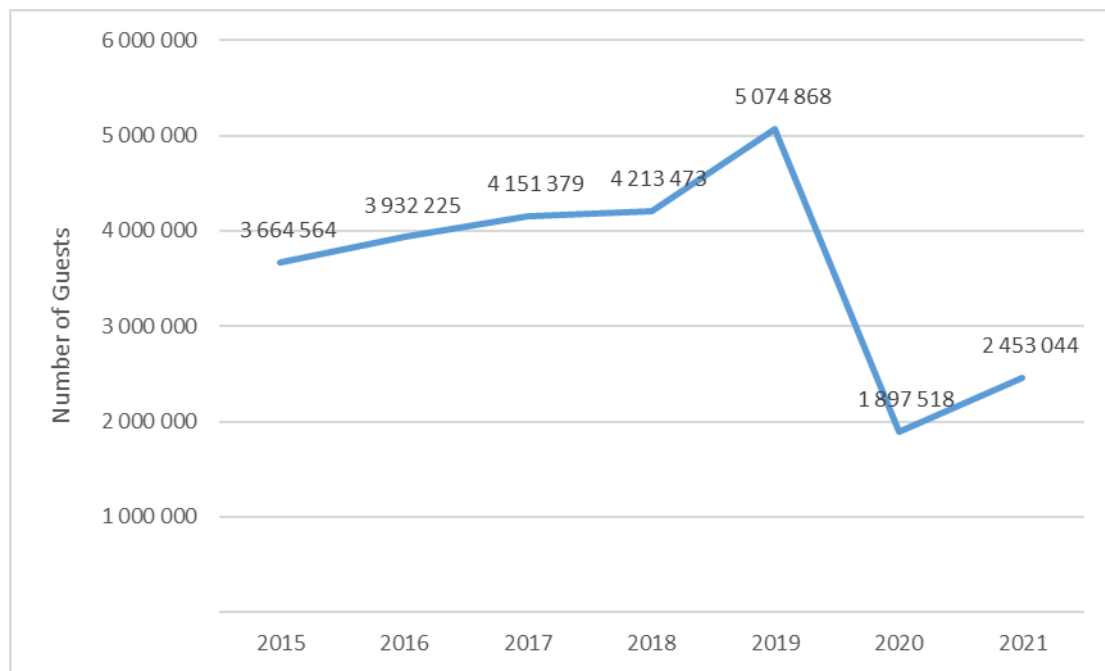
Table 2: Number of guests. Algarve, 2015-2021

Number of Guests	2015	2016	2017	2018	2019	2020	2021
Total	3 664 564	3 932 225	4 151 379	4 213 473	5 074 868	1 897 518	2 453 044
Variation (%)	3,0%	7,3%	5,6%	1,5%	20,4%	-62,6%	29,3%

Source: Tourism of Portugal.

The provisional data available in October 2021, also reflects an increasing number of Portuguese guests (21.5%), against the published figures from the previous year. This data suggests and punctuates, the then made assessment about the resilience and vitality of the national market, as tourist flows start to resume their relative dynamics within the region.

The same data, available from Tourism of Portugal, shows an increase in the number of foreign guests by 25.0%. The United Kingdom, our lead foreign market, reached a 38.5% increase in the number of guests, while demand from tourists originating from France and Spain was 33.7% and 5.7% higher respectively. On the other end, the Netherlands and Germany registered losses in numbers of 1.1% and 11.9%.

Figure 1: Evolution of the number of guests. Algarve, 2015-2021

Source: Tourism of Portugal.

2.3.2 Bed nights

Bed nights registered in this period – January to October 2020 – were 7.59 million, 61.2% less than in the same period of the previous year. The evolution of this indicator is reported in Table 3 and Figure 2.

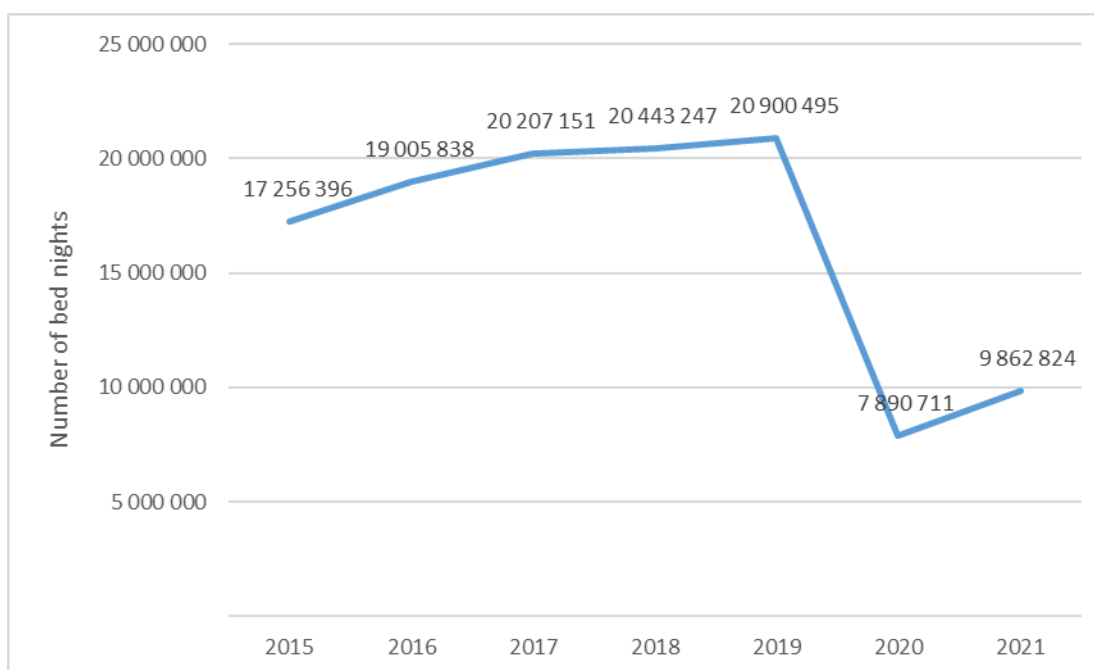
Table 3: Number of bed nights. Algarve, 2015-2021

Number of Bednights	2015	2016	2017	2018	2019	2020	2021
Total	17 256 396	19 005 838	20 207 151	20 443 247	20 900 495	7 890 711	9 862 824
Variation (%)	4,0%	10,1%	6,3%	1,2%	2,2%	-62,2%	25,0%

Source: Tourism of Portugal.

The numbers show a consistent increase in demand throughout the series, peaking at 2019 (20,9 million bed nights). The following year, already suffering from the effects of the COVID-19 pandemic, the numbers suffered a downturn, registering the series' lower figure (7.89 million).

Figure 2: Evolution of the number of bed nights. Algarve, 2015-2020



Source: Tourism of Portugal.

The table below reports on the number of bed nights, by country of origin including Portugal.

Bed nights from residents summed 4.99 million, 30.9% more than in the same period of the previous year (January to October). Nevertheless, the United Kingdom (37.9%) and France had the major slice on demand in the Algarve, representing 523 496 of aggregated bed nights.

Table 4: Bed nights per tourists' country of residence. Algarve, 2015-2021

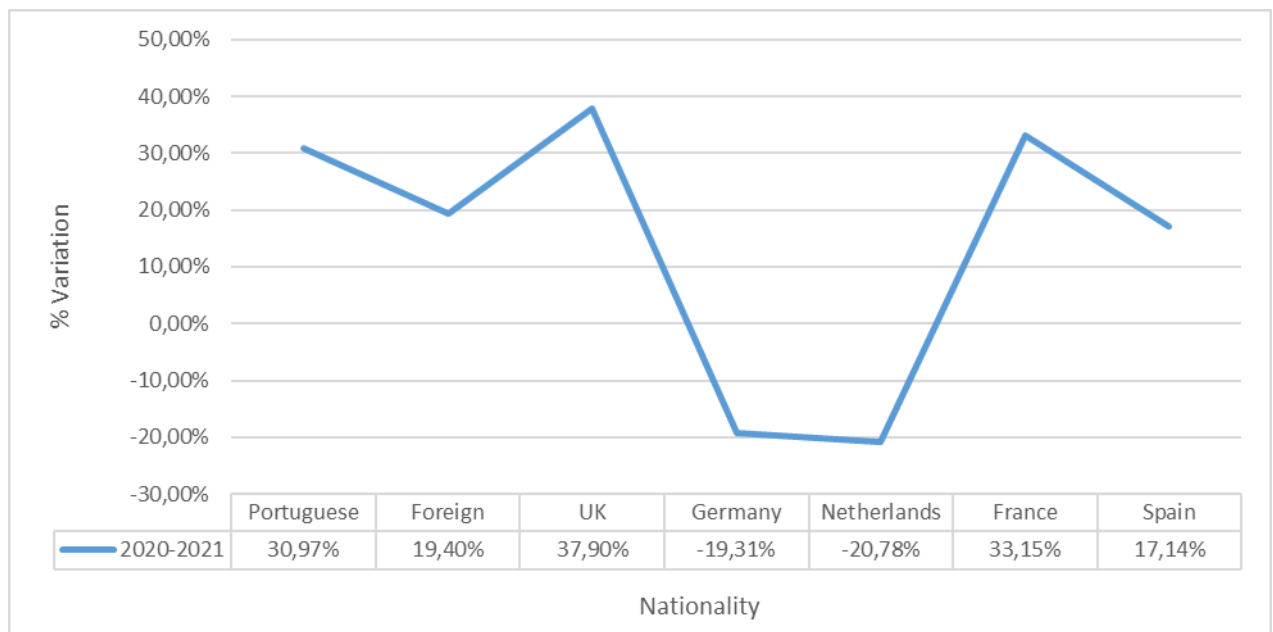
Number of Bednights	2015	2016	2017	2018	2019	2020	2021
Portuguese	4 088 779	4 134 969	4 332 057	4 797 528	4 985 984	3 813 998	4 995 209
Foreign	13 167 617	14 870 869	15 875 094	15 645 719	15 914 511	4 076 713	4 867 615
UK	5 688 676	6 208 951	6 249 136	5 795 119	5 916 074	1 018 490	1 404 491
Germany	1 731 760	1 894 337	2 121 846	2 042 042	1 870 377	674 184	543 999
Netherlands	1 391 216	1 552 326	1 536 882	1 366 634	1 219 837	532 593	421 935
France	652 686	931 796	1 048 912	1 147 029	1 178 976	414 722	552 217
Spain	893 574	902 901	961 722	1 038 845	1 131 271	467 594	547 728

Source: Tourism of Portugal.

Between 2019 and 2020, the United Kingdom, the major incoming market in the Algarve, had a negative variation of bed nights of 82.4%. This amounted to 4.6 million less bed nights, while Ireland registered a 92.1% drop, translated into 1.2 million less bed nights.

In 2021, inside the demand evolution curve within the group of the most important inbound markets to the region, only The Netherlands (-20.8%) and Germany (-19.3%) had negative performances. The best performance came from France, with a 33.2% increase in number of bed nights. These figures are reported in Figure 3.

Figure 3: Variation of the number of bed nights. Algarve, 2020-2021



Source: Tourism of Portugal.

2.3.3 Profit

Both total and accommodation profit, reflect observation of guests and bed nights numbers. From January to October 2021, the total amount of profit was 669.2 million Euro, with a percentage drop of 51.3% when compared with the same period of 2020. The results of the performance of these indicators are reported in Table 5 and Figure 4.

Table 5: Total and accommodation profit. Algarve, 2015-2021

Profit (Total)	2015	2016	2017	2018	2019	2020	2021
NUTS II - Algarve (millions)	780,1	941,0	1078,2	1144,5	1225,7	461,6	698,2
Variation (%)	11,1%	20,6%	14,6%	6,1%	7,1%	-62,3%	51,3%

Profit (Accommodation)	2015	2016	2017	2018	2019	2020	2021
NUTS II - Algarve (millions)	570,0	696,2	806,3	852,0	909,6	346,5	536,1
Variation (%)	13,1%	22,1%	15,8%	5,7%	6,8%	-61,9%	54,7%

Source: Tourism of Portugal.

Considering the same series, the accommodation profit, which amounted to a 61.9% loss in 2020, has, on the other hand, registered a growth of 54.7% (189.6 million) in 2021.

Figure 4: Evolution of total versus accommodation profits. Algarve, 2015-2020



Source: Tourism of Portugal.

Considering the January to October interval between 2015 and 2019, there is a noticeable increase in total profit, varying between 20.6% in 2016 and 6.1% in 2018. In this same interval, but in terms of accommodation profit, the results were similar, with an annual increase and percentual oscillation between 22.1% in 2016 and 5.7% in 2018.

2.3.4 Faro International Airport – Passengers

The data on the number of incoming passengers at Faro International Airport is reported in Table 6 and Figure 5. About 2.81 million passengers arrived at Faro between January and October 2021, which represents an increase of 35.5% in comparison with the same period of the previous year.

Table 6: Number of incoming passengers at Faro airport. 2015-2021

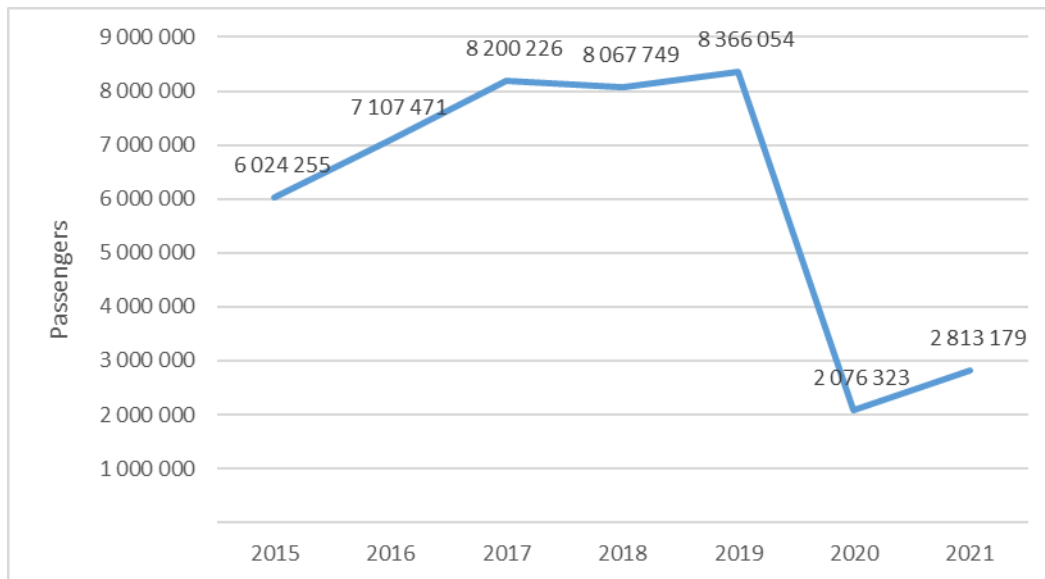
Number of Passangers	2015	2016	2017	2018	2019	2020	2021
Total	6 024 255	7 107 471	8 200 226	8 067 749	8 366 054	2 076 323	2 813 179
Variation (%)	-2,3%	18,0%	15,4%	-1,6%	3,7%	-75,2%	35,5%

Source: ANA – Aeroportos de Portugal.

The breakdown of this analysis shows that the number of foreign passengers had a growth of 29% compared to 2020, in line with the arrivals total figure. Again, the incoming passengers from The Netherlands have registered the lowest loss (-1.4%), while the UK, the main regional incoming passenger market, had a variation of 26.7% more, translating into 205 186 passengers.

The Portuguese citizens represent 6.3% of the total incoming passengers at Faro International Airport, with a growth of 8.7% (177.8 thousand passengers).

Figure 5: Evolution of the number of incoming passengers at Faro airport. 2015-2020



Source: ANA – Aeroportos de Portugal.

Inside the January to October interval, there was an increase in the number of passengers in 2015 and 2017, with a growth of 18% in 2016 and 15.4% in 2017, with a slight drop (-1.6%) in 2018, but picking up again in 2019 with an increase of 2%.

2.3.5 Revenue per available room (RevPAR)

According to data provided by Statistics Portugal, with the exception of 2020, the regional RevPAR numbers have been consistently increasing, on aggregate, since 2015. This indicator had a positive variation on performance of 25.5% during the 2015 – 2021 period, standing for the capacity that unit managers had in occupying their available rooms. The relevant information is reported in Tables 7 and 8.

Table 7: Evolution of the revenue per available room. Algarve, 2015-2021

Revenue Per Available Room	2015	2016	2017	2018	2019	2020	2021
NUTS II - Algarve	39,30	46,07	51,97	52,98	54,60	29,28	49,32

Source: Statistics Portugal (INE); Travel BI.

Table 8: Evolution of the revenue per available room. Algarve-Nuts II, 2015-2021

RevPAR NUTS II - Algarve	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AGG
2015	8,17	11,80	16,43	24,27	31,41	48,68	76,41	99,65	56,15	30,16	12,06	10,36	39,30
2016	9,90	14,43	22,49	27,21	38,68	58,07	88,81	110,27	67,14	37,24	14,91	11,76	46,07
2017	11,35	16,89	21,08	37,14	43,75	66,21	98,55	123,15	75,16	41,93	16,26	13,39	51,97
2018	12,33	16,95	24,62	34,76	45,78	67,88	99,68	125,61	76,67	43,65	16,46	14,52	52,98
2019	13,76	17,45	22,45	39,18	45,17	69,83	100,85	129,83	78,57	44,23	17,31	15,90	54,60
2020	14,22	19,45	12,70	2,63	3,77	15,08	39,02	81,88	46,46	20,20	6,64	6,87	29,28
2021	4,57	3,09	4,11	7,62	22,86	44,76	58,11	117,95	63,50	43,59			49,32

Source: Statistics Portugal (INE); Travel BI.

However, careful consideration must be given to profitability in order to assess if the RevPAR performance can be translated into increasing revenue by units. Again, from 2015 until 2021, and with the exception of 2020, the annual variation of profit has been positive thus indicating the overall positive performance of accommodation units.

In 2020, the RevPAR performance was severely affected, influenced by the confirmed impact that COVID-19 had on travel fluxes worldwide, in spite of lighter government measures during summer and towards the end of the year celebrations.

In 2021, with health improvement measures, traveller confidence slowly gained momentum, allowing a better performance level, although confirming that full recovery would not be achieved in a short period of time.

2.3.6 Average length of stay

The regional average length of stay KPI (ALS) has been experiencing a slight annual decrease since 2018 (an average of – 0.2 %). In prior years, the indicator had a stabilized run of 4.5 until 2017. In 2020, affected by the international travelling crisis due to the pandemic, the ALS had an oscillating performance throughout the year, with a remarkable 7.29 in April, July, August and September being the only other months where the performance was above 4.0. The data is reported in Table 9.

Table 9: Average length of stay. Algarve, 2015-2021

Average Length of Stay	2015	2016	2017	2018	2019	2020	2021
NUTS II - Algarve	4,5	4,5	4,5	4,3	4,1	4,0	

Source: Statistics Portugal (INE); Travel BI.

The monthly based analysis data reported in Table 10, shows that in 2020, April had an average length stay of 7.29 days, unseen in previous years, that probably can be associated with the COVID-19 outbreak and the traveling restrictions that ensued, leading people to lengthen their stay.

Table 10: Monthly average length of stay. Algarve, 2015-2021

AL Stay NUTS II - Algarve	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AGG
2015	4,09	4,39	4,24	3,95	4,05	4,48	5,06	4,93	4,50	4,50	4,25	3,62	4,49
2016	4,08	4,32	4,25	3,95	4,34	4,60	4,84	5,09	4,60	4,52	4,24	3,73	4,54
2017	4,17	4,32	4,52	4,02	4,27	4,54	4,84	4,99	4,44	4,40	4,11	3,49	4,47
2018	4,16	4,37	4,21	4,01	4,08	4,35	4,74	4,72	4,20	4,25	4,05	3,46	4,32
2019	3,93	4,06	3,97	3,93	3,81	4,04	4,53	4,43	4,13	4,21	3,89	3,55	4,13
2020	3,70	3,90	4,80	7,29	3,62	3,47	4,11	4,06	4,10	3,51	3,70	3,22	3,96
2021	3,84	4,39	3,78	3,18	3,05	3,74	4,08	4,46	4,05	3,98	3,73		

Source: Statistics Portugal (INE); Travel BI.

However, in spite of not yet having the final numbers in 2021, there is a trend towards an inconsistent performance in this indicator. Since 2015, the average length of stay dropped 11.8% (from 4.49 to 3.96).

2.3.7 Room and bed occupancy rate

As shown on Table 11, room occupancy rate in the region had been steady between 61.2%, in 2015, and 64.2%, verified in 2019 (a positive variation of 4.9%), with a peak at 66.1% in 2017. However, in 2020 there was an expected decrease of 52% comparing with 2019, due to COVID-19 related impact on the travel industry, performing at 30.8% of room occupancy rate.

Table 11: Room occupancy rate. Algarve, 2015-2021

Room Occupancy Rate	2015	2016	2017	2018	2019	2020
NUTS II - Algarve	61,2%	64,5%	66,1%	63,2%	64,2%	30,8%

Source: Statistics Portugal (INE); Travel BI.

At this point, there are no officially published numbers for this KPI in 2021. Considering the behaviour of all other KPI, an improvement in numbers from the results in 2020 is to be expected.

As with room occupancy rate, the bed occupancy rate is also a KPI that measures success and helps in understanding trends on demand and customer behaviour. As shown on Table 12, excluding COVID-19 pandemic influenced numbers from 2020, the regional bed occupancy rate has been increasing since 2015, coming to stabilize around 50%, since 2018.

Table 12: Bed occupancy annual rates. Algarve, 2015-2021

Bed Occupancy Rate	2015	2016	2017	2018	2019	2020	2021
NUTS II - Algarve	46,5%	49,6%	51,6%	50,2%	50,1%	26,9%	

Source: Statistics Portugal (INE); Travel BI.

The analysis of this indicator on a monthly basis, depicted in Table 13, shows that last year, the first two months had the best performances in comparison with the previous 6 years, followed by a string of poor performances, always under 30% excluding August and September – below the results from previous years.

In 2021, after considering the first 3 months of released data, the rate has been above par in 2020, which is to be expected for the remaining of the year.

Table 13: Bed occupancy monthly rates. Algarve, 2015-2021

Bed Occupancy Rate NUTS II - Algarve	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AGG
2015	16,1%	23,3%	29,6%	38,1%	46,8%	60,1%	72,5%	81,0%	61,7%	44,8%	22,0%	19,2%	46,5%
2016	18,4%	26,3%	36,1%	39,4%	51,0%	63,8%	74,2%	81,2%	65,0%	49,9%	26,3%	20,7%	49,6%
2017	20,5%	29,1%	33,3%	50,8%	52,8%	65,3%	75,1%	81,7%	66,1%	51,6%	26,1%	21,8%	51,6%
2018	20,3%	29,5%	35,7%	43,8%	52,2%	62,5%	73,3%	80,7%	64,5%	51,3%	26,1%	21,9%	50,2%
2019	21,6%	28,9%	32,7%	48,4%	50,4%	61,7%	71,9%	80,2%	64,0%	50,1%	27,3%	23,8%	50,1%
2020	21,9%	31,8%	18,0%	5,5%	6,6%	15,0%	29,8%	56,2%	40,0%	21,0%	9,1%	9,4%	26,9%
2021	6,9%	5,5%	6,5%	8,6%	19,8%	35,1%	40,1%						26,9%

Source: Statistics Portugal (INE); Travel BI.

2.3.8 Unemployment per activity

Table 14 shows that the last 12 months have been particularly taxing on economy, on businesses and, therefore, on family income, a reflexion of the unemployment numbers.

While year 2020 started with a good performance on the unemployment indicator, registering a decrease of almost 60% considering the same month in the previous year, 2021 reflected the impact of COVID-19 on regional economy with a growth of 289% on this indicator when compared with 2020.

Table 14: Unemployment in Accommodation, Food Services and Similar. Algarve, 2019-2021

Unemployment per Activity Accommodation, Food Services and Similar NUTS II - Algarve	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2019	9 403	8 162	5 758	3 537	2 351	1 865	1 638	1 578	1 845	2 908	7 699	9 040
2020	3 965	8 465	9 632	11 637	12 063	10 929	8 832	7 319	7 465	9 137	12 772	14 250
2021	15 289	15 105	15 068	14 241	10 607	6 803	5 643	4 822	4 880	5 570	9 067	10 600
Δ 2021 / 2020	286%	78%	56%	22%	-12%	-38%	-36%	-34%	-35%	-39%	-29%	-26%
Δ 2021 / 2019	63%	85%	162%	303%	351%	265%	245%	206%	164%	92%	18%	17%

Source: Instituto de Emprego e Formação Profissional.

In spite of a better overall performance of the indicator, indicating a recovery of jobs throughout the year, the levels of unemployment in 2019 are still far away.

3

Measuring and monitoring
tourism sustainability dimensions:
Research methodologies and
sustainability indicators



3. Measuring and monitoring tourism sustainability dimensions: Research methodologies and sustainability indicators

3.1 *MONITUR: An instrument to monitoring the Algarve sustainable development*

In order to consolidate the activity of the Observatory, and therefore the construction of an information system centred on the monitoring of sustainability in order to provide stakeholders with relevant information to support the decision process, the project "Observation and monitoring of the tourist destination Algarve: Contributions to its sustainable development" (MONITUR) was implemented in 2021.

Its general objective, which is in consonance with the Observatory's objectives, consists precisely in the design of a model for evaluating and monitoring tourist activity in the Algarve, complemented by the development of an online information system that promotes the transfer of knowledge by allowing the access of stakeholders to relevant, detailed and updated information, essential to the decision-making process.

The project involves distinct, but complementary, activities. The first activity is the design of an evaluation model for the Algarve as a main tourist destination in terms of sustainability, which allows the identification of variables and the definition of relevant indicators at the destination which, after validation by stakeholders, become the core of the information system, and the input for the second activity of the project, which consists of data collection to feed the indicators. At this stage, the prospect is to collect secondary information, but also primary information (through surveys to tourists, residents and industry). The databases are the input to the third activity which consists on the implementation of an online decision support system through which the information is made available to the agents, thus ensuring the transfer of knowledge.

This whole process is dynamic, in the sense that the model and indicators are not watertight, but rather dynamic in order to meet the information needs expressed by tourism stakeholders. This scheme reflects, once again, the importance of close collaboration between regional stakeholders and the Observatory.

At this point, a first proposal of indicators has been completed, which were scrutinized based on criteria such as relevance, clarity, feasibility, complementarity, comprehensiveness, credibility, and comparability, among others. The selection of indicators also took into consideration the World Tourism Organization's guidelines, complemented by the guidelines of the European Tourism Indicators System for Sustainable Destination Management, and also the good practices of the various observatories belonging to the World Tourism Organization's International Tourism Observatories Network. This proposal is currently being evaluated by regional stakeholders to collect their opinion on the indicators' relevance.

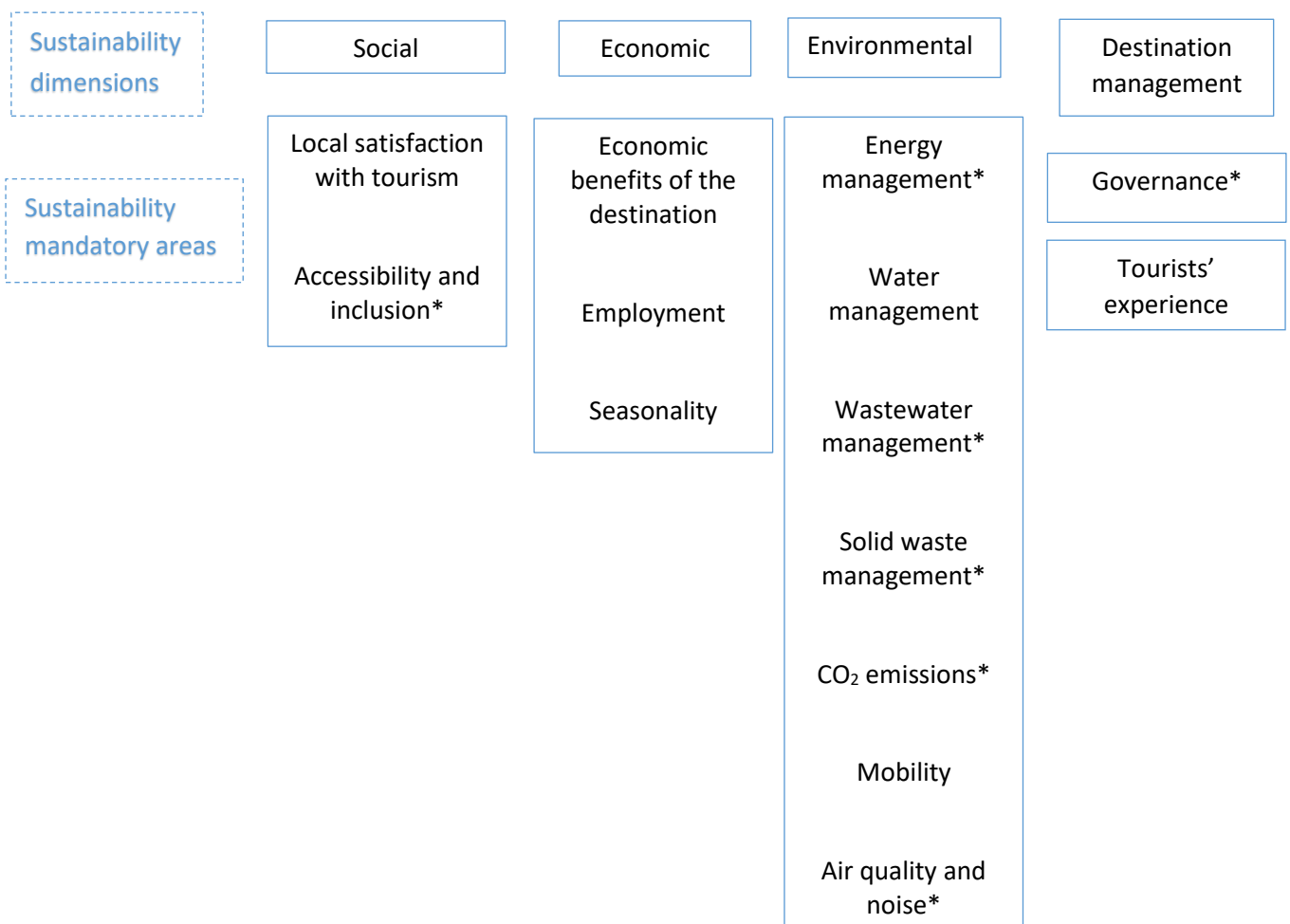
3.2 Sustainability indicators

This report considers information on eleven sustainability areas of tourism in the Algarve, whose analysis and measurement, based on indicators referenced in the European Tourism Indicators System for Sustainable Destination Management (ETIS)¹, constitute the AlgSTO's commitment assumed before the UNWTO-INSTO. These eleven mandatory sustainability areas are the following: (1) Local satisfaction with tourism; (2) Economic benefits of the destination; (3) Employment; (4) Seasonality; (5) Energy management; (6) Water management; (7) Wastewater management; (8) Solid waste management; (9) Governance; (10) Accessibility and inclusion; (11) CO₂ emissions. These areas are intended to measure the following four dimensions of sustainability: social (due to the impacts of tourism on people's well-being), economic (given the impacts on economic growth), environmental (attending to tourism impacts on natural resources) and destination management (which encompasses governance and tourists' satisfaction). The monitoring of these areas started in the 2020 Report, in which two additional sustainability areas were also included given their relevance for the Algarve: mobility and air quality and noise. This report includes also new data about residents' satisfaction with tourism and insights on tourists' satisfaction. All these sustainability areas are grouped into the 4 sustainability dimensions as illustrated in Figure 2.

¹ The European System of Tourism Indicators for Sustainable Destination Management (ETIS) was created by the European Commission in 2013. (https://ec.europa.eu/growth/sectors/tourism/offer/sustainable/indicators_en).

The above-mentioned sustainability areas are measured by a set of indicators which have been selected from the European Tourism Indicators System for Sustainable Destination Management, attending to their relevance for the regional stakeholders. Not all the indicators have implemented and calculated given the difficulties imposed by the pandemic situation, but further efforts will be developed in the upcoming years to provide detailed information for those indicators and others suggested by the stakeholders.

Figure 6: Thematic areas and dimensions of tourism sustainability



Source: Own elaboration.

Efforts have been developed to gather information for each indicator both at the regional and the municipality levels and for the largest possible horizon. However, for some indicators, it was not possible to have data at the municipality level while for

others the data are available for short time horizons. Additionally, as the data of some indicators have not been updated in 2021, those indicators are not included in the current report. These indicators are marked with an asterisk (*).

Tables 15-19 present detailed information of the indicators for each sustainability area/dimension, as well as information of data availability for the indicators presented in this report, including those for which there is no updated information for 2021. Further technical information for all indicators is provided in Annex A.

Table 15: Social sustainability: areas and indicators

Dimensio	Indicator No.	Indicators' description	Information of data availability
Social Sustainability	Local satisfaction with tourism		
	I ₁	Tourist intensity	Algarve: annual (2011-2019); Municipalities: annual (2011-2019) and monthly (2017-2019)
	I ₂	Percentage of residents satisfied with tourism	Data available for the low season 2020.
	I ₃	Lodging capacity in tourist accommodation establishments, per 1000 inhabitants	Algarve and municipalities: annual (2014-2018)
	I ₄	Number of second homes per 100 households	Data not available
	I ₅	Value of rents for residential apartments located in areas of strong tourist pressure	Data not available
	I ₆	Tourist density	Algarve and municipalities: annual (2015-2019)
	Accessibility and inclusion		
I ₇	Percentage of rooms in accommodation establishments accessible to people with disabilities	Data not available	
I ₈	Percentage of public transport accessible to people with disabilities and with specific access requirements	Data not available	

Source: Own elaboration.

To assess the local satisfaction with tourism, from a set of six indicators selected previously, three indicators are considered in this report, namely the “tourist intensity”, the “lodging capacity in tourist accommodation establishments, per 1000 inhabitants” and the “tourist density”. Data for the indicator “percentage of residents satisfied with tourism” are included in this report and they came from the project RESTUR - Residents' Attitudes and Behaviors: Contributions to the Development of a Sustainable Tourism Strategy in the Algarve. Data of the indicators “number of second homes per 100

households” and “value of rents for residential apartments located in areas of strong tourist pressure” are not available.

The economic sustainability dimension is accounted by three sustainability areas, specifically “economic benefits of the destination”, “employment” and “seasonality”. The information is reported in Table 3.

To assess the economic benefits of the destination, from a set of seven indicators selected previously, four indicators are considered in this report, namely the “number of nights in tourist accommodation establishments, per month”, the “relative contribution of tourism in the region to the regional and national economy”, the “average stay of tourists” and the “productivity of tourism activity”.

The data for the “number of same-day visitors”, the “revenue from tourism” and the “average daily expenditure per tourist” are not available.

To assess the effects on employment, from a set of five indicators selected previously, two indicators are considered in this report, namely the “direct employment in tourism as a percentage of total employment in the region” and the “seasonal employment as a percentage of direct tourism employment in the region”.

The data for the “percentage of men and women employed in tourism in the region”, the “qualified employment as a percentage of direct employment in tourism in the region” and the “average monthly salary of direct employment in tourism” are not available.

From a set of three indicators to measure the seasonality area, two indicators are considered. These are the “number of nights spent in the region by tourists, per month” and the “seasonality rate”. The monthly data for “the occupancy rate in tourist accommodation establishments per month and annual average” are not available.

Table 16: Economic sustainability: areas and indicators

Dimensions	Indicator No.	Indicators' description	Information of data availability
<i>Economic Sustainability</i>	<i>Economic benefits of the destination</i>		
	I ₉	Number of nights in tourist accommodation establishments, per month	Algarve: monthly (2010-2019); Municipalities (2011-2019)
	I ₁₀	Number of same-day visitors	Data not available
	I ₁₁	Relative contribution of tourism in the region to the regional and national economy	Algarve and municipalities: annual (2010-2019)
	I ₁₂	Average stay of tourists	Algarve: annual (2006-2020)
	I ₁₃	Productivity of tourism activity	Algarve and municipalities: annual (2010-2019)
	I ₁₄	Revenue from tourism	Data not available
	I ₁₅	Average daily expenditure per tourist	Data not available
	<i>Employment</i>		
	I ₁₆	Direct employment in tourism as a percentage of total employment in the region	Portugal, Algarve and municipalities (2010-2019)
	I ₁₇	Percentage of men and women employed in tourism in the region	Data not available
	I ₁₈	Qualified employment as a % of direct employment in tourism in the region	Data not available
	I ₁₉	Seasonal employment as a % of direct tourism employment in the region	Algarve: annual (2011-2017). Available data were included in the 2020
	I ₂₀	Average monthly salary of direct employment in tourism	Data not available
	<i>Seasonality</i>		
	I ₂₁	Number of nights spent in the region by tourists, per month	Algarve: Monthly (2010-2019)
	I ₂₂	Occupancy rate in tourist accommodation establishments per month	Data not available
	I ₂₃	Seasonality rate	Algarve and municipalities: Monthly (2010-2019)

Source: Own elaboration.

The environmental sustainability dimension is accounted by seven sustainability areas, specifically “energy management”, “water management”, “wastewater management”, “solid waste management”, “CO₂ emissions”, “mobility” and “air quality and noise”. The information is reported in Table 4.

To assess the energy management, from a set of four indicators selected previously, one indicator is considered in this report, namely the “the percentage of tourist companies taking measures to reduce energy consumption”.

The data for “the daily energy consumption of tourists, relative to the daily energy consumption of the resident population”, “the percentage of energy consumption produced by renewable sources, in relation to total energy consumption” and “the percentage of companies adopting energy efficiency measures” are not available.

To assess the water management, from a set of four indicators selected previously, one indicator is considered in this report, namely the “percentage of tourist companies taking measures to reduce water consumption”.

The data for the “daily water consumption by tourists, relative to daily water consumption by the resident population”, the “percentage of tourist companies using recycled water” and the “percentage of companies promoting efficient use of water in their operations” are not available.

To assess the wastewater management, from a set of three indicators selected previously, only the “percentage of sewage treated prior to discharge” was considered in the 2020 Report. The data for this indicator were not updated for 2021.

The data for the “urban wastewater discharge compliance rate” and the “percentage of companies that develop efficient waste management actions” are not available.

Unfortunately, none of the indicators to assess the solid waste management and the CO₂ emissions are included in this report given the absence of available information for the Algarve.

Table 17: Environmental sustainability: areas and indicators

Dimensions	Indicator No.	Indicators' description	Information of data availability
Environmental Sustainability	Energy management		
	I ₂₄	Daily energy consumption of tourists vs. daily energy consumption of resident population	Data not available
	I ₂₅	% tourist companies taking measures to reduce energy consumption	Algarve: annual (2012-2019)
	I ₂₆	% energy consumption produced by renewable sources vs. total energy consumption	Data not available
	I ₂₇	Percentage of companies adopting energy efficiency measures	Data not available
	Water management		
	I ₂₈	Daily water consumption by tourists, relative to daily water consumption by the resident population	Data not available
	I ₂₉	Percentage of tourist companies taking measures to reduce water consumption	Algarve: annual (2012-2019)
	I ₃₀	Percentage of tourist companies using recycled water	Data not available
	I ₃₁	Percentage of companies promoting efficient use of water in their operations	Data not available
	Wastewater management		
	I ₃₂	Percentage of sewage treated prior to discharge	No updated data available since 2009. Available data were included in the 2020 Report
	I ₃₃	Urban wastewater discharge compliance rate	Data not available
	I ₃₄	Percentage of companies that develop efficient waste management actions	Data not available
	Solid waste management		
	I ₃₅	Daily waste production by tourists, vs. daily waste production by resident population (Kg)	Data not available
	CO₂ emissions		
	I ₃₆	% of tourists and tourists who use different means of transport to reach their destination	Data not available
	I ₃₇	Percentage of tourists and tourists using public transport to reach their destination	Data not available
I ₃₈	Average distance (km) travelled by tourists and tourists between the place of residence and the tourist destination	Data not available	
I ₃₉	% of tourist companies involved in climate change mitigation activities – such as reducing CO ₂ emissions, low energy consumption systems, etc.	Data not available	

Source: Own elaboration.

To assess the environmental sustainability in terms of mobility and air quality and noise, a set of four indicators is considered in this report. Mobility is assessed namely by the “movement of passengers on inland waterways”, the “number of passengers embarked and disembarked from cruise ships at the Port of Portimão” and the “number of passengers boarded and disembarked at Faro airport”, whereas the air quality and noise is assessed with the computation of an “air quality index”.

Table 18: Environmental sustainability: areas and indicators (Continuation)

Dimensiodicator No.	Indicators' description	Information of data availability
<i>Mobility</i>		
I ₄₀	Movement of passengers on inland waterways	Algarve: quarterly (2006-2021)
I ₄₁	Number of passengers embarked and disembarked from cruise ships at the Port of Portimão	No updated data available since 2018. Available data were included in the 2020 Report
I ₄₂	Number of passengers boarded and disembarked at Faro Airport	Algarve: quarterly (2006-2021)
<i>Air quality and noise</i>		
I ₄₃	Air quality Index	Algarve: quarterly (2006-2019); presented in t previous report

Source: Own elaboration.

The destination management dimension is accounted by the Governance area, and by the Tourists' experience or satisfaction at the destination. The former area, which was considered in the 2020 Report, is measured by the indicators “Percentage of companies and tourist establishments using voluntary certification of environmental sustainability or corporate social responsibility” and “Percentage of establishments providing training on sustainable practices”. The existing data were included in the 2020 Report and no updated data have been produced in 2021. Due to the absence of updated data, these indicators are not considered in the current report. The information is displayed in Table 5. The information for the tourists' satisfaction is being collected form the project “Tourist experiences' impacts on the destination image: searching for new opportunities to the Algarve”, and will be available this year. Some useful insights on this project are given in Chapter 4.

Table 19: Destination management: areas and indicators

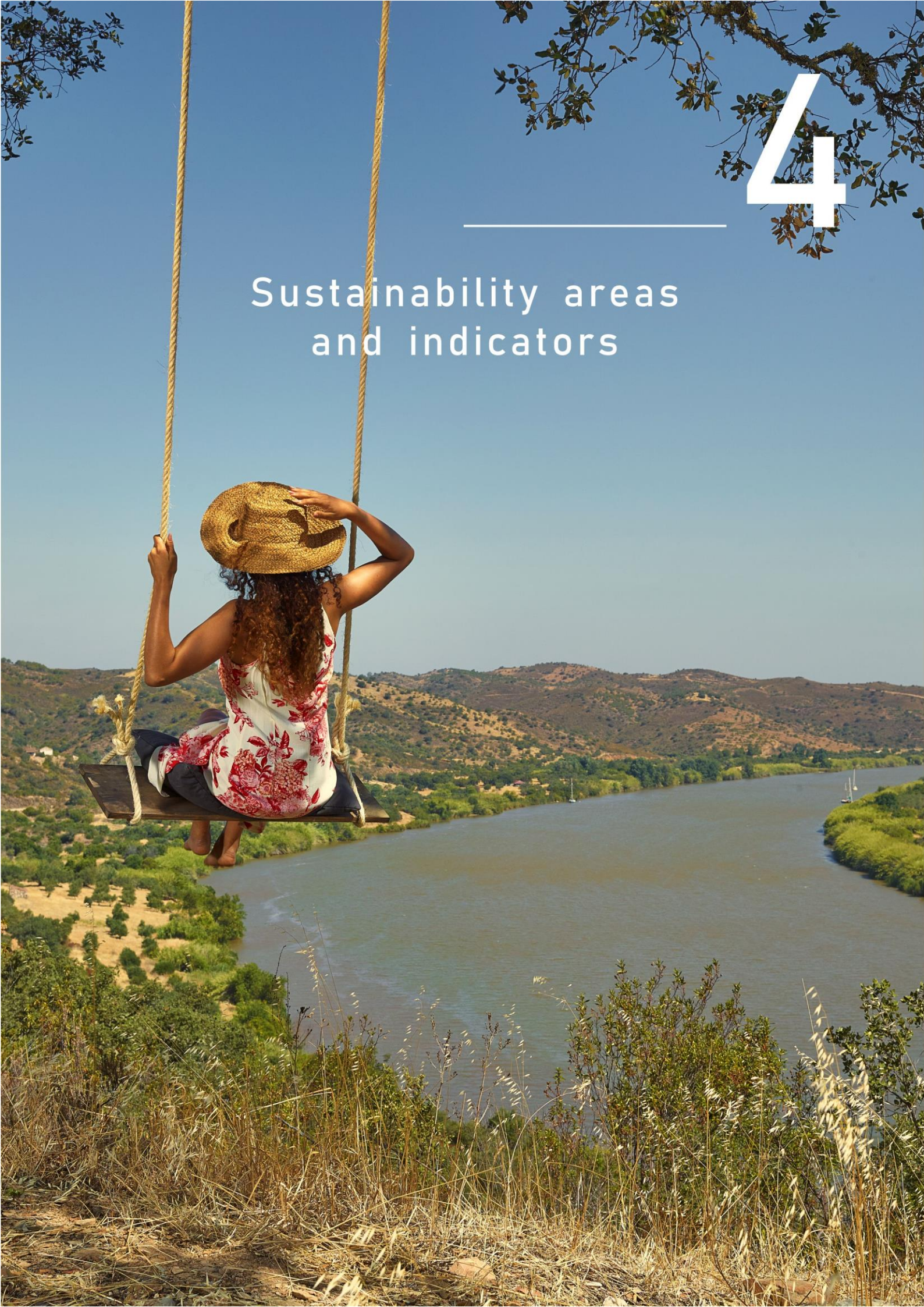
Dimension	Indicator No.	Indicators' description	Information of data availability
<i>Destination management</i>	<i>Governance</i>		
	I ₄₄	% of companies and tourist establishments using voluntary certification of environmental sustainability or corporate social responsibility	No updated data available since 2016. Available data were included in the 2020 Report
	I ₄₅	% of establishments providing training on sustainable practices	No updated data available since 2017. Available data were included in the 2020 Report

Source: Own elaboration.

In summary, at this stage, most of the indicators are still not available, not only for the region, but also at the municipality level. This highlights a significant information gap of relevant information about tourist activity in the region and strengthens the AlgSTO's commitment in developing efforts to surpassing it in the future.

4

Sustainability areas and indicators



4. Sustainability areas and indicators

Associated to tourism development there are social, economic, environmental and institutional effects whose monitoring and assessment are important tools to guarantee a balanced and sustainable growth of tourism destinations. In the following sections, the information on the sustainability indicators for these four sustainability dimensions are presented to assess and present a diagnosis of the sustainability of the tourist activity in the Algarve.

4.1 *Social sustainability*

Social sustainability of tourism is about identifying and managing the impacts of this activity on the local population. The tourism sector, being the main engine of the economy of Algarve, undoubtedly generates, directly or indirectly, effects on resident individuals, whether these are employees, employers or residents. These impacts, in turn, affect the tourist activity. Therefore, measuring the impacts on local residents' satisfaction is of crucial importance to guarantee sustainability of the tourism industry.

4.1.1 *Local satisfaction with tourism*

This area is assessed by indirect measures of local satisfaction, such as the tourism intensity, the number of beds available in accommodation establishments, and tourist density, as well as by direct measures, later analyzed in section 4.1.1.4.

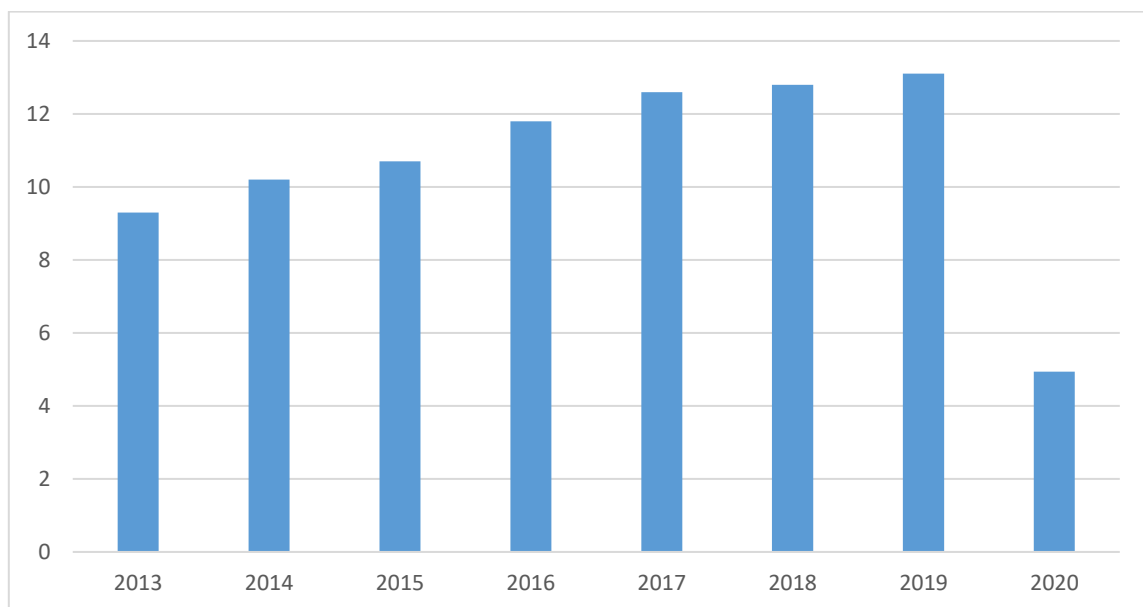
4.1.1.1 *Tourist Intensity*

Tourist Intensity (*TI*) aims to quantify the relationship between the number of nights in tourist accommodation establishments and the population residing in the same geographical area and during the same period. The indicator is inherently based on the rationale that the greater the number of tourists *per* resident, the greater the pressure that tourism activity will exert on the 'normal life' of the local population.

The information on this indicator is provided on an annual basis for the whole region of Algarve and for each municipality, over the period 2013-2020, and also on a monthly basis, for the whole region, over the period 2018-2020.²

As noted in the previous report, this indicator showed an upward trend from 2011 to 2019. However, *TI* in 2020 showed a significant drop due to the COVID-19 pandemic, reaching almost half the value registered in 2013 (Figure 7).

Figure 7: Tourist Intensity. Algarve, 2013-2020

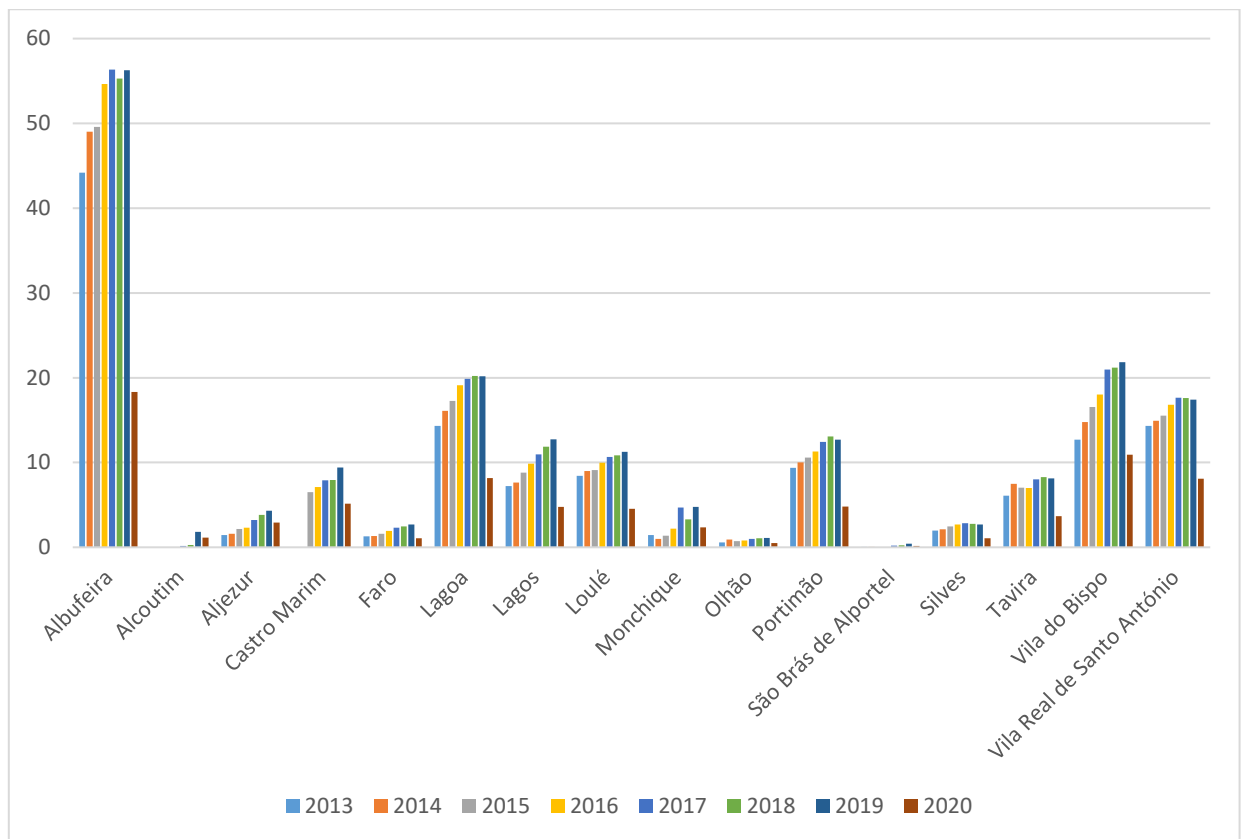


Source: Statistics Portugal (INE); Own calculation.

When observing tourist intensity by geographic location (Figure 8), it is clear that its value is very diverse. For instance, Albufeira stood out by far as the city with the highest-pressure level of tourism activity, followed at great distance by Lagoa and Vila do Bispo, both considered as coastal areas. On the other hand, cities located on the countryside such as Alcoutim or São Brás de Alportel showed a modest value for this indicator. As expected, every municipality registered a significant decrease in 2020 due to the pandemic; yet, the municipality that suffered the greatest impact was Albufeira, reaching a value of 18,32.

² The technical information on this indicator is provided in the Annex A, Table A1.

Figure 8: Tourist Intensity. Algarve municipalities, 2013-2020

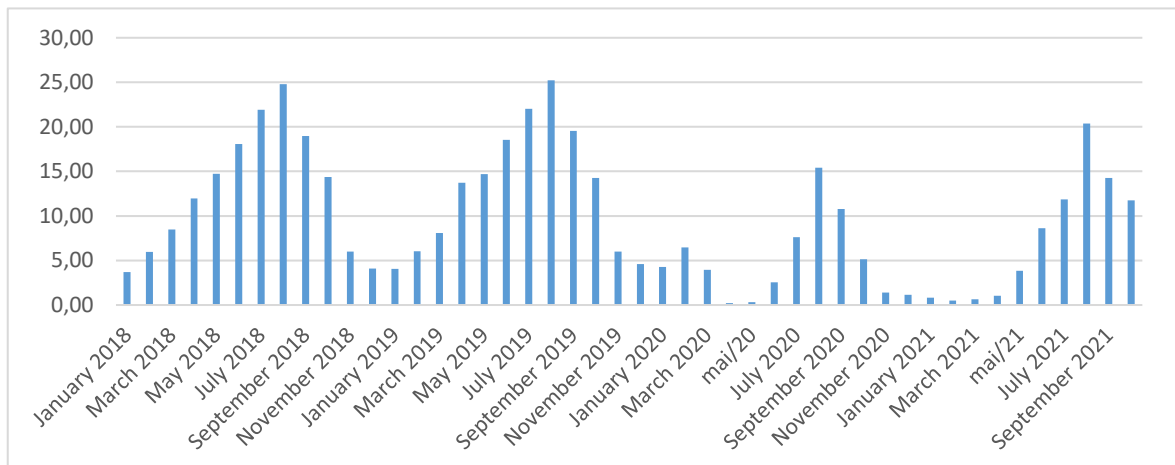


Source: Statistics Portugal (INE); Own calculation.

The same indicator, but calculated on a monthly basis, illustrated on Figure 9, highlights the peak seasonality effect occurred during the summer months (the peak season) over the period January 2018 to October 2021.

Despite the mobility restrictions occurred over the last two years, a great pressure is still noticeable, particularly during the peak season, reaching 20.38 in August 2021.

Figure 9: Tourist Intensity. Algarve, January 2018-October 2021



Source: Statistics Portugal (INE); Own calculation.

4.1.1.2 Lodging capacity in tourist accommodation establishments, per 1000 inhabitants

The high level of tourist intensity demands an adequate response by the supply side of the market. This indicator, defined as the number of beds *per* 1000 inhabitants, is highly relevant since it shows the relative importance of tourism lodging supply in relation to the resident population. Therefore, it provides insight about the response capacity of the region to the tourist pressure and, hence, is a way of measuring the potential relative impact of tourism on the residents' quality of life. The information on this indicator is provided for the region of Algarve and the municipalities on an annual basis from 2016-2020³.

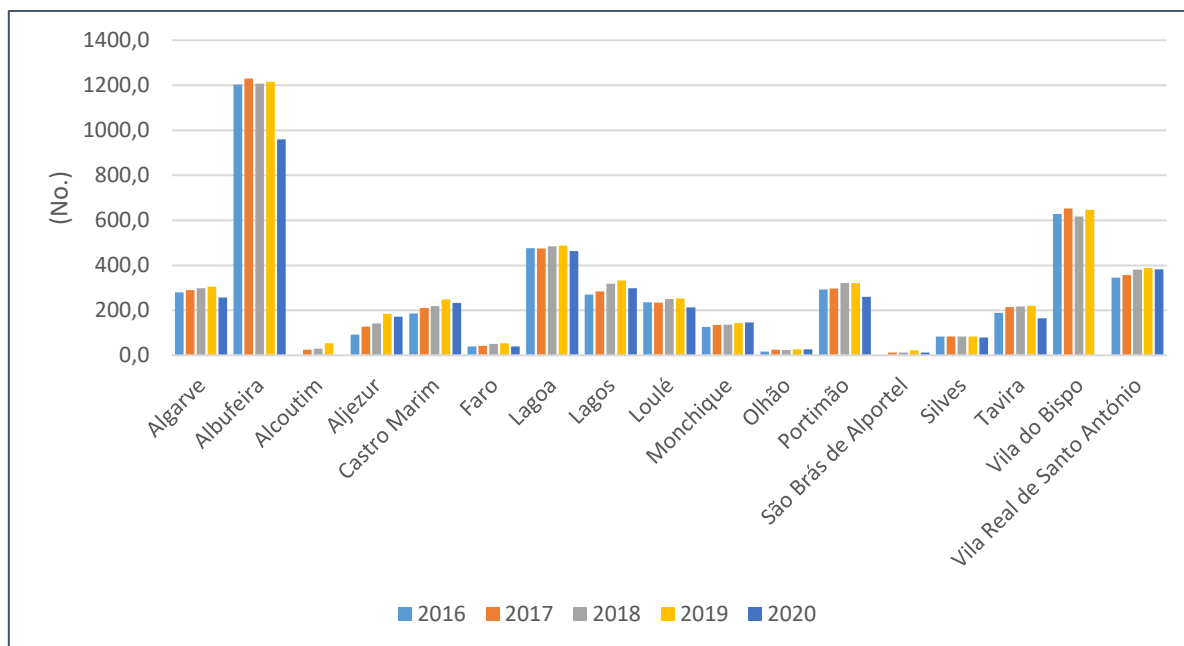
The indicator reports an increasing trend in the Algarve as shown in Figure 10. The number of beds *per* 1000 residents increased from 266.2 in 2014 to 305.7 in 2019 corresponding to a growth rate of 12.9%. In 2020 the indicator dropped to 257.5.

The aggregate figures for the whole region cover regional disparities at the municipality level. Once again, the municipalities with higher tourist intensity index – Albufeira, Lagoa, Vila do Bispo and Vila Real de Santo António – tend to reveal higher lodging capacities. The annual average lodging capacities *per* 1000 residents in 2019 in these municipalities are 1216.1, 487, 647 and 388 beds, respectively, all of them clearly above the regional average of 305.7 beds. All values fell during 2020. Focusing on the decreasing values, the

³ The technical information on this indicator is provided in Annex A, Table A2.

municipalities that decreased above the regional value (-16%) are Faro (-27%), Tavira (-25%), Albufeira (-21%) and Portimão (-19%). In addition, São Brás de Alportel showed a significant decrease (-44%), but notice that its absolute values are very low (12.4).

Figure 10: Lodging capacity in tourist accommodation establishments per 1000 inhabitants. Algarve and municipalities, 2016-2020



Source: Statistics Portugal (INE); Own calculation.

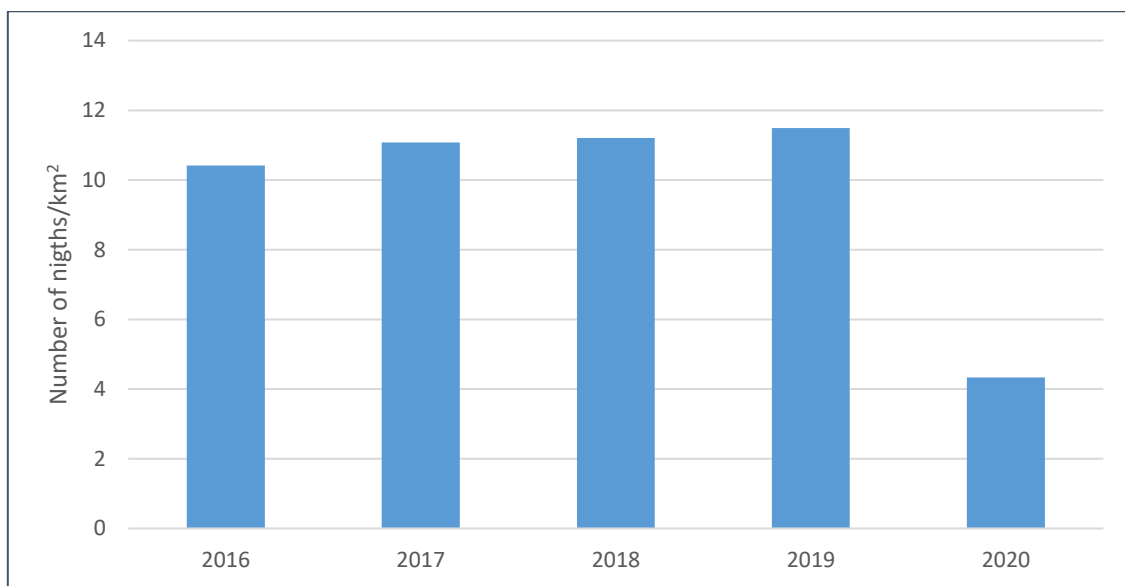
4.1.1.3 Tourist Density

Tourist Density (*TD*) releases information designed to characterize the social impact of tourism and, in particular, the possible degree of dissatisfaction of indigenous populations in the face of the most excessive effects of the tourist phenomenon over the territory of the tourist destination. It enables the assessment of tourist pressure on the region, through the relationship between the number of overnight stays in tourism accommodation establishments and the area of the region, measured in square kilometres. The information on this indicator is provided on an annual basis for the region of Algarve, over the period 2016-2020, and for each municipality over the period 2016-2020⁴.

⁴ The technical information on this indicator is provided in Annex A, Table A3.

The density reveals a persisting upward trend in the Algarve over the period 2016-2019, from 9.5 overnight stays per square kilometres in 2015 to 11.5 overnight stays per square kilometres in 2019. However, as expected, in 2020, this indicator suffered a great fall; from 11.5 overnight stays per square kilometres in 2019 to 4.3 overnight stays per square kilometres, as illustrated in Figure 11. Logically, due to the pandemic effect, tourism density dropped to 4.3 in 2020.

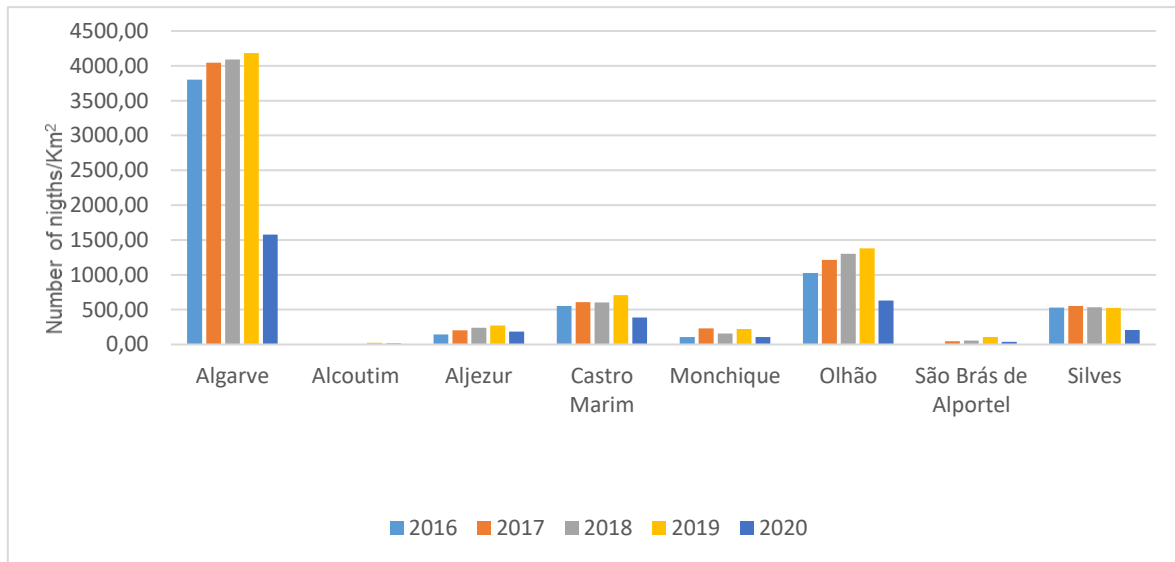
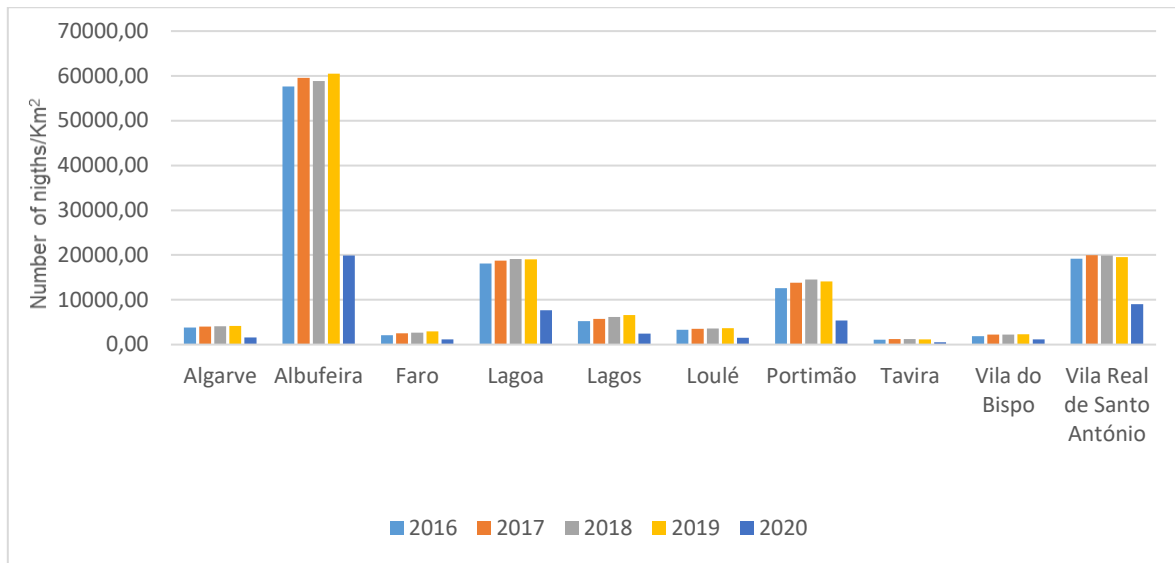
Figure 11: Tourist density. Algarve, 2016-2020



Source: Tourism of Portugal; Own elaboration.

Once again, the aggregate analysis covers pronounced differences at municipality level, as illustrated in Figure 12. The municipalities located close to the coast line, such as Albufeira, Lagoa, Portimão and Vila Real de Santo António, recorded the highest values for the tourist density index, quite above the region average, which reveals a potential high pressure on the territory and consequentially potential social impacts. In 2020, although the index fell in the region as a whole, the municipalities of Albufeira, Vila Real de Santo António, Lagoa and Portimão maintained the highest values, in that order.

Figure 12: Tourist density. Algarve and municipalities, 2016-2020



Source: Tourism of Portugal; Own elaboration.

4.1.1.4 The RESTUR Project

To assess the sustainability of a tourist destination, it is necessary to consider several aspects, including the perceptions and attitudes of its residents towards the impacts caused by tourism. The RESTUR project (Residents attitudes and behaviors towards sustainable tourism development in the Algarve) (SAICT-ALG/39584/2018) project was created with the aim of "measuring and monitoring the impacts of tourism on the residents of the

Algarve" (RESTUR, 2019, p.5)⁵ and, through the application of questionnaires to residents in the 16 municipalities of the region, it was possible to reach a range of conclusions about their attitudes and behaviours regarding the economic, socio-cultural and environmental dimensions, as well as their satisfaction with quality of life. Among the various aspects analysed, the following stand out:

- › Residents' Perceptions of Tourism Impacts;
- › Residents' Feelings and Emotions towards Tourists;
- › Residents' Involvement and Dependence on the Tourism Sector;
- › Residents' Perceptions of Local Accommodation;
- › Residents' Attitudes and Pro-Tourism Behaviour;
- › Residents' Quality of Life and Individual Happiness.

As mentioned above, the study was carried out by applying questionnaires to residents in the 16 municipalities of the Algarve during the 2020 off-season period - February/March and October/November, "pre-" and "post-COVID-19", respectively. More specifically, 2,004 questionnaires were conducted in a stratified sample by municipality, gender and age group - 938 of which during the first collection period (before the first confinement period), and 1,066 during the second period (just after the first confinement period). The respondents assessed the different dimensions of analysis through answers to closed and open questions. In the evaluation of the closed questions, five-point Likert scales were used (1 - totally disagree; 5 - totally agree / 1 - very unsatisfied; 5 - very satisfied). Regarding the segments considered in the data analysis, the study comprises the area of residence (Barlavento and Sotavento), length of residence in the Algarve, age group, level of education, degree of involvement/dependence in the tourism sector, travel habit and period of response to the questionnaire survey (before or after the first confinement period).

Regarding residents' perception of the impacts caused by tourism, it was concluded that residents mainly value its positive economic impacts (overall average = 3.75). It was also concluded that residents believe that "tourism contributes to increase employment opportunities [average = 4.27], to the development of local economic activities [average =

⁵ RESTUR (2019) Residents attitudes and behaviors towards sustainable tourism development in the Algarve. Available at: www.cinturs.pt/site/index.php//nm/26-coordination/152-restur-residents-attitudes-and-behaviors-towards-ustainabletourism-development-in-the-algarve.

4.22] and to the creation of more businesses and services [average = 4.13]" (p.31), but also that tourism has, concomitantly, a negative effect on the region's economy, causing an increase in the price of property (average = 4.46) and in the general cost of living for residents (average = 4.30). In terms of socio-cultural impacts, residents claim that tourism has a positive influence on the region (overall average = 3.29), highlighting its contribution to the recognition, prestige and image of the destination (average = 3.84) and the encouragement of its cultural and traditional activities (average = 3.59). They indicate, however, that tourism also has negative socio-cultural impacts on issues such as the increase in alcohol and drug consumption (average = 3.35), the increased stress in the population (average = 3.16), and sexually transmitted infections (average = 2.86). Concerning the environmental impacts, residents show a greater perception of the negative impacts caused by tourism (overall average = 3.36), such as pollution, noise and litter (average = 3.64), excessive occupation of natural areas, originally for the free use of residents (average = 3.52) and traffic problems, parking and accidents that are caused by tourist activity (average = 3.78). Regarding the current state of tourism development in the Algarve, 38.2% of residents state that it is moderate and 26.9% that it is strong (overall average = 3.03).

In relation to residents' feelings and emotions towards tourists, the study found that residents are compassionate (overall average = 3.75), treat tourists fairly (average = 4.22) and respect tourists (average = 4.07). Additionally, they believe that Algarve municipalities benefit from the presence of tourists (average = 4.11) and are grateful for the economic contribution that tourism activity generates. Residents characterize tourists visiting the Algarve as friendly (n = 530), curious (n = 166), respectful (n = 166), polite (n = 137), friendly (n = 76) and pleasant (n = 72), although they do not identify culturally with them (average = 3.35) nor do they feel a high level of trust in tourists (average = 3.24). Some residents rate tourists as noisy and arrogant (n = 50) and the majority feel they are "too thrifty and should undertake more spending in the region" (n = 76). Most residents state, however, that they wish to preserve interaction with tourists in the future (53.9%) and many would like this interaction to increase (26.1%).

The involvement and dependence of residents with the tourism sector is another issue addressed in the study. According to the answers provided by residents, it is possible to see that the majority of the population are in tourism-related jobs (60.9%) or are close relatives

of people with professions linked to the sector (48.1%), making tourism the main source of income for thousands of families in the Algarve. For this reason, residents state their support of the growth in the number of tourists in the region (52.6%), but highlight the lack of information available on tourism development (20.2% claim to be poorly informed and 55.8% declare they are moderately informed). With regard to the participation of residents in the tourism planning process, residents of the Algarve region participate little or not at all (60.4%), either due to a lack of skills or because they prefer to entrust tourism planning to the competent entities.

Considering the perception of Local Accommodation (LA), the majority of residents are not opposed to its existence near their place of residence but are not exactly in favour of it either (49.8%). They highlight the importance of local accommodation for the reduction of unemployment (average = 3.36), although they believe that, as a consequence, noise and disturbances would increase (average = 3,25). They do not demonstrate feeling unsafe with the growth of tourism in their neighbourhood (73.2% state that the level of safety will be the same and 10.7% admit the possibility that they will feel safer), with seniors (aged 65 years and over) being the residents who offer the most support for the implementation of LA in their neighbourhood.

With regard to residents' pro-tourism attitudes and behaviours, residents were willing to adopt behaviours aimed at improving tourism activity in the region (overall average = 3.61), welcoming tourists with friendliness and more hospitality (average = 4.07), and protecting the natural and environmental resources on which tourism depends (average = 4.06). However, they are not very satisfied with tourism activity in the region (overall average = 3.15; percentage satisfied or very satisfied = 42.4%; percentage neither satisfied nor dissatisfied = 36.5%; percentage of dissatisfied or very dissatisfied = 21.1%), especially with the way tourism is being managed in the different municipalities (average = 3.01; percentage of satisfied or very satisfied = 32.0%; percentage that is neither satisfied nor dissatisfied = 40.2%; percentage of dissatisfied or very dissatisfied = 27.7%).

With regard to the residents' quality of life, it was possible to understand that the issues that most contribute towards their satisfaction are the natural elements, such as air quality (average = 3.54), water quality (average = 3.48) and the environment in the municipality of residence (average = 3.46). The aspects that cause most dissatisfaction are the real estate taxes practiced in the municipality (average = 2.04), the benefits that residents claim to

receive from the Government (infrastructures, education and health) (average = 2.17), the health units (average = 2.39) and the health services provided in there (average = 2.42). Concerning the individual happiness, residents declare that they feel happy (average = 3.88) and satisfied with their lives (average = 3.75), and that tourism activity has positive impacts on their levels of happiness. Those with higher levels of happiness are those who had better evaluate the benefits of tourism, who are emotionally closer to tourists, who support tourism activity and who are more satisfied with tourism in the municipality where they live.

Analyses by segments (zone of residence, length of residence in the Algarve, age group, level of education, degree of involvement/dependence in the tourism sector, habit of travelling and response period) allow the following conclusions to be drawn:

› Zone of residence

- Residents of the western Algarve (Barlavento) - municipalities of Albufeira (9.4%), Aljezur (1.2%), Lagoa (5.7%), Lagos (6.6%), Monchique (1.3%), Portimão (12.1%), Silves (7.9%) and Vila do Bispo (1.4%) - are those who most agree with the positive and negative impacts of tourism, both economic (global average positive impacts = 3.83; global average negative impacts = 3.79), and socio-cultural impacts (global average positive impacts = 3.32; global average negative impacts = 2.85). They are also those who classify the current development of tourism in their municipalities of residence in the most negative way (global average = 2.77). However, they are the most empathetic towards tourists (global average = 3.84) (possibly because they belong to the municipalities with the highest levels of interaction with tourists during the high season), as well as the most dependent/involved in the sector (65.8%), making them the main supporters of tourism growth (global average = 4.05) and the most favourable to tourism (global average = 3.68).
- Residents of the Eastern Algarve (Sotavento) - municipalities of Alcoutim (0.4%), Castro Marim (1.3%), Faro (15%), Loulé (15.6%), Olhão (9.9%), São Brás de Alportel (2.5%), Tavira (5.3%) and Vila Real de Santo António (4.4%) - are, in turn, those who better identify the "positive environmental impacts

of tourism, which they say influence the environmental awareness of residents" (p.80) (overall average = 2.88).

› Length of residence in the Algarve

- Short-term residents (who have lived in the Algarve for three years or less) are the ones who best evaluate the current state of tourism development (global average = 3.22), possibly because they are the least informed on the topic.
- Long-term residents (living in the Algarve for sixteen years or more) are those who least recognize the spending of tourists in the destination (global average = 2.95) and those who least support the growth of tourism activity (global average = 2.50).

› Age Group

- Young people (aged 18-24) and adults (aged 25-64) are the residents with the highest levels of economic dependence on tourism (61.6% of young people and 62.7% of adults) and the ones who guarantee to be most informed and involved in tourism planning (global average young people = 2.37; global average adults = 2.24).
- Seniors (aged 65 and over) are the residents who show the most support on tourism growth in their area of residence (global average = 2.59).

› Level of Education

- Residents with more education, particularly with higher education, are the ones that recognize the most the positive economic impacts of tourism (overall average = 3.83), as well as its negative environmental impacts (overall average = 3.40). They are also the residents who interact the most with tourists during the low season (global average = 3.28), the most informed about tourism development in the Algarve (global average = 3.03), the most satisfied with tourism (global average = 3.19), the most supportive of the activity (global average = 4.00), who demonstrate the most pro-tourism behaviours (global average = 3.68) and the happiest (global average = 3.45).

- › Degree of involvement/dependence in the tourism sector, travel habit and period of response
 - Residents who work in the tourism sector (overall average = 3.70), who have a habit of travelling (overall average = 3.65) and who responded to the questionnaire in the "post-first COVID-19 confinement" period, *i.e.* post-confinement period (overall average = 3.67), are the ones who show the most favourable attitudes and behaviours towards tourism and tourists.
 - Dependency on the sector, travel habit and response in the "post-COVID-19" period are the variables with the "greatest explanatory power for residents' attitudes and behaviours" (p.80).

Finally, it can be concluded that the main concerns of Algarve residents are the seasonality of tourist activity, environmental degradation, the decrease in the number of tourists in the context of the COVID-19 pandemic, the increase in unemployment, the increase in insecurity, property speculation, the decrease in the purchasing power of tourists and residents themselves, the quality of tourist activity, the lack of incentives and investment in the interior of the Algarve region and the lack of policies aimed at improving and promoting the destination abroad. Residents also made some suggestions aimed at improving tourism in the region, such as the creation and promotion of more events, the safeguarding of historical and environmental heritage, the creation of alternatives to mass tourism and "sun and beach" tourism, the need to promote the destination abroad, investment in infrastructure and green spaces and a commitment to improving the quality of life of residents so that they can improve their reception and empathy for tourists.

4.2 Economic sustainability

Tourism is an important engine for economic growth and development, hence economic sustainability of tourism is generally considered with respect to a focus on macro-level and objective indicators, such as gross domestic product, employment rate and investment. While useful, macro-level and objective perspective do not capture many other indicators that have significant importance to local stakeholders, who are affected by tourism development strategies and who have their own interpretations of sustainability. For

monitoring purposes, economic sustainability is measured through the destinations' economics benefits from tourism, employment effects and tourism seasonality.

4.2.1 Economic benefits of the destination

To measure the economic benefits of tourism in the region, only indicators that constitute indirect measures have been addressed. These are the number of nights in tourist accommodation establishments, *per* month, the relative contribution of tourism in the region to the regional and national economy, the average stay of tourists, and the productivity of tourism.

4.2.1.1 Number of nights in tourist accommodation establishments, per month

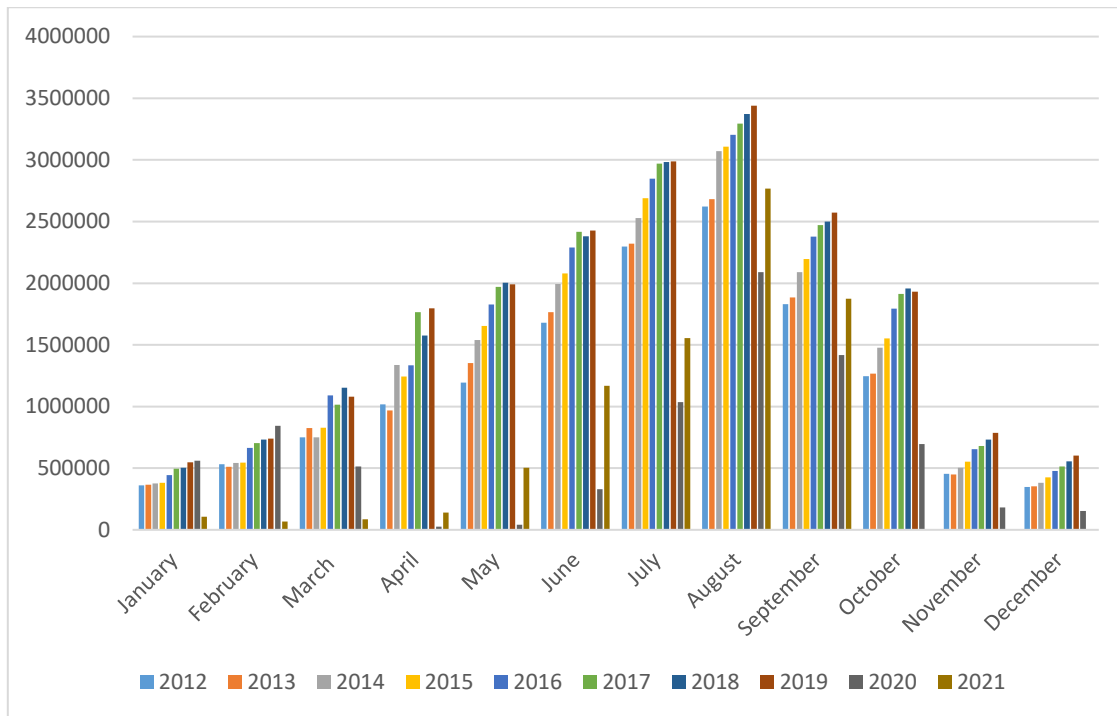
This indicator, considers the total number of nights in all types of tourist accommodation. Direct use of secondary data has been made to create this indicator, which is available on a monthly basis from 2012 to 2021 for the region and municipalities⁶.

Figure 13 shows the increasing pattern of this indicator at the region level in all months over the period 2012-2021, with June, July, August and September accounting for the highest number of nights in tourism accommodation. This upward trend has been transversal to all municipalities without exceptions, as illustrated in Figure 14. In 2020, the values change conditioned by the mobility restrictions from the growth of the first months (+ 14% in February), April and May almost -100% until August and September with the less accentuated decreases (-39% and -45% respectively).

Yet, it is visible from April to September 2021 an increase in this indicator compared to 2020, due to the lifting of restrictions in these months. For instance, in August, the value registered in 2021 reached a higher number than that of 2014.

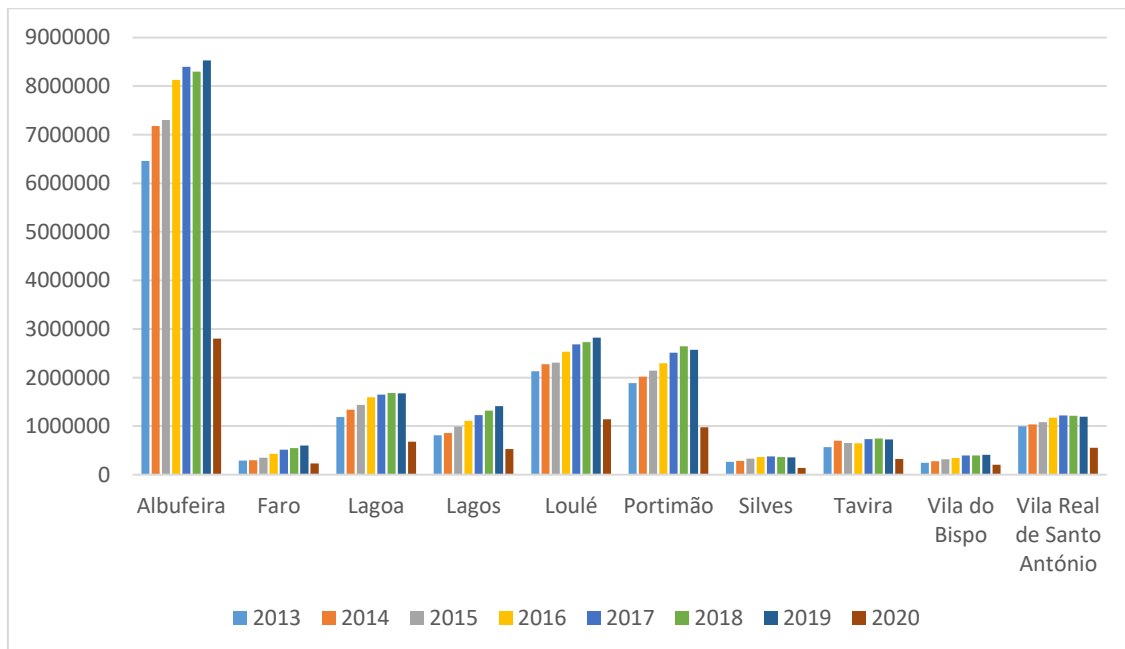
⁶ The technical information on this indicator is provided in Annex A, Table A4.

Figure 13: Number of nights in tourist accommodation establishments per month. Algarve, 2012-2021



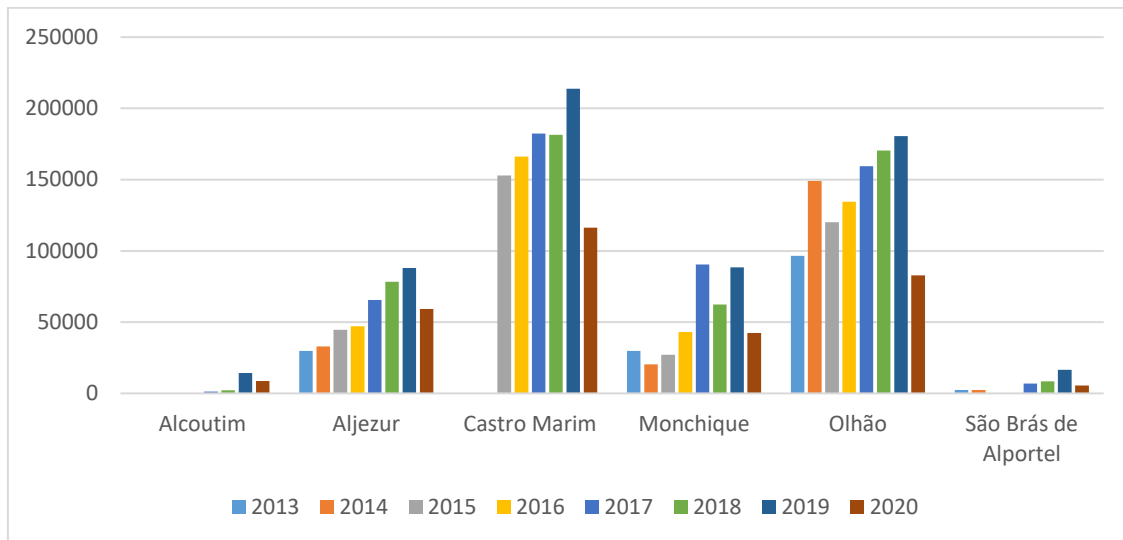
Source: Tourism of Portugal; Own elaboration.

Figure 14: Number of nights in tourist accommodation establishments. Algarve municipalities, 2013-2020



Source: Statistics Portugal (INE); Own calculation.

Figure 15: Number of nights in tourist accommodation establishments. Algarve municipalities, 2013-2020 (Continuation)



Source: Statistics Portugal (INE); Own calculation.

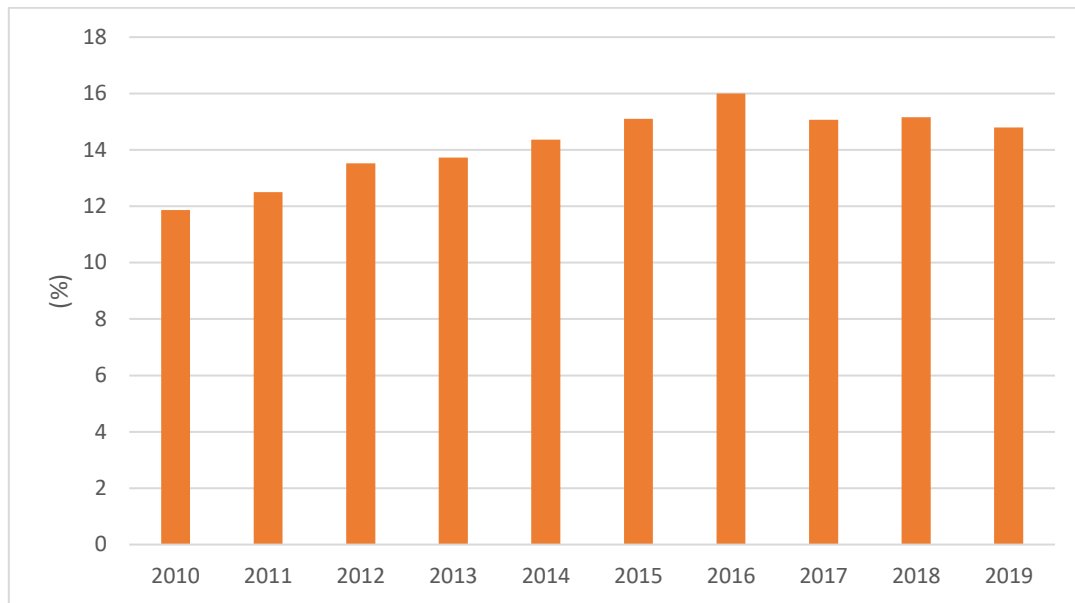
4.2.1.2 Relative contribution of tourism in the region to the regional and national economy

This indicator aims to gather information about the contribution of tourism in Algarve, in the economy of the region itself and in the national economy by accounting for the proportion of the sector gross value added (GVA) generated in the region on the region's total GVA and the country's GVA in the sector. For the purpose of this analysis, the set of accommodation and the food and beverage services sectors are used as a proxy for the tourist sector. The data on this indicator is available on an annual basis for the Algarve and for the municipalities, over the period 2010-2019⁷.

The share of the GVA generated by these sectors in the region in the GVA of the same sectors at the national level is quite expressive, ranging from 11.86% in 2010 to 14.8% in 2019 (0,4 point less than in 2018) and with a maximum value in 2016 (16%). The evolution of the regional share of these sectors in the sectoral GVA at the national level is represented in Figure 15, and it is quite illustrative of the regional importance and the dynamics of these sectors in the country.

⁷ The technical information on this indicator is provided in Annex A, Table A5.

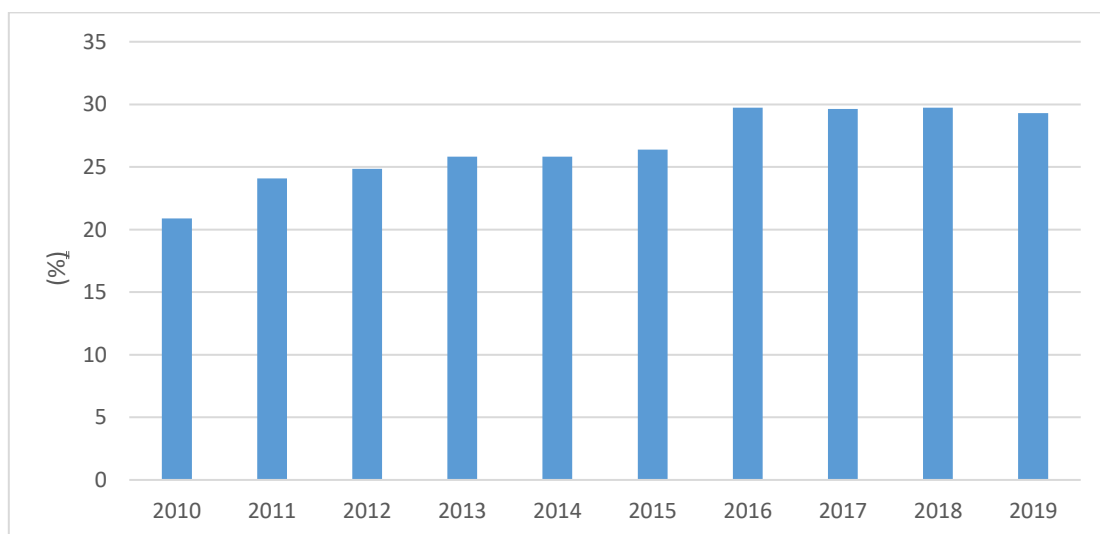
Figure 16: Regional share of GVA in accommodation, food and beverage services in Portugal's GVA in the sector. Algarve, 2010-2019



Source: Statistics Portugal (INE); Own calculation.

At the regional level, the GVA of these sectors stabilized around the 29% of the regional GVA in the last four years (2016 to 2019). The evolution of this share shows a steady increase over the whole period as reported in Figure 16.

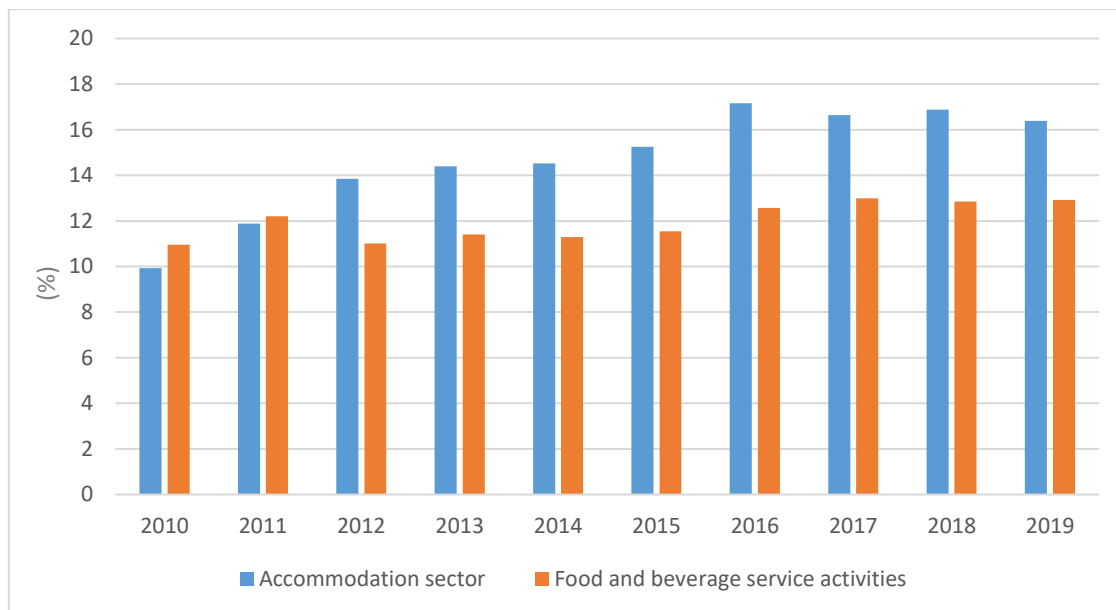
Figure 17: Share of Algarve's GVA in accommodation, food and beverage services in Algarve's total GVA. Algarve, 2010-2019



Source: Statistics Portugal (INE); Own calculation.

As for the contribution of each individual sector to the region's GVA, Figure 17 illustrates their relative weight. An increased dominance of the accommodation sector until 2016 can be noticed; then, its share stabilized at around 16% of the region's GVA (16.4% in 2019). On the other hand, the food and beverage service sector maintained its contribution in the range of 10% to 13%, specifically above 12% in recent years.

Figure 18: Shares of the GVA in accommodation and food and beverage services in Algarve's total GVA. Algarve, 2010-2019



Source: Statistics Portugal (INE); Own calculation.

The analysis at the municipality level, as illustrated in Figures 18 and 19, suggests the existence of economic vulnerability due to an excessive dependency on tourism. Approximately 60% of the GVA in the accommodation and food catering services in the region originates in three municipalities; namely, Loulé, Faro and Albufeira, and this picture has remained stable over the period 2010-2019.

Figure 19: Share of municipalities GVA in accommodation and food and beverage services in the region's GVA, in 2010

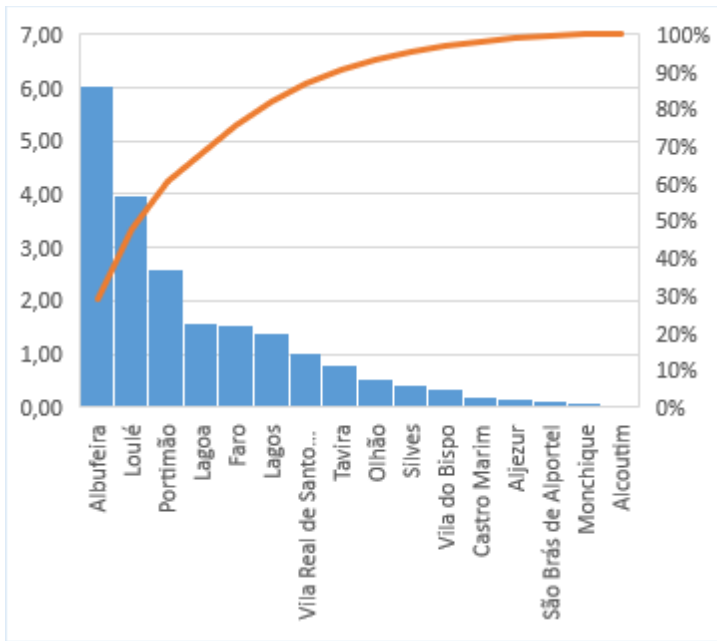
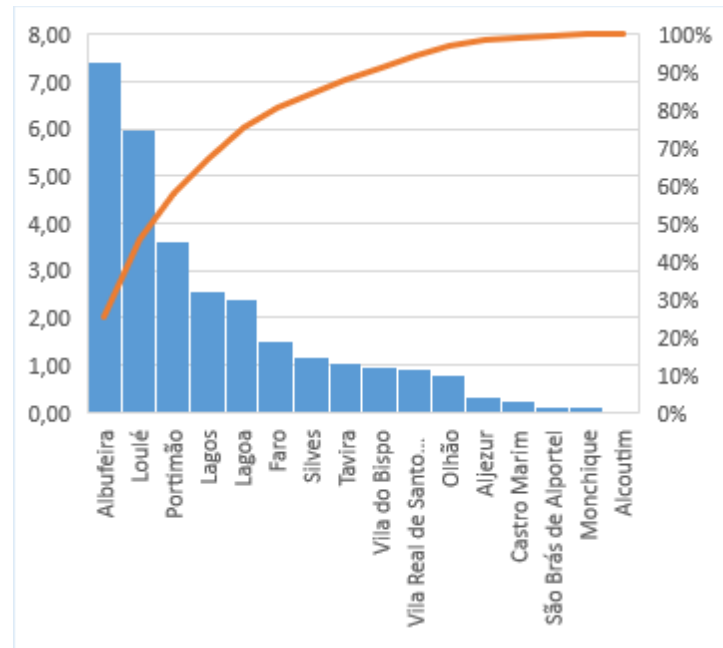


Figure 20: Share of municipalities GVA in accommodation and food and beverage services in the region's GVA, in 2019

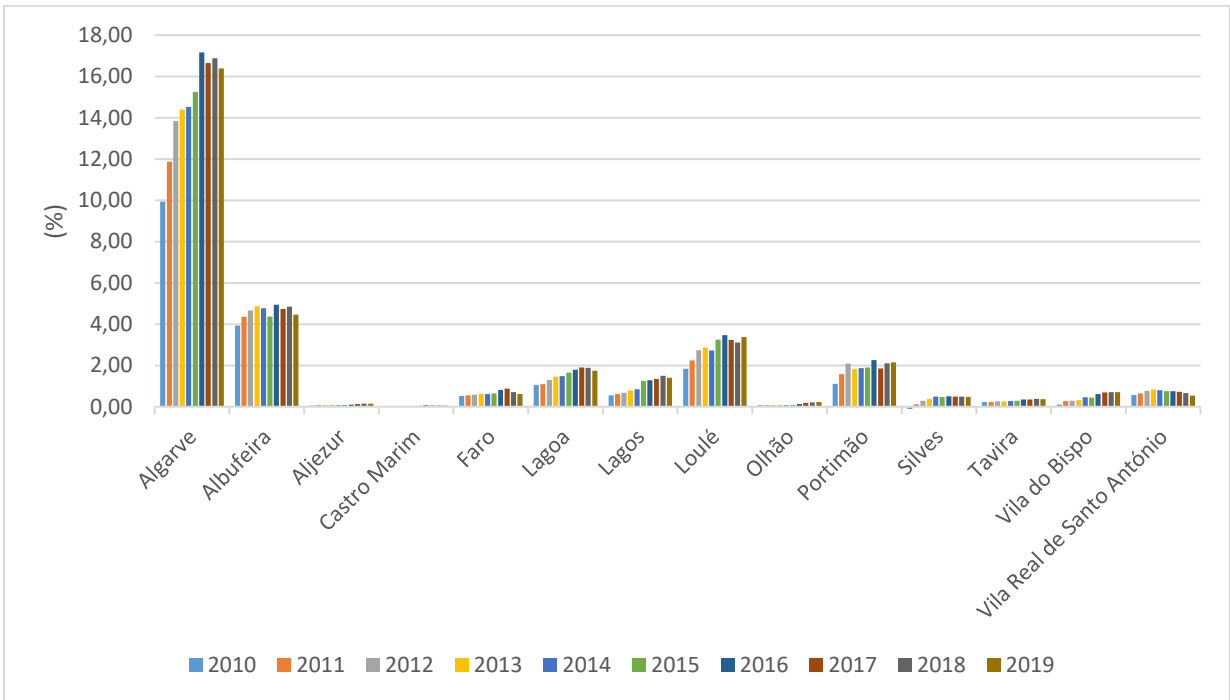


Source: Statistics Portugal (INE); Own calculation.

The analysis by individual sector also reveals spatial asymmetries in the distribution of the relative shares of each sector in the Algarve's GVA, as shown in Figures 20 and 21.

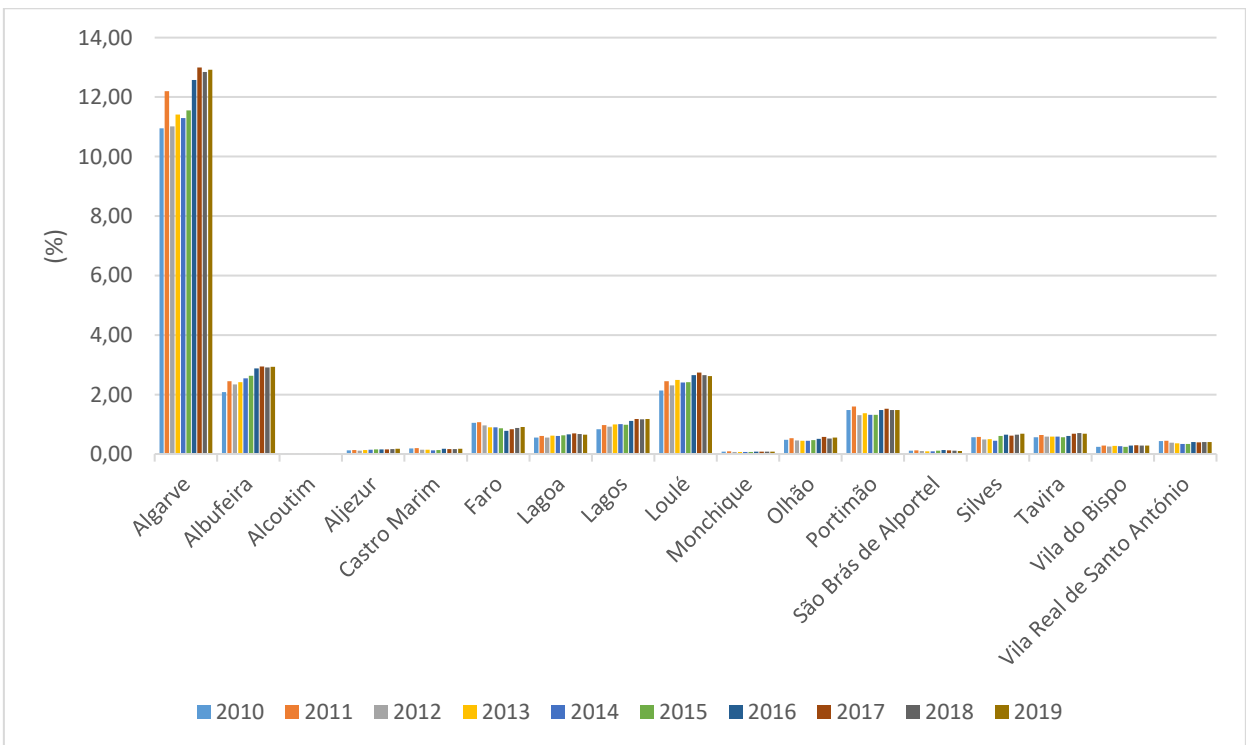
Although an increasing share of both sectors has been observed in all municipalities since 2010, Albufeira, Loulé and Portimão have been the leaders in the accommodation sector. Regarding the food and beverage sector, the municipality of Albufeira also presents values well above the sector's share in the region's GVA, together with the municipalities of Loulé, Portimão and Lagos.

Figure 21: Share of the GVA in accommodation sector in Algarve's total GVA. Algarve and municipalities, 2010-2019



Source: Statistics Portugal (INE); Own calculation.

Figure 22: Share of the GVA in food and beverage sector in Algarve's total GVA. Algarve and municipalities, 2010-2019



Source: Statistics Portugal (INE); Own calculation.

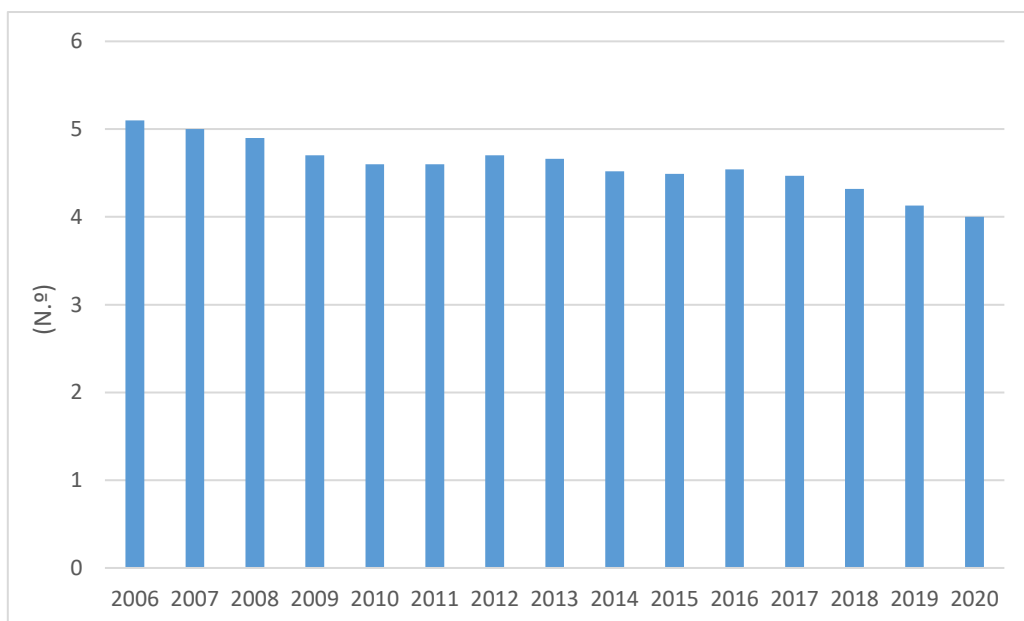
4.2.1.3 Average stay of tourists

This indicator, by relating the number of tourists with the number of overnight stays in tourist accommodation establishments, is an important instrument for analysing economic sustainability and, at the same time, monitoring tourism seasonality and environmental sustainability.

This is a composite indicator based on secondary data and is calculated as the ratio between the number of overnight stays and the number of guests that gave rise to these overnight stays. Information on this indicator is provided for the region of Algarve on an annual basis for the period 2006-2020⁸ and reported in Figure 22.

The average stay in tourist accommodation has shown a slight downward movement from 5.1 nights in 2006 to four nights in 2020 *per* guest visiting the region.

Figure 23: Average stay in tourist accommodations. Algarve, 2006-2020



Source: Statistics Portugal (INE); Own elaboration.

⁸ The technical information on this indicator is provided in Annex A, Table A6.

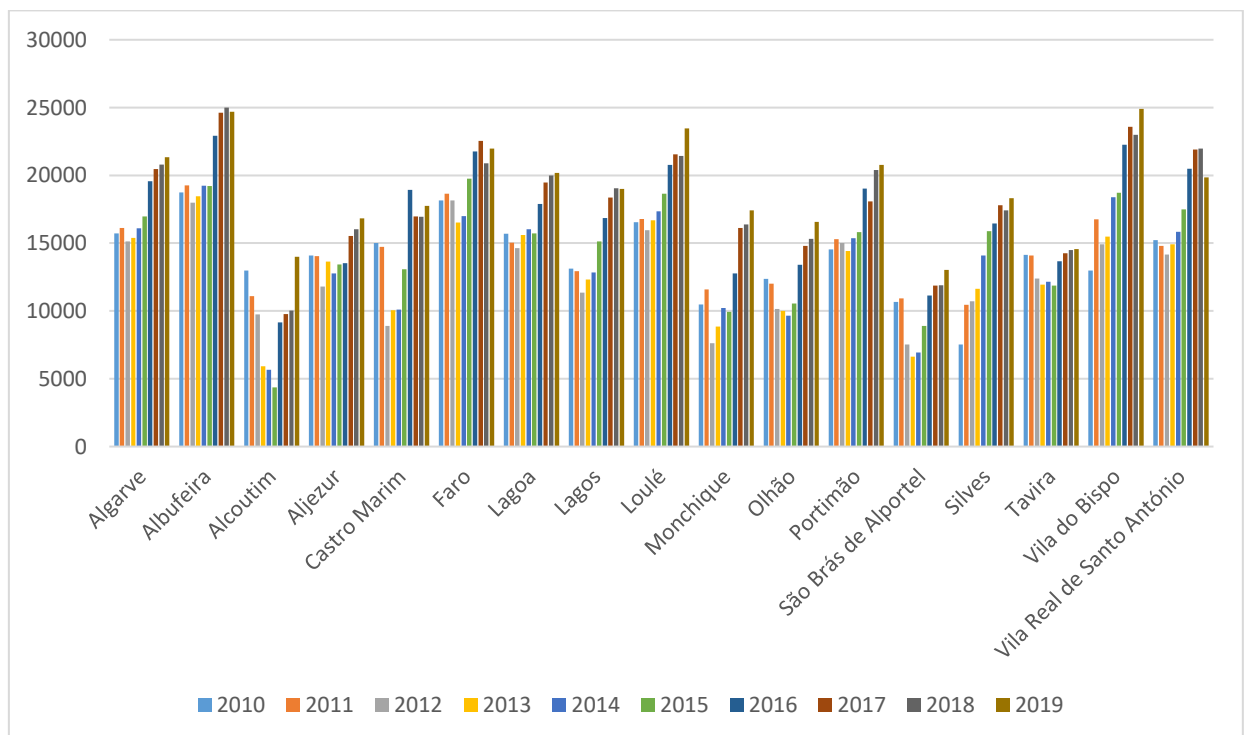
4.2.1.4 Productivity of Tourism

This indicator measures the productivity of the tourist sector by quantifying the relationship between GVA and employment generated in the sectors of accommodation, food and beverage services, travel agencies, tour operators, reservation services and related activities, which were considered representative of the tourism sector in the region. The choice of GVA-based productivity measures reflects the ability of these sectors to convert primary input uses, such as capital and labour, in income.

The information on this indicator for the aforementioned sectors is provided for the region of Algarve and for each municipality, on an annual basis, for the period 2010-2019 and is reported in Figure 23.

The average productivity in the Algarve, over the period 2010-2019, was €17,528.23. Four municipalities – Albufeira, Faro, Loulé and Vila do Bispo, in that order – reported average productivity values above the region’s average. It is also possible to observe a sustained growth of the municipalities’ productivity levels.

Figure 24: Productivity of accommodation, food and beverage sectors & travel agencies, tour operators, reservation services and related activities. Algarve and municipalities, 2010-2019



Source: Statistics Portugal (INE), Own calculation.

Moreover, almost 60% of the region productivity in these sectors is concentrated in 50% of the municipalities, and this picture remained stable over the period as illustrated in Figures 24 and 25 for 2010 and 2019, respectively.

Figure 25: Share of municipality productivity in accommodation, food and beverage sectors & travel agencies, tour operators, reservation services and related activities in 2010. Algarve municipalities

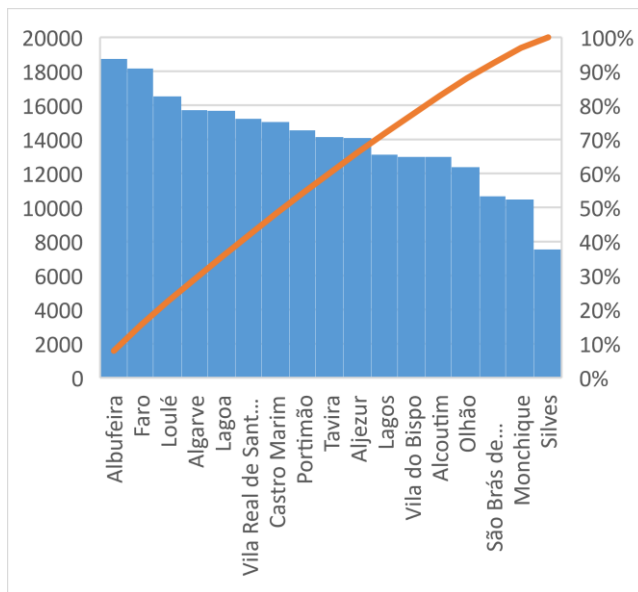
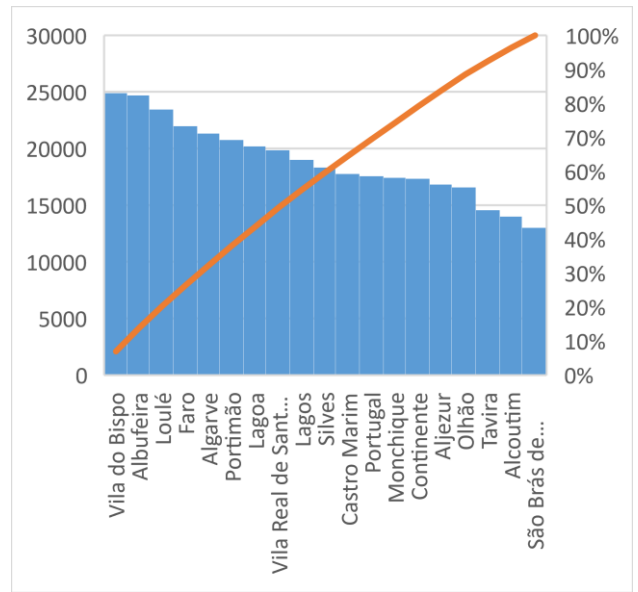


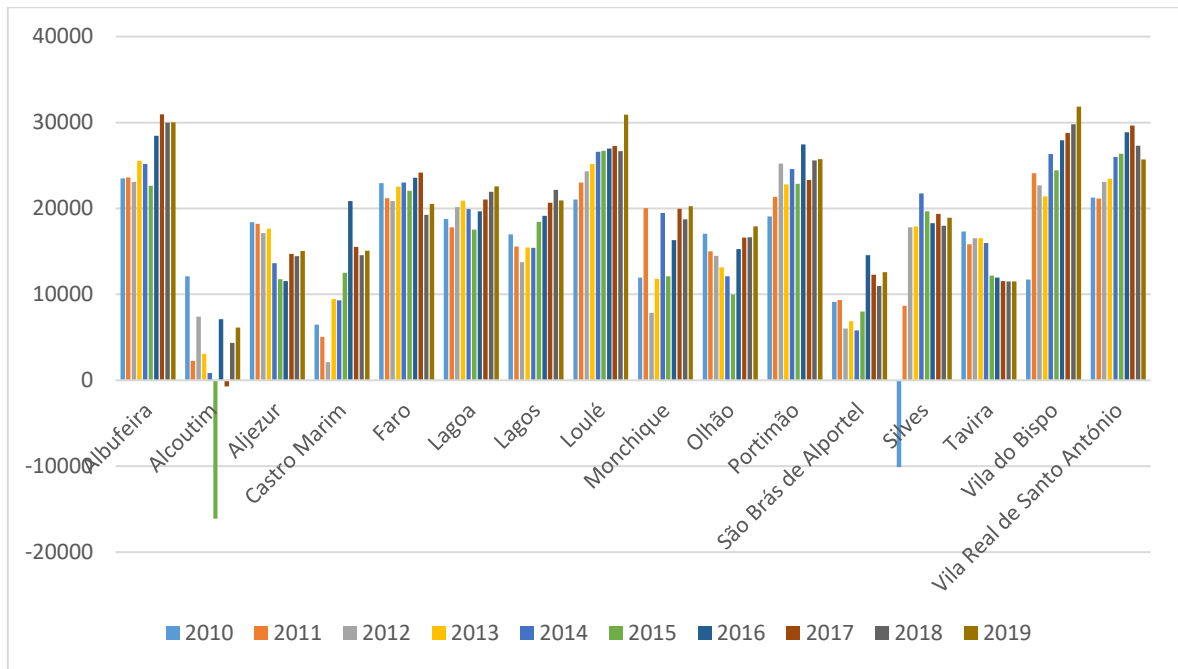
Figure 26: Share of municipality productivity in accommodation, food and beverage sectors & travel agencies, tour operators, reservation services and related activities in 2019. Algarve municipalities



Source: Statistics Portugal (INE); Own elaboration.

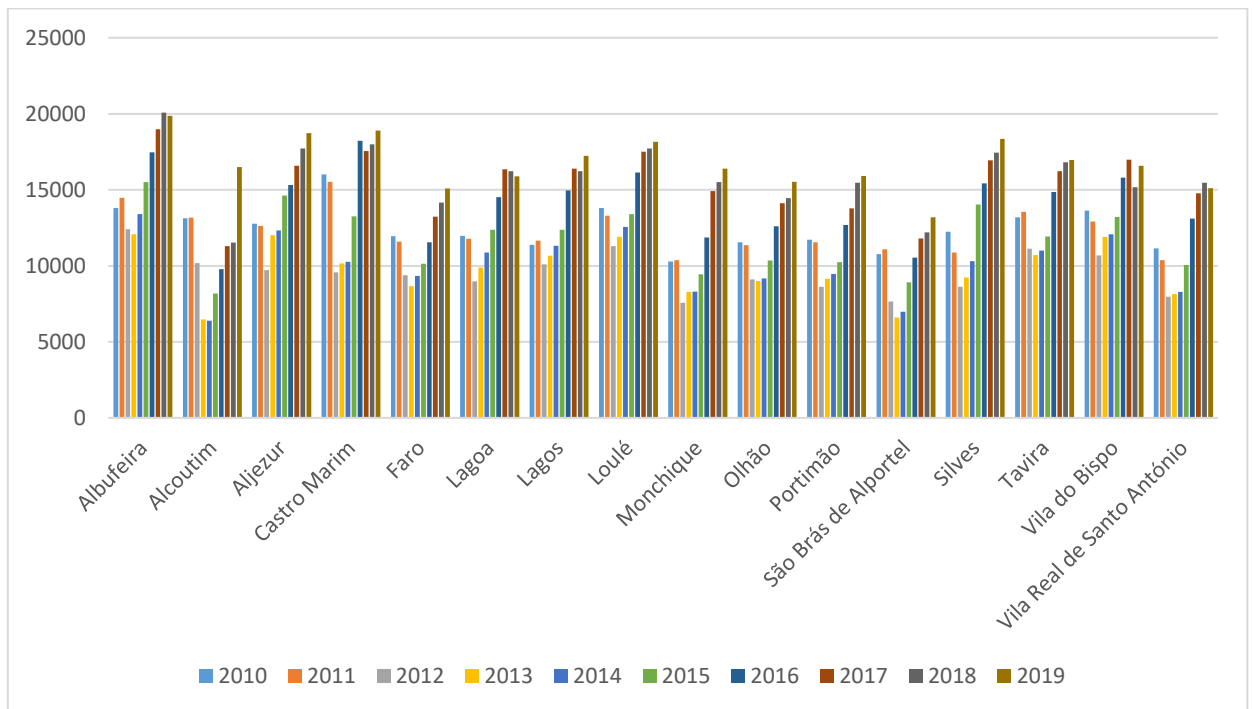
The municipalities with the highest average productivity in the accommodation sector, as illustrated in Figure 26, are Albufeira, Loulé, Vila do Bispo, Vila Real de Santo António and Portimão, in that order, all of them with average values above €23,000. The municipalities of Albufeira, Faro, Loulé and Vila do Bispo are also among those with the highest average values of productivity in the food and beverage sector as all of them show average values above €13,000 (Figure 27). The outlook changes if one focuses at the productivity of travel agencies, tour operators, reservation services and related activities, mostly based in Faro, Olhão and Portimão, which have a greater number of industry and services in general (Figure 28).

Figure 27: Productivity in the accommodation sector. Algarve municipalities, 2010-2019



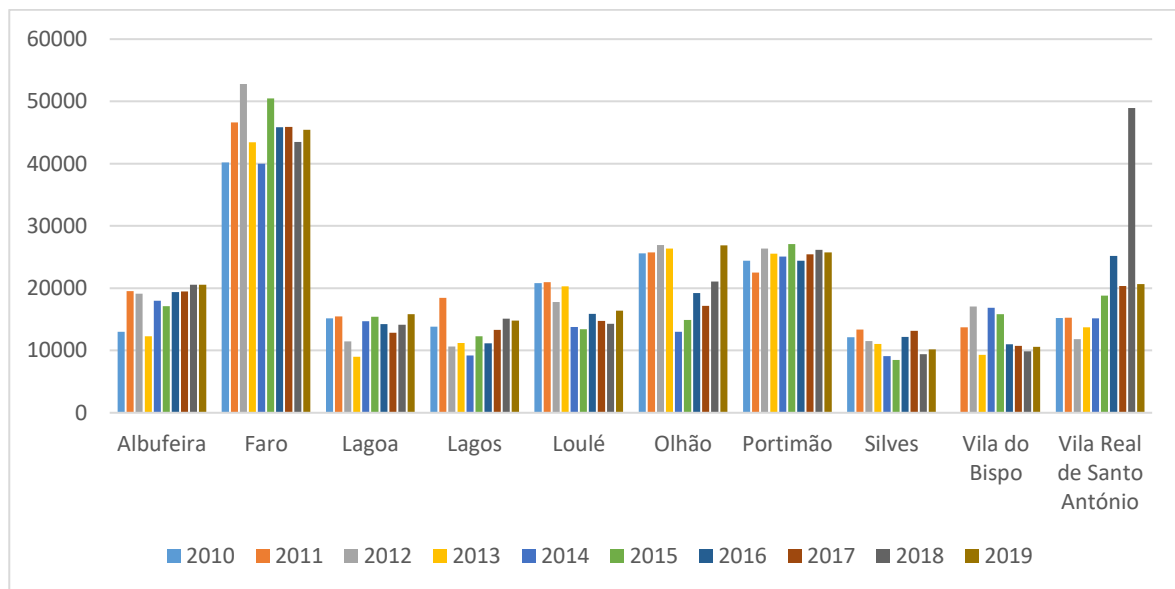
Source: Statistics Portugal (INE); Own elaboration.

Figure 28: Productivity in the food and beverage sector. Algarve municipalities, 2010-2019



Source: Statistics Portugal (INE); Own elaboration.

Figure 29: Productivity in travel agencies, tour operator, reservation services and related activities. Algarve municipalities, 2010-2019



Source: Statistics Portugal (INE); Own elaboration.

4.2.2 Employment

Employment is another area of economic sustainability, as proposed by the World Tourism Organization (UNWTO, 2004), since tourism can be understood as a set of productive activities that serve mainly visitors. As such, tourism is an important source of job creation.

The indicators related to employment here considered are the direct employment in tourism as a percentage of total employment in the region, and the seasonal employment as a percentage of direct employment in tourism in the region.

4.2.2.1 Direct employment in tourism as a percentage of total employment in the region

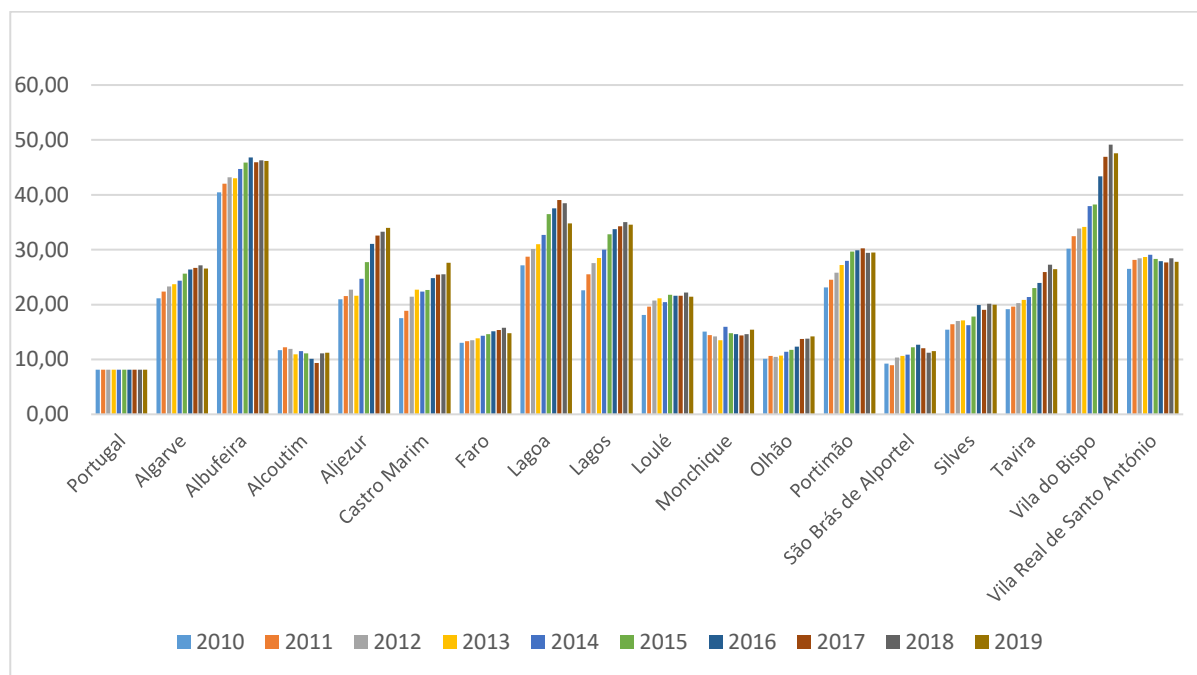
This indicator allows us to understand the role of tourism in job creation and the relative importance of the sector in terms of job creation in the region. Once again, the set of sectors of accommodation and food service activities has been considered to represent the tourism sector.

The information on this indicator is provided for the region of Algarve and at the municipality level on an annual basis for the period 2010-2019⁹.

⁹ The technical information on this indicator is provided in Annex A, Table A8.

Data on this indicator at the regional and municipality levels are reported in Figure 29, which illustrates the significant dependency of the employment in the Algarve on tourism activity when compared to the corresponding national figures. On average, for the period 2010-2019, the direct employment in tourism in the country was 9% of the total employment, while for the region this value was 27.5%. This is quite illustrative of the relevance of the tourism activity in the region. High differences are also identified at the municipality level, with the municipalities of Albufeira, with the average share of employment in tourism is around 50%, and Vila do Bispo and Lagoa with values above 35%, exhibiting high dependency on tourism.

Figure 30: Direct employment in tourism as a percentage of total employment. Portugal and Algarve municipalities, 2010-2019



Source: Statistics Portugal (INE); Own calculation.

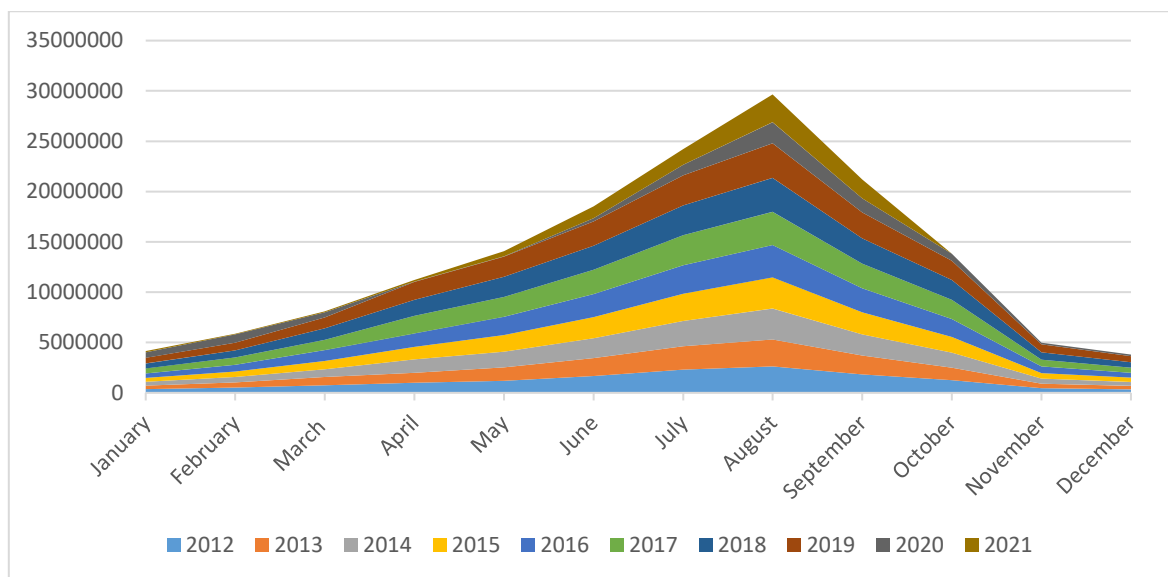
4.2.3 Seasonality

In order to analyse seasonality in the tourism activity in the region, the indicators used are the number of overnight stays by tourists, *per month*, and the seasonality rate.

4.2.3.1 Number of nights spent in the region by tourists, per month

The information on this indicator is provided for the region of Algarve on an annual basis from 2012-2021¹⁰. Figure 30 illustrates the high levels of seasonality that characterize the tourist activity in the Algarve. Most of the nights spent by tourists in the region are concentrated in the peak season, which concentrates in the period from June to September.

Figure 31: Number of nights in Tourist Accommodation establishments, per month. Algarve, 2012-2021



Source: Tourism of Portugal; Own elaboration.

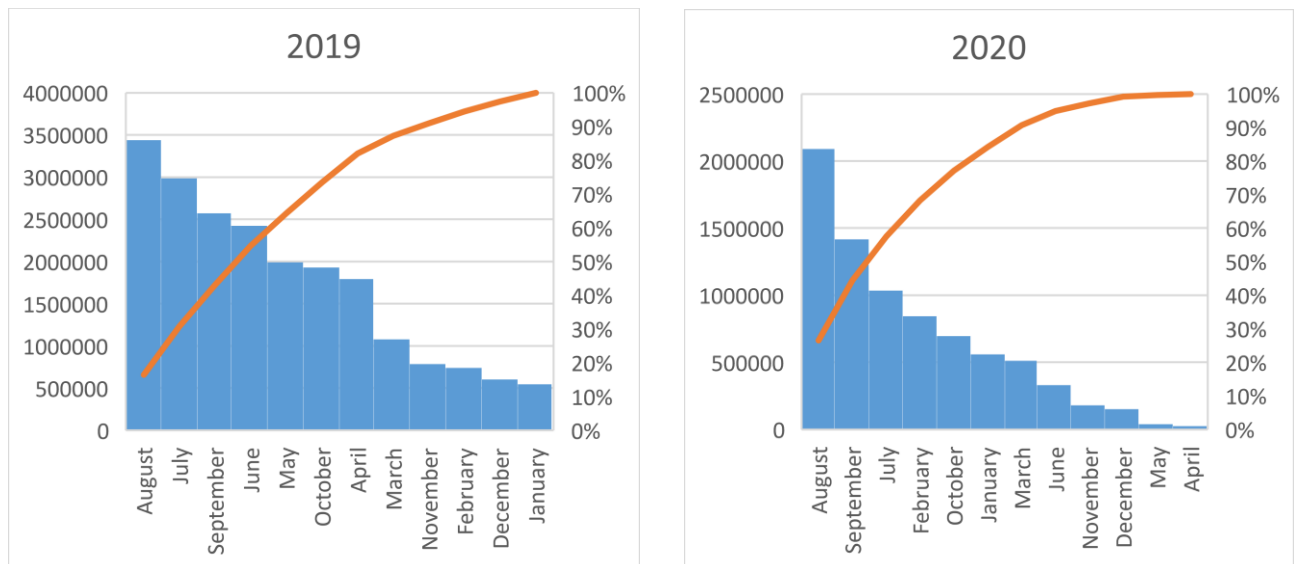
In 2019, the most recent pre-pandemic year, about 54% of the nights spent by tourists in the region were concentrated from June to September, as shown in Figure 31. In 2020, the percentage increased to 61% conditioned by the mobility restrictions in previous and following months.

In Figure 31, a comparison is made between the years 2019 and 2020: it is clear that in the last year, the number of nights dropped; in August, the difference was more than a million nights; and, in addition, the order of the months has changed. This is due to the restrictions

¹⁰ The technical information on this indicator is provided in Annex A, Table A10. 2021 data until September.

imposed during the months of March, April and May of 2020. Therefore, the last two months are the ones with the smallest shares of nights in tourist accommodation.

Figure 32: Number and monthly share of nights in tourist accommodation establishments. Algarve, 2019 vs 2020



Source: Tourism of Portugal; Own elaboration.

4.2.3.2 Seasonality Rate

This indicator relates the number of overnight stays that tourists spend in accommodation establishments in the region in just three months of the annual cycle (July; August and September), which defines the high season in each year, with the total number of overnight stays spent by tourists in the entire year.

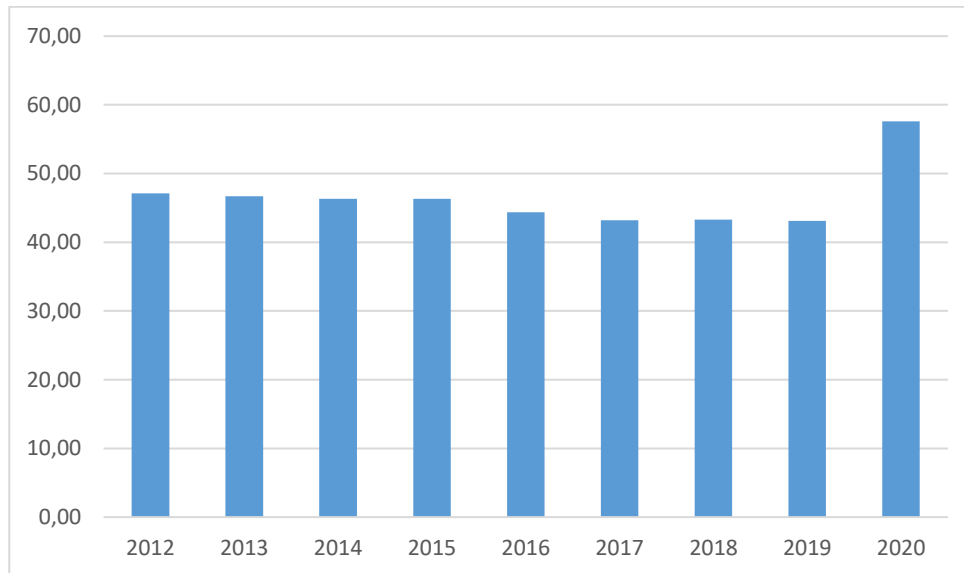
This is a composite indicator based on secondary data, and it is calculated for the whole region on an annual basis for the period 2012-2020¹¹.

The evolution of this indicator is described in Figure 32, where it is possible to observe that the percentage of overnight stays spent by tourists in the region during the months of July, August and September decreased by more than three percent points in the three years

¹¹ The technical information on this indicator is provided in Annex A, Table A12.

prior to the emergence of the COVID-19 disease. Yet, as noted above, mobility restrictions have conditioned 2020 values, increasing the Seasonality Rate to 57%.

Figure 33: Seasonality Rate. Algarve, 2012-2020



Source: Tourism of Portugal; Own calculation.

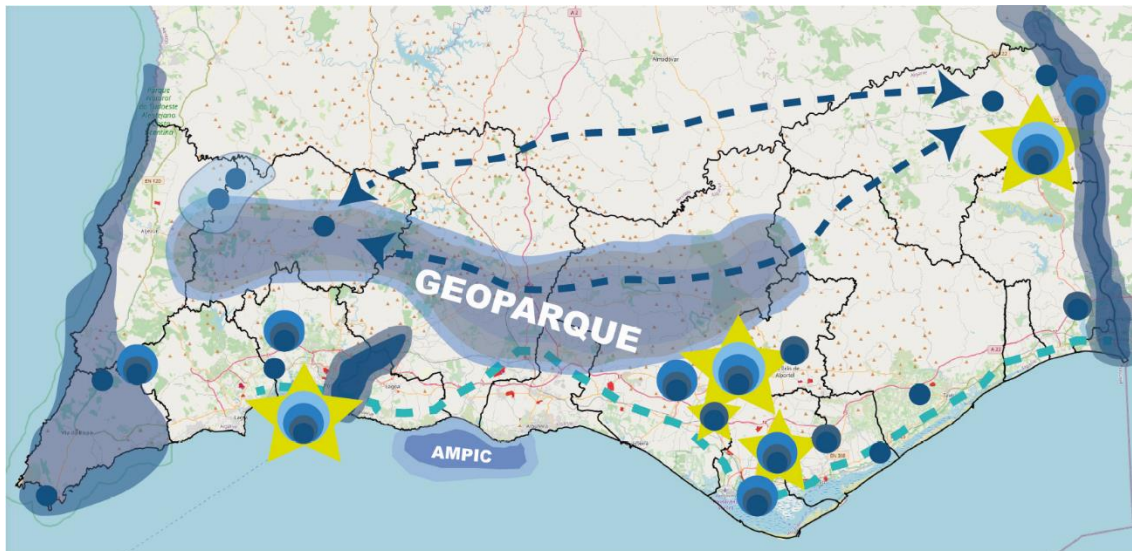
4.3 Promotion of sustainability in the region

The Algarve region, through the Intermunicipal Community of the Algarve (CIM Algarve) has conducted, in partnership with the University of the Algarve, a study to support national entities that envisage future investments in order to support public funding options so as to improving the economic sustainability of the region. The study includes a set of actions to overcome possible blockages and differentiate specific areas of the Algarve, through the so-called Unblocking Projects and Differentiating Projects, respectively.

The aim of Differentiating Projects is to respond to the great challenges of the region; examples of such projects are the construction of hospitals, investment in transport infrastructures, among others. Besides these, there are also the so-called thematic packages, which cover various projects related to innovation, education, health, culture, requalification of the tourism offer, etc.

In Figure 33, different Differentiating Projects are mapped both in the coastal areas and in areas, which traditionally have lower levels of population and tourism activity, such as the interior.

Figure 34: Territorialisation of differentiating projects



Source: AMAL (2021), *Resposta aos efeitos da COVID-19 na região do Algarve: Projetos diferenciadores e desbloqueadores*.

(In Portuguese; assessed at https://amal.pt/imagens/Apresenta%C3%A7%C3%A3o_UALq.pdf on January 10th 2022)

Furthermore, some projects are presented which intend to act in several municipalities or in specific areas, such as the Ria Formosa or the Zona Serrana, trying to differentiate the territory, ensuring a more appropriate territorial redistribution of tourism in the Algarve, with the aim of improving the economic sustainability of this region.

In 2021, within the scope of the National Production Support Program, financed by the European Regional Development Fund from Regional Operational Program of the Algarve, 7 companies from tourism sector develop projects with a total investment of €0.5 Million. These projects essentially aimed at promoting the digital transition, the energy transition and the introduction of more environmentally friendly production processes, contributing to more sustainable practices in tourism.

4.4 Environmental sustainability

Tourism and environment are inter-linked. The environment of a tourist destination, its socio-cultural attributes and resources constitute the basic background for the evolution, growth and development of tourism in the destination area. Increasing tourism activities in a destination often results in overuse and degradation of the natural environment and other resources of tourism, which will eventually lead to a decline in the growth of tourism and loss of tourism value for the destination.

Sustained tourism in a destination depends on the carrying capacity, resilience of the host/destination environment, intensity of tourist activity and sociological attributes of the host society. Hence, the goal of environmental sustainability is to preserve natural resources and to develop alternative sources of power while reducing pollution and harm to the environment. According to the World Tourism Organization, tourism development that meets the needs of present tourists and host regions while protecting and enhancing the tourism opportunities for future generations is sustainable tourism. It respects the fragile environmental balance that characterizes many touristic destinations. Hence, it implies management of all resources in such a way that economic, social, and aesthetic needs can be fulfilled, while maintaining cultural integrity, essential ecological processes, biological diversity, and life support systems. Longevity and sustenance of tourism needs special considerations regarding the sustenance of the host environment. It is based on a long-term perspective (UNWTO, 1998).

For monitoring purposes, environmental sustainability is measured through natural resources management, such as energy and water, waste management, mobility and air quality and noise.

4.4.1 Energy management

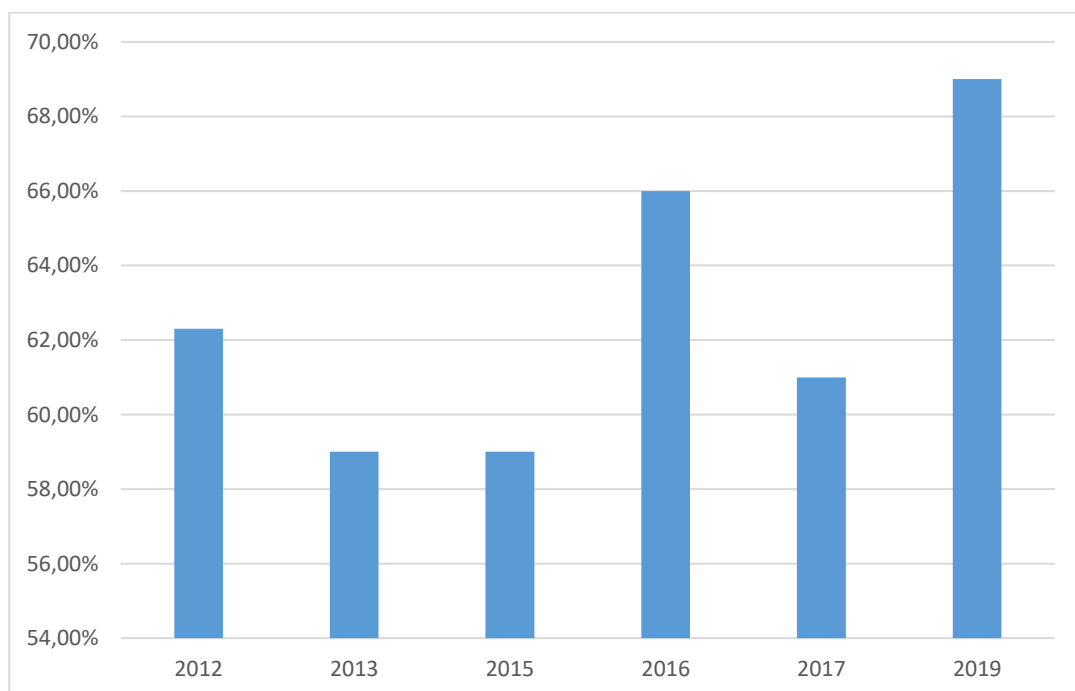
To analyse energy management in the region, the indicator used is the percentage of tourist companies taking measures to reduce energy consumption.

4.4.1.1 Percentage of tourist companies taking measures to reduce energy consumption

This indicator measures the commitment of the tourism companies towards energy savings through different measures. Energy consumption in the tourism sector is crucial information for the development and planning of tourism activity. The reduction of the energy bill will allow the cost reduction of the activity. Likewise, monitoring tourism companies' commitment to energy savings through different measures, such as the use of low energy lighting, helps to measure the success of energy saving programs and initiatives. Direct data from Tourism of Portugal is used to implement this indicator.

The data for this indicator is available for the whole region over the period 2012-2019, with the exception of 2014 and 2018, as presented in Figure 35¹². After a drop in 2013 and 2015, more than 60% of the accommodation establishments adopted measures to optimise energy consumption in the last two years for which the information is available. Furthermore, a significant increase is observed in 2019, reaching a total of 76% of accommodation establishments.

Figure 35: Accommodation establishments that optimize energy consumption. Algarve, 2012-2019



Note: Data for 2014 and 2018 are not available.

Source: Tourism of Portugal; Own elaboration.

¹² The technical information on this indicator is provided in Annex A, Table A13.

4.4.2 Water management

Water is a scarce and finite resource, which is often taken for granted. Population has increased over the last decades, resulting in a stronger pressure on the already scarce water resources. Urbanization has also changed the agrarian nature of many areas. The population expansion and the search for strong economic growth are placing new demands on available water supplies. The temporal and spatial distribution of water is also a major challenge with groundwater resources being overdrawn. For such reasons, reducing, recycling and reusing water is crucial for sustainability.

The monitoring of water consumption that companies make in the context of their operations, and the comparison of this consumption with the consumption made by residents, highlights both the importance of the tourism sector in the use of this resource and the need for preservation measures where and whenever necessary. Likewise, monitoring the involvement of companies in the sector in the rational use of water and in conservation activities helps to assess the success of water conservation initiatives that will result in cost savings for companies. In addition, the use of recycled water to be used in garden irrigation is an effective strategy for reducing water consumption.

The implementation of a policy of optimization of water consumption in a hotel establishment implies that it has developed a policy of quality and environmental management, based on objectives and processes to achieve commitments related to quality and the preservation of the environment. It also implies taking regular actions to improve its performance, in addition to reflecting the level of involvement of establishments in environmental preservation.

The higher the percentage of hotel establishments with policies for optimizing water consumption, the greater the concern shown with environmental preservation and the consequent sustainability of tourism.

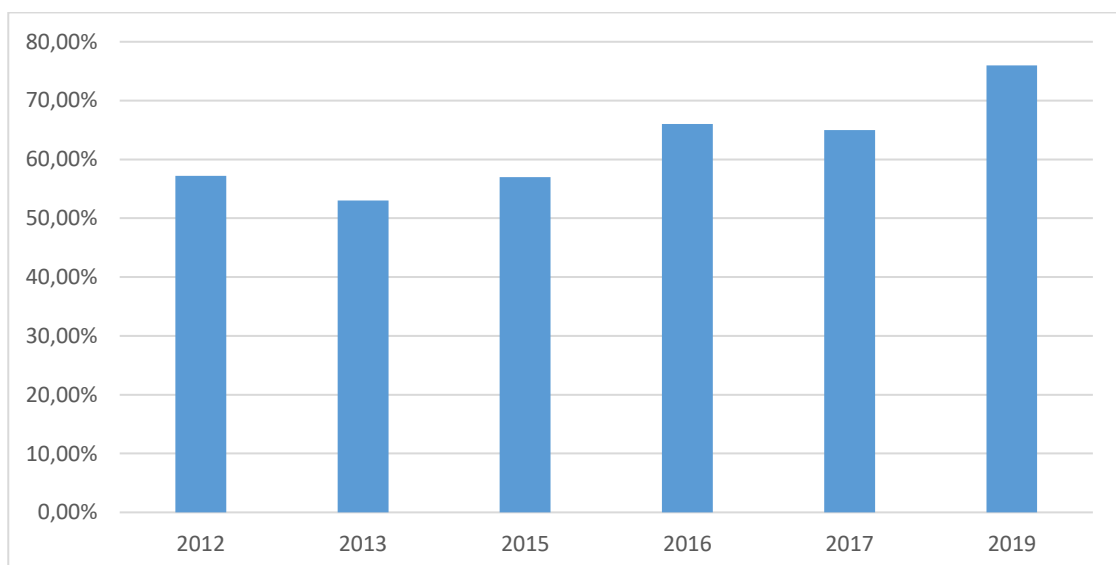
The indicator used to monitor the water management is the percentage of tourist companies that are taking measures to reduce water consumption.

4.4.2.1 Percentage of tourist companies taking measures to reduce water consumption

This indicator allows evaluating the evolution of the share of hotel establishments, resorts and tourist apartments that manage water efficiently. The data is available for the whole region on an annual basis and for the period 2012-2019¹³.

The percentage of accommodation establishments that have been implementing measures towards reduction of water consumption has been increasing over the years, as shown in Figure 36. Moreover, in 2019, the last year for which the information is available, 76% of the establishments defined objectives of water reduction, an increase of 10 and 11 points compared to 2016 and 2017, respectively.

Figure 36: Accommodation Establishments that Optimize Water Consumption. Algarve, 2012-2019



Note: Data for 2014 and 2018 are not available.

Source: Tourism of Portugal; Own elaboration.

4.4.3 Mobility

People and goods' mobility is intrinsically associated to economic growth, as it is a necessary condition for economic activity. As the main economic activity in the Algarve, tourism involves the movement of people and goods, which exerts pressure over the territory, which in turn lead to necessity of monitoring.

The indicators used to monitor mobility are the movement of passengers on inland waterways, the number of passengers embarked and disembarked from cruise ships at the Port of Portimão and the number of passengers boarded and disembarked at Faro Airport.

4.4.3.1 *Movement of Passengers on Inland Waterways*

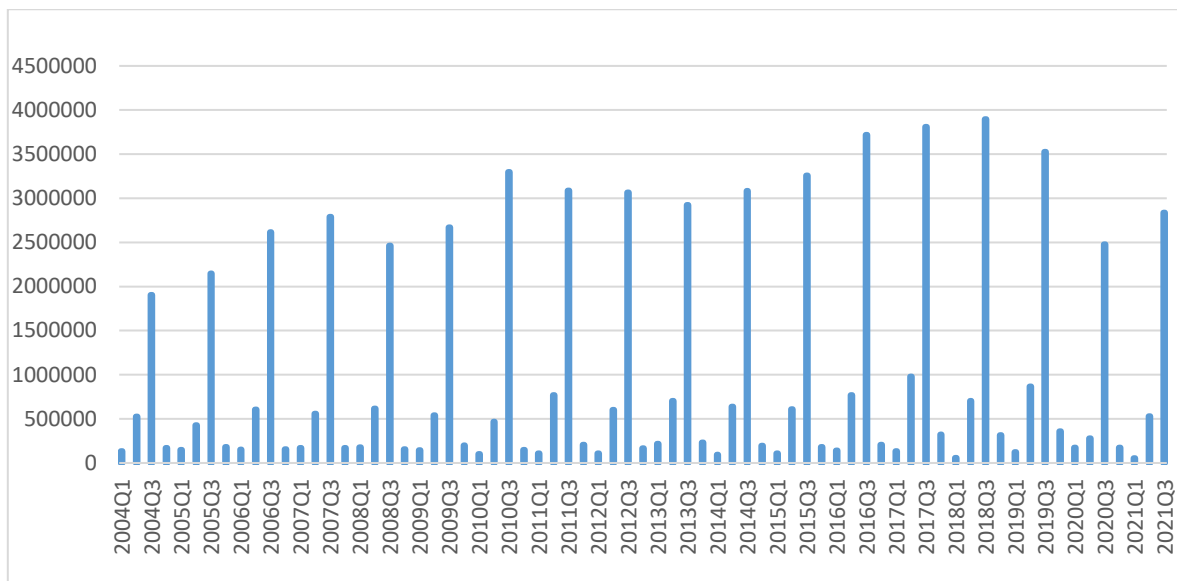
This indicator measures the number of passengers moving on inland waterways. Inland waterway is the regular service performed by public transport, obeying itineraries, schedules or minimum frequencies and pre-fixed rates.

At the regional level, beaches considered for this indicator are Ria Formosa (Faro - Faro island, Deserta Island and Farol island; Olhão - Culatra Island and Armona island; Tavira - Tavira island, Quatro Águas –Tavira island; Fuzeta –Armona island; Sta. Luzia - Terra Estreita; Cabanas – Cabanas island) and beaches located by the Guadiana River (Vila Real de Santo António in Portugal and the beach of Ayamonte, in Spain).

Figure 37 reports quarterly data of the total movement of passengers on the above inland waterways for the period between 2004 and 2021¹⁴. A seasonal pattern can be readily noticed from the inspection of the Figure 37. Moreover, it also results clear the increasing trend of the number of passengers in the 3rd quarters, which correspond to the peak tourist season. Besides, the data shows a progressive increase of passenger from 2013 until 2018/19, followed by a significant decrease as a result of the emergence of COVID-19.

¹⁴ The technical information on this indicator is provided in Annex A, Table A16.

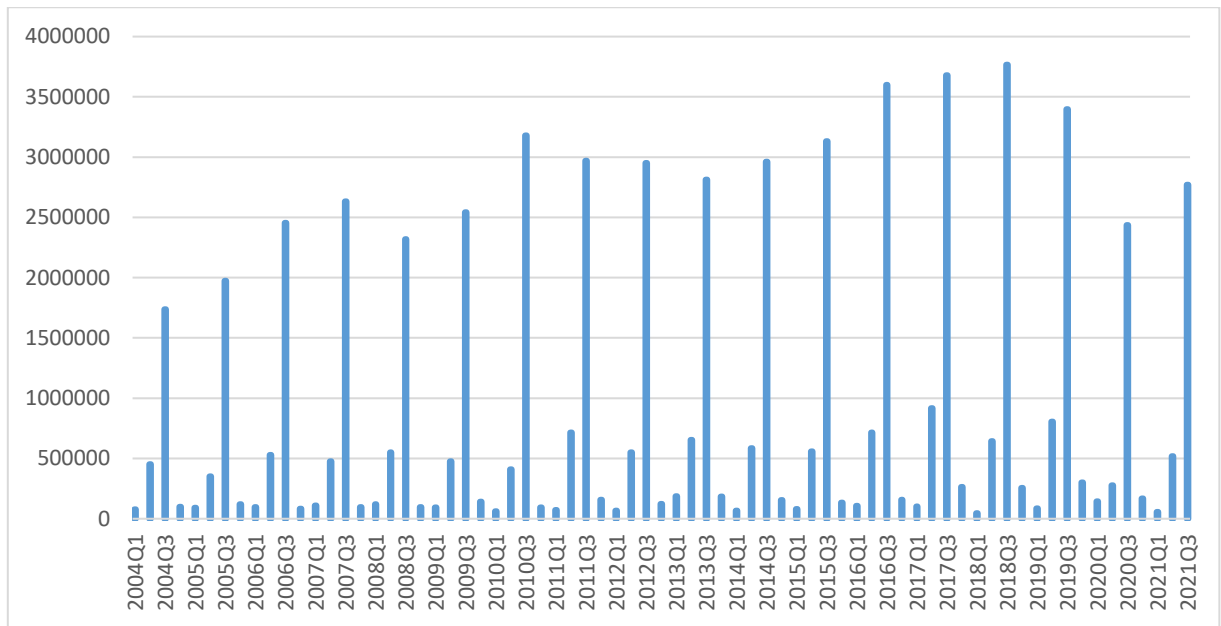
Figure 37: Total movement of passengers on inland waterways. Algarve, Quarterly, 2004-2021 (Q3)



Source: Observe; Own elaboration.

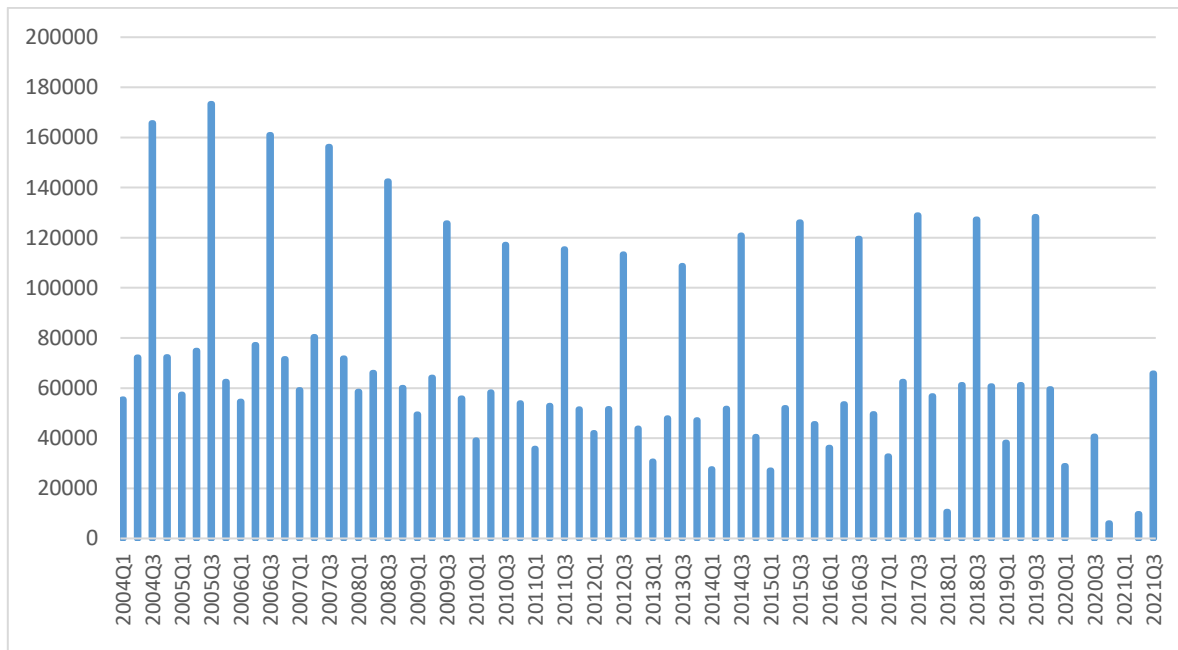
The previous aggregate analysis covers an unbalanced distribution of the passenger's traffic between the Ria Formosa and the Guadiana River. The disaggregated analysis is illustrated in Figures 38 and 39, where it is detected the greater pressure on the Ria Formosa and the surrounding beaches. Besides the seasonal pattern that is shared by both, it is detectable a pronounced increasing trend in peak tourist season in the Ria Formosa, which contrasts with the decreasing trend in the Guadiana River. This is quite informative about the high pressure that the Ria Formosa, which is also a designated Natural Park of over 170 km².

Figure 38: Movement of passengers on inland waterways. Algarve – Ria Formosa, Quarterly, 2004-2021 (Q3)



Source: Observe; Own elaboration.

Figure 39: Movement of passengers on inland waterways. Algarve – Guadiana River, Quarterly, 2004-2021 (Q3)



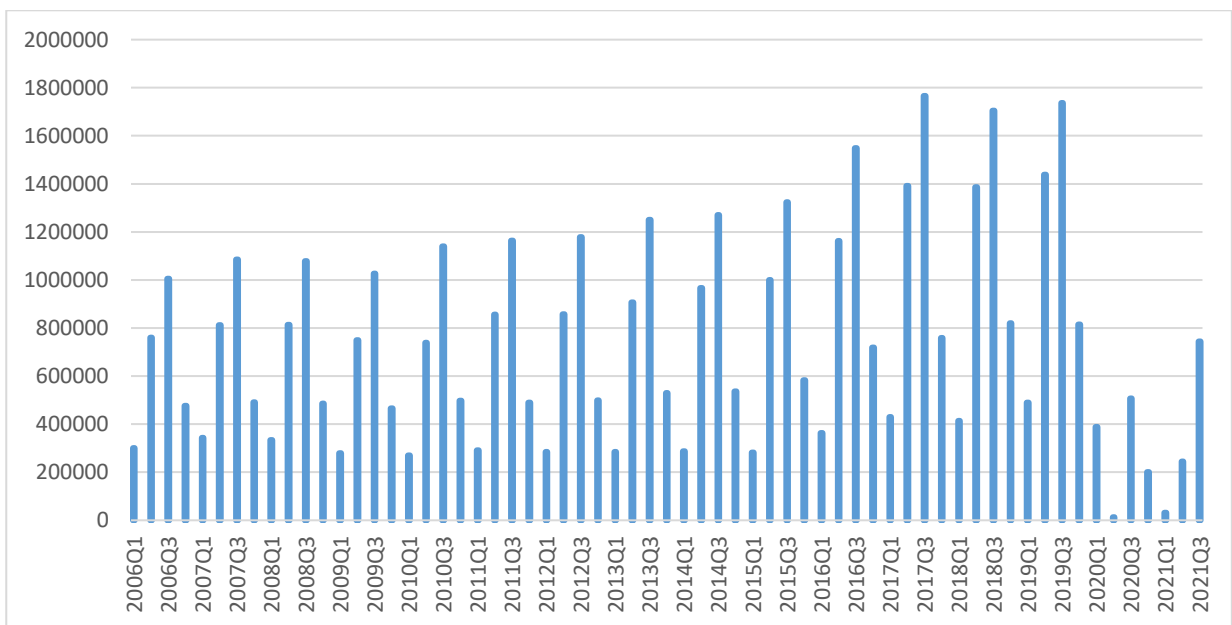
Source: Observe; Own elaboration.

4.4.3.2 Number of passengers boarded and disembarked at Faro Airport

This indicator provides the number of passengers embarked and disembarked at Faro Airport, covering the nature of the traffic (inland, territorial and international) and reported in Figures 40 and 41¹⁵.

The patterns are similar in boarded and disembarked figures. There is a visible increase in volume of travellers over the years, especially the years 2017 to 2019, with the pressure being highest in the third quarters, this confirming once again the strong seasonality of the tourist activity.

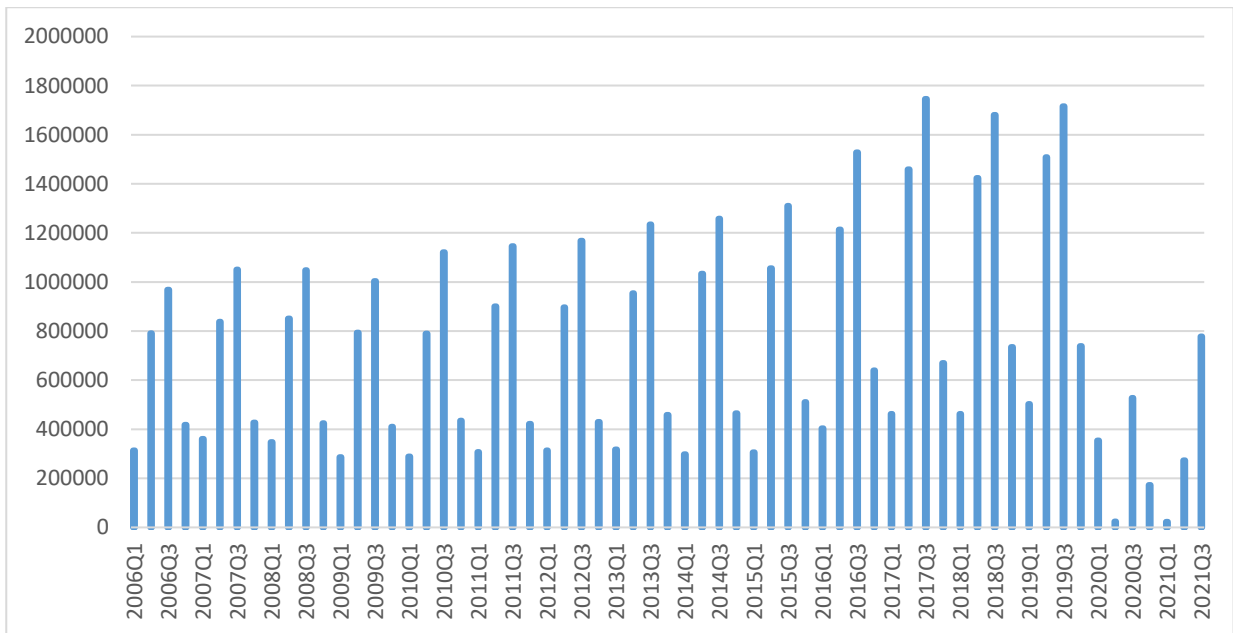
Figure 40: Number of passengers Boarded at Faro Airport. Algarve-Faro, Quarterly, 2006-2021 (Q3)



Source: Observe; Own elaboration.

¹⁵ The technical information on this indicator is provided in Annex A, Table A18.

Figure 41: Number of passengers disembarked at Faro Airport. Algarve-Faro, Quarterly, 2006-2021 (Q3)



Source: Observe; Own elaboration.

4.5 Governance

4.5.1 TURExperience

TurExperiences - Tourist experiences' impacts on the destination image: searching for new opportunities to the Algarve.

Study context

Knowledge about contemporary tourist behaviour allows for market segmentation through different variables (e.g., psychographic and lifestyle). Furthermore, the new paths towards innovation will be based on the transfer of knowledge from and to tourism, which will potentially benefit both the industry (public and private stakeholders) and academia (the University of Algarve has chosen tourism as one of its main strategic axes).

In the framework of the Smart Specialization Strategy of the Algarve (RIES3 Algarve), the project **TurExperiences** - Tourist experiences' impacts on the destination image: searching for new opportunities to the Algarve is situated in the fields of tourism and ICT (Information and Communication Technologies).

It aims to contribute to the promotion of research and development (R&D) in the tourism industry in the Algarve with potential impacts on the qualification and differentiation of traditional tourism products. Furthermore, it meets the objectives of the Intelligent Algarve Region - RIA, particularly within the integrated networks of territorial cooperation since the expected results will contribute to the future Observatory for Sustainable Tourism in the Algarve (a partnership between regional entities [RTA and CCDR] and the University of Algarve).

It also presupposes the involvement of the Research Center focused on Tourism, Sustainability and Well-being (CinTurs) and the collaboration with other entities in the region, namely Faro International Airport, the Algarve Tourism Board, hotel units, among other entities.

This research project aims to identify and measure the impacts of tourism experiences on the image of the Algarve as a tourism destination. Therefore, this project has four specific objectives:

- 1) To identify the scales and related items to assess tourists' experiences and images about the Algarve as a tourism destination.

2) To offer a comprehensive approach to tourists' experiences and images about the Algarve, in which three different methods were conducted in both high and low seasons:

- a) survey including international tourists' opinions;
- b) tourists' storytelling through semi-structured interviews;
- c) Tourist-Generated Content (TGC) collected from social media platforms and networks. The influence of the COVID-19 pandemic is also addressed.

3) To build an online knowledge platform to provide to key national and international stakeholders easy access to the projects' findings.

4) To communicate results and succeed in knowledge transfer among the academic community and stakeholders through several tools (online and offline).

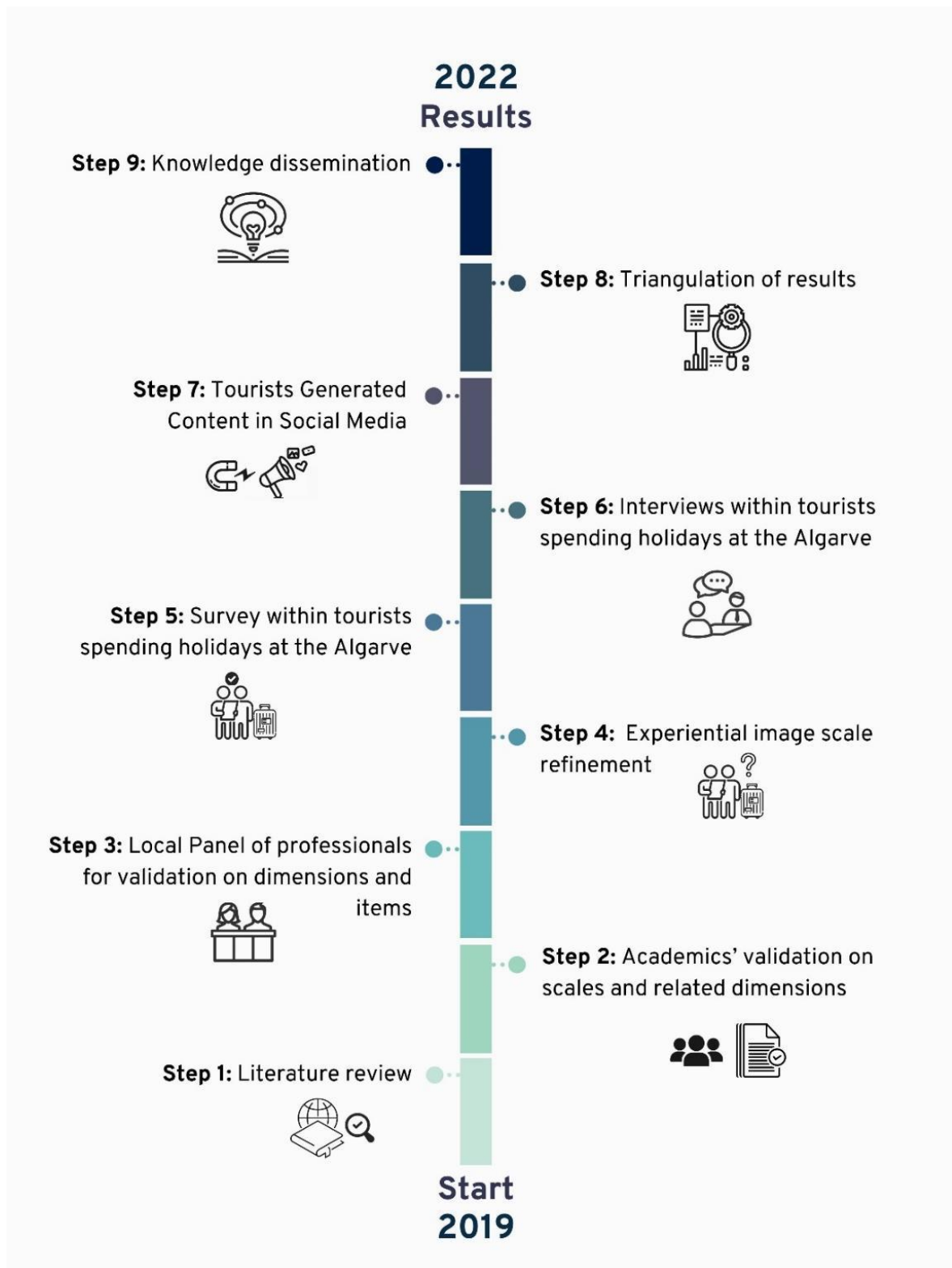
The results of the research will contribute to supporting and informing public and private policies in the field of tourism, which must be more accurate and adjusted to the new environmental challenges that are fuelling the tourism sector and the tourists themselves. Local authorities, and other players in the region, have the opportunity to build on this project's results their innovative strategies to improve the attractiveness and competitiveness of the Tourism Destination using Tourism Experiences as a trigger to engage emotionally tourists.

The findings, segmented by incoming nationalities, contribute to the development of more accurate marketing and communication strategies about the destination, to craft the positioning strategy and to design more appealing touristic products.

It also is addressing the impacts of seasonality on tourists' images and experiences.

Methodology

To offer a comprehensive approach to the phenomenon, a mixed-methods approach is adopted, and a nine-step empirical methodology is designed:



The empirical study, was based on a survey in which the main variables under research, were applied using a questionnaire, following an extensive literature review. The literature review allowed to identify the state of the art about the main variables (tourism experience and destination image), and permitted to find the scales, dimensions, and sub-dimensions.

The scales were adapted to the study and region, and afterwards was validated by two panels of academics and local stakeholders.

A stratified sample of 2.520 tourists is being surveyed considering the touristic seasons and the most representative segments of tourists visiting the Algarve by nationality (Portuguese, British, French, German, Spanish, Irish, Dutch and others). This global sample size assures a margin of error lower or equal to 2% with a 95% confidence level. Data collection is carried out through the application of questionnaires to tourists, using a systematic method and the personal interview. This process is conducted by interviewers recruited by the project team, who were properly supervised and trained.

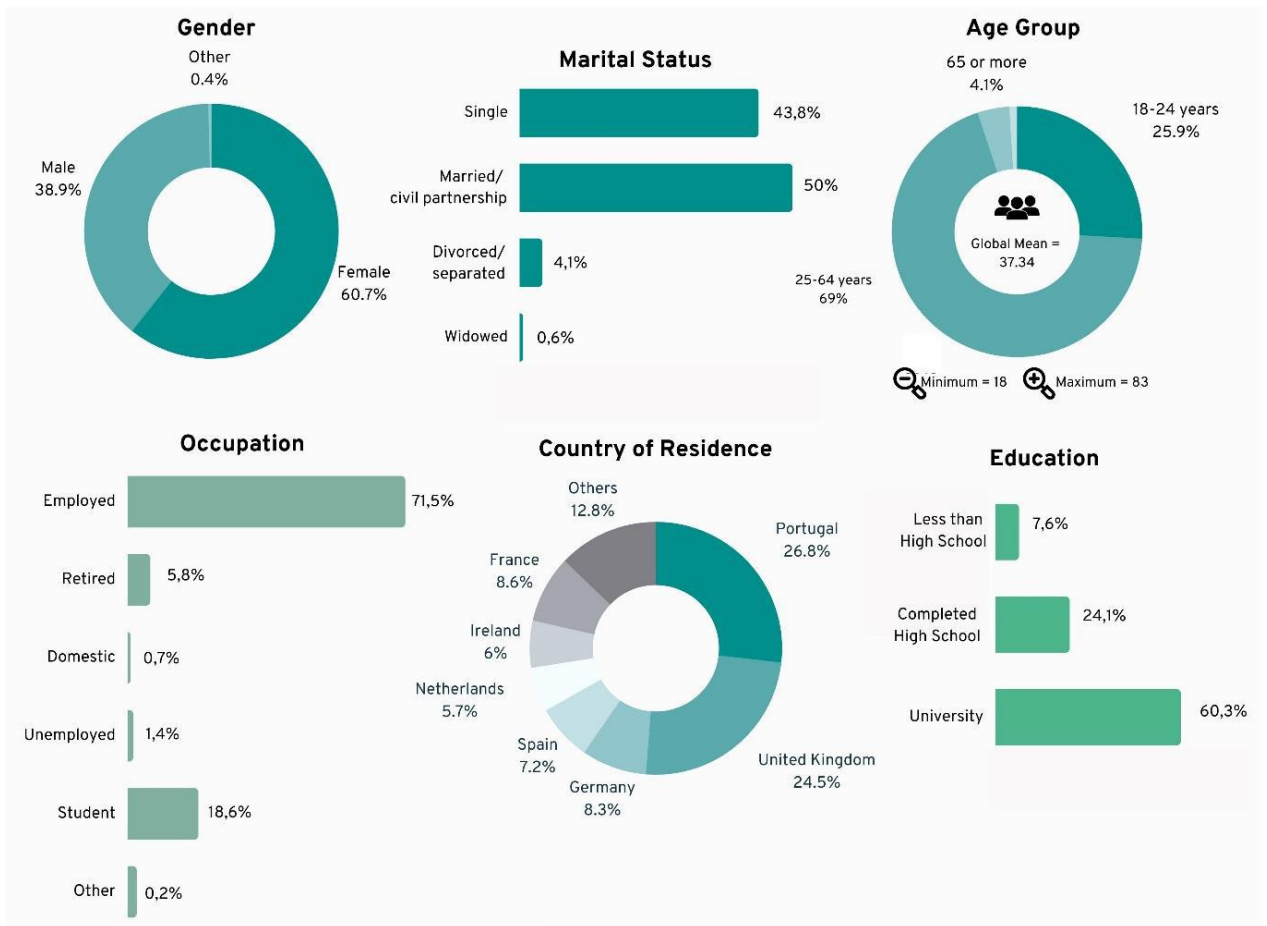
During the touristic high season, between July 15th and September 15th, 2021, 1909 questionnaires were collected at the Faro International Airport, on the departure area and other traditional touristic spots in the region (to include Portuguese and Spanish tourists). An estimated sample of 611 tourists is under interview during the low season (ongoing). The data was analysed using statistical software – Statistical Package for Social Sciences 25.

Tourists' Profile

The profile of tourists visiting the region during the high season is composed mostly of Portuguese (26.8%) and British (24.5%), both representing more than 50% of the visitors to the destination Algarve.

The majority of the respondents were female (60.5%), with 37 years on average and married (50%), although a high number of singles was found (43.8%).

Most of tourists visiting the region, hold a higher education level (60.3%), are employed (71%), and visited the Algarve for holidays (84.8%) with their partners (24.4%) or friends (22.4%) and stayed at one place, particularly Albufeira (17.7%) and Loulé (13.7%).

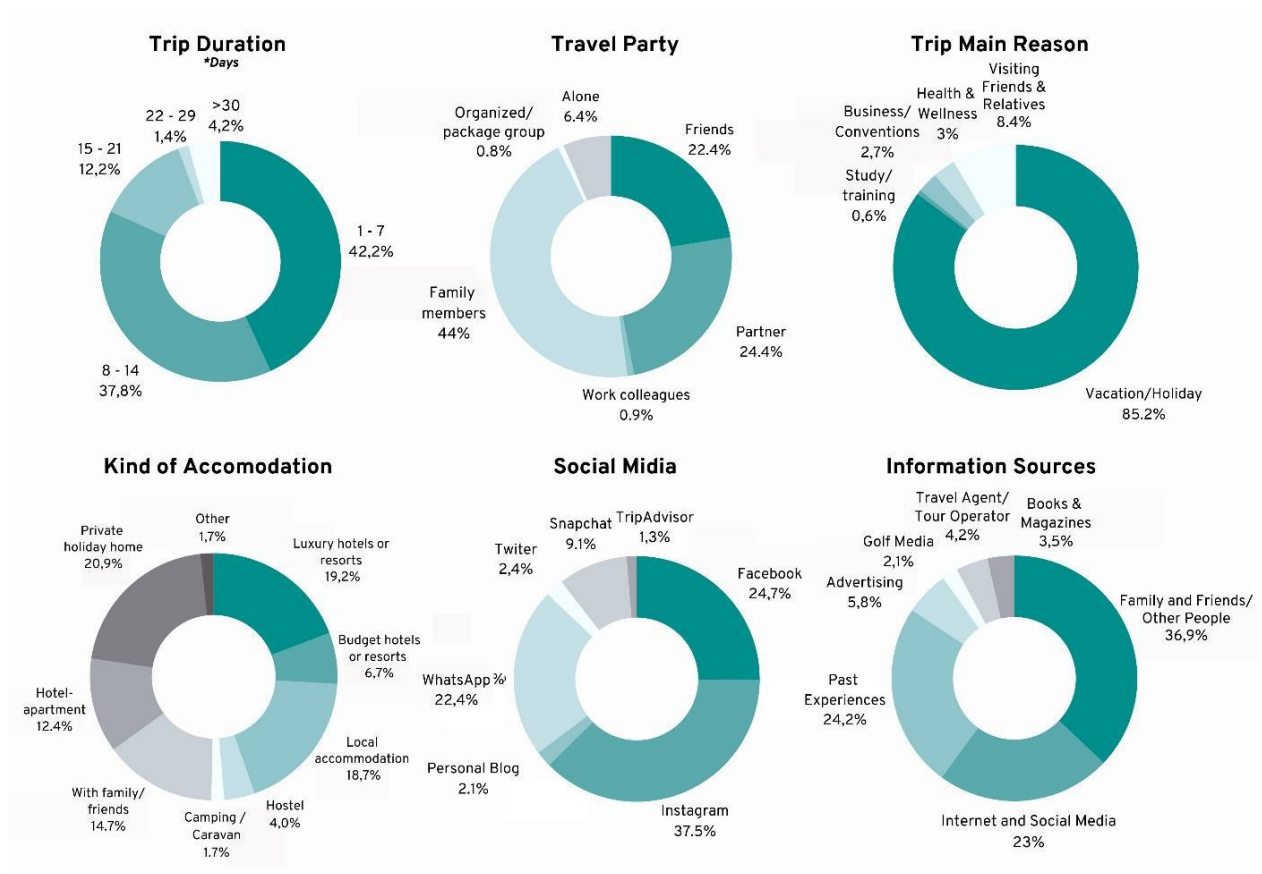


Most of them spend a mean of 8 (15,2 Std deviation) days in the region. The first-time visitors represent 30.5% of the sample, while 68.6% are repeat visitors.

Most of the respondents chose their own private holiday homes (20.9%), Luxury hotels or resorts (19.2%) and Local Accommodation (18.7%) as the accommodation option.

Family and friends' advice (36.9%) was the most important source of information that contributed to the decision to visit the destination, followed by past experiences (24.2%) and the content shared on the internet and social media (22.9%).

The large majority of the tourist (63.7%) shared their travel experiences on social media.



The Image of Algarve

Since the main goal of this research project is to identify and measure the impacts of tourism experiences on the destination image of the Algarve, the destination image is accessed as a multidimensional construct with three main components (Gartner,1993;1994): the Cognitive Image (Algarve’s Attributes, Offerings and Characteristics), the Overall Image and the Affective Image.

According to the results, the image of the Algarve is mainly defined by the following attributes (average between 4 and 5, considering five points Likert scale ranging from 1 - Strongly disagree - to 5 - Strongly agree): “The destination can be easily reached”; “The natural landscape is attractive”; “The scenery is beautiful”; “There are outdoor activities”; “Local food (Cuisine) is appealing”; “Water sports are available”; “Friendly residents”; “It has good quality of life”; “Algarve offers good quality of services”; “Algarve offers good beaches”; “Algarve offers good gastronomy”; “Algarve offers good accommodation”; “Algarve is a sunny place to visit”; “Algarve is a safe place to travel”; “Algarve is a family-

oriented place”; “Algarve is an interesting place to visit”; “Algarve is a place with a good reputation”, and “Algarve is a fun destination”. Algarve is perceived as “an eco-friendly destination”. Algarve has an image of a Pleasant, Relaxing, Pretty and Exciting tourism destination and a positive overall image for almost all the respondents (95.8%).

Perception about the Impacts of COVID-19

Regarding the tourists’ perceptions about the impacts of COVID-19 on their travel plans to the Algarve, respondents show very positive attitudes since they consider that “COVID-19 doesn’t make me worry about my normal ways of travelling in the Algarve”; “COVID-19 doesn’t make me think a lot about taking precautionary measures before travelling to the Algarve”; “Avoiding people when I travel is not frequently on my mind due to COVID-19”; “It makes me uncomfortable to think about COVID-19 while planning my vacation to de Algarve”; “I am not afraid to risk my life when I travel to the Algarve, because of COVID-19”; “When watching news about COVID-19, I don’t become nervous or anxious in regard to travel to the Algarve”, and “I do feel safe to travel to the Algarve due to COVID-19”. There are two issues of more concern...

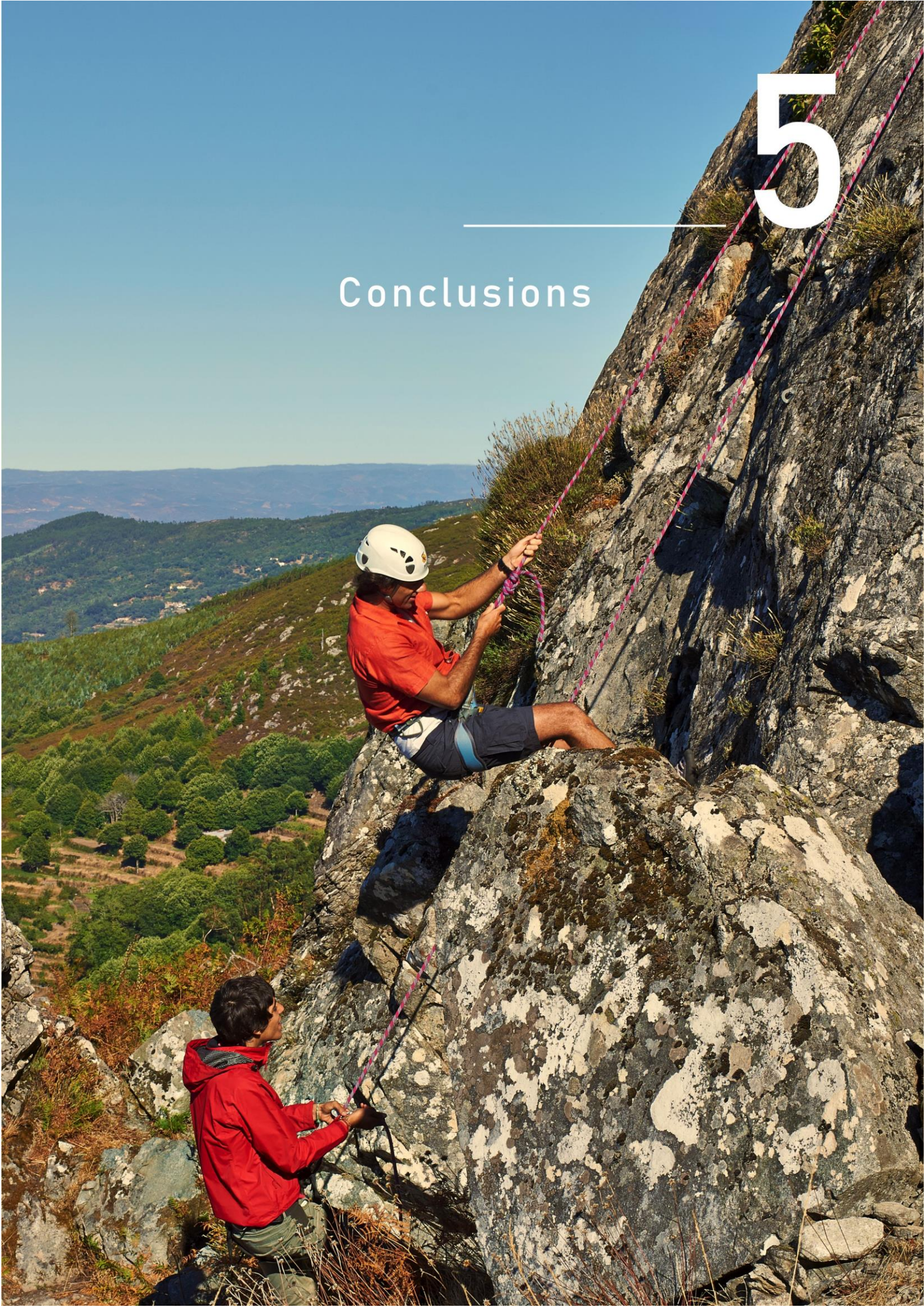
Destination Experience

The overall experience was pointed out as very positive for almost all the respondents (94.7%). Considering the four dimensions of the Experience Economy (Education, Aesthetics, Entertainment and Escapism), the experience of visiting the Algarve is mostly defined by two aspects of the aesthetics dimension: “Being here was very pleasant” and “The setting was very attractive” (both with an average higher than 4). By the results, it is possible to conclude that the overall perceived quality of Algarve as a vacation destination is Good or Excellent (for 86.6% of the respondents with a Global Mean of 4.41). Respondents are Satisfied/Very satisfied (92.9%) with their experience, and they consider that “I have really enjoyed”; “My choice was a wise one” and “It is exactly what I needed”. In addition, respondents confirmed positive intentions to recommend the visit to family and friends since they agree or strongly agree with the following sentences: “I will encourage my friends and/or family to visit Algarve sometime”; I will discuss positive things

about this holiday with my family and/or friends” and “Assuming my current circumstances remain the same, I will choose to come again to the Algarve”.

5

Conclusions



5. Conclusions

Over the last couple of years, the pandemic outbreak has strongly marked the performance of the Algarve's regional economy, particularly the tourist sector, which has been heavily conditioned by mobility restrictions and successive lockdown periods. Such restrictions contributed to the reversal of the positive downward trend that had been registered in the seasonality rate, which rose to 57% in 2021.

However, there were positive signs to be drawn from the pandemic context, with the strengthening of the weight of the national market, even in the months of the so-called low season. See, for example, the provisional data from October 2021, which exceed those recorded in the same period in 2019, which reflects the resilience and vitality of the national tourist market.

Likewise, the overall positive image of the destination is highlighted, recognized by the vast majority of tourists who chose the Algarve (96%), who, through a survey, highlighted the good quality of services, the attractive natural landscape, the good accommodation, among other aspects that will need to continue to be monitored, in line with sectoral strategic references that contribute to the sustainability of the destination.

Also, the perception of trust and safety, including sanitary, expressed by tourists, demonstrates the work developed by the sector in the region in order to achieve a recognizable reputation for the destination, which is very positive, allowing experiences and their full enjoyment, even though in a pandemic context.

Regional players have shown serious concerns about environmental issues, with very significant changes already observed in 2019 in terms of energy optimization, management of water resources and water consumption, with most tourist enterprises defining plans for optimization or implementation of reduction and savings measures. Social issues, about qualifications and employment relations should focus part of the discussion for the coming years, in order to mitigate the serious effects of the crisis.

Globally, both the sector and the region must respond appropriately, contributing to the fulfilment of the central agendas and sustainable development goals, as well as the Green Deal and the European Social Pillar, aiming a more competitive future for the tourism sector in the Algarve.

The unpredictability generated by the pandemic context, leads us to reinforce the importance and commitment to the work of the Algarve Sustainable Tourism Observatory (AlgSTO), motivated by the enormous challenges for the tourism sector in the tourist region of the Algarve, to which are added the challenges related to the activity of the observatory itself, both in operational and financial terms.

The regional ambition for a more sustainable destination lies in the promotion of improved quality of life and greater social and territorial cohesion, duly aligned with the More Sustainable Tourism Plan 20-23, which anticipates the goals established in the National Tourism Strategy 2027.

The funding opportunities provided by the Next generation EU, the new programming period for Portugal 2030 and the Portuguese Recovery and Resilience Plan are essential for its implementation, which reinforce the strategic focus of sustainability, converging on the valorization of biodiversity, environmental values and for the enhancement of transferable knowledge and research for companies. Companies will also have reinforced incentive systems for investments in the energy area, decarbonization and the circular economy.

The pandemic outbreak conditioned the implementation of the AlgSTO activity plan during the year 2021, but very important steps were taken for its development, namely in terms of knowledge production and governance.

The Monitur research project, supported by the Regional Operational Program of the Algarve, enabled a team of researchers dedicated to the development of a model for the evaluation and monitoring of regional tourism performance, fomenting knowledge and innovation that support the sustainability and growth of the sector, being a support tool to the definition of targets and load thresholds associated with the sustainable management of the destination, informing qualitative reference standards, now in adaptation, in the face of the pandemic and the new demands of tourists. This project, as

well as the work developed within the scope of the TurExperiences and ResTour research projects, have been fundamental for the promotion of AlgSTO.

The Protocol of Constitution of the Collaborative Network signed between the founding entities of AlgSTO at the end of 2021, will allow its development, guided by the respective rights and duties and with the proper stabilization of specific competences attributed to its different bodies (Executive Council, Scientific Council, Consultative Council, Technical Unit and Local Working Group), which bring together representatives of the main players of the tourism sector in the region.

Thus, 2022 will be the first year of full operation of AlgSTO, with all its valences and opportunities to assert itself as a space for strategic reflection, knowledge production and entrepreneurial discovery, to support decisions that contribute to a more sustainable and competitive tourism sector, fundamental for the economic and social recovery of the region, helping to mitigate structural weaknesses characteristic of tourist destinations with a strong seasonal nature, such as the Algarve.

As a learning space, it is AlgSTO's ambition to build fruitful relationships with other observatories in the network, enhancing synergies and exchanging good practices that help us to accelerate the achievement of the proposed objectives. At the same time, it is necessary to increase the visibility of AlgSTO among its different target audiences, through accessible and clearly useful communication channels.

In order to overcome the identified challenges, all players should be called upon, so that in their respective competence frameworks, they follow a common path and in a co-responsible way, contributing to affirm the Algarve tourist destination as an international reference in terms of sustainability, also assuming AlgSTO a leading role in valuing and promoting the destination.

6

Annex A: Indicators' technical notes



6. Annex A: Indicators' technical notes

Table A1: Tourist Intensity Index

Algarve Indicator	Tourist Intensity
UNWTO Mandatory Area	Local Satisfaction with tourism
ETIS section	C. Social and cultural impact
ETIS criterion	C.1 Community /social impact
ETIS indicator	C.1.1 Number of tourists/visitors per 100 residents
Description	Tourism Intensity. Measures the ratio between overnight stays in collective tourist accommodations and the resident population residing in the same area over the same period.
Concepts	Tourist accommodation establishment: Establishment that provides short-term accommodation services for remuneration, operating in one or more buildings or facilities. Types: hotels, local accommodation, tourism in rural areas and lodging tourism.
Approach/Calculation	$((\text{Annual overnight stays} / 365) / \text{Total resident population}) * 100$ $((\text{Monthly overnight stays} / n \text{ days month}) / \text{total resident population}) * 100$
Geographic level and periodicity	NUTSII: Monthly (Jan 2017-Dec 2019), Annual (2011-2019) Municipality: Annual (2011-2018)
Data source(s)	<ul style="list-style-type: none"> INE, guests stays and other data on hotel activity survey. Indicator: Nights (No.) in tourist accommodation establishments by Geographic localization (NUTS - 2013) and Type (tourist accommodation establishment); Monthly INE, Annual estimates of resident population. Indicator: Resident population (No.) by Place of residence (NUTS - 2013), Sex and Age group; Annual
Limitations/issues	<ul style="list-style-type: none"> There is no data available on tourist arrivals on a regional level. Therefore, it was chosen to use tourist nights instead of number of tourists. The category 'nights tourist accommodation establishments' does not cover all tourist nights since it leaves out some types of accommodation (such as youth hostels, holiday camps and camp-sites).

Table A2: Lodging capacity in tourist accommodation establishments, per 1000 inhabitants

Algarve Indicator	Number of beds available in tourist accommodation establishments per 1000 residents
UNWTO Mandatory Area	Local Satisfaction with tourism
ETIS section	C. Social and cultural impact
ETIS criterion	C.1 Community /social impact
ETIS indicator	C.1.3 Number of beds available in commercial accommodation establishments per 1000 residents.
Description	Number of beds available in tourist accommodation establishments per 1000 residents.
Concepts	Tourist accommodation establishment: Establishments that provide short-term accommodation services for remuneration, operating in one or more buildings or facilities. Hotels, local accommodation, campsites, youth hostels, tourism in rural areas and lodging tourism.
Approach	Composite indicator based on secondary data. (Lodging capacity tourist acc. / total residents) * 1000
Geographic level and periodicity	NUTSII: Annual (2004-2018) By Municipality: (2017-2018)
Data source	<ul style="list-style-type: none"> • INE, Guests stays and other data on hotel activity survey. Indicator: Lodging capacity (No.) in tourist accommodation establishments by Geographic localization (NUTS - 2013) and Type (tourist accommodation establishment); Annual • Lodging capacity in tourist accommodation establishments by 1000 inhabitants (No.) by Geographic localization (NUTS - 2013); Annual • From the above two sources data is available for the years 2014-2018 only, hence we obtained the remaining data from the tables provided by 'Tourism Statistics' following the individual links for each year: • https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_publicacoes&PUBLICACOESpub_boui=5596816&PUBLICACOESstema=00&PUBLICACOESmodo=2 • https://www.ine.pt/ngt_server/attachfileu.jsp?look_parentBoui=416437385&att_display= • INE, Annual estimates of resident population. Indicator: Resident population (No.) by Place of residence (NUTS - 2013), Sex and Age group; Annual
Limitations/Issues	Data for the municipalities does not capture the full scope of accommodation types. Campsites, holiday camps and youth hostels are not included.

Table A3: Tourist Density Index

Algarve Indicator	Tourist Density
UNWTO Mandatory Area	Local Satisfaction with tourism
ETIS section	C. Social and cultural impact
ETIS criterion	No Match as this is Algarve specific
ETIS indicator	
Description	Tourist Density - allows the assessment of tourist pressure on the region, through the relationship between the number of overnight stays in tourist developments and the area of the region, measured in km2.
Concepts	Includes the entire tourist accommodation sector: hotels (hotels, apartment hotels, tourist apartments, tourist villages, inns and farms in Madeira), local accommodation with 10 or more beds (according to the statistical threshold provided for in EU Regulation 692 / 2011) and tourism in the rural / housing space.
Approach	Direct Data from Turismo de Portugal
Geographic level and periodicity	NUTSII Annual (2015-2020)
Data source(s)	https://travelbi.turismodeportugal.pt/pt-pt/Paginas/PowerBI/Sustentabilidade/densidade-turistica.aspx
Limitations/issues	Only available from 2015

Table A4: Number of nights in tourist accommodation establishments, per month

Algarve Indicator	Number of nights in tourist accommodation establishments
UNWTO Mandatory Area	Destination Economic Benefits
ETIS section	B. Economic value
ETIS criterion	B.1 Tourism flow at destination
ETIS indicator	B.1.1 Number of tourist nights per month
Description/concepts	<p>Number of nights in tourist accommodation establishments per month.</p> <p>Tourist accommodation establishment: Establishment that provides short-term accommodation services for remuneration, operating in one or more buildings or facilities. Types: hotels, apartment hotels, tourist apartments, tourist villages, Inns and others.</p>
Approach	Direct use of secondary data
Geographic level and periodicity	NUTSII: Monthly (Jan 2010– Dec 2020) By Municipalities, Annual: (2011-2020)
Data source(s)	<p>TravelBI by Turismo de Portugal. https://travelbi.turismodeportugal.pt/pt-pt/Paginas/PowerBI/dormidas.aspx (They have sourced the data from: INE, Guest stays and other data on hotel activity survey. Indicator: Nights (No.) in tourist accommodation establishments by Geographic localization (NUTS - 2013) and Type (tourist accommodation establishment); Monthly)</p> <p>For municipality data http://smi.ine.pt/Indicador/Detalhes/13750?LANG=EN</p>
Limitations/issues	The category 'tourist accommodation establishments' does not capture the full scope of accommodation types. Nights in youth hostels, campsites and holiday camps are not included in this indicator.

Table A5: Relative contribution of tourism in the region to the regional and national economy

Algarve Indicator	Gross value added by economic sector
UNWTO Mandatory Area	Destination Economic Benefits
ETIS section	B. Economic value
ETIS criterion	B.1 Tourism flow at destination
ETIS indicator	B.1.3 Relative contribution of tourism to the destination's economy (%GDP)
Description	Gross value added (in % of total GVA) by enterprises per economic sector. It allows to view the relative weight of the tourism industry in the total GVA of Portugal. The industries are categorised by CAE Rev. 3 classification, which is the Portuguese implementation of the NACE Rev.2 classification of economic activities provided by EUROSTAT. In this classification the sector 'accommodation and food service activities' can be regarded as (partially) representing the tourism industry.
Concepts	<p>Gross value added: Gross production value less the cost of raw materials and other consumption in the production process.</p> <p>Enterprise: Legal entity (natural or legal person) that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations.</p>
Approach	Direct use of secondary data (converted into percentages).
Geographic level and periodicity	NUTSII and Municipality: Annual (2008 – 2019)
Data source(s)	INE, Integrated business accounts system. Indicator: Gross value added (€) of Enterprises by Geographic localization (NUTS - 2013) and Economic activity (Division - CAE Rev. 3); Annual
Limitations/issues	The sector 'accommodation and food service activities' does not cover the entire tourism industry. However, considering the lack of detailed data on the entire industry, it is still a useful starting point to analyse the share of GVA by the tourism industry.

Table A6: Average stay of tourists

Indicator	Average stay of tourists
Mandatory Area	Tourism Enterprise Performance
ETIS section	B. Economic Value
ETIS criterion	B.2 Tourism Enterprise Performance
ETIS indicator	B.2.1 Average length of stay of tourists (nights)
Description	This indicator, by relating the number of tourists with the number of overnight stays in tourist accommodation establishments, constitutes an instrument which is an important factor in monitoring tourism seasonality and analysing economic/environmental sustainability.
Concepts	Tourist Accommodation establishments = hotels + apartment hotels + tourist villages + lodging houses + Inns + rural tourism + lodging tourism + local accommodation
Approach/Formula	Composite indicator based on secondary data = Ratio of the number of nights spent to the number of guests that gave rise to these nights spent. Number of nights spent / Number of guests that originated those nights
Geographic level and periodicity	NUTSII Annual (2004-2020)
Data source(s)	https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_public_acoes&PUBLICACOESpub_boui=384536089&PUBLICACOESmo do=2
Limitations/issues	Classification of touristic establishments is consistent from 2013 onwards. Till 2012 touristic accommodation establishments did not include rural and habitational tourism, local accommodation, camping sites, youth hostels, lodges or summer camps. Moreover, each year had different components in the definition.

Table A7: Productivity of tourism

Algarve Indicator	Productivity of tourism activity
UNWTO Mandatory Area	Destination Economic Benefits
ETIS section	B. Economic value
ETIS criterion	No Match as this is Algarve specific
ETIS indicator	N.A
Description	This indicator measures the productivity of the sector by quantifying the relationship between GVA and employment generated in the sector
Concepts	<p>Gross value added: Gross production value less the cost of raw materials and other consumption in the production process.</p> <p>Total Employment: Persons employed (No.) in Enterprises by Geographic localization (NUTS - 2013) and Economic activity (Division - CAE Rev. 3); Annual</p> <p>Enterprise: Legal entity (natural or legal person) that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations.</p>
Approach	Ratio = Total GVA of Accommodation sector + Food and beverage sector + Travel Agencies, tour operator, reservation services and related activities / Total no. of persons employed in each sector
Geographic level and periodicity	NUTSII and Municipality: Annual (2008 – 2019)
Data source(s)	<p>INE, Integrated business accounts system. Indicator: Gross value added (€) of Enterprises by Geographic localization (NUTS - 2013) and Economic activity (Division - CAE Rev. 3); Annual</p> <p>Persons employed (No.) in Enterprises by Geographic localization (NUTS - 2013) and Economic activity (Division - CAE Rev. 3); Annual</p>
Limitations/issues	The sector 'accommodation and food service activities', 'accommodation sector' and 'food and beverage sector' have been considered to represent the tourism sector.

Table A8: Direct employment in tourism as a percentage of total employment in the region

Algarve Indicator	Direct Employment in tourism as a percentage of total employment in the region
UNWTO Mandatory Area	Employment
ETIS section	B. Economic value
ETIS criterion	B.3 Quantity and Quality of employment
ETIS indicator	B.3.1 Direct tourism employment as a percentage of total employment in the destination
Description	This indicator allows to understand the role of tourism in job creation and the relative importance of the sector in terms of job creation.
Concepts	<p>STAFF: The persons who during the reference period participated in the business of the enterprise/institution, regardless of the duration of this participation, under the following conditions: a) staff bound to the enterprise/institution by an employment contract, receiving remuneration in return; b) staff which has ties to the enterprise/institution, who, for not being bound by an employment contract, does not receive regular remuneration for the hours worked or the labour supplied (e.g. owner-managers, unpaid family workers, active members of cooperatives); c) staff with ties to other enterprises/institutions who worked at the enterprise/institution and receive remuneration directly from it; d) persons in the above situations, absent for a period of no more than one month due to holidays, labour dispute, vocational training, as well as disease and occupational accident.</p> <p>HOTEL ESTABLISHMENT: Tourist development (establishment) with the purpose of providing, on a fee basis, lodging and other accessory or support services, with or without the provision of meals. Hotel establishments can be classified as: hotels, boarding houses, lodging houses, inns, motels and apartment-hotels. For statistical purposes, also included here are tourist villages and tourist apartments.</p> <p>ENTERPRISE: Legal entity (natural or legal person) that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations.</p>
Approach	Employment in tourism sectors as a %age of total employment = (Total employment in Accommodation sector + Food and beverage sector + Travel Agencies, tour operator, reservation services and related activities)/Total employment*100
Geographic level and periodicity	NUTSII and Municipality: Annual (2008 – 2019)
Data source(s)	INE, Integrated business accounts system. Indicator: Persons employed (No.) in hotel establishments by Geographic localization (NUTS - 2013) and Type (hotel establishment); Annual For total employment and employment in tourism sectors: Persons employed (No.) in Enterprises by Geographic localization (NUTS - 2013) and Economic activity (Division - CAE Rev. 3); Annual
Limitations/issues	The sector 'accommodation and food service activities', 'accommodation sector' and 'food and beverage sector' have been considered to represent the tourism sector, as there is no direct data designated as 'tourism sector'. The annual employment figures for hotel establishments by geographic localization and type have also been included. However, data for municipalities is not available for this category.

Table A9: Seasonal employment as a percentage of direct employment in tourism in the region

Algarve Indicator	Seasonal employment as a percentage of direct tourism employment in the region
UNWTO Mandatory Area	Employment
ETIS section	B. Economic value
ETIS criterion	B.3 Quantity and Quality of employment
ETIS indicator	B.3.2 Percentage of jobs that are seasonal
Description	This indicator allows to understand the role of tourism in job creation and the relative importance of the sector in terms of job creation.
Concepts	Seasonal Service Employees - allows assessing the evolution of employees whose employment relationship is a fixed or uncertain term contract (with a seasonal character) with the total number of employees employed in hotel establishments. This indicator also assesses the percentage of employees with a seasonal character who are employed in the Tourism sectors.
Approach	Direct data from Turismo de Portugal
Geographic level and periodicity	Algarve Annual (2011 – 2017). There is no data for 2014
Data source(s)	https://travelbi.turismodeportugal.pt/pt-pt/Paginas/PowerBI/Sustentabilidade/colaboradores-ao-servico-de-caracter-sazonal.aspx
Limitations/issues	Data is available only annually from 2011 to 2017, with a break in 2014. It is based on Turismo de Portugal's survey on environmental performance and social responsibility.

Table A10: Number of nights spent in the region by tourists, per month

Algarve Indicator	Number of nights in tourist accommodation establishments
UNWTO Mandatory Area	Destination Economic Benefits
ETIS section	B. Economic value
ETIS criterion	B.1 Tourism flow at destination
ETIS indicator	B.1.1 Number of tourist nights per month
Description/concepts	<p>Number of nights in tourist accommodation establishments per month.</p> <p>Tourist accommodation establishment: Establishment that provides short-term accommodation services for remuneration, operating in one or more buildings or facilities. Types: hotels, apartment hotels, tourist apartments, tourist villages, Inns and others.</p>
Approach	Direct use of secondary data
Geographic level and periodicity	<p>NUTSII: Monthly (Jan 2010– Dec 2020)</p> <p>By Municipalities, Annual: (2011-2020)</p>
Data source(s)	<ul style="list-style-type: none"> • travelBI by Turismo de Portugal. https://travelbi.turismodeportugal.pt/pt-pt/Paginas/PowerBI/dormidas.aspx • For municipality data: http://smi.ine.pt/Indicador/Detalhes/13750?LANG=EN
Limitations/issues	The category 'tourist accommodation establishments' does not capture the full scope of accommodation types. Nights in youth hostels, camp-sites and holiday camps are not included in this indicator.

Table A11: Occupancy rate in commercial accommodation establishments per month and average for the year

Algarve Indicator	Occupancy rate in tourist accommodation establishments per month and annual average
UNWTO Mandatory Area	Seasonality
ETIS section	B. Economic value
ETIS criterion	B.2 Tourism and Enterprise performance
ETIS indicator	B.2.2 Occupancy rate in commercial accommodation establishments per month and average for the year
Description	This indicator allows to understand the volume of tourism in the destination and provides information on seasonal patterns.
Concepts	$NOR(\text{bed places}) = [\text{No. of overnight stays during reference period} / N^{\circ} \text{ of available beds in reference period (considering double beds count as two)}] * 100$
Approach	Direct data from INE
Geographic level and periodicity	Algarve and Municipalities, Annual: (i) for hotel establishments (2011 – 2020), (ii) for tourist accommodation establishments (2017 and 2020).
Data source(s)	<ul style="list-style-type: none"> • Bed occupancy net rate (%) in hotel establishments by Geographic localization (NUTS - 2013) and Type (hotel establishment); Annual • Bed occupancy net rate (%) in tourist accommodation establishments by Geographic localization (NUTS - 2013) and Type (tourist accommodation establishment); Annual • https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_publicacoes&PUBLICACOESpub_boui=445437698&PUBLICACOESmodo=2 (for 2019 data) <p>Source of data is from (i) the survey on guests stays and other data on hotel activity survey.</p> <p>(ii) Survey on the Stay of Guests in Hospitality and Other Accommodation</p>
Limitations/issues	Data on occupancy rate for different types of hotel establishments is available from 2011 to 2019, but for tourist accommodation is available only for the years 2017 and 2018. Monthly data is not available.

Table A12: Seasonality Rate

Algarve Indicator	Seasonality Rate
UNWTO Mandatory Area	
ETIS section	No Match as it is Algarve specific indicator
ETIS criterion	
ETIS indicator	
Description/concepts	<p><i>Seasonality Rate = (Total No. of nights in tourist accommodation establishments in July + August + September / Total No. of nights in tourist accommodation establishments whole year)*100</i></p> <p>Seasonality Rate: assesses the relative weight of tourist demand in the three months of greatest demand (July, August and September), in relation to the annual total, as measures by the number of overnight stays in accommodation establishments.</p> <p>Tourist accommodation establishment: Establishment that provides short-term accommodation services for remuneration, operating in one or more buildings or facilities. Types: hotels, apartment hotels, tourist apartments, tourist villages, Inns and others.</p>
Approach	Composite Indicator based on secondary data
Geographic level and periodicity	NUTSII: Monthly (Jan 2010– Dec 2019)
Data source(s)	<ul style="list-style-type: none"> travelBI by Turismo de Portugal. https://travelbi.turismodeportugal.pt/pt-pt/Paginas/PowerBI/dormidas.aspx <p>(They have sourced the data from: INE, Guest stays and other data on hotel activity survey. Indicator: Nights (No.) in tourist accommodation establishments by Geographic localization (NUTS - 2013) and Type (tourist accommodation establishment); Monthly)</p>
Limitations/issues	<p>The category ‘tourist accommodation establishments’ does not capture the full scope of accommodation types. Nights in youth hostels, camp-sites and holiday camps are not included in this indicator.</p> <p>Using this formula, it is not possible to calculate seasonality for the municipalities of Algarve as monthly data is not available for “total no. of nights in tourist accommodation establishments”. Only annual data (from 2011-2018) is available at INE for the municipalities.</p>

Table A13: Percentage of tourism companies taking measures to reduce energy consumption

Algarve Indicator	Percentage of tourist companies taking measures to reduce energy consumption
UNWTO Mandatory Area	Environmental Impact
ETIS section	D. Environmental Impact
ETIS criterion	D.6 Energy Usage
ETIS indicator	D.6.2 Percentage of tourism enterprises that take actions to reduce energy consumption
Description	This indicator measures the commitment of the tourism companies towards energy savings through different measures
Concepts	Establishments that Optimize Energy Consumption - allows to evaluate the evolution of the share of hotel establishments, resorts and tourist apartments that manage energy efficiently. The higher the percentage of hotel establishments with low power consumption systems, the greater the concern demonstrated to environmental preservation and consequent sustainability of tourism
Approach	Direct data from Turismo de Portugal
Geographic level and periodicity	NUTSII Annual (2011 – 2019)
Data source(s)	https://travelbi.turismodeportugal.pt/en-us/Pages/PowerBI/Sustentabilidade/accommodation-optimize-energy-consumption.aspx
Limitations/issues	There is no elaboration of the components of 'Accommodation Establishments' considered by TravelBI for this indicator.

Table A14: Percentage of tourism companies taking measures to reduce water consumption

Algarve Indicator	Percentage of tourist companies taking measures to reduce water consumption
UNWTO Mandatory Area	Environmental Impact
ETIS section	D. Environmental Impact
ETIS criterion	D.5 Water Management
ETIS indicator	D.5.2 Percentage of tourism enterprises taking actions to reduce water consumption
Description	This indicator allows to evaluate the evolution of the share of hotel establishments, resorts and tourist apartments that manage water efficiently.
Concepts	<p>The implementation of a policy of optimization of water consumption in an hotel establishment implies that it has developed a policy of quality and environmental management, based on objectives and processes to achieve commitments related to quality and the environment. It also implies taking periodic actions to continually improve its performance, in addition to reflecting the level of involvement of establishments in environmental preservation.</p> <p>The higher the percentage of hotel establishments with policies for optimizing water consumption, the greater the concern shown with environmental preservation and the consequent sustainability of tourism.</p>
Approach	Direct data from Turismo de Portugal
Geographic level and periodicity	NUTSII Annual (2011 – 2019)
Data source(s)	https://travelbi.turismodeportugal.pt/en-us/Pages/PowerBI/Sustentabilidade/accommodation-optimize-water-consumption.aspx
Limitations/issues	<p>There is no elaboration of the components of 'Accommodation Establishments' considered by TravelBI for this indicator.</p> <p>Supplementary data about Accommodation Establishments with objectives to limit water consumption is provided by TravelBI at: travelbi.turismodeportugal.pt/en-us/Pages/PowerBI/Sustentabilidade/accommodation-objectives-water.aspx</p> <p>This indicator allows assessing the evolution of the percentage of hotel establishments, resorts and tourist apartments with the objective of reducing water consumption. Data is available only for the years 2016 and 2017.</p>

Table A15: Percentage of sewage treated prior to discharge

Algarve Indicator	Percentage of sewage treated prior to discharge
UNWTO Mandatory Area	Environmental Impact
ETIS section	D. Environmental Impact
ETIS criterion	D.4 Sewage Treatment
ETIS indicator	D.4.1 Percentage of sewage from the destination treated at least at secondary level prior to discharge
Description	This indicator reflects the existence of efficient sewage treatment and management infrastructure.
Concepts	<ul style="list-style-type: none"> • TREATED WASTEWATER: Wastewater after treatment of which is carried out in wastewater treatment plants (Portuguese acronym: ETAR) or in municipal septic tanks. • SEWER DRAINAGE SYSTEM: Set of infrastructures and equipments designed to collect the sewage produced by a community and drain it to a proper treatment facility in order that it is discharged in soil or water bodies in a way that it does not change existing environmental conditions. A complete system includes: drainage pipes or net; intermediate discharger; pumping station; interceptor, wastewater treatment plant and final discharger. • REFERENCE PERIOD: The length of time for which data are collected, e.g. a specific day, month or year.
Approach	$(\text{Direct discharge of wastewater} / \text{Effluents rejected}) * 100$ where effluents rejected = direct discharge of wastewater + discharge of wastewater after treatment.
Geographic level and periodicity	NUTSII and Municipalities Annual (2001 – 2009)
Data source(s)	Statistics Portugal, National inventory of water supply and wastewater systems / physical and operational view (for 2006-2009) Statistics Portugal, Environmental survey - Water and wastewater structure characterization (for 2001-2005)
Limitations/issues	Data is available only from 2001-2009. However, annual data is available at NUTS II level both for (i) Proportion of wastewater treated by Geographic localization; and (ii) Total volume of wastewater treated of wastewater drainage and treatment systems by Geographic localization and Level of treatment.

Table A16: Movement of Passengers on Inland Waterways

Algarve Indicator	Movement of Passengers on Inland Waterways
UNWTO Mandatory Area	Environmental Impact
ETIS section	D. Environmental Impact
ETIS criterion	This is Algarve specific
ETIS indicator	Mobility
Description	This indicator measures the number of passengers moving on inland waterways
Concepts	Movement of passengers in inland waterways by river line, that is a regular public transport service following itineraries, timetables or minimum frequencies and with pre-established fares. There are urban and interurban routes. National level Beaches - Ria Formosa (Faro - Faro island; Faro - Deserta island; Faro - Farol island; Olhão - Farol island; Olhão - Culatra island; Olhão - Armona island; Tavira - Tavira island; Quatro-Águas - Tavira island; Fuzeta - Armona island; Sta. Luzia - Terra Estreita; Faro – Culatra island; Cabanas - Cabanas island); and international level Guadiana River (V. R. S. António - Ayamonte).
Approach	Data obtained from INE by OBSERVE
Geographic level and periodicity	Quarterly data from 2002 to 2021 (Q1)
Data source(s)	INE- Retrieved from Inland waterways passengers and goods transport survey
Limitations/issues	Pressure on inland waterways is measured

Table A17: Number of passengers embarked and disembarked from cruise ships at the Port of Portimão

Algarve Indicator	Number of passengers embarked and disembarked from cruise ships at the Port of Portimão
UNWTO Mandatory Area	Environmental Impact
ETIS section	D. Environmental Impact
ETIS criterion	This is Algarve specific
ETIS indicator	Mobility
Description	This indicator provides the number of passengers embarked, disembarked and in transit at the Port of Portimão, from cruise ships
Concepts	The higher movement is related to the number of passengers in transit. The numbers of embarked and disembarked passengers have been very negligible.
Approach	Data obtained from INE by OBSERVE
Geographic level and periodicity	Yearly data from 2004 to 2018
Data source(s)	INE- Retrieved from Statistics on Passenger traffic evolution at the Port of Portimão.
Limitations/issues	Pressure is measured.

Table A18: Number of passengers boarded and disembarked at Faro Airport

Algarve Indicator	Number of passengers boarded and disembarked at Faro Airport
UNWTO Mandatory Area	Environmental Impact
ETIS section	D. Environmental Impact
ETIS criterion	This is Algarve specific
ETIS indicator	Mobility
Description	This indicator provides the number of passengers embarked and disembarked at Faro Airport
Concepts	Nature of traffic (internal, territorial and international) is captured via this indicator.
Approach	Data obtained from INE by OBSERVE
Geographic level and periodicity	Yearly data from 2004 to 2021 (Q3)
Data source(s)	INE- Retrieved from Airports and airfields survey.
Limitations/issues	Reflects the strong seasonality of the tourist activity.

Table A19: Air quality index

Algarve Indicator	Air Quality Index
UNWTO Mandatory Area	Environmental Impact
ETIS section	D. Environmental Impact
ETIS criterion	This is Algarve specific
ETIS indicator	Air Quality Index
Description	The Air Quality Index (IQar) for a given area results from the arithmetic average calculated for each of the pollutants measured at all network stations in that area. The values thus determined are compared with the concentration ranges associated with a colour scale and the pollutants with the highest concentration are responsible for the IQar.
Concepts	Arithmetic average calculated for each of the pollutants measured in all network stations of that area.
Approach	Data obtained from INE by OBSERVE
Geographic level and periodicity	Yearly data from 2014 to 2018
Data source(s)	INE- Retrieved from Air Quality Index. Aglomeração Sul corresponds to the locations Albufeira, Faro and Portimão.
Limitations/issues	The air quality has remained good in Algarve as well as the municipalities of Albufeira, Faro and Portimão.

Table A20: Percentage of companies and tourist establishments using voluntary certification of environmental sustainability or corporate social responsibility

Algarve Indicator	Percentage of companies and tourist establishments using voluntary certification of environmental sustainability or corporate social responsibility
UNWTO Mandatory Area	Governance

ETIS section	A. Destination Management
ETIS criterion	A.1 Sustainable Tourism Management in Tourism Enterprises
ETIS indicator	A.1.1 Percentage of tourism enterprises/establishments in the destination using a voluntary certification/labelling for environmental/quality/sustainability and/or Corporate Social Responsibility measures.
Description	This indicator analyses the percentage of tourism companies that had an independent verification of their sustainability practices.
Concepts	<p>The implementation and certification of quality management and environmental management systems in tourist establishments implies that it has developed a quality and environmental management policy, based on objectives and processes to achieve commitments related to quality and the environment.</p> <p>It also implies taking periodic actions to continually improve its performance, in addition to reflecting the level of involvement of establishments in environmental preservation.</p>
Approach	Direct data from Turismo de Portugal
Geographic level and periodicity	NUTSII (2011 – 2016)
Data source(s)	Turismo de Portugal
Limitations/issues	‘Accommodation Establishments’ defined by TdP imply Hotel establishments, which are classified as hotels, hostels, inns, motels and apartment hotels (apartment hotels); for statistical purposes, tourist villages and apartments are also included. - Others (Pensions, Furniture and Inns).

TableA21: Percentage of establishments providing training on sustainable practices

Algarve Indicator	Percentage of establishments providing training on sustainable practices
UNWTO Mandatory Area	Governance

ETIS section No Match as it is Algarve specific indicator

ETIS criterion

ETIS indicator

Description This indicator identifies the importance attached to training on environmental issues

Concepts Training for Employees in Good Environmental Practices - allows to assess the evolution of the percentage of hotel establishments, resorts and tourist apartments that provide training / information to their employees in matters of the environment.

Approach Direct data from Turismo de Portugal

Geographic level and periodicity NUTSII (2011 – 2017)

Data source(s) Turismo de Portugal