# THE CONTRIBUTION OF REGIONAL AIRPORTS ON TOURISM ENTERPRISES. THE PERSPECTIVE OF TRIPOLI AIRPORT, IN GREECE 

Konstantinos Marinakos (corresponding author)
Department of Tourism Management, University of West Attica, Athens, Greece

Ioulia Poulaki
Department of Tourism Management, University of Patras, Patras, Greece


#### Abstract

Air transport and tourism development are considered to be two closely related concepts. According to international literature, one of the most important modes of passenger transport around the world is air transport, thus affecting the economic development of many areas, especially those isolated geographically and touristically, as well as local tourism businesses. Understanding the scale of these impacts is important not only for the development of tourism businesses and the local economy, but also for policy makers who make strategic decisions. Most studies focus on the impact of large airports on the national and regional economy, while much less attention has been given to the impact of airports on regional destinations. This study, exploring the potential of the Tripoli military airport in Greece as a civilian airport, seeks to analyse the functional relationship between small regional airports and local tourism businesses, the results of which can contribute to the financial planning and organization of a destination.


## KEYWORDS

Regional Airports, Low Cost Carriers, Tourism Business, Tripoli Airport - Greece

## 1. INTRODUCTION

As early as the 1920s, commercial air transport, gained international support because of its ability to interconnect people, places and products. More recently, the various subsidies provided through various programs in the US and Europe aimed at linking remote areas with their countries' main economic centers (Blonigen, Bruceand Anca, 2012). Based on international literature, there are many studies that either focus on large airline facilities or seek to examine broader airport interconnections with dynamic destinations at macroeconomic level. Instead, the present study focuses mainly on the role that smaller regional airlines can play in boosting tourism businesses and local economic prosperity.

It is a micro-economic view of the extent to which a regional airport used by Low Cost Carriers could be enhancing accommodation businesses and complementary tourist services. At the same time, this study can be a useful 'tool' for tourism policy makers and strategic planners of local destinations. One might argue that smaller-regional airports cannot exert significant influence on the local economy, as would be the case with a large conventional airport, and to some extent this may be true (Butler and Kiernan, 1992). However, the traditional challenge with local or regional airports is that while often not economically viable they are considered, at least by local development stakeholders, important for business growth and attracting investors to an area (Van den Berg, Van Klink and Pol, 1996).

Public use of infrastructure, such as airports, is often considered an important component, as many studies have revealed strong correlations, overall, between public spending on infrastructure and productivity growth (Aschauer, 1989). However, there are other international reality studies that have questioned issues such as the viability of some regional airports, the sustainable management of their facilities and whether their results are actually delivering on expectations (Winston, 1991).

## 2. LITERATURE REVIEW

Kasarda and Lindsay (2011) argue that the existence of airports in different regions signals a new model of regional economic development. Indeed, airports are considered to be the largest infrastructure investment that an area can implement and play a dominant role in interconnecting different places, populations and developing the international economy (Button \& Taylor, 2000).

The international dialogue on regional economic development and in particular on the "new development theories" has placed particular emphasis on the importance of information in economic development (Button, 1998). And of course, as people-to-people contacts drive
economic growth, air travel can be considered very important because of the distances they can cover, such as facilitating work, leisure and product movement (Button and Vega, 2008; Button and Yuan, 2013).

The close relationship between airline passengers and the regional increase in human income has been shown by numerous studies (Goetz, 1992; Green, 2007; Button, Doh, and Yuan, 2010; Mukkala and Tervo, 2013; Cidell, 2014;). Brueckner (2003) finds, however, that airports and airline services contribute more to businesses that rely on the provision of services and information than on industrial production.

As Kanafani and Abbas (1987) point out, the success of smaller regional airports largely depends on the location chosen for their operation and whether this option makes them independent of the major central airports.

Neal (2010) argues that airports are an important factor in the "interconnection of cities" as they link key nodes to the global economy. At the same time, they can help to create 'favorite places' in the global market by providing high quality access to the global flow of people, goods, money and information (Bowen, 2002).

On the other hand, Halpern and Brathen (2011) find that the success of regional airports largely depends on the regional size and requirements of passengers at the airport. In the same vein, Blonigen and Cristea (2012) in their studies argue that airline traffic has a significant impact on regional population, income and employment growth, but that their impact varies according to regional size and structure. of the industry. Rosenthal and Strange (2004) point out that airports play an important role in stimulating regional productivity due to the positive external factors that result from the economies of the settlements that develop around these locations.

Many scholars (Audretsch and Feldman, 1996; Gaspar and Glaeser, 1998) also document the importance of face-to-face interactions. Airports, by narrowing long distances, can increase face-to-face interaction by bringing people from different cities and regions closer together. Business-people also often argue that they will consider investing in a relatively small flight radius directly from their office so that they can interact with managers and monitor those investments. Studies by Lian and Ronnevik (2011) show that passengers prefer the large, main airport of the area, as opposed to the smaller local airports, due to the size of the services available.

It is difficult to pinpoint exactly the causality between airports and economic growth. In any case, airports can be added to the overall economic growth, through the movement of goods and people, along with other growth factors in an area. However, airports are also more likely to be located in larger areas with higher levels of economic growth, more people, larger industries and so on, increasing demand for their services. However, the liberalization of the European air transport market in 1997 led to a redesign of the air transport market (Graham, 1997; Papatheodorou and Arvanitis, 2009), providing a particularly strong incentive for the operation of regional airports. To foster competition in the airline market, this reform has created increasing demand for take-off and landing times at airports. Many already established international airports at European level have been unable to meet this growing demand and as a result more airlines have switched to operating from regional airports.

At the same time, there has been significant growth in Low-Cost Carriers, which avoids the higher costs associated with larger airports. Airports specializing in Low Cost Carriers are mainly developed at regional level and are considered of paramount importance for local economic development (Green, 2007; Lei and Papatheodorou, 2010). The basic operating model of Low Cost Carriers is structured into two main pillars: reducing operating costs and increasing the efficiency of available factors (Sorensen, 2005). Consequently, the strategy of operating a Low Cost Carrier is to offer a simplified product that will at the same time ensure the high levels of completeness and profitability of the company (Skeels, 2005). The reduction of operating costs results from maximizing all productive factors, reducing fixed costs and the adjustment of services offered.

Consequently, in the context of increasing its competitiveness, a Low Cost Carrier primarily focuses on maximizing the use of its aircraft, both in terms of completeness and frequency of operation. By maximizing the number of seats available per flight, minimizing aircraft turnaround time and increasing the frequency of flights, Low Cost Carriers achieve density economies that are evaluated as more cost effective to reduce unit costs on air than economies of scale (Pitfield, 2008; Dobruszkes, 2006).

The fixed costs of Low Cost Carriers are essentially the aircraft fleet and the costs of operating the airports. The fleet of Low Cost Carriers is usually homogeneous and consists of mediumsized, new-generation aircraft that are characterized as cost-effective and energy efficient. These homogeneous features give Low Cost Carriers greater flexibility in the employment of available staff as it facilitates staff qualification and minimizes the cost of training (Sorensen, 2005). On the other hand, the use of central airports generates high fees and impedes the basic aspirations of Low Cost Carriers for short boarding and frequent flights (Mason, 2000; De Groote, 2005; Soresen, 2005;).For this reason, Low Cost Carriers are mainly operating out
of regional airports which have only basic infrastructure for handling and managing flights (Hunter, 2006). This strategy facilitates the maximization of frequencies, minimizing boarding /landing delays and making the aircraft more time-consuming on point-to-point routes (Lawton, 2000; Mason, 2000).

At the same time, it is found that there is a two-way relationship between Low Cost Carriers and regional airports in addition to the multiple benefits that Low Cost Carriers have from using regional airports, regional airports often approach Low Cost Carriers in order to enhance their connectivity to other destinations and thus. increase their revenues from increased passenger traffic (Francis et al., 2004; Zenelis, and Papatheodorou, 2008).

European experience has shown that many small regional airports find it difficult to make a profit and many rely on subsidies (Barrett, 2000). However, a dialogue on the operation and development of regional airports should extend beyond profit or loss conditions. It should take into account the importance of regional airports for many economically and touristically isolated areas where they have a catalytic effect by improving productivity, attracting economic and tourist activity, boosting local income and employment.

## 3. METHODOLOGY

### 3.1 Purpose of the research

The purpose of this empirical research is to investigate the prospective use of Tripoli Military Airport and as a civilian airport for Low-Cost Carriers and to evaluate its contribution to the local tourism business in the region.

### 3.2 General characteristics of the study area.

The Peloponnese has a particularly important and diverse cultural heritage, comprising historical sites and monuments, folklore wealth, cultural infrastructures, as well as morals, customs and various cultural events. The Peloponnese region consists of five regional units: Argolida, Arcadia, Corinthia, Laconia and Messinia, of which only the regional unit of Messinia is adequately served by the existing airport of Kalamata, while the remaining are from the Kalamata airport, between two and four hours, and are primarily served by Athens International Airport (AIA) (SETE, 2018).

The prospect of the Tripoli Military Airport operating as a low-cost passenger airline through Low Cost Carriers is likely to significantly boost local tourism business, due to its geographical location and low costs in airport taxes and air fares.

The total area of the Peloponnese is 21,379 square kilometers and covers $16.2 \%$ of the country's geographical area. Two-thirds of the Peloponnese consists of mountainous or semimountainous areas. The climate of the region varies depending on the altitude and is characterized as Mediterranean in coastal areas and temperate within the Peloponnese. The sectors involved in primary production and processing of agricultural products are dynamic, in contrast to the tourism sector which shows a decline in turnover (Rural Development Program, 2014-2020).The Peloponnese connects with the rest of Greece mainly through the Corinthian isthmus, which connects it with Attica, and via the Rio-Antirio bridge, which connects it with western and northern Greece. It is accessible by air through the airports of Araxos and Kalamata, as well as Athens (Figure 1), while it is accessible mainly by ferry to Patras (EYSSAAP, 2014).

Figure 1. Air Interface of Peloponnese, Greece


Source: Civil Aviation Authority, 2018

Germany was the main market for the Peloponnese, with international arrivals in 2018 at the Kalamata airport, followed by the United Kingdom. These two markets accounted for 53\% of all international arrivals in the study area, 68\% of international arrivals in 2018 occurred between June and September (Figure 2), (CAA, 2018).

Figure 2. International Arrivals in Peloponnese, Greece, 2013-2018


Source: SETE Intelligence, 2019

Most international arrivals take place in the Argolida regional unit, followed by the Corinthian regional unit. In addition, most of the hotel units have the Regional Unit of Argolida followed by the Regional Unit of Laconia (Table 1).

Table 1. Arrivals and Capacity of Tourist Accommodation in Argolis, Korinthia, Laconia, Arcadia

| Regional Unit | Argolida | Korinthia | Lakonia | Arkadia |
| :---: | :---: | :---: | :---: | :---: |
| Arrivals in Hotels 2018 | 94,063 | 78,752 | 27,246 | 4,328 |
| \%Greeks | 64\% | 66\% | 24\% | 91\% |
| \%Foreign | 36\% | 34\% | 76\% | 9\% |
| Number of hotels (2018) | 147 | 103 | 139 | 106 |
| 4-5stars | 29 | 16 | 30 | 27 |
| 3 stars | 28 | 31 | 63 | 36 |
| 1-2 stars | 90 | 56 | 46 | 43 |
| Supplementary tourist accommodation | 269 | 75 | 186 | 203 |

Source: CAA, 2018; Hellenic Chamber of Hotels, 2018
3.3 Perspective of using Tripoli military airport in Greece and as a policy to service Low Cost Carriers - Technical Study Data

As part of its investigation into the use and development of the Tripoli military airport for lowcost civil aviation flights, it has been a constant demand of tourism companies in Central and Southeastern Peloponnese. The main reasons pushing in this direction are the time distance from the AIA to the regions of SE Peloponnese, the high charges of the AIA and the time distance from the airport of Kalamata.

According to the results of a technical study conducted on behalf of local professional tourism operators in Greece, the IBI Group Hellas SA technical consulting firm on the possibility of using the existing Tripoli military airport and as a civilian airport for Low Cost Carriers, the following interesting facts emerge (Efstathopoulos, Richetta \& MacKinnon, 2014):

Modern market trends and the ever-increasing need for more regional airports to use in many tourist destinations, and even with strong geomorphic terrain, such as the case study of the Tripoli Airport in Greece, necessitate the gradual withdrawal of many old technology airports and with new processes based on new Global Navigation Satellite System (GNSS) technologies and in particular Performance Based Navigation (PBN) technologies, compared to ground based auxiliary technologies (e.g. VOR / DME) (ICAO, 2019).

Key benefits of GNSS technology are security (vertical guidance), cost / efficiency, greater airspace capacity, less impact on the environment (emissions, noise) and is suitable for airports in highlands with high terrain \& numerous obstacles (mountains, etc.) as it provides significant flexibility in the course of aircraft (Figure 3)

Figure 3. Summary of GNSS Technologies for Developing Instrumental Processes


Source: Efstathopoulos, Richetta \& MacKinnon, 2014

The initial technical study of the suitability of the Tripoli Military Airport for its use and as a civilian airport, had been carried out in 2003, during which technical barriers were identified, including extensive obstructions with ICAO Annex 14 surfaces, inaccurate ground-based
instrumentation procedures. (VOR / DME) and the ability to approach aircraft only from the North. These barriers after 2011 were finally overcome with the help of new technologies (GNSS-PBN), coupled with the need to extend and slightly change the landing and take-off runway of the aircraft (Figure 4). Over the years, the application of new technologies for instrumental processes is a one-way street for Greek airports as it appears to be supported by all market players.

Figure 4. Military Airport of Tripoli, Greece: Extend and Change Route Airfield


Source: Efstathopoulos, Richetta \& MacKinnon, 2014

### 3.4 Method of Data Collection - Sampling

The questionnaire was selected as the 'tool' for gathering research data, which is considered the most widespread research tool. The structure of the questionnaire was carefully designed to meet specific qualitative and quantitative standards for evaluating the characteristics of the tourists who were the sample of the survey. For the purposes of the survey, a questionnaire was developed in two languages, English and German, since these two nationalities, which constituted both major categories of the survey population, constitute the major bulk of tourists choosing the wider region as their holiday destination.

The first section informs the subjects of the research of its purpose and observes the anonymity of the data to be reported. At the same time, it is requested to initially fill in some of the individual-demographic and social characteristics of the subjects (country of origin, gender, age category, educational level, employment status, income level) which constituted the identity of the research.

Specifically, for the main questionnaire, the questions were aimed at gathering data on the following individual issues: Basic traffic sizes (number of nights, purpose of travel, repeatability, travel time, etc.):

- Reservation details (means and method of reservation, travel package or not, etc.)
- Airport and Carrier Selection Criteria
- Expenditure breakdown analysis (air freight allocation, accommodation, entertainment, other tourism businesses, overheads)

Regarding the sample collection process, the questionnaires were distributed and completed in writing by a random sample of passengers, focusing mainly on the two nationalities (British and German), who resided in hotels in the Regional Units of Arcadia, Argolis, Korinthia and Lakonia travel to Greece by air. The sample of the individual categories of research subjects collected after evaluating the validity of the answers was digitized through SPSS Statistics 24. In terms of the sample of the survey, the initial target population was a total of 300 questionnaires with the main volume coming from the two main categories of nationalities (British and German). In the final sample, after examining the questionnaires for their validity and completeness, 252 questionnaires were included, a number which is considered satisfactory for the needs of the analysis of this research study.

### 3.5 Demographic Characteristics of the Sample

Based on the questionnaires answered, an even distribution of the sample was found between the two main nationalities (British 40.2\% and German 43.3\%), with a small percentage coming from other countries (16.5\%).Focusing on the individual samples, we could comment that $92 \%$ of the visitors of the destinations under study, regardless of nationality and country of origin, use the Athens International Airport (AIA) to move from the country of origin to the individual destinations. The main reason is that there is no nearer regional airport capable of supporting low cost direct flights other than Kalamata, which is considered quite distant compared to the destinations chosen for vacation.

The majority of respondents belong to the age group of $26-35$ years ( $32.65 \%$ ), followed by the age groups of 19-25 years and $36-45$ years ( $26.32 \%$ and $24.3 \%$ respectively), while the lowest rates are followed by the age groups of 46-55 years and over 56 years ( $10.4 \%$ and $6.33 \%$ respectively). In terms of education the overwhelming majority of respondents are university graduates (42\%) or Masters' degree holders (28.2\%) and in combination with the following airport and air carrier selection questions, there is a positive conclusion correlation between higher education level and proximity to airport - fare. Employment status and income level are important indicators for determining the economic profile of visitors as their financial ability determines the level of expenditure in the local economy. The majority of survey participants (62.3\%) are financially independent while the vast majority fall into the income categories of $€ 0-12,000$ and $€ 12,001$ to $€ 30,000$ ( $35.2 \%$ and $38.6 \%$ respectively) while much smaller percentages are in the income categories of EUR 30,001-50,000 and over EUR 50,001 (18.5\% and 7.7\% respectively).

Combined with the questions raised below, it appears that the income categories that would choose a regional airport that can support LCCs (Tripoli airport type) are mainly the low income categories (65.4\%). It is also noteworthy that a significant percentage (34.6\%) of high income categories would make a similar choice. Moreover, in the case of a regional airport that would support LCCs, the overwhelming majority of respondents said that they would choose their destination more regularly because of the low cost of air fare.

## 4. RESULTS AND DISCUSSION

Of the traffic sizes, the main indicator for the purposes of this analysis is the length of stay since it reflects the magnitude of the potential tourist expenditure of visitors. In both main categories of research, the average stay in a destination is quite high and ranges between 6 and 7 nights. As for passengers of choice beyond Athens International Airport, a nearer regional airport such as Tripoli, which could accommodate low-cost carriers, the vast majority of both major nationalities (British and Germany) at $72.3 \%$ and $66.8 \%$ respectively, stated that they would choose it on the most basic criteria the closest distance to the destination of their choice and the lowest fare.

In addition, the analysis of the allocation of individual costs of visitors to a destination determines the characteristics of the visitors' consumer profile and the range of sectors and economic activities that benefit locally. Consumer preferences and priorities set during their stay at a destination shape the level of individual costs and therefore determine the economic benefits of visiting a local / regional economy. A visitor's basic consumables are related to air fare costs and a range of services including expenses for holiday packages, accommodation, dining, transportation, entertainment, cultural activities, shopping and a range of individual support services.

According to the respondents, a very small percentage (4.2\% for British and 3.6\% for German nationality) chose to purchase a travel package with an average cost per tourist package of $€$ 820 for the British market and $€ 1060$ for the German market respectively. For those who did not choose to buy a tourist package, the estimated average cost of purchasing the air fare was $€ 216.40$ for the UK market and $€ 203.5$ for the German market while the average of the sample spend airfare purchase was $€ 209.96$ and prevailing price $€ 230$. In terms of how the accommodation was booked in the two main categories of the sample the rates were similar $34.3 \%$ of British and $37.4 \%$ of Germans visitors used the accommodation website or an intermediary's website respectively to book their rooms. The cost of accommodation was calculated as the total cost per person for the whole period of their stay in the area. As a result, the average per capita expenditure on accommodation for British was $€ 267.4$ while for Germans $€ 366.3$ respectively.

The higher average per capita spending for Germans is related to their length of stay and the choice of accommodation they have, which is probably of a higher class and quality of service provided.

### 4.1 Comparative Analysis of Expenditure based on the Demographic Characteristics of the

 Subjects SurveyedThe qualitative analysis has found that the profile of the main categories of research subjects participating in the sample under study have a great deal of similarities irrespective of nationality. However, the consumer behavior of visitors is not solely influenced by the country of origin of the visitors. The prospect of operating a nearer civilian airport, such as the Tripoli airport under consideration, which can accommodate mainly Low Cost Carriers, also specifies a variety of passengers, with different demographic and socio-economic characteristics.

The potential difference in consumer preferences involving a similar passenger audience should be considered in order to draw useful conclusions about the economic impact that the operation of a corresponding regional airport will have on local businesses and the local economy. Therefore, it is necessary to determine the consumer patterns of each individual demographic category, which may constitute the Low-Cost Carriers passenger community. Individual demographic categories, by attributing most or a small part of their spending to local businesses, at the same time formulate the pricing policy and profile of tourism companies and affiliated airlines in order to maximize their revenue. Therefore, in order to determine which consumer profile would be most effective, the fluctuations of average expenses by demographic category should be investigated.

As noted above, the cost of purchasing airfare constitutes a large part of the total travel expense of the visitors. Although such expenditure as a cash inflow does not directly affect the local economy, a similar expenditure may determine the amount of money spent on staying at a destination (Table 2).

Examining the costs of direct inputs into the real economy of the regional units of the Peloponnese concerned, the fluctuations of accommodation and other activities were analyzed using the following procedure:

The regularity of the distributions of the responses to each individual variable of demographic and socio-economic characteristics was initially tested by means of the Kolmogorov-Smirnov statistical test. Observing that there is no normal distribution of the sample data, the nonparametric Kruskal-Wallis test was applied for each individual demographic category. The
results showed that only two variables were statistically significant in terms of their subgroup's average cost of accommodation (Table 3)

Table 2. Correlation between Air Ticket Expense and Accommodation, General Tourist Services Expenses

| Correlation | p-value | Spearman <br> Correlation |  |
| :--- | :--- | :---: | :---: |
| Air ticket expense | Accommodation expense | 0.000 | 0.403 |
|  | General tourist services expense | 0.000 | 0.413 |
| The correlation in significant at the 0.01 level |  |  |  |

Processing: authors
Table 3. Kruskal-Wallis Test for Accommodation Expenses

| Demographic characteristics | Kruskal-Wallis test |
| :--- | :--- |
| Nationality - Country of origin | 0.000 |
| Age category | 0.075 |
| Educational level | 0.073 |
| Employment status | 0.063 |
| Income category | 0.001 |
| The difference is significant at the 0.05 level |  |

Processing: authors

Based on the data in Table 3, a significant variation in the range of accommodation expenses is identified in the demographic characteristics of "nationality-country of origin" and "income category".

Table 4. Accommodation Expenditure by Nationality-Country of Origin (in $€$ per person)

| Nationality - <br> Country of <br> origin | $\mathbf{N}$ | Average | Minimum | Maximum | Range | Standard <br> deviation |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| British | 103 | 267.40 | 24.00 | $1,840.00$ | $1,816.00$ | 245.62 |
| Germany | 105 | 366.30 | 25.00 | $2,100.00$ | $2,075.00$ | 377.20 |
| Other | 44 | 208.62 | 11.00 | 920.00 | 909.00 | 221.52 |

Processing: authors

Based on the fluctuation of accommodation expenses compared to these two sub-categories of demographic characteristics it is observed (Table 4) that visitors from Germany spent more money on their stay than visitors from Britain. It is therefore found that German tourists bring more benefits to local hotel companies than British tourists, while the expense of spending on both nationalities reveals a wide variety of accommodation prices.

Table 5. Accommodation Expenses by Income Category (in $€$ per person)

| Income <br> category | $\mathbf{N}$ | Average | Minimum | Maximum | Range | Standard <br> deviation |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Under $12,000 €$ | 86 | 152.46 | 19.00 | 820.00 | 801.00 | 202.36 |
| $12,001-30,000 €$ | 98 | 207.47 | 30.00 | $1,020.00$ | 990.00 | 248.83 |
| $30,001-50,000 €$ | 57 | 292.24 | 28.00 | $1,400.00$ | $1,372.00$ | 389.61 |
| Over $50,001 €$ | 11 | 407.67 | 40.00 | $2,200.00$ | $2,160.00$ | 492.39 |

## Processing: authors

Based on the income category of the visitors, there is a very interesting consumer trend, since in combination with the data from the air freight expense, the money that would save visitors from choosing a low cost carrier would be transferred would be transferred to the cost of accommodation. Indeed, as can be seen from the data analysis (Table 5), with the exception of the two extreme income categories (under $€ 12,000$ and over $€ 50,001$ ), the middle income categories show a range of costs ranging between $€ 1,000$ and $€ 1,400$ with expenditure accommodation to be determined between 200 and $300 €$.

On the other hand, spending on general services (catering, leisure, transport, commerce, etc.), in addition to accommodation, reflects the expenditure incurred on all businesses, other than the hotel industry, during the stay of visitors to a destination. In order to evaluate visitors who are considered to be most cost-effective for local businesses and to assess their demographic characteristics, the same statistical tests were used which were also used for past expenditure. In this case too, the sample irregularity was detected and Kruskal-Wallis statistical test was used. Expenditure findings for general services (Table 6) showed statistical significance based on demographic characteristics of "nationality-country of origin", "educational level" and "income category".

Table 6. Kruskal-Wallis Test for General Service Expenses

| Demographic characteristics | Kruskal-Wallis test |
| :--- | :--- |
| Nationality - Country of origin | 0.000 |
| Age category | 0.067 |
| Educational level | 0.048 |
| Employment status | 0.068 |
| Income category | 0.000 |
| The difference is significant at the 0.05 level |  |
|  |  |

Processing: authors

According to the analysis data (Table 7), in this case too, visitors from Germany spent more money on general services than visitors from Britain, which means that they bring greater benefits to all local businesses than British tourists.

Table 7. Expenses on General Services by Nationality-Country of Origin (in $€$ per person)

| Nationality - <br> Country of <br> origin | $\mathbf{N}$ | Average | Minimum | Maximum | Range | Standard <br> deviation |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| British | 103 | 207.40 | 10.00 | $1,800.00$ | 1,790 | 215.62 |
| Germany | 105 | 343.30 | 15.00 | $2,300.00$ | 2,285 | 377.20 |
| Other | 44 | 200.62 | 20.00 | $1.020,00$ | 1,000 | 201.52 |

Processing: authors

Concerning the expenditure on general services in relation to education level (Table 8), it is observed that visitors who are more supportive of the local economy have a postgraduate degree, as opposed to those with lower education which result in lower spending.

Table 8. Expenses on general services by education level (in $€$ per person)

| Educational <br> level | $\mathbf{N}$ | Average | Minimum | Maximum | Range | Standard <br> deviation |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Basic <br> education | 25 | 170.86 | 30 | 300 | 522 | 115.31 |
| Secondary <br> Education | 58 | 296.11 | 30 | 700 | 670 | 232.22 |
| University <br> graduate | 103 | 295.85 | 20 | 1,300 | 1,280 | 216.80 |
| Postgraduate <br> studies | 66 | 320.83 | 30 | 2,200 | 2,170 | 405.61 |

Processing: authors

Finally, with regard to the expenditure on general services compared to the 'income level' (Table 9), it is observed that the middle income categories have similar consumption habits in terms of the level of expenditure on general services. On the other hand, the two extreme income categories cause the lowest and highest costs for general services while staying at a destination.

Table 9. Expenses on general services by income category (in $€$ per person)

| Income <br> category | $\mathbf{N}$ | Average | Minimum | Maximum | Range | Standard <br> deviation |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Under $12,000 €$ | 86 | 151.15 | 20 | 800 | 780 | 163.18 |
| $12,001-30,000 €$ | 98 | 263.15 | 15 | 2,200 | 2,185 | 303.15 |
| $30,001-50,000 €$ | 57 | 265.78 | 20 | 850 | 830 | 201.58 |
| Over $50,001 €$ | 11 | 411.10 | 30 | 2,200 | 2,170 | 412.22 |

[^0]
## 5. CONCLUSIONS

Based on international literature and the findings of the present study, a strong interdependence relationship between air transport and the economy at national and local level is confirmed, with the overwhelming majority of tourists, especially in Greece, choosing airplane as the main means of transport (SETE Intelligence, 2019). In particular, in isolated geographical or tourist areas it is very interesting to clearly determine the extent to which regional airports have an impact on local economic development.

It is a fact that the liberalization of air transport that has led to increased competition and the emergence of Low Cost Carriers has brought new opportunities to the transport sector, passenger transport, the organization and management of regional airports, but has also created the need to assess the impact of many regional airports on the local economy. As identified in the international literature, the main effects of utilizing regional airports are on increasing the traffic and recognition of destinations and on the multiplier economic benefits they bring to local business and the economy.

In the Peloponnese, which is the study area of the present research work, there is a strong seasonality in tourism activity and a high degree of dependence on the domestic market. Consequently, the development of an airport like that of Tripoli, proximity to all central and southeastern Peloponnese would constitute an essential infrastructure project crucial to the economic development of the wider region.

Concerning the effects that the operation of a regional airport such as Tripoli could have on hotels and supplementary tourism businesses, the findings of the primary research are very interesting. In particular, having a closer and cheaper airline connection with the tourist destinations under study seems to attract a much higher number of visitors to the wider area. According to survey data, visitors who would choose an airport closer to their destination of choice, such as Tripoli Airport in Greece, which could support Low Cost Carriers, are in the majority of highly educated, well-informed people with high demands on infrastructure and social services, elements which should be taken into account by the development stakeholders involved in the tourist strategic planning of the area.

The fact that the majority of the guests who would choose a low cost regional airport supported by Low Cost Carriers is a reflection on the amount of total costs to be incurred. But a similar consumer behaviour is offset by the fact that cheap airfare has a high traffic and repeatability in the region, with multiplier benefits for tourism businesses and the local economy.

From a comparative analysis of expenses based on demographic characteristics, some sourcemarkets for Greece, such as the German market, appear to be more interesting than others, because of their higher spending, so they should be further approached with more active promotional policies of the tourist product of the Peloponnese. At the same time, the extent of the cost of accommodation, regardless of nationality, shows that the economic benefits are evenly distributed across almost all categories of tourist accommodation, regardless of the price and quality of service provided.

Interestingly, the low-cost savings on air fare through Low Cost Carriers, primarily favor tourist accommodation, compared to other tourism businesses, since most of the total cost appears to be transferred to the cost of accommodation. On the other hand, high-educated people spend much of their total spending on one destination in general services, beyond accommodation and fares, thereby significantly boosting the local economy as a whole, against lower education categories level.

On the demand side, the middle income categories appear to have similar preferences and consumer behavior, at least in terms of spending on more general services. On the supply side, such a conclusion can be attributed to the level of prices and services of existing destinations businesses, which are priced in these income categories.

According to the data provided, it is found that, at least in the short term, the operation of a regional airport such as that of Tripoli, along with the development of Low Cost Carriers, which have been the catalysts of aviation growth over the last ten years in Europe and Greece in particular, it will contribute to the development of entrepreneurship and the economy of the Peloponnese. It will also strengthen existing target markets and open new ones, increase business and price competitiveness, lengthen the tourist season, and develop new products and services.

Finally, in the long run, in order to maintain and further develop the tourism capital of the Peloponnese, there must be adequate tourism strategic planning, a sustained program of public investment in infrastructure projects and special tourist facilities and a continuous upgrade of tourism services. In any case, specifically, how an airport such as Tripoli, in addition to its importance for local development, can be economically viable should be the subject of further research.

## REFERENCES

- Aschauer, D. A. (1989) 'Does public capital crowd out private capital?' Journal of Monetary Economics,Vol. 24, pp. 171-88.
- Audretsch, D. B., \& Feldman, M. P. (1996). R\&D spillovers and the geography of innovation and production. The American Economic Review, 86(3), 630-640.
- Barrett, S. D., 2000. Airport competition in the deregulated European aviation market. Journal of Air Transport Management, 6(1), 13-27.
- Blonigen, B., Cristea, A. (2012). Airports and Urban Growth: Evidence from a Quasi-Natural Policy Experiment(No. w18278). National Bureau of Economic Research.
- Bowen, J. (2002). Network change, deregulation, and access in the global airline industry.
- Brueckner, J.K. 2003. Airline traffic and urban economic development. Urban Studies 40 (8): 1455-1469.
- Butler, S. E. and Kiernan, L. J. (1992) Measuring the Regional Economic Significance of Airports, Office of Airport Planning and Programming, Federal Aviation Administration, Washington, DC.
- Button, K. \& Taylor, S., 2000. International air transportation and economic development. Journal of Air Transport Management 6: 209-222.
- Button, K. J. (1998) 'Infrastructure investment, endogenous growth and economic convergence', Annals of Regional Science,Vol. 32, pp. 145-162.
- Button, K. J. and Vega, H. (2008) 'The effects of air transport on the movement of labour', GeoJournal,Vol. 71, pp. 67-81.
- Button, K. J., Doh, S. and Yuan, J., 2010. The role of small airports in economic development, Journal of Airport Management, 4, pp. 125-136.
- Button, K., \& Yuan, J., 2013. Airfreight transport and economic development: an examination of causality. Urban Studies, 50(2), 329-340.
- Cidell, J., 2014. The role of major infrastructure in subregional economic development: an empirical study of airports and cities. Journal of Economic Geography
- De Groote, P. (2005) The success story of European low-cost carriers in a changing air world, BIVEC-GIBET Transport Research Day 2005, Diepenbeek, pp. 87-110
- Dobruszkes, F. (2006) An analysis of European low-cost airlines and their net- works. Journal of Transport Geography, 14(4), 249-264.
- Efstathopoulos,N., Richetta,A., MacKinnon, A.(2014), Deployment of GNSS Air Navigation Technologies for Regional Airports with Challenging Terrains - The Case of Tripoli Airport, Available at https://www.ibigroup.com/projects/(Accessed on April 22, 2019)
- EYSSAAP, EP <Transport Infrastructure, Environment \& Sustainable Development 20142020», Available at www.espa.gr/el/pages/staticOPInfrastructureEnvironment.aspx (in Greek) (Accessed on June 26, 2019)
- Francis, G., Humphreys, I., \&Ison, S. (2004) Airports' perspectives on the growth of lowcost airlines and the remodeling of the airport-airline relationship. Tourism Management, 25(4), 507-514.
- Gaspar, J., \& Glaeser, E. L. (1998). Information technology and the future of cities. Journal of Urban Economics, 43(1), 136-156. doi:10.1006/juec.1996.2031
- Goetz A.R. 1992. Air passenger transportation and growth in the U.S. urban System, 19501987. Growth and Change 23:218-242.
- Graham, B., 1997. Regional airline services in the liberalized European Union single aviation market. Journal of Air Transport Management, 3(4), 227-238.
- Green, R. 2007. Airports and economic development. Real Estate Economics 35:91-112.
- Halpern, N., \& Brathen, S. (2011). Impact of airports on regional accessibility and social development. Journal of Transport Geography, 19(6), 1145-1154.
- Hellenic Chamber of Hotels, Hotel Search and Camping, Available at https://services.grhotels.gr/el/searchaccomodation (Accessed on June 17, 2019)
- Hunter, L. (2006) Low Cost Airlines: Business Model and Employment Relations. European Management Journal, 24(5), 315-321.
- International Civil Aviation Organization MIDANPIRG Communication, Navigation and Surveillance Sub-Group Ninth Meeting (CNS SG/9) (Cairo, Egypt, 19 - 21 March 2019), Available at https://www.icao.int/MID/Documents/2019/CNS\ SG9/CNS\ SG9-WP12-\ GNSS\ Issues.pdf (Accessed on May, 13, 2019)
- Kanafani, A., \& Abbas, M. S. (1987). Local air service and economic impact of small airports. Journal of Transportation Engineering, 113(1), 42.
- Kasarda, J. D., \& Lindsay, G. Aerotropolis: The Way We'll Live Next. 1st ed. New York: Farrar, Straus and Giroux, 2011.
- Lawton, C. (2000) "Cleared for Take-off. Structure and strategy in European low fare business", Ashgate
- Lei, Z. and Papatheodorou, A. (2010) Measuring the Effect of Low-Cost Carriers on Regional Airports' Commercial Revenue. Research in Transportation Economics, 26: 3743.
- Lian, J. I., \& Ronnevik, J. (2011). Airport competition - Regional airports losing ground to main airports. Journal of Transport Geography, 19(1), 85-92.
- Mason, K. J. (2000) The propensity of business travelers to use low-cost airlines. Journal of Transport Geography, 8(2), 107-119.
- Mukkala K., Tervo H., 2013. Air transportation and regional growth: which way does the causality run? Environment and Planning A 45(6) 1508-1520
- Neal, Z. (2010). Refining the air traffic approach to city networks. Urban Studies, 47(10), 2195-2215.
- Papatheodorou, A. and Arvanitis, P. (2009) Spatial Evolution of Airport Traffic and Air Transport Liberalization: The Case of Greece. Journal of Transport Geography, 17: 402412.
- Pitfield, D. E. (2008) Some insights into competition between low-cost airlines. Re- search in Transportation Economics, 24(1), 5-14.
- Rosenthal, S. and Strange, W. (2004) Evidence on the nature and sources of agglomeration economies, in: J.-F. Thisse and J. V. Henderson (Eds) Handbook of Urban and Regional Economics, Volume 4, 2119-2171. Amsterdam: North Holland.
- Rural Development Program 2014-2020, Available at http://www.agrotikianaptixi.gr/el (in Greek) (Accessed on June 12, 2019)
- SETE Intelligence (2019), The prospects of incoming tourism in Greece in 2019, Available at http://www.insete.gr/Portals/0/meletes- INSETE/01/2019/2019 Outlook2019 updated.pdf (Accessed on May, 21, 2019)
- SETE, Touristic Strategic Planning - Road Map of Implementation, 2018, Available at http://sete.gr/fileadmin/SETE Conferences/2013/presentations/Tourism\%20Strategy\%2 OPlan SETE\%20Conference Updated.pdf (in Greek) (Accessed on 03 June 2019)
- Skeels J., (2005) Variations in Airport Charges, Aviation Industry Group - 2nd. Annual Managing Airline Operating Costs Conference, Dublin 7 December 2005. Available at: http://www.elfaa.com/documents/ELFAAPresentation-ELFAAPresentation-
AIGconference-L.pdf (Accessed on 18 August 2016).
- Sorensen, T. C. (2005) An analysis of the European low fare airline industry-with focus on Ryanair. Aarhus School of Business.
- Van den Berg, L., van Klink, A. and Pol, P. J. (1996) `Airports as centers of economic growth', Transport Reviews,Vol. 16, pp. 55-65.
- Winston, C. M. (1991) 'Efficient transportation infrastructure policy', Journal of Economic Perspectives, Vol. 5, pp. 113-127.
- Zenelis, P. and Papatheodorou, A. (2008) Low Cost Carriers' Penetration: A Comparative Case Study of Greece \& Spain. 12th Annual World Conference of the Air Transport Research Society hosted by the Hellenic Aviation Society and the University of the Aegean in Athens, Greece.


## AUTHORS' BIOS

Dr Konstantinos Marinakos (corresponding author) is an Assistant Professor in the Department of Tourism Management at the University of West Attica. He also collaborates with the Hellenic Open University. Moreover, he is the Chairman of the Board of the

Peloponnese Tourist Organization and the Peloponnese Health Tourism Network. E mail: marinakos@uniwa.gr

Dr Ioulia Poulaki is an Assistant Professor in the Department of Tourism Management at the University of Patras. She also collaborates with the Hellenic Open University. Furthermore, she has ten years of experience in the airline industry, both in commercial and operational departments. Email: ipoulaki@upatras.gr


[^0]:    Processing: author

