ALGARVE SUSTAINABLE TOURISM OBSERVATORY (AlgSTO)

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Foreword

These seem to be optimistic times when it comes to the tourism sector, a relatively widespread tendency, but with particular emphasis on Portugal and, specifically, the Algarve, this country's main tourist destination.

The year 2023 will go down in history due to the records set in the most diverse performance indicators, in which the tourism sector reaffirmed its importance in the Portuguese economy. However, beyond the foam of the days, several warning signs remain:

- several records were broken at national level, but the fact that the Algarve (despite continuing to be the main national tourist destination) was the only Portuguese tourist region that has not yet reached the values recorded in the pre-pandemic period (2019) is not insignificant.
- even though 2023 was a very good year and 2024 is promising, the sector has been signalling a problem that appears to be becoming chronic and is linked to the lack of human resources.
- apparently (and the indicators presented in this report demonstrate this) the Algarve still does not register animosity among its residents towards tourists, or towards tourist activity. Despite this positive indicator, the rising cost of housing and the cost of living could reverse this scenario;
- in 2023, the Algarve was already showing signs of a problem, the greatest impact of which, will be felt in 2024.

The value of projects such as the Algarve Sustainable Tourism Observatory (AlgSTO) lies precisely in the possibility of looking beyond the obvious, in the approach that does not stop at reading the results, but that explains the rationale underlying them.

In short, it is the expectation of regional stakeholders that AlgSTO, more than presenting a summary of the sector, will help us interpret reality and envision the future.

Executive Summary

The Algarve Sustainable Tourism Observatory (AlgSTO) was formed with the mission of monitoring and supervise the development of sustainable tourism in the Algarve, providing instruments for the region's politicians and decision-makers to make informed decisions in order to have a more sustainable and higher quality tourist region. Its integration in the International Network of Sustainable Tourism Observatories (INSTO) represents a critical step forward in evaluating the sustainability of the tourist activity in the region of Algarve.

Thus, one of AlgSTO main area of concern is to collect and process regional data to feed a list of specific indicators, constructed in three dimensions of sustainable tourism: economic, sociocultural and environmental. A thorough research was conducted in order to have a limited but essential group of indicators to reflect the real picture of the Algarve.

To supply the set of indicators chosen, surveys were conducted to residents, to have the perception of the inhabitants of the region regarding the positives and negative impacts of the tourism activity; tourists, to consider the perception of the experience during their stay; and to companies, to gather more information regarding environmental aspects and impacts of the tourism sector. Additionally, official Portuguese sources were considered as well, such as Turismo de Portugal, a public institution whose role is dedicated to promote Portugal as a tourist destination; and the National Statistics Institute (INE), the main producer of official statistics in Portugal.

During 2023, AlgSTO focused on continuing the tasks carried out in 2022, particularly the questionnaires to residents and tourists, as well as implementing surveys to companies in the region's tourism sector. This collection of information culminates in the design and implementation of the Decision Support System (DSS) - a platform dedicated to collecting, processing, storing and disseminating information on the development of sustainable tourism in the region.

Regarding local residents, questionnaires were applied in three seasons: High Season 2022, Low Season 2022/2023 and High Season 2023, representing a sample of 2628 individuals stratified by age, gender and municipality of residence. A longitudinal analysis reveals not only a consistency in terms of response throughout the seasons, but also a decrease of residents' perception regarding positive economic impacts from tourism and an increase in the perception of negative impacts. The same evolution can be observed when comparing the perceptions of positive environmental impacts and the negative environmental impacts as well as in the sociocultural dimension. Additionally, the differences between positive and negative impacts both economic and environmental are statistically significant which lead to the conclusion that there are stronger perceptions of the negative impacts, both economic and environmental, of the touristic activity among residents.

Regarding the questionnaire among tourists, 2586 valid responses were obtained throughout three seasons: High Season 2022, Low Season 2023 and High Season 2023. The stratification criterion of the surveyed tourists was the country of residence. The longitudinal analysis shows significant differences between the High Seasons and Low Season in specific items, such as motivation for the trip, duration of the stay, and activities done by tourists in the Algarve. Results showed in the High Season 2022 questionnaire are consistent with the following seasons in what concerns overall satisfaction with the region, assessed as high or very high; security concerns, violence and crime do not seem to be a primary concern to tourists; and intention to revisit the destination, largely by Portuguese tourists.

In what concerns the information collected from companies in the tourism sector, the survey applied during Summer/Fall 2023, with 65 valid responses from companies of the tourism sector in the Algarve. The items present in the questionnaire are intended to fill in the gaps in information regarding the environmental dimension of the list of sustainable tourism indicators developed in 2022. From all the respondents, most companies take actions to optimize water consumption, but a small percentage uses non-public water for watering green spaces; a great portion of companies monitor their water consumption periodically more than half on a monthly basis and all

companies show concerns about waste management in the future – important aspects to take into consideration when regarding environmental sustainability. Furthermore, the majority not only shows concerns regarding climate change adaptation actions, and have some kind of environmental certification.

Applications of sustainability indicators based on the national data sources are primarily concerned with the social and economic dimensions of tourism activity. It was possible to obtain some results that reveal the characteristics of recent tourism activity in the Region. In the previous report the values of the variables and indicators revealed the dramatic effect of the Covid-19 pandemic on regional tourist activities. However, most recent results show a great recovery in every indicator to values higher then pre-pandemic numbers.

For example, in the 2022 report it was stated the massive drop in the number of tourist overnight stays in the pandemic period and a recovery, not reaching pre-pandemic values, and in 2023 the values increased, surpassing 2019 numbers in the low season months.

A similar trend is registered in other indicators, such as the tourist intensity ratio, that even though it did not surpass the values presented before the COVID-19 outbreak, it shows a significant increase. The same behavior occurs in the regional share of Gross Value Added (GVA) in accommodation services, a drop in the pandemic period but a fast recovery, surpassing 2019 values. The same indicator for the food and beverage services present a less significant drop, due to the non-touristic component contained in this indicator.

Lastly, the seasonality rate helps recognize the seasonal pattern of tourist activity present in the region, aggravated during the pandemic period but reaching in 2023 the lowest value in 10 years.

All this information is gathered in the DSS, a self-sustainable platform that presents many functionalities, namely: collect - allows data to be imported via Excel files, by consuming INE APIs (updated automatically) and via questionnaires carried out directly on the platform; store - allows the information imported into the platform and

the answers to questionnaires carried out on it to be stored via databases; process - allows specific information to be selected from the database, as well as indicators to be created using data already in the database; disseminate - allows information to be presented via interactive dashboards containing tables, graphs, etc.., as well as exporting information in Excel file format.

Even though in the last report the information regarding some dimensions of sustainability was scarce, this AlgSTO's activity report is enriched with information from all dimensions, due to all the work done during 2023, giving the opportunity to have a more thorough analysis and interpretation of results.

1

Algarve profile

1. Algarve profile

1.1 Identity

The Algarve is the southernmost region of Portugal occupying an area of 4 997 km^2. 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 km^2.

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;
- around 200 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 coastal extent and 37% of its territory inserted in natural reserves, nature parks or protected landscape areas, suggestive open-air activities throughout the whole year, like walking trails (Via Algarviana, GR15, Rota Vicentina), bicycle riding (Ecovia/EuroVelo 1) or birdwatching;
- a diversified tourism offer based on abundant accommodation facilities, transportation services and entertainment events throughout the year (wide range of hotel offer, recognized quality of its services, 40 golf courses considered to be among the best in the world, marinas and sports and cultural facilities);

- welcoming population, speaking several languages and always ready to unveil its history and traditions, arts and crafts and folklore; its gastronomy based essentially on the Mediterranean Diet, 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. In 2023, the % of active population working in the different activity sectors was consistent with the importance of tourism and the whole services area of economy: 3.1% on primary sector, 13.3% on secondary sector and 77.9% on the tertiary sector.

The weight of the regional GVA in "wholesale and retail commerce; repair of vehicles and motorcycles; transportation and storage; restaurant and accommodation activities" sector was 39.5%, in 2022.

Also, in 2022, the regional contribution to the national GDP was 4.8%. In the same year, the Algarve represented 27.4% of total bednights in Portugal.

1.3 Main source markets

Considering the origin of external demand, while in 2019, the United Kingdom, Germany, Ireland, Netherlands and France represented 60.6% of the overall nights spent by non- resident tourists in the Algarve, in 2022, and after a year of hiatus, Ireland returned replacing Spain in this top five source markets.

Despite the sharp drop in tourist flows from several markets, a direct consequence of travel restrictions implemented during 2020 and 2021, in terms of strategy, this has not changed the Algarve tourism market rating, still divided into 20 incoming markets grouped into three different types: priority (mature and consolidated in the region, with enough weight or potential for growth, that justify priority of action); wager (markets that are not yet consolidated, 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 vison and the critical factors for the success of the region and for which a set of action plans and strategic projects are programmed:

Figure 1: Development Strategy.

Source: Algarve Tourism Board.

- Axis A – Competitivity – 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

2. Algsto, Tourist activity in Algarve

2.1 Tourism performance indicators in the Algarve

In the wake of the recent COVID-19 pandemic crisis, whose pernicious effects the tourism industry is still trying to assess in its entirety, clearly emphasized that both public and private sectors need to adopt more sustainable development strategies. This newly acquired awareness has generated several calls for further reset tourism on a more resilient framework that allows businesses to focus on a competitive performance but also being able to lay solid foundations for the correct management of resources, economy and visitor expectations.

Achieving ever-higher numbers of visitors, occupancy, demand and tourism revenues on a territory, must also contribute positively to its community's economic health and quality of life, in an environmentally conscious way, with agents throughout the spectrum integrating processes of open intersectoral debate, therefore ensuring resident's support of tourism and a beneficial relationship between them.

The efficient collection and management of performance indicators in tourism is of paramount importance, allowing for objectively measuring the translation of policies into results.

2.1.1 Guests

The number of guests is one of the most important KPIs in tourism industry.

In 2023, registered guests in the Algarve amounted to 5.13 million, which represented a 7.7% growth considering the same period of the previous year, as reported in Table 2 and Figure 2.

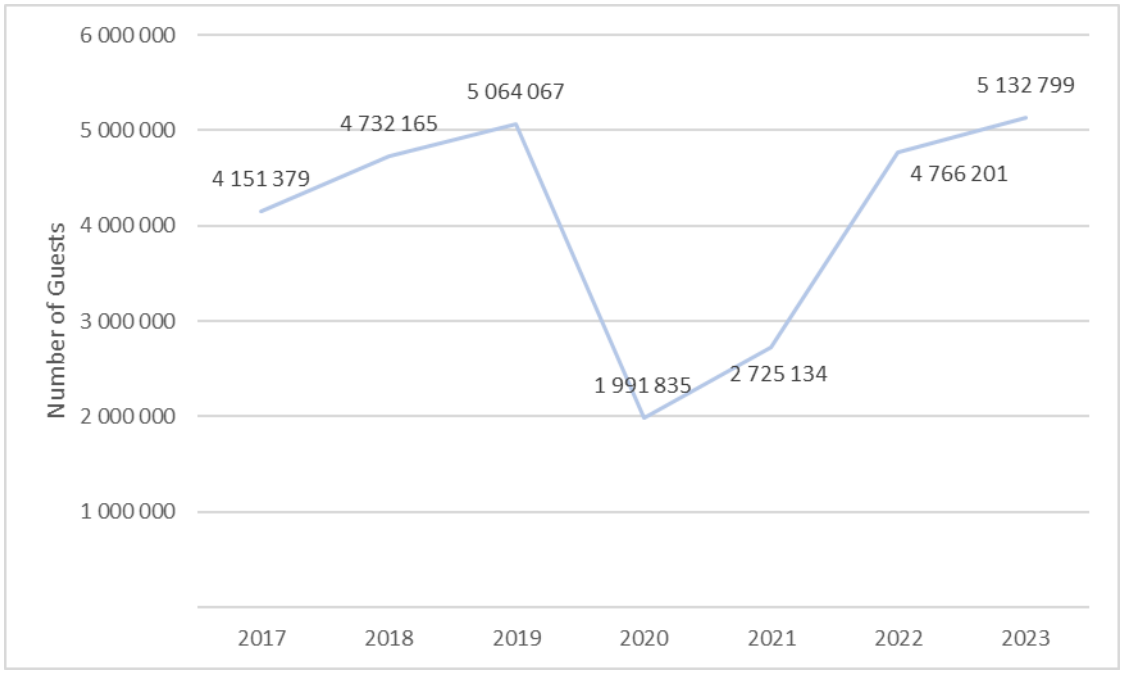
Table 2: Number of guests. Algarve, 2017-23.

Number of Guests	2017	2018	2019	2020	2021	2022	2023
Total	4 151 379	4 732 165	5 064 067	1 991 835	2 725 134	4 766 201	5 132 799
Variation (%)	5,6%	14,0%	7,0%	-60,7%	36,8%	74,9%	7,7%

Source: Tourism of Portugal

Numbers for 2023, also reflect a decreasing number of Portuguese guests (-3.66%), against the published figures from the previous year. This data suggests and punctuates, the already made assessment about the resilience and vitality of the national market, as tourist flows start to resume their relative dynamics within the region.

Figure 2: Evolution of Guests' number. Algarve, 2017-23.



Source: Tourism of Portugal

Data made available by Tourism of Portugal, in Table 3, also shows a major increase in the number of foreign guests by 12.8%.

The United Kingdom, our lead foreign market, reached a 11.3% increase in the number of guests, while demand from tourists originating from Germany and the Netherlands was 17.3% and 5.3% higher respectively.

Other important markets, such as Spain and France, experienced decreased numbers of -1.48% and -0.38%.

Table 3: Number of guests by nationality. Algarve, 2019-23.

Number of Guests	2019	2020	2021	2022	2023	Y. Var.%	Share
Portuguese	1 471 626	1 067 397	1 395 439	1 485 299	1 430 929	-3,66%	27,9%
Foreign	3 592 441	924 438	1 329 695	3 280 902	3 701 870	12,83%	72,1%
UK	1 181 824	204 004	316 373	1 071 780	1 193 204	11,33%	23,2%
Germany	361 662	127 824	140 128	313 717	367 876	17,26%	7,2%
Netherlands	201 151	85 378	100 807	193 152	204 214	5,73%	4,0%
France	293 734	104 648	161 564	280 484	276 325	-1,48%	5,4%
Spain	407 356	180 982	208 629	339 620	338 339	-0,38%	6,6%

Source: Tourism of Portugal

2.1.2 Bednights

The number of bednights registered during 2023 was 20.4 million, 6.4% more than the figures yielded by 2022. The evolution of this indicator is evidenced below, in Table 4 and Figure 3.

Table 4: Number of bednights. Algarve, 2017-23.

Number of Bednights	2017	2018	2019	2020	2021	2022	2023
Total	20 207 151	20 443 247	20 900 495	7 890 711	10 874 036	19 162 790	20 384 184
Variation (%)	6,3%	1,2%	2,2%	-62,2%	37,8%	76,2%	6,4%

Source: Tourism of Portugal

The numbers above show a clear and consistent increase in demand throughout the 2017-19 period, peaking at 2019 (20,9 million bed nights).

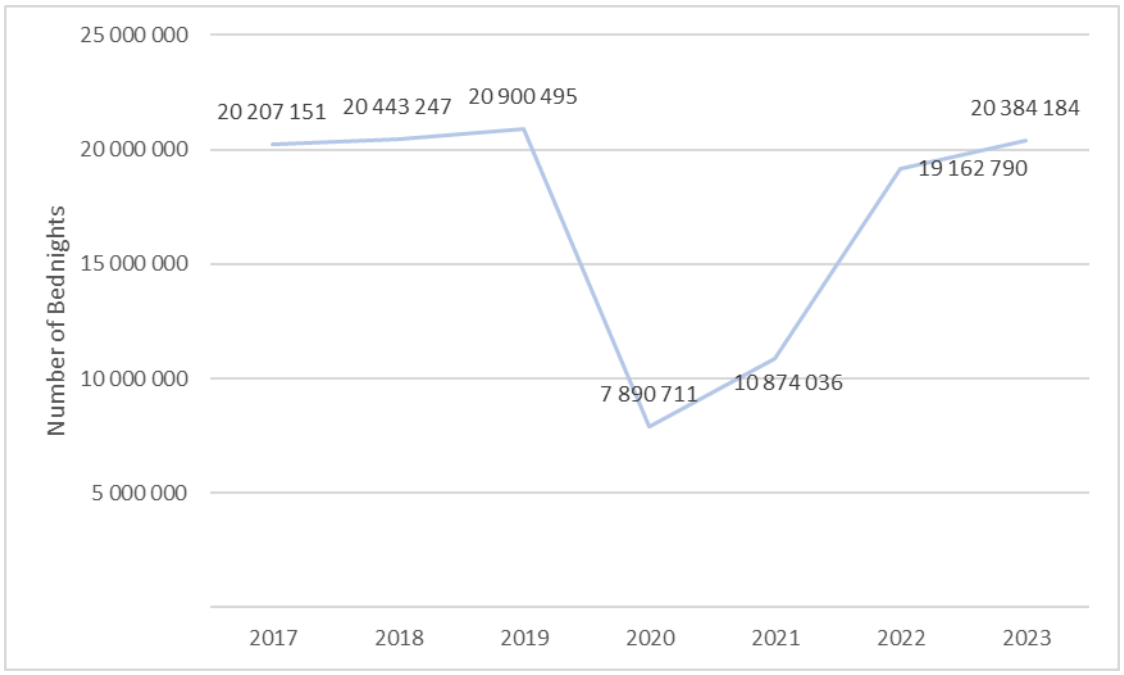
The following year, demand for the Algarve, as well as all around the globe, suffered a heavy toll from the effects of the COVID-19 pandemic, with numbers taking a major downturn. The number of bednights registered the series' lower figure at 7.89 million (2020).

As soon as travel restrictions began to being lifted, during 2021, tourist flows resumed, but the economic context and confidence levels of families were not favourable, not matching the pre-COVID levels.

Official estimates pointed for a full recovery in 2023, as numbers of guests in 2022, were 76.2% higher than in 2021 (19.2 million), but still short of prior COVID-19 levels.

However, 2023 ended with the region managing to achieve 97.5% of 2019, a performance aligned to European flows, which recovered an encouraging 94% of pre-pandemic levels.

Figure 3: Evolution of bednights' number. Algarve, 2017-23.



Source: Tourism of Portugal

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

Bednights from residents summed 4.7 million, 6.9% less than in the same period of the previous year. The Portuguese domestic market was not the only one of the major demand markets to underperform. Also, Spain (-3,7%) claimed less bednights than in the previous year.

The UK (28.5%) and Portugal (22.9%) had the major slice of demand in the Algarve, representing 10.5 million of aggregated bednights.

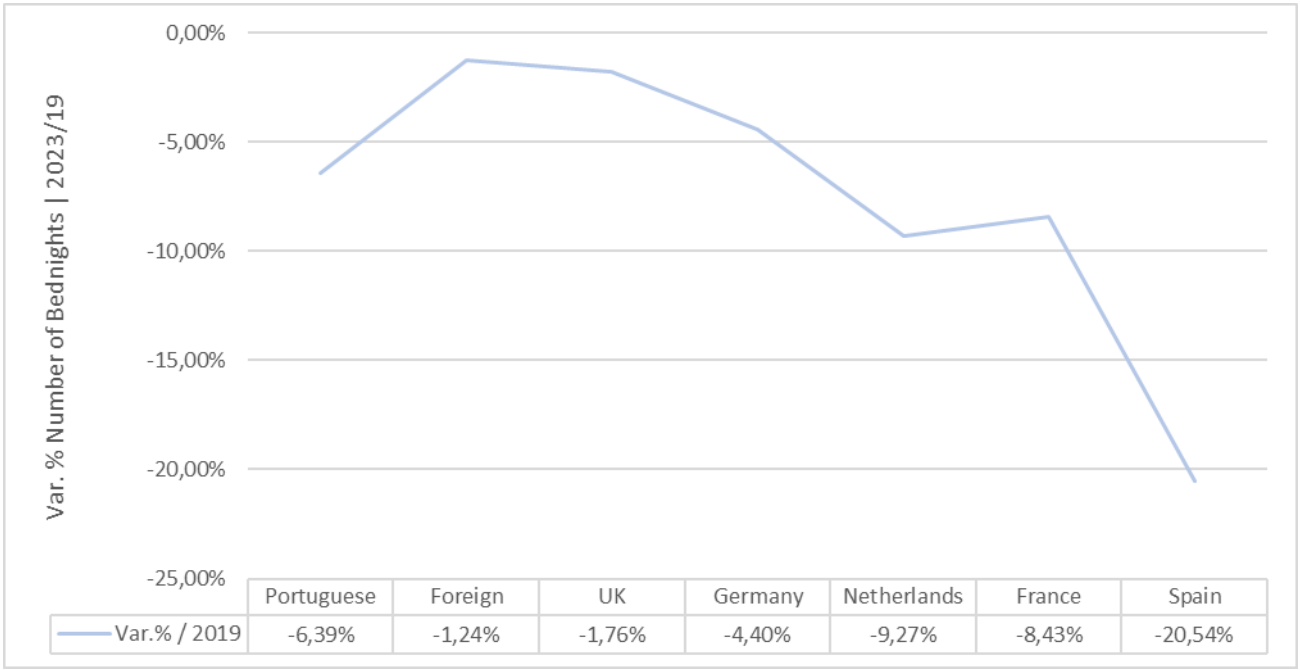
Table 5: Bednights per tourists' country of residence. Algarve, 2019-23.

Number of Bednights	2019	2020	2021	2022	2023	Y. Var.%	Share
Portuguese	4 985 984	3 813 998	5 227 754	5 011 930	4 667 247	-6,88%	22,9%
Foreign	15 914 511	4 076 713	5 646 282	14 150 860	15 716 937	11,07%	77,1%
UK	5 916 074	1 018 490	1 562 425	5 260 986	5 811 989	10,47%	28,5%
Germany	1 870 377	674 184	695 257	1 559 300	1 788 049	14,67%	8,8%
Netherlands	1 219 837	532 593	522 152	1 062 639	1 106 726	4,15%	5,4%
France	1 178 976	414 722	632 612	1 054 224	1 079 647	2,41%	5,3%
Spain	1 131 271	467 594	587 448	933 597	898 951	-3,71%	4,4%

Source: Tourism of Portugal

Between 2019 and 2023, none of the major regional incoming markets had a positive variation of bednights. This translates into an amount of 5,2 thousand less bednights in 2023, than the figure achieved in 2019.

Figure 4: Variation in number of bed nights. Algarve, 2019-23.



Source: Tourism of Portugal

2.1.3 Profit

Both total and accommodation profit, reflect observation of guests and bednights numbers. In 2023, the amount of total profit was 1.591,7 million EUR, an increased

percentage of 12%, on performance numbers in 2022. The results of these indicators are reported in Table 6 and Figure 5.

Table 6: Total and accommodation profit. Algarve, 2017-23.

Algarve	2017	2018	2019	2020	2021	2022	2023
Total Profit	1078,2	1144,5	1225,8	461,6	753,2	1421,5	1591,7
Variation (%)	14,6%	6,1%	7,1%	-62,3%	51,3%	88,7%	12,0%
Accommodation Profit	806,3	852,0	909,6	346,5	572,0	1045,7	1174,5
Variation (%)	15,8%	5,7%	6,8%	-61,9%	54,7%	82,8%	12,3%

Source: Tourism of Portugal

Considering the same series, the accommodation profit, which amounted to 82.8% growth in 2022, has trended positively, registering a renewed growth of 12.3% (1174.5 million) in 2023.

Figure 5: Evolution of total versus accommodation profit. Algarve, 2017-23.

Source: Tourism of Portugal

From 2017 to 2019, there was a noticeable increase in total profits, varying from 1078.2 million EUR, at the start of the series, to 1.225,7 million EUR, in 2019.

In 2020 and 2021, the behaviour of the profits' curve was no exception to the other KPI's low performance. The COVID-19 pandemic had a severe effect on tourist flows coming to the Algarve, resulting in a 62,3% drop in results (461.6 million EUR) in 2020. In spite of the recovery in the ensuing year, the achieved 753.2 million EUR fell almost halfway short of 2019. However, confirming the tourism authorities estimates for 2022 and 2023, the tourist flows have resumed their levels prior to the COVID-19 outbreak, trending in growth and registering a series peak (2023) at 1.591,7 million EUR.

As expected, results for profits of accommodation follow a similar pattern as total profits, with an annual increase between 15.8%, in 2017, and 6.8%, in 2019. In 2020, COVID-19 impacted on the activity outcome, reflected by a 61.9% drop (346.5 million EUR). Nevertheless, the referred estimations proved to be accurate and 2021 yielded 54.7% more accommodation profits than the year before (572 million EUR).

Then again in 2022, results yielding a 1.045,7 million EUR series best, providing excellent indicators towards recovery of the tourism demand worldwide. Again, in 2023, a new series best result, with accommodation figures reaching the 1.174,5 million EUR mark.

2.1.4 Gago Coutinho International Airport - Passengers

The number of arrivals at the regional international airport is an important indicator for tourism performance.

The capacity of attracting air transport and access to international markets is a key asset for regional and national economies, playing an important role in trade, in tourism development and thus in regional development.

The number of incoming passengers at Gago Coutinho is reflected in Table 7 and Figure 6.

About 9.64 million passengers arrived at Faro between January and December of 2022, which represents an increase of 16.3% when compared with the same period of the previous year.

Table 7: Number of incoming passengers at Gago Coutinho Airport. 2017-23.

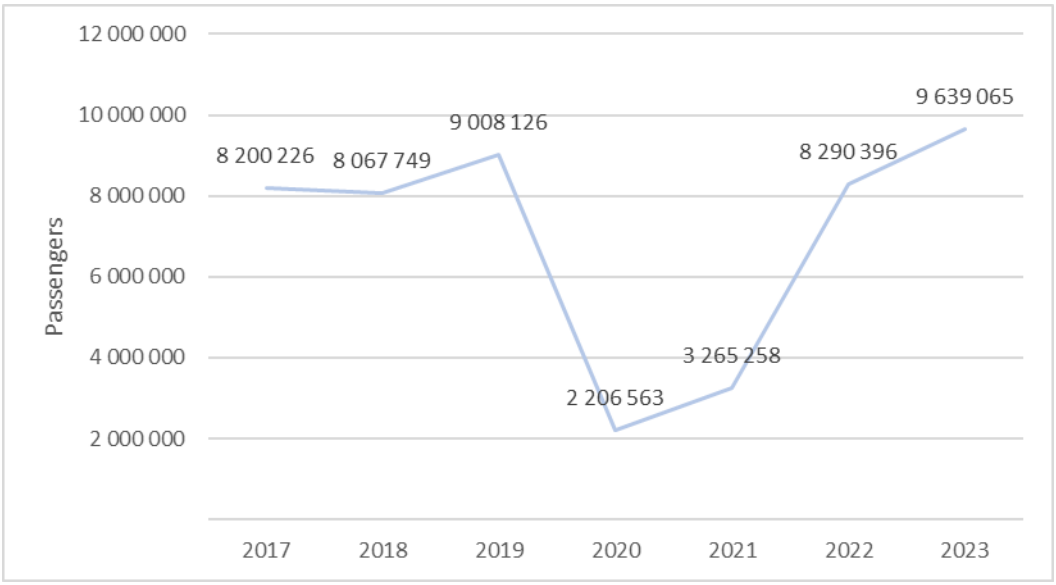
	2017	2018	2019	2020	2021	2022	2023
Total	8 200 226	8 067 749	9 008 126	2 206 563	3 265 258	8 290 396	9 639 065
Variation (%)	15,4%	-1,6%	11,7%	-75,5%	48,0%	153,9%	16,3%

Source: ANA Aeroportos

Prior to 2019, there was a solid increase in the number of processed passengers at Gago Coutinho. The series between 2016 and 2019 peaked, precisely, at 2019 (9.01 million passengers). In 2020, the pandemic was very taxing on tourism, with numbers dropping to the series lowest (2,21 million passengers), with a step towards recovery – in spite of many travel restrictions being still enforced – in 2021 (3.27 million passengers).

As expected in many official estimates, 2022 translated in a more than adequate response from markets worldwide. The final numbers yielded 8.29 million passengers in 2022, confirming the expected resuming of tourist activity, for as early as 2023. Last year, saw numbers of arrivals achieving an all-time peak, at 9.64 million passengers coming to Algarve through Gago Coutinho.

Figure 6: Evolution of total incoming passengers at Gago Coutinho airport. 2017-23.



Source: ANA Aeroportos

The breakdown of incoming passengers at Gago Coutinho confirms the United Kingdom as the main regional market (4.39 million passengers), toping a group with Germany (1.03 million), Ireland (0.89 million), France (0.82 million) and the Netherlands (0.66 million) representing a share of 80.8%, translated into 7.79 million passengers.

The Portuguese citizens represent 5,7% of the total incoming passengers at Faro Gago Coutinho, with an amount of 0.55 million passengers.

2.1.5 Revenue per available room (RevPAR)

According to data provided by Statistics Portugal, the regional RevPAR numbers have been inconsistent since 2015. The 2017-2023 series is no exception to this performance, nevertheless including the period of pandemic induced travel restrictions. This indicator had a low peak in 2020 (29.28 EUR). The final numbers on RevPAR, for 2023, place the total annual RevPAR at 70.48 EUR, which confirms the recovery scenario for tourism activity, surpassing 2019's final value.

Table 8: Evolution of the revenue per available room. Algarve, 2017-2023.

RevPAR	2017	2018	2019	2020	2021	2022	2023
NUTS II - Algarve	51,97	52,98	54,60	29,28	43,94	64,09	70,48

Source: Tourism of Portugal

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 2017 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 2022, with health improvement measures, traveller confidence slowly gained momentum, allowing a better performance level, and although official estimates

pointed to full recovery by the end of 2023, that year closed with a 64.09 mark. Nevertheless, numbers achieved in 2023 represented the series maximum, with the RevPAR slightly above 70 EUR (70,48).

2.1.6 Average length of stay

The regional average length of stay (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 months where the performance was above 4.0.

In 2023, the ALS curve emulated results from the previous year. The summer months punctuated the period when tourists spent more nights in Algarve's accommodation units, December being the year's lowest month (3.27 nights).

Table 9: Average length of stay. Algarve, 2017-2023.

AL Stay NUTS II - Algarve	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AGG
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	4,5
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	4,3
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	4,1
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	4,0
2021	3,85	4,43	3,75	3,17	3,05	3,77	4,09	4,45	4,05	3,98	3,75	3,57	4,0
2022	3,82	3,72	3,93	3,72	3,76	3,94	4,29	4,53	4,02	3,99	3,82	3,42	4,0
2023	3,70	3,97	3,66	3,63	3,83	3,97	4,23	4,42	4,02	4,04	3,74	3,27	4,0

Source: INE / Tourism of Portugal

The monthly based analysis data reported in Table 9, 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.

2.1.7 Room and bed occupancy rate

As shown on Table 10, Room Occupancy Rate (ROR) in the region was constant between 2018 (54,6%) and 2019 (54.3%). However, in 2020 there was an unexpected decrease of 50,8% comparing with 2019, due to COVID-19 related impact on the travel industry, performing at 32.4% of room occupancy rate.

Since 2021, the occupancy indicator has recovered the growing tendency, reaching 58.4%, in 2023.

Table 10: Room occupancy rate. Algarve, 2019-2023.

Room Occupancy Rate NUTS II - Algarve	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AGG
2019	28,20	37,28	41,88	55,24	58,70	68,72	75,46	82,20	75,58	61,32	35,84	30,66	57,20
2020	28,55	39,86	23,19	6,81	8,79	17,51	33,78	61,05	48,31	27,18	12,85	12,53	32,40
2021	9,22	7,86	9,21	11,83	23,92	41,50	43,46	72,12	57,68	50,53	32,68	20,54	38,90
2022	19,42	32,99	36,96	54,05	58,25	67,64	75,90	81,36	70,47	60,63	35,20	29,21	55,40
2023	31,05	42,49	45,19	58,72	61,80	67,45	74,20	81,07	72,62	64,21	37,44	30,63	58,40

Source: INE / Tourism of Portugal

The regional Bed Occupancy Rate (BOR) had also been constant between both in 2018 and also in 2019. However, in 2020 there was an expected decrease comparing with 2019, due to COVID-19 related impact on the travel industry, performing at 26.9% of bed occupancy rate. Again, there was an expected growth of numbers of Occupancy in 2021 (50.1%). As with several other KPI for tourism performance, in 2023, the bed occupancy rate trended in similar figures of 2019, with a final 49.2%.

Table 10: Bed occupancy rate. Algarve, 2019-2023.

Bed Occupancy Rate NUTS II - Algarve	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AGG
2019	21,59	28,93	32,67	48,36	50,42	61,73	71,92	80,20	64,03	50,14	27,26	23,76	50,10
2020	21,73	31,30	17,64	5,02	6,50	14,87	29,64	55,76	39,70	20,75	9,00	9,36	26,90
2021	6,74	5,50	6,42	8,57	19,78	35,49	40,28	69,27	49,27	42,04	24,64	15,67	34,00
2022	14,69	25,58	28,39	46,18	48,26	58,17	69,96	76,77	59,32	48,41	26,52	22,35	47,40
2023	22,92	31,70	33,91	50,46	50,51	57,82	67,65	75,07	59,93	51,74	27,86	23,96	49,20

Source: INE / Tourism of Portugal

The analysis of this indicator on a monthly basis, in Table 11, shows that almost every month of 2023 is performing over its counterparts in 2022, however still behind numbers achieved prior to 2019.

2.1.8 Unemployment per Activity

The unemployment within the tourism activity is shown in Table 12, for the last 3 years. 2021 was particularly taxing on economy, on businesses and, therefore, on family income, a reflexion of the unemployment numbers.

Table 12: Unemployment in Accommodation, Food Services and Similar. Algarve, 2021-2023.

Unemployment per Activity Accommodation, Food Services and Similar, new job NUTS II - Algarve	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Average
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	9 808
2022	11 078	9 564	6 601	4 532	3 215	2 349	1 873	1 765	2 114	2 972	7 883	10 176	5 344
2023	10 432	3 880	2 445	1 495	1 095	808	683	691	812	1 412	3 879	4 969	2 717
Δ 2021 / 2023	-32%	-74%	-84%	-90%	-90%	-88%	-88%	-86%	-83%	-75%	-57%	-53%	-72%

Source: IEFP

However, the final month of 2021 and the every single one in 2022 were hard indicators of numbers below the first year of COVID-19, results that are coherent with the rest of the KPI in analysis.

The analysis of 2023 indicates an average of 2717 unemployed active population in the tourism sector, a 72% less than in 2021.

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 2021, the project "Observation and monitoring of the tourist destination Algarve: Contributions to its sustainable development" (MONITUR) was implemented with the goal of consolidating the activity of the Observatory, as well as the creation of an information system centred in monitoring sustainability to offer stakeholders relevant information to support the decision process. Alike the Observatory's objectives, the aims of the project fall in the design of a model to evaluate and monitor tourist activity in the Algarve region, along with the development of an online information system that encourages the transmission of knowledge. This allows stakeholders to access relevant, detailed and updated information, essential to the decision-making process.

The project involves three distinct and complementary activities: the first activity consists on 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. The second activity of the project comprises data collection instances to feed the indicators, including both primary (through surveys to tourists, residents and industry) and secondary information. The third activity involves the implementation of an online decision support system through which the information is made available to the agents, ensuring the transfer of knowledge.

This whole process is dynamic in order to meet the needs of information voiced by tourism stakeholders, which proves the importance of close collaboration between regional stakeholders and the Observatory.

After the initial proposal of indicators, as mentioned in the previous report, a model was chosen with a set of indicators based on their relevance, clarity, feasibility, complementarity, comprehensiveness, credibility, and comparability, and others. The

selection of indicators took into consideration the World Tourism Organization's guidelines, complemented by the guidelines of the European Tourism Indicators System for Sustainable Destination Management, as well as the good practices of the various observatories belonging to the World Tourism Organization's International Network of Sustainable Tourism Observatories.

3.2 Sustainability Indicators

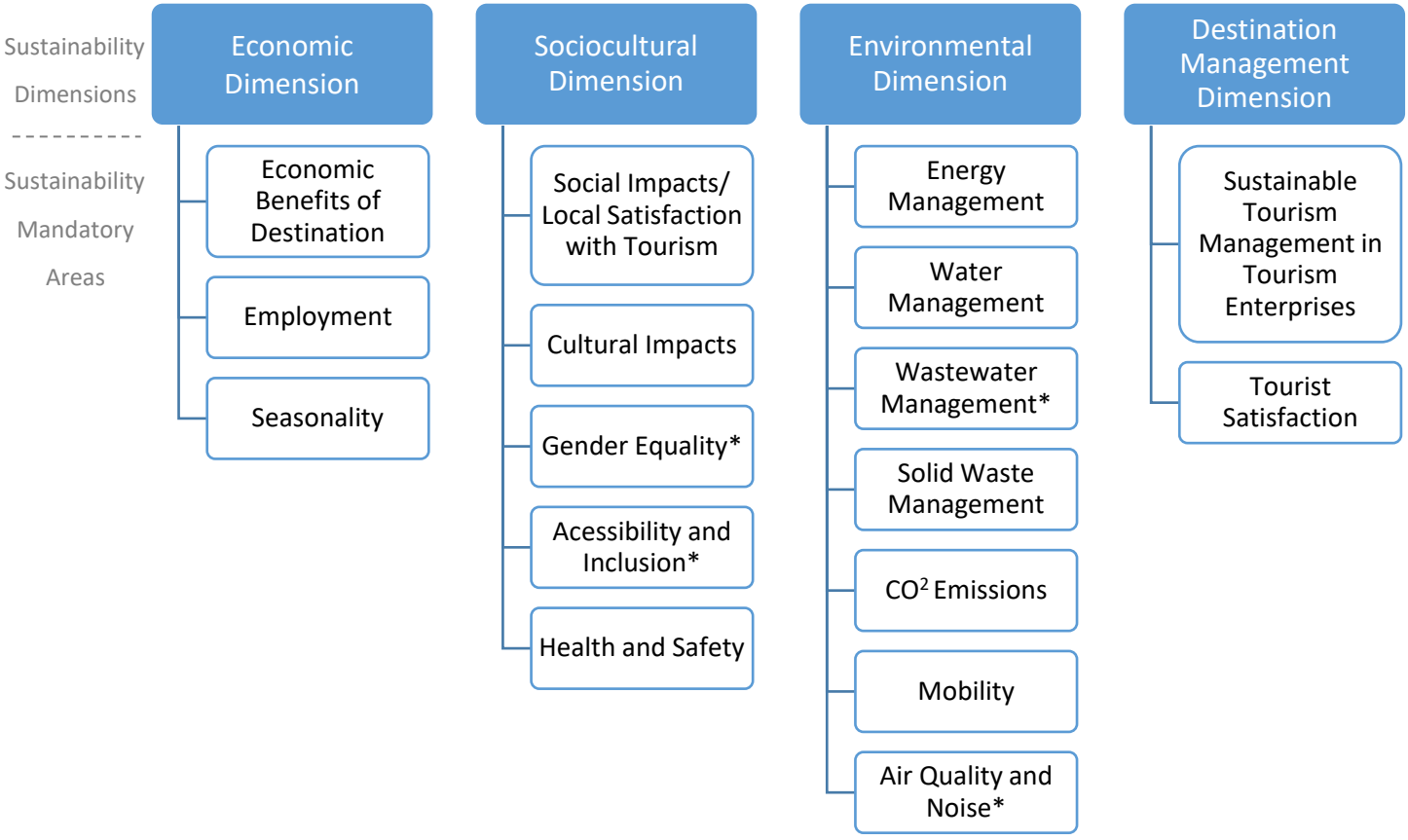
This report considers information based on indicators referenced in the European Tourism Indicators System for Sustainable Destination Management (ETIS)[1] regarding the eleven mandatory sustainability areas of tourism which constitute the AlgSTO's commitment assumed before the UNWTO-INSTO. The areas are: (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) CO_2 emissions.

As mentioned in the previous report, the AlgSTO focused on four dimensions of sustainability (Figure 7): sociocultural (due to the impacts of tourism on people and their well-being), economic (given the impacts on economic growth), environmental (attending to tourism impacts on natural resources) and destination management (which encompasses sustainable tourism management and tourists' satisfaction). Furthermore, the present report includes data on residents and tourists' perceptions of sustainable tourism in the destination, as well as companies' information regarding environmental indicators, such as water and energy consumption and environmental certification.

[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).

Not all the indicators have been implemented and calculated but further efforts will be developed in the upcoming years to provide detailed information for those indicators and others suggested by the stakeholders.

Figure 7: Thematic areas and dimensions of tourism sustainability.



Efforts have been developed to gather information for each indicator at the regional and the municipality levels. Yet, for some indicators, it was not possible to get data at the municipality level. Additionally, as the data of some indicators has not been updated in 2022, those indicators were not included in the current report and are marked with an asterisk (*).

Tables 12-15 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 2023.

Further technical information for all indicators is provided in Annex A.

Table 13: Social sustainability: areas and indicators.

Dimension	No. of Indicator	Description of Indicator	Information of Data Availability
Sociocultural Dimension	**Social Impacts/Local satisfaction with tourism**		
	I_1	Tourist intensity	Algarve: Monthly (Jan 2020-Dec 2023), Annual (2015-2022) Municipalities: Annual (2015-2022)
	I_2	Percentage of residents satisfied with tourism	Algarve and Municipalities: High Season 2022, Low Season 2022/2023, High Season 2023
	I_3	Lodging capacity in tourist accommodation establishments, per 1000 inhabitants	Algarve: Annual (2018-2022) Municipalities: (2018-2022)
	I_4	Tourist density	Algarve: Annual (2018-2022)
	I_5	Number of second homes per 100 households	Data not available
	I_6	Value of rents for residential apartments located in areas of strong tourist pressure	Data not available
	Cultural Impacts		
	I_7	Percentage of residents that are satisfied with the impacts of tourism on the destination's identity	Algarve and Municipalities: High Season 2022, Low Season 2022/2023, High Season 2023
	I_8	Percentage of the destination's events that are focused on traditional/local culture and heritage	Data not available
	Gender Equality		
	I_9	Percentage of men and women employed in the tourism sector	Data not available
	Accessibility and Inclusion		
	I_{10}	Percentage of tourist accommodation establishments that develop information actions on accessibility.	Data not available
	I_{11}	Percentage of public transport that is accessible to people with disabilities and specific access requirements	Data not available
	I_{12}	Percentage of tourist attractions that are accessible to people with disabilities and/or participating in recognized accessibility information schemes	Data not available

	I_{13}	Percentage of rooms in accommodation establishments accessible to people with disabilities	Data not available
	Health and Safety		
	I_{14}	Percentage of tourists who register a complaint with the police	Data not available
	I_{15}	Number of hospital beds, per 1000 inhabitants	Algarve: Annual (2014-2022)

Source: Own elaboration.

As can be seen in Table 13, the sociocultural dimension consists of five areas, two of which are presented in this report: "Local Satisfaction with Tourism" and "Cultural Impacts". The first area contains six indicators, and four of them are considered in this report, and the second includes two indicators, of which one was measured for the report. Information for the indicators "Percentage of Residents Satisfied with Tourism" and "Percentage of residents that are satisfied with the impacts of tourism on the destination's identity" was collected as primary data through the Residents' Perception questionnaire and it is included in this report in chapter 5.

The economic sustainability dimension accounts for three sustainability areas, specifically "Economic Benefits of the Destination", "Employment" and "Seasonality" (Table 14). To assess the "Economic Benefits of the Destination", four indicators are considered in this report out of a set of eleven, namely "Number of Nights in Tourist Accommodation Establishments, per Month", "Relative Contribution of Tourism in the Region to the Regional and National Economy", "Average Stay of Tourists" and "Productivity of Tourism Activity". Data for the remaining indicators was not available. Regarding the effects on "Employment", from a set of four indicators, one was considered in this report: "Direct Employment in Tourism as a Percentage of Total Employment in the Region". Data for all other indicators was not available. Lastly, considering the "Seasonality", one indicator ("Seasonality Rate") is present in the report, from the original four indicators. All the other remaining indicators did not have available data.

Table 14: Economic sustainability: areas and indicators.

Dimension	No. of Indicator	Description of Indicator	Information of Data Availability
Economic Dimension	**Economic Benefits of the Destination**		
	I_{16}	Number of nights in tourist accommodation establishments, per month	Algarve: Monthly (Jan 2015–Dec 2023); Municipalities: Annual (2016-2023)
	I_{17}	Number of same-day visitors	Data not available
	I_{18}	Relative contribution of tourism in the region to the regional and national economy	Algarve and Municipalities: Annual (2013 – 2022)
	I_{19}	Average stay of tourists	Algarve: Annual (2007-2022)
	I_{20}	Productivity of tourism activity	Algarve and Municipalities: Annual (2013 – 2022)
	I_{21}	Average daily expenditure per tourist	Algarve: High Season 2022, Low Season 2022/2023, High Season 2023
	I_{22}	Number of golf rounds	Data not available
	I_{23}	Sales from golf rounds	Data not available
	I_{24}	Sales from hotels and similar establishments	Data not available
	I_{25}	Market share of the main source markets	High Season 2022, Low Season 2022/2023, High Season 2023
	I_{26}	Diversity of the source markets	High Season 2022, Low Season 2022/2023, High Season 2023
	Employment		
	I_{27}	Direct employment in tourism as a percentage of total employment in the region	Algarve and Municipalities: Annual (2013 – 2022)
	I_{28}	Qualified employment as a percentage of direct employment in tourism in the region	Data not available
	I_{29}	Seasonal employment as a percentage of direct tourism employment in the region	Available data present in the 2020 report
	I_{30}	Average monthly salary of direct employment in tourism	Data not available
	Seasonality		
	I_{31}	Number of nights spent in the region by tourists, per month	Algarve: Monthly (Jan 2013–Dec 2023) Municipalities: Annual (2013-2022)
	I_{32}	Occupancy rate in tourist accommodation establishments per month	No Updated data; available in the 2021 report
	I_{33}	Seasonality rate	Algarve: Monthly (Jan 2014 – Dec 2023)
	I_{34}	Tourist arrivals by month (or quarter) and market	Data not available

	I_{35}	Average price per room sold, by month	Data not available

Source: Own elaboration.

The environmental sustainability dimension is composed of seven sustainability areas, specifically "Energy Management", "Water Management", "Wastewater Management", "Solid Waste Management", "CO_2 Emissions", "Mobility" And "Air Quality and Noise", as can be noted in Table 14. Of these, only two indicators from "Mobility" (of a set of three) possess updated data: "Movement of Passengers on Inland Waterways" and "Number of Passengers Boarded and Disembarked at the Faro Airport".

Table 15: Environmental sustainability: areas and indicators.

Dimension	No. of Indicator	Description of Indicator	Information of Data Availability
Environmental Dimension	**Energy Management**		
	I_{36}	Daily energy consumption of tourists vs. daily energy consumption of resident population	Data not available
	I_{37}	Establishments that optimise energy consumption	High Season 2023
	I_{38}	Percentage energy consumption produced by renewable sources vs. total energy consumption	High Season 2023
	I_{39}	Percentage of companies adopting energy efficiency measures	High Season 2023
	Water Management		
	I_{40}	Daily water consumption by tourists, relative to daily water consumption by the resident population	Data not available
	I_{41}	Establishments that optimise water consumption	High Season 2023
	I_{42}	Percentage of tourist companies using recycled water	Data not available
	I_{43}	Percentage of companies promoting efficient use of water in their operations	High Season 2023
	Wastewater Management		
	I_{44}	Percentage of sewage treated prior to discharge	No updated data; in the 2020 report
	I_{45}	Urban wastewater discharge compliance rate	Data not available

Environmental Dimension	I_{46}	Percentage of companies that develop efficient waste management actions	Data not available
	Solid Waste Management		
	I_{47}	Establishments that separate waste	High Season 2023
	I_{48}	Daily waste production by tourists, vs. daily waste production by resident population (Kg)	Data not available
	CO_2 Emissions		
	I_{49}	Percentage of tourists and tourists who use different means of transport to reach their destination	Data not available
	I_{50}	Percentage of tourists and tourists using public transport to reach their destination	Data not available
	I_{51}	Average distance (km) travelled by tourists and tourists between the place of residence and the tourist destination	Data not available
	I_{52}	Percentage of tourist companies involved in climate change mitigation activities - such as reducing CO2 emissions, low energy consumption systems, etc. - and "adaptation" responses and actions	Data not available
	Mobility		
	I_{53}	Movement of passengers on inland waterways	Quarterly (2007-2022)
	I_{54}	Number of passengers embarked and disembarked from cruise ships at the Port of Portimão	No updated data; in the 2020 report
	I_{55}	Number of passengers boarded and disembarked at Faro Airport	Quarterly (2007-2022)
	Air quality and noise		
	I_{56}	Air quality index	No updated data; in the 2020 report

Source: Own elaboration.

The final dimension, Destination Management (Table 15), consists of the "Sustainable Tourism Management in Tourism Enterprises" and the "Tourists' Satisfaction" areas. Originally, this dimension only had one are "Governance", which no longer exists. The former area 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", none of which have updated data and were, therefore, not considered in the current report. The information regarding the three indicators from "Tourists' Satisfaction" was collected as primary data through the Tourists' Perception questionnaire and it is included in this report in chapter 5.

Table 16: Destination Management: areas and indicators.

Dimension	No. of Indicator	Description of Indicator	Information of Data Availability
Destination Management Dimension	**Sustainable tourism management in tourism enterprises**		
	I_{57}	Percentage of companies and tourist establishments using voluntary certification of environmental sustainability or corporate social responsibility	High Season 2023
	I_{58}	Percentage of establishments providing training on sustainable practices	High Season 2023
	Tourists satisfaction		
	I_{59}	Percentage of tourists that are satisfied with their overall experience in the destination	High Season 2022, Low Season 2022/2023, High Season 2023
	I_{60}	Indicators intended to measure tourists' experience such as memories of the experience, global perceived quality of the experience, intention to recommend the tourism destination	High Season 2022, Low Season 2022/2023, High Season 2023
	I_{61}	Percentage of repeat/return visitors (within 5 years)	High Season 2022, Low Season 2022/2023, High Season 2023

Source: Own elaboration.

In summary, at this stage, several indicators are still not available, but progress has been made, especially regarding the data on residents and tourists' perceptions. 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 with tourism development, there are sociocultural, 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, information on the sustainability indicators for these four sustainability dimensions is presented to assess and diagnose the sustainability of the tourist activity in the Algarve.

4.1 Sociocultural sustainability

The sociocultural 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 the Algarve, undoubtedly generates, directly or indirectly, effects on resident individuals, whether these are employees, employers or residents. These impacts, in turn, affect tourist activity. Therefore, measuring the impacts on local residents' satisfaction is of crucial importance to guarantee the 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 analysed in chapter 5.

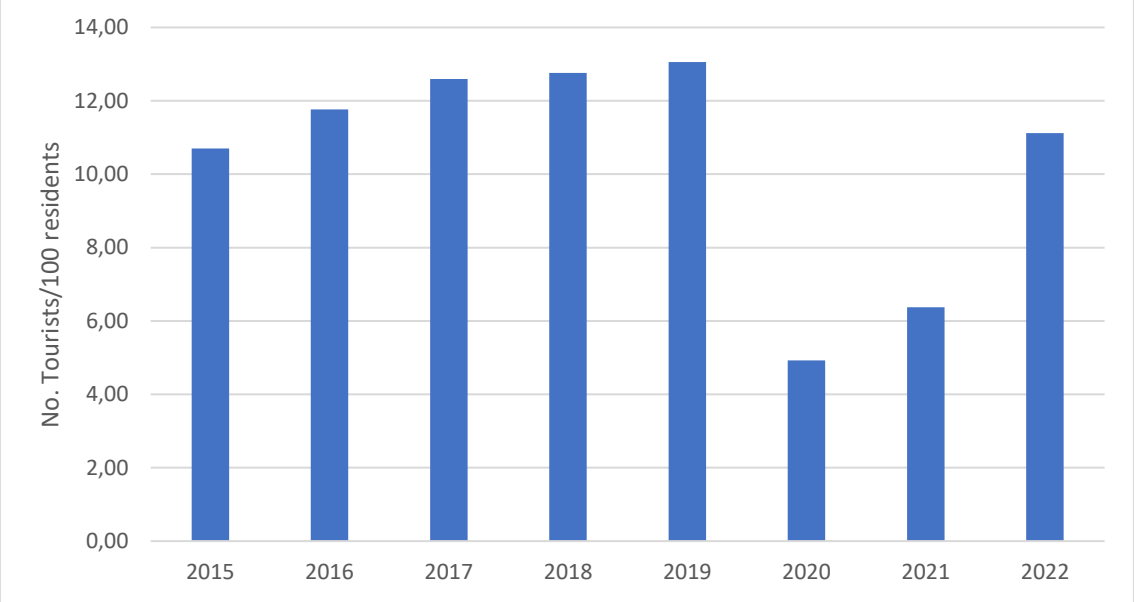
4.1.1.1 Tourist Intensity

Tourist Intensity (TI) aims to quantify the relationship between the number of nights in tourist accommodation establishments and the resident population 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 2015-2022 (Figure 8), as well as on a monthly basis, for the entire region, over the period 2020-2023.[2]

As shown in previous reports, the indicator showed an increasing trend until 2019 and a significant drop due to the COVID-19 pandemic in 2020 and its effects in 2021. In 2022 it was registered a great increase compared with the previous year, reaching values higher than 2015.

Figure 8: Tourist Intensity. Algarve, 2015-2022.



Source: Statistics Portugal (INE); Own calculation.

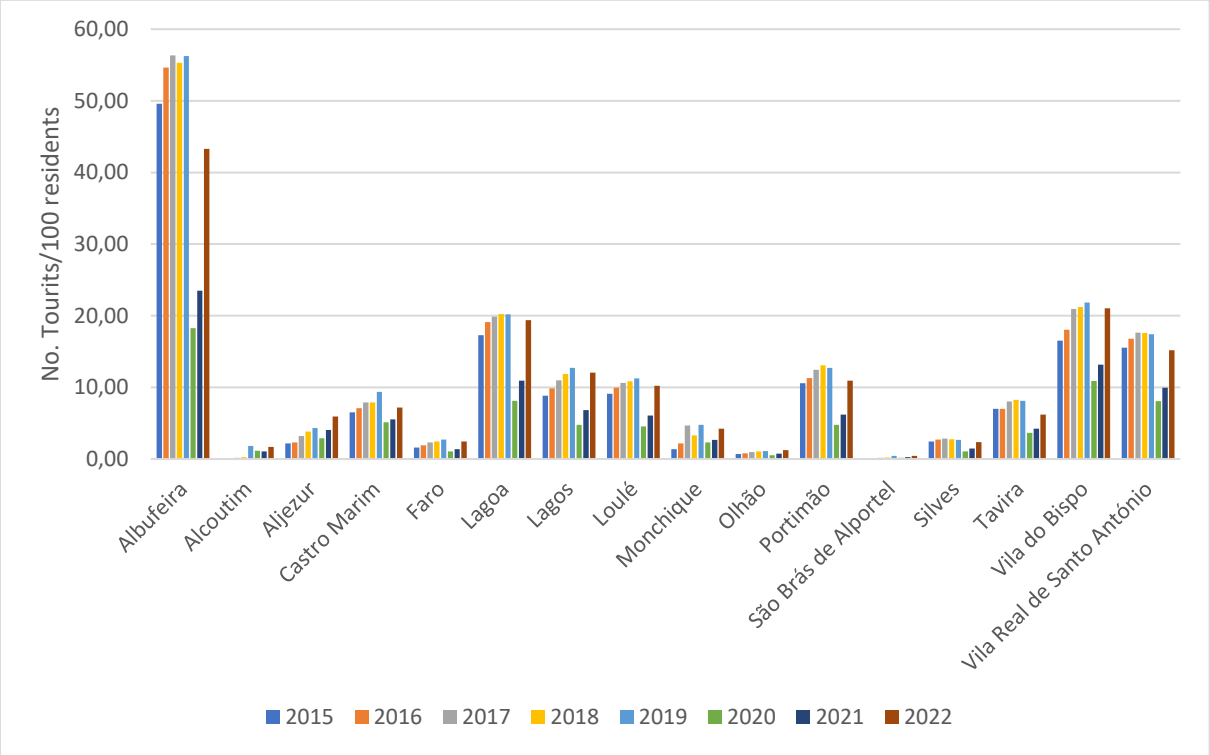
When observing tourist intensity by geographic location (Figure 9), it is clear that its value is very diverse. For instance, Albufeira stood out by far as the municipality with the highest-pressure level of tourism activity, followed at great distance by Lagoa and Vila do Bispo, both considered as coastal areas. On the other hand, municipalities located on the countryside such as Alcoutim or São Brás de Alportel showed a modest value for this indicator. In previous reports, it was noted the significant decrease in 2020 and a minor recovery in 2021, however in 2022 the indicator nearly doubled its value in

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

some municipalities, such as Albufeira, Lagoa, Lagos, Loulé, Portimão, Vila do Bispo and Vila Real de Santo António.

Nevertheless, the indicator does not reach the pre-pandemic values with the exception of Aljezur.

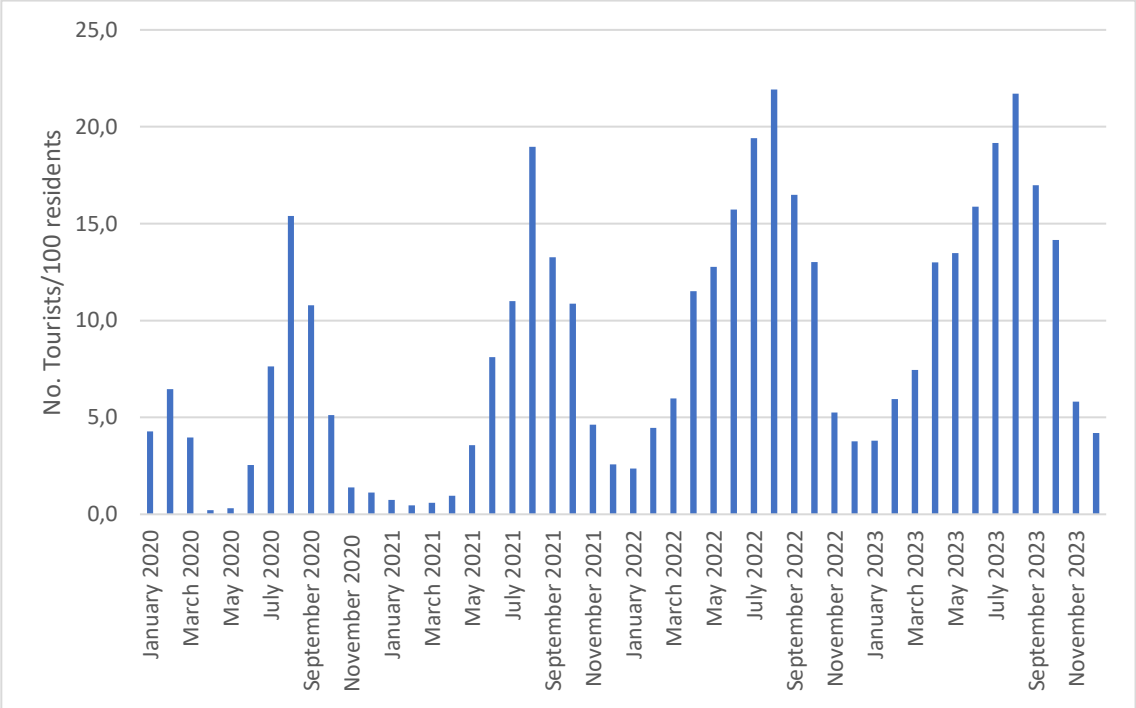
Figure 9: Tourist Intensity. Algarve municipalities, 2015-2022.



Source: Statistics Portugal (INE); Own calculation.

The same indicator, but calculated on a monthly basis, illustrated on Figure 10, highlights the peak seasonality effect occurred during the summer months (the peak season) over the period January 2020 to November 2023. August remains the month with the highest pressure, even during the pandemic time as well as the years onwards.

Figure 10: Tourist Intensity. Algarve, January 2020-December 2023.



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 2018-2022.[3]

The aggregate figures for the whole region cover regional disparities at the municipality level. As seen in previous reports, the municipalities with higher tourist intensity ratio,

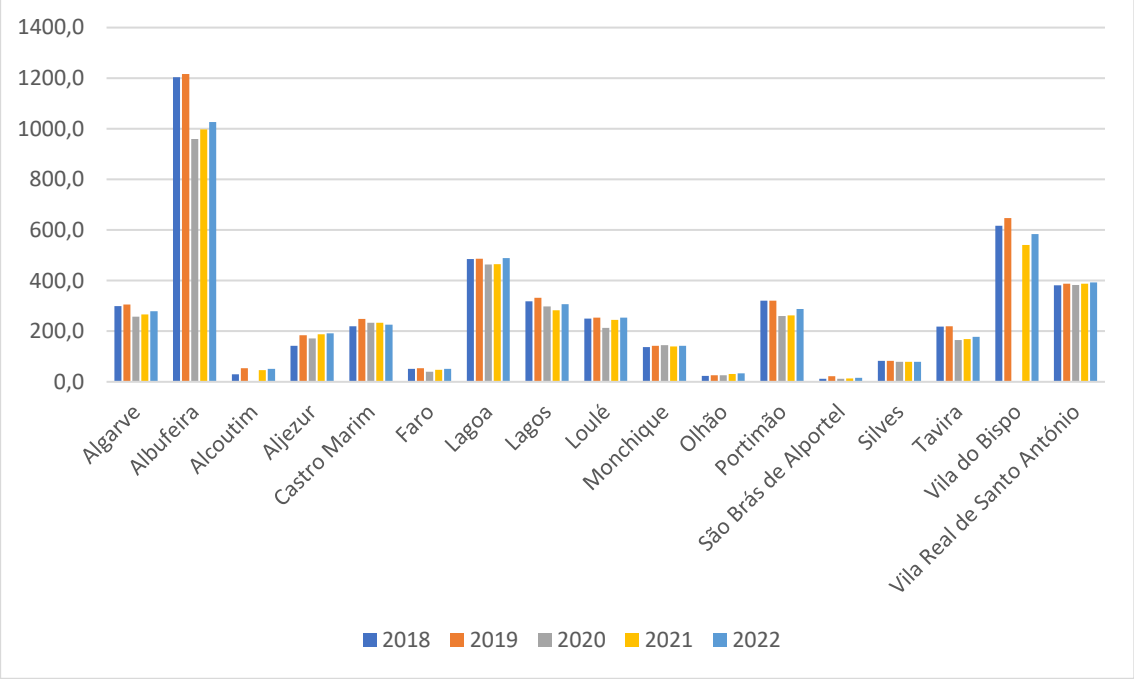
[3] The technical information on this indicator is provided in Annex A, Table A2.

such as Albufeira, Lagoa, Vila do Bispo and Vila Real de Santo António, tend to present higher lodging capacities.

Figure 11 shows an increasing trend in the Algarve. The number of beds *per* 1000 residents increased from 257.4 in 2020 to 279.5 in 2022 corresponding to a growth rate of 5.1%. Regardless of this increase, it did not reach the pre-pandemic values.

The annual lodging capacities *per* 1000 residents in 2022 of the municipalities with the highest values are 1026.6 for Albufeira, 583.4 for Vila do Bispo, 489 for Lagoa and 393 for Vila Real de Santo António all of them clearly above the regional average of 269.3 beds. These numbers represent increases of 2.90% in Albufeira, 7.83 in Vila do Bispo, 5.14% in Lagoa, and 1.39% in Vila Real de Santo António.

Figure 11: Lodging capacity in tourist accommodation establishments per 1000 inhabitants. Algarve and municipalities, 2018-2022.



Source: Statistics Portugal (INE); Own calculation.

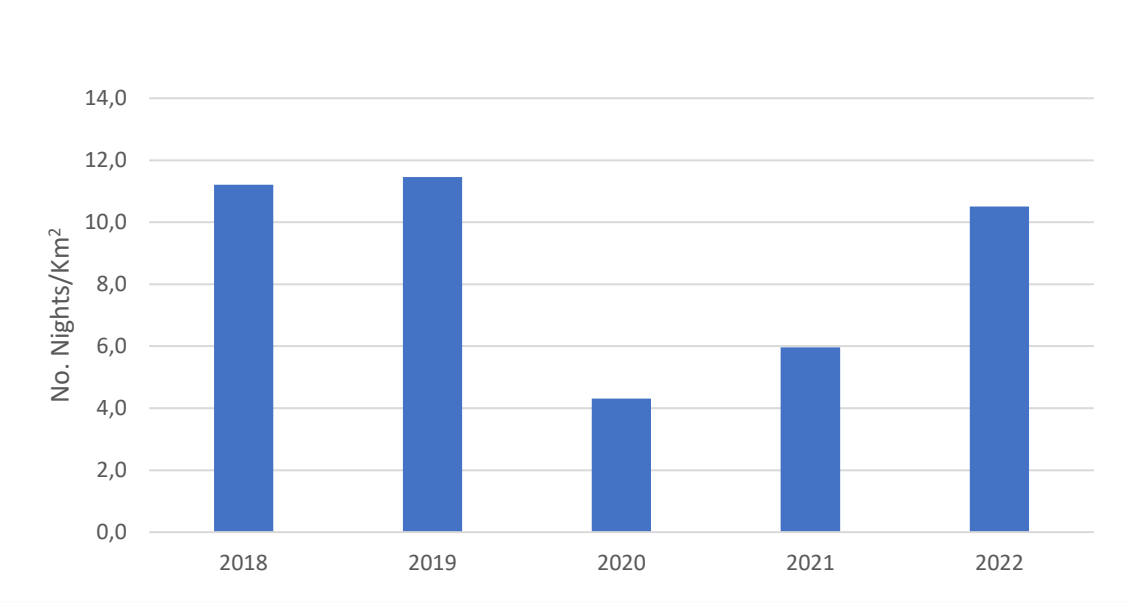
4.1.1.3 Tourist Density

Tourist Density (*TD*) releases information designed to characterize the sociocultural 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 and for each municipality over the period 2018-2022[4].

In the previous report, it was presented an upward trend until 2019 and a drop in 2020 due to the pandemic period. From 2021 to 2022, the number of nights per km^2 increased from 6 to 10.5 respectively, almost reaching the values from 2018 (11.2).

Figure 12: Tourist density, Algarve, 2018-2022.



Source: Statistics Portugal (INE); Own calculation.

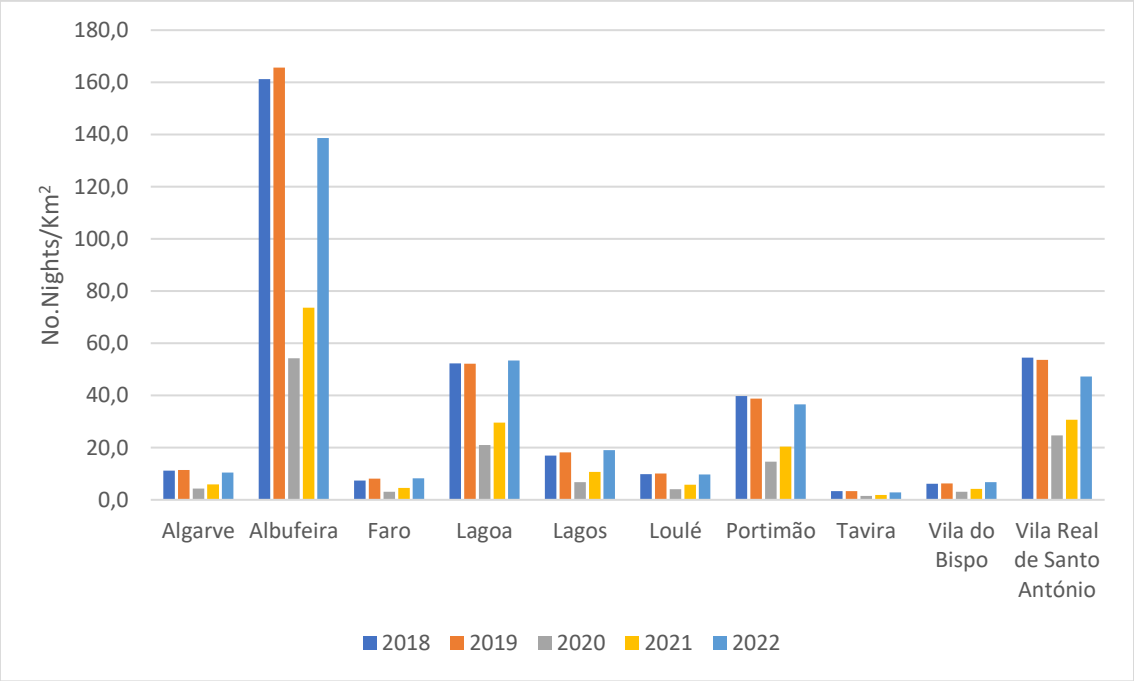
Once again, the aggregate analysis covers pronounced differences at municipality level, as illustrated in Figures 13 and 14. The municipalities close to the coastline, such as Albufeira, Lagoa, Portimão and Vila Real de Santo António, recorded the highest values

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

for the tourist density index, quite above the region average, which reveals a potentially high pressure on the territory and consequentially potential sociocultural impacts.

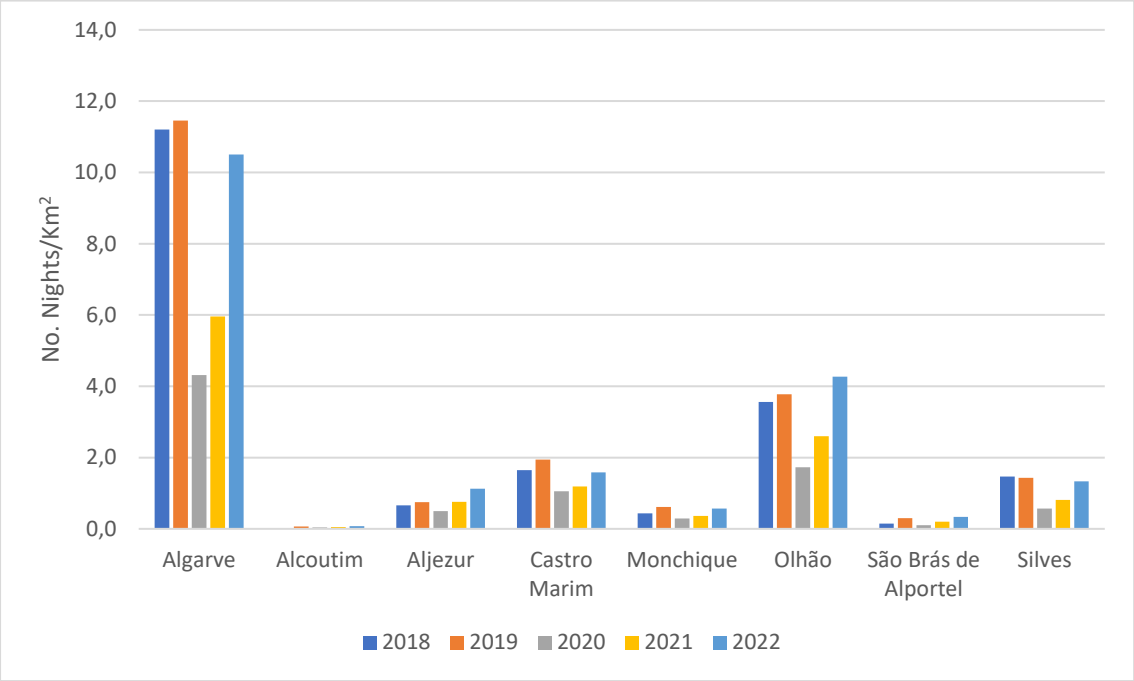
In the previous report it was noted an increase in the ratio after the fall in 2020, and the trend persists in 2022 such that some municipalities present values higher than in the pre-pandemic period – Faro, Lagoa, Lagos, Aljezur and Olhão. The municipalities of Albufeira, Lagoa, Vila Real de Santo António and Portimão presented the highest ratio.

Figure 13: Tourist density. Algarve and municipalities, 2018-2022.



Source: Tourism of Portugal; Own elaboration

Figure 14: Tourist density. Algarve and municipalities, 2018-2022 (continuation).



Source: Tourism of Portugal; Own elaboration

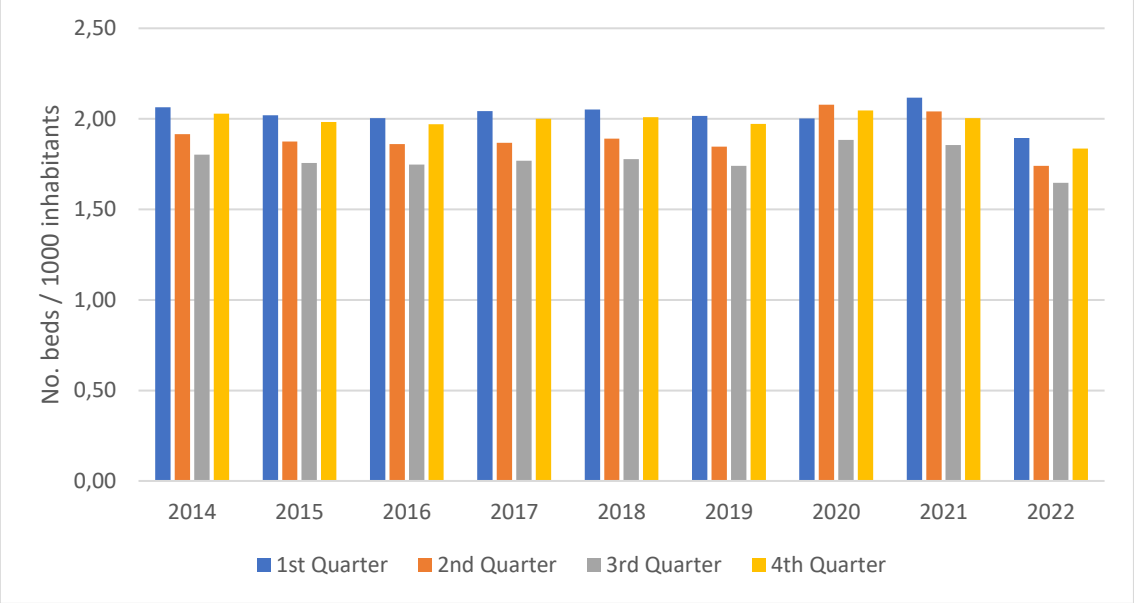
4.1.2 Health and Safety

4.1.2.1 Number of hospital beds, per 1000 inhabitants

This indicator quantifies the number of hospital beds of public hospitals of universal access and hospitals in public-private partnership available per 1000 inhabitants. It is defined by the ratio between the number of available hospital beds and the sum of the average annual resident population with the weighted average of overnight stays, multiplied by 1000. The lowest values of the indicator consistently occur in the third quarter given that during this period there is a greater tourist pressure, even in pandemic times (Figure 15). By examining the components of the indicator in the pre-pandemic period, it is possible to observe that, with an essentially stable resident population, the supply of hospital beds has had difficulty in keeping up with the potential demand provided by significant levels of growth in overnight stays in tourism. Additionaly, 2022 registered a decrease in this indicator, justified by the significant decrease in the number of beds and the increase in the resident population.[5]

[5] The technical information on this indicator is provided in the Annex A, Table A4.

Figure 15: Beds in hospitals per 1000 inhabitants. Algarve, 2014-2022



Source: Statistics Portugal (INE); Own calculation.

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

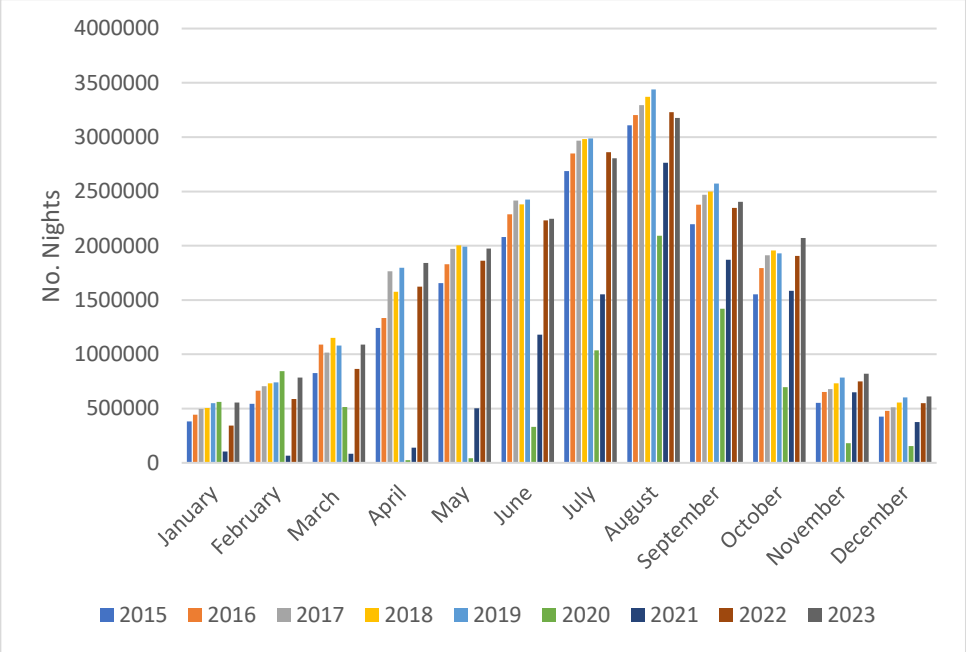
in the region to the regional and national economy, the average stay of tourists, and the productivity of tourism.

4.2.1.1 Number of nights in tourist accommodation establishments, per month

This indicator, considers the total number of night beds 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 2015 to 2023 for the region and municipalities[6].

Figure 16 shows the increasing pattern of this indicator at the region level in all months over the period 2015-2023, with June, July, August and September accounting for the highest number of nights in tourism accommodation

Figure 16: Number of nights in tourist accommodation establishments per month. Algarve, 2015-2023.



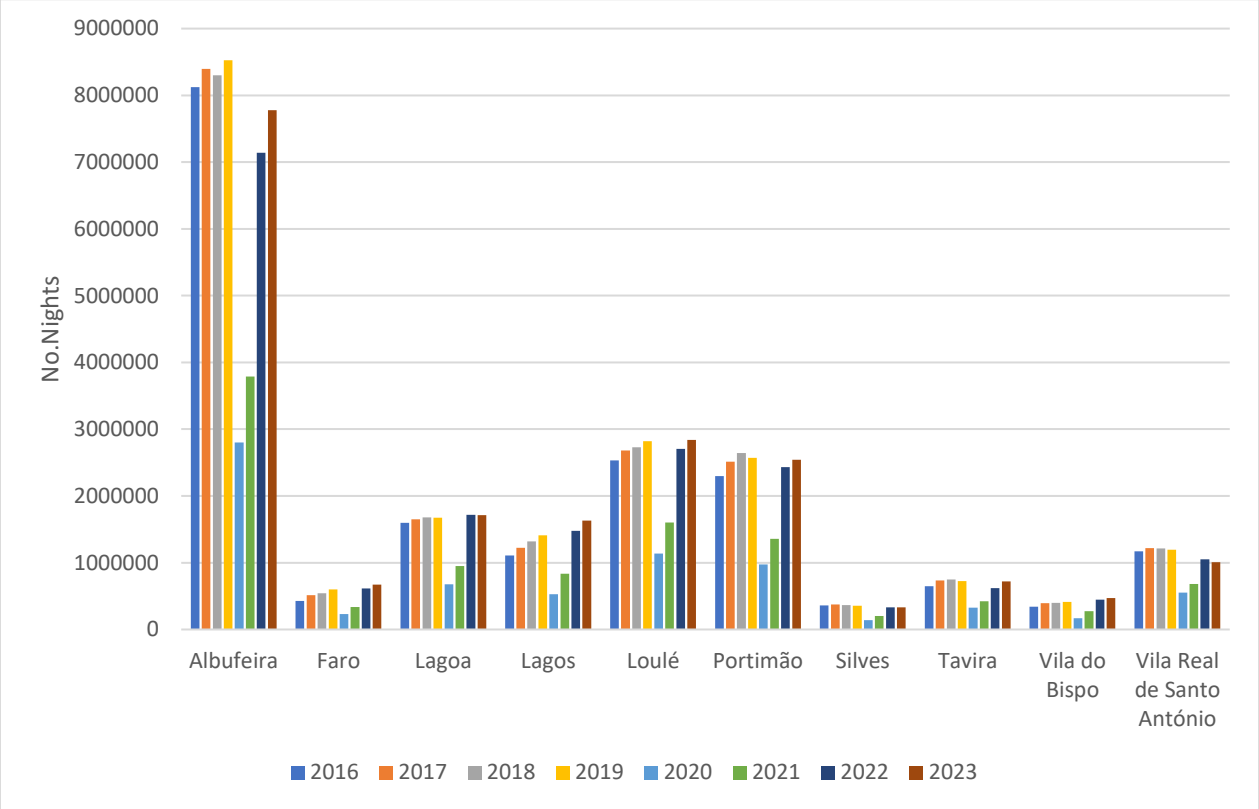
Source: Tourism of Portugal; Own elaboration.

In the previous reports, it was noted a growth from 2021 to 2022 throughout the year due to the lifting of health constraints in terms of transportation. In 2023, the increasing

[6] The technical information on this indicator is provided in Annex A, Table A5.

trend persisted, leading to values higher than the pre-pandemic period in the months of March, April, October, November and December.

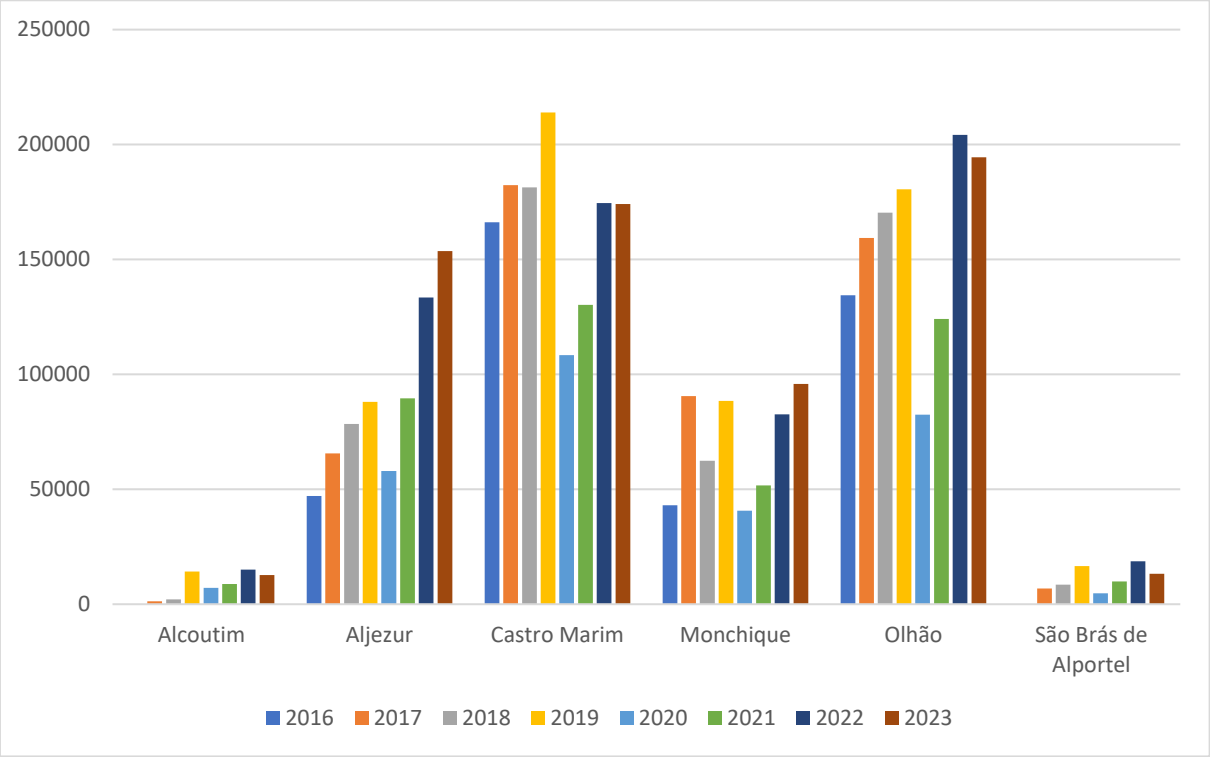
Figure 17: Number of nights in tourist accommodation establishments. Algarve municipalities, 2016-2023.



Source: Statistics Portugal (INE); Own calculation.

As illustrated in Figures 17 and 18, this upward trend has been transversal to all municipalities without exceptions, with all-time records in Faro, Lagos, Loulé, Aljezur and Monchique.

Figure 18: Number of nights in tourist accommodation establishments. Algarve municipalities, 2016-2023 (Continuation).



Source: Statistics Portugal (INE); Own calculation.

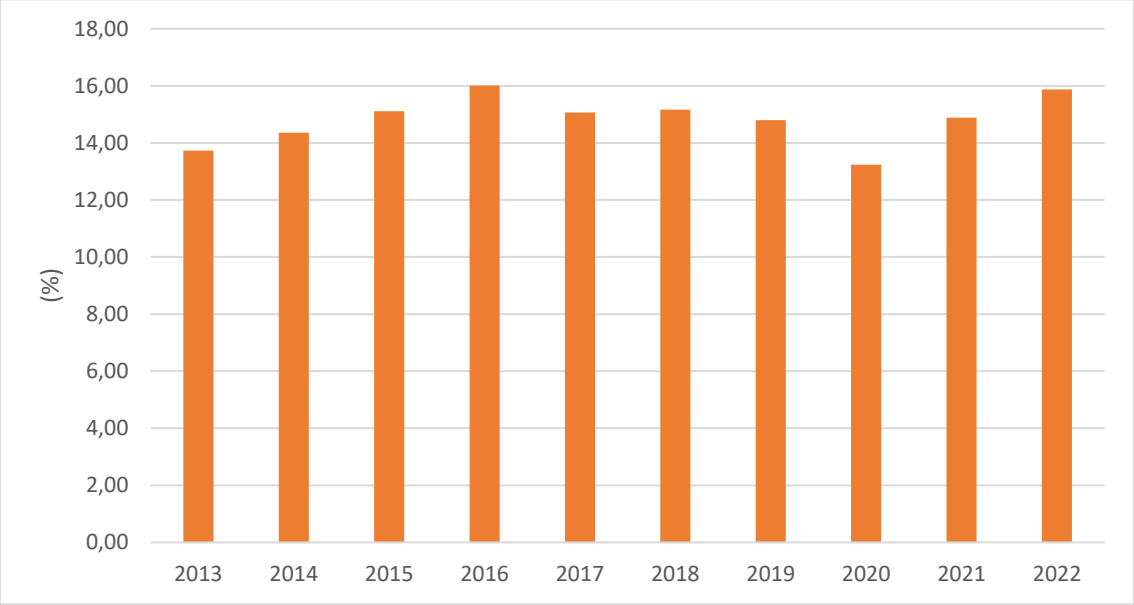
4.2.1.2 Relative contribution of tourism in the region to the regional and national economy

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 2013-2022[7].

[7] The technical information on this indicator is provided in Annex A, Table A6.

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 13.73% in 2013 to 15.87% in 2022, reaching the 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 19, and it is quite illustrative of the regional importance and the dynamics of these sectors in the country. It is clear that even though there was a drop during the pandemic period, the value of the regional share in 2022 (15.87%) was very close to the value in 2016.

Figure 19: Regional share of GVA in accommodation, food and beverage services in Portugal's GVA in the sector. Algarve, 2013-2022.

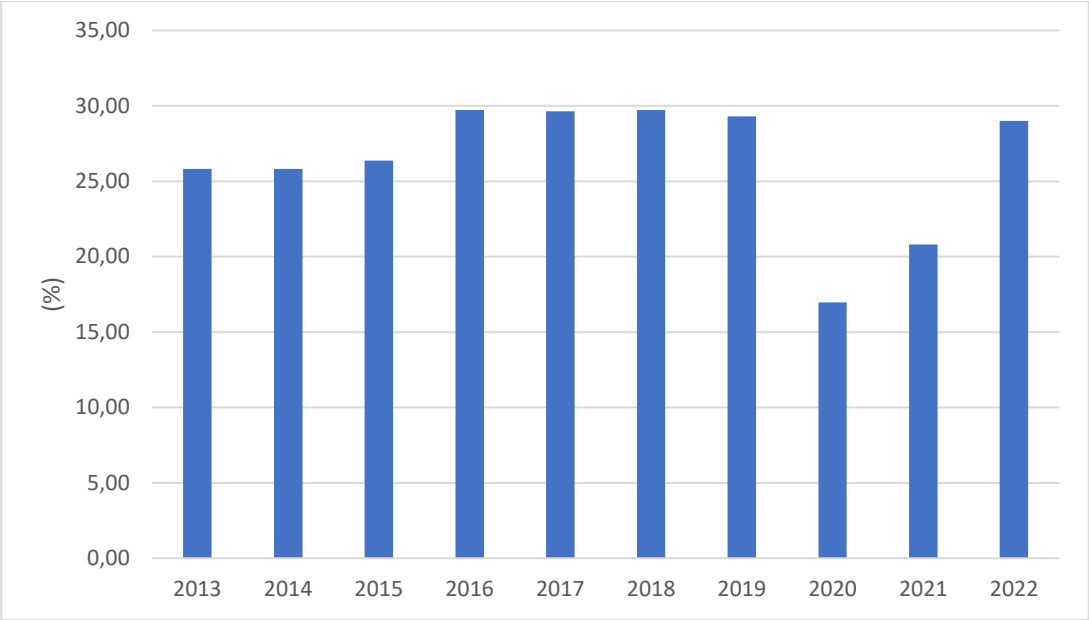


Source: Statistics Portugal (INE); Own calculation.

At the regional level, as can be seen in Figure 20, the GVA of these sectors stabilized around the 29% of the regional GVA in the last four years (2016 to 2019).

In the previous report, it was mentioned the stabilization observed during the years of 2016 to 2019 and the consequent drop from the COVID-19 pandemic at the regional level. However, 2021 and 2022 registered a significant increase in this percentage, reaching pre-pandemic values in the last year.

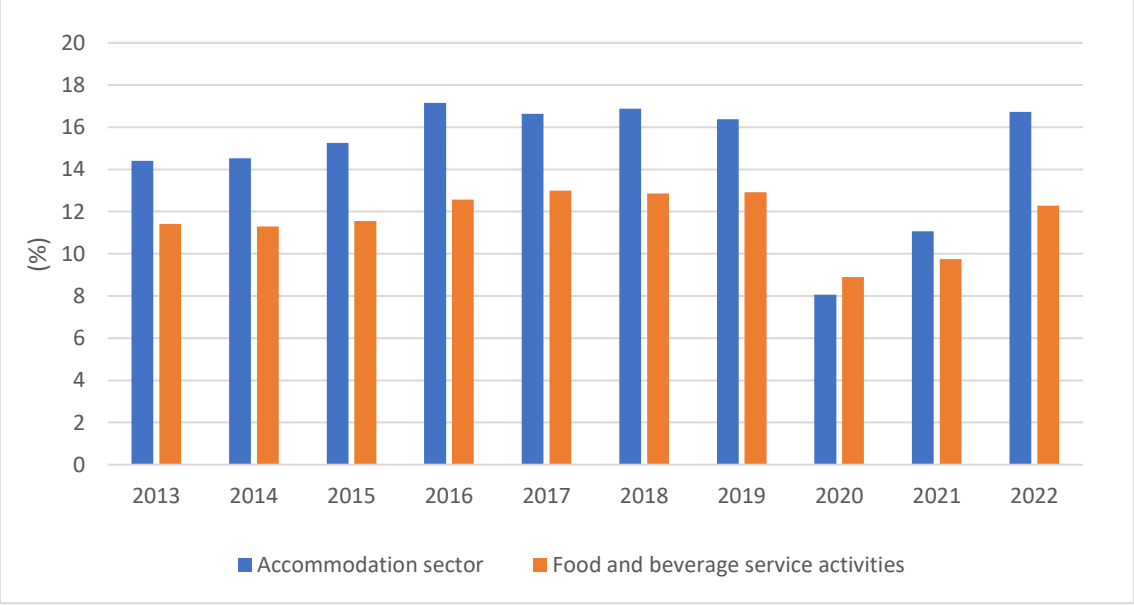
Figure 20: Share of Algarve's GVA in accommodation, food and beverage services in Algarve's total GVA. Algarve, 2013-2022.



Source: Statistics Portugal (INE); Own calculation.

As for the contribution of each individual sector to the region's GVA, Figure 21 illustrates their relative weight.

Figure 21: Shares of the GVA in accommodation and food and beverage services in Algarve's total GVA. Algarve, 2013-2022.



Source: Statistics Portugal (INE); Own calculation.

Previous reports show a significant dominance of the share in GVA of the accommodation sector over the food and beverage service sector until 2019. In 2020, due to the pandemic, the food and beverage service sector stood out (8.89%) when compared with de accommodation sector (8.07%), and the latter increased their share in the following years up to 16.73%.

The analysis at the municipality level, as illustrated in Figures 22 and 23, suggests the existence of economic vulnerability due to some dependency on tourism.

Approximately 18% of the GVA in the accommodation and food and beverage service sectors originate from three municipalities: Albufeira, Loulé and Portimão. Between 2013 and 2020, the distribution of the municipalities is approximately the same, with the exception of the increase of share in Lagos and Vila do Bispo to 2.72% and 1.33% respectively.

Figure 22: Share of municipalities GVA in accommodation and food and beverage services in the region´s GVA, in 2013.

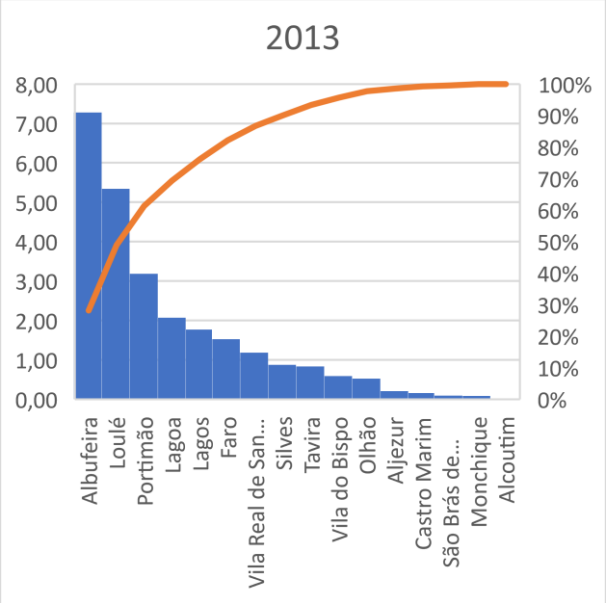
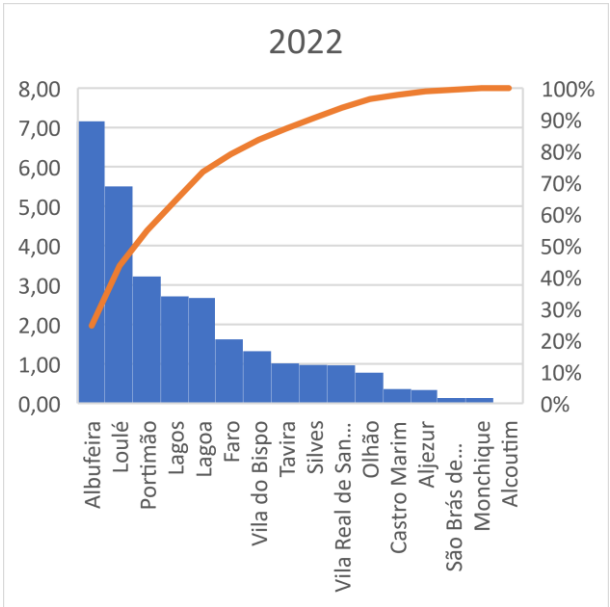


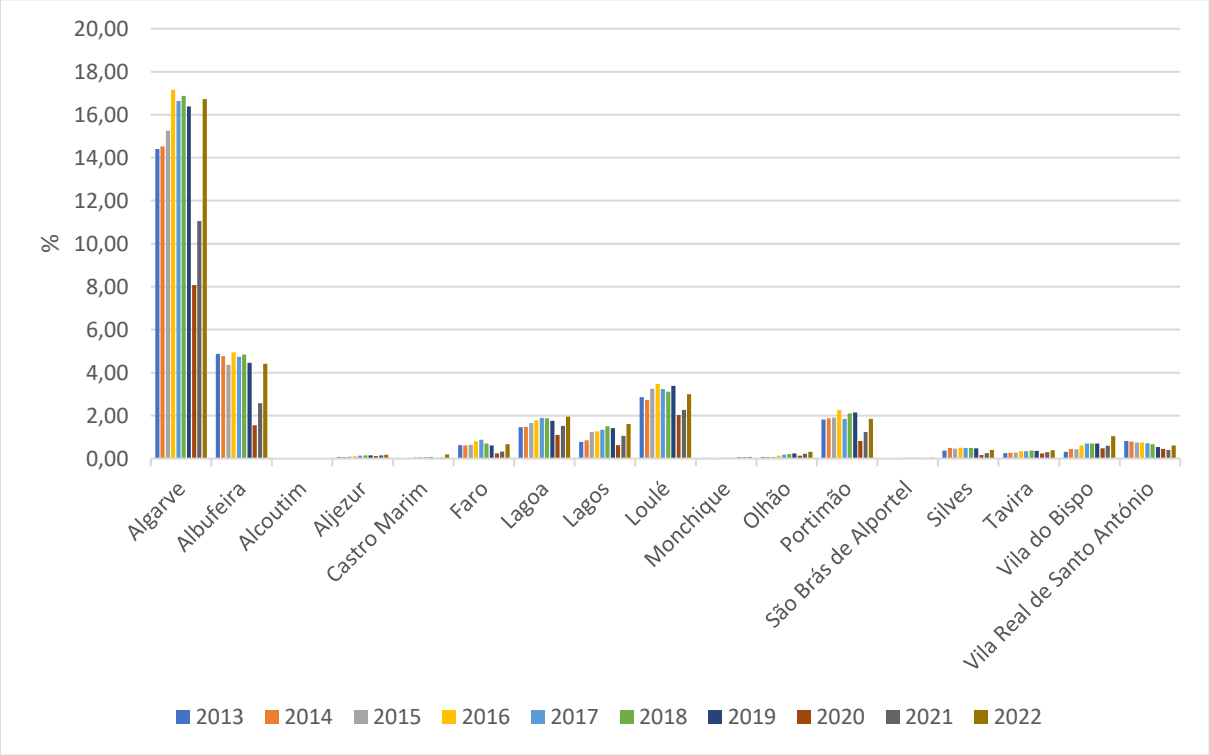
Figure 23: Share of municipalities GVA in accommodation and food and beverage services in the region´s GVA, in 2022.



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 24 and 25.

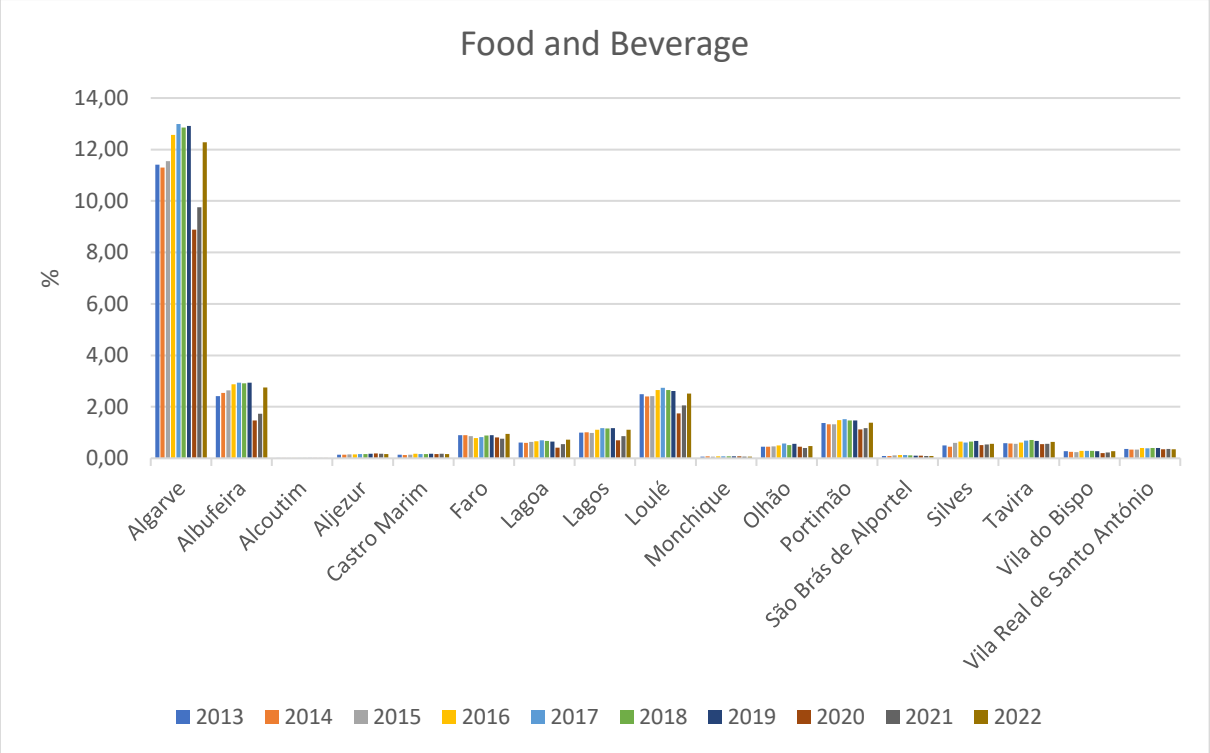
Although an increasing share of both sectors has been observed in all municipalities since 2013, Albufeira, Loulé and Portimão have been the leaders in the accommodation sector. Regarding the food and beverage sector, the municipality of Albufeira also presents values well above the sector's share in the region's GVA, together with the municipalities of Loulé, Portimão and Lagos. Even with the 2020 expected decreases, this tendency remains the same such that the share from 2022 corresponds approximately to pre-pandemic values.

Figure 24: Share of the GVA in accommodation sector in Algarve's total GVA. Algarve and municipalities, 2013-2022.



Source: Statistics Portugal (INE); Own calculation.

Figure 25: Share of the GVA in food and beverage sector in Algarve's total GVA. Algarve and municipalities, 2013-2022.



Source: Statistics Portugal (INE); Own calculation.

4.2.1.3 Average stay of tourists

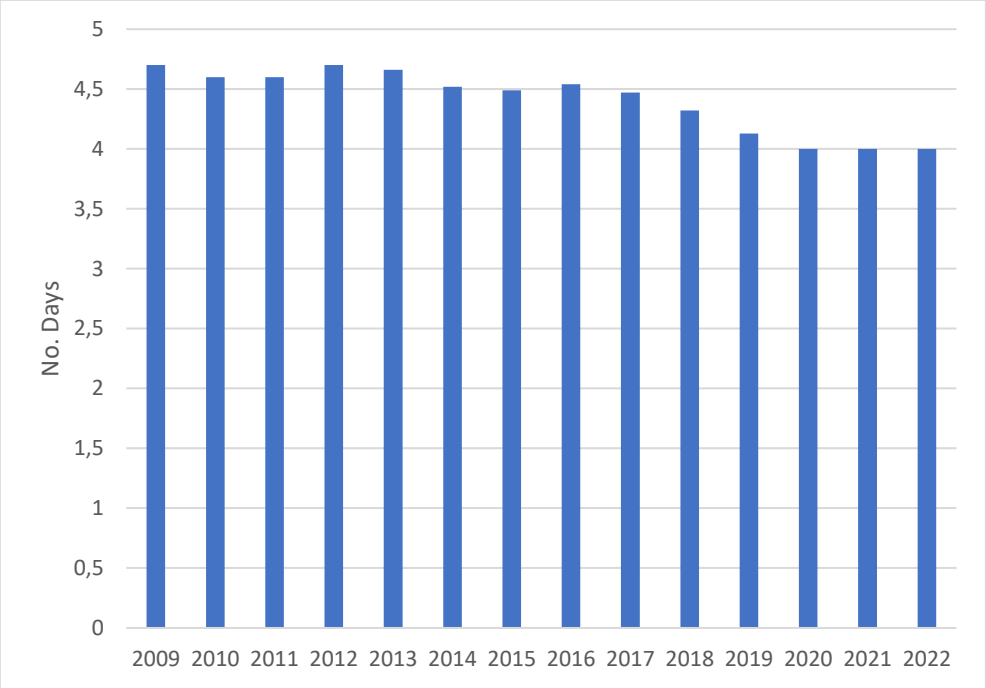
This indicator, by relating the number of tourists with the number of overnight stays in tourist accommodation establishments, is an important instrument for analysing economic sustainability and, at the same time, monitoring tourism seasonality and environmental sustainability.

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 2009-2022[8] and reported in Figure 26.

[8] The technical information on this indicator is provided in Annex A, Table A7.

The average stay in tourist accommodation establishments shows peak values in 2012 and 2016, such that in the last three years it has maintained the same value (4 days).

Figure 26: Average stay in tourist accommodations. Algarve, 2007-2021.



Source: Statistics Portugal (INE), Own calculation.

4.2.1.4 Productivity of Tourism

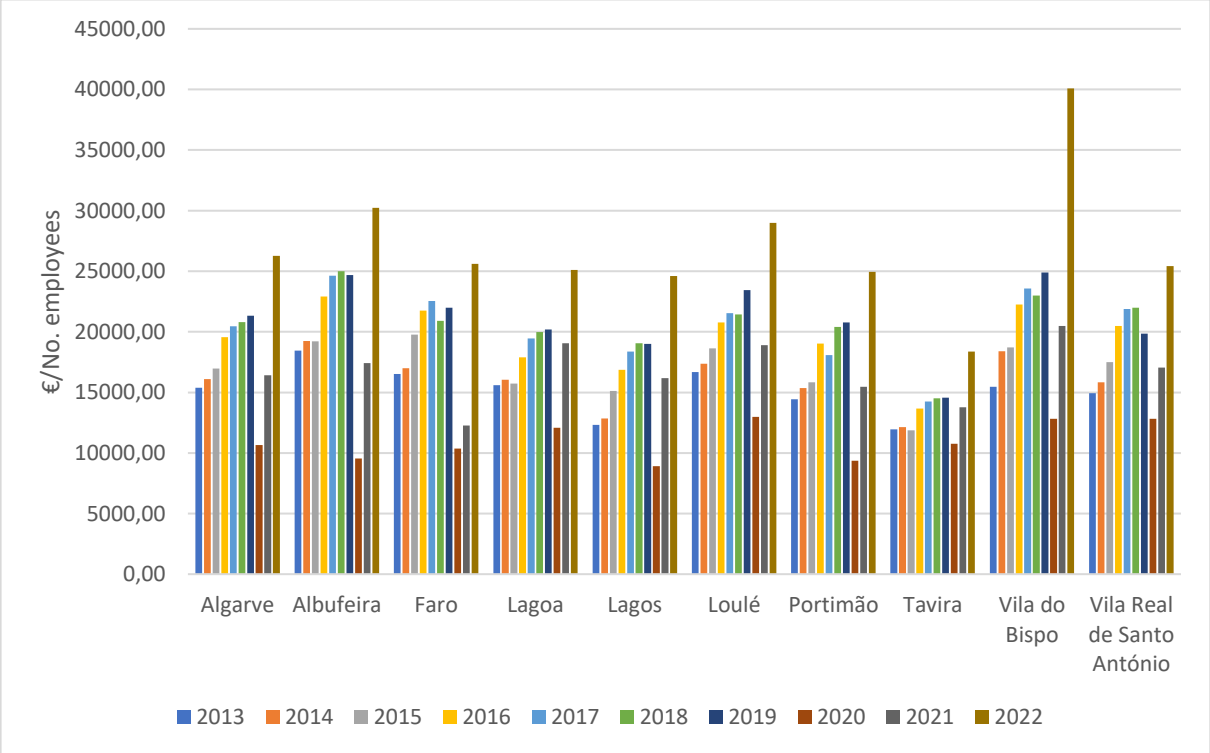
This indicator measures the productivity of the tourist sector by quantifying the relationship between GVA and employment generated in the sectors of accommodation, food and beverage services, travel agencies, tour operators, reservation services and related activities, which were considered representative 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. [9]

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

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 2013-2022 and is reported in Figures 27 and 28.

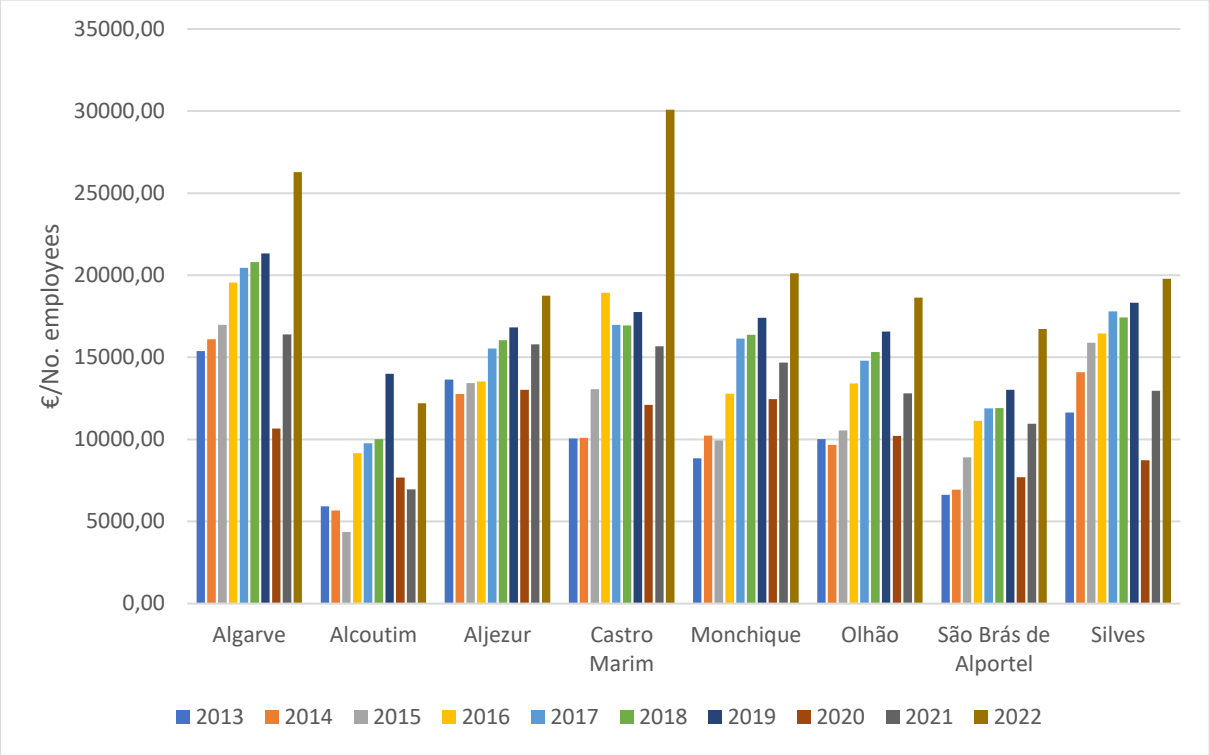
During the period of 2013 to 2022, the average productivity in the Algarve was 18,394.91 EUR per employee a year. Even though productivity in the region has an upward trend, 2022 was an all-time breaking record – all municipalities (except Alcoutim) registered a jump when comparing the previous year. Vila do Bispo outperformed all other municipalities in terms of performance in 2022 with a productivity of 40,088.84€ per employee.

Figure 27: Productivity of accommodation, food and beverage sectors & travel agencies, tour operators, reservation services and related activities. Algarve and municipalities, 2013-2022.



Source: Statistics Portugal (INE), Own calculation.

Figure 28: Productivity of accommodation, food and beverage sectors & travel agencies, tour operators, reservation services and related activities. Algarve and municipalities, 2013-2022 (continuation).



Source: Statistics Portugal (INE), Own calculation.

Moreover, as illustrated in Figures 29 and 30, Albufeira, Faro and Loulé were the municipalities with the highest productivity in 2013. However, in 2022 Vila do Bispo presents the highest value of productivity. This can be explained by the significant increase in GVA of this municipality – the value from 2022 is more than six times higher than in 2013. Albufeira and Castro Marim present high values as well, with the last one more than doubling its value in productivity between 2013 and 2022.

Figure 29: Comparison between municipalities' productivity in food and beverage sectors & travel agencies, tour operators, reservation services and agencies, tour operators, reservation services and related activities in 2013.

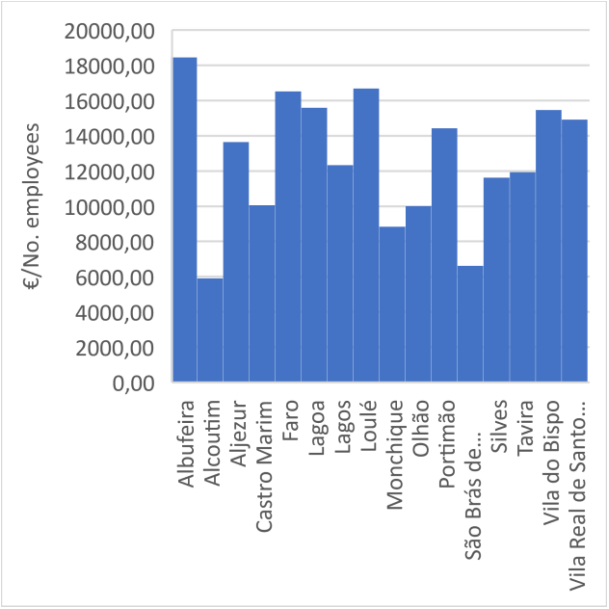
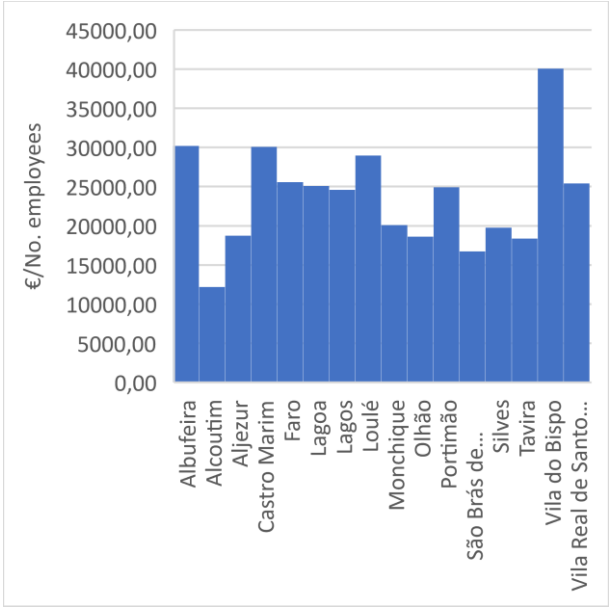


Figure 30: Comparison between municipalities' productivity in food and beverage sectors & travel agencies, tour operators, reservation services and agencies, tour operators, reservation services and related activities in 2022.

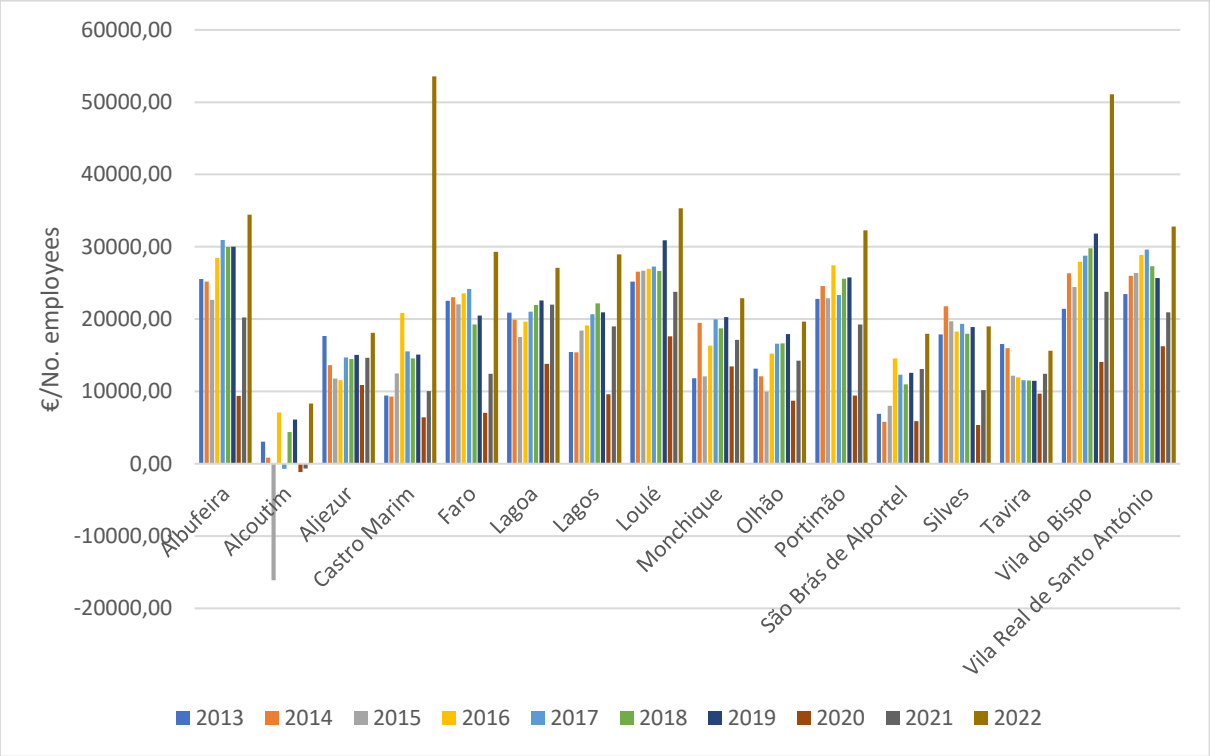


Source: Statistics Portugal (INE); Own elaboration.

In terms of productivity in the accommodation sector, Figure 31 shows the highest productivity in the accommodation sector in the municipalities of Castro Marim, Vila do Bispo, Loulé and Albufeira. All of these municipalities with the exception of Castro Marim present values of productivity in the food and beverage services sector above 20,000€ per employee (Figure 32).

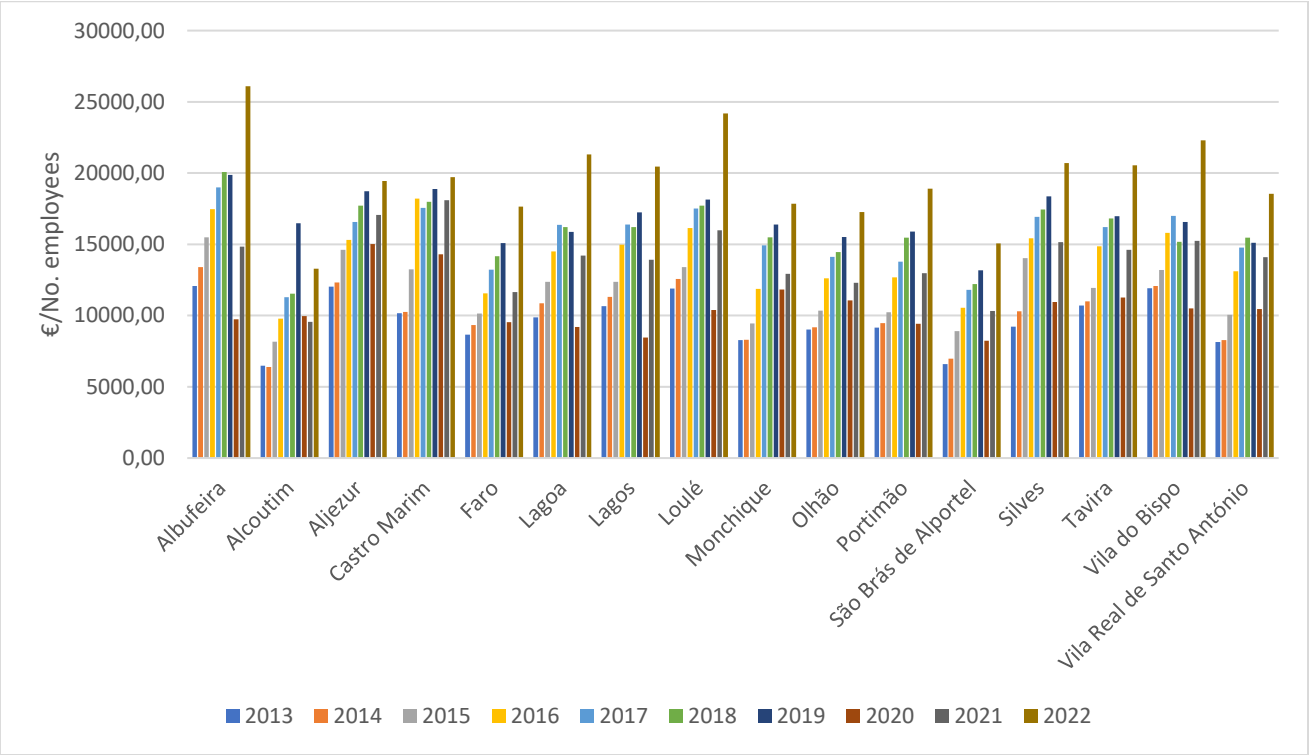
However, Figure 33 presents Faro dominating the productitvity of travel agencies and tour operators, followed by Olhão and Vila do Bispo with values above 30,000€.

Figure 31: Productivity in the accommodation sector. Algarve municipalities, 2013-2022.



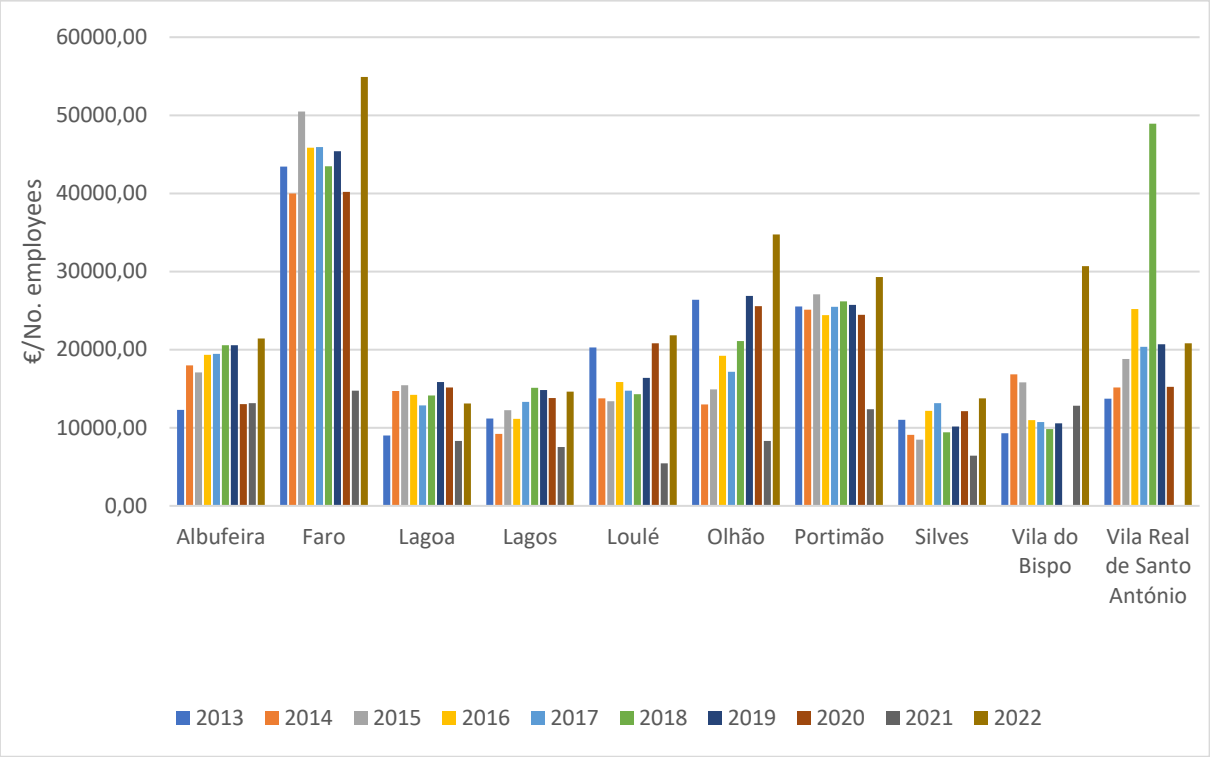
Source: Statistics Portugal (INE); Own elaboration.

Figure 32: Productivity in the food and beverage sector. Algarve municipalities, 2013-2022.



Source: Statistics Portugal (INE); Own elaboration.

Figure 33: Productivity in travel agencies, tour operator, reservation services and related activities. Algarve municipalities, 2011-2020.



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 relative importance of the tourism 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.

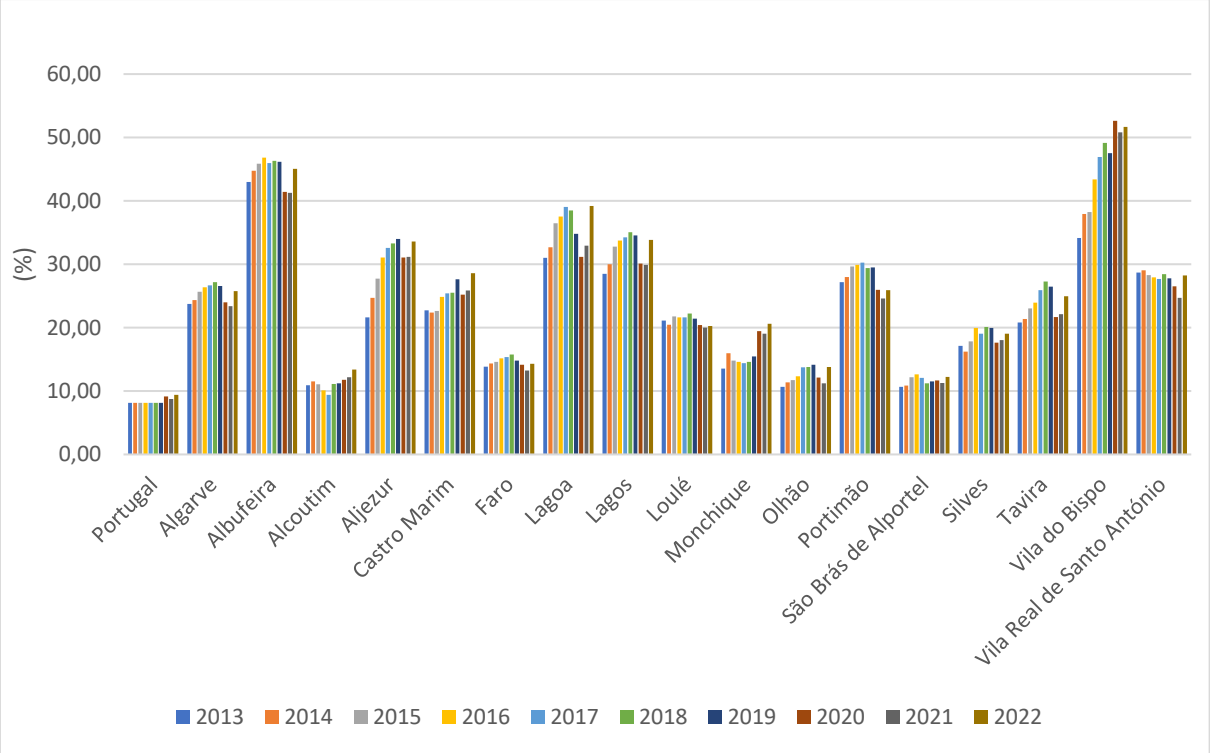
The information on this indicator is provided for the region of Algarve and at the municipality level on an annual basis for the period 2013-2022[10].

Data on this indicator at the regional and municipality levels are reported in Figure 34, which illustrates the significant dependency of employment in the Algarve on tourism activity when compared to the corresponding national figures. On average, for the period 2011-2020, direct employment in tourism in the country was 8.2% of the total employment, while for the region this value was 25%. This is quite illustrative of the relevance of the tourism activity in the region. High differences are also identified at the municipality level, the municipality of Albufeira, with a share of 45% approximately, and Vila do Bispo, Lagoa and Lagos all with values above 30%.

In previous reports, it is clear the relevance of tourism in the Algarve by observing the average share of direct employment in the region when compared with the value for the country – 25% and 8% respectively. And even though this indicator suffered a drop during the pandemic period, it respects an increasing trend. Municipalities such as Vila do Bispo, Albufeira, Lagoa, Lagos and Aljezur maintain values above 30%.

[10] The technical information on this indicator is provided in Annex A, Table A9.

Figure 34: Direct employment in tourism as a percentage of total employment. Portugal and Algarve municipalities, 2011-2020.



Source: Statistics Portugal (INE); Own calculation.

4.2.3 Seasonality

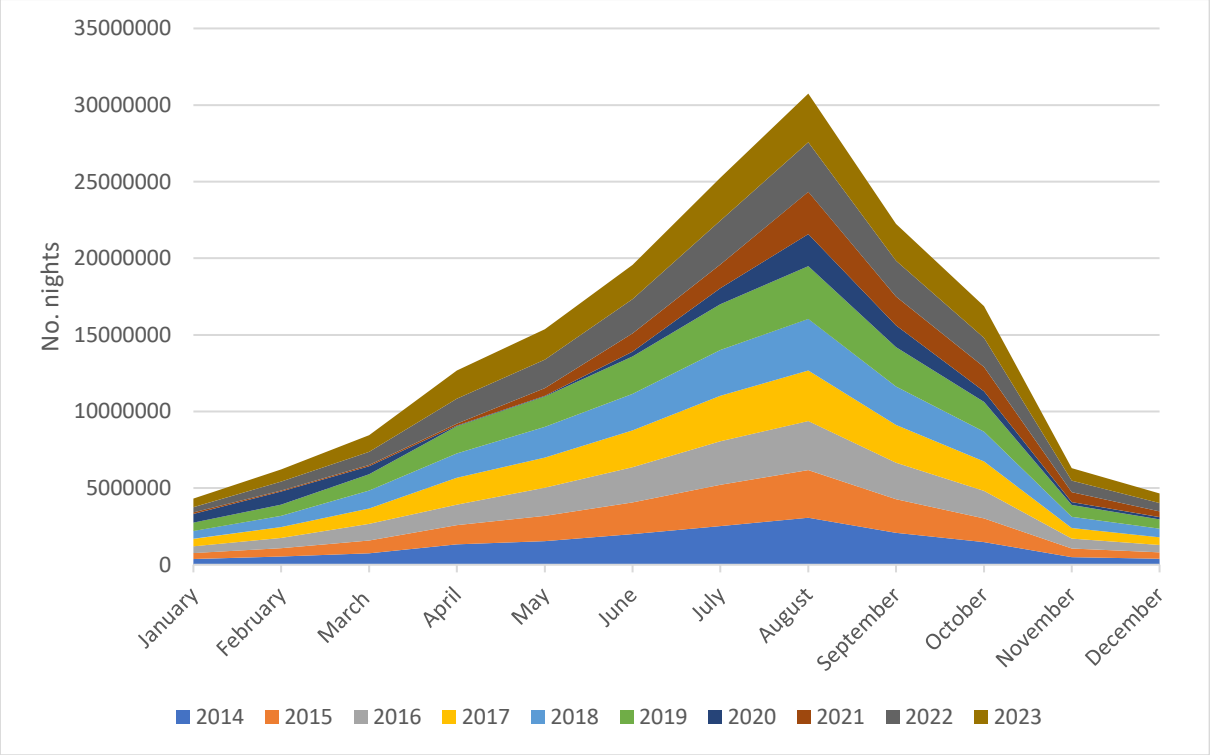
In order to analyse seasonality in the tourism activity in the region, the indicators used are the number of overnight stays by tourists, per month, and the seasonality rate.

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 2014-2023[11]. Figure 35 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 is defined as the period ranging from June to September.

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

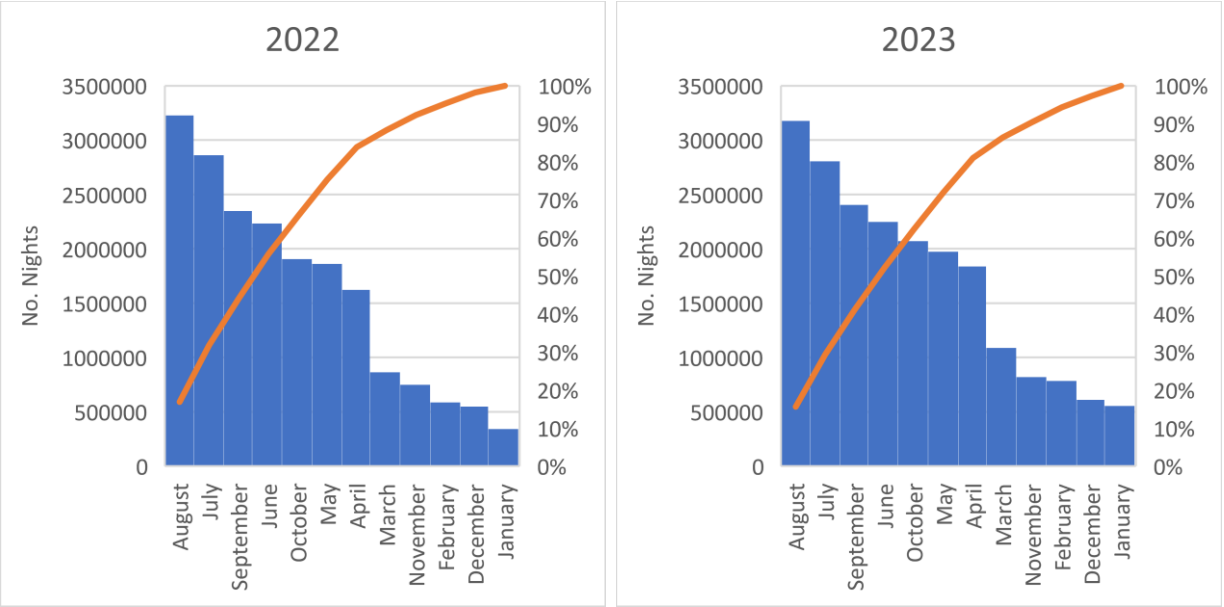
Figure 35: Number of nights in Tourist Accommodation establishments, per month. Algarve, 2013-2022.



Source: Tourism of Portugal; Own elaboration.

Figure 36 shows the comparison of the number of nights spent by tourists in the region between 2022 and 2023. In 2022, 60% of the nights were concentrated between the months of June to September, and the same can be verified in 2023. A comparison between the two years show a significant increase in the low season months, namely March surpassing one million nights; April and May close to two million nights and October with more than two million nights.

Figure 36: Number and monthly share of nights in tourist accommodation establishments. Algarve, 2020 vs 2021.



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.

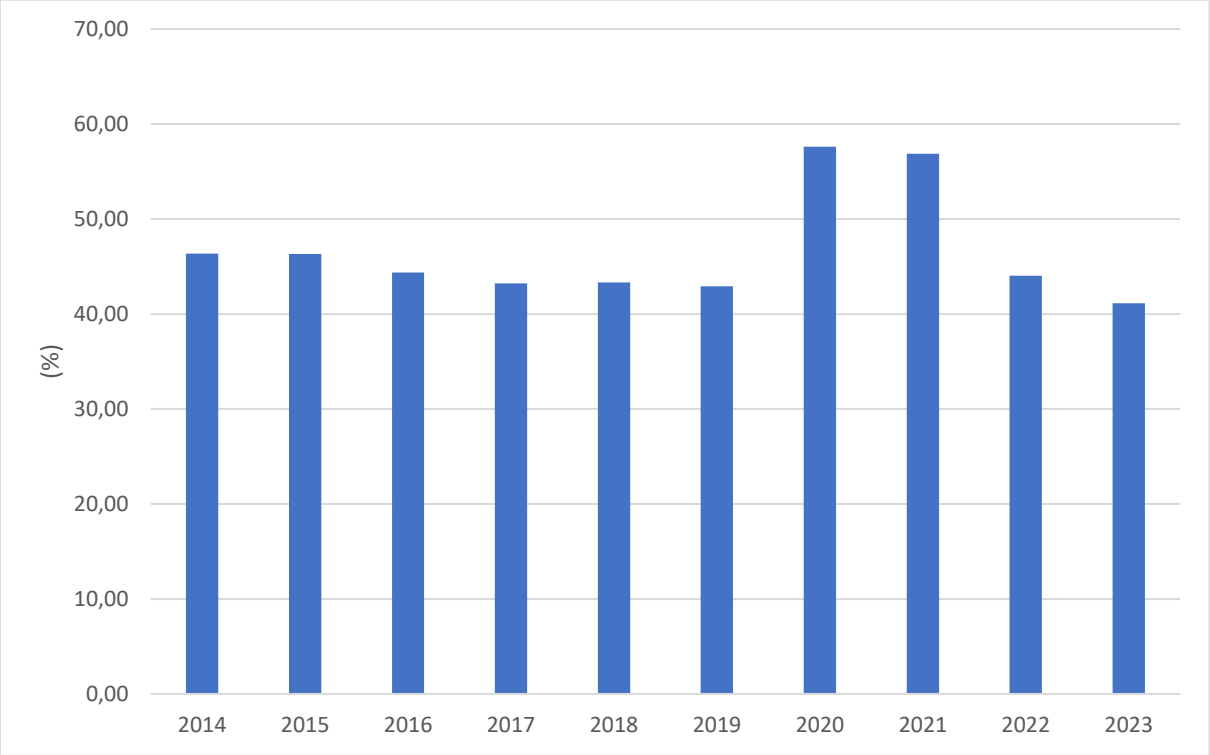
This is a composite indicator based on secondary data, and it is calculated for the whole region on an annual basis for the period 2014-2023[12].

The evolution of this indicator is described in Figure 37, 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 in the three years prior to the emergence of the COVID-19 disease. As described in previous reports, the seasonality rate increased in pandemic years due to mobility restrictions, reaching

[12] The technical information on this indicator is provided in Annex A, Table A11.

57.6% in 2020. However, from 2021 onwards, there has been a downward trend of this indicator, resulting in the lowest value in a ten year's period in 2023 (41.1%).

Figure 37: Seasonality Rate. Algarve, 2014-2023.



Source: Tourism of Portugal; Own calculation.

4.3 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, sociocultural, 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.

4.3.1 Energy management

To analyse energy management in the region, the indicator used is the percentage of tourist companies taking measures to reduce energy consumption. Updated information regarding this indicator is shown in section 6 in Companies' Results.

4.3.2 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 often 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 carrying out 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 (percentage of tourist companies that optimize water consumption) has no updated values, and therefore is present in the previous report.

Updated information regarding this subsection is shown in section 6 in Companies' Results.

4.3.3 Mobility

People and goods' mobility are 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.

4.3.3.1 Movement of Passengers on Inland Waterways

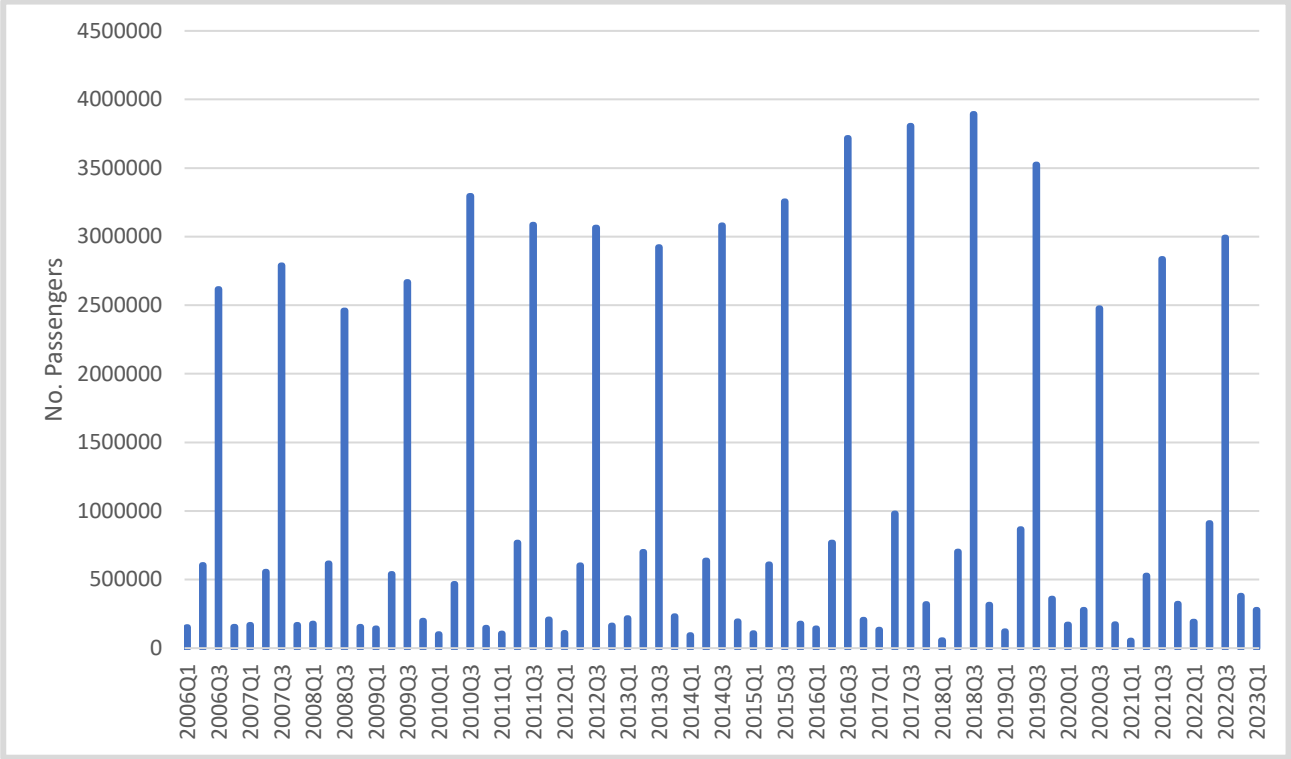
This indicator measures the number of passengers moving on inland waterways. Inland waterway is the regular service performed by public transport, obeying itineraries, schedules or minimum frequencies and pre-fixed rates.

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 38 reports quarterly data of the total movement of passengers on the above inland waterways for the period between 2006 and 2023[13]. A seasonal pattern can be readily noticed from the inspection of the Figure 38. Moreover, it is also clear the increasing trend of the number of passengers in the 3rd quarters, which corresponds to the peak tourist season, as well as a progressive increase of passenger movement. A drop is felt in 2020 due to COVID-19 restrictions, but from 2021 onwards the increasing trend continues, reaching approximately 3 million passengers in the third quarter of 2022.

[13] The technical information on this indicator is provided in Annex A, Table A12.

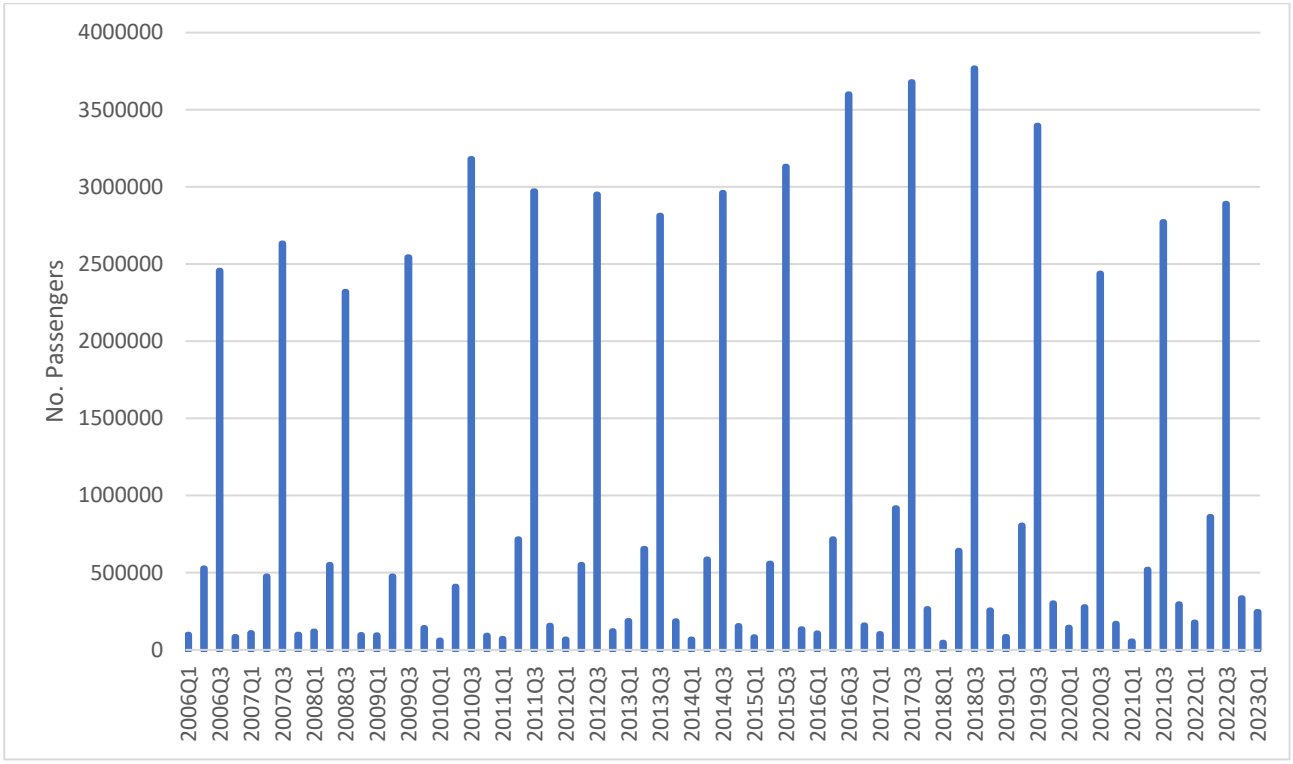
Figure 38: Total movement of passengers on inland waterways. Algarve, Quarterly, 2005-2022 (Q3).



Source: Observe; Own elaboration.

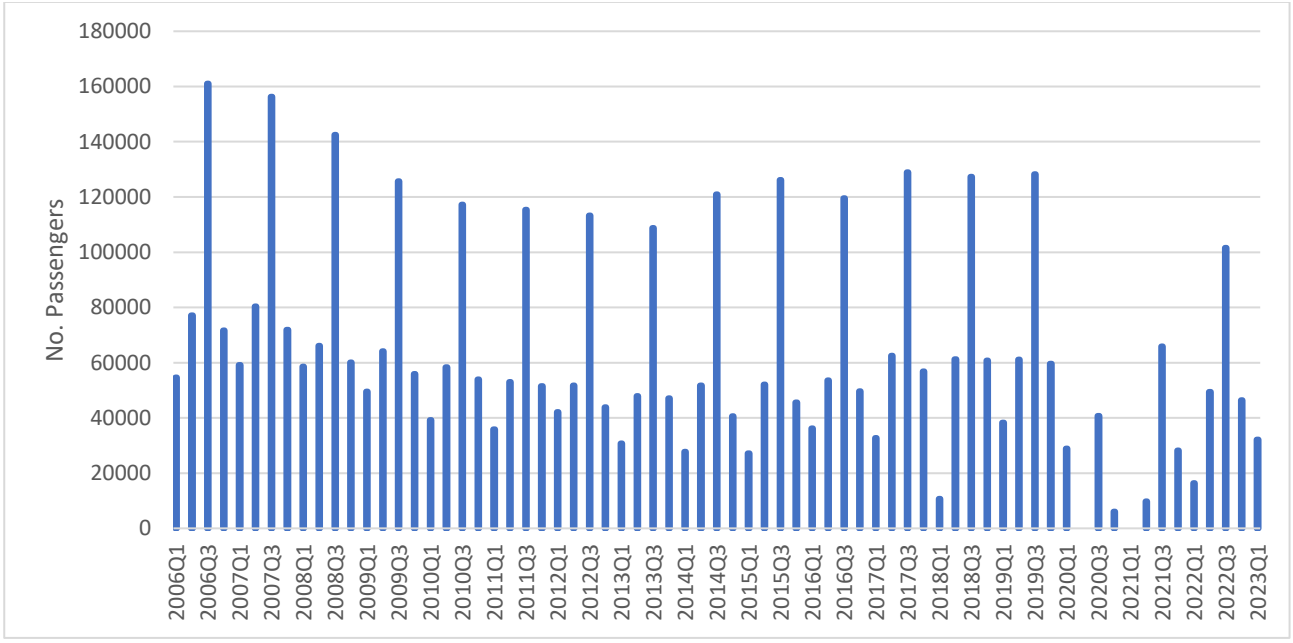
The previous aggregate analysis covers an unbalanced distribution of the passenger's traffic between the Ria Formosa and the Guadiana River. The disaggregated analysis is illustrated in Figures 39 and 40, where it is detected the greater pressure on the Ria Formosa and the surrounding beaches. Besides 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 square kilometres.

Figure 39: Movement of passengers on inland waterways. Algarve – Ria Formosa, Quarterly, 2005-2022 (Q3).



Source: Observe; Own elaboration.

Figure 40: Movement of passengers on inland waterways. Algarve – Guadiana River, Quarterly, 2005-2022 (Q3).



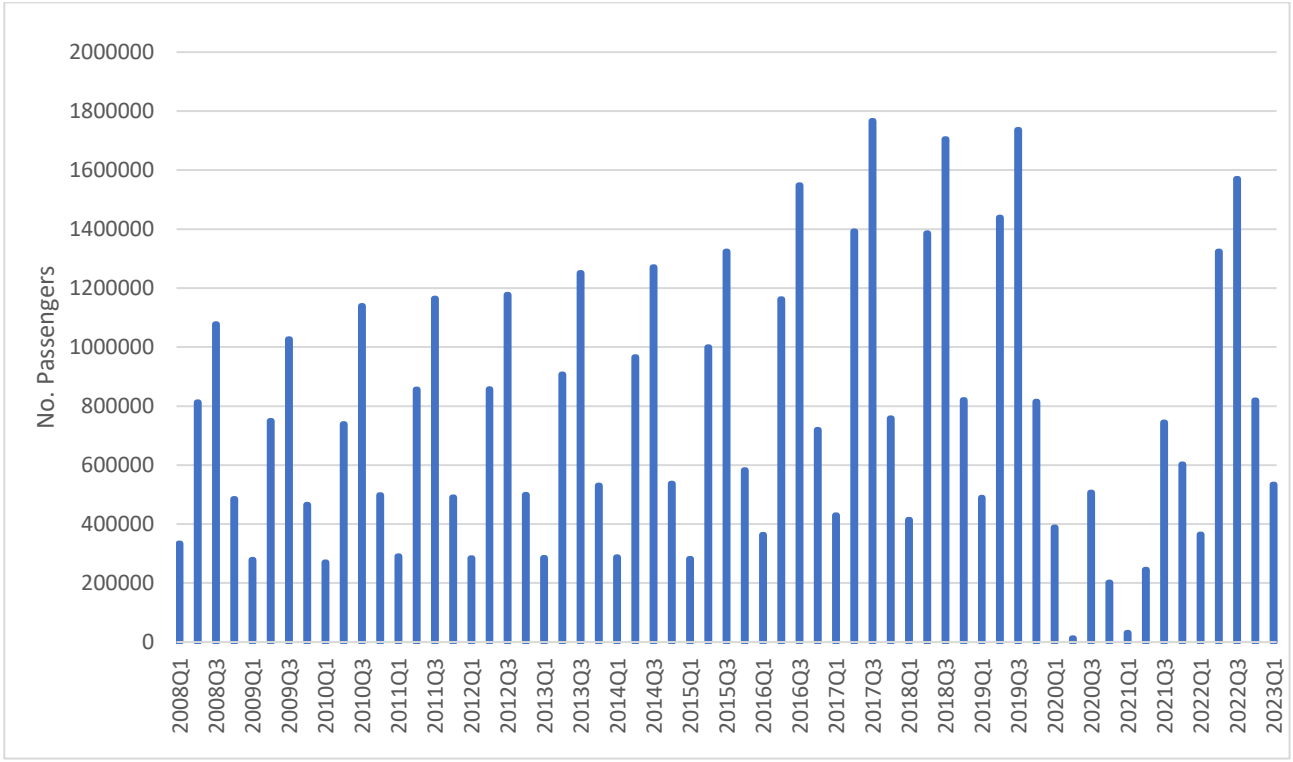
Source: Observe; Own elaboration.

4.3.3.2 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 41 and 42[14].

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. The pressure expectedly decreases in the year 2020 and rises again in 2021 and 2022, reaching numbers similar to the ones of 2016 in the same quarter. The first quarter of 2023 registered the highest value over the same period of previous years considered in the figures.

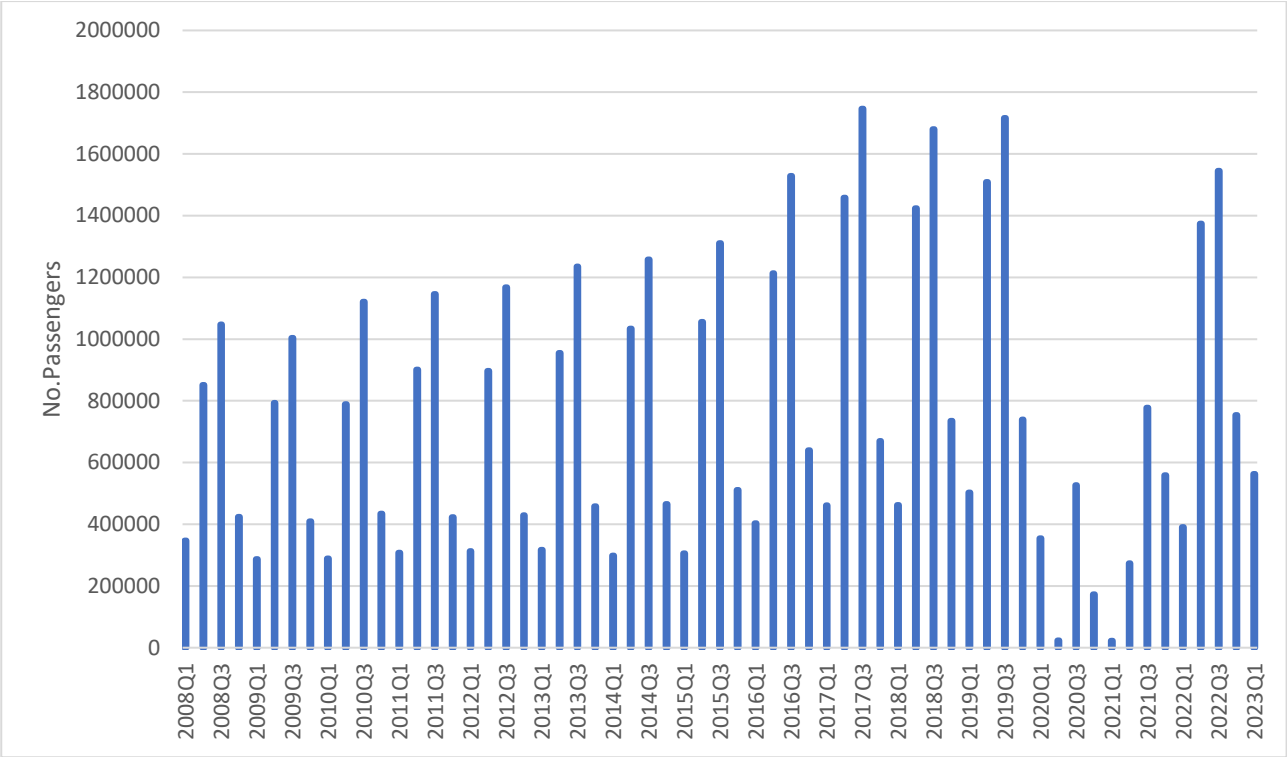
Figure 41: Number of passengers Boarded at Faro Airport. Algarve-Faro, Quarterly, 2007-2022 (Q3).



Source: Observe; Own elaboration.

[14] The technical information on this indicator is provided in Annex A, Table A13.

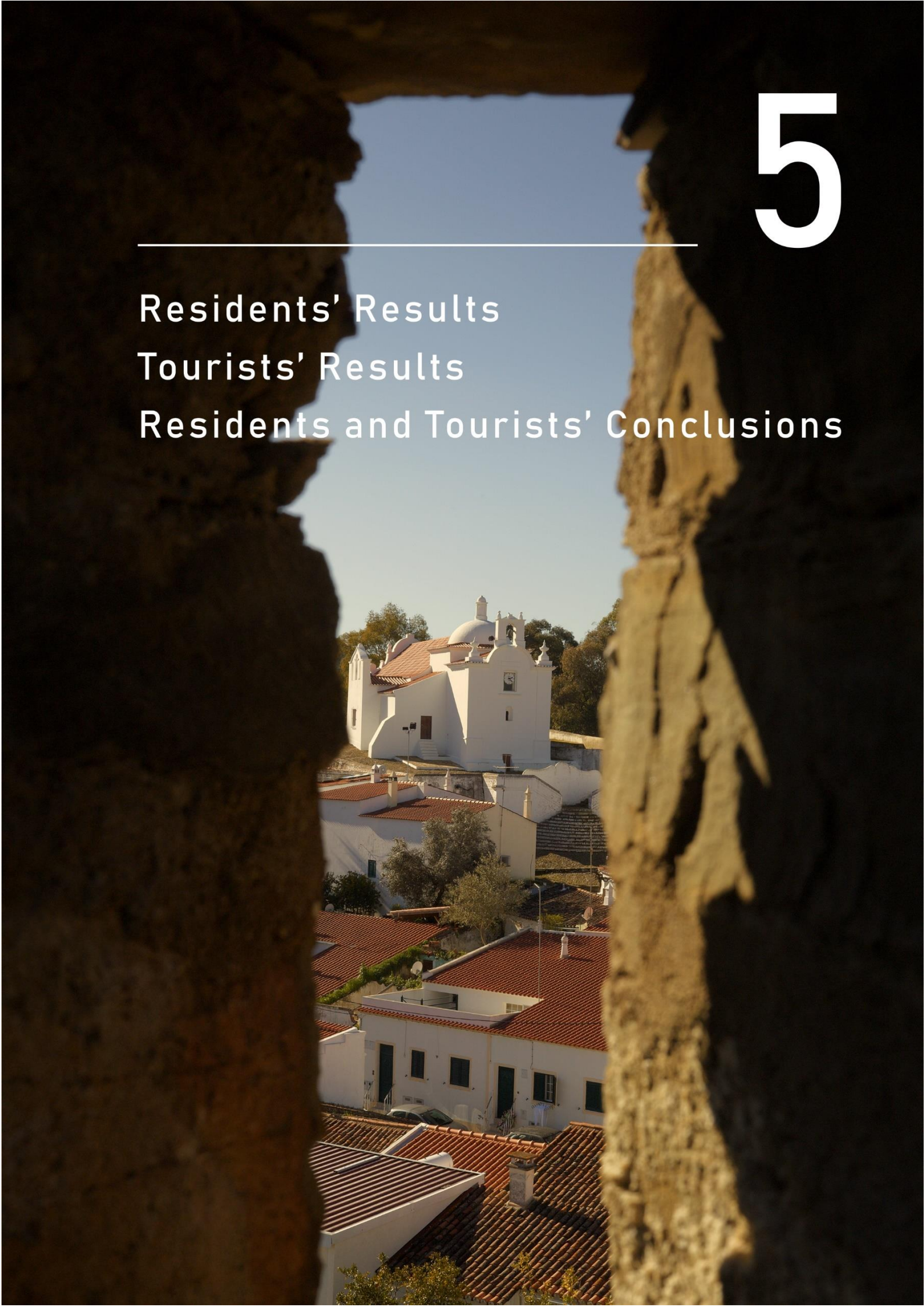
Figure 42: Number of passengers disembarked at Faro Airport. Algarve-Faro, Quarterly, 2007-2022 (Q3).



Source: Observe; Own elaboration.

5

Residents' Results
Tourists' Results
Residents and Tourists' Conclusions



5.1. Residents' Results

Primary data was collected on several occasions during the high and low seasons to gather information to feed the developed indicators regarding residents' perceptions. Using this approach, the project collected and validated 2,628 questionnaires to residents, 2,586 questionnaires to tourists and 65 questionnaires to public and private entities. surveys to tourists and residents were implemented in three distinct moments during the high and low seasons of the tourist activity in the Algarve, in the years 2022 and 2023. The sample was stratified based on municipality of residence, gender and age group based on the number of inhabitants in the region in 2018, which was 438,864 (INE, 2019). The sample size was calculated for a 95.0% confidence level and a margin of error of 3.0%. The statistical analysis was conducted with a significance level of 5.0%.

5.1.1 Sample Characterization

5.1.1.1 High Season 2022

Table 11. High Season 2022 | Sample Characteristics

Characteristic	N	%
Gender		
Male	424	42.8
Female	565	57.1
Other	1	0.1
Age Group		
18 – 24 years	120	12.1
25 – 64 years	773	78.1
65 and more	97	9.8

Marital Status		
Single	366	37.0
Married/Living together	477	48.2
Divorced/Separated	106	10.7
Widowed	25	2.5
DK/DA[1]	16	1.6
Education Level		
Primary School	147	14.8
High School	495	50.1
University	330	33.3
DK/DA[1]	18	1.8
Employment Situation		
Employed	707	71.5
Entrepreneur	155	15.7
Unemployed	9	0.9
Student	46	4.6
Retired	24	2.4
Homemaker	3	0.3
DK/DA[1]	46	4.6

Characteristic	**N**	**%**
Net Monthly Income		
Until 705€	209	21.1
706€ - 1000€	434	43.4
1001€ - 1500€	174	17.4
1501€ - 2000€	37	3.7
2001€ or more	24	2.4
DK/DA[1]	112	11.3

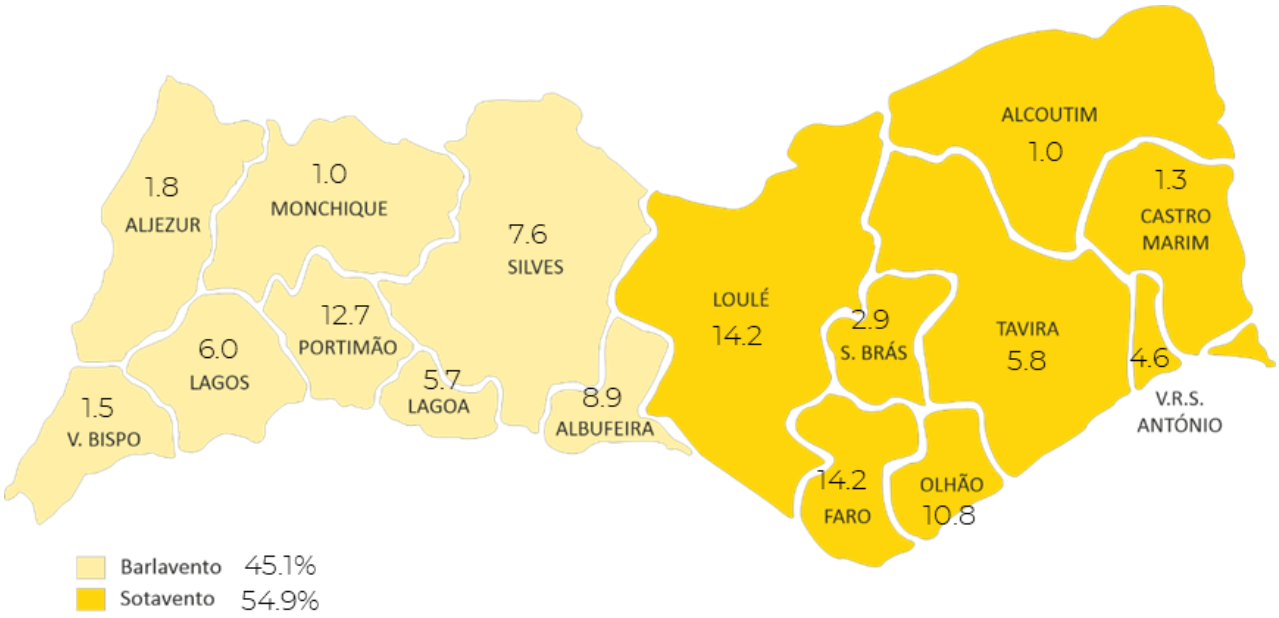
Source: Own elaboration
[1] DK/DA stands for Does not know/Does not answer

990 questionnaires to residents in the 16 municipalities of the Algarve region were collected and validated during the high season of 2022 (Table 16). Most of the

respondents were female (57.1%) and aged between 25 to 64 years (78.1%). The majority were married/ living together (48.2%) or single (37.0%). Most of them had a high school level (50.1%) or a university degree (33.3%) and were employed (71.5%).

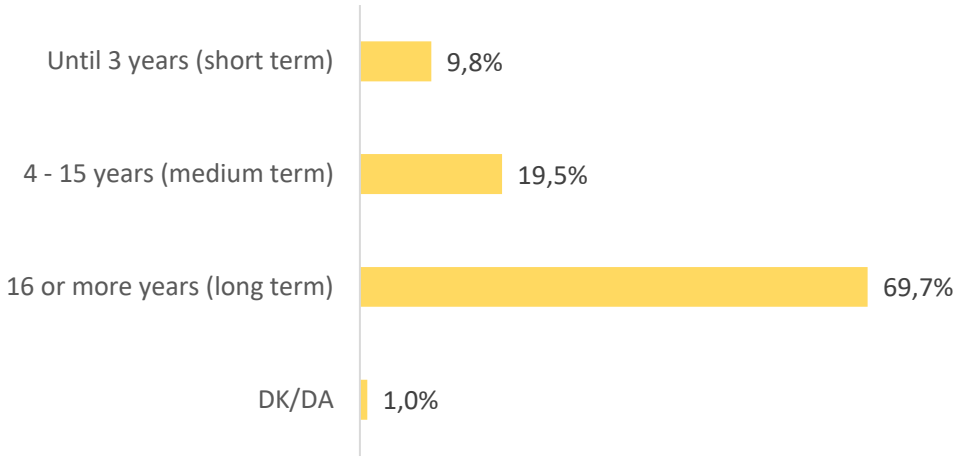
Most of the respondents lived in the Sotavento area (54.9%), namely in the municipalities of Faro (14.2%) and Loulé (14.2%). The other part of the respondents lived in the Barlavento area (45.1%), specifically in Portimão (12.7%) and Albufeira (8.9%) (Figure 43), according to residents' distribution in the Algarve (INE, 2019). The majority of residents lived in the Algarve for a long-term period (16 or more years) (69.7%) and few residents lived in the region for a short-term period (until 3 years) (Figure 44).

Figure 43 High Season 2022 | Place of Residence in the Algarve



Note: Values in percentage
Source: Own elaboration

Figure 44 High Season 2022 | Residence Time in the Algarve



Source: Own elaboration

5.1.1.2 Low Season 2022/2023

Table 12 Low Season 2022/2023 | Sample Characteristics

Characteristic	N	%
Gender		
Male	194	36.3
Female	340	63.7
Age Group		
18 – 24 years	66	12.4
25 – 64 years	435	81.5
65 and more	33	6.2
Marital Status		
Single	174	32.6
Married/Living together	192	36.0

Divorced/Separated	35	6.6
Widowed	10	1.9
DK/DA[1]	123	23.0
Education Level		
Primary School	83	15.5
High School	285	53.4
University	142	26.6
DK/DA[1]	24	4.5
Employment Situation		
Employed	346	64.8
Entrepreneur	86	16.1
Unemployed	5	0.9
Student	21	3.9
Retired	8	1.5
Homemaker	1	0.2
DK/DA[1]	67	12.5

Characteristic	N	%
Net Monthly Income		
Until 705€	77	14.4
706€ - 1000€	260	48.7
1001€ - 1500€	86	16.1
1501€ - 2000€	19	3.6
2001€ or more	16	3.0
DK/DA[1]	76	14.2

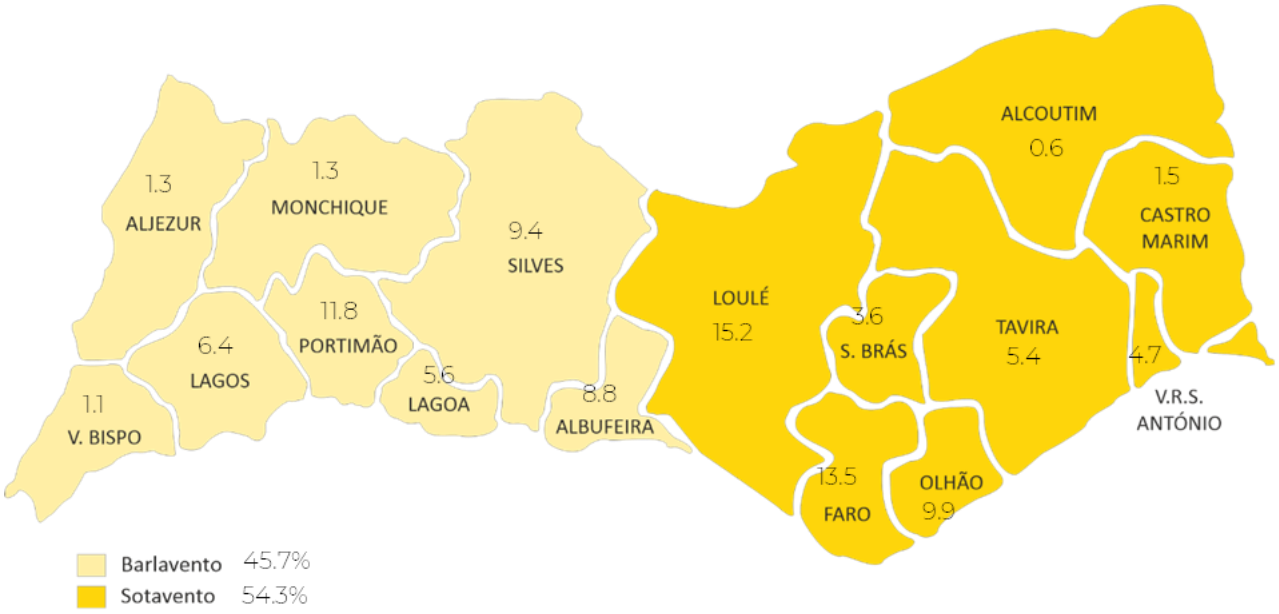
During the low season 2022/2023, 534 questionnaires to residents were collected and validated (Table 17). Most of the residents able to indicate an answer were female (63,7%), aged between 25 to 64 years old. (81,5%), married or single (89%), employed (74,1%) and completed high school or took a university degree (83,8%).

Respondents lived in the Sotavento area (54.3%), mainly in the municipalities of Loulé (15.2%) and Faro (13.5%), or in the Barlavento area (45.7%), specifically in Portimão (11.8%) and Silves (9.4%) (Figure 45). This distribution aligns with the official distribution statistics in the Algarve (INE, 2022). Most residents lived in the Algarve for over 16 years (72,7%), with only a few living in the Region for less than three years (7,3%) (Figure 46).

Source: Own elaboration

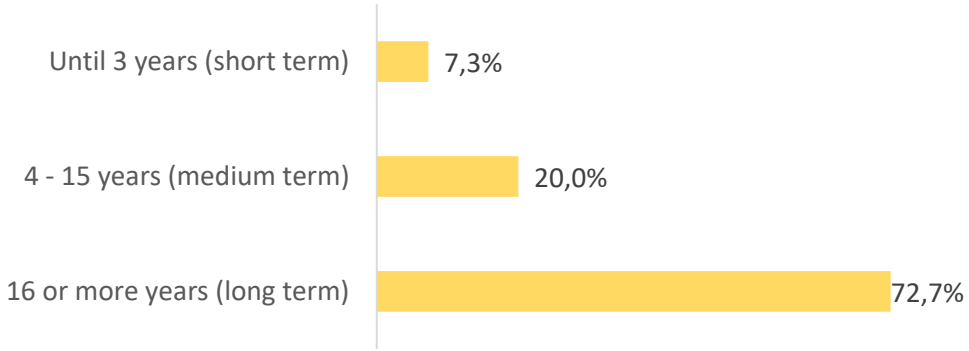
[1] DK/DA stands for Does not know/Does not answer

Figure 45 Low Season 2022/2023 | Place of Residence in the Algarve



Note: Values in percentage
Source: Own elaboration

Figure 46 Low Season 2022/2023 | Residence Time in the Algarve



Source: Own elaboration

5.1.1.3 High Season 2023

Table 13 High Season 2023 | Sample Characteristics

Characteristic	N	%
Gender		
Male	450	40.8
Female	649	58.8
Age Group		
18 – 24 years	163	14.8
25 – 64 years	990	79.7
65 and more	61	5.5
Marital Status		
Single	384	34.8
Married/Living together	527	47.7
Divorced/Separated	103	9.3
Widowed	23	2.1
DK/DA[1]	67	6.1
Education Level		
Primary School	136	12.3
High School	542	49.1
University	372	33.7
DK/DA[1]	54	4.9
Employment Situation		

Employed	776	70.3
Entrepreneur	158	14.3
Unemployed	5	0.5
Student	49	4.4
Retired	15	1.4
Homemaker	2	0.2
DK/DA[1]	99	9.0

Characteristic	N	%
Net Monthly Income		
Until 760€	181	19.2
761€ - 1000€	484	51.2
1001€ - 1500€	195	20.6
1501€ - 2000€	49	5.2
2001€ or more	36	3.8
DK/DA[1]	159	16.8

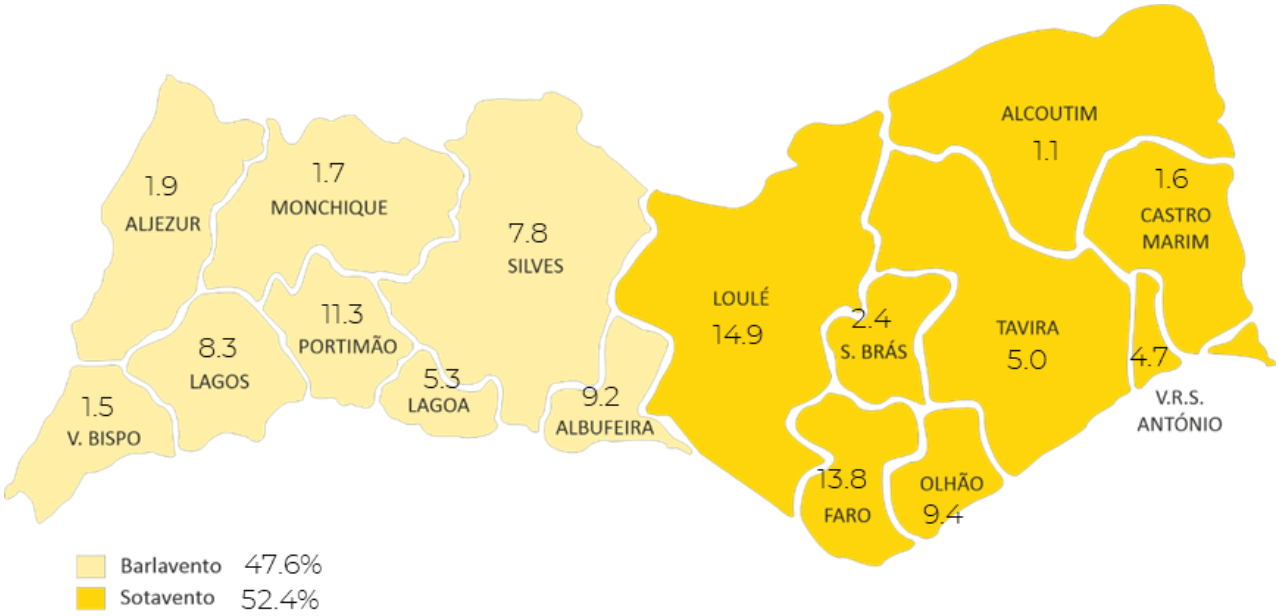
Out of the total sample of 1104 respondents in the high season of 2023, the majority are female (58.8%) and aged between 25 to 64 years old (79.7%). Most respondents were married/ living together (47.7%) or single (34.8%). They completed high school (49.1%), hold a university degree (33.7%) or were employed (70.3%) (Table 18).

Respondents lived in the Sotavento area (52.4%), mainly in the municipalities of Loulé (14.9%) and Faro (13.8%), or in the Barlavento area (47.6%), specifically in Portimão (11.3%) and Albufeira (9.2%) (Figure 47). As in the previous seasons, this distribution aligns with the official distribution statistics in the Algarve (INE, 2022). Most residents lived in the Algarve for over 16 years (73,2%), with only a few living in the Region for less than three years (9,2%). (Figure 48).

Source: Own elaboration

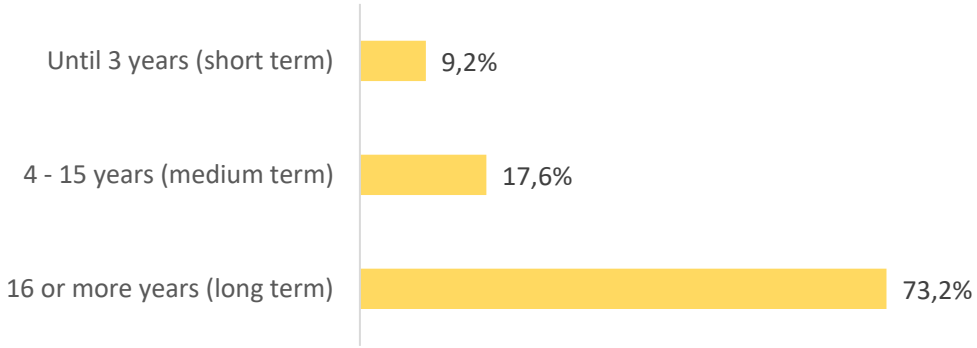
[1] DK/DA stands for Does not know/Does not answer

Figure 47 High Season 2022 | Place of Residence in the Algarve



Note: Values in percentage
Source: Own elaboration

Figure 48 High Season 2023 | Place of Residence in the Algarve



Source: Own elaboration

5.1.2 Longitudinal Analysis

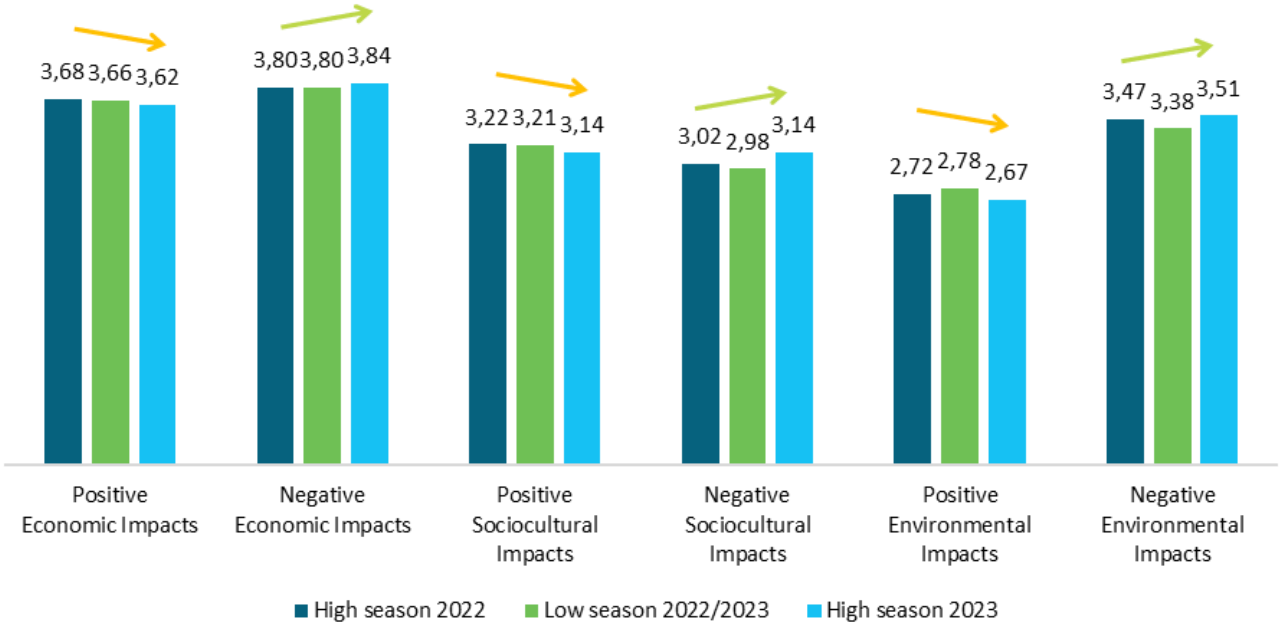
In order to allow for a longitudinal analysis of residents' perceptions on tourism in the Algarve, comparisons between the results of the high seasons 2022 and 2023, as well as the low season 2022/2023 were conducted. It needs to be noted that, while the analysis can give a general idea about evolution and developments, differences in the samples characteristics (e.g. regarding age or the respondents or their dependency on tourism) as well as other external factors, such as overall economic development, may influence the observed results.

Additionally, it is important to note that the analysed data were obtained in three different moments in a relatively short period of time. Therefore, further studies should be conducted with future data in a long-term perspective.

5.1.2.1 Residents' Perceptions of Tourism Impacts

A comparison of residents' perceptions on the impacts of tourism between the high season 2022 and high season 2023 reveals a decrease regarding positive economic impacts from a global average of 3.68 to 3.62 and an increase in the perception of negative impacts from 3.80 to 3.84 (Figure 49). The same evolution can be seen when comparing the perceptions of positive environmental impacts, which decreased from 2.72 to 2.67 and the negative environmental impacts, which increased from 3.47 to 3.51 between the two high seasons. For the sociocultural dimension, the perception of positive impacts has decreased from 3.22 to 3.14, while the perception of negative impacts has also increased from 3.02 to 3.14 between high season 2022 and high season 2023. However, these changes are non-significant and motivated by sampling errors. Additionally, the differences between positive and negative impacts both economic and environmental are statistically significant which lead to the conclusion that there is stronger perceptions of the negative impacts, both economic and environmental, of the touristic activity among residents.

Figure 49 Residents' Perceptions of Tourism Impacts



Source: Own elaboration

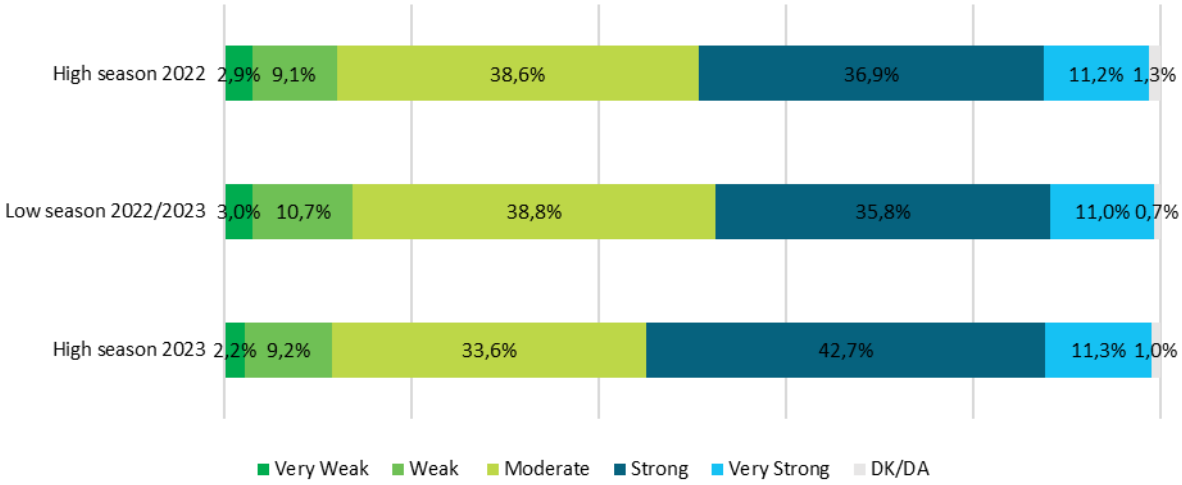
5.1.2.2 Evaluation of Tourism Development

Evaluation of the Current State of Tourism Development

A comparison of residents' assessment of the current state of tourism development in the Algarve between the high season 2022 and high season 2023 shows an increase in respondents who rate the development as strong (from 36.9% to 42.7%) or very strong (from 11.2% to 11.3%) (Figure 50).

When focusing on the low season of 2022/2023, it becomes apparent that resident's evaluations had shifted more towards a weak (from 9.1% to 10.7%) or moderate (from 38.6% to 38.8) level of tourism development, compared to the high season of 2022. Therefore, the change to higher assessments of strong or very strong level of development in the high season of 2023 become even more apparent.

Figure 50 Evaluation of the Current State of Tourism Development



Source: Own elaboration

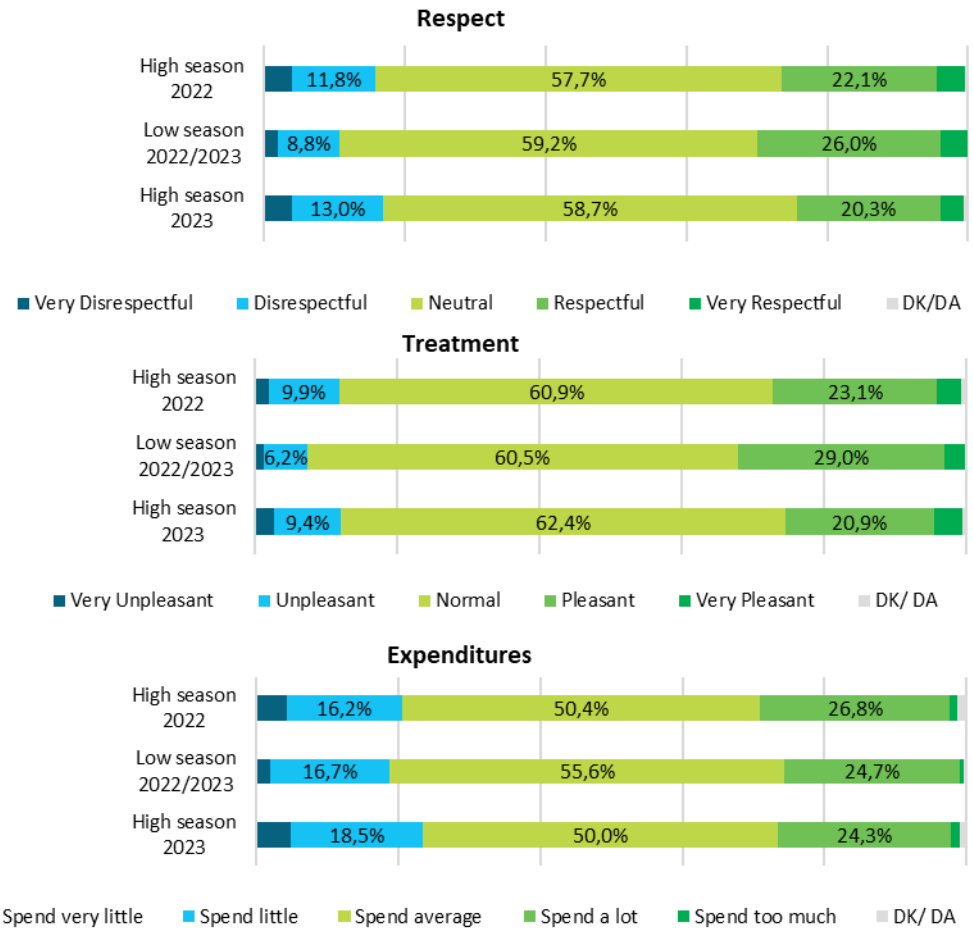
Evaluation of Tourist Behaviour

When comparing residents' perceptions of tourist behaviour in terms of respect between the high seasons of 2022 and 2023, it can be seen that less respondents report respectful behaviour (decrease from 22.1% to 20.3%) and more respondents rate the behaviour as neutral (from 57.7% to 58.7% or disrespectful (from 11.8% to 13.0%) (Figure 51). Regarding the way tourists treat residents, also less respondents reported "pleasant" treatment (decrease from 23.1% to 20.9%) and more respondents gave neutral ratings (from 60.9% to 62.4%). In terms of expenditures, the comparison between high season 2022 and 2023 shows a change towards higher ratings for "little" spending (from 16.2% to 16.5%) and lower ratings for tourists spending "a lot" (from 26.8% to 24.3%).

When reviewing residents' evaluation of tourist behaviour in the low season, it can be seen that respect is rated higher (26.0% indicating "respectful" behaviour) as well as treatment (29.0% reporting "pleasant" treatment), as compared to the high seasons. For expenditures, the evaluations show lower spending perceptions in the low season of 2022/2023 that continue through to the high season.

In conclusion, residents' perception of tourists' behaviour is generally more positive in the low season, while the ratings are declining in the high season. Evaluations of tourists' expenditures show a negative evolution, which has to be, however, seen in context of other external factors such as the ongoing economic recession.

Figure 51 Evaluation of Tourist Behaviour in Terms of Respect, Treatment and Expenditures



Source: Own elaboration

Positioning on Tourism Development

A comparison of residents' positioning towards future tourism development in their municipality between the high season 2022 and high season 2023 reveals a decrease in the number of respondents who wish to receive more tourists in the future (from 32.4% to 27.6%) and an increase of respondents who wish to receive less tourists

(from 13.2% to 17.6%) or to keep the number of tourists at the same level (from 50.9% to 52.4%) (Figure 52).

This evaluation is different for the low season of 2022/2023, where 38.0% of respondents state they wish to receive more tourists, while the ratio for those who prefer less tourists (11.8%) or the same as is (46.8%) is lower.

These results show that residents positioning towards tourism development is more positive during the low season, while their preference for more tourism development is declining over the course of the two high seasons studied.

Figure 52 Positioning on Tourism Development

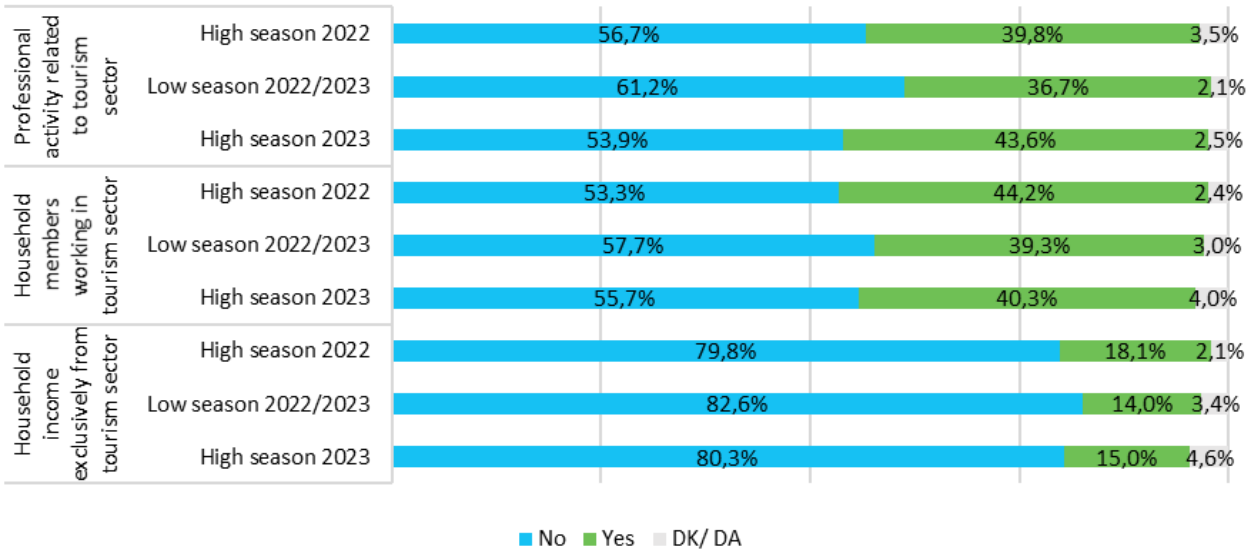
Source: Own elaboration

5.1.2.3 Dependency on the Tourism Sector

The comparison of high season 2022 and 2023 shows that more respondents hold employment in the tourism sector in the high season of 2023 (from 39.8% to 43.6%); however, the number has decreased for members of their households (from 44.2% to 40.3%) (Figure 53). At the same time, the number of respondents who indicate that their household income is coming exclusively from tourism is declining, from 18.1% in the high season of 2022 to 15.0% in the high season of 2023.

For the low season 2022/2023, it can be seen that the numbers for both respondents (36.7%) and members of their households (39.3%) who hold employment in the tourism sector is lower than in the high seasons and that only 14.0% report that their household income is mainly coming from tourism.

Figure 53 Dependency on the Tourism Sector



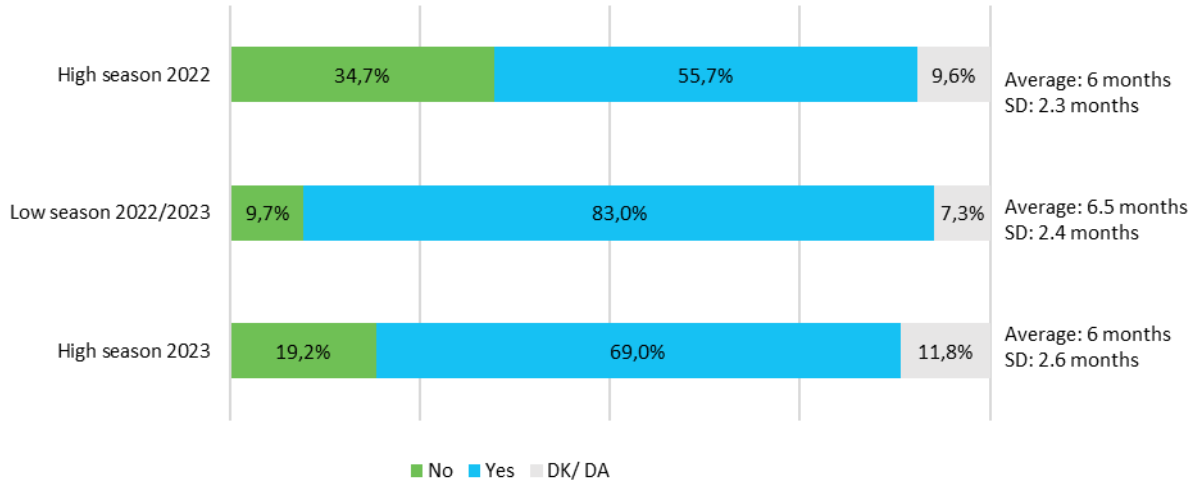
Source: Own elaboration

An analysis of the high seasons 2022 and 2023 shows that the number of respondents with professional activities related to the tourism sector that work all year around has increased from 55.7% to 69.0% (Figure 54). In parallel, the number of respondents with professional activities related to the tourism sector that indicate seasonal employment has decreased, and those indicating non-permanent employment work an average of six months in tourism-related activities in both high season 2022 and 2023.

In the low season of 2022/2023, the number of respondents with professional activities related to the tourism sector that indicate seasonal employment is only 9.7% and with that, considerably lower than in the seasons with high tourism activity. The average period of employment for residents with non-permanent employment in

tourism-related activities is with 6.5 month a little higher in the low season 2022/2023 than in the two high seasons observed.

Figure 54 Residents Working on the Tourism Sector All Year Around

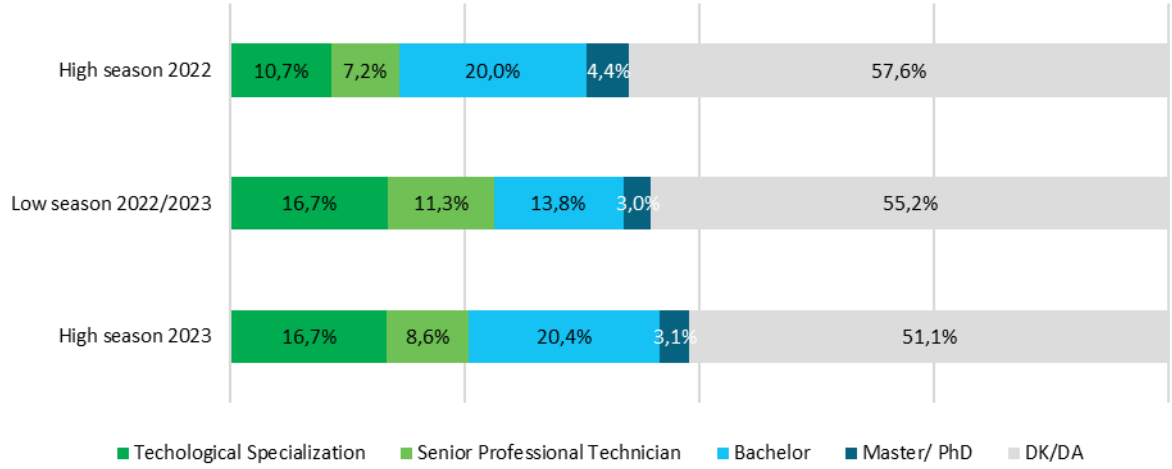


Source: Own elaboration

When comparing the results for the high seasons of 2022 and 2023 regarding residents with professional activities in the tourism sector that have completed specific training, an increase can be observed in the high season 2023 regarding the technical specialization (from 10.7% to 16.7%), senior professional technicians (from 7.2% to 8.6%) and Bachelor's degrees (20.0% to 20.4%), while the ratio of respondents holding a Master's degree or PhD has decreased (from 4.4% to 3.1%) (Figure 55).

In relation to the high seasons, the low season 2022/2023 shows a similar trend with regards to the technological specialization (16.7%); however, more respondents report a holding a senior professional technician degree than in the high seasons (11.3%) while less respondents indicate holding a Bachelor's (13.8%) or Master's/ PhD degree (3.0%).

Figure 55 Residents Working on the Tourism Sector with Specific Training



Source: Own elaboration

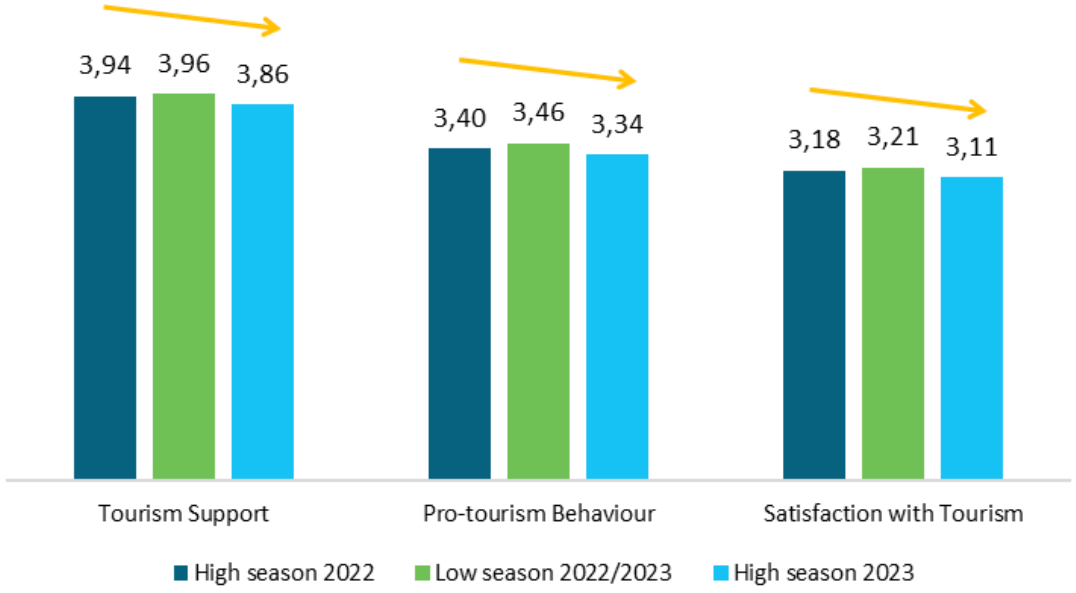
5.1.2.4 Support, Pro-Tourism Behaviour and Satisfaction with Tourism

The comparison between the high season of 2022 and high season of 2023 show a decrease of residents' support of tourism activity (from 3.94 to 3.86), pro-tourism behaviour (from 3.44 to 3.34) and satisfaction with tourism (from 3.18 to 3.11) (Figure 56). Still, with very similar values in-between them and always above 3, specially for the support of residents regarding tourism activity.

For the low season of 2022/2023, values had been increasing for tourism support (3.96) and satisfaction with tourism (3.21), while the value for pro-tourism behaviour follows the declining evolution (3.34).

The longitudinal analysis therefore shows that, while tourism support and satisfaction with tourism was slightly higher in the low season of 2022/2023, a small and non-significant decreasing evolution can be observed for support, pro-tourism behaviour and satisfaction with tourism in the high season.

Figure 56 Support, Pro-Tourism Behaviour and Satisfaction with Tourism



Source: Own elaboration

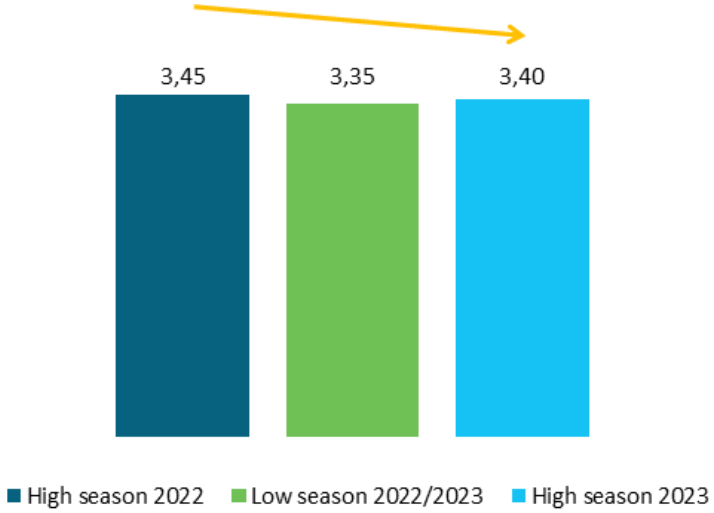
5.1.2.5 Quality of Life and Individual Happiness

Regarding quality of life and individual happiness, the comparison between high season 2022 and high season 2023 shows a small and non-significant decrease in residents' perceptions from 3.45 to 3.40 (Figure 57).

For the low season 2022/2023, this value drops to 3.35 compared to the high season 2022 before increasing to 3.40 in the high season 2023.

Overall, it can be observed that, while there is some variation between the different seasons, residents in the Algarve show moderate levels of agreement regarding their quality of life and individual happiness.

Figure 57 Quality of Life and Individual Happiness



Source: Own elaboration

5.2. Tourists' Results

Questionnaires to the tourists were applied during the high season of tourist activity in the Algarve, i.e. July 2022 and June to July 2023, as well as the low season, i.e. February and March 2023.

5.2.1 Sample Characterization

5.2.1.1 High Season 2022

Table 14. High Season 2022 | Sample Characteristics

Characteristic	N	%
Gender		
Male	524	53.8
Female	442	45.4
Other	2	0.2
DK/DA[1]	6	0.6

Age Group		
18 – 24 years	163	16.7
25 – 64 years	670	68.8
65 and more	25	2.6
DK/DA[1]	116	11.9
Marital Status		
Single	342	35.1
Married/Living together	541	55.5
Divorced/Separated	64	6.6
Widowed	8	0.8
DK/DA[1]	19	2.0
Education Level		
Primary School	45	4.6
High School	342	35.1
University	534	54.8
DK/DA[1]	53	5.4
Employment Situation		
Employed	632	64.9
Entrepreneur	148	15.2
Unemployed	23	2.4
Student	103	10.8
Retired	34	3.5

Homemaker	5	0.5
DK/DA[1]	29	3.0

Source: Own elaboration
[1] DK/DA stands for Does not know/Does not answer

Characteristic	N	%
Net Monthly Income		
Up to 1000€	136	14.0
1001€ - 2000€	253	26.0
2001€ - 3000€	234	24.0
3001€ - 4000€	128	13.1
4001€ or more	99	10.2
DK/DA[1]	124	12.7

974 questionnaires to tourists from the 8 markets of origin were collected and validated during the high season of 2022 (Table 19).

The gender distribution among participants shows a slightly higher response rate among people identifying as females (53.8%) compared to the male representing (45.3%) and non-binary ones (0.2%).

Most participants are aged between 25-64 years (68.7%), and the smallest age group is over 65 years (2.57%), followed by 18-24-year-olds (16.7%).

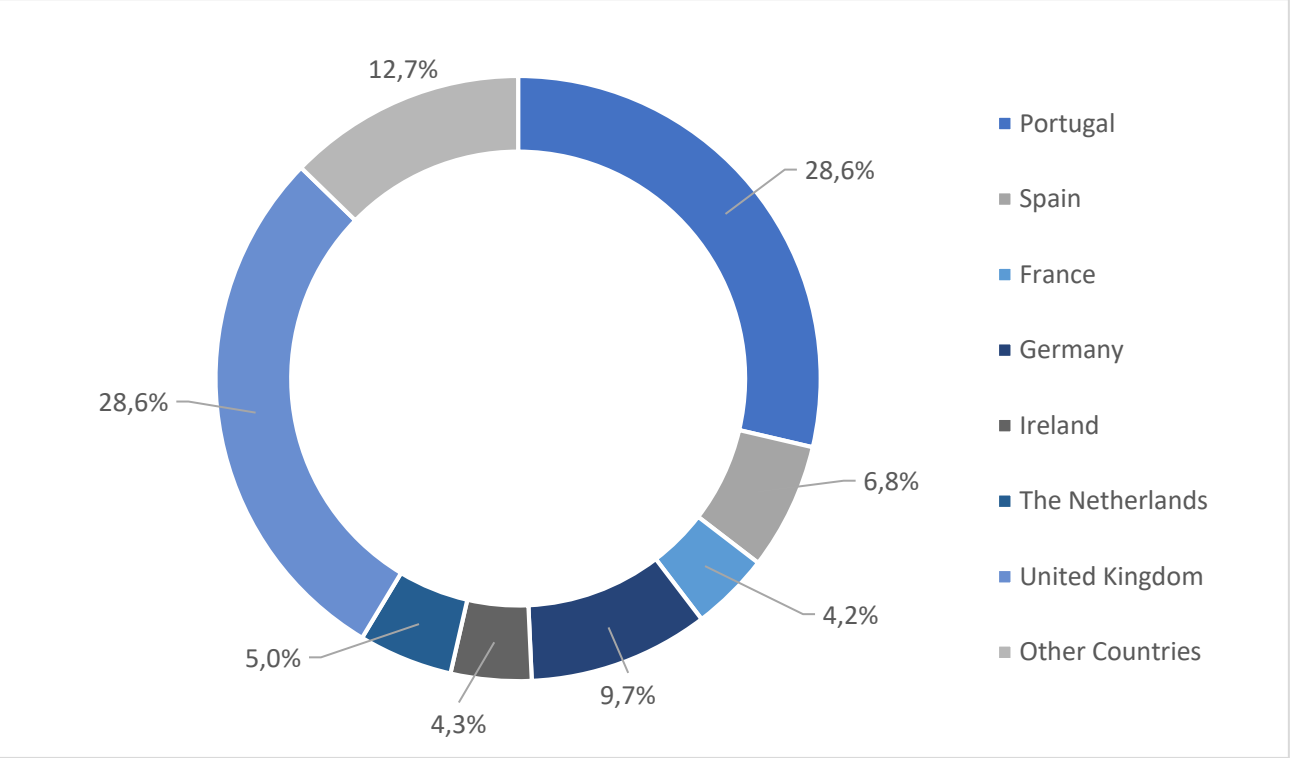
The majority of the respondents are married, living with a partner (55.5%) or single (35.1%). They hold a university degree (54.8%) or have completed high school education (35.1%).

Respondents indicate being employed (64.8%), entrepreneurs (15.2%) or students (10.6%), with a net monthly income of 1.000 € to 2.000 € (25.9%) or 2.000 € to 3.000 € (24%) (Table 2.2.2).

Fifty-eight nationalities' views are included in the survey. The data is presented by the participant's country of origin and closely reflects the distribution of origin markets

reflected official statistics of priority markets of the Algarve Tourism Board. Most participants originate from Portugal (28.6%), the UK (28.6%), and Germany (9.7%) (Figure 58).

Figure 58 High Season 2022 | Main Source Markets



Source: Own elaboration

5.2.1.2 Low Season 2023

Table 15 Low Season 2022-2023 | Sample Characteristics

Characteristic	N	%
Gender		
Male	222	43.2
Female	287	55.8
Other	1	0.2
DK/DA[1]	4	0.8
Age Group		
18 – 24 years	62	12.1
25 – 64 years	287	55.8
65 and more	68	13.2
DK/DA[1]	97	18.9
Marital Status		
Single	171	33.3
Married/Living together	274	53.3
Divorced/Separated	33	6.4
Widowed	12	2.33
DK/DA[1]	24	6.7
Education Level		
Primary School	22	4.3
High School	189	36.8
University	254	49.4

DK/DA[1]	49	9.5
Employment Situation		
Employed	281	54.7
Entrepreneur	69	13.4
Unemployed	12	2.3
Student	28	5.5
Retired	88	17.1
Homemaker	3	0.6
DK/DA[1]	33	6.4

Characteristic	N	%
Net Monthly Income		
Up to 1000€	69	16.4
1001€ - 2000€	136	26.5
2001€ - 3000€	111	21.8
3001€ - 4000€	46	9.0
4001€ or more	59	11.5
DK/DA[1]	93	18.1

During the low season of 2023, 514 questionnaires to tourists were collected and validated (Table 20).

The gender distribution among participants shows a higher response rate among people identifying as females (55.8%) compared to the male representing (43.2%) and non-binary ones (0.2%).

Most participants are between 25-64 years (55.8%), and the smallest age group is 18-24 years old (12.1%), followed by over 65-year-olds (13.2%).

The majority of the respondents are married or living with a partner (53.3%) or widowed (2.3%). They hold a university degree (49.4%) or have completed high school education (36.8%).

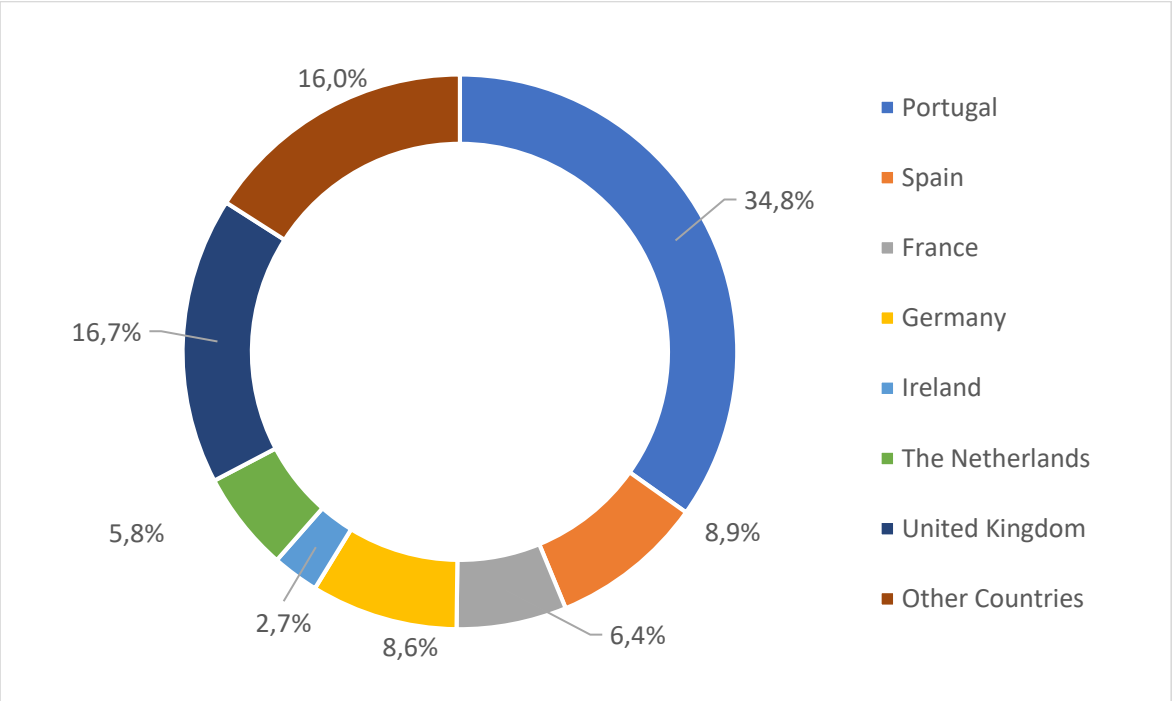
Respondents indicate being employed (54.7%), retired (17.1%) or entrepreneurs (13.4%), with a net monthly income of 1,001 € - 2000 € (26.4%) or 2,001 € to 3,000 € (21.8%) (Table 20).

Source: Own elaboration

[1] DK/DA stands for Does not know/Does not answer

Fourty-four nationalities' views are included in the survey. The participant's country of origin closely reflects the low season distribution of markets reflected in the statistics of priority markets of the Algarve Tourism Board. Most participants originate from Portugal (34.8%), the UK (16.7%), and Spain (8.9%) (Figure 59).

Figure 59 Low Season 2022-2023 | Main Source Markets



Note: Values in percentage
Source: Own elaboration

5.2.1.3 High Season 2023

Table 16 High Season 2023 | Sample Characteristics

Characteristic	N	%
Gender		
Male	440	40.1
Female	626	57.0
Other	2	0.2
DK/DA[1]	30	2.7
Age Group		
18 – 24 years	189	17.2
25 – 64 years	650	59.2
65 and more	83	7.6
DK/DA[1]	176	16.0
Marital Status		
Single	462	42.1
Married/Living together	504	45.1
Divorced/Separated	69	6.3
Widowed	14	1.3
DK/DA[1]	49	4.5
Education Level		
Primary School	43	3.9
High School	413	37.6
University	573	52.2

DK/DA[1]	69	6.3
Employment Situation		
Employed	665	60.6
Entrepreneur	115	10.5
Unemployed	19	1.7
Student	126	11.5
Retired	109	9.9
Homemaker	8	0.7
DK/DA[1]	56	5.1

Characteristic	N	%
Net Monthly Income		
Up to 1000€	164	14.9
1001€ - 2000€	260	23.7
2001€ - 3000€	221	20.1
3001€ - 4000€	118	10.8
4001€ or more	137	12.5
DK/DA[1]	198	18.0

Out of the total sample of 1098 respondents in the high season of 2023, the gender distribution among participants shows a higher percentage among people identifying as females (57.1%) compared to the male group representing 40.1% and non-binary ones (0.2%) (Table 21).

Most participants are between 25-64 years (59.2%), and the smallest age group is over 65 (7.6%), followed by over 18-24 years old (17.2%). The majority of the respondents are married, living with a partner (45.1%) or single (42.1%).

More than half of the respondents hold a university degree (52.2%) and more than one-third have completed high school education (37.6%).

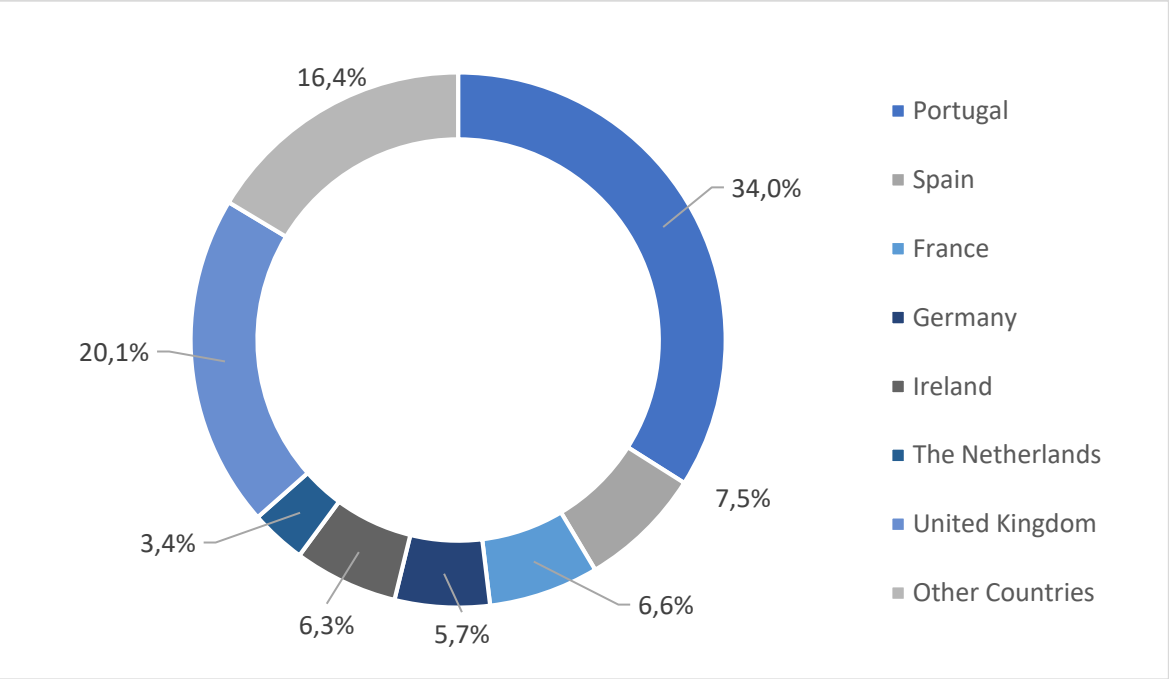
The majority of respondents indicated to be employed (60.6%), to be students (11.5%) or entrepreneurs (10.5%). The distribution of net monthly income is slightly asymmetric, with the largest groups with net monthly incomes of 1,001 € - 2000 € (23.7%) or 2,001 € to 3,000 € (20.1%) (Table 21).

Source: Own elaboration

[1] DK/DA stands for Does not know/Does not answer

The participant's country of origin closely reflects the high season distribution of the number of guests by markets reflected in the statistics of priority markets of the Algarve Tourism Board. Most participants originate from Portugal (34.0%), the UK (20.1%), and Spain (7.5%) (Figure 60).

Figure 60 High Season 2023 | Main Source Markets



Source: Own elaboration

5.2.2 Longitudinal Analysis

In order to allow for a longitudinal analysis of tourists' experience in the Algarve, we conducted comparisons between the results of the high seasons 2022 and 2023, as well as the low season 2023. It needs to be noted that, while the analysis can give a general idea about trends and developments, differences in the sample characteristics (e.g. regarding age or the respondents or their dependency on tourism) as well as other external factors, such as overall economic development, may influence the observed results.

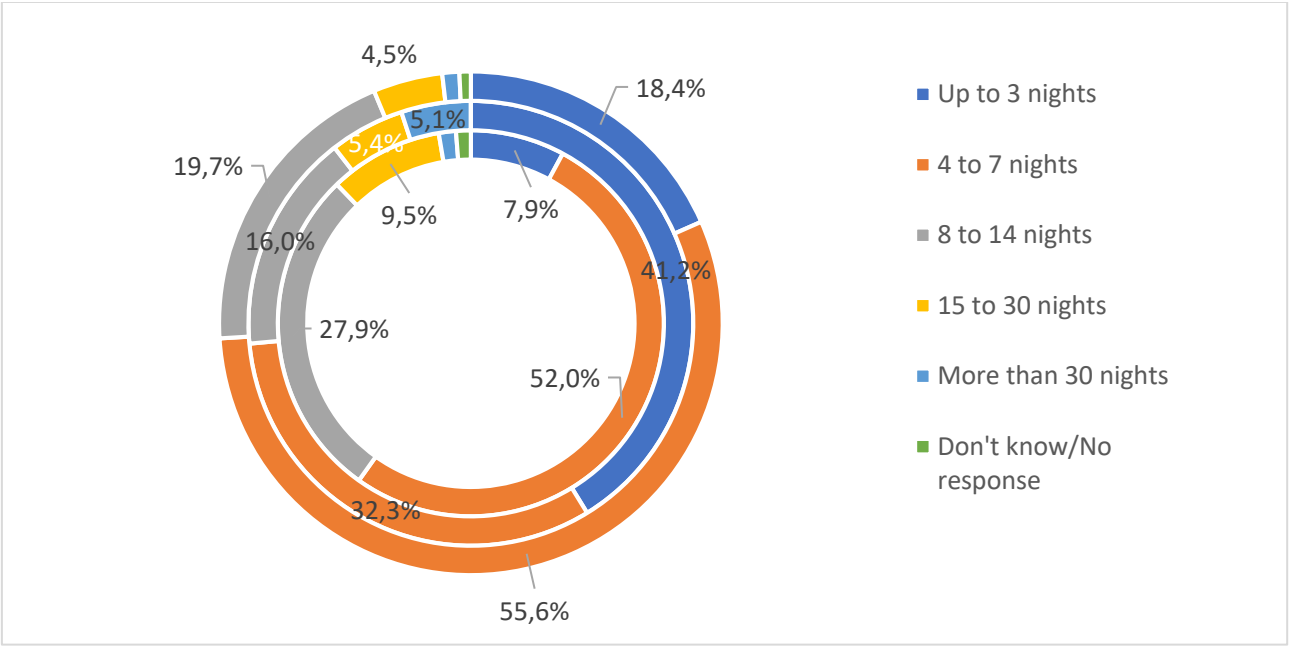
Additionally, it is important to note that the analysed data was obtained in three different moments in a relatively short period of time. Therefore, although this analysis

is possible to be done with the available data, further studies should be conducted with future data in a long-term perspective.

5.2.2.1 Travel Logistics

Comparing the number of nights spent in the Algarve in all seasons, there is a clear growth in short visits when one observes high season 2022 (7.9%) and high season 2023 (18.4%) (Figure 61). The same occurred with 4 to 7 nights stays, going from 52.0% to 55.6%. More than a week-long stay fell over the course of each season. The low season differs from the high seasons due to the great increase in short visits (41.2%). Very long visits is also a distinct feature of the lower season.

Figure 61. Number of Nights Spent in the Algarve

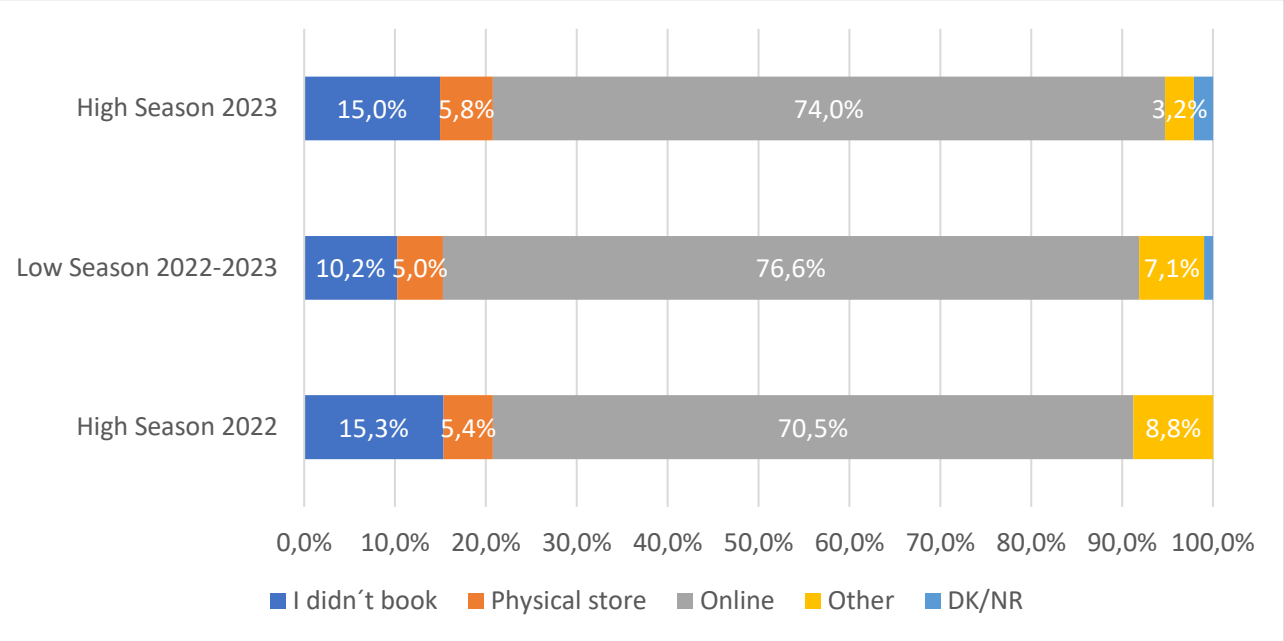


Source: Own elaboration

External Ring – High Season 2023: Middle Ring – Low Season 2022-2023; Internal Ring – High Season 2022

In what concerns the mode of booking trip to the Algarve, there is not a significant difference in answers in high season 2022 and high season 2023 (Figure 62). However, in the low season more tourists preferred to book their trip online (76.6%) or through other means (7.1%).

Figure 62. Mode of Booking

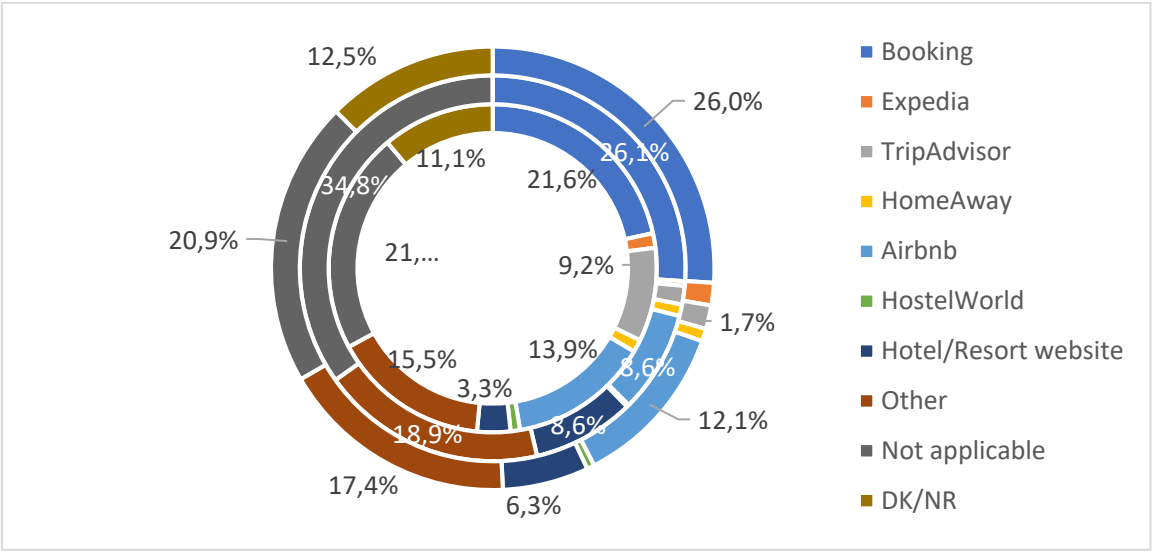


Source: Own elaboration

An increase in reservations through booking is clear through the seasons, as well as a decrease of TripAdvisor' usage, from 9.2% in high season 2022 to 1.7% in high season 2023 (Figure 63). However, an increase in bookings from the hotel website is noticeable in all seasons.

More than a third did not book their accommodation online in the low season (34.8%).

Figure 63. Online Booking of Accommodation



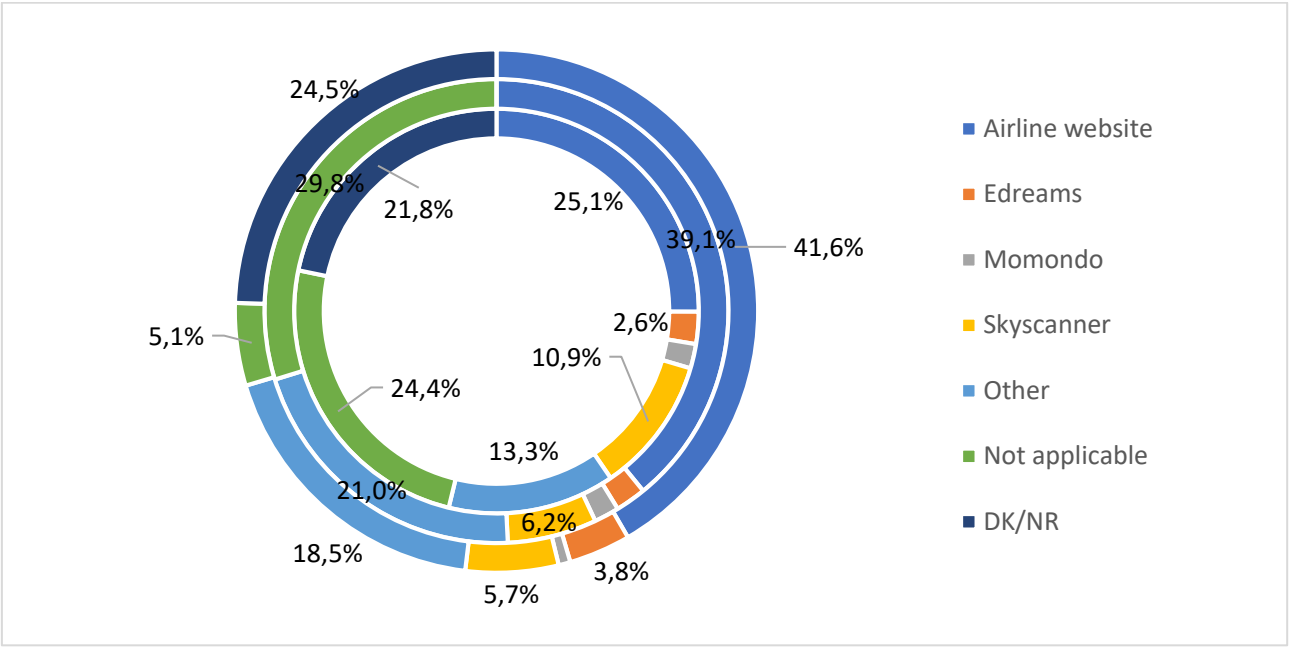
Source: Own elaboration

External Ring – High Season 2023: Middle Ring – Low Season 2022-2023; Internal Ring – High Season 2022

The booking of transportation using the airline website increased from 2022 to 2023, representing in the last season 41.6% of surveyed tourists (41.6%) (Figure 64). Additionally, the platform Edreams has the same trend, even though in smaller percentages.

On the other hand, Skyscanner presents a downward trend, representing more than ten percent in the high season 2022 (10.9%) and 5.7% in the high season 2023.

Figure 64. Online Booking of Transports

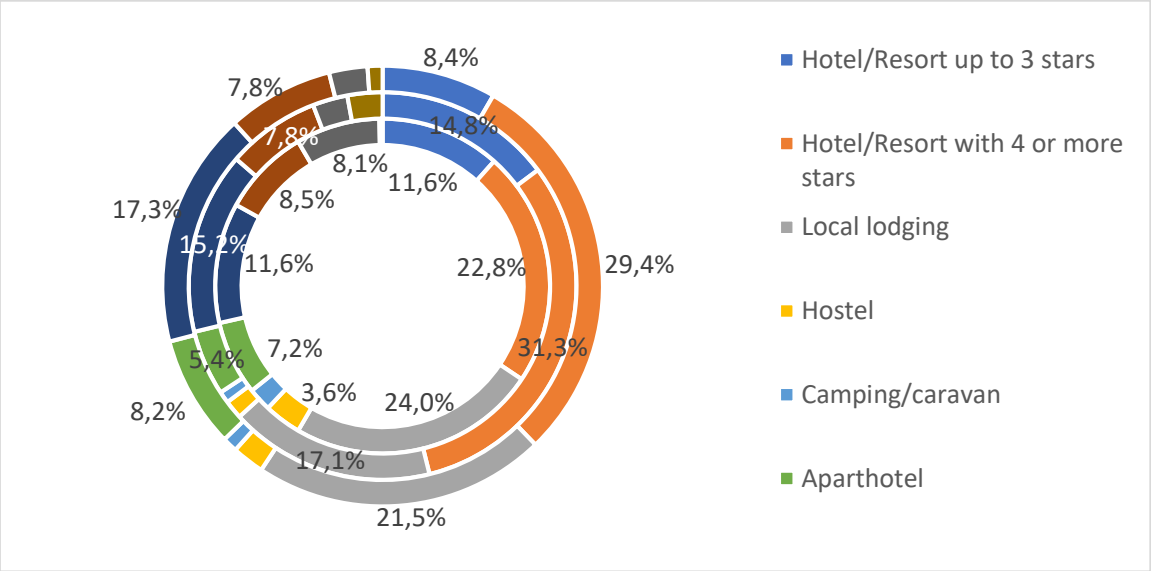


Source: Own elaboration

External Ring – High Season 2023: Middle Ring – Low Season 2022-2023; Internal Ring – High Season 2022

The longitudinal analysis regarding type of accommodation reveals an increase of housing by family or friends and hotels with 4 or more stars (Figure 65). There were no significant changes in the number of tourists that have their own holiday home. In the low season 2022/2023 there was an increase in accommodation in hotels up to 3 stars (14.8%) and a significant decrease in aparthotels (5.4%) and local lodging (17.1%).

Figure 65. Type of Accommodation

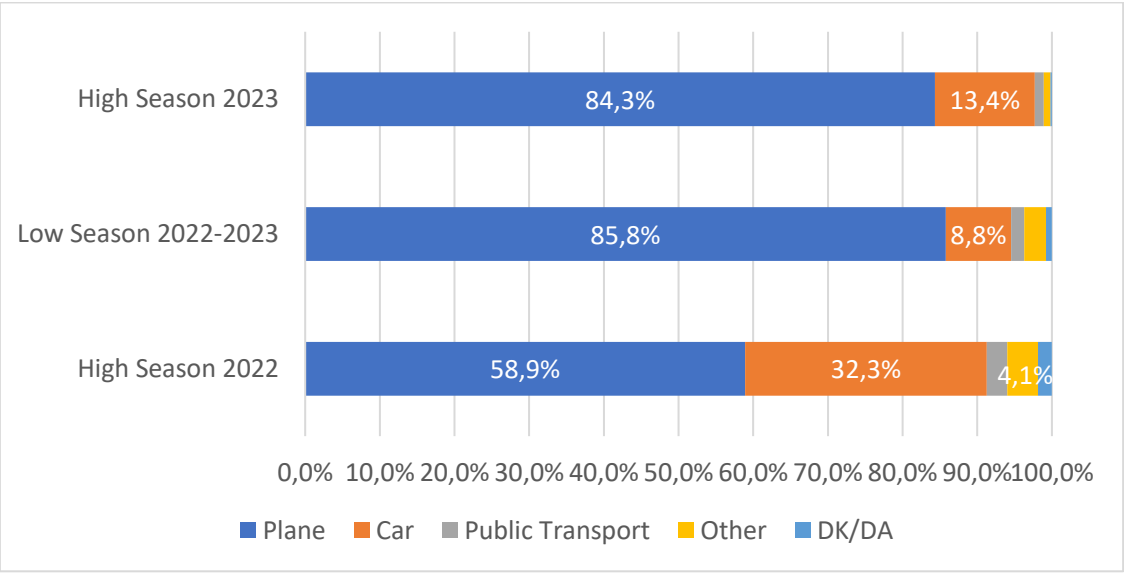


Source: Own elaboration

External Ring – High Season 2023: Middle Ring – Low Season 2022-2023; Internal Ring – High Season 2022

Airplane was certainly the most used transportation to the Algarve in all seasons, being more represented in low season 2022/2023 and high season 2023 than in high season 2022 (Figure 66). Public transportation suffered a decrease through all seasons.

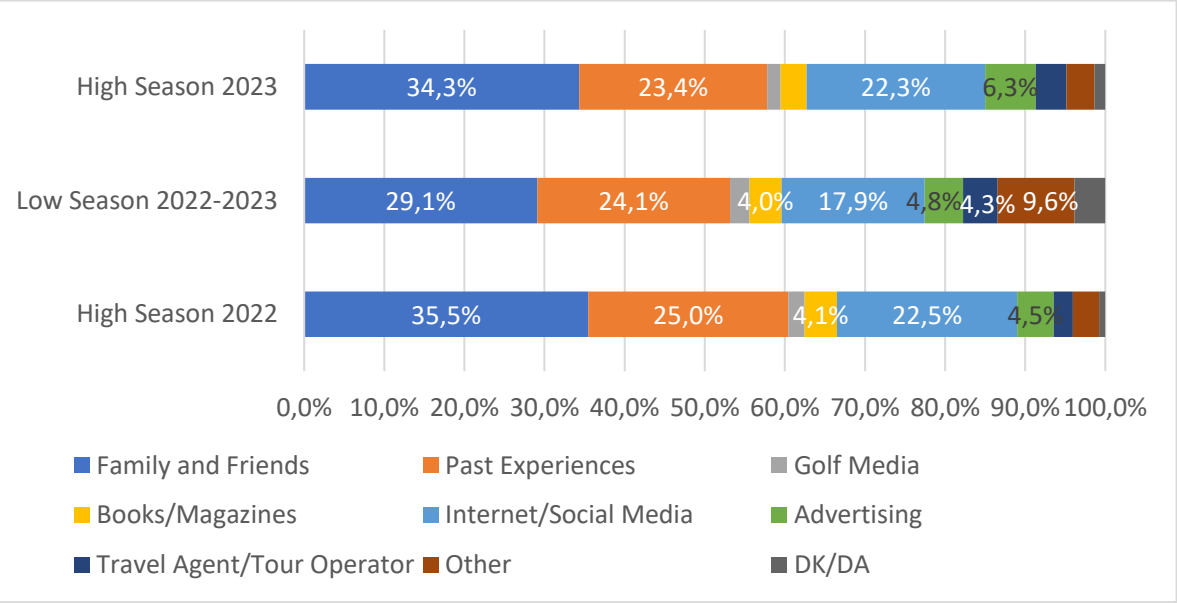
Figure 66. Means of Transportation to the Algarve



Source: Own elaboration

Friends and family are considered the main sources of information to come to the region, followed by past experiences and social media (Figure 67). These three factors all suffered a significant decrease in low season 2022/2023. Information from books and magazines and travel agents or tour operators did not present significant differences in all seasons. Advertising had a very small increase through the seasons, going from 4.5% in high season 2022 to 6.3% in high season 2023.

Figure 67. Information Sources About the Algarve

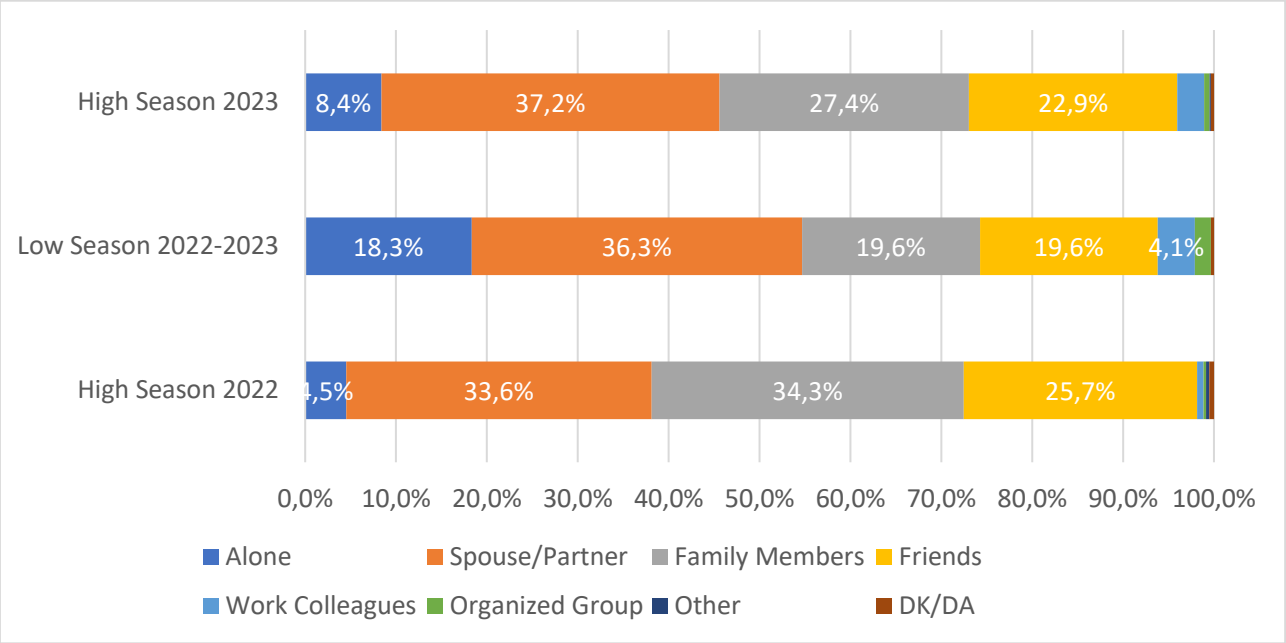


Source: Own elaboration

There exists a clear difference in high and low season in what concerns the travel partnership (Figure 68).

In low season, tourists prefer to come alone, when compared to the high seasons. In high season on the other hand, family members and friends have a greater parcel of the sample. Regardless the season, a third of tourists choses to come to the region with their spouse or partner.

Figure 68. Travel Party

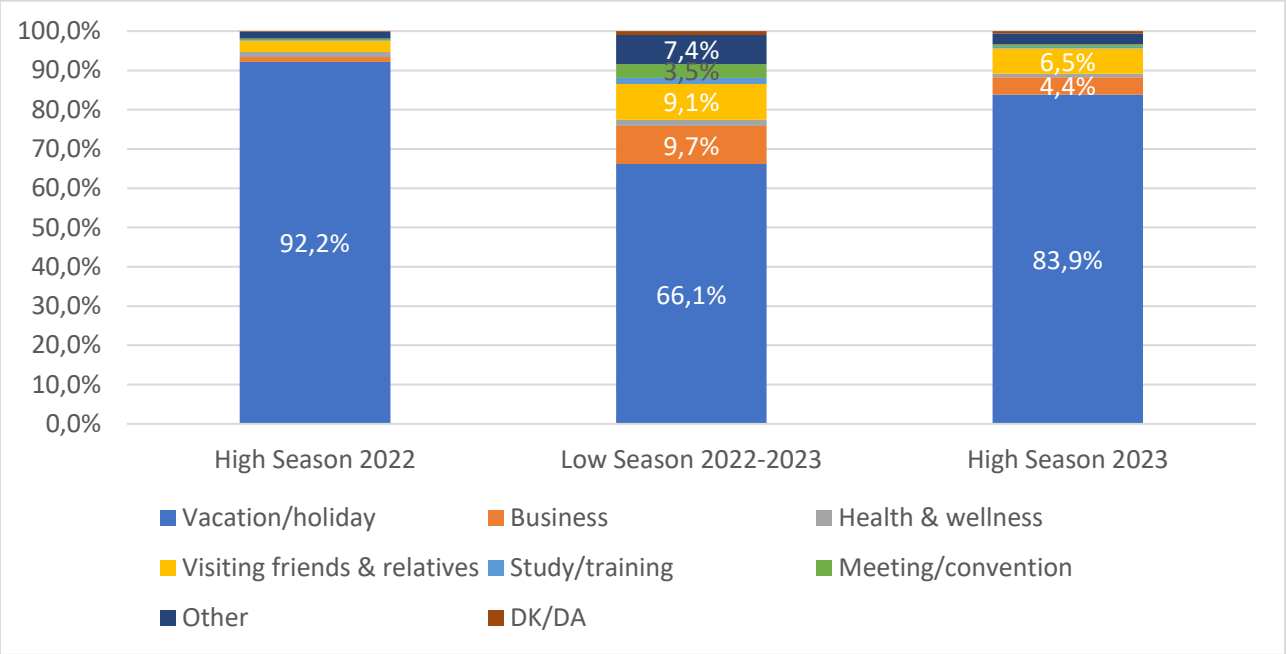


Source: Own elaboration

5.2.2.2 Motivations to visit the Algarve

The main motivation to visit the Algarve is vacation holiday, present in all seasons (Figure 69). However, in low season 2022/2023, other motivations have a stronger representation when compared to high seasons, namely business (9.7%), visiting friends and relatives (9.1%) and meeting or conventions (7.4%). From high season 2022 to high season 2023, there is a clear growth in terms of business trips (6.5%) and visiting friends and family (6.5%).

Figure 69. Motivations to visit the Algarve

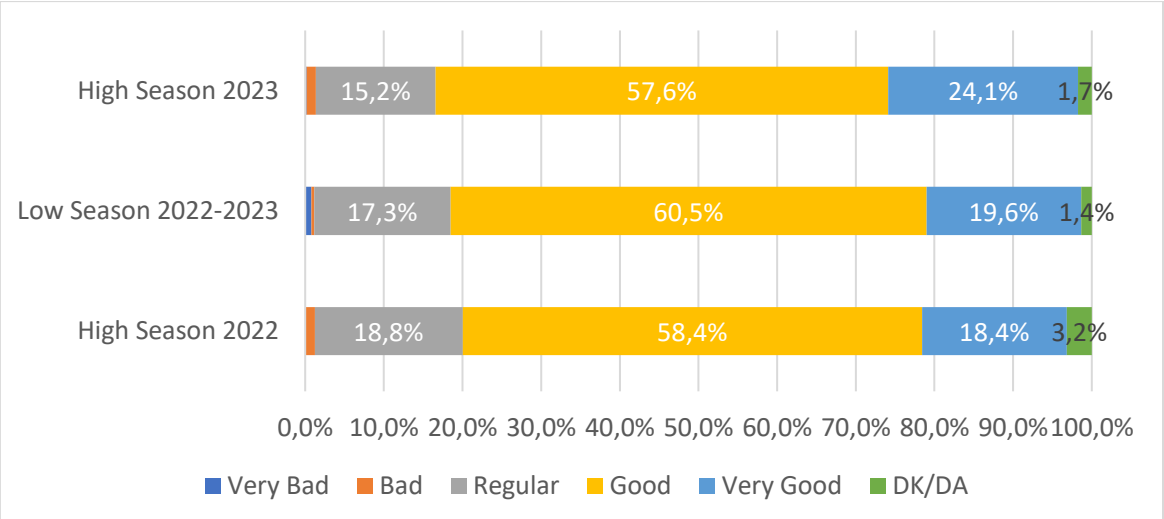


Source: Own elaboration

5.2.2.3 Assessment of Services' Quality, Accessibility and Price Levels

A longitudinal analysis of the quality of overall tourism services shows no significant difference in tourists' assessment throughout the seasons (Figure 70), with the exception of the increase in "Very Good" assessment in high season 2023 (24.1%).

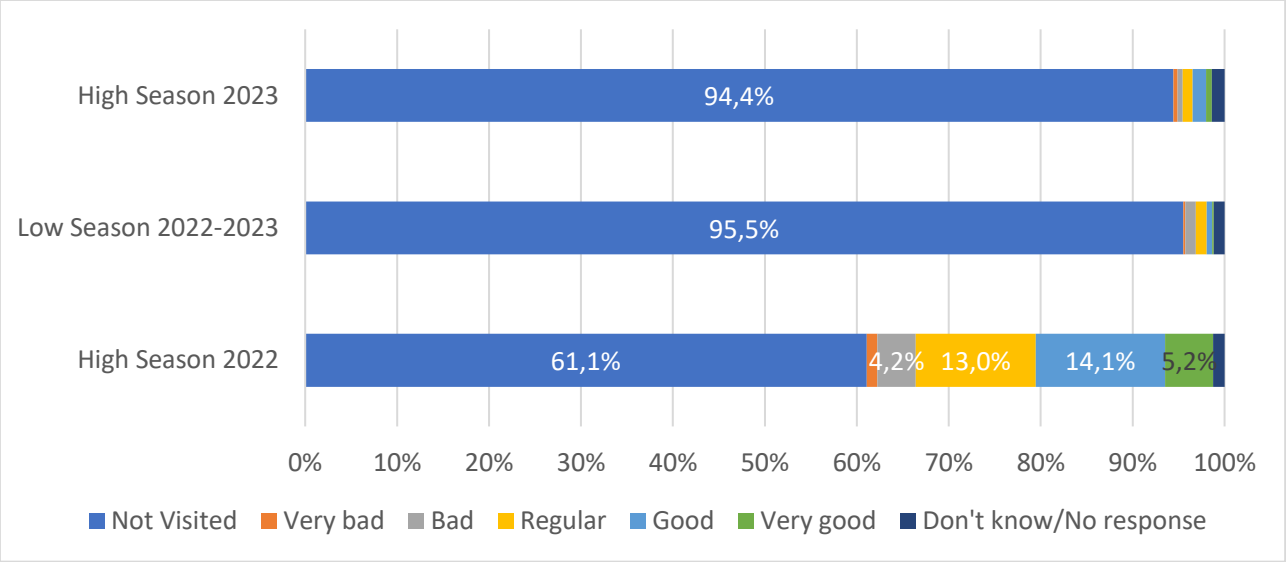
Figure 70. Quality of Tourism Services



Source: Own elaboration

Regarding health services, the number of tourists that visited health services during their stay is very low, and it decreases even more if one observes the last two seasons (Figure 71). Therefore, due to the very small sample size, it is unclear the conclusion one can take from a longitudinal analysis on this section in particular.

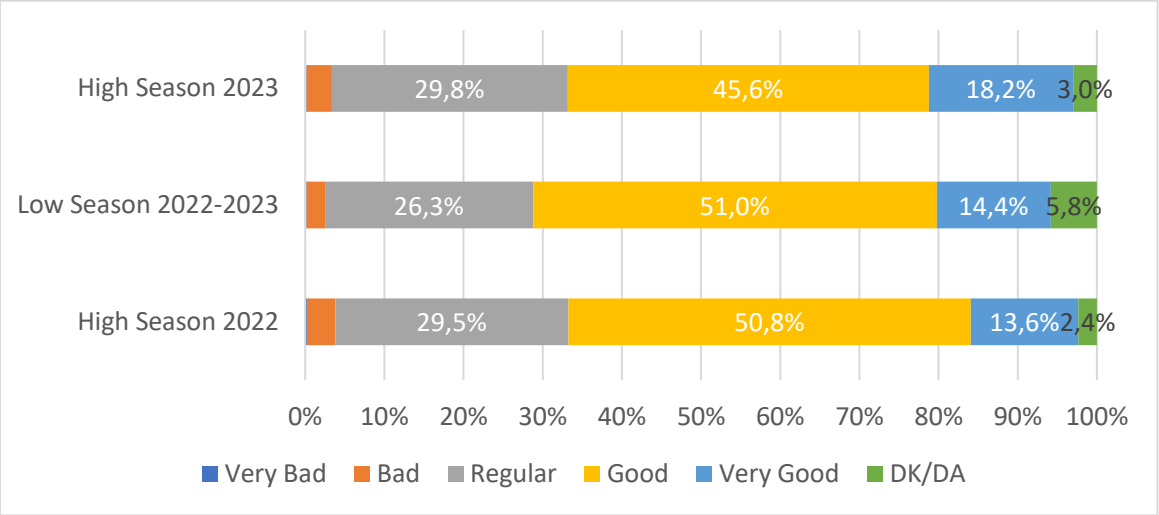
Figure 71. Quality of Health Services



Source: Own elaboration

The quality of local trade and traditional stores was accessed by the majority of tourists as good and very good in all seasons (Figure 72). This perception increased in low season 2022/2023, and the assessment of regular and bad decreased in this season.

Figure 72. Quality of Local Trade/Traditional Stores

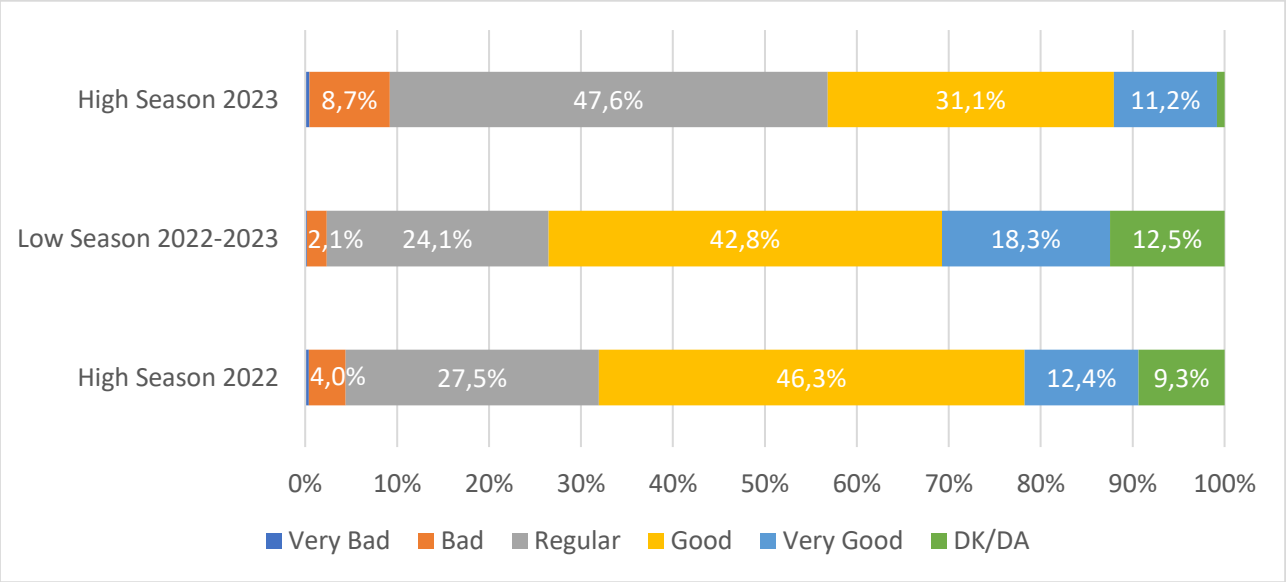


Source: Own elaboration

Observing the answer distribution of the quality of malls and shopping centres through all the seasons, from high season 2022 to low season 2023, there is a decrease in the good, regular and bad perceptions and an increase in very good and non-respondents (Figure 73).

In high season 2023, the trend shifts with an increase in the bad and regular perceptions and a drop in good and very good perceptions. The percentage of non-respondents in the latter season is very close to zero.

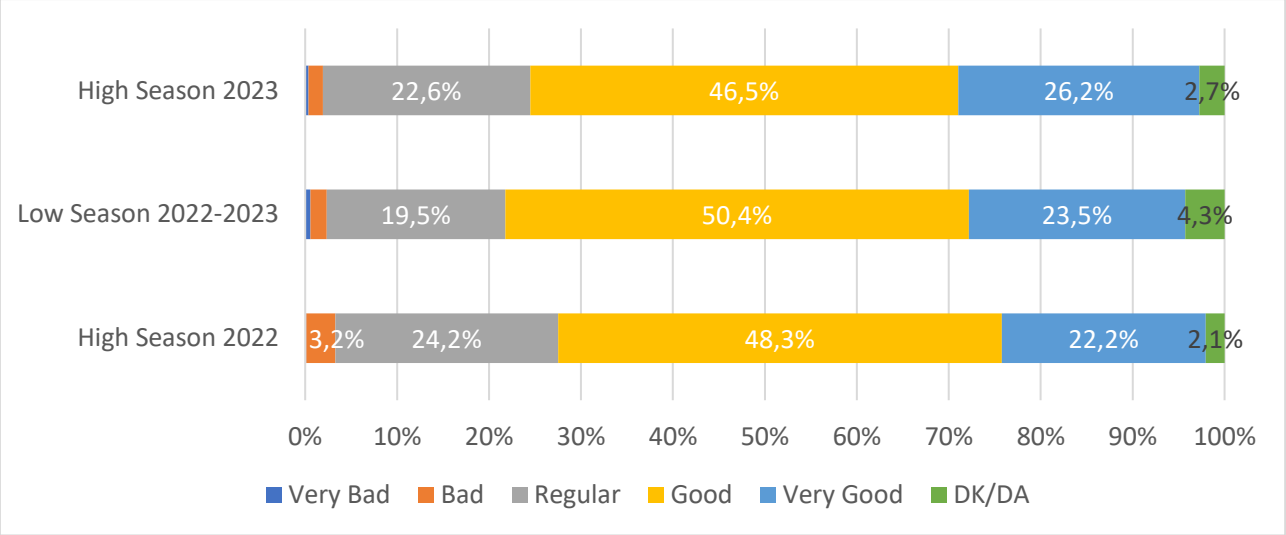
Figure 73. Quality of Shopping Centres



Source: Own elaboration

Tourists' perception of the quality of restaurants and similar services is homogeneous throughout the seasons with most respondents rating it as good and very good (Figure 74). In the low season it is clear an increase in positive classification and a decrease in regular (19.5%) perception.

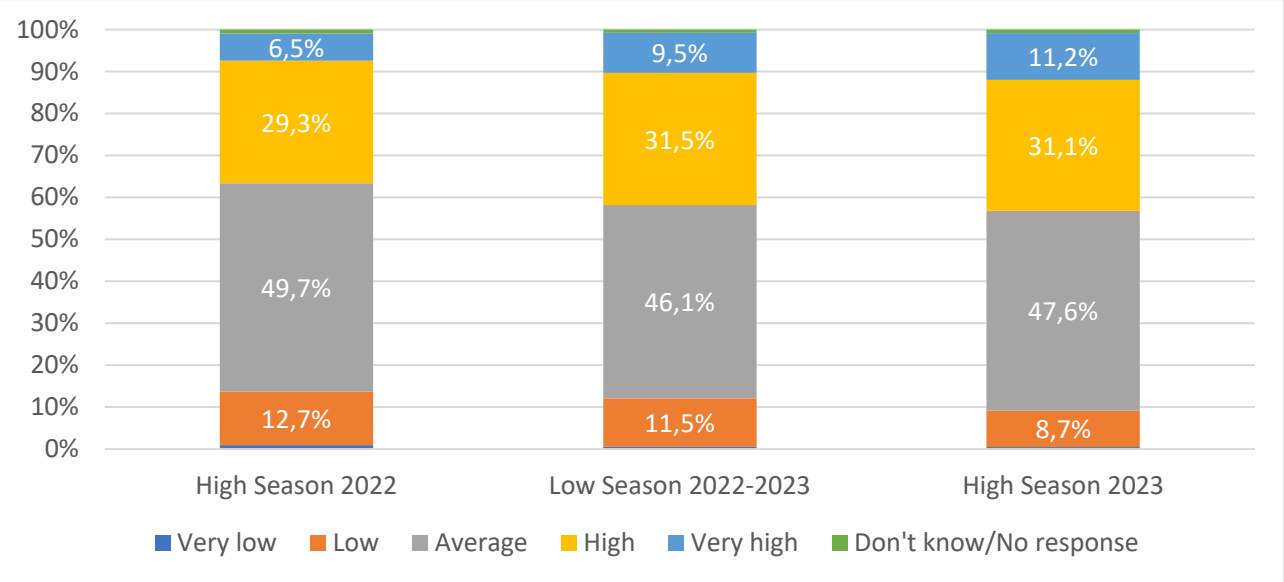
Figure 74. Quality of Restaurants and Similar Services



Source: Own elaboration

Even though the overall price levels do not seem to suffer significant changes qhen observing all seasons, there is an increasing trend in the perception of high and very high price levels (Figure 75).

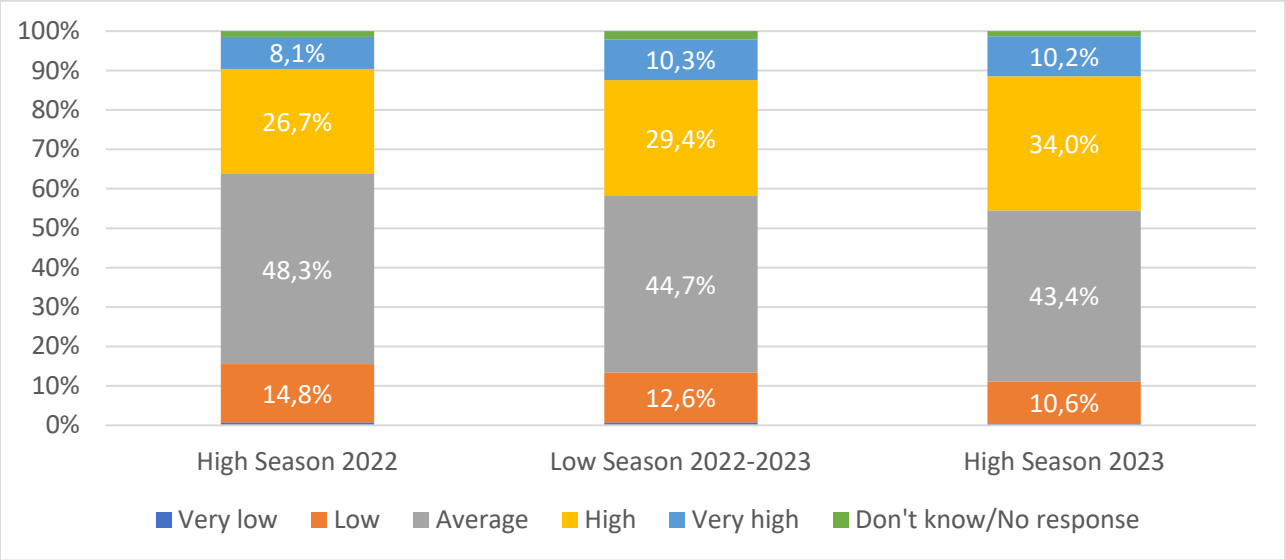
Figure 75. Evaluation of Overall Price Levels



Source: Own elaboration

Regarding restaurants' price levels, it follows the same trend as the overall price levels, with a decrease in the low and very low from 2022 to 2023 (Figure 76).

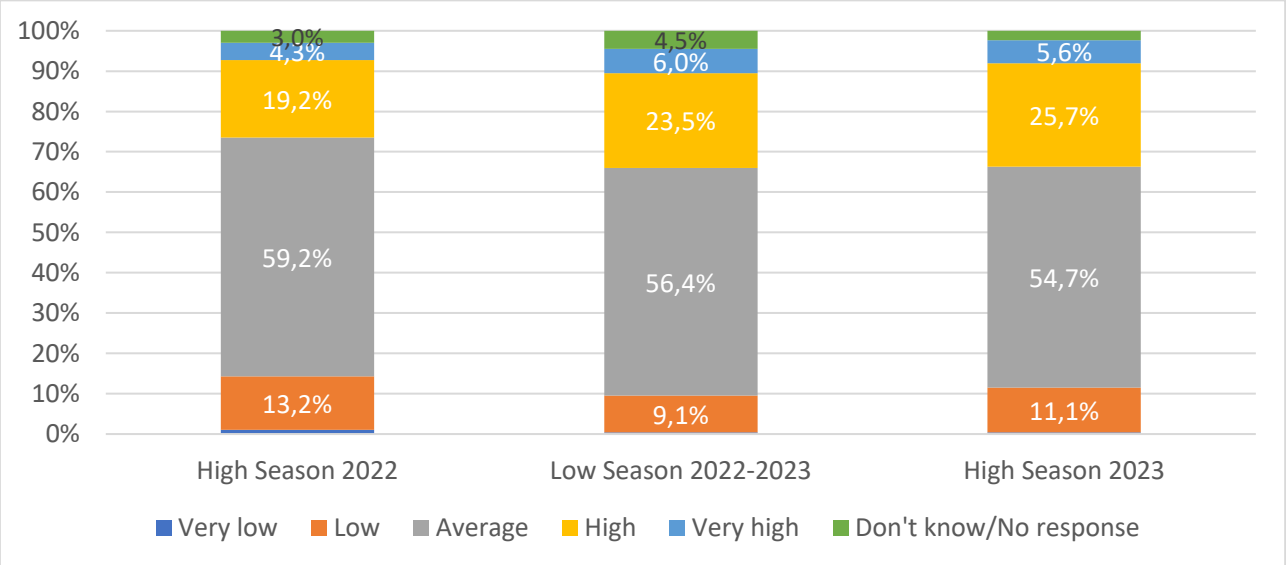
Figure 76. Evaluation of Restaurants' Price Levels



Source: Own elaboration

Tourists' perceptions of local trade and traditional stores' price levels suffered an increase in low season 2022/2023 compared with high season 2022 and high season 2023 (Figure 77).

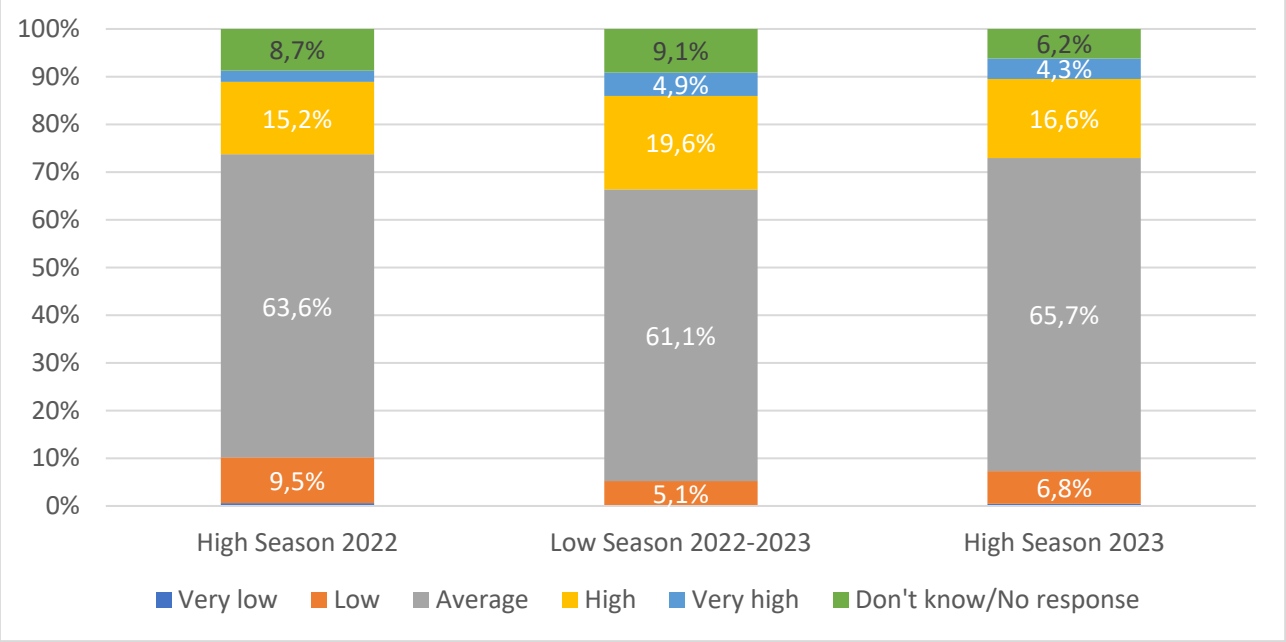
Figure 77. Evaluation of Local Trade and Traditional Stores' Price Levels



Source: Own elaboration

The perception of price levels in shopping centres and malls (Figure 78) is quite similar with the one registered in local trade and traditional stores, with an increase in high and very high classification in the low season 2022/2023 compared with the high seasons.

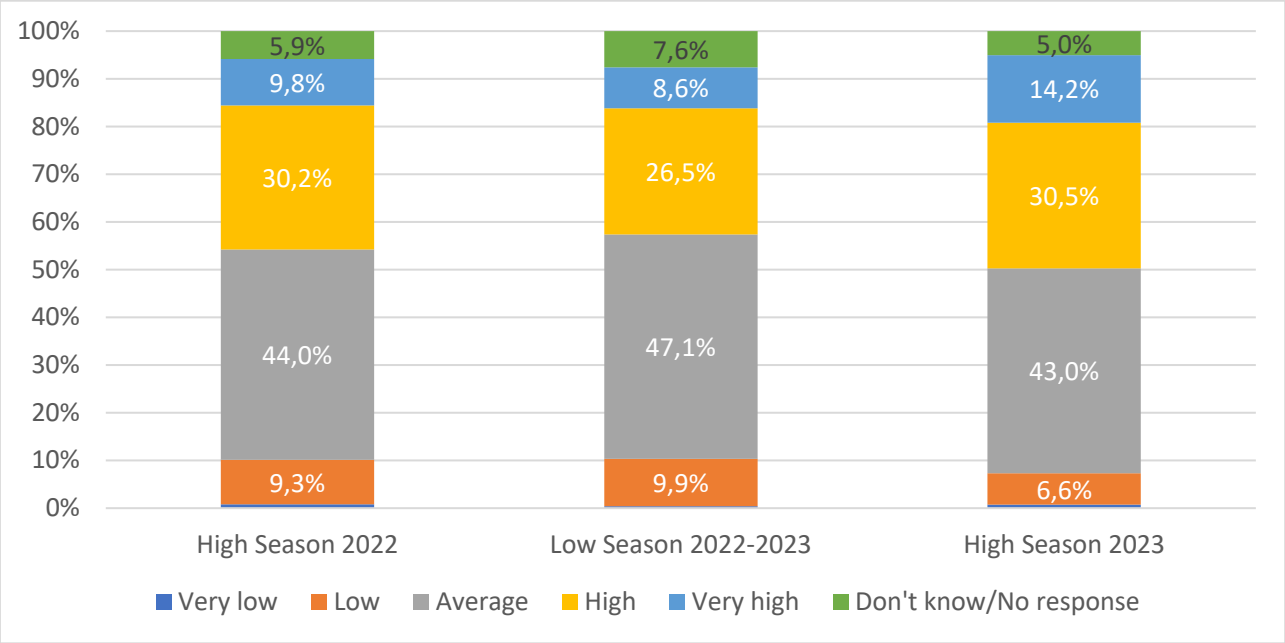
Figure 78. Evaluation of Shopping Centres and Malls' Price Levels



Source: Own elaboration

The trend registered in the price levels of accommodation services (Figure 79) is the opposite of the previous graphs. High season 2022 and high season 2023 present approximately the same answer distribution, except in the “very high” perception in 2022 (9.8%) and 2023 (14.2%). The perception of high price levels decreased in low season 2022/2023 in comparison with high seasons.

Figure 79. Evaluation of Accommodation Services' Price Levels



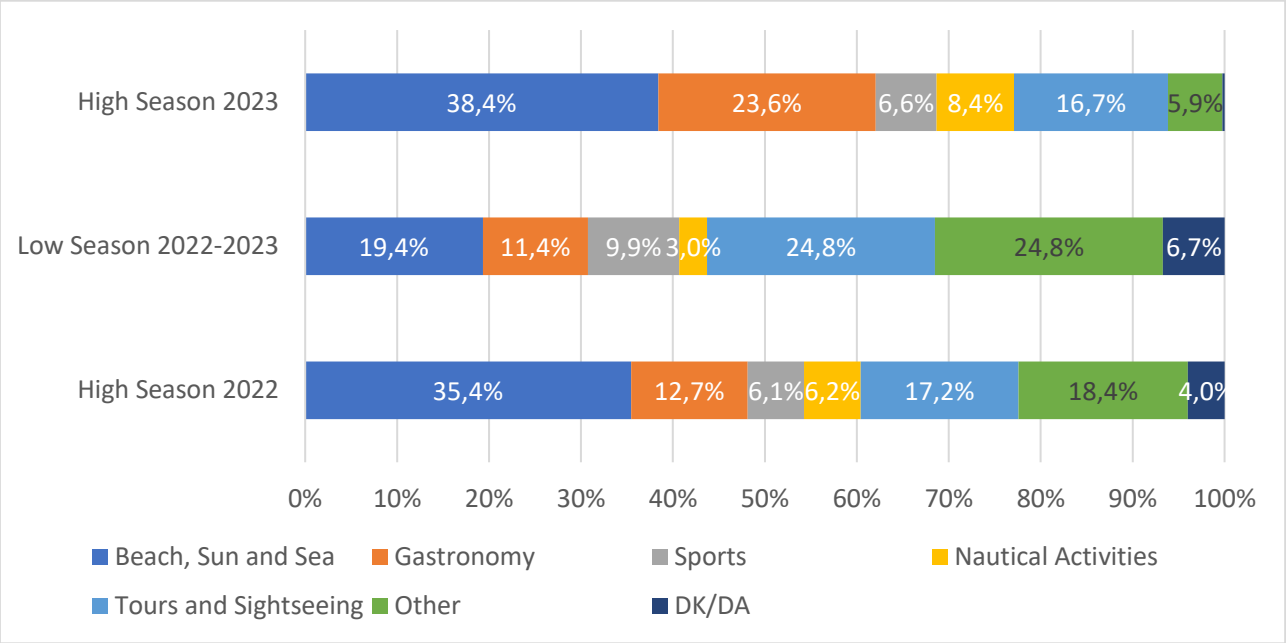
Source: Own elaboration

5.2.2.4 Activities in the Algarve

In the longitudinal analysis concerning the activities practiced by tourists in the Algarve indicates a clear difference between high and low seasons (Figure 80).

During high season, beach sun and sea were the favourite activity of tourists, followed by gastronomy and tours and sightseeing. In the low season, approximately half of the activities were tours and sightseeing and other type of activities. The nautical activities decreased during low season compared with high season 2022 and high season 2023, possibly due to the unfavourable weather conditions.

Figure 80. Activities in the Algarve

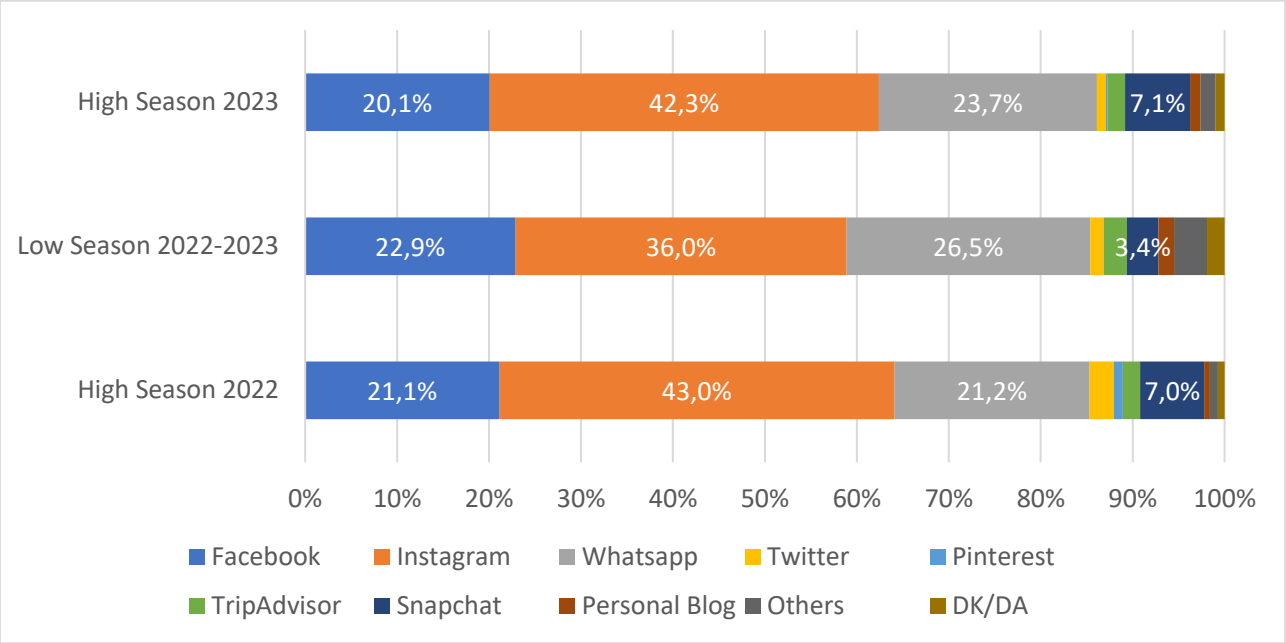


Source: Own elaboration

5.2.2.5 Tourist Experience on Social Media

Regarding the usage of social media during the trip to Algarve, the distribution through all seasons is very similar, with Instagram, Facebook and WhatsApp being the most used social media networks (Figure 81). Compared with the other seasons, there was a significant decrease in the use of Instagram and Snapchat in low season 2022/2023. From 2022 to 2023, Twitter was less utilized by tourists.

Figure 81. Social Media Used

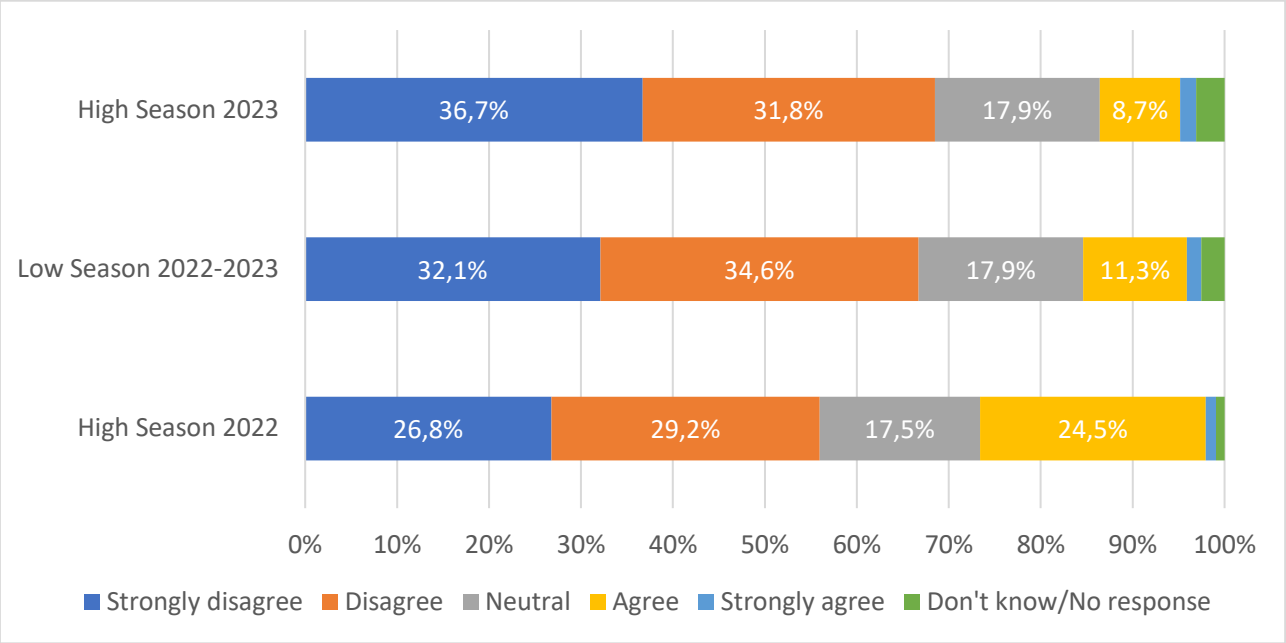


Source: Own elaboration

5.2.2.6 Safety Concerns

A longitudinal analysis of the existence of crime and violence allows to conclude that tourists are less and less concerned about crime and violence in the Algarve (Figure 82). Therefore, the region is seen by tourists as a safe place.

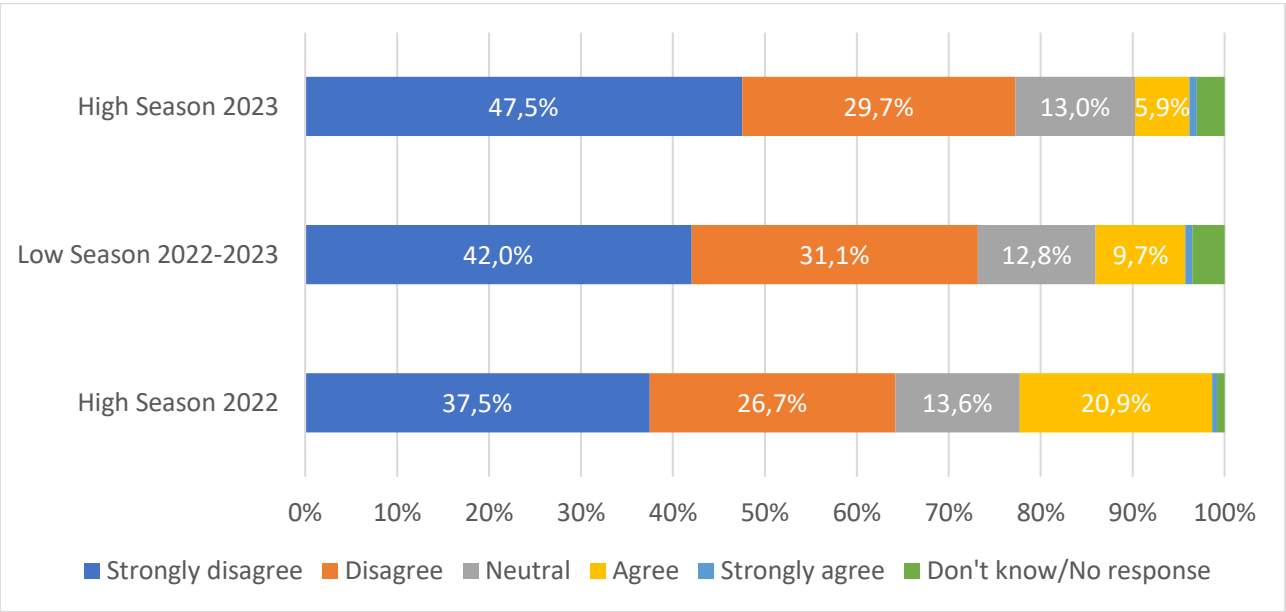
Figure 82. Existence of Crime and Violence



Source: Own elaboration

The same trend as the previous item is seen regarding global threats (Figure 83). While the share of strong disagreement increased from high season 2022 to high season 2023, the share of agreement decreased significantly in the same period.

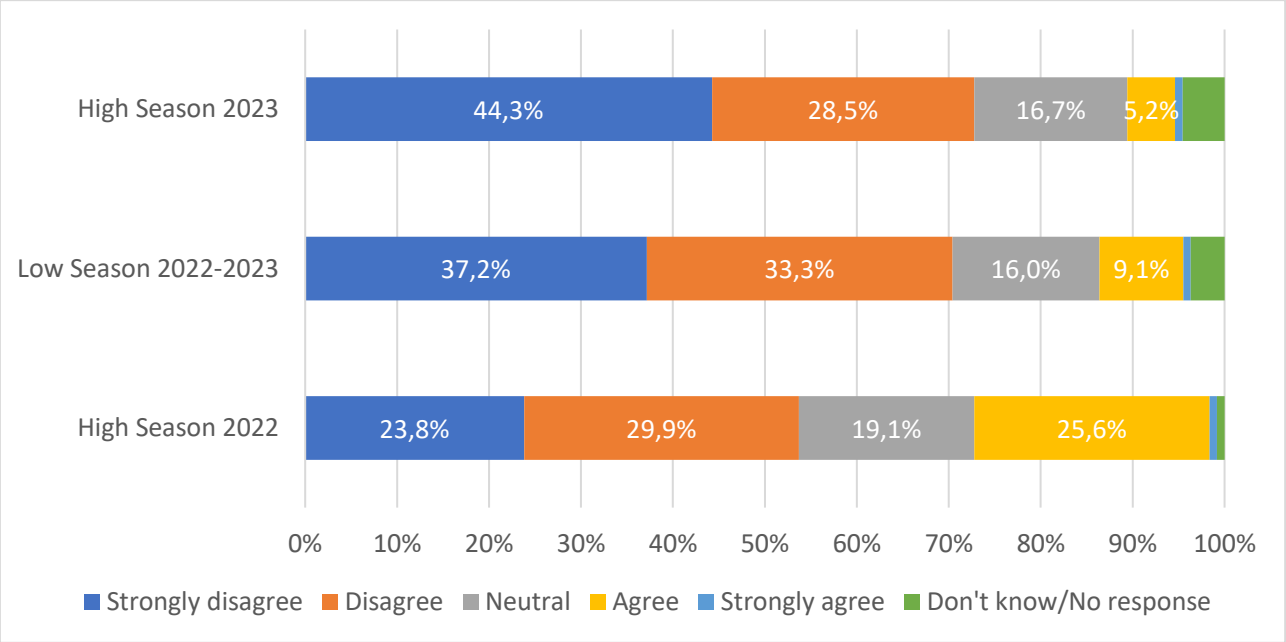
Figure 83. Global Threats



Source: Own elaboration

In what concerns the risk of epidemics, the respondents perceive it as a low concern factor for their trip to the region (Figure 84). It is visible a great increase in the strong disagreement answer from high season 2022 to low season 2022/2023 and even in high season 2023. In the opposite direction, the share of agreement falls from 25.6% in high season 2022 to 5.2% in high season 2023.

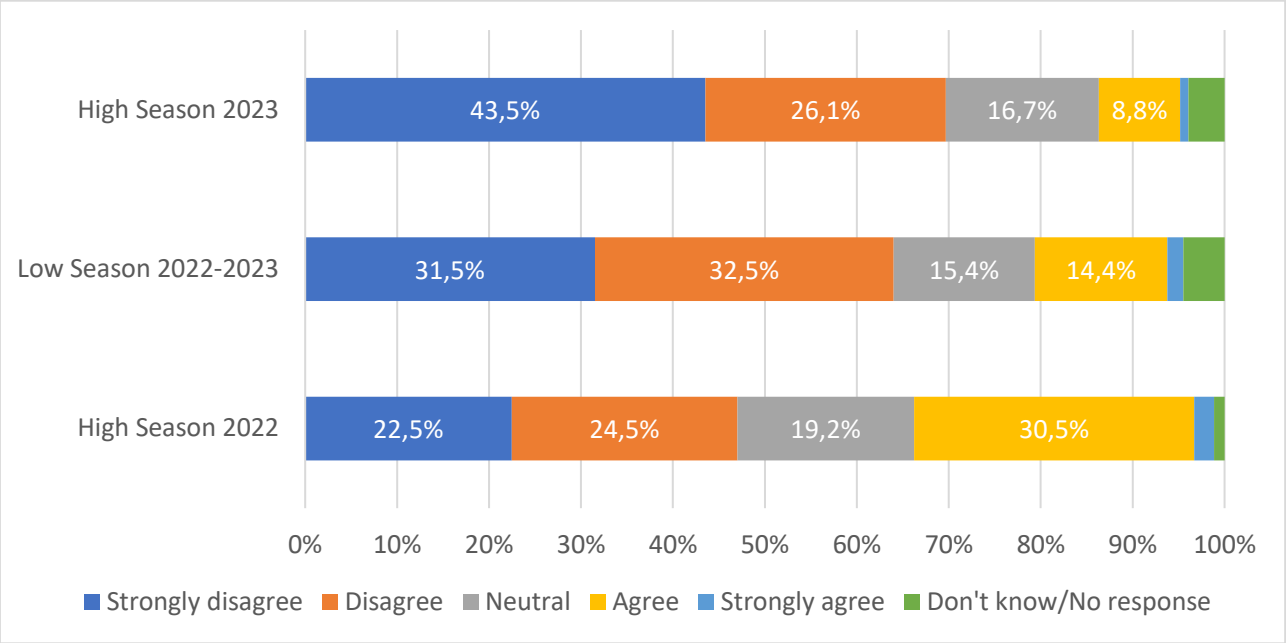
Figure 84. Epidemics



Source: Own elaboration

Epidemics do not seem to have a relevant importance in the travel choice of the respondents throughout all seasons (Figure 85). Neutral answers did not suffer any significant change, however strong disagreement increased from 22.5% in high season 2022 to 43.5% in high season 2023.

Figure 85. Epidemic Influence on Travel Choice



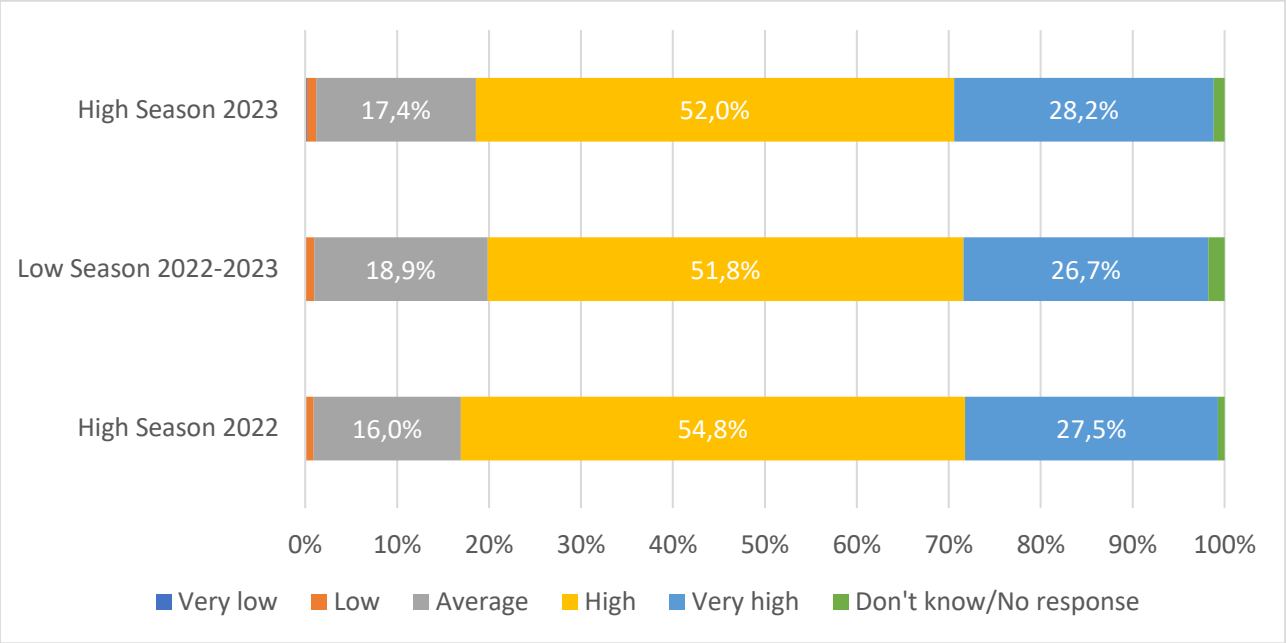
Source: Own elaboration

5.2.2.7 Destination Evaluation

A longitudinal analysis of the overall evaluation of the tourist experience in the Algarve states a high and very high assessment in all seasons (Figure 86). High season 2022 and low season 2022/2023 do not present very low assessments, and the value in high season 2023 is residual (less than 1%).

Average rating increased slightly and high and very high rating decreased in the same amount in low season 2022/2023.

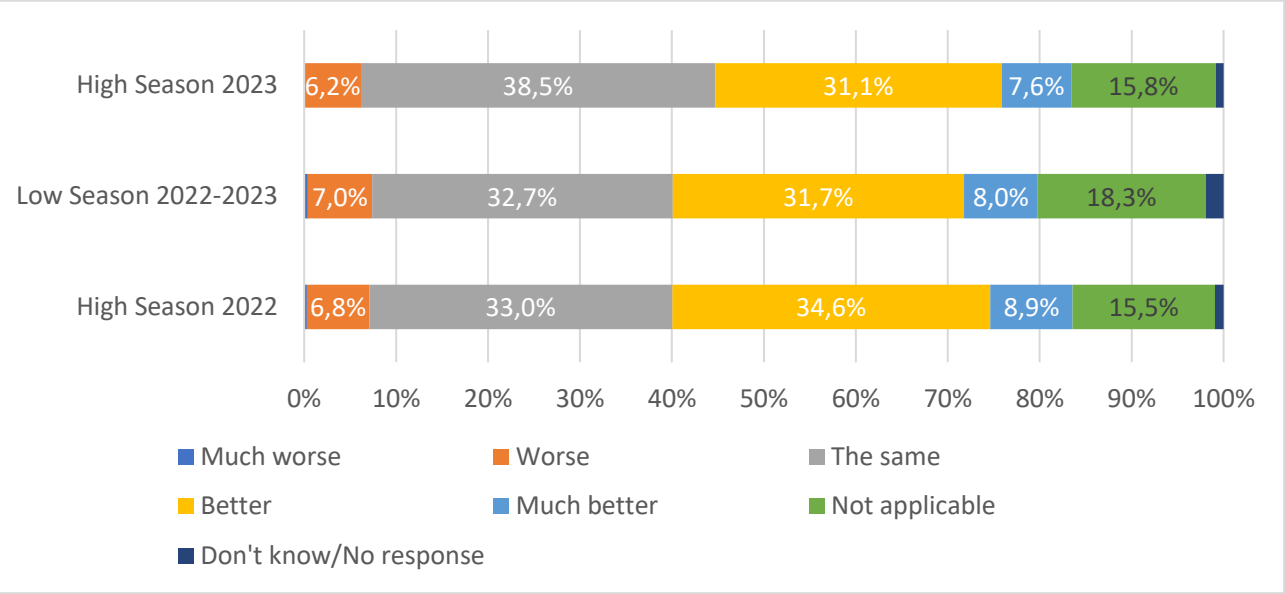
Figure 86. Overall Satisfaction with the Algarve



Source: Own elaboration

When compared with other sand and sun tourism destinations, more than a third considers the Algarve to be better or much better in high season 2022, low season 2022/2023 and high season 2023 (Figure 87). In high season 2023, it can be observed a greater percentage in "the same" response. All other ratings did not change significantly through the seasons.

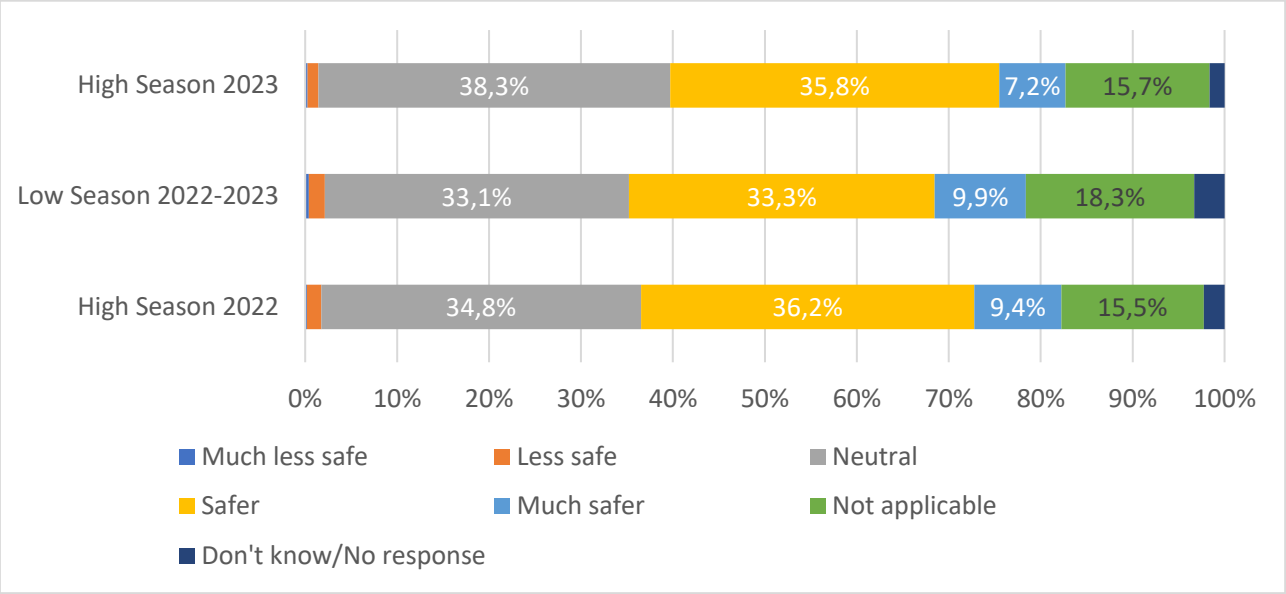
Figure 87. Algarve compared with other Sun and Sand Destinations



Source: Own elaboration

Concerning safety, more than 40% consider the Algarve to be a safer destination than other sand and sun destinations in all seasons (Figure 88). Similar to Figure 3.4.26, the neutral position increased in high season 2023.

Figure 88. Algarve Safety compared with other Sun and Sand Destinations

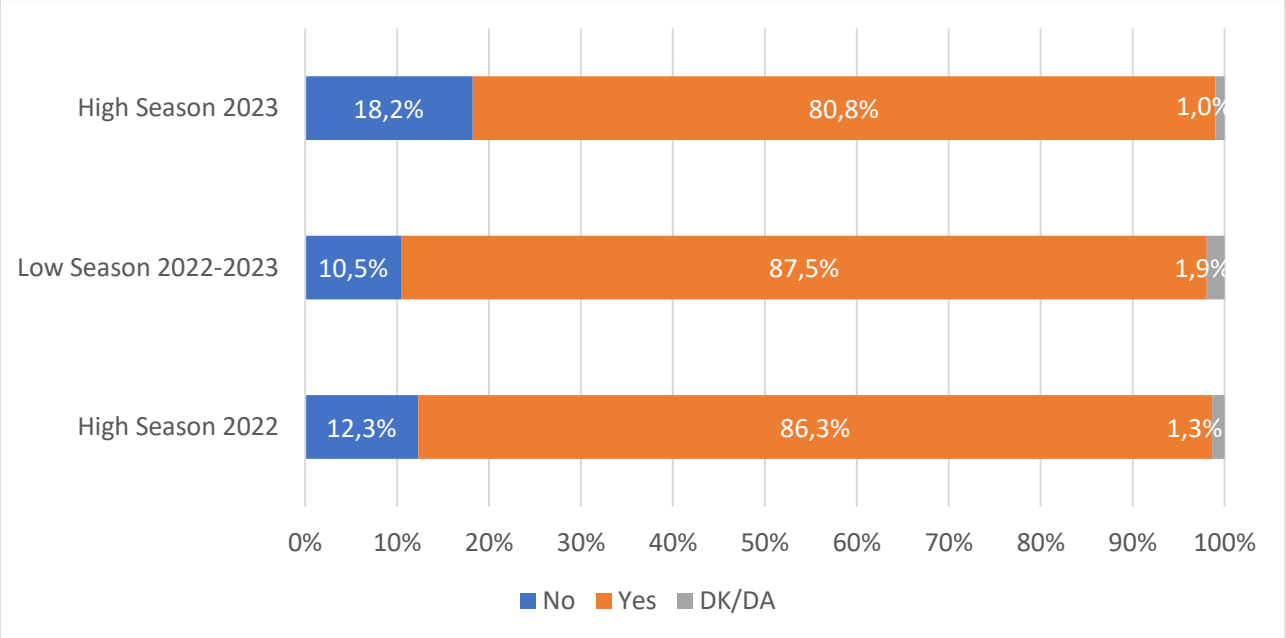


Source: Own elaboration

5.2.2.8 Destination Loyalty

The large majority of tourist intent to revisit the destination in the next five years (Figure 89). This percentage decreased in the high season 2023 (80.8%).

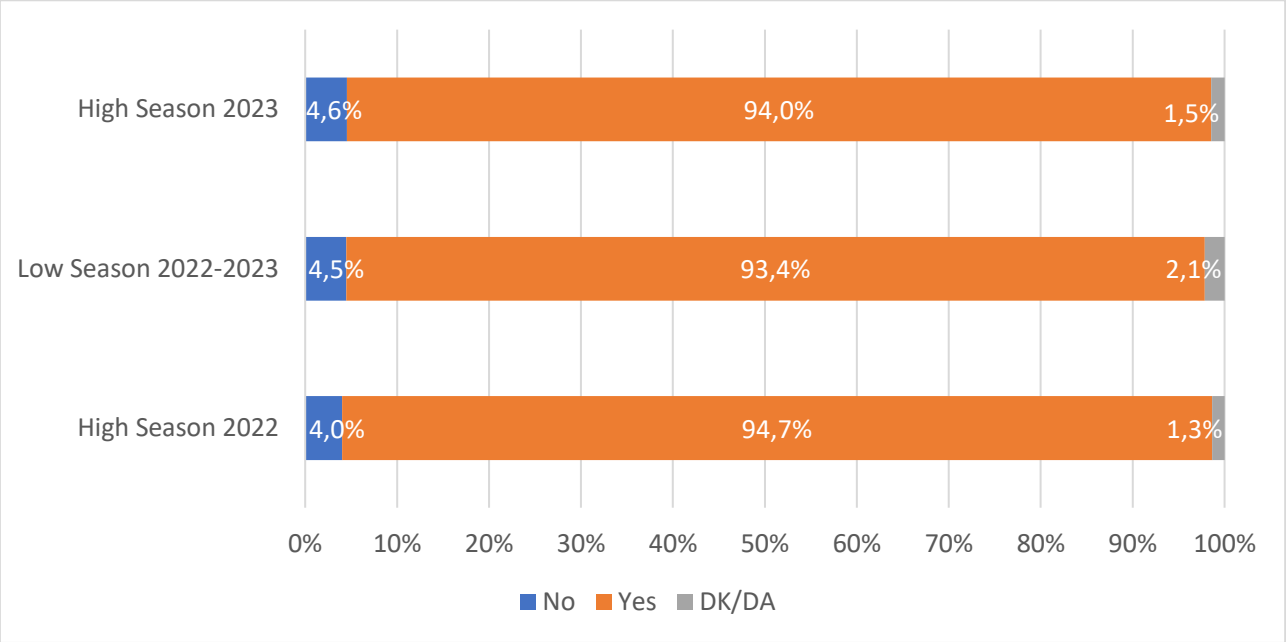
Figure 89. Intention to Revisit in the Next Five Years



Source: Own elaboration

More than 90% of respondents will recommend the Algarve to their family and friends (Figure 90). Through the seasons, there were no significant changes in the answer distribution.

Figure 90. Intention to Recommend the Algarve



Source: Own elaboration

5.2.2.9 Destination Tourist Profile

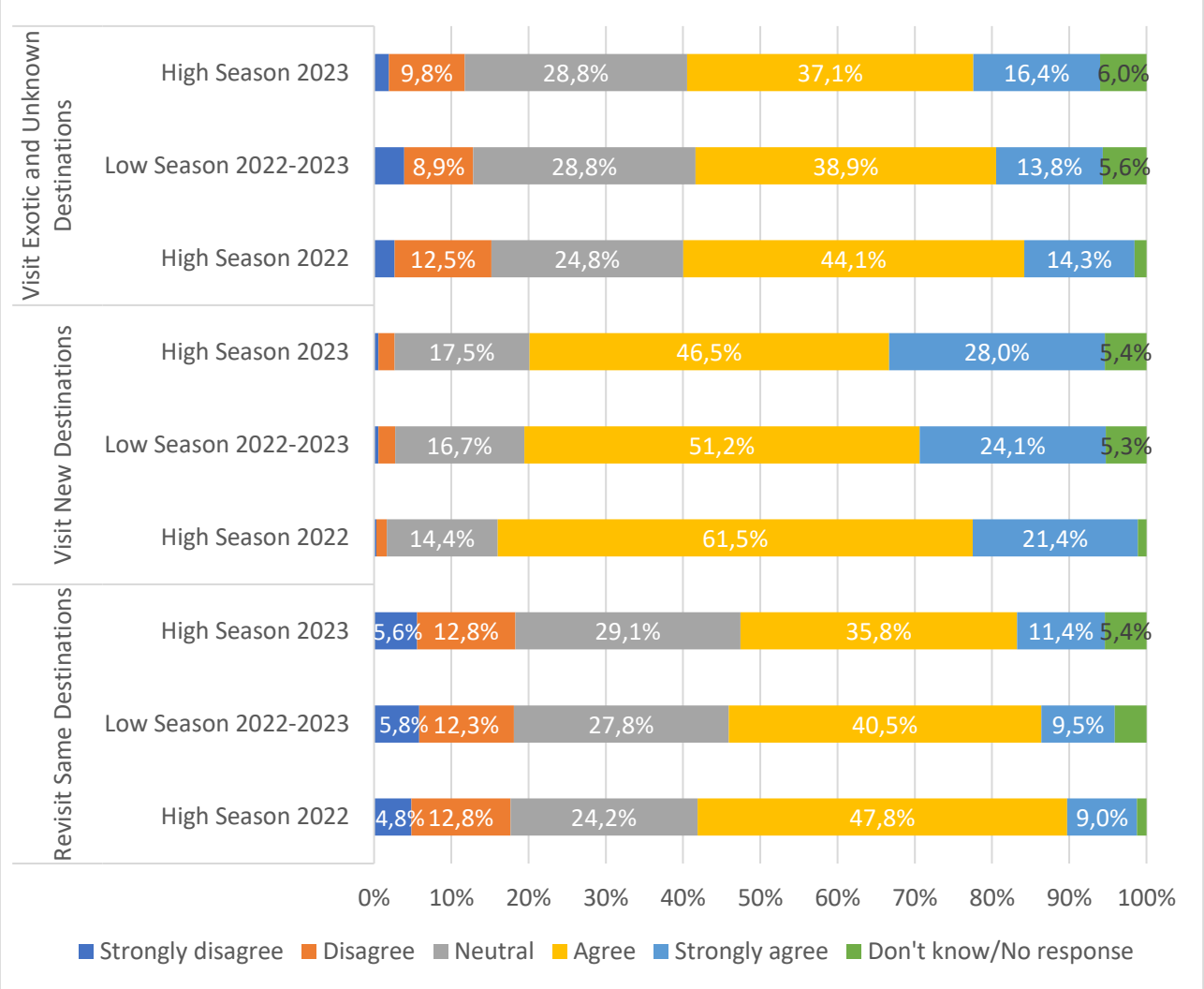
To characterize the tourist profile, three items were analysed: visit exotic and unknown destinations, visit new destinations and revisit same destinations (Figure 91).

Regarding visiting exotic and unknown destinations, more than half the respondents enjoy visiting this type of destinations. High season 2022 registered the highest agreement rating as well as the highest disagreement rating.

Around 75% of tourists enjoy visiting new destinations. There is a decreasing trend in the agreement responses and an increasing trend in the neutral and disagreement responses throughout the seasons.

More than 45% of respondents in all seasons revisit the same destinations. Even though the disagreement responses were approximately the same through the seasons, the agreement responses decreased from high season 2022 to high season 2023.

Figure 91. Destination Tourist Profile



Source: Own elaboration

5.3. Residents and Tourists' Conclusions

Overall, the conclusions regarding the residents' perceptions on tourism for the seasons of 2022, 2022/2023 and 2023, as well as the longitudinal analysis, may be highlighted as such:

- Residents agree with both positive and negative economic impacts throughout the various seasons. However, the agreement level seems to be decreasing over time for the positive impacts and, on the contrary, increasing for the negative ones, suggesting that residents consider disadvantages to outweigh the benefits;
- Regarding sociocultural impacts, residents show higher agreement levels towards the positive impacts than the negatives, but overall responses are neutral. Over time, agreement with positive impacts decreased and with negative impacts increased;
- Residents moderately disagree with positive impacts of environmental nature, but agree with the negative ones. Similar to other impacts, the perception of positive environmental impacts is declining over time, and of negative impacts is increasing;
- Although perception of positive impacts seems to be declining, and of negative impacts seems to be increasing, in the cases of sociocultural and environmental impacts, responses show higher levels of agreement with positive impacts and lower levels with negative in the low season;
- Residents consider the current state of tourism development to be moderately strong, but weaker in the winter season;
- Overall tourist treatment of residents was considered to be normal to pleasant, with higher levels in the low season. This shows some satisfaction from residents;
- Regarding respect of tourists, responses were neutral, with higher levels in the low season;

- According to the residents' perceptions, tourists spend an "average" amount in the destination, in a downwards trend overtime;
- Perception of behaviour is generally more positive in low season and declining in high seasons;
- Residents seem to want the destination to keep the same number of tourists overall, but also want to receive more in the winter. Although they still want number to remain the same, overtime responses wanting to decrease the number of tourists were higher;
- Residents are more positive during low season, but preference for more tourism development is declining;
- Employment in the tourism sector increased over time, but numbers of household members working in the sector and household income coming exclusively from tourism decreased;
- Non-seasonal employment in the sector increased from one high season to the other, but it is overall higher in the winter season, as well as the average number of months for non-permanent employment in the sector;
- During high season, there is a higher number of employees with Bachelor degree and a higher number of technological specializations in the low season.
- In the low season there are less people employed in the tourism sector;
- Overall, residents support tourism, consider to have pro-tourism behaviours, and are moderately satisfied with tourism in the region;
- Although support, pro-tourism behaviour and satisfaction with tourism decreased overtime, support and satisfaction levels were higher in the low season;
- Responses show that residents are mainly satisfied with their quality of life, although individual happiness levels may be more neutral;

- Quality of life and individual happiness agreement levels decreased overtime. However, similar to support, pro-tourism behaviour and satisfaction with tourism, they were higher in the low season. While there are variations between seasons, residents show moderate levels of agreement overall.

The following conclusions stand out for TOURISTS during the high season of tourism activity in 2022:

- Tourists in the Algarve come from 58 different countries. The surveyed group closely reflected the key visitor markets to the Algarve, with the highest numbers coming from Portugal, the United Kingdom and Germany.
- Tourists of the surveyed group spent, on average, 4-7 nights or 8-15 nights in the region and visited primarily for holiday purposes or to see friends and family.
- Respondents arrived by airplane or car and booked their itinerary online utilizing Booking.com, Airbnb and TripAdvisor. Hotels and resorts of four or more stars and local lodging are the preferred accommodation choices.
- Respondents assess the service quality of accommodation, restaurants, local trade stores and shopping centres as high. The United Kingdom and Ireland rate the overall satisfaction with the Algarve the highest, whereas the Portuguese reported the lowest satisfaction levels among the surveyed group.
- Crime and violence are not a primary concern for most tourists during their holiday in the Algarve. However, the Dutch respondents indicate more significant safety concerns than other main origin markets.
- Differences among countries of origin for revisitation intentions are observed, with Germans showing the lowest interest in revisiting the Algarve and the highest indicated by visitors from the UK and Portugal.

- The tourist profile of the surveyed group shows that the Algarve attracts individuals that enjoy visiting new and exotic destinations. However, many tourists mentioned enjoying revisiting the same destination, which leads to the conclusion that the sample consists of first-time visitors drawn to the Algarve as an unknown and exotic destination with high revisit intentions.

6

Companies' Results

6. Companies' Results

6.1. Energy Management

This section reports the results regarding energy consumption, the usage of renewable energy sources and actions to optimise energy consumption.

In what concerns Energy Management, all respondent companies take some sort of action to optimize energy consumption (Table 22).

Table 17 Actions to Optimise Energy Consumption

Does your company take action to optimise energy consumption (e.g. low-energy lighting such as LEDs, etc.)?	N	%
Yes	60	96.77%
NR	2	3.23%

Source: Own elaboration. NR - No response

The month with most data available regarding energy consumption is August (45.16%), followed by June (25.81%) and finally May (16.13%) (Table 23). The months of April and September only have one consumption registered.

Table 18 Months of Energy Consumption

What was the last month for which you have available data of energy consumption? (in KWh)	N	%
April	1	1.61%
May	10	16.13%

June	16	25.81%
July	3	4.84%
August	28	45.16%
September	1	1.61%
NR	3	4.84%

Source: Own elaboration. NR - No response

On average, approximately 27.59 KWh of energy is consumed per overnight stay in a representative tourism accommodation establishment and 75% of the sample present an energy consumption equal and below 32.14 KWh per overnight stay. (Table 24)

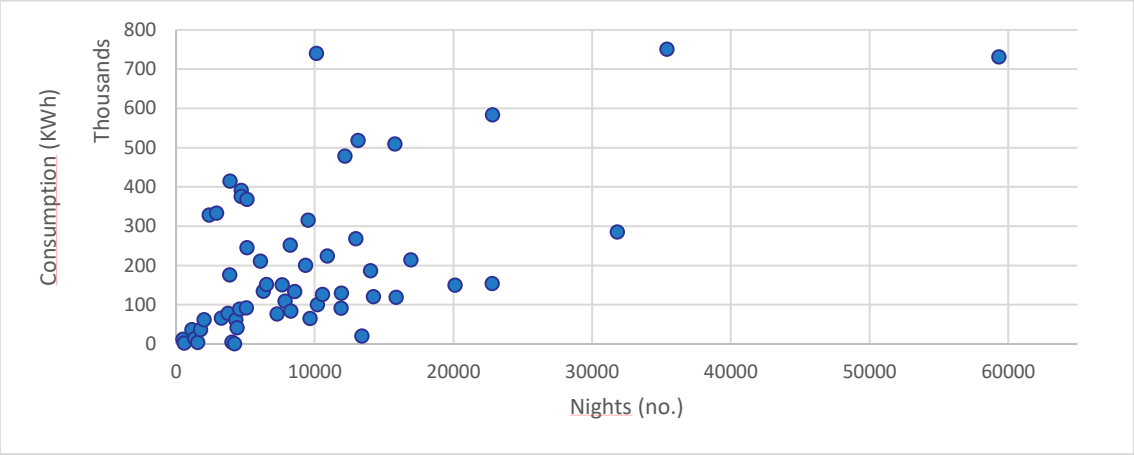
Table 19 Descriptive statistics of Total Energy Consumption and Energy Consumption per Overnight Stay

	Energy Consumption (KWh)	Energy Consumption per overnight stay (KWh)
Mean	205814.9	27.59
Median	134206	19.96
Standard Deviation	191965.9	29.16
Quartile 1	71335	9.85
Quartile 3	300230	32.14

Source: Own elaboration.

Figure 92 presents the scatter plot of energy consumption in relation to the Number of overnight stays in the accommodation establishments. Clearly, the data is more concentrated closer to the origin of the plot, up to 400 KWh and up to 20000 overnight stays. The scatter plot clearly shows a positive correlation between the two variables, which means that energy consumption is directly correlated with the number of overnight stays.

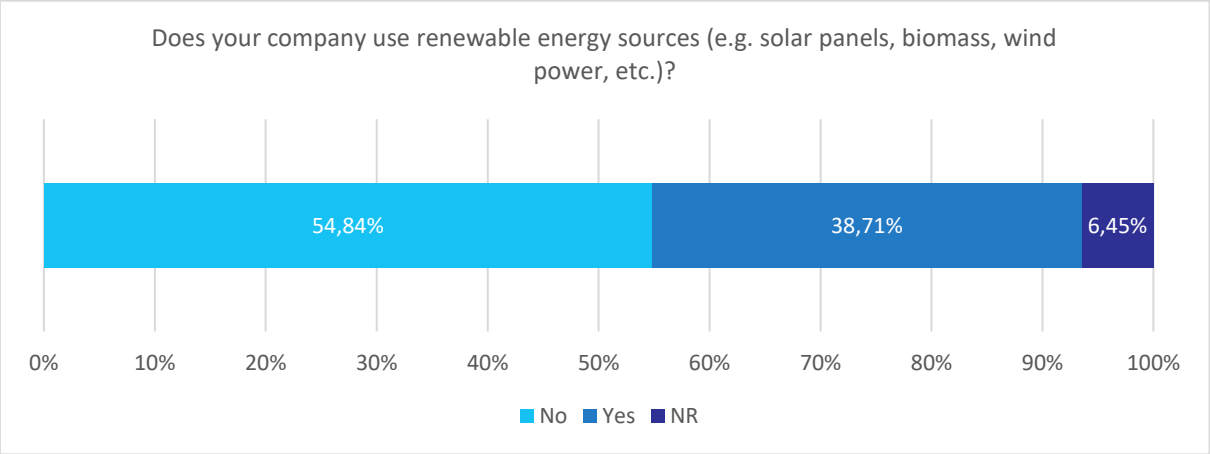
Figure 92 Energy Consumption



Source: Own elaboration.

Regarding the usage of renewable sources, such as solar panels, biomass, wind power, among others, a significant number of the companies do not use renewable energy sources (54.84%) (Figure 93).

Figure 93 Usage of Renewable Energy Sources



Source: Own elaboration. NR - No response

From the companies that use renewable energy sources, more than half uses less than 40% of energy from a renewable source (54.17%) and approximately one fifth of the firms use 100% of renewable energy (20.82%) (Table 25).

Table 20 Percentage of Electricity from Renewable Sources

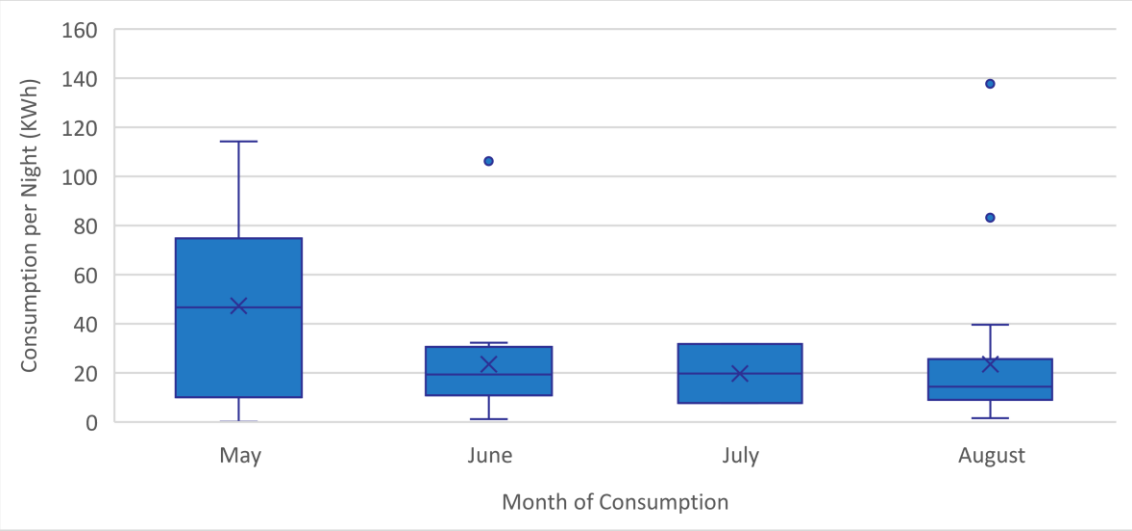
If so, what percentage of your electricity needs are met by renewable energy sources?	N	%
0% - 40%	13	54.17%
60%	1	4.16%
100%	5	20.82%

Source: Own elaboration. NR - No response

Figure 94 illustrates the distribution of energy consumption per overnight stay through the months of May, June, July and August[1]. It is possible to observe a larger distribution in May compared to August and June

Additionally, one outlier was detected in the month of June, with a value greater than 100KWh per overnight stay, and two in August, with the highest value approximately 140 KWh per overnight stay followed by the second highest value, 83.16 KWh per overnight stay. The mean values presented on Table 3 are influenced by these outliers.

Figure 94 Distribution of Energy Consumption per Night between the May and August



Source: Own elaboration.

6.2. Water Management

This section shows the results regarding water consumption, water sources, monitoring of water consumption and actions to optimise water consumption.

The majority of the companies in the study (93.55%) take actions to optimize water consumption, such as lowering toilet water consumption, lowering flow shower heads and taps or dripping irrigation for gardening, among others. (Table 26)

Table 21 Actions to Optimise Water Consumption

Does your company take action to optimise water consumption? (e.g. low water consumption toilets,	N	%

low flow shower heads and taps, drip irrigation for gardening, etc.)		
No	4	6.45%
Yes	58	93.55%

Source: Own elaboration.

Taking into consideration all the tasks that take place in the companies surveyed, the majority uses public water supply as the water source (96.77%), while very few use an artesian borehole as their main water source. (Table 27)

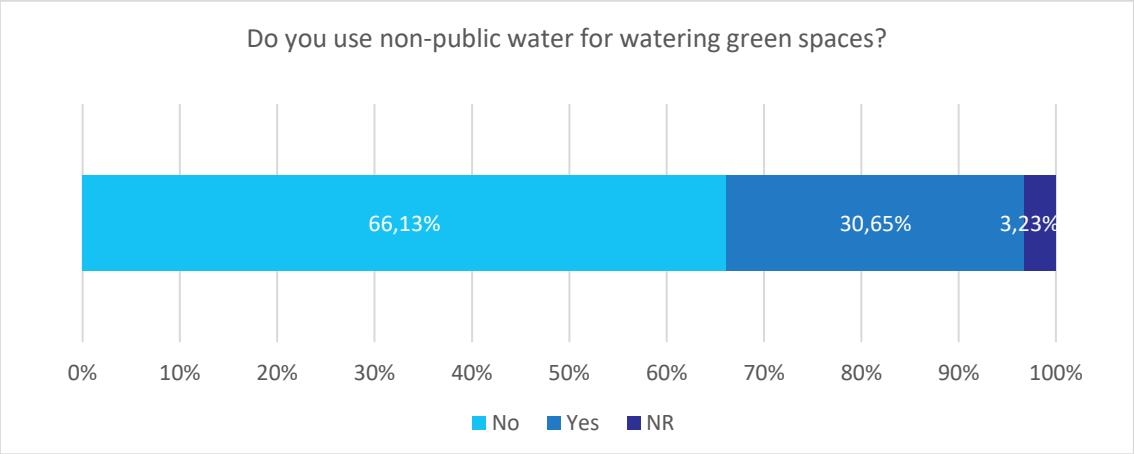
Table 22 Origin of the Water Used

In the context of the various operations that take place in your establishment, please indicate the origin of the water used:	N	%
Artesian borehole	2	3.23%
Public water supply	60	96.77%

Source: Own elaboration.

On the matter of the usage of non-public water for the irrigation of green spaces, less than half of the companies use non-public water for that purpose (30.65%). On the other hand, 66.13% use public water for watering green spaces. (Figure 95)

Figure 95 Usage of Non-public Water for Watering Green Spaces



Source: Own elaboration. NR - No response

Water consumption is on average 0,74 cubic meters per overnight stay, and half of the companies surveyed present a consumption per overnight stay equal or less than 0.36 cubic meters. (Table 28)

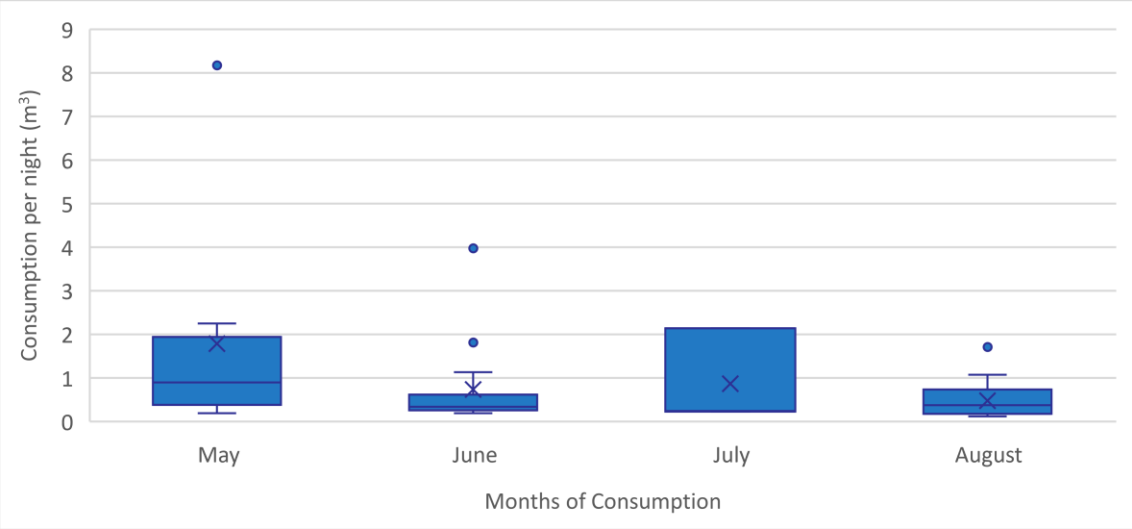
Table 23 Descriptive statistics of Total Water Consumption and Water Consumption per Overnight Stay

	Water Consumption (m^3)	Water Consumption per overnight stay (m^3)
Mean	4902.73	0.74
Median	3261	0.36
Standard Deviation	6436.20	1.21
Quartile 1	1800.5	0.20
Quartile 3	5223	0.76

Source: Own elaboration.

Figure 96 is a representation of water consumption distribution per overnight stay through the months of May, June, July and August[1]. It is possible to observe a larger distribution in May and July compared to August and June. It is noticeable the presence of outliers in this plot: the outlier with the highest value is in the month of May, with the value of 8.17 m^3 per overnight stay; the two following are from June, with 3.97 m^3 and 1.81 m^3 per overnight stay; and finally from August, with 1.71 m^3 per overnight stay.

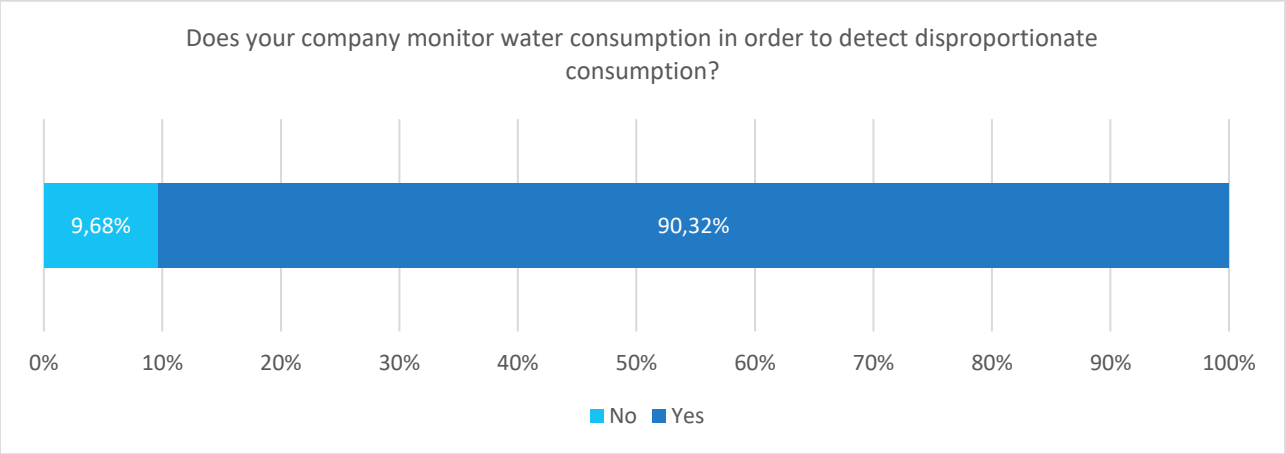
Figure 96 Distribution of Water Consumption per Night between the May and August



Source: Own elaboration.

Still regarding water consumption, most companies monitor consumption to detect disproportionate consumption (90.32%), leaving approximately 10% of the companies without monitorization of water consumption (Figure 97)

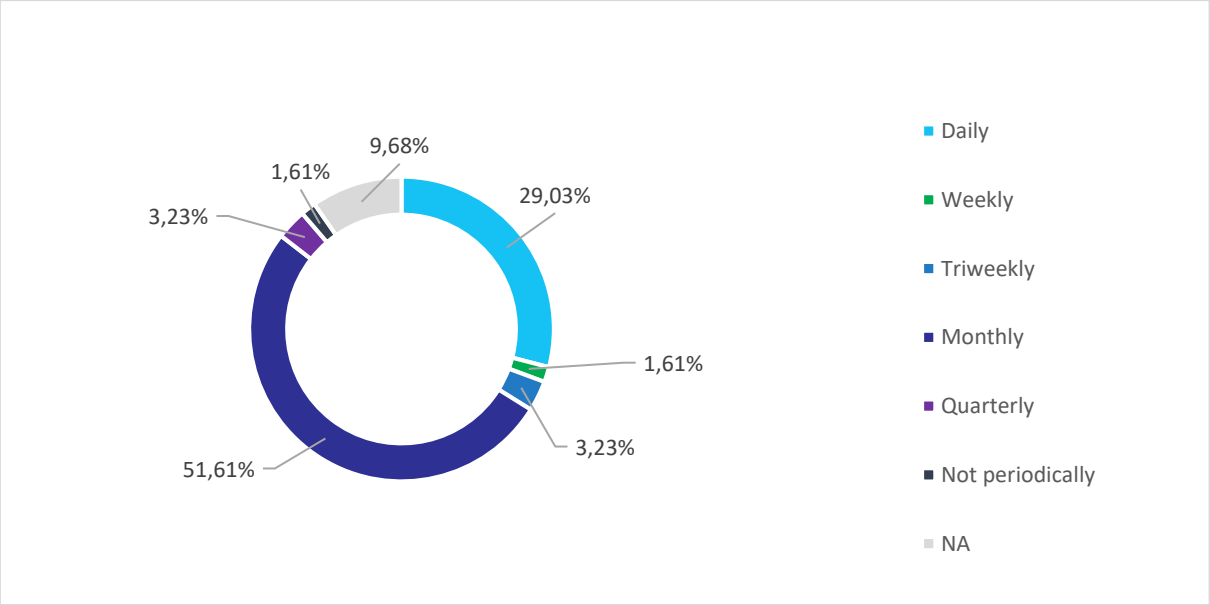
Figure 97 Monitoring of Water Consumption



Source: Own elaboration.

More than half of the companies declared to monitor their water consumption on a monthly basis (51.61%), followed by a daily monitorization (29.03%). (Figure 98)

Figure 98 Periodicity of Water Consumption Analysis

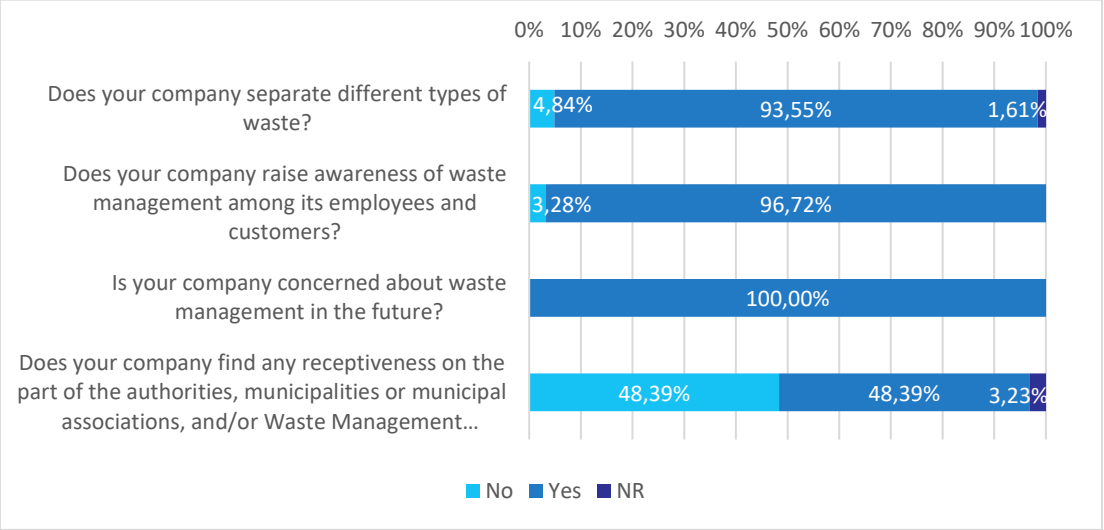


Source: Own elaboration. NA – Not Applicable

6.3. Solid Waste Management

Regarding solid waste management, a great portion of the companies in the study separate different types of waste (93.55%) and raise awareness of waste management among its employees and customers (96.72%) (Figure 99). All companies show concerns about waste management in the future. In what concerns receptiveness from authorities towards compliance with Best Sustainable Solid Waste Management Practices close to half of them find receptiveness (48.39%) and the same number of companies don't (48.9%).

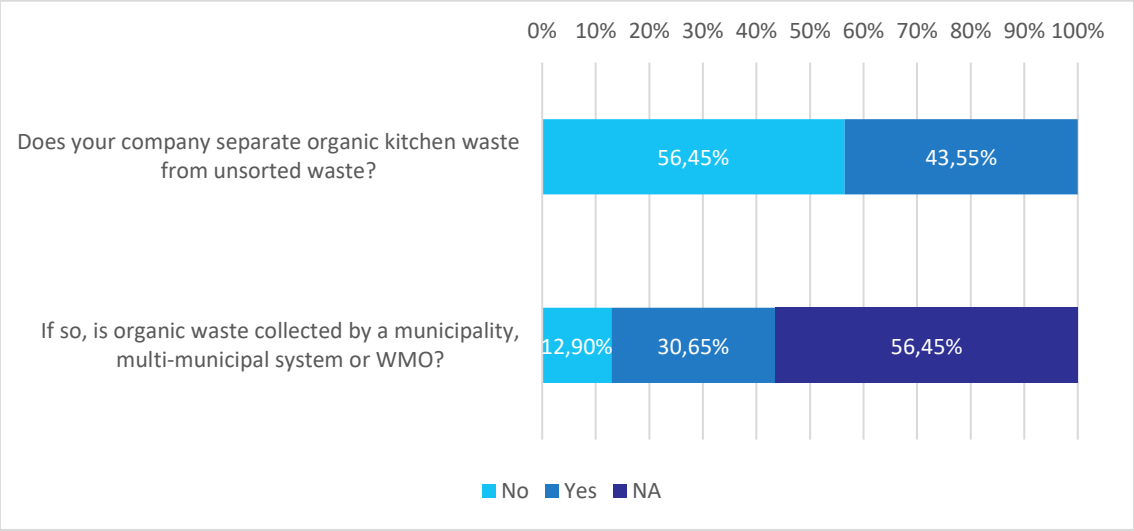
Figure 99 Solid Waste Management



Source: Own elaboration. NR - No response

In the matter of organic kitchen waste, more than half the companies do not separate organic kitchen waste from unsorted waste (56.45%). Considering the ones that separate the organic waste from the unsorted one, 30.65% of them have their organic waste collected by a municipality, multi-municipal system or waste management operators (WMO) (Figure 100).

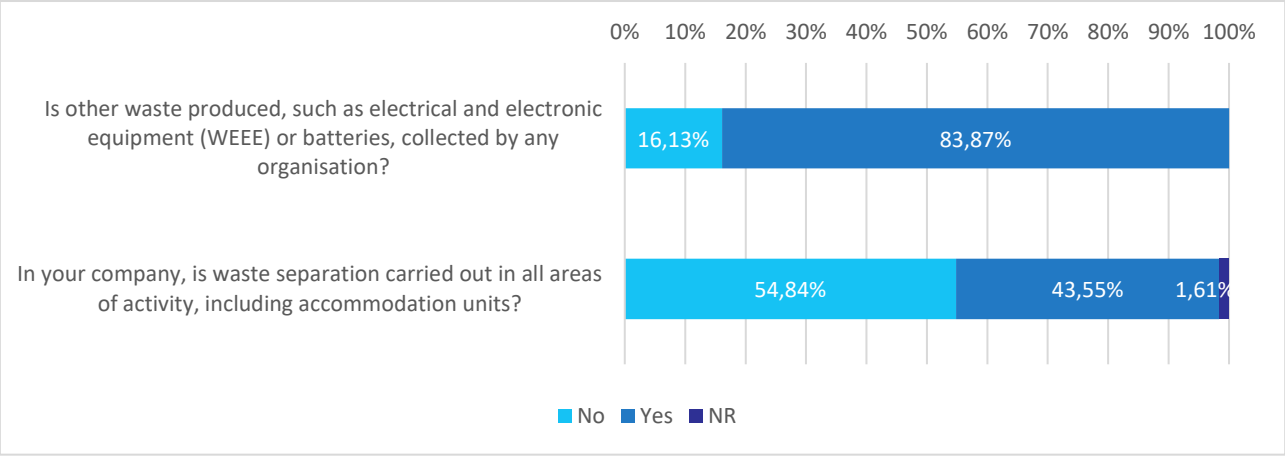
Figure 100 Separation and Collection of Organic Waste



Source: Own elaboration. NA – Not Applicable

In the topic of electrical waste, the majority of the respondents have their waste of electrical and electronic equipment or batteries collected by an organization (83.87%). Around 54.84% of the companies do not have a waste separation carried out in all areas of activity (including accommodation units). (Figure 101)

Figure 101 Electronic Waste and Waste Separation



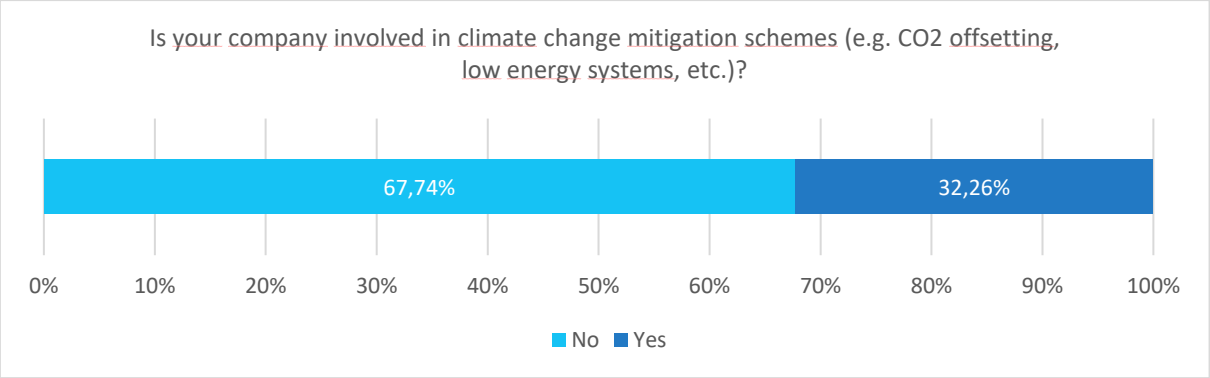
Source: Own elaboration. NR - No response

6.4. Environment and Climate Change

In this section, results are presented regarding climate change mitigation schemes, actions and certification.

In what concerns climate mitigation schemes, such as CO_2 compensation, low energy systems, among others, 32.26% of companies are involved in at least one of those schemes. (Figure 102)

Figure 102Climate Mitigation Schemes



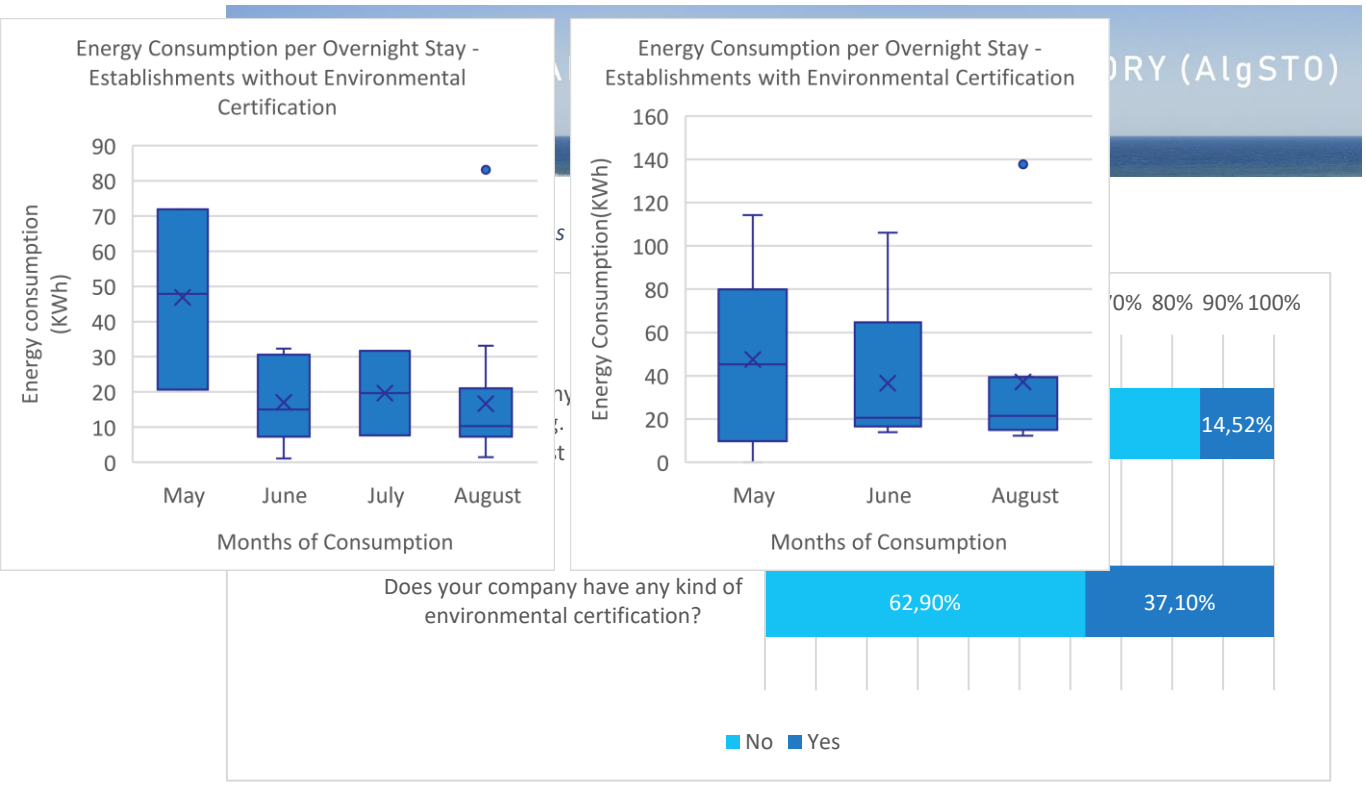
Source: Own elaboration.

Below we can find a list of the climate change mitigation schemes described by respondents:

- Awaiting investment proposals
- CO2 compensation
- Reduce water and electricity consumption
- More efficient equipment and solar energy
- GHG Protocol
- Energy with GDO Certificate
- LEDS

- Solar panels
- Photovoltaic panels
- Electric cars
- Green Key programme
- Total remodeling of the unit 2023/2024
- Reuse of water bottles
- Filtered water system
- Reduction of food waste
- Paperless check-in
- Eco-garden
- Electric car charging
- Winter and summer timetables and set points
- More efficient systems and solar energy

When adressing the topic of climate change adaptation, a great portion of the respondents do not take any action (85.48%). Regarding certification, approximately 37.10% of companies have an environmental certification of some type. (Figure 103)



Source: Own elaboration.

The sample was divided in two samples: the establishments that possess an environmental certification and the ones that don't have certification. Furthermore, a comparative analysis was carried in terms of energy and water consumption per overnight stay. Figure 104 presents the distribution of energy consumption per overnight stay through the months of May, June, July and August, in establishments with

Figure 104 Energy Consumption per Overnight Stay in Establishments without Environmental Certifications VS Establishments with Environmental Certification

and without environmental certification – the months of April and September were not considered for this analysis due to the small sample from each month.

Source: Own elaboration.

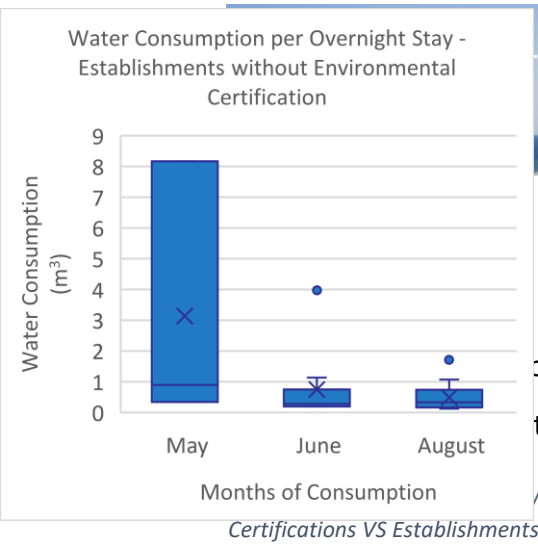
In terms of energy consumption, the establishments without environmental certification consume less energy per overnight stay on average compared with the certified companies. (Table 29)

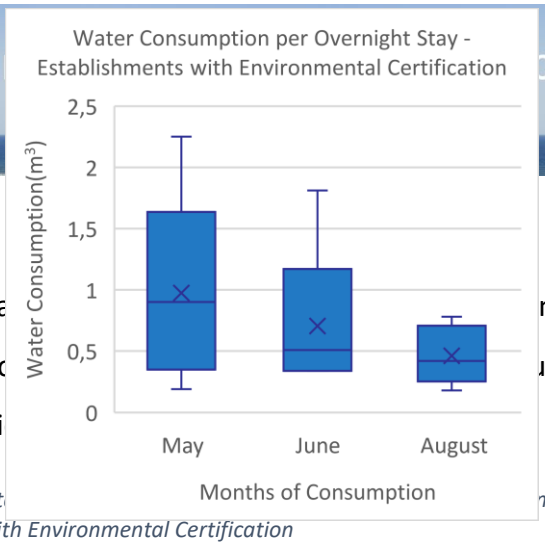
Table 24 Descriptives of Total Energy Consumption and per Overnight Stay in Establishments without Environmental Certifications VS Establishments with Environmental Certification

Environmental Certification	No	Yes
Mean	19.80	39.62
Median	13.00	21.36
Standard Deviation	18.32	38.07
Quartile 1	7.62	14.28
Quartile 3	26.82	52.25

Source: Own elaboration.

Figure 105 presents the distribution of water consumption per overnight stay through the months of May, June, and August, in establishments with and without environmental certification – the months of April, July and September were not considered for this analysis due to the small sample from each month.





Certifications VS Establishments with Environmental Certification

Environmental Certification	No	Yes
Mean	0.771	0.698
Median	0.293	0.514
Standard Deviation	1.486	0.609
Quartile 1	0.189	0.306
Quartile 3	0.735	0.809

Source: Own elaboration.

Figure 105 Water Consumption per Overnight Stay in Establishments without environmental certifications VS Establishments with Environmental Certification

6.5. Conclusions

The surveyed companies revealed that they largely implement environmental sustainability practices, but there is still a lot of room to expand the use of these practices. Indeed, there is evidence that:

- All companies take actions to optimize energy consumption, but a small percentagem of them use 100% renewable energy sources;
- Most companies take actions to optimize water consumption, but a small percentage uses non-public water for watering green spaces;
- A great portion of companies monitor their water consumption periodically – more than half on a monthly basis,
- All companies show concerns about waste management in the future;
- Less than half of the companies separate organic waste from unsorted waste;
- More than half the firms are involved in some climate change mitigation scheme and adaptation actions.

Conclusions

After three years of the COVID-19 outbreak that strongly marked the world and one year of war in Ukraine, the tourism sector as showed it has the capability to adapt to such impacts, in a cautious and steady way.

The ambition of achieving more sustainable competitiveness and more competitive sustainability are part of the regional strategic vision for 2030, that incorporates an incessant search for qualification and sustainability of the Algarve destination.

2022 presented many challenges and very positive results, but in 2023 the hard work was continued.

In what concerns economic indicators, there are very favourable signs, namely in total profit and accommodation profit, the values exceeded the pre-pandemic ones; and revenue per available room (RevPAR), which reaches the highest value in the last seven years.

For the Algarve Sustainable Tourism Observatory (ALGSTO), in 2023 it was possible to promote moments of inquiry to residents, tourists and companies, with very significant 127 samples and territorial coverage, which added additional critical value for the fulfilment of the Observatory's mission. Of these processes, the advances and outputs recorded in the Monitur, TurExperience and ResTour research projects stand out.

The detailed information acquired through these projects is noteworthy, offering valuable support for decision-making in both regional and local contexts, despite the relatively small yet highly diverse nature of the region, encompassing various profiles and tourist performances. This knowledge, rooted in perceptions, underscores the importance of ongoing monitoring of residents' involvement, encompassing both positive and negative impacts across economic, sociocultural, and environmental domains.

On the tourist front, continuous evaluation of overall destination quality and services, coupled with supplementary analysis from sources such as social media interactions, has broadened the scope of data collection and enhanced its qualitative aspect. Notably, when considering overall tourist satisfaction by nationality, it's crucial to acknowledge the differing perceptions, with Portuguese tourists exhibiting less positivity compared to counterparts from the United Kingdom, Ireland, and Germany, who notably stand out. Nevertheless, nearly 99% of the domestic market expresses intent to revisit the destination, with almost 95% of surveyed tourists recommending the Algarve destination to their acquaintances.

In direct comparison with other sun and beach destinations, the Algarve receives notably favorable evaluations, with nearly 45% of respondents rating it as "better" or "much better." Such feedback is both encouraging and demanding, elevating the responsibility and dedication of all regional stakeholders.

Companies results are a first step in monitoring the environmental indicators present in the list created, giving the capability to guide companies in to environmentally sustainable practices.

The DSS is a platform that, according to its current functionalities, is crucial for monitoring the development of sustainable tourism in the Algarve.

Functionally, the ALGSTO should prioritize enhancing the visibility of its initiatives through dedicated channels to engage key stakeholders effectively. Furthermore, sharing exemplary practices within the INSTO network can foster replicability, scalability, and mutual learning across tourist destinations.

The adoption of the Algarve 2030 Regional Program by the European Commission presents an opportunity to pursue more competitive and sustainable trajectories. This includes facilitating knowledge transfer, fostering entrepreneurial discovery, promoting innovation and qualification, advancing decarbonization and resource efficiency, embracing circular practices, enhancing academic and professional qualifications, and improving public space, heritage, and mobility standards. Leveraging such funding

opportunities alongside existing mechanisms like the Portuguese Recovery and Resilience Plan can expedite the attainment of desired sustainability benchmarks in tourism.

We firmly believe that an ambitious sustainability agenda will position the Algarve as an international benchmark in tourism, with AlgSTO playing a pivotal role in generating knowledge, validating the destination's worth, and promoting its allure.

7

Annex A:
Indicators' technical notes

7. 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	*((Annual overnight stays / 365) / Total resident population) * 100* *((Monthly overnight stays / n days month) / total resident population) * 100*
Geographic level and periodicity	NUTSII: Monthly (Jan 2019-Nov 2022), Annual (2014-2021) Municipality: Annual (2014-2021)
Data source(s)	• 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	• 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 (2017-2021) By Municipality: (2017-2021)
Data source	• 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 20142018 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&PUBLICACOEStema=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 (2017-2021)
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 hospital beds, per 1000 inhabitants

Algarve Indicator	Number of hospital beds, per 1000 inhabitants
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	N.A.
Description	The indicator contrasts hospital response capacity, measured in number of beds, with the potential demand for hospital care services, this including not only that coming from residents, but also that from tourists as an occasional and non-permanent population
Concepts	Bed - Equipment intended for the stay of an individual in a health care establishment. Hospital - Health establishment that provides in-patient and out-patient curative and rehabilitative health care, and may collaborate in disease prevention, teaching and scientific research.
Approach	$\frac{CH}{R+\frac{DT}{365}} \times 1000$ CH – the number of hospital beds; R – the number of inhabitants (residents); DT – the number of overnight stays of tourists.
Geographic level and periodicity	Algarve: Quarterly (2013-2021)
Data source(s)	INE: Beds (No.) of public hospitals of universal access and hospitals in public-private partnership by Geographic localization (NUTS - 2013) and Modality; Annual (2) Resident population (No.) by Place of residence (NUTS - 2013), Sex and Age group; Annual
Limitations/issues	- Residents remain at their homes for 365 (or 366) days of the year concerned. Surely, the number of days residents stay in their homes should be adjusted for their periods of absence (whether on vacation, business or any other reason). For example, if the average period of absence of residents from their homes is seven days, the value to use would be equal to 365-7=358. - The level of demand for hospital care by tourists is, on average, identical to that of the resident population. If this is not the case, there would be an indication to introduce some form of compensation in the formula. A possible criterion would be based on the average ages of the two population segments, since it is assumed that the age structure of the resident population does not coincide with that exhibited by tourists.

Table A5: 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	Number of nights in tourist accommodation establishments per month. **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.
Approach	Direct use of secondary data
Geographic level and periodicity	NUTSII: Monthly (Jan 2013– Oct 2022) By Municipalities, Annual: (2011-2020)
Data source(s)	• TravelBI by Turismo de Portugal. https://travelbi.turismodeportugal.pt/ptpt/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) 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, campsites and holiday camps are not included in this indicator.

Table A6: 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	**Gross value added**: Gross production value less the cost of raw materials and other consumption in the production process. **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.
Approach	Direct use of secondary data (converted into percentages).
Geographic level and periodicity	NUTSII and Municipality: Annual (2011 – 2020)
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 A7: Average stay of tourists

Algarve Indicator	**Average stay of tourists**
UNWTO 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 (2007-2021)
Data source(s)	https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_publicacoes&PUBLICACOESpub_boui=384536089&PUBLICACOESmodo=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 A8: 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	**Gross value added**: Gross production value less the cost of raw materials and other consumption in the production process. **Total Employment:** Persons employed (No.) in Enterprises by Geographic localization (NUTS - 2013) and Economic activity (Division - CAE Rev. 3); Annual **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.
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 (2011 – 2020)
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 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.

Table A9: 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	**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. **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. **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.
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 (2011 – 2020)
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 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	Number of nights in tourist accommodation establishments per month. **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.
Approach	Direct use of secondary data
Geographic level and periodicity	NUTSII: Monthly (Jan 2013– Oct 2022) By Municipalities, Annual: (2013-2022)
Data source(s)	• travelBI by Turismo de Portugal. https://travelbi.turismodeportugal.pt/ptpt/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: Seasonality Rate

Algarve Indicator	Seasonality Rate
UNWTO Mandatory Area	**Seasonality**
ETIS section	No Match as it is Algarve specific indicator
ETIS criterion	
ETIS indicator	
Description/concepts	*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* 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. 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.
Approach	Composite Indicator based on secondary data
Geographic level and periodicity	NUTSII: Monthly (Jan 2014 – Oct 2022)
Data source(s)	• travelBI by Turismo de Portugal. https://travelbi.turismodeportugal.pt/ptpt/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)
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. 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.

Table A12: 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 2005 to 2022 (Q3)
Data source(s)	INE- Retrieved from Inland waterways passengers and goods transport survey
Limitations/issues	Pressure on inland waterways is measured

Table A13: 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 2007 to 2022 (Q3)
Data source(s)	INE- Retrieved from Airports and airfields survey.
Limitations/issues	Reflects the strong seasonality of the tourist activity.