

ASSESSING TOURIST INFRASTRUCTURE IN THE ISLAND OF SKIATHOS: THE VIEWS OF LOCALS AND VISITORS

Stylianos Tampakis
Democritus University of Thrace

Evangelos Manolas
Democritus University of Thrace

Vasileios Tampakis
Municipality of Skiathos

The island of Skiathos is an important tourist destination. The creation of tourist infrastructure is a necessary pre-requisite for confronting competition from other, equally popular, tourist destinations. In this paper an effort is made to identify the problems with regard to the island's tourist infrastructure in order to make it possible for those responsible to take the appropriate measures for improving this infrastructure. This paper is based on data retrieved from a structured assessment questionnaire. It also combines two parallel research projects, with regard to both the local population as well as visitors, who are asked to assess the road network, the pedestrian walkways, the parking areas and access to the island's beaches. In addition, the respondents are asked to express their opinion with regard to the drainage system, the water supply network, cleanliness, transport services as well as hotel facilities, restaurants and entertainment places.

Keywords: *Tourism, assessment of infrastructure, island of Skiathos*

JEL Classification: *L83, M1, O1*

INTRODUCTION

Tourism plays a crucial role for national economies throughout the world (Korres, 2008). A basic pre-requisite for dealing with fierce competition in the area of tourism is the creation of infrastructure. The



existence of infrastructure is also important for the development of a place at both national and international level (Papanastasiou, Laszaridis & Noulas, 2006; Sheykhi, 2009; Petrakis & Psycharis, 2004).

Although Skiathos has a big road network, nevertheless, this network faces several problems: bad delineation, partial construction, limited width and asphaltting (source: Municipality of Skiathos).

Many roads in the town of Skiathos are pedestrian walkways. The movement of vehicles in these roads is restricted. Only a few roads have sidewalks within city limits including the road which connects the town to the airport (source: Municipality of Skiathos).

The drainage network of the Municipality of Skiathos is limited to the town of Skiathos and to a small part in the area of Koukounaries. The existing drainage network covers 70% of the town of Skiathos. The rest of the island has no drainage system. In the island of Skiathos there are two units for sewage treatment. The unit for sewage treatment in the town of Skiathos can serve 22000 people while the unit operating in the area of Koukounaries can serve 2500 people. The operation of the units for sewage treatment during winter-time is satisfactory while during summer-time is marginal (source: P.E.W.S.D. - Skiathos).

The problem of waste management is particularly serious during the summer months because of the increase of the island's population as a result of tourism. The Municipality of Skiathos operates at a regular basis 6 waste management vehicles. The rubbish bins in the island are about 150. The municipality also operates two mechanical cleaners. During winter-time the collection of rubbish is done once every day (excluding weekends) while during the summer season is done three or four times a day (including weekends). Through the use of a track-laying vehicle and at a daily basis the garbage is covered with sand in the island's sanitary landfill in the area of Zorbades. It is worth noting that the rubbish is not recycled in any way (source: Municipality of Skiathos).

Until today the inhabitants of the island face no shortage of drinking water even though this water is brackish. The island's water supply network is not restricted to the town of Skiathos but extends to areas just outside the town limits. The existing connections are 3300 while the length of the network is 12569 m. 6702 m are P.V.C. pipes of which 5462 m are made of amiant and 405 m are made of iron. The average daily water consumption is 3200 m³ per day while the maximum water consumption is 4000 m³ per day (Markantonatos & Papavasilopoulos, 2002, source: Skiathos P.E.W.S.D.) The water mentioned above is not drinking water and for this reason the town of Skiathos is supplied every day with 20 m³ of drinking water. The drinking water comes from the

area of Profitis Elias and it is distributed to 12 public fountains (source: P.E.W.S.D. - Skiathos)

The island's port can accommodate up to three ferry boats and three high speed boats. In addition, during the peak of the summer season the existing facilities in the port cannot accommodate the many private recreation vessels which arrive there. With regard to ferry boats, during the summer season the island of Skiathos is connected with 12 different ports while, with regard to high speed boats, the island is connected with 8 different ports (source: Skiathos Port Police).

Skiathos has a public airport which is not regarded as "international" but as "an entry-exit point". This means that the offices regarding passport control and customs do not operate on a continuous basis. The airport is used for international flights in the period April to October. On the basis of the length of the airport's runway, the International Civil Aviation Organization (I.C.A.O.) classifies Skiathos airport in category 3. On the basis of fire insurance facilities Skiathos airport is classified in category 6. The size of the airport's parking area is 132x60 m and can just accommodate two middle size aircraft of the Boeing B737 category. In the surrounding area there are parking spaces which can accommodate 118 automobiles, 16 buses, 88 rented automobiles and 10 personnel vehicles. However, it is difficult for the airport to host private airplanes especially in the peak of the tourist season. During the summer period, Skiathos airport is the destination of chartered flights from 18 different European cities (source: C.A.S. - Skiathos)

The island's urban transport includes three lines. The first starts from the town of Skiathos and terminates at Koukounaries. This particular line uses 5 buses of 54 seats each and serves the entire south side of the island with 24 stops in a distance of 15 km. The other two lines use only an 11 seat small bus. They both start from the town of Skiathos and terminate at the destinations Moni Evangelistrias and Xanemos (source: P.E.T. - Skiathos).

Within town limits the island of Skiathos can only provide a limited number of parking spaces. In the summer time, the local authorities attempt to solve the problem by converting a large green area into parking area (source: Municipality of Skiathos).

Access to the island's beaches is generally easy. These can be reached via private vehicles, buses, private recreation boats or on foot. Access to the beaches in the southern part of the island is easier as opposed to beaches in the northern part of the island which are much more difficult to reach.

Skiathos currently has 99 hotels with 3367 rooms and 6513 beds (source: H.T.O. - Volos). The demand for lodgings is also met by rented rooms or apartments. With regard to rented rooms Skiathos today has 407 units of rented rooms with 3387 rooms and 6922 beds (source: H.T.O - Volos).

In the island there are also several restaurants. The only weakness may be the lack of luxury restaurants. There are also several entertainment enterprises.

The aim of this paper is to identify the problems of the island of Skiathos regarding infrastructure as these are perceived by locals and visitors as well as to compare and contrast these views.

RESEARCH METHOD

This paper is based on two independent research projects which were carried out in the island of Skiathos using the same questionnaire. The first project was addressed to the inhabitants of the island and the second to the visitors.

For the investigation of the attitudes of the inhabitants of Skiathos simple random sampling was applied. This choice was made on the basis of the simplicity of this method and the fact that this technique, when compared to other methods, requires the least possible knowledge with regard to the population under study (Freese, 1984; Asteris, 1985; Matis, 1992; Damianos, 1999; Kalamatianou, 2000). The “population” under study (statistical population) was the total of the adult residents of the island (4477 individuals). As sampling framework we used the registry book of the Municipality of Skiathos.

The estimation of the proportion of the population and the estimation of the standard error of the proportion of the population s_p are given by the formulas of simple random sampling. In order to calculate the size of the sample we needed to carry out pre-sampling, with the size of the sample being 50 individuals. The size of the sample for each variable was estimated on the basis of the formulas of simple random sampling (for probability $(1-\alpha) = 95\%$, $e = 0.005$ and without the correction of finite population since n is small in relation to the size of the population N) (Freese, 1984; Matis, 1992; Pagano & Gauvreau, 2000; Kalamatianou, 2000). This way it becomes possible to estimate the most changing variable with the desired precision while the rest of the variables can be estimated with greater precision from what was originally determined (Matis, 1992). In this case the size of the sample was calculated to 385 individuals.

The individuals were then located with the help of random numbers using tables of random numbers. Personal interviews were also carried out. In cases of refusal or in cases in which no one could be found at home, two more efforts were made to contact them. When this was not possible we used the same process to choose new sampling units. The collection of data began in June 2004 and ended in May 2005.

For the investigation of the attitudes of the visitors, the “population” under study was the total of the visitors whose main reason for visiting the island was summer vacations. The summer begins on the 21st of June and ends on the 21st of September (Sfakianakis, 2000). The above period, in 2004, was the time when the research was carried out. The lack of, as well as the inability to create a sampling framework before the commencement of sampling, led us to choose the method of cluster sampling (Matis, 1992; Siardos, 1999; Damianou, 1999; Kalamatianou, 2000). Cluster sampling requires the existence of only one list of groups – clusters and of the elements only of the selected clusters (Filiats et al, 2000; Benos, 1991; Farmakis, 1992; Tryfos, 1996; Charissis & Kiohos 1997). Also, the division of the population in clusters results in the reduction of the cost of sampling (Farmakis, 1992).

For the successful application of the method the population is divided in N clusters (93 days) from which, randomly or systematically, we take a sample of n clusters. From those we extract observations which come from all the units of the selected clusters. The estimation of the proportion of the population and the estimation of the standard error of the proportion of the population s_p are given by the formulas of cluster sampling.

Before the application of final sampling we carried out pre-sampling for which five clusters were selected. The data of pre-sampling process were used for the estimation of the final sample (number of clusters) with $d = 0.09$ and for probability $(1-\alpha) = 95\%$ (so respectively the value $z_{\alpha/2} = z_{0.025} = 1.96$). The maximum size of the sample was calculated to be 16 clusters (days). Thus, the most changing variable is estimated with the desired precision, while the rest are estimated with greater precision than in the first effort (Matis, 1992). This way in these 16 days of the summer, in the information point provided by the Municipality of Skiathos in the island’s harbor, the visitors of the island completed 566 questionnaires. The questionnaire was distributed in the Greek, English, German and Italian language. The data were analysed through the statistical package SPSS.

The total of questions on economic activities constitutes a multi-theme variable on which reliability can be tested (reliability analysis). To

estimate the reliability of any measurement process means defining the degree of variance with regard to the ranking given by the individuals asked. In particular, we mean the degree which is due to real differences (and standard errors) and the degree which is due to inconsistencies of measurement (Siardos, 1999; Filias et al, 2000).

In particular, in order to find the internal reliability of a questionnaire we use the alpha co-efficient (or the reliability co-efficient α -Cronbach), that is we try to find if the data have the tendency to measure the same thing (Howitt & Gramer, 2003). When the alpha coefficient is 0.70 or bigger it is regarded as satisfactory (Howitt & Gramer, 2003), and when it is bigger than 0.80 it is regarded as very satisfactory. In practice, smaller alpha co-efficients, with values not smaller than 0.60 may also be accepted (Siardos, 1999).

The testing must be reliable in order to be useful. However, it is not enough to be reliable, it must also be credible and this can be done through the application of factor analysis (Siardos, 1999).

Factor analysis is a statistical method that aims to find the common factors within a group of variables (Sharma, 1996). It tries to interpret structure rather than variability (Djoufras & Karlis, 2001). Its goal is to reproduce the correlations between the variables to the highest degree, by using the smallest possible number of factors and thus lead to a solution which is “unique” and easily interpreted (Siardos, 1999).

More specifically, the principal components method was used, which is based on a spectral analysis of the variance table (correlation) (Djoufras & Karlis, 2001). The criterion used for the significance of the principal components is the one proposed by Guttman and Kaiser (Catell, 1978; Frangos, 2004), according to which, the limit for receiving the appropriate number of principal components is determined by the values of the typical roots which are equal or bigger than one. We also resorted to the rotation of the principal components matrix by using the maximum variance rotation method by Kaiser (Harman, 1976).

Finally, we are interested in finding if there are some factors which can explain the correlations between the variables of our data and attempt to provide an interpretation (if possible) (Djoufras & Karlis, 2001). According to Frangos (2004), the variables that “belong” to each factor are those whose loading, on the table indicating the loadings of the factors after rotation, is over 0.5 for that factor.

RESULTS

The research results with regard to the local population are cited in Table 1 while the results with regard to the visitors are cited in Table 2. A general observation we can make is that the tourists, in contrast to the local population, see more superficially and assess more leniently the tourist infrastructure of the island. This is positive because it shows that the tourists are left with a better impression on the island's infrastructure than that held by the local population.

Table 1 The tourist infrastructure of the island of Skaithos as assessed by the local population

Infrastructure	Very good		Good		Fair		Bad		Very bad		I do not know	
	p	s _p	p	s _p	p	s _p	p	s _p	p	s _p	p	s _p
Road network	0.8%	0.0043	22.1%	0.0202	34.8%	0.0232	24.4%	0.0206	17.7%	0.0186	0.3%	0.0025
Pedestrian walkways	5.7%	0.0113	18.2%	0.0188	29.6%	0.0222	29.1%	0.0221	16.4%	0.0180	1.0%	0.0049
Drainage network	8.1%	0.0133	31.9%	0.0227	35.3%	0.0233	14.0%	0.0169	9.6%	0.0144	1.0%	0.0049
Waste management	11.4%	0.0155	42.6%	0.0241	29.1%	0.0221	8.3%	0.0135	8.1%	0.0133	0.5%	0.0035
Water supply network	8.6%	0.0136	33.2%	0.0230	33.5%	0.0230	13.8%	0.0168	10.1%	0.0147	0.8%	0.0043
Sea transportation	2.1%	0.0070	11.4%	0.0155	29.6%	0.0222	29.6%	0.0222	26.8%	0.0216	0.5%	0.0035
Air transportation	4.9%	0.0106	19.5%	0.0193	37.1%	0.0235	25.5%	0.0212	12.2%	0.0160	0.8%	0.0043
Urban transportation	16.9%	0.0183	43.6%	0.0242	26.8%	0.0216	7.8%	0.0131	3.4%	0.0088	1.6%	0.0060
Parking areas	3.6%	0.0091	9.9%	0.0145	30.6%	0.0225	36.6%	0.0235	19.2%	0.0192	0.0%	0.0000
Access to beaches	17.7%	0.0186	43.9%	0.0242	25.5%	0.0212	7.0%	0.0124	6.0%	0.0115	0.0%	0.0000
Hotel facilities	13.8%	0.0168	39.5%	0.0238	38.4%	0.0237	4.9%	0.0106	2.9%	0.0081	0.5%	0.0035
Rented rooms	9.1%	0.0140	42.3%	0.0241	31.7%	0.0227	12.5%	0.0161	4.2%	0.0097	0.3%	0.0025
Restaurants	9.1%	0.0140	40.3%	0.0239	39.0%	0.0238	7.5%	0.0129	2.3%	0.0074	1.8%	0.0065
Entertainment places	12.5%	0.0161	44.7%	0.0242	33.5%	0.0230	6.8%	0.0122	2.3%	0.0074	0.3%	0.0025

Table 2 The tourist infrastructure of the island of Skaithos as assessed by visitors

Infrastructure	Very good		Good		Fair		Bad		Very bad		I do not know	
	p	s _p	p	s _p	p	s _p	p	s _p	p	s _p	p	s _p
Road network	5.7%	0.0107	40.1%	0.0264	35.3%	0.0231	11.5%	0.0139	4.4%	0.0083	3.0%	0.0063
Pedestrian walkways	6.2%	0.0116	36.0%	0.0193	33.4%	0.0207	15.7%	0.0174	5.3%	0.0068	3.4%	0.0081
Drainage network	1.8%	0.0069	29.0%	0.0233	37.3%	0.0283	15.9%	0.0212	8.8%	0.0179	7.2%	0.0118
Waste management	12.9%	0.0158	48.2%	0.0304	23.3%	0.0199	8.1%	0.0109	2.5%	0.0030	4.9%	0.0101
Water supply network	10.4%	0.0172	44.9%	0.0293	27.2%	0.0244	9.4%	0.0117	3.7%	0.0066	4.4%	0.0075
Sea transportation	21.9%	0.0172	42.4%	0.0265	21.7%	0.0285	5.7%	0.0118	3.2%	0.0082	5.1%	0.0087
Air transportation	19.3%	0.0177	46.1%	0.0237	17.0%	0.0157	6.9%	0.0207	2.1%	0.0044	8.7%	0.0126
Urban transportation	23.3%	0.0251	50.4%	0.0198	16.3%	0.0198	3.0%	0.0077	1.2%	0.0039	5.8%	0.0082
Parking areas	3.7%	0.0079	31.6%	0.0213	30.2%	0.0179	19.4%	0.0255	4.9%	0.0110	10.1%	0.0180
Access to beaches	20.0%	0.0209	53.2%	0.0270	19.1%	0.0260	4.4%	0.0105	1.6%	0.0046	1.8%	0.0039
Hotel facilities	22.1%	0.0196	52.1%	0.0156	19.1%	0.0152	0.9%	0.0051	0.4%	0.0022	5.5%	0.0112
Rented rooms	14.5%	0.0163	45.9%	0.0235	17.5%	0.0168	3.2%	0.0049	0.5%	0.0035	18.4%	0.0208
Restaurants	23.1%	0.0181	55.7%	0.0213	16.3%	0.0151	1.8%	0.0056	0.5%	0.0026	2.7%	0.0064
Entertainment places	17.1%	0.0233	47.9%	0.0193	21.7%	0.0203	2.5%	0.0069	0.5%	0.0026	10.2%	0.0193

The views of the local population, with regard to the island's road network, is not very clear but it may be said that the locals think of it as not being the most appropriate: 24.4% think it is bad, 34.8% fair and 22.1% good. The visitors of Skiathos have a better opinion about the island's road network as 40.1% think it is good and 35.3% fair.

The locals hold a similar view about the quality of the island's pedestrian walkways as 29.1% of them think it is bad, 29.6% fair and 18.2% fair. Regarding the opinion of the visitors on the same issue 36% think it is good and 33.4% fair.

With regard to the drainage system of the island 31.9% of the locals think it is good and 35.3% fair. Although the visitors cannot know many things about the drainage system of the island, nevertheless, their opinion of it is similar to that held by the locals. 37.3% of them describe it as fair.

Regarding waste management more than 50% of the locals hold a positive opinion as 11.4% of them think that waste management services are very good and 42.6% good. A similar view is also held by the visitors. 12.9% of them think that waste management services are very good and 48.2% good.

Concerning the water supply network 33.2% of the locals think it is good and 33.5% fair. The visitors of the island also hold a positive opinion about the water supply network as 44.9% think it is good and 27.2% fair. Given the problems many Mediterranean islands have regarding the issue of water supply then only the existence of water in Skiathos, even if this is brackish, is important.

The frequency of services regarding sea and air transportation is different in the summer than it is in winter. The fact that such services are not as frequent in the winter as they are in the summer when combined with harsh weather conditions in winter time which makes the island impossible to reach, makes more than half of the locals have a negative opinion about the provided sea and air transport services.

For the above reasons 29.6% of the locals think that sea transport services are bad, 29.6% fair and 26.8% very bad. Regarding air transportation services 25.5% of the locals think they are bad, 37.1% fair and 19.5% good. The tourists visit the island in the summer when sea and air transportation is more frequent. So, regarding sea transportation services 64.3% of the visitors think they are good – 21.9% think they are very good and 42.4% good. With regard to air transportation services 65.4% of the tourists think they are good – 19.3% very good and 46.1% good.

Regarding urban transportation 60.5% of the local population has a positive view – 43.6% thinks it is good and 16.9% very good. 73.7% of the tourists also have a positive opinion about urban transportation – 23.3% think it is very good and 50.4% good.

Concerning the available parking areas the opinion of more than half of the locals is not good as 36.6% think they are bad and 19.2% very bad. The tourists do not seem to have a clear opinion about the island's parking areas as 31.6% think they are good, 30.2 % fair and 19.4% bad. It must be noted that the problem regarding parking spaces is restricted to the town of Skiathos only and for this reason it is not of concern to every tourist who visits the island.

Regarding access to beaches there is, generally, no problem as 61.6% have a positive opinion about the issue – 17.7% think it is very good and 43.9% good. 73.2% of the visitors hold a similar opinion on the issue as 20% think it is very good and 53.2% good. This shows that the needs of most of the visitors regarding access to beaches are satisfied.

More than half of the locals have a positive view about the island's hotel facilities as 13.8% think they are very good, 39.5% good and 38.4% fair. In relation to the local population the tourists seem much more satisfied with the island's hotel facilities as 74.2% of them think positively about them – 22.1% think they are very good, 52.1% good and 19.1% fair.

In addition, more than half of the locals have a positive view about rented rooms in the island as 9.1% think they are very good, 42.3% good and 31.7% fair. A similar view is held by the visitors as 14.5% of them think they are very good, 45.9% good and 17.5% fair.

The locals also have a positive opinion about restaurants and entertainment places. Regarding restaurants 40.3% of them think they are good and 39% fair. Regarding entertainment places 44.7% of them think they are good and 33.5% fair. The view of the visitors about restaurants and entertainment places is much better than that held by the locals. Regarding restaurants 23.1% of the visitors think they are very good, 55.7% good and 16.3% fair. Regarding entertainment places 17.1% of the tourists think they are very good, 47.9% good and 21.7% fair.

The total of the above questions for both research projects constitute a multi-theme variable. In order to test the consistency of these equal in strength questions (variables) we carried out all the necessary checks and then used reliability analysis. The values of the reliability co-efficient alpha are significantly high (0.8541 for the locals and 0.8316 for the visitors). This constitutes a strong indication that the scale marks are logically consistent, which means that the data have the tendency to

measure the same thing. This is also supported by the significantly high partial α - reliability factors and after the deletion of any type of tourist infrastructure no increase of the reliability factor is achieved.

Also, before the application of factor analysis we carried out all the necessary tests. With regard to the data on the local population the value of the Keiser-Meyer-Olkin indicator is 0.843 while with regard to the data on the visitors the value of the Keiser-Meyer-Olkin indicator is 0.815. It is suggested that the KMO index should be higher than 0.80, yet values higher than 0.60 are considered as tolerable (Sharma, 1996). Furthermore, in both cases, the Bartlett's test of sphericity rejects the null assumption that the correlation matrix is unitary and that the partial correlation coefficients are low. Also, the sampling appropriateness measures (MSA) have values from high to very high which support the view that the data are appropriate for factor analysis to be carried out.

With regard to the data on the local population the multiple definition coefficients R^2 of each variable to the rest have relatively high values, i.e. from 0.474 to 0.731. Although the variable which refers to the type of tourist infrastructure "access to beaches" seems to have the weakest connection to the rest, nevertheless, its removal from the group of variables was not thought useful. Also, with regard to the data on the visitors the multiple definition coefficients R^2 of each variable to the rest have relatively high values, i.e. from 0.379 to 0.771. Although the variable which refers to the type of tourist infrastructure "urban transport" seems to have the weakest connection to the rest, nevertheless, its removal from the group of variables was not thought useful.

In both cases we see that the factors extracted were four and have typical root bigger than 1.

Table 3 refers to the data with regard to the local population and reveals the loadings which are partial correlation coefficients of the fourteen variables with each of the four factors which were extracted from the analysis. The biggest the loading of a variable on a factor, the more this factor is responsible for the total variance of the marks on the variable we examine. The variables which "belong" to each factor are those for which the loading (columns 1, 2, 3 and 4) is bigger than 0.5 in the particular factor.

The first factor includes the variables "drainage network", "waste management", "water supply network", "road network" and "urban transport" and can be titled "tourist infrastructure which is related to the Municipality of Skiathos". To a great extent the island's urban transportation belongs to the Municipality of Skiathos. The Municipality of Skiathos is also responsible for the management of the entirety of the

island's roads even though the provincial road network does not constitute part of its responsibilities.

The second factor which can be called "tourist infrastructure which depends on private initiative" includes the variables "restaurants", "entertainment places", "rented rooms" and "hotel facilities". The above variables constitute the most important part regarding provision of tourist services as well as places of communication among locals and visitors.

The third factor includes the variables "parking areas", "pedestrian walkways", "access to beaches" and "road network" and can be called "movement possibilities within the island". If we want to identify the parties responsible for the development of such infrastructure, we will be led to say that responsibility is distributed among (1) the citizens whose actions make problems worse, (2) the municipality which intervenes dynamically for the solution of problems, and (3) the central authority which should help, mainly through legislation as well as its inspecting mechanisms. A representative example is the fact that in the provincial road network there are no regulations for the existence of pavements which allows the locals to build fences at the edge of the road making it impossible for pedestrian tourists to use it when they travel.

Table 3 Factor loadings with regard to local population before and after rotation

Variable	Factor loadings							
	Before rotation				After rotation			
	1	2	3	4	1	2	3	4
Road network	0.687	-0.365	0.012	0.055	0.574	0.126	0.511	0.047
Pedestrian walkways	0.554	-0.276	0.225	0.266	0.281	0.036	0.641	0.115
Drainage network	0.614	-0.373	-0.185	-0.308	0.781	0.117	0.148	0.013
Waste management	0.625	-0.451	-0.163	-0.184	0.754	0.090	0.275	-0.053
Water supply network	0.653	-0.225	-0.016	-0.425	0.754	0.104	0.095	0.262
Sea transportation	0.541	0.376	0.509	-0.191	0.125	0.163	0.195	0.806
Air transportation	0.453	0.379	0.608	-0.110	0.003	0.083	0.243	0.816
Urban transportation	0.669	-0.155	-0.093	-0.004	0.512	0.292	0.352	0.095
Parking areas	0.548	-0.173	0.345	0.358	0.145	0.047	0.713	0.215
Access to beaches	0.614	-0.092	0.104	0.279	0.244	0.251	0.577	0.141
Hotel facilities	0.520	0.568	-0.190	-0.236	0.199	0.663	-0.162	0.424
Rented rooms	0.606	0.480	-0.273	-0.203	0.298	0.707	-0.095	0.339
Restaurants	0.560	0.302	-0.412	0.314	0.106	0.769	0.259	-0.054
Entertainment places	0.586	0.319	-0.262	0.435	0.012	0.733	0.407	0.025

The fourth factor can be called “movement possibilities outside the island” and includes the variables sea and air transportation. As responsible for the development of such infrastructure the citizens regard the central authority as well as the private companies which have interests in this field of activity.

From the above it becomes obvious that the locals classify the types of tourist infrastructure on the basis of whom they consider responsible for their proper development and improvement. In addition, it seems that in their assessment they do not take into account only the issue of tourism but also how tourism affects the quality of their life throughout the year.

Most of the citizens of Skiathos do not have a good opinion about the contribution of the local authorities for the island’s tourist development as 36.6% of them think it is fair and 15.1% think it is inadequate. 81.3% of them also feel that the state is not interested enough to solve their problems – 56.4% feel that the state is far away from them and 24.9% simply away. Indeed, 83.6% of them think that the state returns to Skiathos less than it collects via tourism – 37.9% think it returns less and 45.7% much less (Tampakis, 2008).

The results of factor analysis regarding the data which refer to the visitors are cited in Table 4. The first factor includes the variables “sea transportation”, “air transportation”, “parking areas” and “pedestrian walkways” and can be called “convenience in movement”. It seems that the tourists in the limited time of their holidays perceive and assess their movements in a unified way. For example, they talk about the bus which stops in the middle of the road forcing them to move their luggage and thus be in danger of being hit by other passing cars.

The second factor includes the variables “water supply network”, “waste management” and “drainage system”. The water supply network, the drainage system as well as cleaner services, even in the areas where tourists stay, are the responsibility of the same authority. Therefore, this factor can have the same name with a factor mentioned earlier, i.e. “tourist infrastructure which is related to the Municipality of Skiathos”.

The third factor can also have the same name with a factor mentioned earlier, i.e. “tourist infrastructure which depends on private initiative”. This factor includes the variables “entertainment places”, “restaurants”, “hotel facilities” and “rented rooms”. These variables, as already mentioned, constitute an important part of the provision of tourist services.

Table 4 Factor loadings with regard to visitors before and after rotation

Variable	Factor loadings							
	Before rotation				After rotation			
	1	2	3	4	1	2	3	4
Road network	0.486	0.544	-0.202	0.445	0.065	0.239	0.086	0.838
Pedestrian walkways	0.533	-0.141	-0.386	0.515	0.618	-0.115	0.096	0.560
Drainage network	0.534	0.495	-0.227	-0.076	0.115	0.597	-0.006	0.467
Waste management	0.512	0.424	-0.011	-0.274	0.026	0.671	0.130	0.222
Water supply network	0.549	0.056	-0.092	-0.581	0.308	0.721	0.086	-0.170
Sea transportation	0.666	-0.428	-0.338	-0.057	0.828	0.199	0.139	0.025
Air transportation	0.593	-0.511	-0.212	-0.073	0.771	0.121	0.214	-0.092
Urban transportation	0.570	0.148	-0.010	-0.177	0.236	0.497	0.229	0.152
Parking areas	0.641	-0.165	-0.276	0.051	0.620	0.240	0.151	0.227
Access to beaches	0.510	0.416	0.191	0.071	-0.061	0.418	0.363	0.406
Hotel facilities	0.631	-0.277	0.320	0.084	0.375	0.117	0.655	0.024
Rented rooms	0.648	-0.055	0.363	-0.065	0.218	0.336	0.630	0.041
Restaurants	0.580	-0.110	0.454	-0.090	0.165	0.285	0.672	-0.055
Entertainment places	0.404	-0.075	0.537	0.404	0.018	-0.133	0.741	0.232

The fourth factor includes the variables “road network” and “pedestrian walkways” and can be titled “movement possibilities within the island”. Indeed, it would not be wrong to connect it to the issue of safe traveling.

The variables “urban transport” and “access to beaches” do not seem to be connected with any of the above four factors.

A general observation we can make is that the tourists connect tourist infrastructure to those responsible for the development and improvement of this infrastructure much less than the local population does. The assessment of the tourists is more superficial than that of the locals and it is related to how the tourist infrastructure in the island affects the tourist services which are provided to them.

DISCUSSION – CONCLUSIONS

The existence of proper tourist infrastructure in the island of Skiathos is very important for the island’s tourist development in the future.

The locals do not have a clear opinion about the island’s road network while the visitors describe it as at least acceptable. The tourists also hold a similar view about the island’s pedestrian walkways.

More than half of the island’s inhabitants perceive a problem regarding the available parking spaces in the island while the visitors describe them as good or fair. The problem with regard to the availability

of parking areas does not seem to be of concern to the tourists. It must also be noted that this is problem restricted to the town of Skiathos.

The issue regarding access to beaches is something which is assessed positively by both locals and visitors.

The opinion of the locals with regard to the island's drainage network is relatively good and a similar view is also held by the tourists. Both locals and visitors have a good opinion about the island's water supply network with the tourists being more positive on the issue.

More than half of the local population has a positive opinion about waste management services and a similar view is also held by the tourists. Both locals and tourists think positively about the island's urban transport services with the visitors expressing a better opinion on this matter.

More than half of the island's local population holds a negative opinion about the provided sea and air transportation services. The opposite is true for more than half of the tourists who assess positively such services. The locals assess the issue of sea and air transportation with regard to what happens throughout the year while the tourists assess the issue with regard to the quality of such services in the summer. The truth is that there are problems with the island's sea and air transportation services outside the tourist season.

More than half of the island's local population has a positive opinion about hotel facilities in Skiathos while the visitors are much more satisfied with the existing hotel facilities. Regarding rented rooms both locals and visitors hold the same positive opinion. The locals have a good opinion about restaurants and entertainment places with the tourists being more positive on the issue.

Through the use of factor analysis we see that the local population groups tourist infrastructure on the basis of the parties they regard as responsible for the development and improvement of such infrastructure. The island's infrastructure affects the quality of life of the inhabitants throughout the year and the identification of those responsible is the most important step forward. Regarding the data which refer to visitors we see that the tourists connect tourist infrastructure to those responsible for the development and improvement of this infrastructure much less than the local population does. The assessment of the tourists is more superficial than that of the locals and it is related to how the tourist infrastructure in the island affects the tourist services which are provided to them.

Generally, we could say that the visitors see and assess the island's tourist infrastructure more superficially and more leniently than the locals. This is positive for the island's tourist development because it shows that the tourists are satisfied with the island's tourist infrastructure. However,

the issue of the infrastructure is more important for the locals because it is linked with the improvement of their standards of life. For this reason, the locals are stricter than the tourists in their assessment of the island's infrastructure. In fact, for some issues, such as sea and air transportation from and to Skiathos, their assessment is negative. Those responsible for the island's tourist development should seriously take into account that improving the quality of life of the local population is something which is inextricably connected to the quality of the services which are provided to the tourists. It is also something which should be seen as a reciprocal obligation of the state to the inhabitants of the island.

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SOURCES

Municipality of Skiathos

P.E.W.S.D. – Skiathos: Skiathos Public Enterprise for Water Supply and Drainage

Skiathos Port Police

C.A.S. – Skiathos: Skiathos Civil Aviation Service

P.E.T. – Skiathos: Skiathos Public Enterprise for Transport

H.T.O. – Volos: Hellenic Tourist Organization - Volos

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Stylianos Tampakis (stampaki@fmenr.duth.gr) is an Assistant Professor at the Department of Forestry and Management of the Environment and Natural Resources, Democritus University of Thrace, 193 Pantazidou Street, 68200 Orestiada, Greece.

Evangelos Manolas (emanolas@fmenr.duth.gr) is an Assistant Professor at the Department of Forestry and Management of the Environment and Natural Resources, Democritus University of Thrace, 193 Pantazidou Street, 68200 Orestiada, Greece.

Vasileios Tampakis (dasologos@n-skiathos.gr) is an employee in the Bureau of Civil Protection, Municipality of Skiathos.