

## Urban Dipoles in Greece: Economic Development Opportunities for Larissa-Volos Dipole in Thessaly Region

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**Abstract:** The article attempts to illustrate the significance of the existence of co-operation and in tandem development of an urban dipole, as well as the impact of such a dipole development on each of the two cities and on the greater region they belong. For this reason, the article focuses on a specific case of two medium size cities in Greece, Larissa and Volos, which activate in the same region by taking development actions complementary to one another. The aim of the article is to define the prospects for economic development of this dipole and examine its dynamic in relation to other cities in Greece, by using original data derived by a recent empirical research conducted among foreign firms of the region which have established in the dipole area the last 15 years.

**Keywords:** urban dipoles, economic development, Greece

**JEL Classification:** R11, R12, R13

### Introduction

Cities are the most dynamic centres of economic transformations in a global level (Harris 1997). The main argument arises through the analysis of the international practice is that regional competitiveness / attractiveness presupposes the economic development and vigorousness of the regions main cities (Cheshire and Gordon 1998; Cuadrado-Roura and Rubalcaba- Bermejo, 1998; Cuadrado-Roura, 2001). This conclusion is harmonized with the basic principles for the competition between cities, as they referred in the European Spatial Development Perspective (ESDP, 1999). EU supports that regions / peripheries could become competitive only if the cities belong to them have their own economic power.

According to Petrakos and Economou (1999), medium size cities competitiveness is much smaller that of large metropolitan centers. Both the breadth of the production

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base (agglomeration of large and innovative firms) and the mobility of investment tend to accumulate into large metropolitan centers, leaving limited chances for development and competitiveness to small and medium size cities. Especially for medium size cities located in agricultural regions, their development will depend, mainly, on their access to urban networks and on the infrastructure of the whole European dominion, while cities with specific competitive advantages (e.g. geographical position, market size etc.) on their ability to become attraction poles for the establishment of productive investments and entrepreneurial activities (CEC, 1992; Petrakos and Economou, 1999:34).

This image of medium-size European cities also applies to Greek cities. Because of their small number in Greece (5>100,000 to 30,000 dwellers), their main production orientation is specialization on specific fields, while the bulk of foreign investments takes place in Athens and, to a smaller degree, in Thessalonica. This fact leads to the seeking of policies and development plans in order for regional cities to stimulate their economic development and competitiveness in comparison to the large metropolitan centers. The planning and development of co-operations between them is a very important aspect of the total planning as it appears in the last few years.

Based on the previous suggestions, the article tries to investigate the potential and the opportunities for economic development of two especially important Greek medium size cities, Larissa and Volos, which have the potential to act as a dipole, aiming at their common development and competitiveness, becoming a dynamic attraction pole for the establishment of foreign firms, mainly. The article also tries to bring out the dynamic of the dipole both in relation to other medium-size cities in Greece and in relation to the two large metropolitan centers of Athens and Thessalonica. Next, there is a presentation of 'city networking processes within the frame of which the cities develop co-operations and exchange information and know-how aiming at in common development. In the third unit there is a brief presentation of polycentricity and a definition of the concept and the operation of urban dipole. In the fourth unit, reference is made to the case study of the dipole Larissa – Volos, with an introductory description of the Region of Thessaly where the dipole belongs. Historical and economic data are presented, while, in the end and according to the empirical evidence, a comparative analysis takes place concerning the dipole's dynamic as an investment destination in relation to other cities in Greece. The article ends with important conclusions.

### **City Networking Process**

City Networking, which has appeared in the last 10-15 years, due to globalization (Beriatos, 2005), constitutes a main principle of urban systems analysis and refers to

the fundamental characteristic of cities and towns; that is, they do not constitute isolated and autonomous points of concentration of population and activities in the space, but they generate and attract flows, which are orientated to other cities or the country-side (Tsakiris and Lalenis, 2006:6). Urban network – urban system or, according to other authors urban grid (Derruau, 2001), is defined as the total of the cities along with their interactions, which faces cities as points of the system (Economou, 2005). A huge number of scholars, both on theoretical and investigative level, have studied networked cities, focusing on the role of communications and technologies (Townsend, 2001; Beaverstock et al., 2001; Taylor et al., 2002; Taylor and Lang, 2005; Wall et al., 2007:16). National, regional and local authorities and development organizations, including universities, are trying to support specifically innovative processes through different knowledge networks and a new type of collaboration (Kosonen, 2005; Sakellariou, 2008). The development of urban networks has been used as a policy instrument to built alliances, exchange knowledge and save resources, take advantage of scale economies, develop common markets, and exploit complementarities, which are all part of the new trend of internationalised policies (Pyrgiotis, 1991; Economou and Vrassida, 2005). City Networks are more flexible and adaptable forms of organisation, able to evolve with their environment and with the development of the cities that participate in it. Still by definition networks do not have one centre, they decentre performance and opportunities and they share decision making. This creates a problem in co-ordinating actions, focusing resources and beyond an ‘optimum’ size managing complexity (Castells, 2000; Economou and Vrassida, 2005).

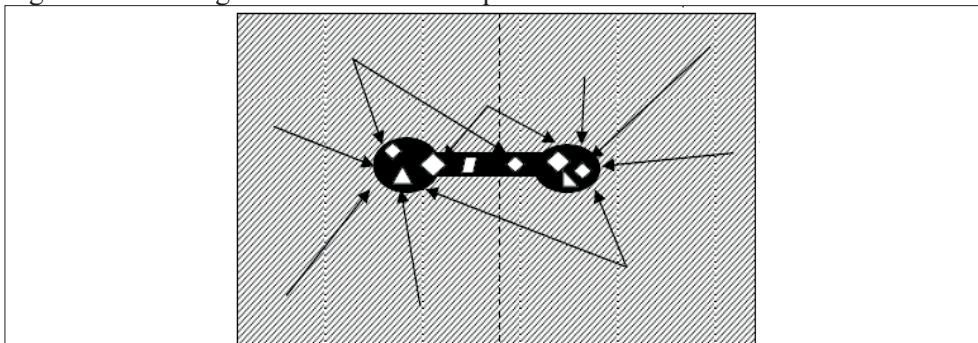
On European level, co-operation networks were able to develop thanks to the promotion of programs funded by the European Commission. Such programmes are the CultMark project which is applying a place marketing strategy with a cultural approach, and emphasizes the cultural dimension of marketing, as well as the promotion of the cultural resources of five European places (Deffner and Metaxas, 2005), the ECOS-OUVERTURE, which is aiming at the promotion of co-operations between E.U. cities and their peers in Central and Eastern Europe as well as cities of the former U.S.S.R. (Kotios, 1999), the IBA project (International Building Exhibition Urban Redevelopment Saxony-Anhalt 2010’ (IBA, 2005), promoting the development of networks among cities in Britain aiming at the exchange of information and knowledge (ERSC, 2000), or the cases of the cities of Coimbra and Aveiro in Portugal (Balsas, 2000), that focuses on the joint analysis of the cities’ environment with the objective to pinpoint the specific factors that influence the attractiveness and competitiveness of their market precincts.

### Polycentricity, Urban Dipole and Central Place Functions

The concept of polycentricity is not at all new, but it has been applied for a long time in the analysis of urban areas and systems, mainly on intra-urban and intra-regional scales. Yet, polycentricity is proposed as a strategic policy tool, whilst this concept has traditionally been used in explaining the changing spatial structures of cities and city systems (Eskelinen and Fritsch, 2007). There are several definitions of polycentricity. For Bailey and Turok (2001:698), polycentricity concerns a region which consists of one or more cities with none of them dominating, though, and with relative proximity and communication with one another, while ESPON programme focuses on the inter-supplementation of operations between cities (ESPON, 2003:15).

The concept of urban dipoles fit in the tradition of networking, comprising elements both from the classic hierarchical urban systems and the recent networks of peer towns. It presupposes, in the first place, two centres which belong to the same urban system, and have a similar order in the system, serving equivalent hinterlands. As a consequence, the two cities are playing similar roles regarding the central place functions. However, when these two cities also contain, or develop, (usually different) special functions, their profile can also be relatively differentiated: their common factor is the central functions; their discriminating factor is the special functions. The urban functions which are the main motors of the above scheme are the so-called 'central place functions' or 'central functions'. These functions tend, by nature, to be distributed in space according to hierarchical ranks and, correspondingly, hierarchically ranked hinterlands (service areas), in whose centre they are located (Tsakiris and Lalenis, 2006:6). Figure 1 shows two neighbour cities (such as Larissa and Volos), which form a dipole. The dipole is situated on a higher rank in the urban system and has a semi-unified hinterland as far as the higher functions (both central and special) are concerned.

Figure 1: Two neighbour cities form a dipole



## **The Larissa-Volos dipole in Thessaly Region**

### *Profile of Thessaly Region in Brief*

Thessaly region (Map 1) is one of biggest Greek regions in size and population and lies in the middle of the Greek peninsula bounded by the Aegean Sea on the east and the Pindos mountain range on the west. The region has four prefectures, Larissa and Magnesia in its eastern part and Trikala and Karditsa in its western. The existence of the cities of Larissa (in the prefecture of Larissa) and Volos (in the prefecture of Magnesia) make Thessaly region the only Greek region with two medium-sized cities in its territory (Metaxas and Kallioras, 2007). The Region of Thessaly consists of the Prefectures of Larissa, Karditsa, Magnesia and Trikala. With Larissa as the headquarters, the region holds 6.9% of the national population and produces 6.3% of the gross national product (4th largest participation after Attica, Central Macedonia and Sterea Hellada).

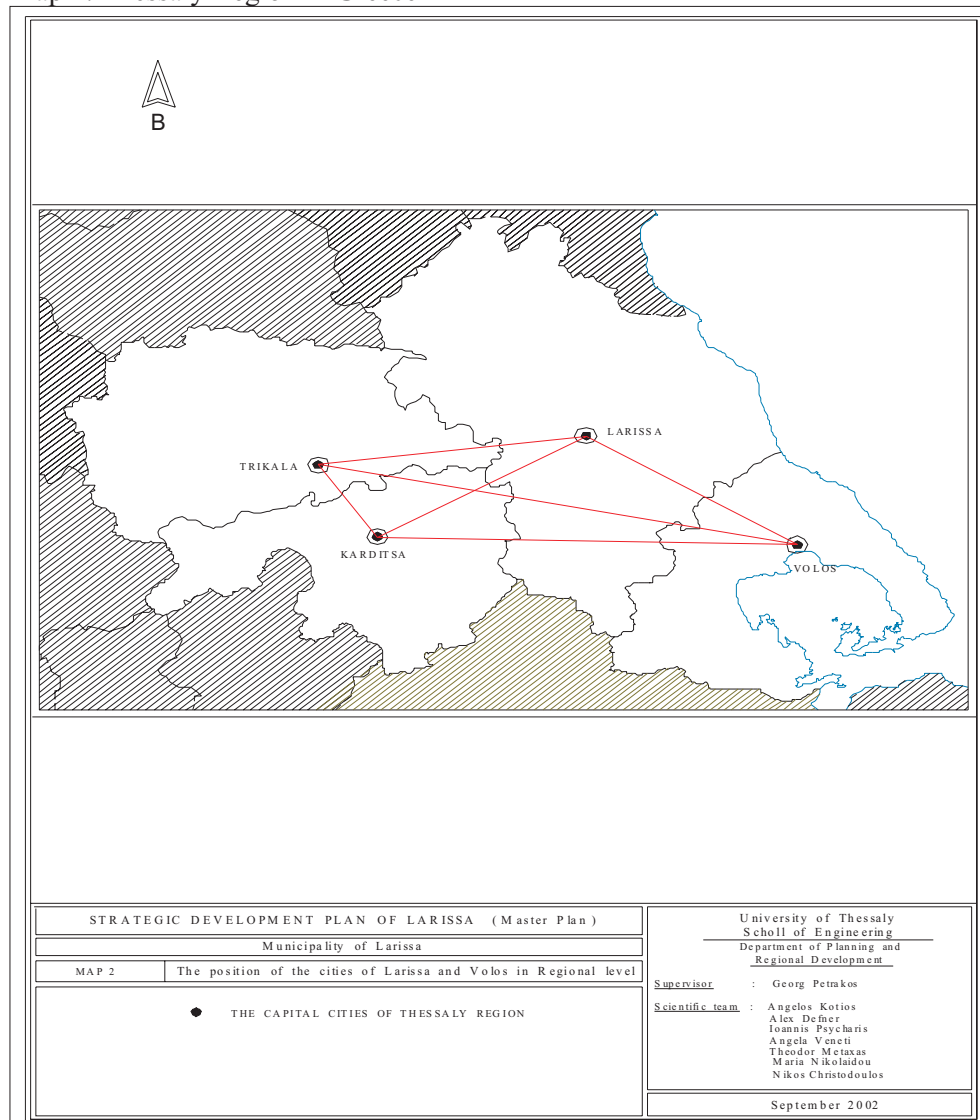
There are a number of comparative advantages favoring the development of Thessaly. It has a rich and long-standing economic, social and cultural tradition. It has a favorable geographical position on the Patras-Athens-Thessaloniki-Kavala axis, as well as on the Volos-Igoumenitsa axis. Significant infrastructure works have been carried out in the region, such as national roads, industrial sites, etc. Finally, businesses show a positive attitude towards changes and innovation. The geographical location of the region, despite being a positive comparative advantage, is still burdened with the disadvantage of ‘position’ of Greece as a whole because of its great distance from the financial centers and markets of Europe (Regional Operation Programme, 2004:35). Map 1 shows the four Thessaly capital cities and the connections among them.

### *Define the Dipole Historically*

The term dipole contains the notion of the combined developmental strategy of the two cities, Larissa and Volos. The central geographical locations of the two cities, the distance inter se (56 km) and their market size and potential have given a unique character to the entire region. Thessaly region is the only Greek region that contains two mediums sized cities in its land. The two cities in common have many of the characteristics of a Greek metropolitan urban centre (Athens, Thessalonica) and constitute a Greek peripheral metropolis. This is the Larissa-Volos dipole, Thessaly major development pole (Metaxas and Kallioras, 2007). Thessaly Region decided that Volos and Larissa should develop into a so-called dipole, a small metropolitan

urban region. It is expected that the combined weight of Volos and Larissa (240.000 inhabitants) makes it easier to attract investments, subsidies, innovations or events.

Map 1: Thessaly Region in Greece




Larissa, crossed by the main national highway<sup>1</sup>, has a significant population size, for the standards of the Greek system of urban centres (125,000 citizens) and it is the 5th largest city after Athens, Thessalonica, Patras and Herakleion. The city is

recognised as a production centre and is an attraction pole for the agglomeration of population and productive activities, commercial and manufacturing mainly (Strategic Plan of Larissa, 2002). On the other hand, Volos is the capital city of Magnesia Prefecture and is the second largest city, after Larissa, in population and area in the Region of Thessaly and 6th in Greece. Volos, is a major Greek harbor with exceptional natural beauty and together with Larissa constitute the most advanced part of Thessaly region creating a potential dipole. In addition, the city is one of the most important urban and industrial centers of the Greek urban system (right behind Athens and Thessalonica) with a quite advantageous position in it (Strategic Development Plan of Volos, 2006).

Table 1: Main characteristics of the two cities separately and as a dipole

City	Urban Characteristics
<i>Larissa</i>	<ul style="list-style-type: none"> <li>- Big urban centre</li> <li>- Government centre in Regional and Prefecture level</li> <li>- Communications core</li> <li>- Agriculture supporting service centre</li> <li>- Commercial and manufacturing centre specialized on agricultural products</li> <li>- Health supporting service centre (University Hospital)</li> </ul>
<i>Volos</i>	<ul style="list-style-type: none"> <li>- Big urban centre</li> <li>- Government Prefecture centre</li> <li>- Port-Communications/ transportations</li> <li>- Traditional Industrial Centre</li> <li>- Tourism-Cultural Centre</li> <li>- Headquarters of University of Thessaly – R/D Centre and facilities</li> </ul>



Dipole
<ul style="list-style-type: none"> <li>- Geographical position</li> <li>- Access to national and European markets</li> <li>- High level of Urban Infrastructure</li> <li>- Market size in local and regional level</li> <li>- R/D pole</li> <li>- FDI existence</li> <li>- Multisectoral business centre</li> <li>- Government centre</li> </ul>

The idea for a dipole between these two cities was first suggested in 1979 as a choice for the two cities to act as a system and was based on the general belief that the small distance between them, in conjunction with other factors, creates the necessary ifs and ands for a common urban system. The existence of two, relatively equally dynamic residential centers in Thessaly, each one with its own competitive

advantages and whose communication is facile and open to reinforcement, became the basis on which the idea of a dipole was developed (Tsakiris and Daskalakis and Associates, 1999:30).

Also, one of the studies referring to the dipole is the recent commission by the Municipality of Larissa to the University of Thessaly to work out a Master Plan for the city of Larissa (2002). In this specific study is mentioned that the short distance from Volos offers the city of Larissa the unique opportunity, for the Greek standards, for co-operation between the two large rural cities with a total population reaching 350,000 and close by backland that goes up to over 400,000 citizens. That means that, according to the study, the city needs to aim at satellite development in relation with Athens and Thessalonica, but that development, however, runs the risk for dependence on economic fluctuations in these regions as well as the risk for loss of significant financial activities.

This pole, according to the Master Plan, is likely to develop on national and broader level as a counterbalance of development towards Athens and Thessalonica with great potential, important technical and social equipment, strategic location, interesting and multiple productive make-up, complete urban system and great variety of natural environment and living and recreation prospects. In the light of these facts, the promotion, on institutional level, of a co-operation for development could possibly release a dynamic with diverse economic ramifications (University of Thessaly, Larissa Master Plan, 2002). The main characteristics of each one of the two cities but also as a dipole are shown on Table 1.

#### *Economic and Investment Profile of the Dipole*

Larissa and Volos are the region's cities with an extremely low share of the primary sector of production in GDP terms. The shares of the secondary sector of production remain at high levels despite the de-industrialization took place after Greece's accession to the EU. During the last 15 years, a considerable attempt, by the central government and the endogenous dynamic, for the enforcement of the area's investing climate has been recorded. The basic development priority of Larissa and Volos is to become competitive against the other medium-sized cities, in a micro (Greece) and a macro (EU and the Balkans) level. Prefectures of Larissa and Magnesia, indeed, have the highest shares in the number of companies founded and in the amount of capital invested, comparing to the other two other two prefectures of Thessaly region. These prefectures are not identical, however, since they present dynamism in different economic sectors (Table 2). Both of the cities tend to play a crucial role in the competitiveness of the region and both cities are characterized by the necessity to become attractive and competitive to their external target markets. Volos is trying to



reconstruct its industrial image, investing at the same time on the development of tourism and services. Larissa has a strong presence in industry and tends to become a city of trade paying limited attention to tourism.

Table 2: The investing climate of Thessaly region, 1997-2004

Year	Region of Thessaly	Prefecture of Larissa	Prefecture of Magnesia			
	Companies founded	Invested capital (€)	Companies founded	Invested capital (€)	Companies founded	Invested capital (€)
1997	168	27.241.444	65	10.837.133	56	12.884.685
1998	139	21.585.165	65	13.459.941	28	4.142.040
1999	170	25.352.003	76	12.395.994	47	6.352.751
2000	162	101.890.932	71	88.366.324	52	3.931.328
2001	165	25.759.434	70	9.226.705	70	5.253.558
2002	157	19.159.000	68	9.064.950	59	7.030.020
2003	141	14.052.000	64	7.334.730	37	3.740.370
2004	113	7.737.000	53	3.750.500	36	2.542.800
Total	1,215	242.776.978	533	154.436.277	385	45.859.553

Source: ICAP (2000,2004) elaborated by the authors

### *Development in Common Base?*

The in-tandem development of the two cities is the main question deriving from the analysis, up to know. The current orientation leads to the conclusion that the dipole can exist and operate effectively bringing benefits both to the development of the two cities and to the competitiveness of the Region of Thessaly. Also, the existence of the dipole is likely to operate competitively towards the rest of the urban centers in Greece and mainly towards the two large metropolitan centers of Athens and Thessalonica. These observations are reinforced further by the results of a recent study conducted among non-local firms which established in the greater area of the dipole in the last 15 years. In the present article we are using data from this study which derived from 70 firms in the period January to June, 2007, through the use of questionnaires and personal interviews. More specifically, we are going to focus on the importance of the dipole based on the evaluations of the firms. Besides that, we are also going to evaluate the dynamic of the dipole Larissa-Volos in comparison

with another two medium-size, important cities – Heraklion and Patras, as well as with Athens and Thessalonica.

The sample of this empirical research is seventy (70) non-local enterprises. The research uses questionnaires (personal interviews). As far as the non-local enterprises activities are concerned, in the research area, 23, 5% of them were producers of finished products and services, 23,4% were in logistics and distribution business area, 41,1% sales of final products/ services, 3,9% packaging, 27,4% technical support and finally a 5,9% develop other business activities. It has to be stressed that on this question enterprises could choose one or two alternative answers. Following this, some of the enterprises develop more than one kind of business activity in the research area. The majority of the responders were high business executives from the headquarters in Athens, Thessalonica and the existing enterprises in Larissa and Volos (Metaxas and Kallioras, 2007).

Table 3: Larissa - Volos dipôle

Larissa- Volos dipôle	Sum: 4+5 (% ratio)	Middle: 3 (% ratio)	Sum: 1+2 (% ratio)	Total (% ratio)
The two cities development in common	68	20	12	100
The economic development of one city to cause economic hysteresis of the other	12	16	72	100
Regional competitiveness through the cooperation of the two cities	68	20	12	100
Each city to become an 'attraction pole'	52	28	20	100
Each city to operate beneficially to the other	64	24	12	100
The two cities distinctive characteristics to operate beneficially to the cities' dipole and to the region in general	88	8	4	100
The existence of Larissa-Volos dipole to operate competitively against the big urban centres (Athens, Thessalonica)	44	20	36	100

According to the evidence of table 3, the enterprises support that the competitiveness of Thessaly region could be strengthened and supported through cooperation between the cities of Larissa and Volos (68%). This option is also enhanced by the responses to the rest relevant questions. The two cities could be developed in common (68%) and furthermore each city could operate beneficially to the other (64%). Referring to the distinctive characteristics of the dipole and of the wider region, the enterprises support that the investment in these particularities could

operate positively not only to the cities economic development but also to the regional competitiveness (88%). In addition, each city separately, could become an 'attraction pole' (52%), without the economic development of the city causing economic hysteresis of the other (72%). In the end, the enterprises believe that the existence of the two cities dipole common development could operate in a competitive way against the big urban centres, Athens and Thessalonica (44%).

Concluding the analysis of table 4, the article argues that the importance of the dipole is obvious, since the enterprises take into account this significance in their decision selection process. But the effective operation of the dipole requires the existence of partnerships between the two cities, the existence of local authorities with entrepreneurial capacity and the adaptation and the implementation of new methods and development strategies and tactics so that the significance of the dipole can be supported and promoted as a distinctive characteristic and as a competitive advantage of this area.

#### *Prevalence of Larissa-Volos Dipole in Comparison to Other Cities*

A plethora of studies and papers examine various factors linked with the final decision making of foreign, multinational firms in order for them to set up in a region (Herzberg et al, 1959; Locke, 1976; Meyer, 1996; Chakrabarti, 2000; Parsons and Broadbridge, 2006; Keune, 2001; etc). Referring to the research program TeCSEM (Territorial Competition and the Single European Market), Cheshire and Gordon (1995), are studying the factor 'location choice' for the establishment of firms from the aspect, however, of the specific demand on the part of the firms and what the prospective regions have to offer. Following, we are going to refer to a series of specific factors which compose the environment of cities and have an effect on firms' competitiveness. The selection of the factors was made, mainly, based on CEC (1993) reports, where these factors are criteria for the decision making of firms concerning their establishment in a region.

The purpose of the following analysis is to present a very important relation both for the two cities (Larissa and Volos as a dipole) but also for the foreign enterprises that select the dipole's area in order to expand their business activities. Taking into consideration the appreciation of the enterprises that the dipole Larissa - Volos could operate competitively to the big urban centres (Athens and Thessaloniki) (table: 4), the following analysis presents the relation between the degree of significance (DOS: max 100) of the selected criteria and the degree of prevalence (DOP: max 100) in one or more of these criteria for the dipole (D) Larissa-Volos in comparison with two different city types. First in comparison to the two medium-sized cities, Heraklion (H) and Patras (P) and second in comparison to the two big urban centres, Athens (A)

and Thessalonica (T). Figures 2a, 2b, 3a, 3b, present the comparisons of Larissa -Volos dipole with the other cities.

Taking into consideration the analysis above, the selection criteria examined are presented in table 4.

Table 4: Location choice criteria

Codes	Location criteria	Studies
GP	Geographic Position (agglomeration economies and access to networks)	Devereux and Griffith 1998; Crozet et al., 2004
HSLW	High Specialization of Local Workforce	Tietjen and Myers 1998; Parsons and Broadbridge 2006
SLM	Size of Local Market	Doeringer et al., 2004; Carree, 2002; Lankes and Venables, 1997
TCI	Transportations & Communications Infrastructures	Vickerman 1994 ; Gao, 2004
EOE	Existence of Other Enterprises	Davies, 2001; Keune, 2001; Scott, 1995
BII	Better Investment Incentives	Budryte 2005; Desai et al., 2004; Leibfritz et al., 1997
ARC	Access to Research Centres	Doutriaux 2003; Shane, 2002
LCA	Lack of Competition in the Area	Crozet et al., 2004; Doeringer et al., 2004

while the quarters that are being created are:

- 1st quarter: Low degree of significance - Low degree of prevalence
- 2nd quarter: Low degree of significance - High degree of prevalence
- 3rd quarter: High degree of significance - High degree of prevalence
- 4th quarter: High degree of significance- Low degree of prevalence

More specifically we discuss the following comparisons:

a) Larissa –Volos dipole over Heraklion and Patras

In the comparison between Larissa –Volos dipole and the city of Heraklion (figure 2a), according to the research evidence, the biggest agglomeration of the selection criteria is presented. The high degree of Larissa-Volos prevalence over the city of Heraklion in all the evaluated criteria is the most important evidence of this comparison. More specifically a strong agglomeration of criteria is presented at the 2nd quarter, where Larissa-Volos dipole has a high degree of prevalence over Heraklion, concerning the criteria HSLW, TCI, EOE, ARC and LCA, but these

criteria have low degree of significance for enterprises. The enterprises acknowledged the prevalence of Larissa-Volos dipole on these criteria, but they do not take them into consideration in order to establish their activities in Larissa-Volos area. On the contrary, they do consider seriously other factors such as GP, SLM and BII (3rd quarter).

Figure 2a: Larisa-Volos Dipole (D) over Heraklion (H)

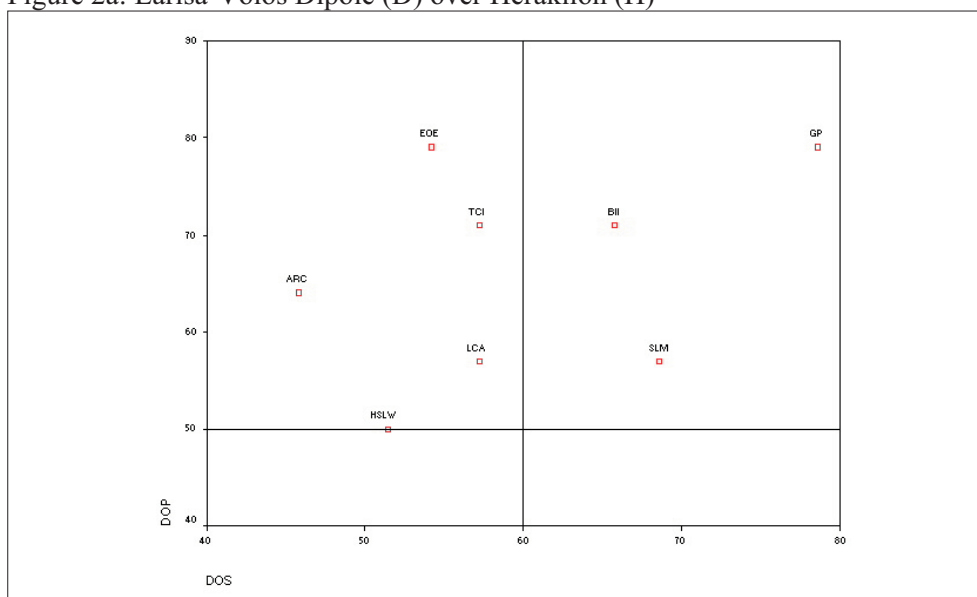
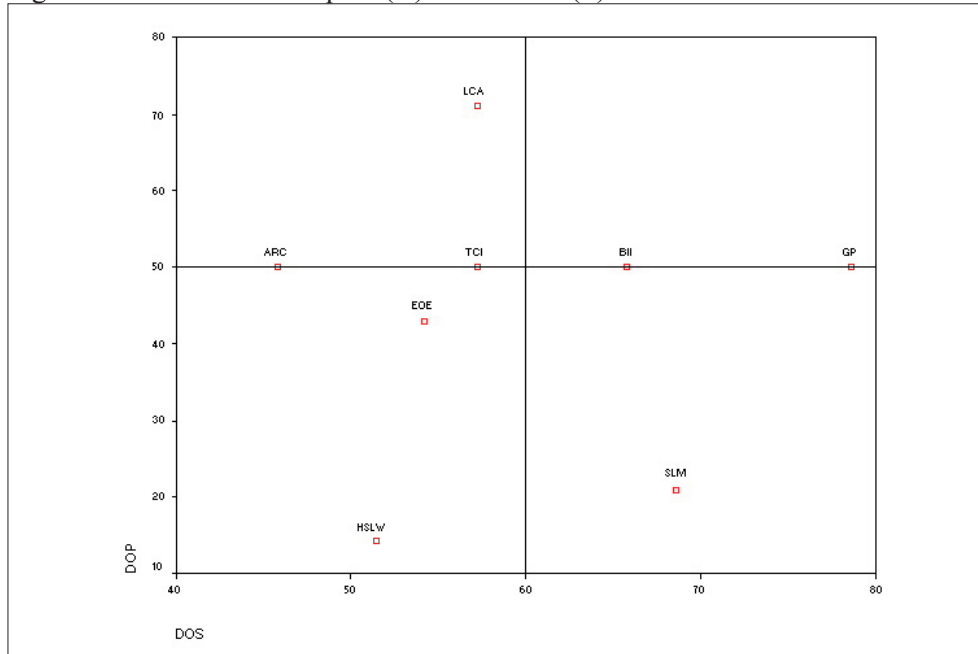


Figure 2b presents the comparison between Larissa-Volos dipole and the city of Patras. According to the figure the dipole and the city of Patras seem to have the same development opportunities. Four of the selection criteria (ARC, TCI, BII, GP) are found on the horizontal axis in different quarters. BII and GP criteria have high significance for enterprises, as at the comparison with Heraklion, but Larissa-Volos dipole does not have an obvious prevalence of these criteria over the city of Patras. This is a logical fact if we take into account that Patras have a population almost equal to that of the dipole Larissa-Volos, it is located close to Athens, it has a port and an equally strategic location in Greece. The same appreciation follows the criteria ARC and TCI, which have low significance for enterprises, as to the comparison with Heraklion. Larissa-Volos dipole has prevalence in the criterion LCA, but this criterion has also low significance for the enterprises and finally, as for the criterion SLC, which has a high significance for enterprises decision process, the Larissa-Volos dipole hasn't got prevalence over the city of Patras.

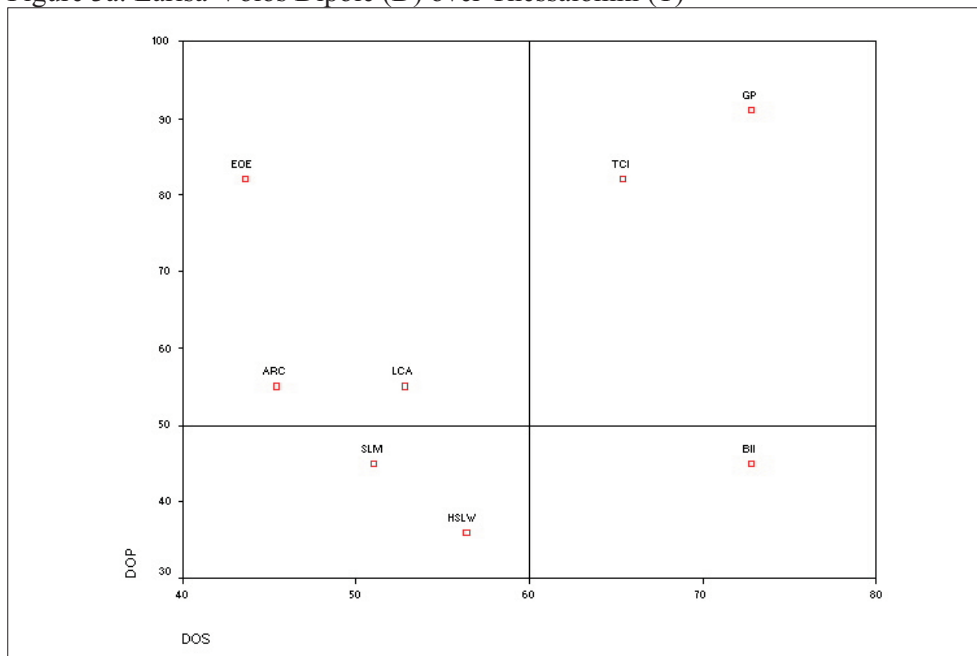
Figure 2b: Larisa-Volos Dipole (D) over Patras (P)



#### b) Larissa –Volos dipole over Thessalonica and Athens

In the next two comparisons (Larissa-Volos dipole vs Thessalonica and Larissa-Volos dipole vs Athens) (figures 3a and 3b), the outcome is totally different as in case of the two previous comparisons. The firms estimate that the dipole Larissa-Volos has an advantage towards Thessalonica where criteria ARC and LCA are concerned, but comes short to criteria SLM and HSLW, since Thessalonica is a large population and entrepreneurial center (2nd largest city next to Athens) with a large consumer market and available production force. What seems surprising is the supremacy attributed by firms to the dipole where criteria GP and TCI are concerned; criteria which are important for the firms themselves, especially GP. More specifically, they estimate that Larissa's central location with its roads network as well as the importance of the port of Volos, are significant factors which can give the dipole Larissa-Volos a dynamic, competitive position towards the city of Thessalonica. On the other hand, given the fact that the region of the dipole combines different kinds of urban infrastructure (road, railway, port and – to some degree- air connections), and the existence of the University of Thessaly, the firms estimate that the existence of all these advantages can create an especially powerful dynamic towards Thessalonica.

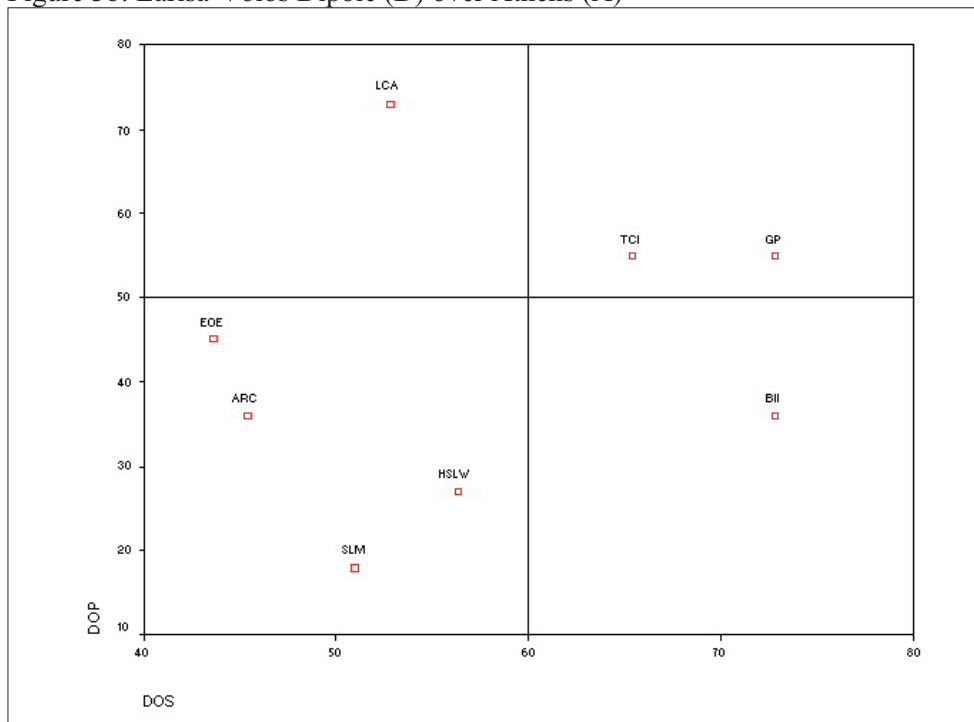
Figure 3a: Larisa-Volos Dipole (D) over Thessaloniki (T)



In the comparison of the dipole with Athens the picture differentiates greatly. Only in three criteria, LCA, TCI and GP, the dipole Larissa-Volos is considered to excel, without, however, this excellence to be serious (at least for TCI and GP), as was in the case of Thessalonica. In spite of this, the firms continue to have a certain attitude in their evaluation of the criteria stressing, as in the comparison with Thessalonica, the significance of the factors geographical position and access to networks for their own competitiveness. Criterion IA - BII is also important, but, as expected, the dipole falls quite short of in it, in comparison with the two large metropolitan centers.

Closing this unit, the article supports that the above comparisons according to estimations made by firms, point out the dynamic of certain factors which compose the concept of geographical location and networks towards markets on national and European scale, through urban infrastructure and telecommunications. This combination is very important for the firms of the study, showing the dynamic and the significance of the existence of the dipole for the total development and competitiveness not only of the two cities but also of the Region of Thessaly.

Figure 3b: Larisa-Volos Dipole (D) over Athens (A)



## Conclusions

The strengthening of the dipole Larissa-Volos constitutes a basic aspect of the spatial planning of the Region. The axis Larissa-Volos, alongside with the upgrading of the role of the two cities, will lead to creation of a strong aggregation of urban and industrial activities – and supplementary ones- with elaborate internal organization which will tend to obtain the characteristics of a Metropolitan zone (Spatial Plan of Thessaly Region, 2002:12).

For the accomplishment of this goal, however, which will allow Larissa and Volos to achieve a higher rank in the order of developing cities on national, European and generally international level, a prerequisite is not only the reinforcement of the existing inter-supplementation of operations and the role of the two cities, but also the social adoption of the idea so that, through a mentality of consensus, the necessary co-operation between the two cities, which has to be planned and continual, will be consolidated. More particularly from the previous analysis we conclude that a) the existence and the exploitation of the Larissa – Volos dipole



comprises a very important area selection criterion (from the enterprises viewpoint) mainly for the commercial and the services sector (according to the research outcomes). In addition, enterprises strongly support that the cities' mutual development is feasible having as a prerequisite the investment (by the cities) in the cities' distinctive characteristics, enforcing this way the competitiveness of the whole region, b) the comparison to the other two competitive medium – sized cities (Heraklion and Patras) has shown a prevalence of Larissa and Volos in the traditional economic factors (geographic position, size of the local market and transportation and communication infrastructure) while the comparison to the two Greek metropolitan centres (Athens and Thessalonica) has shown an hysteresis to all selection criteria. This outcome is explained by the orientation of the medium – sized cities to certain branches of production leading to their specialization and to the attraction of certain kinds of enterprises' business activities.

Finally, the article supports that the existence of Larissa-Volos dipole as a common development operation constitutes an efficient element for the development and the competitiveness of Thessaly region as a whole. Of course in any case this 'common' development is characterised by difficulties, opportunities and threats that the two cities have to define, exploit and overcome in order for the whole effort to become successful. Crucial parameter is the role of local authorities and decision makers that have to co-operate and represent common interests as a main priority.

## NOTES

<sup>1</sup> The Patras – Athens – Thessalonica – Evzonoi (PATHE) national highway.

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