



**RESEARCH STUDY ON ACCESSIBILITY INDICATORS FOR PLACES OF
SPECIAL INTEREST IN THE IMPACT ZONE OF EGNATIA ODOS
MOTORWAY**

- Ref No 5403 -

Working Package (WP) No 6

Final Report

EXECUTIVE SUMMARY



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1 INTRODUCTION: CONTEXT AND SCOPE OF THE PROJECT

The "Study of Accessibility Indicators for Sites of Special Interest - Reference Code 5403" aims to record important data concerning the accessible means of transport, industrial areas or other productive zones and key tourist sites located in Zone IV of the Egnatia Motorway. Zone IV covers the five Regions through which the Egnatia Motorway and its Vertical Axes pass. These are the regions of Eastern Macedonia & Thrace, Central Macedonia, Western Macedonia, Epirus and Thessaly. The study constitutes the second cycle of a previous study entitled "Study of accessibility indicators of areas of special interest and means of public transport in the area through which the Egnatia Motorway passes" (Reference Code: 3653) prepared in 2009. Briefly, the study includes collection of capacity data, traffic measurements (distance, time and route speed) and field research (questionnaire surveys), having as final objective the calculation of the following indicators included in the Egnatia Motorway Observatory's System of Indicators: SET06 – Accessible transport modes, SET07 – Accessible industrial areas and SET08 – Accessible sites of tourist interest. Finally, the assessment of a composite indicator for each site of interest is attempted. On the basis of all the above, the development and transport impacts of the Egnatia Motorway and the Vertical Axes are estimated.

SET06: Accessible transport modes records data related to airports, seaports and railway stations located in the Regions through which the Egnatia Motorway passes, and in particular: (a) the location, (b) the official classification according to their importance, (c) the serviced passenger and freight traffic and (d) the time distance from the nearest junction of the Egnatia Motorway or one of the Vertical Axes. The indicator allows the monitoring of the effects of the Egnatia Motorway on the accessibility of other main modes of transport. Besides, the optimised connection of the motorway with other modes of transport is a key parameter in the development of an integrated system of combined transport.

SET07: Accessible industrial areas records data on Industrial Areas as well as some other productive development infrastructures (technology parks etc.) that are located in Zone IV, and in particular (a) the location, (b) the capacity and c) the time distance from the nearest junction of the Egnatia Motorway. The purpose of the indicator is to contribute to the knowledge of the impact of Egnatia on the accessibility and the capacity of the development infrastructure, which affects the overall economic development of an area. Besides, the optimised connection of the road network with the development infrastructure is a key parameter in the development of the productive activities in general.

SET08: Accessible sites of tourist interest identifies the major tourist sites / areas of tourist interest in the Egnatia Motorway Influence Zone which are accessible via motorway intersections, and in particular (a) the location, (b) the time distance from the nearest junction of the Egnatia Motorway, (c) the number of visitors to these places, when official data are available, and (d) the total tourist movement by Region, Regional Unit, Municipality and Zone / Site of Touristic Interest. The purpose of the indicator is to contribute to the knowledge of the impacts of the Egnatia Motorway on the accessibility of touristic sites and consequently on the development of the tourist resources along the area affected by the axis.

The technical scope of the study comprises the following 6 Work Packages (WP):

WP1: Preliminary Work - Preparing Field Surveys

It includes the preliminary work for the preparation of the field research required for Work Packages 2, 3 and 4.

WP2: Accessibility of transport modes

It includes conducting a field survey and secondary data collection, systematising the material and studying all the required data and information for SET06 - Accessible transport modes, as well as compiling the required reports, tables and maps presenting the results.

WP3: Accessibility of industrial areas

It includes conducting a field survey and secondary data collection, systematising the material and studying all the required data and information for SET07 - Accessible industrial areas, as well as compiling the required reports, tables and maps presenting the results.

WP4: Accessibility of sites of tourist interest

It includes conducting a field survey and secondary data collection, systematising the material and studying all the required data and information for SET08 - Accessible sites of touristic interest, as well as compiling the required reports, tables and maps presenting the results.

WP5: Indicators' Results Bulletins

It includes the completion of the Results Bulletins for the three indicators under consideration (SET06, SET07 and SET08), the development of a composite quantitative accessibility indicator and the completion of the geospatial database.

WP6: Final Report

It includes the drafting of the Final Report of the project.

2 PRELIMINARY WORK – PREPARATION FOR THE REQUIRED TASKS

2.1 Identification of locations / points of indicators

2.1.1 Identification of locations / points of SET 06 "Accessible transport modes"

Correspondingly to the study carried out in 2009, information regarding capacity was sought for all airports and ports located in Zone of Impact IV, while for railway stations, data were sought for selected stations following the criteria: i) railway stations in urban centers with over 10,000 inhabitants, ii) Country border railway stations, iii) Railway stations with significant passenger traffic.

Regarding new time distance measurements, 15 locations were selected for the SET 06 indicator for the measurement of their time distance to the nearest junctions of Egnatia Motorway. This selection is the result of a thorough analysis of both the general transport supply in Zone of Impact IV compared to 2009 and the evolution of the projects of Egnatia Motorway and vertical axes, taking into account the ongoing and planned road works. The locations selected are: 1) Alexandroupolis Airport, 2) Orestiada Railway station, 3) Thessaloniki Port, 4) Serres Railway station, 5) Promachonas Railway station, 6) Kilkis Railway station, 7) Kastoria Airport, 8) Florina Railway station, 9) Aktiou Airport, 10) Preveza Port, 11) Igoumenitsa Port, 12) Larissa Railway station, 13) N. Anchialos Airport, 14) Volos Port and 15) Volos Railway station. It is worth noting that all the selected locations for this indicator were also measured in the study of 2009.

2.1.2 Identification of locations / points for SET 07 "Accessible industrial areas"

Before determining the locations/points of interest for SET07 "Accessible industrial areas" Indicator, the project team thoroughly analysed the regulatory framework for national, regional and urban planning (either finalised and approved or under study) for the industrial areas of Zone IV. In addition to that, the team also searched for data from organisations of the secondary production sector. In particular, detailed research was carried out at ETVA Industrial Parks SA and other management authorities for existing Industrial and Entrepreneurial Areas and Business Parks as well as at the Ministry of Economy and Development (contact with the General Secretariat for Industry). In agreement with the supervising authority, it was decided to conduct the research for the SET07 Indicator in 17 Industrial Zones (BI.PE.), 3 Industrial Parks (BI.PA.), 1 Small Business Park (BIO.PA.) 1 Steam-electric Power Station and 3 Technological Parks in the 5 Regions of the study area. Specifically, the chosen development zones were: 1) the Industrial Zone (BI.PE.) of Alexandroupoli, 2) the Industrial Zone (BI.PE.) of Orestiada, 3) the Industrial Zone (BI.PE.) of Komotini, 4) the Industrial Zone (BI.PE.) of Xanthi, 5) the Industrial Zone (BI.PE.) of Drama, 6) the Industrial Zone (BI.PE.) of Kavala, 7) the Industrial Zone (BI.PE.) of Thessaloniki, 8) the Industrial Zone (BI.PE.) of Edessa, 9) the Industrial Zone (BI.PE.) of Kilkis, 10) the Industrial Zone (BI.PE.) of Serres, 11) the Industrial Park (BI.PA.) of Thessaloniki (in Kato Gefyra of Municipality of Chalkidona), 12) the Alexander Innovation Zone of Thessaloniki, 13) the Technopolis Thessaloniki ICT Business Park, 14) the Industrial Zone (BI.PE.) of Florina, 15) the Industrial Zone (BI.PE.) of Kozani, 16) the Small Business Park of Ptolemaida, 17) the

Industrial Park (BI.PA.) of Kastoria, 18) the Steam-electric Power Station of Agios Demetrios, 19) the Industrial Zone (BI.PE.) of Ioannina, 20) the Science and Technology Park of Epirus, 21) the Industrial Zone (BI.PE.) of Preveza, 22) the Industrial Zone (BI.PE.) of Larisa, 23) the Industrial Zone (BI.PE.) of Volos A', 24) the Industrial Zone (BI.PE.) of Volos B' and 25) the Industrial Park (BI.PA.) of Farkadona.

With regard to time - distance measurements, based on the analysis of the transportation system and spatial planning features, it was selected that the 20 SET 07 indicator locations set by the tender specifications of the study for the measurement of their time - distance measurements to the nearest junctions of the Egnatia Motorway are the following: 1) the Industrial Zone (BI.PE.) of Alexandroupoli, 2) the Industrial Zone (BI.PE.) of Orestiada, 3) the Industrial Zone (BI.PE.) of Komotini, 4) the Industrial Zone (BI.PE.) of Thessaloniki, 5) the Industrial Zone (BI.PE.) of Kilkis, 6) the Industrial Park (non approved) of N. Santa Kilkis, 7) the Industrial Zone (BI.PE.) of Serres, 8) the Alexander Innovation Zone of Thessaloniki, 9) the Technopolis Thessaloniki ICT Business Park, 10) the Industrial Zone (BI.PE.) of Edessa, 11) the Industrial Zone (BI.PE.) of Kozani, 12) the Industrial Park of Kastoria, 13) the Steam-electric Power Station of Agios Demetrios, 14) the Industrial Zone (BI.PE.) of Florina, 15) the Industrial Zone (BI.PE.) of Ioannina, 16) the Science and Technology Park of Epirus, 17) the Industrial Zone (BI.PE.) of Preveza, 18) the Industrial Zone (BI.PE.) of Larisa, 19) the Industrial Zone (BI.PE.) of Volos A' and 20) the Industrial Zone (BI.PE.) of Volos B'. It is noted that almost all of the above locations were also included in the study of 2009, with the exception of the Alexander Innovation Zone of Thessaloniki and the Science and Technology Park of Epirus.

2.1.3 Identification of locations / points for SET 08 “Accessible sites of tourist interest”

In order to identify the sites / areas studied under SET 08, in addition to researching the national and regional spatial planning framework, it was attempted to assess the importance of sites of touristic interest and, accordingly, set priorities among the great number of such sites within the 5 Regions. Thus, the “Study on the Spatial Organization and Development of Tourism” of the Greek Tourism Confederation (SETE) Institute was also taken into account through the Analysis and Evaluation of the Studies for the Modification of the Regional Spatial Frameworks of Spatial Planning and Sustainable Development. Stage B1 of these studies (2014) defines Wider Development Zones, which are interpreted as zones suitable for the location of relevant installations or industrial zones.

The Thematic Report “Egnatia Motorway and spatial structure of the tourism areas” of the Egnatia Motorway Observatory (2015, in Greek) was also considered. This report analyzed and categorized the touristic areas and the tourist traffic in Zone IV. In addition, the following sources were investigated: 1) Ministry of Culture, 2) Greek Biotope / Wetland Center, 3) Tourist Maps, 4) Presidential Decree 19/10/78 on traditional settlements and 5) Indicators’ Results Bulletins of the Egnatia Motorway Observatory.

Following the above survey and taking into account the changes in the road network, the routes and the points of the transport measurements, 43 zones of tourist interest were selected. These constitute broader areas rather than points of touristic interest, and include all the popular urban, mountainous, environmental, cultural, religious and seaside tourist destinations whose accessibility has been affected by the operation of the motorway and its vertical axes. The selected zones / areas of tourist interest are as follows:

- Voreios Evros

- Description: Soufli-Didimoteiho-Orestiada
- Municipalities of Soufli, Didimoteiho and Orestiada
- Alexandroupoli
 - Description: city of Alexandroupoli, coastal zone and Evros Delta
 - Δήμος Αλεξανδρούπολης
- Xanthi - Stavroupoli
 - Description: city of Xanthi, area of natural beauty and settlements with touristic interest
 - Municipalities of Xanthi and Myki
- Komotini - Maroneia - Iasmos
 - Description: city of Komotini, area of natural beauty and coastal zone
 - Municipalities of Komotini, Maroneia – Sapes and Iasmos
- Kavala
 - Description: city of Kavala, coastal zone and archaeological site of Filippi
 - Δήμος Καβάλας
- Drama - Paranesti
 - Description: city of Drama, area of natural beauty and settlements with touristic interest
 - Municipalities of Drama, Doxato and Paranesti
- Pangaio – Moustheni
 - Description: area of natural beauty
 - Municipality of Pangaio
- Zone of Lake Kerkini
 - Description: area of natural beauty
 - Municipalities of Sintiki and Herakleia
- Serres - Amphipoli - Alistrati
 - Description: city of Serres and ski center of Lailia, archaeological site – museum, area of natural beauty
 - Municipalities of Serres, Amfipoli, Visaltia and N. Zihni
- Thessaloniki
 - Description: city of Thessaloniki
 - Municipalities of Thessaloniki and Pavlos Melas
- Kilkis
 - Description: city of Kilkis
 - Municipality of Kilkis
- Zone of Asprovalta
 - Description: summer tourism area
 - Municipalities of Volvi, Lagkadas and Arisotelis
- Sithonia
 - Description: summer tourism area
 - Municipality of Sithonia
- Polygyros
 - Description: city of Polygyros
 - Municipality of Polygyros
- Kallikrateia – Nea Moudania
 - Description: summer tourism area
 - Municipality of Nea Propontida
- Kassandra
 - Description: summer tourism area
 - Municipality of Kassandra
- Veroia - Alexandria
 - Description: city of Veroia and Alexandria
 - Municipalities of Veroia and Alexandria
- Naousa
 - Description: city of Naousa
 - Municipality of Naousa

- Edessa and Ski center of Kaimaktsalan – Agios Athanasios
 - o Description: city of Edessa and Ski center of Kaimaktsalan – Agios Athanasios
 - o Municipality of Edessa
- Pozar - Aridaia hot springs:
 - o Description: area of natural beauty
 - o Municipality of Almopia
- Katerini
 - o Description: city of Katerini and summer tourism area of Katerini
 - o Municipality of Katerini
- Zone of Litohoro - Leptokaria - N. Poroï
 - o Description: summer tourism zone
 - o Municipality of Dion-Olympos
- Ski center Vasilitsa - Deskati
 - o Description: zone of natural beauty and mountainous tourism, city and wider area of Grevena
 - o Municipalities of Grevena and Deskati
- Kastoria - Dispilio - Nestorio
 - o Description: zone of Nestorio, city of Kastoria and archaeological site of Dispilio
 - o Municipalities of Kastoria and Orestida, Nestorio
- Kozani - Servia - Velventos
 - o Description: zone of the city of Kozani and area of Servia and Velventos
 - o Municipalities of Kozani and Servia-Velventos
- Nymfaio
 - o Description: settlement and wider area of Nymfaio
 - o Municipality of Amyntaio
- Florina
 - o Description: city and wider area of Florina
 - o Municipality of Florina
- Prespes
 - o Description: zone of natural beauty
 - o Municipality of Prrespes
- Zone of Parga - Preveza and Amvrakikos gulf
 - o Description: summer tourism area, cities of Arta and Preveza, area of natural beauty
 - o Municipalities of Preveza and Ziros, Parga, Artaion, Nikolaou Skoufa
- Zone of Igoumenitsa - Syvota
 - o Description: city of Igoumenitsa and summer tourism area of Syvota
 - o Municipality of Igoumenitsa
- Tzoumerka
 - o Description: area of natural beauty and group of settlements of touristic interest
 - o Municipalities of Voreia Tzoumerka, Kentrika Tzoumerka and Georgiou Karaiskaki
- Zagorohoria
 - o Description: group of settlements of touristic interest
 - o Municipality of Zagori
- Konitsa
 - o Description: Konitsa and rest of mountainous settlements
 - o Municipality of Konitsa
- Ioannina
 - o Description: city and wider area of Ioannina
 - o Municipality of Ioannina
- Metsovo
 - o Description: Metsovo and rest of mountainous settlements
 - o Municipality of Metsovo
- Karditsa
 - o Description: city and wider area of Karditsa
 - o Municipality of Karditsa
- Lake Plastira

- Description: area of natural beauty and group of settlements of touristic interest
- Municipality of Limni Plastira
- Trikala
 - Description: city and wider area of Trikala
 - Municipaliti of Triikkaioi
- Zonew Meteora - Elati - Pertouli
 - Description: area of natural beauty and group of settlements of touristic interest
 - Municipalities of Kalampaka and Pyli
- Larisa
 - Description: city and wider area of Larisa
 - Municipality of Larissaioi
- Zone Kokkino Nero - Agiokampos
 - Description: summer tourism area
 - Municipality of Agia
- Volos
 - Description: city of Volos, mountainous settlements and summer tourism area
 - Municipality of Volos
- Pelion
 - Description: group of settlements with tourist interestic
 - Municipalities of Zagora-Mouresi, Notio Pelion

Also, another objective was the recording of the visits in all museums and archaeological sites of the 5 Regions (where ELSTAT data are available): 47 museums and 31 archaeological sites.

Regarding the assessment of time distance, based on the analysis of the overall transport supply and spatial planning features and the additional studies that were mentioned above, the 32 locations for SET 08 were decided for which time distances were measured with respect to the nearest junctions of the Egnatia Motorway. The differentiation with respect to the SET07 and SET08 indicators is that in some cases the locations refer to wider areas of touristic interest. The selectec locations are the following:

- Zone of Alexandroupoli
- Zone of Xanthi
- Pangaio - Moustheni
- Amfipoli
- Lake Kerkini
- Aggistro
- Cave of Alistrati
- Serres (city centre)
- Kilkis (city centre)
- Zone of Asprovalta
- Zone of Kassandra
- Zone of Sithonia
- Polygyros (city centre)
- Edessa (city centre)
- Pozar - Aridaia hot springs
- Edessa and Ski center of Kaimaktsalan – Agios Athanasios
- Zone of Litohoro - Leptokaria - N. Poroï
- Dispilio
- Kastoria (city centre)
- Nymfaio
- Florina (city centre)
- Prespes
- Metsovo
- Zagorohoria (zone)

- Preveza (coastal zone)
- Parga (city centre)
- Arta (city centre)
- Wetland of Amvrakikos gulf
- Karditsa (city centre)
- Trikala (city centre)
- Larisa (city centre)
- Volos (city centre)

It is worth noting that all the above locations were also included in the 2009 study, with the exception of the Zone of Alexandroupolis and the Zones of Lithoro - Leptokaria - N. Poroï and Zagorohoria, where we have a combination of sites in wider areas of touristic interest.

2.2 Methodology of measurements and questionnaire survey

2.2.1 Methodology of measurements conducted

The methodology for measuring time distances and estimating the average travel speed from the nearest junction of Egnatia Motorway or vertical axis to the various locations of interest is the floating ' car method - " collision vehicle method ". The collection of capacity data was done using an inventory sheet to facilitate the measurement and, above all, to ensure the homogeneity of the data collected. The difference with the method applied in the 2009 study is that for the control of measurements (distances, time distances) and the detection of records due to special traffic conditions (e.g. unjustified delays on road sections due to leading motorised agricultural machines or cyclists) positioning (GPS) systems were also used in tracking mode. Two (2) experimental vehicles were used to perform the measurements.

2.2.2 Questionnaire collection

An important task of field investigations was the completion of questionnaires. This is summarized by:

- completing about 200 questionnaires addressed to entrepreneurs in selected development areas
- completing about 300 questionnaires in places of touristic interest, which were addressed to professionals in the area
- completing about 600 questionnaires in places of touristic interest, which were addressed to the visitors of the selected place.

Questionnaires standards derive from the Contractor's cooperation with the contracting Authority. Questionnaires contained mostly closed / pre-coded questions, which allow for easy editing of responses and extraction of conclusions.

The collection of questionnaires was carried out during the visit of the study team responsible for the measurement of time distance to the places of special interest.

3 ELABORATION OF INDICATORS AND MAIN CONCLUSIONS

3.1 SET 06 "Accessible transport modes"

The processing of the indicator results in information on the location and classification, as well as the passenger and freight traffic (where available) of the airports, seaports and railway stations in Zone IV of the Egnatia Motorway, and also on the time distances of selected sites from the nearest junction of Egnatia Motorway or its vertical axis. More specifically, the collection of capacity data concerned all airports and seaports located in Zone of Impact IV, as well as the major railway stations during the period 2008-2017 (where possible).

In Zone IV, there are 9 airports and 5 seaports. Two airports are located in Eastern Macedonia and Thrace (Kavala and Alexandroupolis), one in Central Macedonia (Thessaloniki), two in Western Macedonia (Kozani and Kastoria), two in Thessaly (Skiathos and Anchialos) and two in Epirus (Ioannina and Aktio). With the exception of Kastoria airport, which is characterised as a domestic by law airport, and Kozani airport, which is characterised as exclusively domestic, the other airports are characterised as international airports. Regarding the seaport infrastructure, two seaports are located in the Region of Eastern Macedonia and Thrace (Kavala and Alexandroupoli - of international interest), one in Central Macedonia (Thessaloniki – of international interest), one in Epirus (Igoumenitsa – of international interest) (Preveza – of national importance, Parga – of local importance and Sagiada) and one in Thessaly (Volos - of international interest).

The National Railway Network serves 16 of the 24 Prefectures of Zone IV. Areas not served are the Region of Epirus as a whole and the Prefectures of Kavala, Halkidiki, Grevena and Kastoria.

Some of the main findings of the specific indicator are:

Concerning passenger traffic at airports of Zone IV, passenger traffic presents fluctuations between 2008-2017 at most airports. The highest positive change for the whole period under review is observed at Kozani Airport, which is 119%, followed by Skiathos Airport with a positive change of 61%, while the largest negative change is presented at Alexandroupolis Airport around 45%, followed by Ioannina Airport with a negative change of 25.7%. With regard to freight traffic, available data in full time series are available only for the airports of Alexandroupolis, Kavala and Thessaloniki, of which a positive change is recorded only at Thessaloniki airport. As for the number of flights, the smallest number of flights during the period 2008-2017 is recorded at Kozani airport, while the largest number is presented at Thessaloniki International Airport, as expected.

Data regarding segregation between domestic and international flights and passenger traffic indicate that all airports in Zone IV service both domestic and international flights and passengers, with the exception of Kozani and Kastoria airport where only one flight abroad took place in 2016. It should be noted that, as expected, the number of international flights exceed this of domestic flights at airports located close to sites of touristic interest (Aktio airport, Volos-Anchialos airport, Skiathos airport).

Concerning passenger traffic in seaports of Zone IV in the period 2010-2016, the only positive change refers to the Port Authority of Kavala. Concerning freight traffic of seaports, comparable results are only available for the period 2014-2016, showing a negative change of more than 30% in the ports of Alexandroupolis and Kavala. Similarly, Thessaloniki port is

showing a negative change, but much less, approximately 6%. In the ports of Igoumenitsa and Volos, the change appears positive, with the highest one at the Volos port, approximately 30%.

Concerning railway stations and, in particular, passenger traffic no definitive conclusions can be drawn as traffic data is incomplete, covering only specific years and specific stations and, moreover, deriving only from computer-generated - electronic - online tickets (not including passenger traffic data from hand-written tickets etc.). With regard to freight traffic, data show a large variation in the total number of stations for the years under consideration, while the overall change for the 2008-2017 period is negative and in many cases it reaches 100%. A similar situation is observed with regard to the corresponding transport task (tonne-kilometers) where, except from Pythiou and Karditsa railway station, the overall change for the period 2008-2017 is negative and in many cases it reaches 100%.

Finally, the indicator assesses the time distance of selected public transport sites from the nearest junction or vertical axis of Egnatia Motorway. Analysis was performed based on preexisting data from Observatory regarding the state of the road network in 2009 and the main conclusions are:

- There is no significant difference in travel time (and corresponding travel speeds) between off and peak hour, where they were recorded.
- The recent construction of new interchanges in the area of Western Macedonia (vertical axis of Egnatia Motorway) significantly reduced travel times to points of interest such as Florina railway station, compared to 2009.
- Significant reductions in travel times are recorded regarding trips to / from Klidi interchange since the completion of road works at Tempi (creation of three tunnels) has substantially changed the accessibility to the points of interest that are located in the Region of Thessaly (Larissa and Volos railway station, Volos Port etc.).
- Reductions in travel time are observed regarding trips to / from Grevena interchange due to the upgrade of Trikala-Larissa road axis, increasing the accessibility to points of interest in the Regional Units of Larissa and Magnesia, such as Larissa railway station, N. Anchialos Airport etc.
- The completion of the Ionian Road alters the trips measured from / to Aktio Airport and Preveza Port compared to the year 2009, with the corresponding travel times being particularly reduced.

3.2 SET 07 “Accessible industrial areas”

The research carried out in the study identified 25 regulated development sites in Zone IV, 20 of which are in operation and 5 are not (being either under activation or never activated). More specifically, there are 17 Industrial Zones (BI.PE.), 3 Industrial Parks (BI.PA.), 1 Small Business Park (BIO.PA.) 1 Steam-electric Power Station and 3 Technological Parks (the Alexander Innovation Zone of Thessaloniki, the Technopolis Thessaloniki ICT Business Park and the Science and Technology Park of Epirus). Out of the above 25 development infrastructure sites, 7 are located in the Central Macedonia Region, 5 in the Region of Western Macedonia, 6 in the Region of Eastern Macedonia and Thrace, 4 in the Region of Thessaly and 3 in the Region of Epirus. With the exception of the Prefectures of Chalkidiki, Pieria, Hmathia, Grevena, Thesprotia, Arta and Karditsa, all the remaining 17 Prefectures of Zone IV host at least one development infrastructure site.

Out of the 25 production sites examined, 14 are located within 10 km (9 zones within 5 km) on both sides of Egnatia Motorway and its vertical axes. Explicitly, in Zone IV of Egnatia Motorway and its vertical axes, more than half of the industrial and development infrastructure of the regions of Eastern Macedonia and Thrace, Central Macedonia, Western Macedonia and Epirus are concentrated. In Thessaly, however, these sites are at longer distances from Egnatia Motorway. A total of 21 out of the 25 development sites are located along the Egnatia Motorway's route while 4 of them are located in the rest of Zone IV, i.e. in the Region of Thessaly.

The distance between areas of development infrastructure of Zone IV and the nearest junction of Egnatia Motorway - vertical axes ranges between one (1) (Orestiada Industrial Area) and 195 km (Volos Industrial Area A'). In the Region of Eastern Macedonia and Thrace the average distance between a site and the nearest junction is 9 km and the average time distance is 10.2 minutes. In the Region of Central Macedonia the average distance between a site and the nearest junction of Egnatia Motorway - vertical axes is 22.25 km and the corresponding average time distance is 18.9 minutes. In the Region of Western Macedonia, all areas of development infrastructure are directly serviced by the junctions of Egnatia Motorway - vertical axes, with the exception of the Agios Dimitrios Steam - Electric Power Station which is 14.95 km from Polymylos junction. The average distance between a site and the nearest node is 7.17 km and the corresponding average time distance is 5.9 minutes. In the Region of Epirus, three instituted sites of development infrastructure (Ioannina Industrial Park, Epirus Scientific and Technological Park and Industrial Area of Preveza) were studied. The first two are located 18,65 and 4,45 km respectively from the nearest junction of Egnatia Motorway and their time distance is 24,64 and 7,54 minutes. On the contrary, Industrial Area of Preveza has a bigger distance from the nearest node (average 90.93 km and average travel time 66.43 minutes). The most remote areas of development infrastructure of Zone IV from the Egnatia Motorway and the vertical axes are located in the Region of Thessaly, where the average distance between a site and the nearest junction is 179,63 km and the average time distance is 1 hour and 54 minutes.

Regarding the capacity of the development sites studied, based on the data available today, it is clear that, apart from the Industrial Zone of Thessaloniki (currently 718 operating enterprises), Ioannina (today 134 companies in operation) and Volos (A ') (75 operating enterprises), there is no other area that exceeds 60 enterprises (Industrial Areas of Komotini, Drama, Kavala, Serres, Preveza, Larissa and Volos, and Kilkis Business Park number 30-60 enterprises). Furthermore, there are large Industrial Zones which, however, present a small occupancy rate (Industrial Zones of Alexandroupolis, Komotini and Florina) while there are others that have not yet begun their operation (Industrial Zone of Kozani, Industrial Park of Farkadona and the Small Industrial Park of Ptolemaida still don't number any enterprise).

3.3 SET 08 “Accessible sites of tourist interest”

The processing of the indicator basically includes:

- an overview of the tourist load in Zone IV of the Egnatia Motorway. The primary data has been provided by ELSTAT and concerns the following:
 - arrivals of non-residents in Greece by each transport mode and entrance station (period: 2007-2016),
 - arrivals and overnight stays at tourist accommodation establishments (period: 2007-2016) per Region, Regional Unit and Zone / Tourist Site,

- capacity of accommodation establishments (2007-2016) per Region and Regional Unit as well as occupancy rates (period: 2010-2016) per Region, Regional Unit and Zone / Tourist Site,
- visitors, tickets sold and revenues in museums and archaeological sites (2007-2016).
- the number of enterprises engaged in economic activities related to tourism and their turnover, based on ELSTAT's Statistical Business Register.
- the time distance of locations of touristic interest from the nearest junction of the Egnatia Motorway.

Some of the main conclusions that can be drawn from the processing of the Indicator are listed below.

Regarding arrivals of foreigners in Greece

For the whole period 2007-2015, it is clear that the car is chosen as the basic means of entrance into the Regions of Zone IV, while the airplane follows. Indeed, it appears that after 2010 there is an increase in road transport, which is accompanied by reductions mainly in air transport and, secondly, in sea transport.

Regarding arrivals in tourist accommodation establishment

For the period 2007-2016, the arrivals in tourist accommodation establishments in the Regions of Zone IV account for about 28% of the arrivals throughout the country. Among the 5 Regions, Central Macedonia (53%) predominates, while Western Macedonia (4%) holds the smallest share. At the level of Regional Units (R.U.), R.U. of Thessaloniki (24.54%) predominates, followed by R.U. of Chalkidiki (18.69%), Magnesia-Sporades (9,19%), Trikala (6.15%), Kavala-Thassos (5.67%) and Ioannina (5.60%). In the Region of Western Macedonia, which is not represented in the above group, all R.U. have very low participation rates (less than 2%). Indeed, Western Macedonia recorded the largest negative change rate (-42.30%) between 2007 and 2016, with continuous negative trends. During the same period, in Zone IV there is an increase of 10,28% in arrivals to tourist accommodation establishments, which is less than the corresponding increase in the whole country (20.58%).

At the level of zones / sites of touristic interest in Zone IV, in the period 2010-2016, 26 among the 43 chosen locations recorded negative changes in arrivals and 17 positive. The classification of the zones / sites of touristic interest based on the five highest positive and the five highest negative change rates in arrivals leads to some interesting conclusions. For this particular period, the worst performance is recorded in 4 zones / locations of the Region of Western Macedonia (Ski center Vasilitsa - Deskati, Nymfaio, Prespes, Florina) and 1 in Eastern Macedonia and Thrace (Voreios Evros). These 5 sites correspond to the 5 positions with the most negative change for the period 2010-2014. Notably, however, the Vasilitsa - Deskati Ski Center recorded the highest negative change during the period 2010-2014 while went on to the 2nd place of the ranking with the zones with the highest positive changes during 2014-2016. Over the whole period, the highest positive changes are recorded in 2 zones / sites in Central Macedonia, 2 in Thessaly and 1 in Eastern Macedonia and Thrace (Polygyros, Kavala, Zone of Kokkino Nero - Agiokampos, Lake Plastira and Thessaloniki).

Regarding overnight staying at tourist accommodation establishments

For the 2007-2016 period, Zone IV accounted for 18.54% of overnight stays throughout the country. At the Regional level, the picture is similar with this of arrivals, with Central Macedonia holding a dominant role (61.74% of the total overnight stays in Zone IV) and

Western Macedonia recording the smallest share (2.53%). Regarding the Regional Units, R.U. of Chalkidiki covers more than 1/3 of the total number of overnight stays in Zone IV. The rest of R.U. with the highest rates in overnight staying in Zone IV are the R.U.s of Thessaloniki (16.33%), Magnesia-Sporades (9.68%), Kavala (7.19%), Ioannina (3.41%) and Kastoria (0.98%). The lowest rates in overnight staying are presented in Grevena (0.18%) and Kilkis (0.23%), which also account for the lowest arrival rates during the period 2007-2016.

Focusing on overnight stays in the tourist zones / sites in Zone IV, out of a total of 43, over the period 2010-2016, 19 reported negative and 24 positive change. Tourist zones / sites are ranked based on the changes in overnight stays. The five zones / sites with the highest negative changes in overnight stays are those that also record the highest negative changes in arrivals (Ski center Vasilitsa - Deskati, Nymfaio, Prespes, Florina and Voreios Evros). Nymfaio, Florina and Prespes are present in this negative ranking in both sub-periods 2010-2014 and 2014-2016. Vasilitsa - Deskati Ski Center is the zone with the most negative trends in the first four years and the zone with the most positive trends in the next two years. On the contrary, Zone of Kokkino Nero - Agiokampos, Lake Plastira, Kavala, Polygyros and Thessaloniki appear to be the most dynamic zones between 2010 and 2016.

Regarding occupancy rates in tourist accommodation establishments

For the period 2010-2016, Zone IV shows lower occupancy rates compared to the whole of the country (average occupancy: 37.08% vs. 47.33%). At the regional level, the Region of Central Macedonia (44.44%) has the highest average occupancy rate and the Region of Western Macedonia the lowest (18.56%). At the Regional Unit level, the highest average occupancy corresponds, to Chalkidiki with 54.41%, which is the only one with an average occupancy of over 50%. The R.U. of Thassos follows with a 49.51% rate. R.U. of Grevena (3.90%) and Kilkis (12.66%) are in the last positions of the ranking. In addition, it is observed that the average occupancy rate for the period 2014-2016 is higher than that of the period 2010-2014 for both the whole country and Zone IV and for three out of five Regions: Eastern Macedonia & Thrace, Central Macedonia and Thessaly. The picture is similar for 12 out of the total 26 R.U.s.

Over time, Zone IV shows a decline in occupancy rates between 2010 and 2012, followed by an upward trend until 2016, when the occupancy level marginally exceeds this of 2010. Fluctuations are identified for the Zone IV Regions. What is worth mentioning is that, following these fluctuations, three regions have not managed to recover the occupancy levels of the base year (2010), namely Western Macedonia, Epirus and Thessaly.

In the classification of the zones / sites of touristic interest of Zone IV, first of all, the significant momentum of Kassandra can be observed, which is ranked first in both the whole period and the sub-periods (2010-2014 and 2014-2016). It is also important to notice that the top five positions are occupied by zones / locations in Central Macedonia, with some reclassifications in their relative position in the two sub-periods under consideration. On the contrary, Vasilitsa - Deskati Ski Center has the worst performance in the whole period, but also in the sub-periods. The rest in the group of the five zones / sites with the lowest rates are two zones in Western Macedonia (Prespes, Nymfaio) and two in Epirus (Konitsa, Metsovo). The only differentiation among the areas with the worst performance in this indicator is the presence of Kilkis in the 2010-2014 sub-period, in the fifth place along with Metsovo.

Regarding the number of number of enterprises engaged in economic activities related to tourism¹

Among the five Regions of Zone IV, for the time period 2007-2015, the Region of Epirus records the highest increase (14.81%) in the total number of enterprises engaged in economic activities related to tourism while the Region of Western Macedonia records the largest decrease (-5.72%). During 2010-2015, the only Region with an increase transcending this of the period 2007-2015 is the Region of Eastern Macedonia and Thrace (5% vs. 1.68%).

At the R.U. level, the number of enterprises for the period 2007-2015, although increasing in the majority of the Regions, is decreasing in half of the R.U.s. The decrease ranges from -1.49% in Pella to -10.57% in Florina. The R.U. of Drama remains unchanged, while the highest increases are found in the R.U.s of Chalkidiki (38.39%), Thesprotia (22.58%), Preveza (20%), Magnesia - Sporades (18.47%), Ioannina (16.63%) and Kavala-Thassos (15.28%). All of the above areas, except for the R.U. of Ioannina, are destinations for summer tourism.

In 2015, the year with the most recent data available, about 45% of businesses engaged in economic activities related to tourism in Zone IV are concentrated in Central Macedonia, followed by Thessaly (20.30%). The smallest percentage is attributed to Western Macedonia (7.38%). Regarding the Regional Units, the highest percentage of tourism related enterprises is concentrated in Thessaloniki (18.32%) and then in Chalkidiki (8.56%) and Magnesia - Sporades (8.16%). The lowest percentages are observed in three out of the four R.U.s of Western Macedonia: Grevena, Kastoria and Florina (1-1.5% share in Zone IV).

As regards the 43 zones / sites of tourist interest for the period 2007-2015, 15 zones (out of 37 for which it was possible to estimate a change) show a decrease in the number of enterprises, while most zones are increasing. Compared to the 2010-2015 period, the increase is higher, as it was observed in 26 of the 37 zones for which data was available, and a change could be calculated accordingly. Specifically, in the overall picture of the two branches of activity related to tourism, for the period 2007-2015, the increases in the cases of Sithonia (71,34%) and Asprovalta (45,01%) zones stand out. The largest decrease over the same period (2010-2015) is recorded in the Zone of Naousa (-13.97%).

Regarding the turnover of enterprises engaged in economic activities related to tourism

In the period 2007-2015, all Regions except for Western Macedonia record negative change rates, ranging from -12.30% in Central Macedonia to -28.62% in Western Macedonia, while the number of enterprises increased in all Regions of Zone IV with the exception of Western Macedonia.

As a result, over the same period, the picture in Zone IV as a whole is also negative, with the overall turnover of these enterprises falling by 15.29%. Negative change rates are even higher in all Regions and in Zone IV over the period 2010-2015, i.e. after the beginning of the economic crisis. At the R.U. level, for the whole period under examination, all R.U.s of Zone IV record negative change rates, except for Chalkidiki which shows an increase of 11.06%.

It is worth noticing that, by comparing sectors I and R, the picture of the regions and the R.U.s is clearly better in the second sector, i.e. in the Arts, entertainment and recreation, which, nevertheless, represents a much smaller share of enterprises in all enterprises in the tourism sector.

¹ I: Accommodation and food service activities and R: ARTS, ENTERTAINMENT AND RECREATION

Regarding visits in museums

The tickets sold at the museums of Zone IV for the period 2007-2016 are almost 4,000,000. At the Regions level, most tickets are sold in Central Macedonia's museums with an average of 293,503 per year, which account for about 75% of all tickets sold in Zone IV (the largest share of visitors is attributed to the R.U. of Thessaloniki, participating with approximately 82% in the Region as a whole). At the R.U. level, the R.U. of Thessaloniki records the largest percentage of tickets in museums, holding over half of the tickets sold in Zone IV (61.30% of Zone IV), scoring much higher than Ioannina (5.82%) which holds the second place.

Observing the development of tickets sold for the period 2007-2016, the Region of Eastern Macedonia & Thrace shows an increase by approximately 35%. In Central Macedonia, the increase is equal to 314%, with impressive increases in tickets to the museums in the R.U. of Thessaloniki and a remarkable increase in the Amfipolis Museum in the R.U. of Serres. The performance of the museums of Dion, Polygyros and Prosfori Tower is negative. In Western Macedonia, the increase for the whole period is slightly less than 18%. In Epirus, trends are positive both in the whole period and in all sub-periods (2007-2010, 2010-2014, 2014-2016). The total increase for the period 2007-2016 is approximately 150%, which is shaped mainly after 2010. Finally, in Thessaly, during the whole period, the number of tickets have increased by more than 200%.

As regards the revenue from tickets, at a regional level, for the whole period 2007-2016 Eastern Macedonia & Thrace shows a small negative rate of change of -2.07%, while the other 4 Regions have high positive rates ranging from 70,96% in Epirus to 203.46% in Western Macedonia. The change rate is particularly high in Central Macedonia, which is the only one of the Regions that shows positive rates of change in all the sub-periods considered, i.e. 2007-2010, 2010-2014 and 2014-2016, with the highest change in the intermediate one. In Western Macedonia, Epirus and Thessaly, a negative change occurs in the first sub-period and a positive for the next two, while in Eastern Macedonia & Thrace the change is negative for the first and third sub-periods.

Regarding visits in archaeological sites

Regarding the number of visitors to archaeological sites, the tickets in Zone IV for the period 2007-2016 exceed 3,500,000. As in the case of museums, most tickets at a regional level are sold into Central Macedonia's museums and rise to an average of 236,547 tickets per year, which account for 66.8% of Zone IV in total (the largest share of visitors to the archaeological sites corresponds to the R.U. of Imathia, which participates with about 55% of the Region as a whole). At the R.U. level, the R.U. of Imathia records the largest amount of tickets in archaeological sites, accounting for 37% of the tickets sold in Zone IV, and is far from the second R.U. of Pieria (17.57%).

Observing the development of tickets for the period 2007-2016, in the Region of Eastern Macedonia and Thrace the tickets to archaeological sites increased by approximately 20%, with a decrease in the period 2007-2010, a significant increase in the period 2010-2014 and a reduction during the last two years (2014-2016). For the whole period 2007-2016, the tickets to archaeological sites in Central Macedonia increased by approximately 50%, following the same course for the three separate periods with Eastern Macedonia & Thrace.

It can be clearly concluded that there is a significant potential and dominance of the Vergina Royal Tombs with a 191.78% increase in tickets during the period 2010-2016. The other archaeological sites, for which there are sufficient data, are also recording an increase for

the same period. In Western Macedonia, the situation is negative over time, with a decline in tickets of -87.03% between 2007 and 2016. In Epirus, the picture is generally positive, with the exception of the period between 2007 and 2010, when a decrease of -17, 42% is recorded. For the whole period considered, the number of tickets increases by 56.68%. Finally, in Thessaly, visitors to archaeological sites record an impressive course, with constant positive rates of change in all sub-periods, leading to an increase of over 2000% between 2007 and 2016. However, the absence of data for the majority of archaeological sites at least until 2011 should be noted.

Regarding the revenues from tickets sold in archaeological sites, at a region level, for the whole period 2007-2016, there is no data available for Western Macedonia until 2011, while the remaining 4 Regions are increasing their revenues in rates ranging from 55.64 % in Eastern Macedonia & Thrace to 464,46% in Thessaly. In the latter case, the dominance seems to derive from the trends in the period 2010-2014, since in the other two sub-periods the change is negative. The change is positive for all 4 Regions between 2010 and 2016.

Regarding the measurement of time distances

Regarding the assessment of the time distance between the locations / zones of touristic interest and the nearest node or the vertical axis of Egnatia Motorway, the analysis was performed based on preexisting data from Observatory regarding the state of the road network in 2009. The main conclusions resulting from the measurements are presented below:

- There is no significant difference between time distances (and the corresponding average travel speeds) between off and peak hour, where they were recorded.
- Significant variations with regard to 2009 were recorded in relation to the city of Serres, where the construction of new interchanges has significantly changed accessibility from / and to Serres.
- The construction of new interchanges in the areas of Western Macedonia (vertical axis of the Egnatia Motorway) resulted to different routes for measuring time distance from / to the tourist sites of the Region of Western Macedonia (Florina City Center, Kastoria city center, etc) with regard to 2009.
- Significant reductions in travel times are recorded on routes to / from Klidi interchange, since the completion of road works in Tempi (creation of three tunnels) has substantially changed accessibility to the urban centers of the Region of Thessaly (Larissa city center, Volos city center, Trikala city center, Karditsa city center).
- Reductions in travel times are observed on the routes from / to the Grevena interchange to Larissa (city center) and Volos (city center) due to the upgrading of the road Trikala-Larissa, that increased the accessibility to these locations.
- The road artery Xiaiada - Trikala (Motorway E65 - Central Greece), which was launched in December 2017, alters the routes measured for the city of Karditsa from / to the interchange of Panagias and Dyt. Grevena compared to 2009, while travel times do not change significantly.

3.4 Composite Accessibility Indicator

3.4.1 Methodology for constructing the Composite Accessibility Indicator

The composite indicator (CI) is a quantified estimate of the change (improvement but also in some cases deterioration) in the characteristics of the transport infrastructure and the capacity of the locations of interest examined in the present study.

For the purposes of the study, it was decided that the evaluated indicator would cover some typical and essential (S.M.A.R.T.) features, which are:

- S-specific: the quantification of parameters of the indicator should be quantitative and / or qualitative in order to be easily understood by both the authorities and the final recipients.
- M-measurable: the quantification of parameters of the indicator should be measurable today (or possibly in the past) but also ensure their ability to be measured in the future so as to ensure the monitoring of their evolution over time.
- A-achievable: the quantification of parameters of the indicator should be able to be collected on the basis of technical and operational capabilities of stakeholders, either directly or by improving data exchange protocols through e.g. updated Memorandum of Cooperation.
- R-relevant: the selection of the quantification parameters of the indicator should be done in a way to ensure the relevance to the final measured result. So, their choice should be carefully made to include the absolutely relevant indicators and to exclude the least relevant ones.
- T-time bound: the final composite indicator as well as the quantification of parameters should, in addition to their monitoring, be defined / displayed in future periods so that specific policies can be pursued to improve the specific indicator.

Based on the above and in consultation with the Contracting Authority, it was decided for each category of locations to develop a multiparametric composite indicator that would satisfy as far as possible the previous SMART requirements.

The Composite Indicator (CI) is mathematically defined in its general form by the following formula:

$$FA_{SET06} = \sum_{i=1}^n (b_{1i}X_{1i} + b_{2i}X_{2i} + \dots + b_{ki}X_{ki})$$

Where

X_i : the k quantification parameters of the SET06, SET07, and SET08 indicators

b_i : the corresponding coefficients of the k quantification parameters of the SET06, SET07 and SET08 indicators

for each $i = 1$ to n points of interest that are included in the composite indicators SET06, SET07 and SET08.

It should be noted that the weights at each coefficient, resulted after the cooperation of the scholars with the Contracting Authority.

The measurement scale was chosen to be ordinal and not scale in order to normalize any difference in the absolute values of the quantification parameters.

Each factor was calculated for each location / zone of interest as defined in the previous stages of the study.

The necessary data was derived from the traffic model of the Egnatia Motorway and from the calculation of the SET06, SET07 and SET08 indicators. Finally, it is noted that three measuring ranges (small, medium, large) of the indicator corresponding to different grades for each quantification parameter were selected. In order to calculate the range of values for each grade, the statistical distribution of the arithmetic values of the parameters for each variable was checked using boxplot.

3.4.2 Composite Indicator calculation results

With regard to the composite indicator, the results of the composite indicator SET06 show that the relative indicator in 2016 compared to the one for 2006 has decreased. However, based on the average values of the parameters used for the calculation of the indicator, it appears that this decrease is not due to the construction of the Egnatia Motorway as the corresponding x_1 associated with the travel time is considerably improved in 2016. It is recalled that the scale for travel time defines 2 as the average travel time, while 1 responds to the long travel time. So, the increase in the value of the parameter corresponds to an improvement in the travel time. Parameters x_2 and x_3 show a decrease in 2016 and this is due to the fact that these parameters are related to the passenger and freight traffic of each location. Both passenger and freight traffic has dropped during the crisis in almost all of the locations taken into consideration for this study. The parameter regarding arrivals of foreigners at each point of interest has remained stable, leading to the conclusion that tourist flows have not been affected by the economic crisis.

On the contrary, in the case of Composite Indicator SET07, there is a clear improvement in both the characteristics of the transport infrastructure and the capacity of the points of interest. The improvement of the travel time after the construction of the Egnatia Motorway is relatively small, as most of the industrial areas examined in the study were not particularly affected by its construction. The increase in the number of both established and in operation businesses in industrial areas should be addressed with caution, as no data are available for all enterprises over the period 2006-2016.

Finally, with regard to the SET08 Composite Indicator, a marginal increase in the indicator in 2016 is shown in relation to 2006. The parameter associated with the travel time improves, albeit to a small extent, by suggesting an improvement in the characteristics of the transport infrastructure after the construction of the Egnatia Motorway. The parameters related to the number of nights spent and the accommodation completeness for each point of interest remain constant while the number of tourist businesses is decreasing, which can be explained by the economic recession in recent years, which even affects tourism enterprises.

4 QUESTIONNAIRE SURVEY

4.1 Questionnaire structure and execution time of the survey

4.1.1 Survey of sites / areas of tourist interest of indicator SET 07

The questionnaire survey was carried out in selected established and operational development areas of the Regions of Eastern Macedonia and Thrace, Central Macedonia, Western Macedonia and Epirus in order to evaluate the use / utilization of the Egnatia Motorway and the Vertical Axes from entrepreneurs (entrepreneurs are the shareholders of a business) whose businesses are established and operating in these development areas.

The questionnaire survey was conducted by the Study Group (4 people in total) in specific developmental zones during time periods 9-18 December 2017 and 5-25 February 2018. The questionnaires were collected through personal interviews but also electronically, as at the same time the questionnaire was also available in electronic format in order to be sent to as large a sample as possible. The online questionnaire survey was stopped when the required data was collected. A total of 218 questionnaires were collected for entrepreneurs in development zones.

4.1.2 Survey of sites / areas of tourist interest of indicator SET 08

Questionnaires for visitors at tourist sites

The questionnaire survey was conducted in selected tourist sites in order to collect data regarding the origin of the visitors, the mode of travel, the duration of the trip, the frequency of visits to the tourist destinations in the area of influence of Egnatia Motorway and the vertical axes, exploitation / evaluation of the use of the Egnatia Motorway and the Vertical Axes by visitors and local tourist businesses.

The questionnaire survey was carried out by the Study Group on specific areas of tourist interest in two seasons, winter and summer. The winter survey took place between 5-25 February 2018 and 9-18 December 2017, while the summer survey was from July 1 to August 10, 2018.

Among the 632 questionnaires responded by visitors, 64 where from the Region of Eastern Macedonia and Thrace (10,13%), 345 where from the Region of Central Macedonia (54,59%), 66 where from the Region of Western Macedonia (10,44%) and the remaining 157 concerned sites in the Region of Epirus. Of the above 4 Regions in the case of Western Macedonia there were only winter tourism sites and therefore no questionnaires were collected during the summer period.

Questionnaires for tourist businesses

The questionnaire survey was conducted in selected tourist sites of the Regions of Eastern Macedonia, Central Macedonia, Western Macedonia and Epirus with the aim of collecting data regarding the access to tourism enterprises, mode of travel, assessment of the use of the Egnatia Motorway and the Vertical Axes in terms of impact on the business as well as on the overall transport system.

The questionnaire survey was conducted by the Study Group in specific development zones during the winter period 9-18 December 2017 and 5-25 February 2018 and during the summer period 1-7 / 10-8/2018.

For the category of tourism professionals, 313 questionnaires were completed. The final target number was covered by the completion of questionnaires from the zones / places of seasonal summer tourism.

4.2 Overall findings of the questionnaire survey

Research through questionnaires has led to substantial conclusions on improving accessibility after the operation of Egnatia Motorway. As a starting point the research had the recognition of the importance of transport infrastructure for the development of economic activities in general and their direct or indirect impact on the establishment and development of enterprises or the development of tourist sites.

Results of the SET 07 questionnaire survey show that the improvement of accessibility as well as the positive evaluation of movement through Egnatia Motorway for each company is the most important constructive effect of Egnatia Motorway. On the contrary, there is no significant correlation between the operation of Egnatia Motorway and the increase in personnel, the expansion of the clientele or the increase in recognition, although the turnover seems to have been positively influenced by about half of the large enterprises. Road services for drivers and travel costs are the characteristics most concerned by entrepreneurs, while as major problems have been assessed by most the inadequate public transport, transport connectivity and low road maintenance. To a lesser extent, safety issues, high travel costs, and in some cases the high travel time was considered as negative.

Out of the 945 questionnaires completed (in two periods: summer and winter) for the tourist interest locations / zones of SET 08 indicator, some basic conclusions were drawn. Both groups of domestic and foreign visitors shared a number of opinions, but they also showed significant differences, mainly in terms of their characteristics. Thus, domestic visitors were generally younger and with lower incomes, and visited the site, where they answered the questionnaire, more often. Also, unlike foreign visitors, knowing the changes in travel times and the quality of transport that took place after the operation of Egnatia Motorway, domestic visitors responded by majority that the existence of Egnatia Motorway played a significant role in the choice of their journey. In addition, in the case of foreign visitors, the cost of travel was more positively assessed than it did for domestic visitors.

In both categories of tourists, summer tourism was dominant among other types of tourism, while inadequate maintenance and safety issues were assessed as problems. In relation to the positive aspects of their travel, foreign visitors considered all the features mentioned in the questionnaire as positive, while domestic visitors considered the absence of drivers road services as negative.

In relation to tourism professionals, the picture is similar in terms of traveling experience, as this group of respondents considered positively most of the characteristics given by the respective question and reported as problems the same as the visitors.

One of the main conclusions of the survey would be that entrepreneurship is potentially enhanced by the operation of transport infrastructure, as it improves accessibility and has an impact on the increase of mobility of stakeholders on production, the expansion of the clientele and, consequently, the increase in the turnover.



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