DETERMINANTS OF ECONOMIC PERFORMANCE AND NETWORKING PATTERNS OF SETTLEMENTS IN ANTALYA REGION

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ABSTRACT

DETERMINANTS OF ECONOMIC PERFORMANCE AND NETWORKING PATTERNS OF SETTLEMENTS IN ANTALYA REGION

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Effects of globalization transform the forms of relations between settlements and it also changed the relations between capital and labor. In this global era performances of individual settlements became crucial in the absence of old hierarchic boundaries. But individual performances of settlements are not enough to integrate the global system. A New type of spatial organization appeared which is called networking to enhance complementary and cooperative relations crucial for synergy. The spatial reflexions of this transformation process are city regions.

This study aims to determine the factors affecting economic performance and networking patterns of settlements in Antalya Region with the use of quantitative research methods.

Key Words: Economic performance, networking, city regions

ÖZ

ANTALYA BÖLGESİNDEKİ YERLEŞMELERİN EKONOMİK PERFORMANSLARINI VE ARALARINDAKİ AĞ İLİŞKİLERİNİ BELİRLEYEN FAKTÖRLER

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Yüksek Lisans, Şehir ve Bölge Planlama Bölümü, Bölge Planlama

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Küreselleşmenin etkileri yerleşmeler arası ilişki biçimlerini, aynı zamanda da sermaye ve işgücü arasındaki ilişkileri dönüştürmektedir. Hiyerarşik sınırların kaybolduğu bu küresel çağda yerleşmelerin ekonomik performansları önem kazanmıştır. Fakat bireysel performanslar küresel sistemle bütünleşmek için yeterli değildir. Yerleşmeler arası tamamlayıcı ve işbirlikçi ilişkileri sağlayarak sinerji yaratan ve ağlar olarak tanımlanan yeni bir ilişki biçimi ortaya çıkmıştır. Bu küresel dönüşüm sürecinin mekandaki yansımaları ise kent bölgelerdir.

Bu çalışma kent bölge bağlamında, yerleşmelerin ekonomik performanslarını ve birbirleri ile kurdukları ağ ilişkilerini niceliksel araştırma yöntemleri kullanarak ortaya çıkarmayı amaçlamaktadır.

Anahtar Kelimeler: Ekonomik performans, ağ ilişkileri, kent bölge

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CHAPTER 1

INTRODUCTION

Effects of globalization changed traditional relations between settlements and urban networking became one of the key notions gaining importance. According to Giddens (2001) globalization represents a transformation of space and time through the emergence of modern information and communication technologies. Old traditional relations between capital and labor or management relations within a specific national or regional boundary are being loosened. Related to this change nation states have faced with a certain loss of significance and new heterarchic structure of global urban system occurred. Hierarchical relations represented by traditional "administrative town walls" do not just limit the economic potential of the city but are also responsible for inadequate allocation and distribution of resources in the region as a whole. The traditional hierarchical relations between cities are no longer appropriate and the newly emerging spatial relational metaphor is urban networks. (Knox, 1995, p.6)

There is need for a new urban equilibrium that can be called "concerted" region which aims to reach beyond local boundaries. Today's decision making actors and institutions are not homogeneous but they have a vertically and horizontally complex, multilevel structure and act according to their interests and motives. Implementation of urban and regional policies needs vertical and horizontal political interaction. New models of active cooperation between administrations emerge because of this need. Networks are one of these models as well as new forms of

cooperation between local authorities. (Arndt, Gawron, Jahnke, 2000)

Network type of relations is needed to go beyond one sided dualisms like state-market or public-private. Hierarchies and pure market relations are replaced with networking type of relations. Belonging to a network is a source of power in this era and there is a blurring border between competitiveness and cooperation, cities should compete, co-operate and create functional networks at the same time. (Sotarauta, Linnamaa 1998)

Again with globalization, patterns of production and trade in manufactured goods have shifted towards the new international division of labor in which the multinational enterprises are taking place in the locations where labor cost is low such as newly industrialized countries and in less developed countries. Meanwhile developed nations consider the sectors which they will have competitive advantage and to sustain this competitive advantage. (Lever, 1999)

Cities are confronting fiercer competition than before. (Sotarauta, Linnamaa 1998) Cities, regions and nations have no option than being competitive in order to survive in the new global marketplace which is forged by the new information and knowledge driven economy. (Gardiner et al) In addition to this, it is evident that some regions grow faster and show a better ability to develop new economic activities than other regions. Income and employment generated within boundaries of those regions exceed others, in other words, they perform better. (Begg 1999, Boschma, 2004) The reason why they are more successful is explained by their economic performance.

Increasing international mobility of capital and more open national markets, which are results of globalization, made notion of economic performance of cities core increasing foreign direct investment. Emergence of new markets increased the pressures on costs, economic insecurity and risk of instability. In such an topics of

regional development. Declining trade barriers, falling transport costs and the growth of transnational corporations resulted in rising exports, imports and environment improving the efficiency of firms' internal processes and to enhance the quality and value of their products, which is productivity, is closely related with economic performance.

Improving economic performance has become a key issue for regional and economic policies trying to meet the challenges of global competition and mainstream regional development policy is focused on increasing performance of cities and regions instead of convergence between regions. Standard of living and prosperity of a region can be defined as a target of these policy making efforts. Begg, (1999) considers the importance of improved economic performance as the path to economic nirvana.

In such an era that economic performance and networking are two popular notions of regional development, defining the determinants of economic performance and networking patterns of settlements in an urban network gains importance. The aim of this thesis is to explore the factors affecting the economic performance and networking patterns of settlements (in terms of attractivity and centrality in policy networks) in an urban network in city region context. To achieve this aim, after analyzing city region literature, determinants of economic performance and centrality in a network are reviewed from the related literature. Then, for Antalya Region, spatial sectoral differentiations, factors affecting the economic performance and positions of settlements in the entire network are examined.

CHAPTER 2

ECONOMIC PERFORMANCE AND NETWORKING IN CITY REGION CONTEXT

The aim of this chapter is to discuss firstly city region approach which is defined by networks. Secondly, it focuses on the factors affecting the economic performance of individual settlements in a city region. As a result of global transformation process individual performances of settlements are not enough to enhance the unity and settlements cannot enjoy the benefits of city regions unless they are not a member of the network. So the theoretical chapter continues with the network metaphor and the determinants of networking patterns.

2.1 City Region Theory

City regions can be seen as a spatial reflexion of the trends stated in the introduction chapter, so the literature related to this study starts with city region approach.

2.1.1 Emergence and Popularity of City Regions

One of the factors that positively affect the popularity of city region is the devolution processes. In 1960s-70s the world was dominated by strongly centralized governments and the type of policy making was top-down oriented. Over the past three decades this structure transformed and regionalist tendencies emerged. So the transfer of power, authority and resources increased the importance of city regions. (Pose, 2008)

The concept of city region became popular recently in academic and policy environments. The point of departure can be defined as increasing importance of dense nodes of human labor around which socio-economic activities are located. The concept is also related closely with "new regionalism" approach which defines city region as adequate special scale for sustaining economic governance. The human labor stated above is usually located in relatively large cities with systems of medium sized cities in close proximity and in relation with its semi-urban and rural hinterland.

The popularity of the concept can also be seen as a reaction to the views of globalization that emphasizes the "location no longer matters" idea. Increasing mobility of factors of production did not undermine the need for urban concentrations instead it provoked city region and according to Scott (et. al 2001) they became the "regional motors of global economy" and dynamism and proximity of city regions positively affect the wealth of semi urban and rural population.

Again with globalization, central governments' ability to deal with varied demands of all localities is decreasing. This transformation of central governments and as a result increasing importance of sub-national actors and units created a multiscalar structure and city regions have a crucial role in this game. With this transformation of sectoral to territorial approach, need for policy diversity and innovation for localities, need for bottom-up and horizontal coordination gained importance. (Pose, 2008)

Liberalization of the investment flows is another reason of the rise of city regions. Displacement of hierarchic international relations with heterarchic ones made international competition possible which is one of the basic features of the new regionalism.

Unlike many recent predictions, geography does not disappear; on the contrary globalization makes geographical differences and specialization more apparent. It seems as a paradox that improvements in transportation and communication technologies reduces the boundaries of space on one hand but on the other hand dense urban agglomerations tend to continue to increase in size and importance. The reason of this is that the networking structures that are crucial in this new global geography are still associated with locationally dependent costs and results of this networking are often synergistic outcomes such as clusters. (Scott, 2001)

According to Scott, city region are presented as selective "windows of locational opportunity" for developing a specialized reordering of economic activity. Scott 2001 explains the reasons of the massive recent expansion of the city regions as:

> Circumstance that many of the leading sectors of capitalism today are organized as dense and intensively localized networks of producers with powerful endogenous growth mechanisms and with an increasing global market reach.

Finally, regional level has indirectly been promoted by:

- Policies to create a "Europe of Regions"
- Proposals on spatial planning and EU Structural Funds
- Interterritorial cooperation at the regional level through the INTERREG IIC initiative
- European Spatial Development Perspective

2.1.2 Definitions of City Regions

All definitions of city region include a core city in relation with its hinterland by

functional ties. These ties include a combination of economic housing markets, travel to work, marketing or retail catchment factors. But the essence of the dominant core, semi urban and rural hinterland has been modified to a multicore structure making the city region a polycentric geographical unit. Different definitions related to city region concept are given below.

Tewdwr-Jones & McNeill, 2000

> We have defined 'city–region' to refer to: a strategic and political level of administration and policy making, extending beyond the administrative boundaries of single urban local government authorities to include urban and/or semi-urban hinterlands. This definition includes a range of institutions and agencies representing local and regional governance that possess an interest in urban and/or economic development matters that, together, form a strategic level of policy making intended to formulate or implement policies on a broader metropolitan scale.

Ache, 2000

> The city region transcends the local level (as the basic administrative unit) and also goes beyond the city level. In a spatial sense, the city region is very much like a conurbation or metropolitan area. Most importantly, the city region is far more of a complex system than a monolithic entity. The evolving city region constitutes a political and economic power field comprised of a variety of cultures and societies.

Scott, 2001

> From a geographic point of view, global city-regions constitute dense polarized masses of capital, labor, and social life that are bound up in intricate ways in intensifying and far-flung extranational relationships. As such, they

represent an outgrowth of large metropolitan areas—or contiguous sets of metropolitan areas—together with surrounding hinterlands of variable extent which may themselves be sites of scattered urban settlements. In parallel with these developments, embryonic consolidation of global city-regions into definite political entities is also occurring in many cases, as contiguous local government areas (counties, metropolitan areas, municipalities, etc.) club together to form spatial coalitions in search of effective bases from which to deal with both the threats and the opportunities of globalization.

Vermeijden, 2001

The 'city region' [denotes] a spatial hierarchy of satellite towns surrounding a central core city, on which the satellite settlements would depend for both employment and services.

Davoudi, 2003, p. 986

The concept of city region (which is consistent with Geddes' original definition of conurbation and Gras' concept of 'metropolitan economy') moves beyond such distinction and covers not only the commuting hinterland of the city but also the whole area which is economically, socially, and culturally dominated by the city.

Scott & Storper, 2003

The city-regions are locomotives of the national economies within which they are situated, in that they are the sites of dense masses of interrelated economic activities that also typically have high levels of productivity by reason of their jointly-generated agglomeration economies and their innovative potentials.

ODPM, 2005

> The concept of the city-region can be understood as a functionally inter-related geographical area comprising a central, or Core City, as part of a network of urban centers and rural hinterlands. A little bit like the hub (city) and the spokes (surrounding urban/rural areas) on a bicycle wheel.

Hildreth & Clark, 2005

> A city-region is essentially about the economic, social and environmental reach of the city into its hinterland. It is not a homogenous concept with clear boundaries. But it recognizes that decisions taken by people – where to live, work, travel to work, shop, visit for entertainment and leisure – and the economic activity by firms and investors – with customers and suppliers – means that there are important economic, environmental and social interdependencies between the city and it's neighboring towns and commuter hinterland. These relationships are not usually accounted for local authority administrative boundaries.

In scope of this thesis, the crucial aspects of city regions include:

- a spatial reflection of global transformation trends
- dense and localized networks within global market reach (networks that are basics of city region formation, includes high level of contact, cooperation and information exchange and so they produce the institutional capacity of the region)
- local decision making authorities
- dynamism and prosperity of the core positively affects semi urban and rural population
- relations beyond administrative borders

- coordination and cooperation for competitive power

2.1.3 Advantages of city region

Nowadays city regions are emphasized in terms of their functionality for creativity, innovation, development and competition in the global world. (Jones and Ward, 2007) Urban agglomeration creates the ability of cities to function as centers of learning, innovation and creativity. Because cities are locations for dense transactions of many interdependent activities, including new transactional experiences, information creation and circulation. (Scott, 2001) Agglomeration creates positive externalities like development of cooperation networks and labor markets, sharing of strategic assets, infrastructures and resources. (Jones and Ward, 2007) Scott and Storper (2003) emphasizes importance of city regions as:

> The most striking forms of agglomeration in evidence today are the super-agglomerations or city regions that have came into being all over the world in the last few decades …These city regions are locomotives of the national economies within which they are situated

Usually boundaries of a city region do not match existing administrative borders and in the most cases it is larger than the administrative divisions and it is not fixed in time-it changes. With the rise of city regions, greater coordination and improved governance is needed. Smaller territories make horizontal coordination a crucial aspect within the actors of the unit and so vertical coordination with national level. (Pose, 2008)

Proponents of city regions support the idea that territories of a city region are not only its physical location but also include entities which are results of common interests. Another idea supported by proponents of city region is that it is the

economic locomotive of the globalized world and the welfare of their territories depends on their success. Finally, they think that city region is the ideal scale of policy making and intervention.

According to Jacobs (1854) rather than the nations, cities are the agents of wealth creation with their strong trade relations which are specialized in different sectors. As a result of this specialization, competition occurs and she states that because of these reasons, city regions are more functional economic entities than nation states. City regions are also political entities because they can include autonomously developed regulatory and decision making capacities.

In large and heterogeneous nation states, it is hard for the central government to respond to the local needs and priorities. City regions respond to local needs and priorities better than the national level governments. The entire city region is seen as a functional economic entity and there is a complementarity between the interests of its core and periphery makes any intervention at city region level beneficiary for the whole region.

Another advantage of city region is that it is a good scale for policy innovation because of its internal diversity, initiatives to innovate at regional level increases when its welfare depends on its own dynamism and the risky structure of innovation makes it easy to operate at regional level to diminish the level of uncertainty and potential costs of failure. (Pose, 2008)

Another positive factor for policy implementation at city regions a perfect match between boundaries of city region and administrative unit which reduces the institutional costs and risks of governance.

Last advantage of city region approach is the proximity between decision makers, citizens and stakeholders. As a result of this proximity regular interaction, transparency and accountability, level of social capital, local capital and trust increases. (Pose, 2008)

Social and institutional factors in regional development and growth have gained importance recently so institutions and networks are placed at the core of policy attempts. Larger, wealthier and more accessible city regions have higher potential to fulfill the advantages of city region approach. They include more efficient institutions and active civil societies. (Pose, 2008)

Allmendinger and Jones (2000) describe the success of a region as follows:

> The success of a particular region, therefore, is not only dependent on the existence of advantageous physical assets or resources, but also arises through the emergence of socially and institutionally mediated forms of selective co-operation between actors

2.1.4 Critiques to city regions

Although being a functional economic entity, the role of politics and diverse forms of governance and political participation that are crucial factors for success stories in city regions are not clearly defined and they "might" emerge in city regions. But the proponents of city region approach see it as an autonomous political and economic space. (Jones and Ward, 2007)

Oppositions to city region approach include continued significance of national state power for regional competitiveness strategies. This view suggests that regions have limited capacities to act politics of territory and crisis management and the linkage

between state and political economy of scale is very crucial. (Etherington and Jones, 2009) Emphasis is on the core of the city region at the expense of secondary cities,

smaller towns and rural areas. It downplays the importance of national governments' role in reducing regional disparities. (Etherington and Jones, 2009)

Policy making at city region level may be difficult because of the financial constraints. In most cases city region do not have significant tax rising powers and rely on transfers from the central government so their financial capacity is limited. Another disadvantage is that the policy making in some areas may be inefficient in regional scale because of inadequate demographic and economic base of the city region. Costs increase when providing some services at regional level and benefits decrease with respond to national scale. (Pose, 2008)

Capacity constraints of smaller, poorer and less influential city regions are another disadvantage of city region approach. They rely on weaker tax bases, have less access to financial markets, and command less influence over central governments. so they have less competitive power with the reduction of the role of central states.

City region approach also generates a number of practical problems related to the policy implementation. Clearly identifying which actors should be involved in the participatory process, issues of leadership and responsibility, problems of defection and enforcement and the scale of functional areas that city region policies should deal with are some of these problems. Another problem may arise with high level involvement of non-local players such as central government and international institutions which diminishes the governance, sustainability and empowering nature of city region approach. Policy making in city region level have certain risks and benefits. The success of the process depends on the starting conditions of the territories and the governance structure of the territory. (Pose, 2008)

In general city region strategies tend to pay insufficient attention to redistributional consequences of competitive policies. (Etherington and Jones, 2009) According to Andrew E. G instead of this approach that directly defines city region as an autonomous political and economic space, city region should be seen as an integral component of state. “not an input, not an output, but part of the process and politics of state re-territorialization.

2.2 Economic Performance of Settlements

To define the economic performance of cities, it is necessary to employ various related concepts. Begg (1999), states that economic performance, competitiveness, full employment of resources and productivity in a city have the same meaning.

All of the factors that affect the economic performance of regions are not under the direct control of urban regions. National taxation policies, tariffs, macro economic conditions, incentive policies etc. are some of these external factors. However, global forces are changing this situation and these external factors are becoming less important. For example, tariff policies are losing importance because of trade liberalization or decentralization processes are resulting in devolution of responsibility of critical competitiveness factors to local level. (Webster and Muller, 2000)

In the globalized world, international competition cannot be explained through a one sided approach. Indicators like economic output, the rate of economic growth, export market shares and the balance of trade are not enough to define the competitiveness of localities. Economic output is no longer depends on the countries and regions themselves due to transfer of capital, goods and profits between multinational companies. (Lengley, 2003)

The factors of economic performance are defined from various authors and in various contexts. To define the factors affecting the economic performance of a location, input variables are defined; and to measure economic performance of a

location output (target) variables are defined.

2.2.1 Input variables affecting economic performance

Economic performance of settlements in an urban network can be seen as the cumulative outcome of a number of input factors like which can be grouped under four headings which are i) Innovativeness, learning and human resources, ii) infrastructure and local business environment, iii) sectoral trends and specialization and firms and iv) institutional milieu and networking. (Lengley, 2003; Kresl and Singh, 1998; Budd,and Hirmis 2004, Sotarauta, Linnamaa 1998, Turok, 2004, Lever, 1999, Cheshire, 1996)

2.2.1.1 Innovativeness, learning and human resources

In the long term, regions ability to respond to any kind of technological, business, environmental or other challenges depends on the innovational environment it has and innovation and learning factor is related with the capacity of firms to develop new processes and products. Fast introduction of innovations and new technologies, successful R&D activities and their fast and wide-ranging distribution are one of the most effective factors to increase competitiveness. Due to development of research, innovation, education and training, spillover of scientific and technological advantages can be produced. Also access to different networks makes it easy to learn, to benefit from experience of others.

Human resources include skill levels, availability and cost of labor. In successful regions, skills of the workforce and the share of educated and skilled labor in total population are high. According to Webster and Muller, 2000, the ability of an urban region to move up value chains is directly related with its human resources. Effective

education system that can flexibly adjust to changing demands of labor markets are essential for development of human capital and have also positive effects on competitiveness. Human resource of a region is not only measured by education level, training facilities, and skills but also other attributes like entrepreneurship, creativity and risk tolerance are important. As a result level of human capital and investments in human capital are crucial factors for regional high economic performance.

2.2.1.2 Infrastructure and local business environment

Infrastructure is important to meet the needs of local sectors and clusters. Infrastructure and local environment includes supply, quality and the cost of factors of production like human capital, availability of property and complementary services, availability and diversity of subcontractors, quality and cost of transport, communication, information and other infrastructure networks. Diamond and Spence's (1989) survey of 190 business establishments shows that an efficient and up-to-date transaction-facilitating infrastructure is vital to a growth-oriented economy. In recent years, telecommunication facilities are increasingly seen as a vital tool for business administration as they can handle massive flows of information and transactions concurrently to provide spatial integration of different sectors of economic activity (Wong, 1998). Geographical location and accessibility of regions are important to overcome the problems like limited range of opportunities and high travel costs. Transport and communications infrastructure helps to reduce

the effects of geographical limitations providing access to potential markets and suppliers. Also availability of education and training services is a part of this factor because it shapes the labor supply which is a crucial factor of production. Deficiencies in this basic infrastructure make a region less competitive.

Importance of the local environment which influences the willingness of mobile workers to locate in the city has also influence on the productivity, innovativeness and dynamism of local business and so the economic performance of the region. Besides attracting firms, attracting the human capital by influencing the willingness of mobile workers to locate in the city, a city needs attraction of the locality (amenity) is a crucial factor. The business environment of a region includes factors that are outside the direct control of the firm, but it has a significant influence on the economic performance of the region. It includes social and environmental factors like the quality of the residential accommodation, urban environment and quality of life, climate conditions, pollution levels, public safety, health and education facilities, recreational and cultural facilities etc. These factors necessitate a high public sector capacity which can be defined as:

> The ability of the permanent administrative machinery of the government to implement policies, deliver services and provide policy advise to decision makers (Polidano 2000, 805)

Taxes and charges determined by the authorities affect costs of production and so the attractiveness of the localities. Lastly, social cohesion can be regarded as a positive factor of competitiveness under this title.

The reason why local business environment including infrastructure and local environment is an important factor of competitiveness is that it directly affects the input costs of the employers in the area and once achieved it becomes a

distinguishing attribute that make an urban region desirable to investors when other factors are perceived to be equal. (Webster and Muller, 2000)

2.2.1.3 Sectoral trends, specialization and firms

The competition between countries is for world market shares and from this viewpoint for most cities probability of success lies in specialization. The workforce of successful regions typically concentrates in sectors with high value added like information technology, financial services, and telecommunications and high tech industries. In these sectors productivity and employment usually increases and so the economic performance of the region. In the short term, economic performance depends on the economies structure and on its sectoral specialization.

Inherited mix of industries which is the outcome of this historical development of the city has positive effects on city's capacity to attract new activities. Doeringer *et al.* (1987) find that industrial mix interacting with national trends is the most significant influence on a state's short- and long-term economic performance in the US. This inheritance of the city shapes sectoral trends. Aggregate performance of the national economy, long term structural changes and national policy changes can affect sectoral trends and so performance of cities.

Company characteristics are also another determinant of economic performance. Ownership and decision-making power of companies positively affect the performance if they are indigenously owned with respect to those of under external control. The size of companies in combination with the sectoral mix has an influence on economic performance. SME's constitute an important source for it. Flexible and adoptable characteristics of SME's make them responsible for generating employment in the region. In the globalized world, using information technology and networks, SME's are acting as independent global players. Rapid start-up rates and

high survival rates are also desirable characteristics for urban economic performance.

2.2.1.4 Institutional milieu and networking

Institutional milieu is one of the key factors explaining the economic performance of successful regions (Porter, 1990). Efficient cooperation among existing institutions and efficiency of administrative services has a direct affect on regional performance. 'Partnership' and 'synergy-building' have been repeatedly emphasized by regional policy documents such as the *competitiveness White Paper* (HM Government, 1993). Institutional milieu includes business culture, governance and policy frameworks and network behavior. According to Webster and Muller, (2000):

> Development of competitiveness is largely a product of networking, which is based on, and creates social capital.

Social capital is defined as the features of social organizations like trust, norms, and networks that can improve the efficiency of society by facilitating coordinated actions. The contributions of networking to economic performance are the topic of the next chapter.

2.2.2 Output Indicators of Economic Performance

When different competitiveness factors are brought together, they determine "urban economic performance". Connected with employment rate and productivity, urban performance leads to increase in standard of living and so the quality of life. These variables of employment rate, productivity and standard of living may be considered as outputs of a good urban performance.

To measure the economic performance of a region literature also defines output variables say depend on the input variables explained above. Most commonly used output variables for measuring competitiveness are per capita GDP, labor productivity, employment rate and economic openness (exports and imports) (Lengley 2003).

Beside this, in a study Kresl and Singh (1998) used variables like growth of urban economies population, growth of business services receipts. Huggins used earnings (full-time wages) and unemployment figures to define competitiveness. Cheshire 1996 used variables of migration in addition to these variables to define competitiveness of cities.

Output variables help us to know about economic performance of a region but it is not enough to suggest policies to improve performance of that region. The basic motivations behind efforts to improve performance are creation of employment opportunities and increasing efficiency (productivity). So policy makers need to know about the factor variables affecting economic performance of a region.

In addition to these output variables, Kresl (1995) determines six attributes which signal a competitive city: i) The jobs created should be high-skill, high-income jobs, ii) production should evolve towards environmentally benign goods and services, iii) production should be concentrated in goods and services with desirable characteristics, like high income elasticity of demand, iv) the rate of economic growth should be appropriate to achieve full employment without generating the negative aspects of overstressed markets, v) the city should specialize in activities that will enable it to gain control over its future- that is, to choose among alternative futures rather than passively accepting its lot, vi) the city should be able to enhance its position in the urban hierarchy.

2.2.3 Review of Studies on Economic Performance of Cities

Empirical studies use a variety of variables to define input and output indicators for economic performance of settlements. Most of them used multivariate regression analysis and four this study its important to list the factors used in those quantitative analysis. Following table introduces a list of these variables:

Table 1 Sources of economic performance

Source	Variables
Begg, 1999	Sectoral trends, company characteristics, business environment, innovativeness and learning.
Lengyel, 2003	**Development factors**: Research and technological development, small and medium sized enterprises, foreign direct investment, infrastructure and human capital, institutions and social capital **Success determinants**: Economic structure, innovative activity, regional accessibility, skills of workforce, decision centers, environment
Kresl and Singh, 1998	Attractivity of the location for its non-inhabitants, growth of manufacturing value added, investments in plant and equipment, in human capital and in infrastructure
Budd and Hirmis, 2004	Labor market conditions and transport costs, company size, research and intensity, innovative capacity and export orientation, the degree of institutional embeddedness, government structures and demonstration effects
Huggins, 2000	Business density (firms per capita), knowledge based business (as a percentage of all business) and economic participation (activity rates)
Lever, 1999	Specialization, sustainability and quality of life, civic leadership, flexibility in labor force, a responsive public sector, effective public private partnerships and entrepreneurial milieu
Cheshire et al., 1996	Economic growth, unemployment rates and migration

Source: Author's own elaboration

2.3 Network Metaphor

The relationships among settlements no longer occur only on the basis of territorial hierarchy-type relationships, driven by non-overlapping market logics, as Christaller's central place theory. Other new types of non-territorial and long-distance relationship emerge, among cities of the same size, and of different or similar specialization patterns which are called network element of a polycentric region. (Capello, 2000)

Usually planning policy concepts referring to polycentric urban regions use network metaphor. This metaphor of network emphasizes the complex and strong relationships between cities and thus the coherence and unity of the region. In addition networks are closely related with terms such as economies of scale, critical mass and synergy. Networks are made up of nodes (cities, households, firms, organizations and individuals), linkages between the nodes (infrastructure, relationships, ties), flows (people, goods, information, capital) and meshes. (Meijers, 2005)

In polycentric urban regions, cities seem to have coalesced in functional and morphological terms into larger and more dispersed regional urban systems. Polycentric urban regions are often defined as collections of historically distinct and both administratively and politically independent cities located in close proximity and well connected through infrastructure. There are a lot of synonyms of polycentric urban regions. Multicore city regions, network cities, city networks and polynucleated metropolitan regions are some of these synonyms. Also, there exist earlier concepts about polycentrism which are dispersed city, megalopolis or the regional city. (Meijers, 2005)

Networks can be grouped under two headings: club type networks and web type

networks. In club networks actors share a common objective, activity or service, while also having parallel interests and transaction chains. On the other hand web type of networks is characterized by different activities of the actors. These are complementary instead of similar and they are linked in a serial way. Club type networks are also called synergy networks and web type of networks are called complementarity networks. In club networks, horizontal synergy can be achieved and in web network, vertical synergy is achieved. In the case of horizontal synergy, the synergy derives from the co-operation leading to economies of scale and so called positive network externalities. (Meijers, 2005)

Urban regions may be characterized as club networks when cities having similar characteristics join forces to achieve some kind of a common objective or common interests. This co-operation generates economies of scale. Port cities or tourist cities are examples of this kind. Polycentric urban regions resemble web networks when the individual cities perform different economic roles and host complementary urban facilities, activities, residential and working environments. Web type of networks has more relevance for polycentric urban regions.

Many spatially restricted numbers of towns form a systematic unit through functional relations like complementary urban functions or economic exchange or through interactions of people, money, goods or information. In addition to this, urban networks are defined through political cooperation between the municipalities. Instead of independence of municipal actors, the concept of urban networks necessitates less hierarchy between actors, so complementarity is needed and it concentrates on multiple interactions. The prime hypothesis for the current relevance of urban networks in European spatial and regional policy is that networking structures seem particularly suited to reflecting multiple interaction and dependence and respond flexibly to the demands of globalization and regionalization, structural economic change. Compared to a development strategy based on certain functional

entities or notion of central places theory, networks do not depend on a territorial logic, instead depend on a logic based on long distance competition and cooperation regardless of distance barrier. Instead of transport costs and economies of scale, in the network logic economies of vertical and horizontal integration and network externalities are the main forces shaping the spatial organization of functions and urban areas. Networks have a priority which is not to equip a single hub but to initiate joint projects based on cooperation and communication. (Arndt, Gawron, Jahnke, 2000)

2.3.1 The differences between hierarchic, heterarchic and networking relations

The structure and the mode of coordination between or within organizations are related to the distinction between hierarchy and networking. According to Ansell (2000):

> A hierarchy is a pyramid of officers in which coordination is achieved through vertical chains-of-command with higher level officers directing the behavior of the officers below them. In contrast, network forms of organizations operate horizontally as well as vertically and achieve coordination through mutual adjustments rather than through command.

It is important also to define the difference between heterarchic and hierarchic relations. The capacity of lower level units to have relationships with multiple higher level centers as well as lateral links with units at the same organizational level distinguishes heterarchy from a hierarchy. Kontopoulos (1993) states that while a hierarchy is a “many-to-one” type of structural aggregation; heterarchy is a “many-to-many” type of a relationship between different nodes in a social structure and many-to-many type of relations offers dense networks and so high degrees of connectivity.

Network has a multilateral character rather than bilateral where more frequently and more systematically the many-to-one mapping is violated, the more the term network becomes a distinctive concept.

An actor with high centrality in a network acts as a "facilitator", "broker" or "strategy maker" to bring other dispersed actors together to engage in mutually beneficial cooperation. (Provan and Milward, 1995). In a hierarchical form of activity central actor acts as a "gatekeeper" between noncommunicating parties. But in a many-to-many type of relation, the central actor probably may act as a "gateway" than a "gatekeeper", creating and facilitating direct relationships between communicating parties.

2.3.2 Urban policy networks

Origins of policy networks go back to 1950s. Lowi's iron triangle comprised of a government agency, a congress committee and an interest group (in north American political system) can be thought as an early form of urban policy networks. Peters (1996), describes iron triangles as exchange relationships between actors who are aware of their mutual functional dependency for achieving success. Jordan states that the idea of policy networks emerged in 1950s and 60s regular contacts between individual interest groups, bureaucratic agencies and government. Private interest involved in the sub-governments could become dominant. They could control their members and could capture the government agency which is supposed to regulate their activities which is called the agency capture. Theodore Lowi (1969) states that there is a triangular nature between central government, congressional committee and the interest group which is symbiotic. According to Peters (1986) the actors in the iron triangle need each other. Pressure group needs government to have better service for its members and to protect its connection with government. Government agency need pressure group for political support. But iron triangles have also seen as a limit

to full expression of a democratic political system and in 1970's pluralist model has gained importance again. Heclo 1978 stressed the importance of issue networks which is a form of more loosely tightened policy networks, a communication network of interested parties. According to him instead of iron triangles which are the closed to circles of control there exists fairly open issue networks. (Marsh, 1998)

Before networking approach, central place theory which was used to provide infrastructure and services optionally based on specific points in all sub regions based on hierarchical system of cities and communities. But urban networks go beyond this simple model. Policy networks emerged in 1980's as an attempt to build a coherent theory and analytical toolbox through which consistent theories could be carried out. Recently the concept became a normative model for policy making.

There are significant differences in the way the concept used in U.S, British or German literature. But, all authors see policy networks as a key feature of modern polities. (Marsh, 1998)

In today's increasingly complex environment where the hierarchical coordination is very difficult and potential of deregulation is limited due to market failures, governance became more and more only feasible within policy networks in which public and private actors are linked in a non-hierarchical way to exchange resources and to coordinate their interest and actions.

Policy networks symbolize being against hierarchical and market forms of governance. Hierarchies are described as a system which has strong central coordination by government with tight public private relations which is too rigid to respond to increasing requirements of policy effectiveness, efficiency and equity. On the other hand market form of relations mean a system with no coupling and all actors interact among interest maximizing rationales. The regulation associated with

market forms of governance do not protect society from market failures, therefore policy networks are identified as the optimal solution for policy making and delivery. Kickert (1997) states that policy network model is a democratic one. The government is no longer seen as a superior, directive role but as one actor among a number with roughly equal power. Sorensen and Torfing, 2005, describe this situation as:

> In the wake of the many reports on government failure and the market failure, public authorities are now aim to govern society by involving different kinds of citizens, professionals, voluntary organizations, labor market organizations and private firms in self regulating networks.

Policy networks are between these two models (hierarchical and market forms of governance) and provide environment for loose structural coupling, interactions between autonomous actors to generate negotiated consensus, shared value and improve strategic coordination and problem solving capacity. Policy networks are seen as a response to the increasing interdependence between state and private sector. Interorganizational and intergovernmental partnerships gain importance in public policy making and public administration. (Pierre, 1997) Within this perspective:

> The policy network has therefore become an institutional innovation for governance in a time of complexity and fragmentation.

From a managerial point of view Hertting (2004) explains the necessity of policy networks he emphasizes the importance of lack of cooperation instead of lack of control.

A policy network can be defined as:

> A set of relatively stable relationships which are of non-hierarchical and independent nature linking a variety of actors who share common interests with regard to a policy and who exchange resources to pursue these shared interests acknowledging that cooperation is the best way to achieve common goals. (Besussi, 2006)

This definition is the only one which different actors agree on. But there is variety of perspectives on understanding of policy networks:

Firstly, some authors understand policy networks as a useful metaphor. (Dowding, 1995) to describe the fact that policy making involves many and different actors while others see policy networks as a theory and model capable of explaining policy dynamics and outcomes (Carlsson, 2000).

Secondly, there is a debate between qualitative and quantitative analytical approaches. (Marcussen and Olsen, 2005) Authors from both sides see policy networks as an analytical tool. While quantitative approach (Brinton and Provan, 1998, Knoke 1990-1996) uses network analysis to understand and describe the structural properties of networks measured in terms of centrality, structural equivalence or cohesion; qualitative approach (Bevir and Rhodes, 2003; Hay 2002) focuses on the processes and on the contents of the interaction, using discourse analysis and in depth interviews.

Last discussion on policy networks is between the authors from U.S. and Britain that describe policy networks as a typology of interest intermediation and intergovernmental organization and the authors from Europe that identify policy

networks as a specific and emerging form of governance. Rhodes (1981) states that structural relationships between political institutions are the crucial elements in a policy network rather than the interpersonal relations between individuals in those institutions. Policy networks are a model of interest group representation which is superior to pluralism and corporatism. In contrast Kickert and Klijn (1997) view policy networks as a real change in structure of polity and as a new form of governance because neither hierarchy nor markets are appropriate forms of governance in a world characterized by increasing independence between the state and the private sector. They suggest that the distinction between the state and the civil society has been dissolved and this change necessitates a new form of governance. Government organizations are no longer the central steering actor in policy activities.

The model developed by Marsh and Rhodes in 1992 argues that the network structures can define the agenda and outcomes of a policy network. Network's membership and distribution of resources among members lead to the definition of different types of policy networks which have their extreme cases in policy communities (tight policy networks) and issue networks (loose policy networks).

For many authors accountability and legitimacy deficit of policy networks are important problems.

2.3.3 Contributions of policy networks to effective governance

The promise of policy networks is to produce more effective and legitimate policies "without resting upon the authority and limitations of a single representative body". There are two contributions of policy networks to effective governance.

First contribution of policy networks to effective governance is that it enables the

proactive policy making via the participation of different actors and determining the existing problems early, in other words it provides a certain degree of flexibility and adjustment to the complexity of existing conditions. (Kooiman, 2000)

Second contribution is its ability to gather information about the policy and the actors. Last contribution is that policy networks enables consensus building so limits the implementation resistance. (Marin and Mayntz, 1991)

> Not only policy networks blur the boundaries between state and the society but they also expose policy making process to uncontrollable and particularistic power games.

It is also seen as a "contribution to the territorially organized institutions of representative democracy" (Sorensen and Torfing, 2005).

2.3.4 Networks for High Economic Performance

Administrative boundaries shape the policy formulation and implementation and public administration tends to be organized in a territorial hierarchy. However many spatial issues these days requires an approach that is formulated and applied at multiple scales and across several administrative tiers. This is called governance instead of government. Networking is one of the basic reflections of this new era.

Creating synergy is the basic contribution of networking to regional development. The idea of synergy means being more than the sum of the parts and it is a central objective in policies for polycentric urban regions. It is often popularly formulated as 1+1>2 which can be explained as the rise in the performance of a network through efficient and effective interaction. Synergy provides economies of scale without incurring the costs or agglomeration diseconomies that these large metropolises

entail. The economies of scale of a network apply only to the participants in the

network. Externalities exist when the cost of participating in the network is less than the benefits of the co-operation. Network externalities are the main economic advantages of network behavior. Network externality is a matter of exploiting scale economies in complementary relationships and synergic effects in cooperative activities achieved through participation in the network. From this point of view, network externalities are club goods, can be achieved only by those economic actors who are partners in the economic and spatial network. To generate synergy in a region there should be co-operation and complementarity networks. Externalities are present in both types of networks. Networks of cooperation result in regional organizing capacity and its functioning leads to horizontal synergy. Networks of cooperation are generally achieved in club type of networks. Meijers (2005) explains this situation as:

> So what is needed is regional organizing capacity which is the ability to coordinate developments regionally through a more or less institutionalized frame work of co-operation, debate, negotiation and decision making in pursuit of regional interest in which a multitude of public and private stakeholders participate. The externalities that may arise depend on the utilization and functioning of such frameworks. Synergy requires a high level of interaction which will generate the necessary network cohesion to make up for the increased interdependency.

When economic roles of cities differentiate, in urban facilities, in business and residential milieus coupled with a regional demand, it makes complementary networking possible and leads to vertical synergy which is the surplus value following from agglomeration or specialization effects. This type of a synergy results from a specialization process, redistributing resources and activities among the participating actors according to their competence. This means that the individual

performance of actors improves as they can focus their efforts on their core activities,

abandoning non-core activities unnecessarily absorbing energy. There are two preconditions for generating complementarity.

- There must be differentiation in the supply of activities and/or places
- The geographical markets of demand for the activities or places must at least partly overlap

It can also be emphasized that complementary networks are generally achieved in web type of networks. Arndt, Gawron, Jahnke, (2000) describe this situation as:

> The underlying assumption is that conurbations in particular do not today offer the best organizational form for systems of towns seeking to create an order founded on special directions and spatial distributions. Rather, location quality of the overall region is served by a network of reciprocal and complementary relationships which dispenses with a graded hierarchy.

Another contribution of urban networks to economic performance of cities is about developing competence. Urban networks allow member settlements to achieve locally unavailable know-how for efficient and advanced urban policies, managed in a co-operative way with other members. Technical innovation (for example, new techniques for a more efficient management of urban traffic) and new organizational solutions for urban policy management (participative processes for common projects among institutions, and with citizens, as well as intersectional approaches to the solution of urban issues) embodied in success stories previously experienced by partners, easily become a strategic starting-point for locally successful urban policies for other member settlements. These advantages reflect the rationale for network behavior: they are all achieved via a network behavior. The achievement of new

information in specific urban projects may easily represent a solution to a contingent urban problem (for example, management of new policies, like waste disposal); the achievement of a wider market through synergy networks is a more strategic medium term goal, strengthening the position of the city in international urban competition. In this perspective, the competence goal represents the most strategic aim for city participation in a network, achieved through a joint co-operative effort with similar cities with similar problems. (Capello, 2000)

2.4 Sources of Urban Attractivity in Actual Networks

Human flows are one of the main categories that can be defined as actual networks. In the context of this study it is crucial to determine the factors affecting human flows and making settlement more attractive for people.

Some cities have grown into mega cities and some into uncontrolled sprawl; others have seen their centers decline with populations moving to the suburbs. In such times, questions of the sources of urban attractivity draw greater attention.
(Chen and Coulson, 2002)

Differences related to growth and income of cities play an important role on their attractivity. Settlements with rapid growth rates attract more human flows than declining settlements (Gaag and Wissen, 2000). Gross city product (GDP at the city level) is an important indicator of this king of attraction. A positive influence on urban attractivity is expected because human flows are directed from lower to higher income areas. A high level of salary is also a similar source of attraction. Employment rate in cities is another source of attraction because a high unemployment rate set barriers against mobile people looking for a job.

Another source of urban attractivity is ratio of proprietors which can be defined as a ratio of private single-owner businesses in a city. A higher value indicates a more

conducive growth environment for private businesses as well as a greater potential for the attraction of people looking for a job. For example, in China, private businesses have become the major source of new jobs and the major employers of surplus labor from the state as well as the rural sectors. These private businesses have been less discriminatory against rural migrants than state enterprises. Moreover, a greater value of this indicator also indicates a better survival environment for human flows aiming to settle in the city. (Chen and Coulson, 2002)

Another indicator of high urban attractivity is the level of foreign direct investment. This variable is expected to exert a positive pull on human flows into the cities because of its effect on creating employment opportunities and boosting income. Moreover, this indicator also strongly related with a city's location, policy treatment and historical development.

The availability of public transport is a direct indicator of quality of life in cities. An efficient public transport makes the city more accessible people. So a positive relation between urban attractivity and public transport is expected.

Level of public expenditures per capita can also be added among sources of urban attractivity because it has positive effect on quality of urban life, assuming that higher expenditures correlate with better public amenities, health care system, schools (Chen and Coulson, 2002).

Findlay et al.'s study of livability in British cities aims to provide a map of where the best quality of life can be found and a set of comparable indicators to measure the performance of a city in attracting human flows (Findlay et al., 1998,). According to

this study, main characteristics of urban attractivity in terms of quality of life include low crime, pollution and cost of living rates, racial harmony, and good health and shopping facilities. In another study, sources of attractivity for young knowledge workers are determined as amenities, environmental quality and social tolerance. (Florida, 2002). Florida states the importance of these factors as:

> The new economy dramatically transforms the role of the environment and natural amenities from a source of raw material and a sink for waste disposal to a key component of the total package required to attract talent and in doing so generate economic growth (Florida, 2000, p. 5).

In another study cited by McCann in 2004, determinants of human flows between settlements are defined as low crime rate, clean water, plentiful doctors, clean air, many hospitals, good schools, housing appreciation, low property taxes, strong state government, low income taxes

Table 2 Sources of urban attractivity

Source	Variables
Chen and Coulson, 2002	Gross city product, level of salary, employment rate, ratio of proprietors, foreign direct investment, public transport, fiscal expenditures
Gaag and Wissen, 2000	Economic structure, labor market, quality of housing market, metropolitan character, location, regional amenities, migrant networks
Florida, 2002	Amenities, environmental quality and social tolerance
McCann, 2004	Quality of life, strong state government, low level of taxes,
Findlay et al., 1998	Quality of life including low crime, pollution and cost of living rates, racial harmony, and good health and shopping facilities

Source: Author's own elaboration

To conclude, literature defines basically quality of life as a basic factor of urban attractivity. Then availability of employment opportunity is another important determinant. The last main factor is the level of public expenditures as an indicator of responsiveness of public sector.

CHAPTER 3

METHODOLOGY

As expressed in the introduction section, the aim of this thesis is to explore the factors affecting the differences of performance and positions of settlements in an urban network. To achieve this aim, firstly determinants of having a higher central position and better economic performance in a network are reviewed from the related literature.

In this section, first, research methods that were used in the previous related studies are reviewed. Second, main hypothesis and sub hypothesis of this thesis is explained. Third, the research methodology that the study is based on is introduced. The model that is designed to test the first three hypotheses is explained before the section on the case study.

3.1 Methods used in the previous related studies

To define the structure of a network, the measures should rely on soft data such as key informant interviews, focus groups, surveys and polls. An example of this kind of empirical work is made by Ayda Eraydın (et al. 2007). In that study to define networking structure in İzmir City Region, a survey conducted to 39 municipalities and data is collected on joint activities between them. Then social network analysis is used to describe the relations.

In a study of Turin geographical school, France, researchers tried to reveal

empirically the network linkages among the centers in the Po Valley. The method used was measuring the shifts between the actual and theoretical sectoral mix in each centre. Existence of direct complementary relationships is mainly inferred in the case where couples of neighboring centers of similar size present relatively a very high and very low employment share in some sectors.

In another study made by Bocconi Economics University and Polytecnical University, Italy, a flow data (square matrix of telephone communication data among 157 regional districts in 1990) was used. A network relationship between two centers was hypothesized to exist when actual communication flows exceeded significantly the interaction that was expected on the basis of a doubly-constrained entropy model. **(**Camagni and Salone, 1993)

The study of Meijers, 2005, data source was National information system on employment and it contains 1996 and 2002 data on the number of jobs. As a research method, correspondence analysis used to analyze the differentiation in the economic roles of cities in a famous polycentric urban region: Randstad. As a result, the complementary and cooperative relations are defined in that urban network.

(Aimin) Chen and N. (Edward) Coulson, 2002, used multiple regression analysis to define factors affecting human flows. The variables that they used were listed under the title of "Sources of Urban Attractivity in terms of Human Flows".

Kresl and Singh (1998) used 1992 census data to rank major U.S. metropolitan areas and used variables: growth of retail sales, growth of manufacturing value added, growth of business services receipts in multiple regression analysis.

In another study, (Ben) Gardiner et al.2004 used output per employed worker as a measure of productivity for European Union Nuts 2 regions. He reached the data

from Eurostat Region database.

(Cecilia) Wong, 1998, carried out an empirical research to ascertain the perceptions of policymakers concerning the importance of different factors to the success of local economic development. Key public- and private-sector actors in local economic development organizations in the North West and the Eastern regions of UK were asked in a survey to rank the 11 factors according to their relative importance to local economic development. It was then followed up by 22 in-depth, semi-structured interviews with selective participants. The study was completed by summarizing the survey findings.

3.2 Hypotheses

To define the determinants of having a higher central position and better economic performance in an urban network, major and sub hypotheses are determined according to the related literature and these hypotheses are tested in the case study chapter.

Major hypothesis of this study is:

Hypothesis I: *"Economic performance of a settlement depends on its endogenous dynamics, resources and its networking patterns".*

Sub hypotheses are:

Hypothesis II: *"Attractivity of a settlement depends on its position in policy networks, its economic structure and its infrastructure."*

Hypothesis III: *"Position of a settlement in policy networks depends on its economic characteristics and its attractiveness"*.

Hypothesis IV: *"Although economic characteristics and attractivity determines the position of a settlement in policy networks, administrative borders limit the level of interaction between settlements."*

3.3 Methods used to test the hypotheses

Analysis in this study includes a descriptive part concentrated on the spatial-economic differences in Antalya City Region indicating specialization patterns which is crucial in city region literature. In this descriptive part location quotient analysis is used as a research method. This chapter also includes maps and tables on employment structure, population distribution. Finally an overview of public interventions to the region is given in the descriptive chapter.

After descriptive analysis on Antalya City Region, networking patterns are analyzed based on the survey results of 182[1] settlements of Antalya City Region conducted by staff of METU, City and Regional Planning Department in 2006. Social network analysis is employed based on this data with the help of UCINET 6 software. Description of the survey that network analysis is based is presented under the heading: *5.1 Data Analysis on Networking Structure of Antalya City Region*

The most widely used method to define factors affecting economic performance and networking pattern is an econometric analysis tool which is multivariate regression analysis. Three models are designed to test the first three hypotheses. Before testing

[1] Although the survey results include 182 settlements in the region, this study is designed as a district level study because of lack of data in sub district level and 39 districts included in the analyses.

the three models data analysis are performed on the relations between output indicators of attractivity, centrality in policy networks and economic performance and other input variables. The aim of this data analysis is to check whether there is an auto-correlation problem in the data that may violate the models or not. Model description, variables and data information is presented under the heading: *5.2 Econometric Model to Determine Factors Affecting Economic Performance and Positions of Settlements in Antalya City Region*

CHAPTER 4

DYNAMICS OF ANTALYA AS A NEWLY EMERGING CITY REGION[2]

The aim of this chapter is to make a description of Antalya Region focusing on the inter-regional differentiations on sectoral distribution and population distribution with the use of different analysis methods. It also includes important public interventions (investments, land allocations, sectoral development plans) which affects these structural and spatial differences. These differences play an important role in city region formation if the different specialized nodes in the city region complement each other and create the synergy.

4.1 Endogenous Dynamics in Global Transformation Process

4.1.1 Distribution of Economic Activities in the Region

Economic activities in the region range in different sectors which are agriculture, retail and wholesale trade, construction, transportation and insurance, manufacturing, mining, electricity and social services.

[2] The analysis on spatial distributions of sectors in the region and the population distribution are based on the studies done by METU- RP 501 Studio Group in 2006.

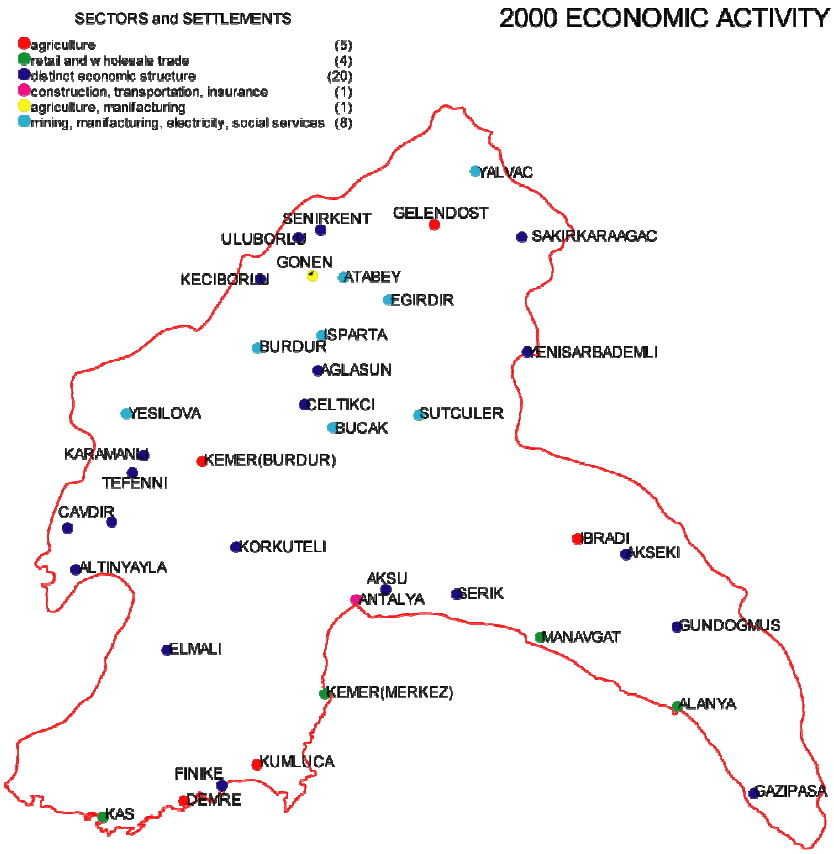


Figure 1 Spatial Distributions of Economic Sectors

Source: The analysis done by METU- RP 501 Studio Group in 2006.

The above map reveals the specialization of each settlement via correspondence analysis produced in regional planning studio of METU Regional Planning Masters Program in 2006. This map shows that in 2000, in the six of the settlements agriculture played an important role. However, while five of these settlements are specialized only in agriculture, in Gönen also the sector of manufacturing is better developed than in average. Four settlements are specialized in only wholesale and retail trade. Twenty settlements show a distinct economical structure which could not be identified using Correspondence Analysis. Antalya is the settlement that is specialized in construction, transportation, and insurance sectors, while eight

settlements are specialized in the sector of mining, manufacturing, electricity, and social services. The specialization patterns of 39 districts are summarized below.

Table 3 Distribution of Economic Sectors in Districts

Sectors	Number of Specialized Districts
Agriculture	5
Agriculture and Manufacturing	1
Wholesale and Retail Trade	4
Mining, manufacturing, electricity, and social services.	8
Construction, Transportation, Insurance	1
Distinct Economic Structure	20

Source: The analysis done by METU- RP 501 Studio Group in 2006.

4.1.2 Inter Regional Spatial Concentrations of Basic Sectors in Antalya City Region

To understand the inter-regional spatial differentiations in the region the location quotient analysis for 2000 gives important insights. First of all agriculture which is one of the basic sectors (although it loses its importance as seen in the next table) for the region does not have a certain spatial concentration.

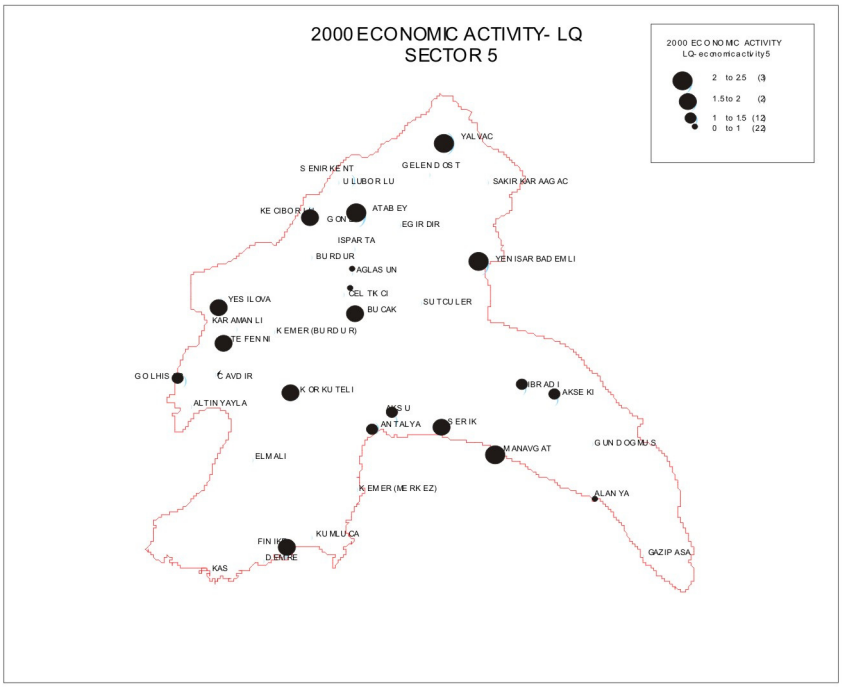


Figure 2 Spatial Distribution of Agriculture Sector

Source: The analysis done by METU- RP 501 Studio Group in 2006.

However, manufacturing, mining, and construction sectors concentrate in the east and north of the region and as stated under Employment Structure and Changing Patterns heading these sectors are the declining sectors (not as much as agriculture sector). The spatial concentrations of these settlements are presented in the below figures.

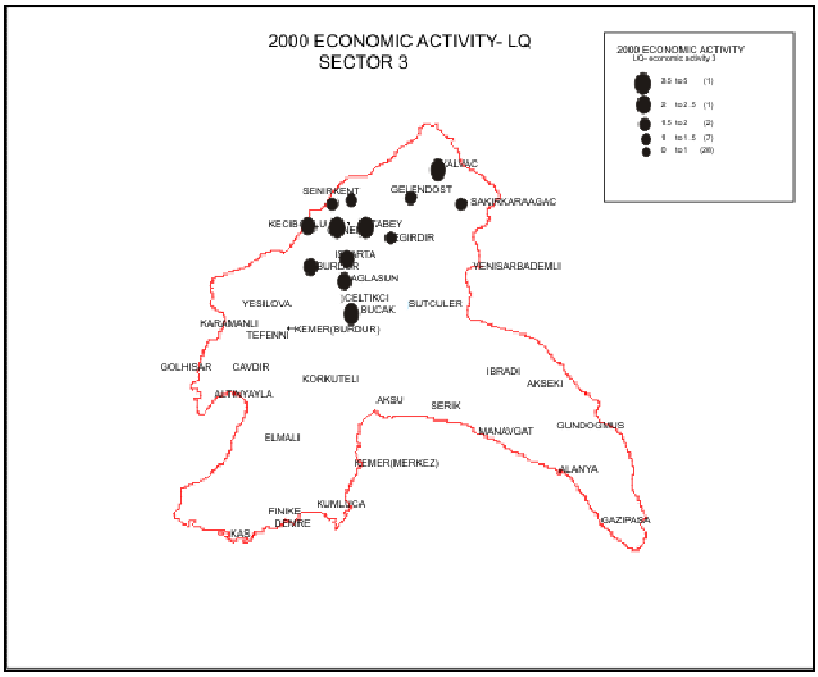


Figure 3 Spatial Distribution of Manufacturing Sector

Source: The analysis done by METU- RP 501 Studio Group in 2006.

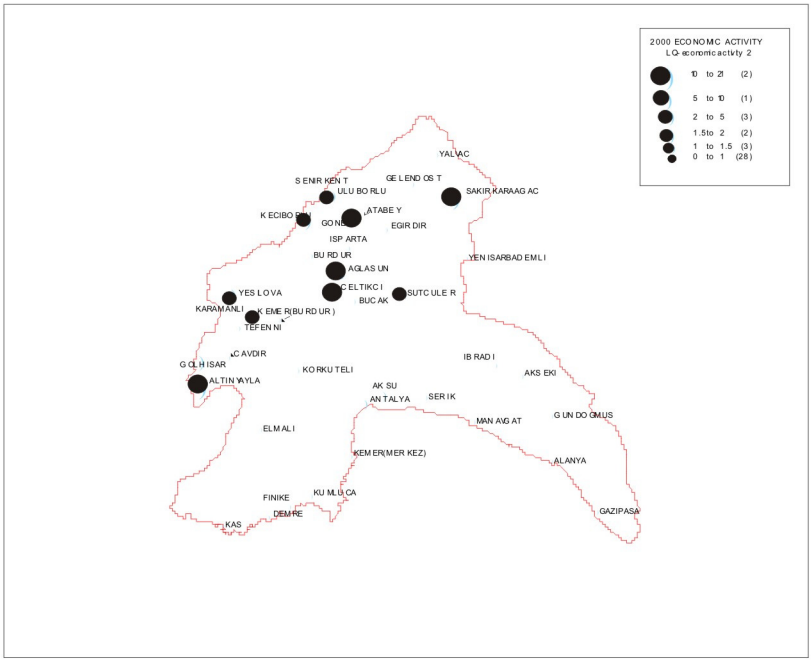


Figure 4 Spatial Distribution of Mining Sector

Source: The analysis done by METU- RP 501 Studio Group in 2006.

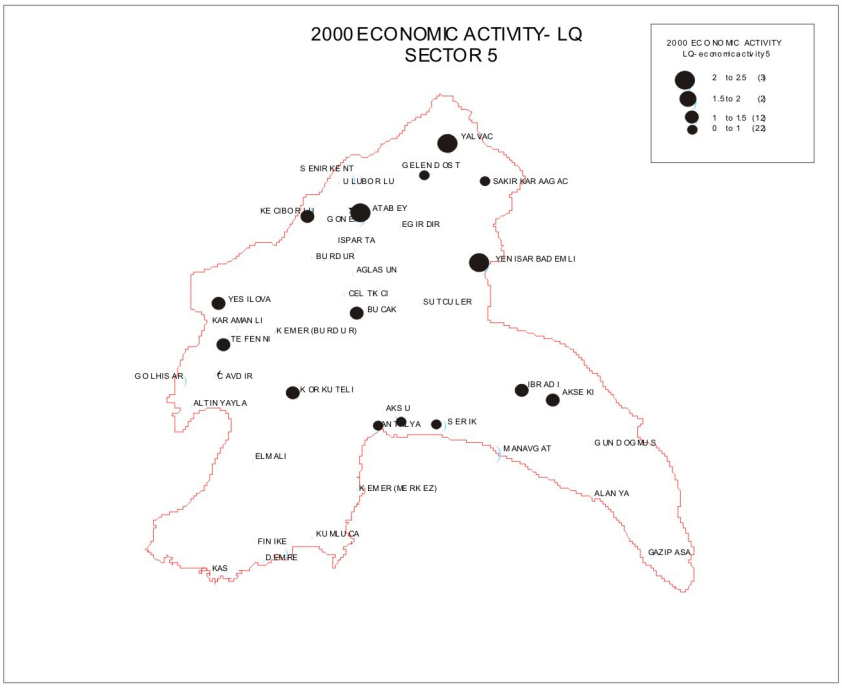


Figure 5 Spatial Distribution of Construction Sector

Source: The analysis done by METU- RP 501 Studio Group in 2006.

Another spatial concentration is seen in the coastal area in the retail and wholesale trade sector due to the tourism developments presented in the figure:

Figure 6 Spatial Distribution of Tourism Sector

Source: The analysis done by METU- RP 501 Studio Group in 2006.

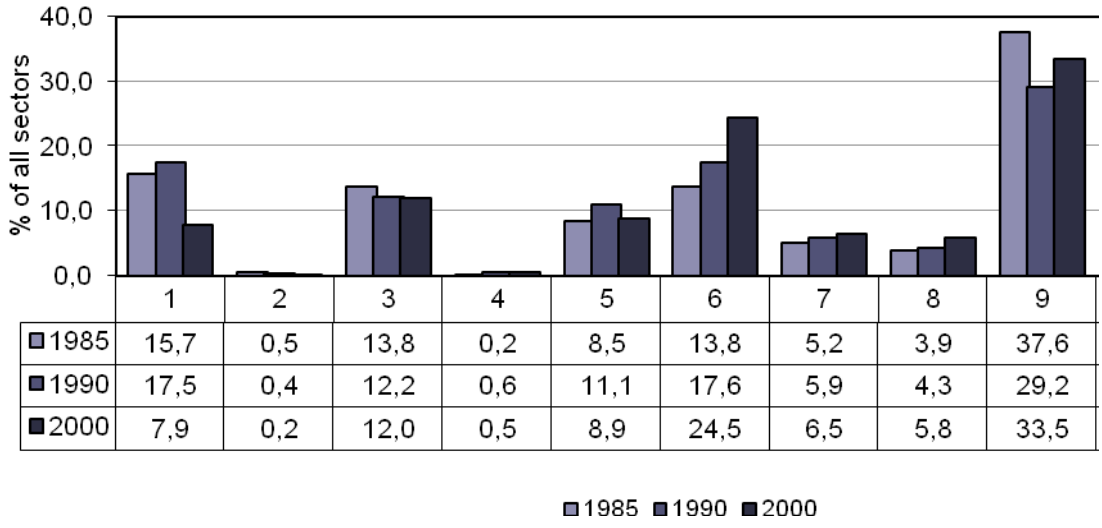
As an implication from the spatial distributions of the different sectors, it can be determined that the sectoral concentrations are available in the region, especially divided between the north and the coastal areas.

4.1.3 Employment Structure and Changing Population Patterns

In order to see how different sectors have gained or lost importance in Antalya City Region, the following diagram shows the percentages of the different sectors[3] in the

[3] Sectors: 1: Agriculture, 2: Mining, 3: Manufacturing, 4: Electricity, gas, water, 5: Construction, 6: Retail and wholesale trade, 7: Transportation, communication, 8: Insurance, 8: Social services, 10: Other

years 1985, 1990 and 2000 according to the structure of all employees within all the settlement in the regions in these years.



	1	2	3	4	5	6	7	8	9
1985	15,7	0,5	13,8	0,2	8,5	13,8	5,2	3,9	37,6
1990	17,5	0,4	12,2	0,6	11,1	17,6	5,9	4,3	29,2
2000	7,9	0,2	12,0	0,5	8,9	24,5	6,5	5,8	33,5

Figure 7 Development of Employment Percentages

Source: The analysis done by METU- RP 501 Studio Group in 2006.

It is seen that the biggest sector through all the years is the sector of social services. Though there has been a relative loss of importance between 1985 and 1990, in the year 2000 this sector covers 33,5% of all employees.

In the second point of importance it is seen that some changes took place between 1985 and 2000. Most striking is the loss of importance of the agricultural employment from 15.7% in 1985 to 7,9% in 2000. The winner of this transformation is the sector of retail and wholesale trade which has steadily grown from 13,8% in 1985 up to 24,5% in 2000.

Smaller sectors that gained more importance are transportation/ communication and insurance. Manufacturing faced a slightly decreasing development, while the

construction sector remained on the level around 9%, though it had more importance in the year 1990. While the small sector of electricity, gas and water was growing, the mining sector decreased from 0,5% to 0,2% in 2000.

Population distribution is another important indicator of spatial differentiations in Antalya City Region. From 1950 to 2000 there is a significant change in the distribution of population in the region.

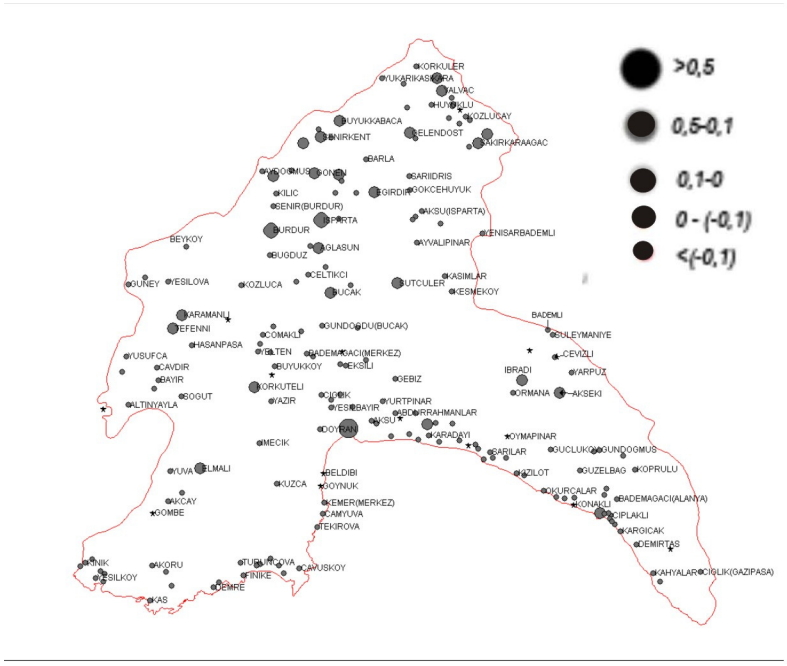


Figure 8 Population Distribution in 1950

Source: The analysis done by METU- RP 501 Studio Group in 2006.

In 1950s, it can be seen that, city centers of Antalya, Isparta and Burdur are also population attraction centers. According to population distribution in 1950, 20% of people in Antalya city region are living in city centers and costal part of the city region is less populated than northern part of the region. Result of this may be lack of tourism activities.

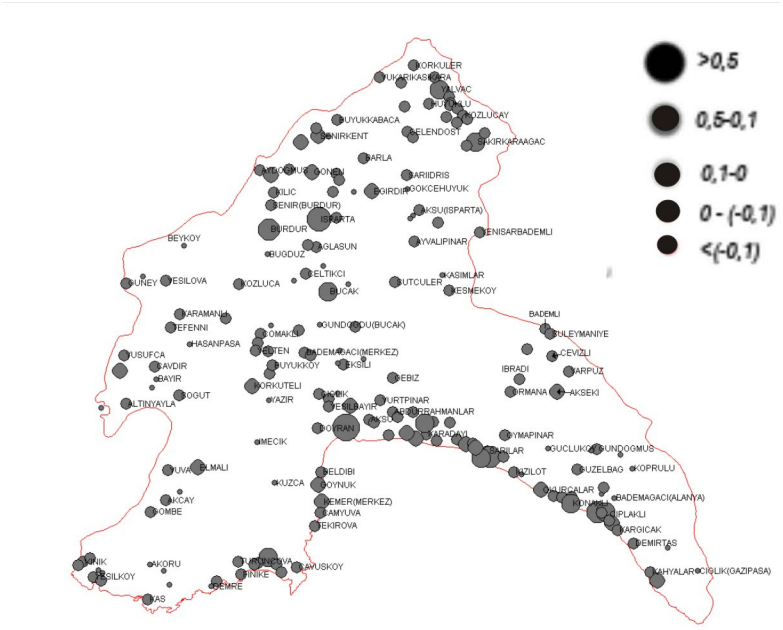


Figure 9 Population Distribution in 2000

Source: The analysis done by METU- RP 501 Studio Group in 2006.

In year 2000 it can be seen that the population of the settlements in coastal region and the northern of the region are increasing rapidly because of the economic development in coasts. Actually, we can say that the settlements which are on the surroundings of the motorways developed much more than others.

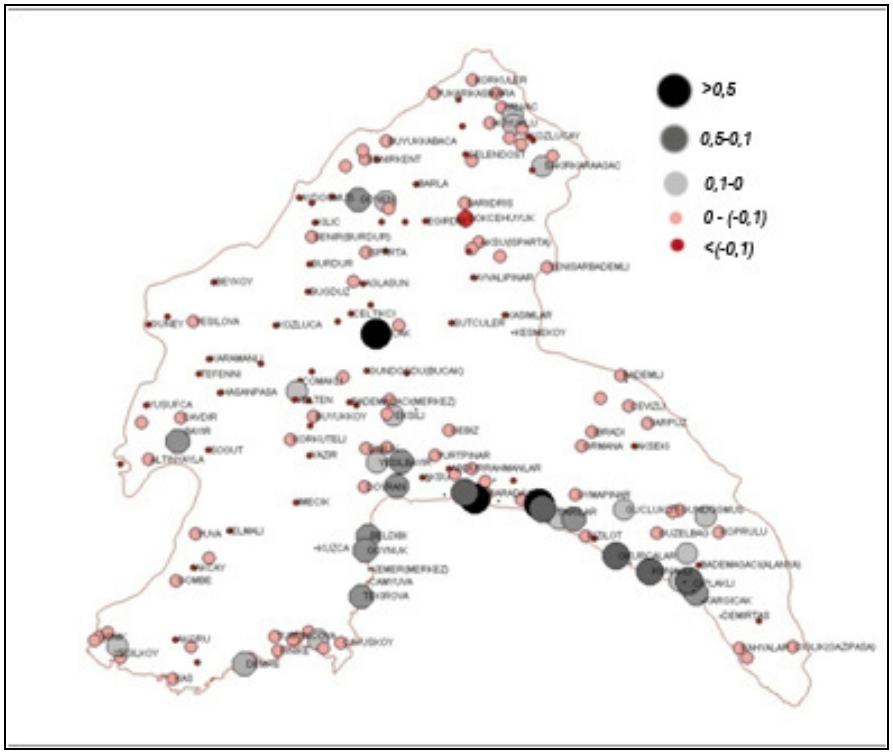


Figure 10 Population increase rate 1990-2000

Source: The analysis done by METU- RP 501 Studio Group in 2006.

Looking at the population increase rates, it can be seen that the population in the settlements which are in coastal area, the northern of the region, the centre of the cities increased much more than the other settlements. Their rates which are between the 1990s and 2000 are over the average population increase rate for the region. However, the rates of the other settlements, for example, in the inner regions, rural areas, decreased because of migration to the other regions. Their rates are under the average population increase rate for the region. Therefore, it can be said that new attractive settlements have been occurred in coastal area, northern area between these years and so the spatial context of the region has started to change from mono-centric to poly-centric structure. The migration from inner regions to coastal areas and the northern areas have been experienced.

4.2 Policies and support schemes to enhance integration to global economy

Transformation of economic, social and spatial configuration of Antalya City Region depends on the investments and interventions that support tourism and infrastructure. In Antalya tourism region, beside the support of government, the support of private initiatives has also a crucial role in designing the spatial organization which is shaped by tourism investments. The share of public investments in the region is not very high. But it can be understood from the table that there is an increasing trend between 1990 and 2001.

Table 4 The share of public investment expenditures of Antalya City Region according to Turkey-2001 prices

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
REGION TOTAL	0,95	0,63	0,82	0,9	1,04	1,13	1,3	1,66	1,61	1,42	1,2	1,48
TURKEY TOTAL	100	100	100	100	100	100	100	100	100	100	100	100

Source: Öztürk, H.E 2008, The Role of Local and Global Networkıng For Tourısm Fırms and Clusters: The Case of Antalya, METU

However, public investments are important for Antalya City Region. It is the 11th and one of the priorly supported tourism provinces after the underdeveloped provinces by the government. As a result some of the important public institutions are located in Antalya. These institutions are General Directorate of Highways,

Hydraulic Works, Rural Services and Bank of Provinces. In addition to these public institutions there are also free zone, international airport, wholesale bazaar, harbor, hospitals and university located in Antalya serving for the region.

Shares of public investment are not very high according to Turkish average in some years for the region but important contributions are made in the region by public supports which is crucial for the the structural and spatial transformation of the region. Implemented investment incentives are important for the development of regions. Share of investment incentives certificates of the region is around 7 percent of Turkey.

Table 5 The share of Investment Incentives Certificates of Antalya City Region according to Turkey, 2001 Prices

	1995	1996	1997	1998	1999	2000	2001
REGION TOTAL	7.43	10.35	8.99	6.87	5.13	5.48	7.32
TURKEY TOTAL	100	100	100	100	100	100	100

Source: Öztürk, H.E 2008, The Role of Local and Global Networkıng For Tourısm Fırms and Clusters: The Case of Antalya, METU

Antalya has become the province that has taken the highest tourism investment in Turkey with a 60% share between 2000 and 2005. Antalya became the primary province in Turkey with 409 tourism investment incentive certificates and 4.785.000.000 TL investment during the period of 2000 and 2005.

4.2.1 Public Policies and New Institutional Setup to Enhance Tourism

The coastal area between the south border of Çanakkale province and Mersin province which include Antalya is declared as a *priority tourism development zone in* Tourism Master's Plan of Turkey prepared by State Planning Organization and

Ministry of Tourism and Advertising in 1960s. (Öztürk, 2008)

Priority regions are transformed into *Tourism Area* and *Tourism Centers* by Tourism Encouragement Law of The Ministry of Tourism in 1982 (Law No. 2634). Development of tourism regions as in the case of Antalya City Region was fostered by the allocation of public lands to tourism investments and other incentives given for tourism.

Public investments as *Antalya Yatch Marina Environment Tourism, Restoration of Kaleiçi,* 600 *bed tourism complexes in Side and South Antalya Tourism Development Project* have made important contributions to the development tourism sector in the region.

Antalya is taken as the touristic regional center and Kemer is the supporting settlement in *South Antalya Tourism Development Project* covering 75 km. coastal area between Antalya Yatch Marina and Gelidonya Foreland and also in the boundary of Olympos-Beydagları National Park. The aim of this project was to provide a capacity of 62.000 beds by 1995 serving mostly (80%) international tourism, foreign market and thus obtain foreign currency which will bring positive benefits to the balance of foreign trade of the country. (Öztürk, 2008)

GATAB, an infrastructure development association of Kemer, is established by the government to develop infrastructure in collaboration with public and private institutions of Kemer in the context of the project and this institutions had a crucial role for the development of successful infrastructure projects of Kemer.

Belek and Side Tourism Development Plans have emerged in addition to the *Project of South* West *Antalya Tourism Development Project.* Belek tourism center constitutes of more than 40 accommodation establishment and 5 golf areas in the

scope of Belek Tourism Project. Existing bed capacity is 32.204. In addition to the coastal tourism activities and natural environment, Belek Tourism center is an organized tourism complex for conference and sport based activities.

BETUYAB has been founded as a management association in 1988 by the investor companies of the region with the support of the Ministry of Tourism in the context of Belek tourism Development Project. The aim of BETUYAB is solving the infrastructure problems in Belek Tourism Center cooperation with government and private sector. It is also a joint initiative of international institutions such as World Bank and World Environmental Protection Association. Successful projects are observed in Belek Tourism Center with the help of global linkages and government support. (Öztürk, 2008)

Bed capacity of Side Tourism Development project area exceeds 50.000. Project area covers tourism settlements of Kumköy – Bingesik – Yeni Selimiye – Antik Side – Titreyen Göl – Kemer – Sorgun –Acısu and Manavgat. MATAB is the institution which is mainly collaborated with the municipality when implementing and developing infrastructure projects.

In addition to the projects stated above, settlements developed by land allocations of government are very important for the region. Antalya is the primary province that take the higher number of land allocations when compared with other provinces of Turkey. Approximately, 195 tourism establishments are land allocated including accommodation, golf, yatch and other types in Antalya by the support of the government.

Kemer has taken 77 land allocations for tourism establishments. The second important tourism settlement is Side and 45 tourism establishments have taken land allocation. Belek has taken 41 land allocations. Then; 16 tourism establishments in

Central Antalya, 8 tourism establishments in Alanya and 6 tourism establishments in Kale (Demre) which have taken land allocation for tourism development in Antalya. (Öztürk, 2008)

In addition to tourism development plans and land allocations of the government, Kaleiçi, Konyaaltı and Kundu-Kemeragzı in Central Antalya; Serik-Çolaklı, Serik-Manavgat coastal area, Gazipasa, West Alanya, Alanya-Akdag, Alanya-Alara-Incekum, Kas-Kalkan coastal band, Arapsuyu, Side, Perge Congress and Fair, Belek, Ibradı Masata Yaylası, Kale (Demre), Oymapınar Culture and Tourism Conservation Region are defined as tourism centers by the Ministry of Culture and Tourism.

To conclude while direct financial investments of public sector are not very influential for the development, other interventions such as land development, infrastructure provision for tourism, tourism plans and development projects have had striking contributions for the development of tourism in the region. The increasing number of association types, especially related with tourism, has gaining importance by the type of activities and projects for the development of each local area. (Öztürk, 2008)

4.3 Outcomes of the spatial dynamics

As a result of the previous analysis on Antalya Region can be divided into five sub-regions according to the distribution of economic activity and the social structure. In the Northern Sub-Region, main economic activities are manufacturing (especially textile, wearing apparel and leather industries and food, beverages and tobacco manufacturing), mining and social services (especially in Isparta and Eğirdir) respectively. In addition, concentration of the entrepreneur and administrative personal are high in this sub-region. In the Western Inner Sub-Region the main

economic activities are agriculture and mining (especially in Altınyayla and

Yeşilova) respectively. This sub-region is one of the population loosing part of Antalya City Region with agricultural characteristics and as a result of it, the concentration of unemployment and unpaid family workers are increasing. Eastern Inner Sub-Region has the main economic activity of agriculture and the concentration of manufacture of wood and wood products are increasing. In addition, due to its agricultural composition, concentration of unpaid family workers is increasing. Eastern Coast Sub-Region has the main economic activity of financial services and wholesale and retail trade and as a result concentration of employees is high in the sub-region. The main economic activities in Western Coast Sub-Region are agriculture, wholesale and retail trade (Kemer) and financial services (Kas) respectively and concentration of employment is increasing.

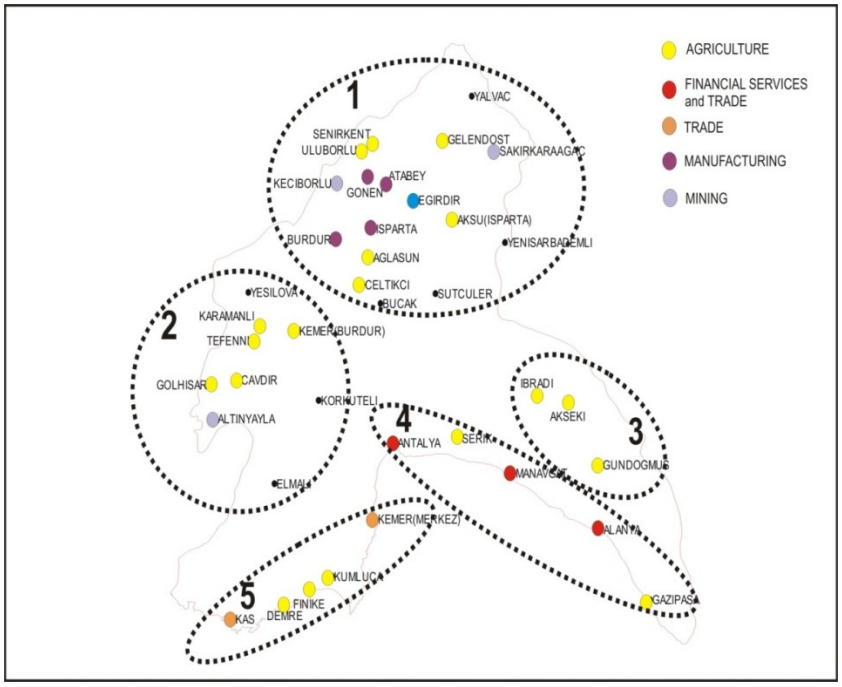


Figure 11 Sub-regions of Antalya City Region

Source: The analysis done by METU- RP 501 Studio Group in 2006.

CHAPTER 5

NETWORKING AND ECONOMIC PERFORMANCE IN ANTALYA REGION[4]

Aim of this chapter is to explore the determinants of economic performance and networking patterns in the region. To achieve this aim firstly networking patterns in the region are analyzed. Before the econometric analysis which will give determinants stated above, relations between different variables are analyzed to check the possible auto-correlations that may violate the econometric models. Finally, three econometric models are employed. First model defines attractivity factors (in actual networks), second defines centrality factors (in policy networks) and the last model defines economic performance factors of settlements in the network. The reason why three models are employed is because of the fact that only economic performance of settlements is not enough and a networking mechanism is essential for enjoying the benefits of city regions.

5.1 Data Analysis on Networking Structure of Antalya City Region

Networking patterns of Antalya Region is analyzed based on the survey results of 182 settlements of Antalya Region conducted by staff of METU, City and Regional Planning Department in 2006. The survey includes 10 questions asked to the

[4] The analysis on networking patternse are based on the studies done by METU CRP Staff and METU- RP 501 Studio Group in 2006.

municipalities. Three of them are related to human flows and remaining are related to joint activity networks with other municipalities in the region.

The surveys include two parts. In the first part is related to actual networks and includes three categories:

- Network of human flows for work
- Network of human flows for public services
- Network of human flows for leisure, recreation or visiting

Second part of the surveys is related to joint activity networks between district municipalities including seven categories:

- Network of partnership and cooperation
- Network of knowledge sharing and consultancy
- Network of common project
- Network of common investment
- Network of machinery and technical assistance
- Network of financial support
- Network of common cultural activity

Although the surveys are conducted to 182 settlements in the region, this study is designed as a district level study because of lack of data in sub district level and 39 districts included in the analyses.

According to the results of this survey flows between settlements and joint activity networks can be conceptualized with the help of social network analysis. UCInet software is used to produce spatial maps. The analysis depends on degree centrality measures. Degree centrality analysis shows the settlements' degree according to their ties to other settlements and settlements having more ties to others have bigger dots

than others. These settlements have a central position in the network. (Hanneman A. R., Riddle M. ,2005).

5.1.1. Network of Human Flows

5.1.1.1 Network of Human Flows for Work

In this figure the settlements which are central in the aspect of people go for those settlements to work can be seen. There are some major settlements which are central in this aspect and we see a clear multi central structure comparing to other categories.

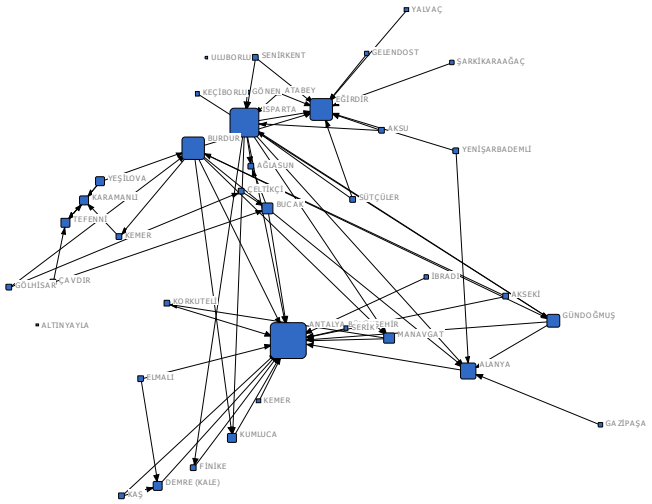


Figure 12 Degree centrality analysis for the category of people coming to work in a coordinated way

Source: Produced based on the data of RP 501 Studio, METU

Antalya has a huge network with the settlements surrounding it and it is the most central settlement in the system. Then, Isparta has the second central position with a network of surrounding settlements. Burdur, Eğirdir and Alanya forming sub-groups

and people go for these settlements for working. Burdur seems as a smaller center in this analysis and it can be because of the higher centrality of Isparta which is near to Burdur. In addition, in this analysis the administrative borders are less effective than other categories and the duality between north and south of the region is observed in this aspect. Finally, province centers, tourism centers, agricultural production centers and manufacturing centers have higher centrality in this aspect.

5.1.1.2 Network of Human Flows for Public Services

In this analysis the settlements which are central for people coming for education, health services can be seen. A dominancy of administrative borders defining the network distribution. Antalya and Burdur have a large network with the settlements which are in their administrative border. Isparta has its small group of settlements and we see Alanya and Elmalı as separate identities where people want to go instead of Antalya probably because of its location.

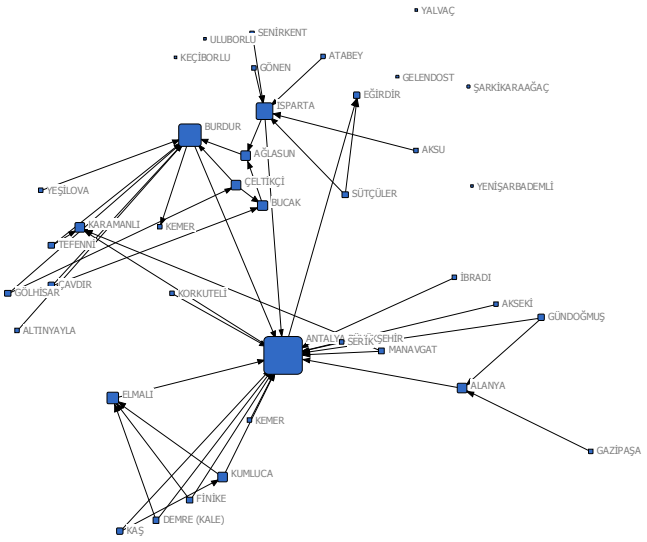


Figure 13 Degree centrality analysis for the category of people coming for public services in a coordinated way

Source: Produced based on the data of RP 501 Studio, METU

5.1.1.3 Network of Human Flows for Leisure, Recreation or Visiting

In this analysis, the settlements which people go for leisure, recreational or visiting activities are illustrated. It is possible to see a multi-central distribution which is defined according to the locational proximities. Major centers like Antalya, Isparta, Burdur, Yeşilova, Eğirdir, Çavdır have more ties meaning that people go there for leisure, recreational or visiting activities.

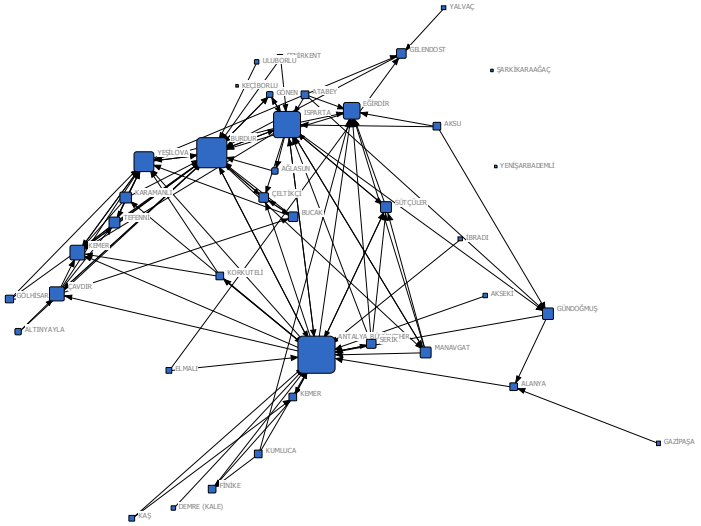


Figure 14 Degree centrality analysis for the category of people coming for leisure, entertainment or visiting in a coordinated way

Source: Produced based on the data of RP 501 Studio, METU

5.1.2 Joint Activity Networks in Antalya Region

Network analysis includes seven categories of joint activity networks between municipalities including the level of network in the region which is crucial for city region formation providing complementarity and cooperation.

5.1.2.1 Network of partnership and cooperation

In this category the dominancy of administrative borders are clearer. Province centers have high centrality measures in terms of partnership and coordination issues. This shows that partnership and cooperation type of relations are restricted by the administrative system.

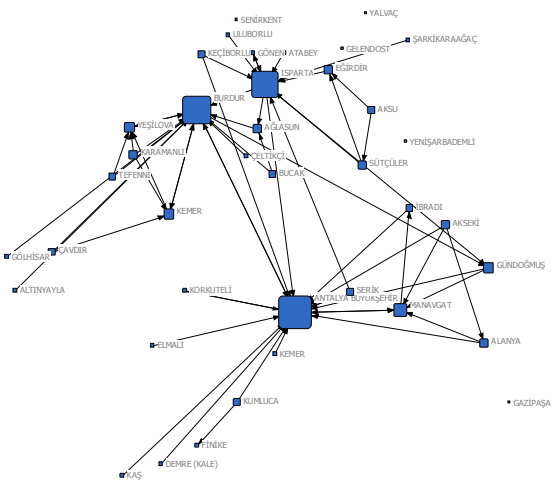


Figure 15 Degree centrality analysis for the category of partnership and cooperation in a coordinated way

Source: Produced based on the data of RP 501 Studio, METU

5.1.2.2 Network of knowledge sharing and consultancy

In this category there is a multi centered structure especially in the north of the region. Again a duality in the region is obvious. There is a dense network in the north on knowledge sharing and consultancy. Finally, dominancy of administrative borders is less effective than other categories.

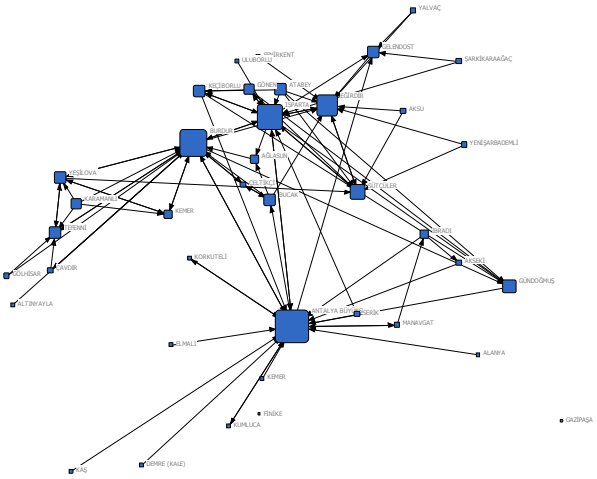


Figure 16 Degree centrality analysis for the category of knowledge sharing and consultancy in a coordinated way

Source: Produced based on the data of RP 501 Studio, METU

5.1.2.3. Network of Common Project

In this category in is obvious that development of common projects is very limited in the region. The only dominant settlement is Isparta and especially in the south of the region there is a lack of common project culture. Most of the settlements are excluded from this network.

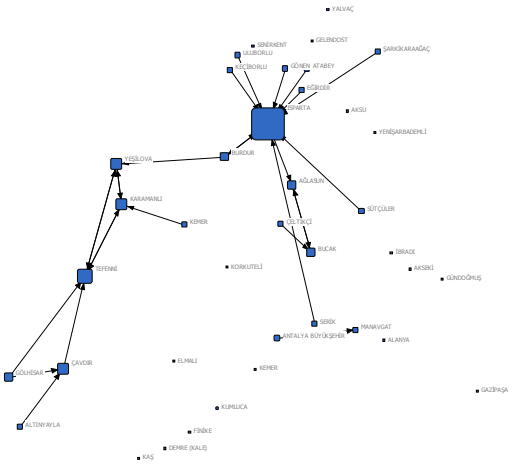


Figure 17 Degree centrality analysis for the category of common projects in a coordinated way

Source: Produced based on the data of RP 501 Studio, METU

5.1.2.4 Network of Common investment

Similar to the common project category, in common investments the relations are very limited. While most of the settlements are excluded from the network, Isparta and Antalya are the central nodes.

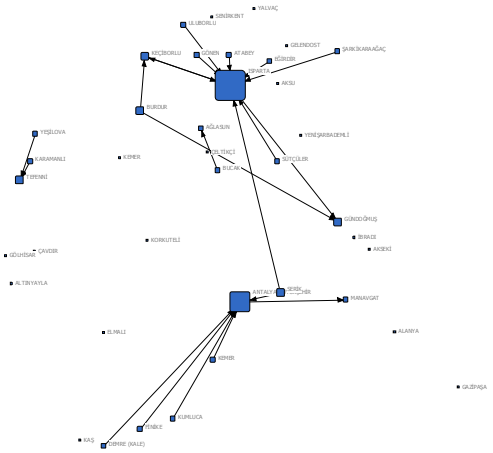


Figure 18 Degree centrality analysis for the category of common investment in a coordinated way

Source: Produced based on the data of RP 501 Studio, METU

5.1.2.5 Network of machinery and technical assistance

Comparing with other categories machinery and technical assistance network is a dense one because of the agricultural structure of the region. This type of relations is introduced especially between the agricultural settlements which are generally excluded from other type of networks.

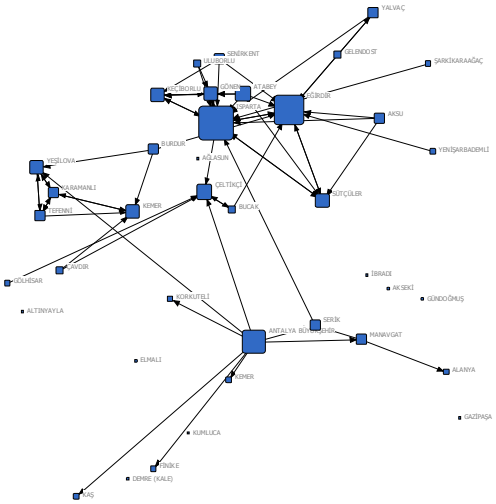


Figure 19 Degree centrality analysis for the category of machinery and technical assistance in a coordinated way

Source: Produced based on the data of RP 501 Studio, METU

5.1.2.6 Network of Financial Support

One of the least dense networks in the region is financial support network. There is only one dominant settlement which is Isparta. The reason of this low density is because of the legal structure do not permit such financial support mechanisms.

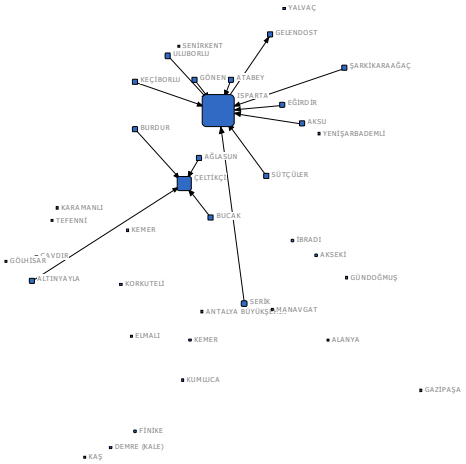


Figure 20 Degree centrality analysis for the category of financial support in a coordinated way

Source: Produced based on the data of RP 501 Studio, METU

5.1.2.7 Network of common cultural activity

In this category again the network is not a dense one. Isparta and Burdur are the central nodes of their small network. Most of the settlements are excluded from the network.

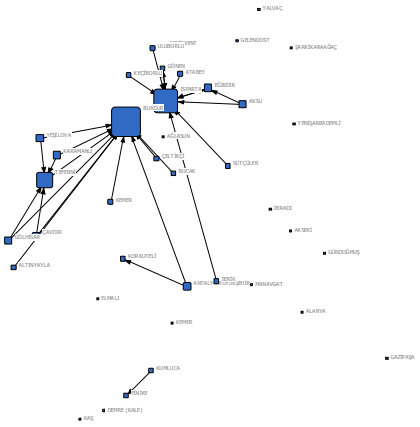


Figure 21 Degree centrality analysis for the category of common cultural activity in a coordinated way

Source: Produced based on the data of RP 501 Studio, METU

To conclude, networks of human flows in the region are not depended to the administrative borders but joint activity networks as an indicator of policy networks in the region are very depended on the administrative borders. Level of cooperation and knowledge sharing in the region are determined by these borders. In addition cooperation type of relations such as common projects, common investment and financial support almost do not exist in the region. This is a crucial conclusion for Antalya Region showing that although the region includes potentials for a successful city region performance, it lacks the necessary networking level.

5.2 Econometric Model to Determine Factors Affecting Economic Performance and Positions of Settlements in Antalya City Region

5.2.1 Model Description, Variables and Data

Three main models were built to test the first three hypotheses which are:

Hypothesis I: *"Economic performance of a settlement depends on its endogenous dynamics, resources and its networking patterns".*

Sub hypotheses are:
Hypothesis II: *"Attractivity of a settlement depends on its position in policy networks, its economic structure and its infrastructure."*

Hypothesis III: *"Position of a settlement in policy networks depends on its economic characteristics and its attractiveness".*

For the first hypothesis, central position of a settlement in the networks of human flows is the dependent variable and as an indicator of this variable, Freeman's Degree Centrality Measures for cities in the network of human flows is used in the model. Centrality in total flows variable includes flow categories with purposes of work, public services and leisure, recreation and visiting which are analyzed in detail in Chapter 5.1.1.

In the second model the dependent variable is central position of a settlement in policy networks and indicated by Freeman's Degree Centrality Measures for cities in the joint activity networks. Centrality in total policy networks variable includes network categories of partnership and cooperation, knowledge sharing and consultancy, common project, common investment, machinery and technical assistance, financial support and common cultural activity. The networking data is the data source of the first and second dependent variables. The data is based on the survey results of 182 settlements of Antalya City Region conducted by the staff of METU, City and Regional Planning Department in 2006.

For the last hypothesis, the dependent variable used in multivariate regression is the level of employment which is an indicator of economic performance of cities. The data is available for year 2000 from the Study of Socio-Economic Development Level of Districts in Turkey (2004) by State Planning Organization.

A bundle of variables are used to test these three hypotheses. It should be noted that availability of data in district level is a main limitation for this study. The reason is that the statistical spatial level of data storage is not even province level especially from year 2000 and NUTS 2 regional level is the most proper level for regional analysis. But the aim of this study necessitates local data and Study of Socio-Economic Development Level of Districts in Turkey (2004) by State Planning Organization is a crucial and rare resource for district level studies.

The possible available data give the opportunity to find independent variables which are sectoral structure, human resources, public sector responsiveness, technical

infrastructure, quality of life, administrative status of the settlement.

Sectoral structure of settlements in an urban network is an important determinant for economic performance and centrality ranking of individual settlements. In an environment of competition for world market shares, inherited mix of industries and especially specialization is an important factor for success. The workforce of successful regions typically concentrates in high-tech and high value added sectors. High value added sectors usually generate employment and increases productivity. In the regression models, Krugman's specialization index and location quotient for high-tech industries are use to indicate sectoral structure of settlements. The data source for these variables is State Institute of Statistics Annual Manufacturing Statistics, 2000.

Human resource is another important factor positively affecting economic performance and centrality ranking of individual settlements. According to Webster and Muller (2000), the ability of an urban region to move up value chains is directly related with its human resources. Human resource of a region is measured by education level, skills, availability and cost of labor, availability of training facilities, entrepreneurship, creativity and risk tolerance. In the models to indicate human resource of settlements, the ratio of university graduates to total population is used. In addition, as an indicator of entrepreneurship, ratio of working woman to total employment and ratio of employees to total employment are used. The data source is again the Study of Socio-Economic Development Level of Districts in Turkey (2004) by State Planning Organization.

A responsive public sector in a settlement is another crucial factor for economic performance and centrality ranking of settlements. It directly effects the local business environment and willingness of mobile workers depends on this variable.

All of the social and environmental factors like the quality of the residential accommodation, urban environment and quality of life, climate conditions, pollution levels, public safety, health and education facilities, recreational and cultural facilities necessitate a high public sector capacity. (Chen and Coulson, 2002). In the regression models, public expenditure per capita for year 2000 which is taken from the Study of Socio-Economic Development Level of Districts in Turkey (2004) by State Planning Organization is used.

Availability of job opportunities in a settlement is the most important factor attracting human flows. Human flows are directed from lower to higher income areas and job opportunity variable is important indicator of high income areas. A high unemployment rate of settlements is a negative factor setting barriers against mobile people looking for a job. In the model to test the main hypotheses of the thesis, two categories of employment are included. First indicator of job opportunities is industrial employment, the data belongs to year 2000, it is percentage of industrial employment to total employment. Second indicator is about job opportunities in finance sector. The data is percentage of financial employment to total employment, again for year 2000. Both variables belong to the data source of the Study of Socio-Economic Development Level of Districts in Turkey (2004) by State Planning Organization.

Today, availability of up-to-date transaction-facilitating infrastructure plays a crucial role for a growth oriented economy and especially to meet the needs of local producers. (Diamond and Spence, 1989). According to Wong, 1998, telecommunication facilities are increasingly seen as a vital tool for business

administration as they can handle massive flows of information and transactions concurrently to provide spatial integration of different sectors of economic activity.

Communications infrastructure helps to reduce the effects of geographical limitations providing access to potential markets and suppliers. In this study as an indicator of technical infrastructure, number of telecom subscribers per home for year 2000 is used and the data source is again the Study of Socio-Economic Development Level of Districts in Turkey (2004) by State Planning Organization.

One of the crucial determinants of economic performance and centrality of settlements in an urban network is the quality of life. According to Florida (2000), quality of life is a key component to attract talent and in doing so it positively affects productivity, innovativeness and dynamism of local business and so the economic performance of the region. Regarding different studies, quality of life includes low crime, pollution and cost of living rates, racial harmony, and good health, education and shopping facilities, low property taxes and strong state government. As expressed above, due to the lack of appropriate data, it is possible to use only one indicator of quality of life in the regression models although it is a very determining factor. Infant mortality rate (per thousand) is the indicator showing the quality of life in the regression model and the data source is the Study of Socio-Economic Development Level of Districts in Turkey (2004) by State Planning Organization.

The last variable used in the regression analysis is a dummy variable representing administrative status of the settlements. Being a province centre or not is expected to be an important determinant in centrality ranking and economic performance.

Table 6 Variables used in the models

Determinants	Variables	Year	Data source
Dependent Variables			
Modal I: Attractivity in human flows	Freeman's Degree Centrality Measures for cities in the network of human flows	2006	Survey results 2006
Model II: Centrality in policy networks	Freeman's Degree Centrality Measures for cities in the joint activity networks	2006	Survey results 2006
Model III: Economic performance	Level of Employment	2000	Study of Socio-Economic Development Level of Districts in Turkey (2004), SPO
Independent Variables			
Employment Opportunities	Percentage of industrial employment to total employment	2000	Study of Socio-Economic Development Level of Districts in Turkey (2004), SPO
	Percentage of financial employment to total employment	2000	Study of Socio-Economic Development Level of Districts in Turkey (2004), SPO
	Ratio of working woman to total employment	2000	Study of Socio-Economic Development Level of Districts in Turkey (2004), SPO
Specialization	LQ for High-Tech sector	2000	State Institute of Statistics Annual Manufacturing Statistics 2000
	Krugmans Specialization Index	2000	State Institute of Statistics Annual Manufacturing Statistics 2000

Source: Produced based on the data of RP 501 Studio, METU

Table 6 Cont'd

Determinants	Variables	Year	Data source
Human Capital	Ratio of woman literacy	2000	Study of Socio-Economic Development Level of Districts in Turkey (2004), SPO
	Ratio of university graduates to population	2000	Study of Socio-Economic Development Level of Districts in Turkey (2004), SPO
Entrepreneurship	Ratio of entrepreneurs to total employment	2000	Study of Socio-Economic Development Level of Districts in Turkey (2004), SPO
Public sector responsiveness	Public expenditure per capita	2000	Study of Socio-Economic Development Level of Districts in Turkey (2004), SPO
Technical Infrastructure	Number of telecom subscribers per home	2000	Study of Socio-Economic Development Level of Districts in Turkey (2004), SPO
Quality of life	Infant mortality rate (per thousand)	2000	Study of Socio-Economic Development Level of Districts in Turkey (2004), SPO
Administrative status of the settlement	A dummy variable of being a province centre or not		

Source: Produced based on the data of RP 501 Studio, METU

5.2.2 Data Analysis on Attractivity of Settlements

Attractivity of settlements is represented by Freeman's Centrality Measures of settlements and it is possible to make cross sectional analysis on the relations between centrality in total flows and other variables.

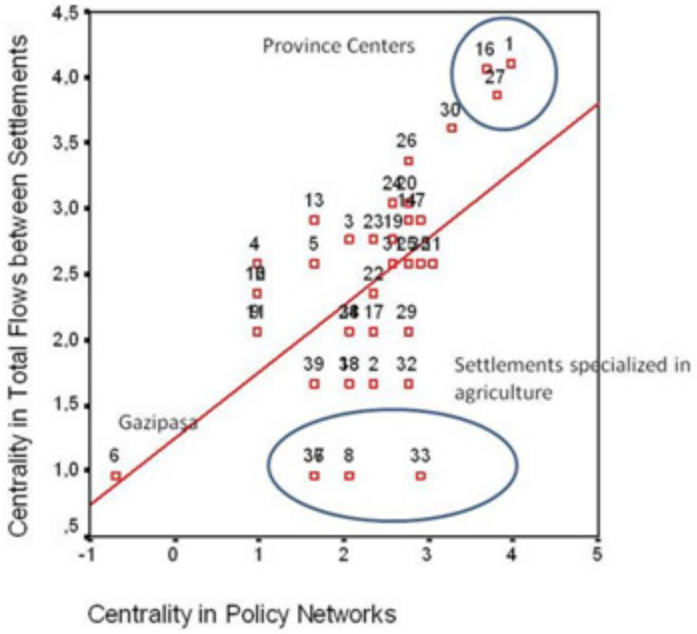


Figure 22 Centrality in policy networks by centrality in flows in year 2006

The most determining factor affecting the central position of settlements in terms of the total flows to those settlements is their central position in total policy networks. There is a significant correlation between these two variables. (Pearson Correlation Coefficient 0,572, significant at 0,001 level) The group of settlements which includes province centers of Antalya, Isparta and Burdur has high centrality both in total flows and in total policy networks. The reason of this is because of their advantages of having administrative power. There is a second group with low centrality in total

flows and medium level centrality in policy networks. These settlements have agriculture sector as their basic sector and they cannot attract flows because of their sectoral characteristics. Finally, Gazipaşa is a settlement which has a locational disadvantage and it is also an agricultural settlement. So proximity to main administrative and manufacturing settlements is an important factor.

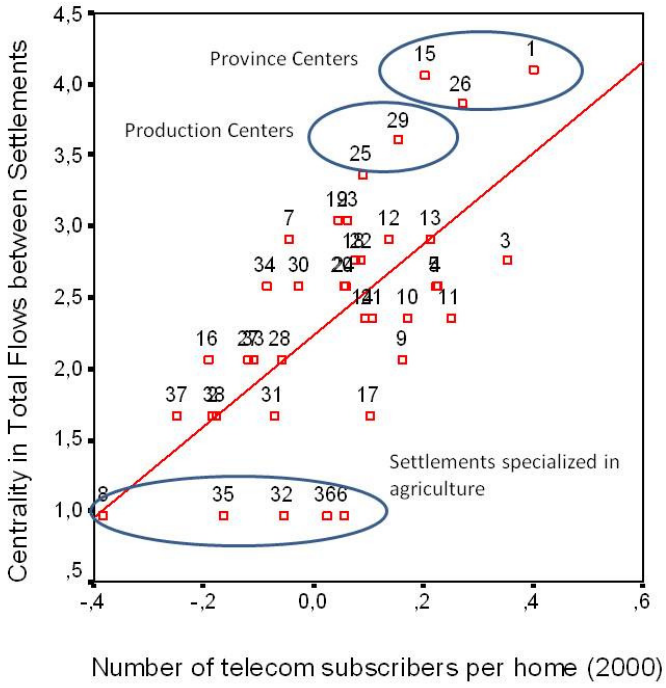


Figure 23 Number of telecom subscribers per home by centrality in flows in year 2006

Second determinant factor affecting the attractivity of settlements is the communication infrastructure. The analysis of data shows that number of telecom subscribers per home has the highest correlation with centrality of total flows between settlements (Pearson Correlation Coefficient 0,654, significant at 0,001 level). Figure 2.3 indicates that again province centers have the highest values both in centrality in total flows and in communication infrastructure. Then the second highest values in terms of these two variables belong to production centers of

Tefenni and Eğirdir. The concentration of food beverages, tobacco and electricity manufacturing increases the requirements of an advanced communication infrastructure. It can also be observed from the figure that settlement specialized in agriculture have the lowest values both in centrality in total flows between settlements and in communications infrastructure.

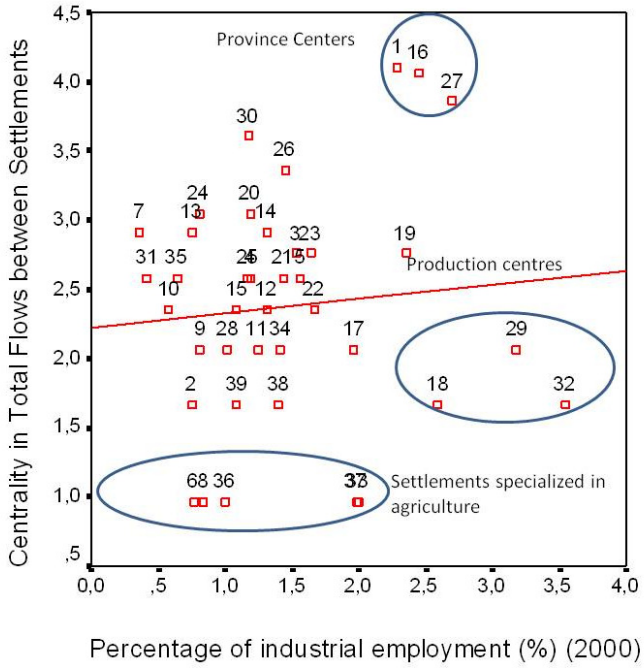


Figure 24 Percentage of industrial employment by centrality in flows in year 2006

Third determinant of attractivity of settlements is the percentage of industrial employment. From Figure 2.4 it is observed that again province centers have high values in terms of both centrality in total flows and percentage of industrial employment. Altınyayla, Atabey and Gönen are the production centers in specialized in basic metal industries, non-metallic mineral products and mining. Because of being specialized in these sectors these settlements have high values in industrial employment and average values in centrality in total flows. Settlements specialized in agriculture have low values in terms of two variables.

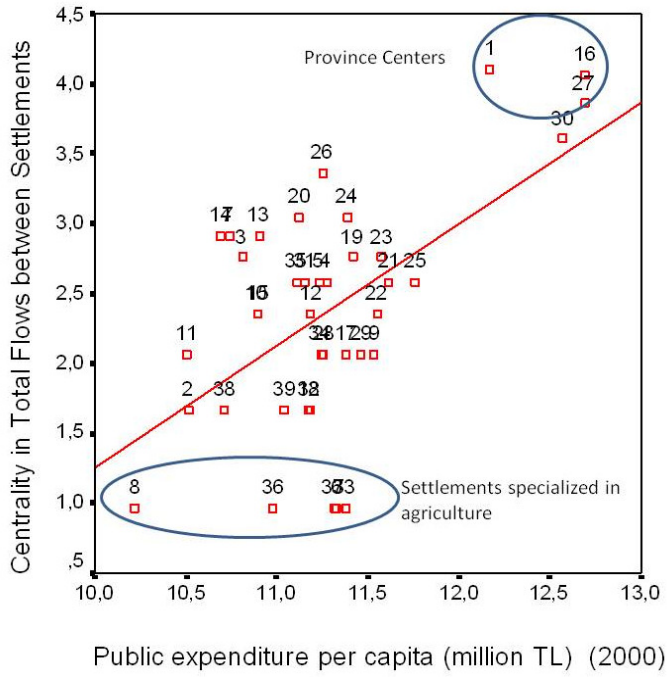


Figure 25 Public expenditure per capita by centrality in flows in year 2006

Last determinant of attractivity of settlements is the public expenditure per capita. It shows the responsiveness of public sector and has a high correlation with centrality in total flows. (Pearson Correlation Coefficient 0,577, significant at 0,001 level). Again it can be observed from Figure 2.5 that province centers have high values in terms of both variables and settlements specialized in agriculture have the lowest values in terms of the two variables.

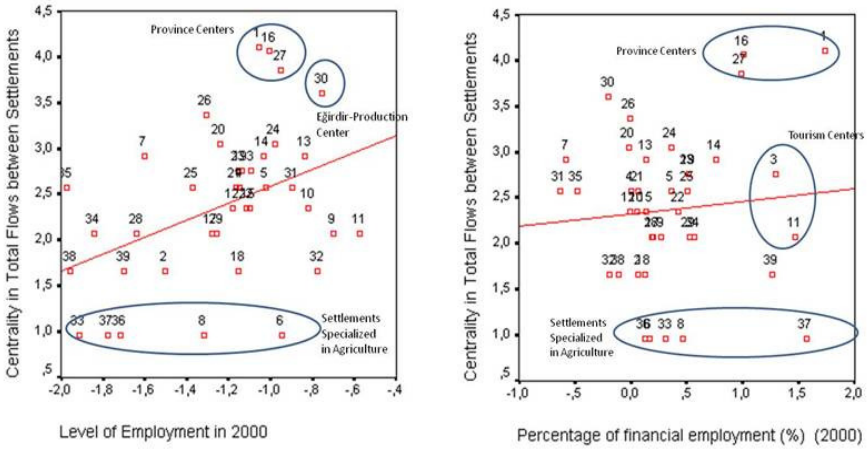


Figure 26 Level of Employment and Percentage of Industrial Employment by Centrality in Total Flows

According to Gaag and Wissen, 2000, settlements with rapid growth rates attract more human flows than declining settlements and employment rate in cities is a source of attraction because a high unemployment rate set barriers against mobile people looking for a job. In Antalya case, the level of employment is positively correlated with attractivity of settlements. For example, Eğirdir as a production center also attracts human flows; province centers of the region have also high values in both variables. In another group of agricultural settlements, low level of both employment and human attractivity is observed.

Percentage of financial employment has a similar relation with centrality in human flows like employment level. The difference is that instead of Eğirdir as a production center, the tourism centers, Alanya and Kemer, has high values of both financial employment level and centrality in human flows network.

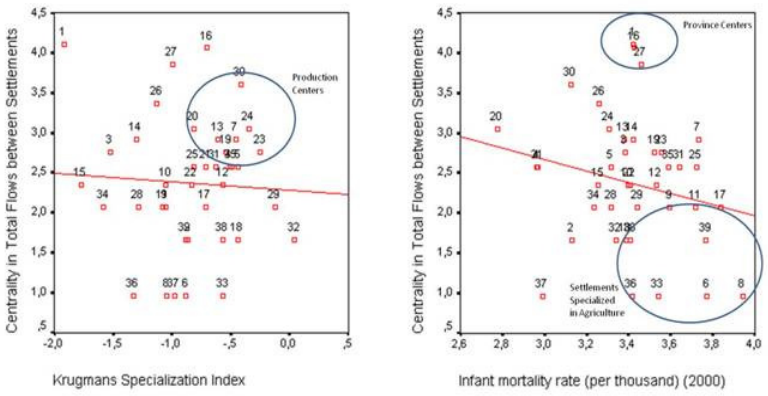


Figure 27 Krugman Specialization Index and Infant Mortality Rate by Centrality in Total Flows

Although there is no clear positive correlation between specialization and centrality in human flows network defined in the literature, in Antalya City Region, it can be observed that production centers with high values of specialization has at least moderate values of centrality in human flows network.

Infant mortality rate is an important indicator of quality of life which is one of the most determining factors of attractivity of settlements. According to Findley et al., 1998, main characteristics of urban attractivity in terms of quality of life include low crime, pollution and cost of living rates, racial harmony, and good health and shopping facilities. Form this point of view, infant mortality as an indicator of good health facilities can give insights about the life quality of a settlement. In Antalya City Region, it is observed that settlements with agricultural characteristics have high values in terms of infant mortality rates and these settlements have also low values in centrality in human flows network. There is a tendency that in the settlements with decreasing rate of infant mortality the centrality in human flows network increases. It can be observed in Antalya City Region that life quality is a factor affecting attractivity of settlements in terms of human flows positively.

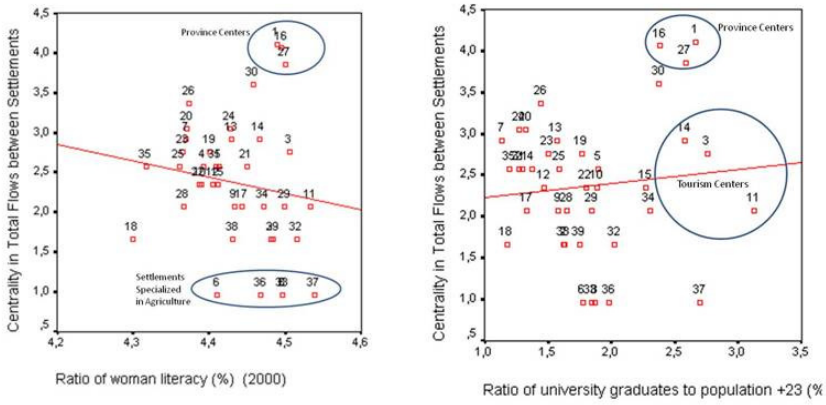


Figure 28 Ratio of woman literacy and ratio of university graduates to population by centrality in total flows

In terms of human capital that is indicated by ratio of woman literacy and ratio of university graduates to total population there is not a powerful correlation with centrality in total flows between settlements but again some implications can be made from the graphs above. Especially tourism centers and province centers have high values in terms of human capital and centrality in human flows network.

5.2.3 Data analysis on Centrality of Settlements in Policy Networks and its determinants

Centrality in policy networks is represented by Freeman's Centrality Measures of settlements and it is possible to make cross sectional analysis on the relations between centrality in policy networks and other variables.

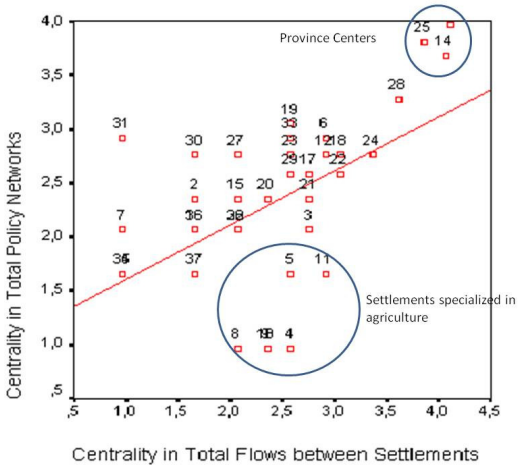


Figure 29 Centrality in total flows by centrality in total policy networks

One of the most important factors of being in a central position in a policy network is centrality in total flows. There is a significant correlation between these two variables. (Pearson Correlation Coefficient 0,520, significant at 0,001 level). Province centers, Antalya, Isparta and Burdur have central position both in two networks while agricultural specialized in agriculture have medium level centrality in total flows (because of people going for work to those settlements) and low centrality in total policy networks.

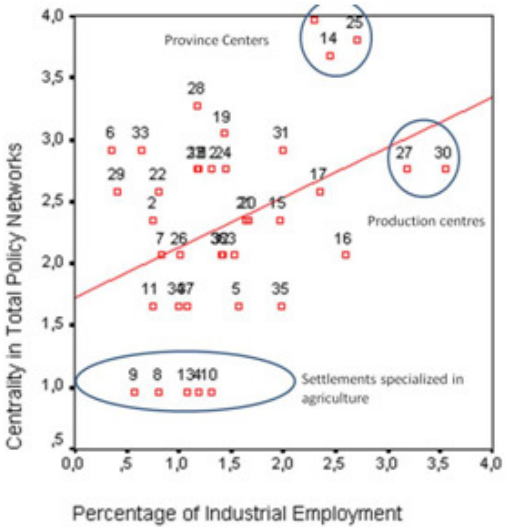


Figure 30 Percentage of industrial employment by centrality in total policy networks

Second important factor affecting the centrality in total policy networks is the percentage of industrial employment of the settlement. From data analysis it is seen that there is a significant relation between these two variables. (Pearson Correlation Coefficient 0,520, significant at 0,001 level) There are three important groups in the region in this aspect. Province centers have again high values in terms of both variables. Atabey and Gonen have manufacturing industry as their basic sector and they form another group having high percentage of industrial employment and moderate centrality in total policy networks. Settlements specialized in agriculture (Korkuteli, Elmalı, Kale and Serik) have low values in terms of both variables. Result of these analysis shows that the level of industrial employment is an important factor on centrality in total policy networks.

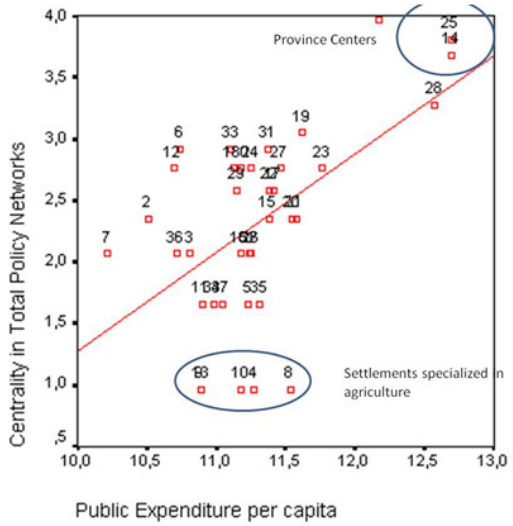


Figure 31 Public expenditure per capita by centrality in total policy networks

Third important factor determining the centrality in total policy networks is the responsiveness of the public sector. Analysis of data shows that there is a significant correlation between centrality in total policy networks and public expenditure per capita. (Pearson Correlation Coefficient 0,554, significant at 0,001 level) Again province centers have high values in terms of both variables and settlements specialized in agriculture (Korkuteli, Elmalı, Kale and Serik) have low values in terms of both variables. It can be concluded from the data analysis that a responsive public sector is one of the most important determinants of being in a central position in total policy networks.

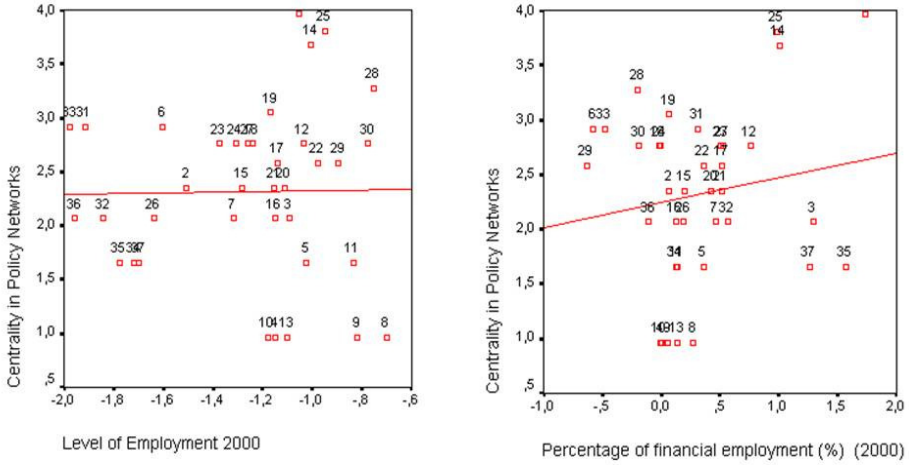


Figure 32 Level of employment and percentage of financial employment by centrality in policy networks

Although the literature does not define factors affecting central positions of settlements in policy networks, it is possible to observe some tendencies through available data. There is not a significant correlation between centrality in policy networks and employment level of settlements in Antalya City Region. Major agricultural settlements, Kale, Elmalı, and Serik have high level of employment but at the same time these settlements are not in a central position in policy networks of the whole region. Percentage of financial employment is a more determining factor compared to level of employment. In this aspect, province centers have high values in both financial employment and centrality figures. In addition to these major agricultural settlements have low centrality and low financial employment showing that financial employment figures describe centrality in policy networks better than level of employment.

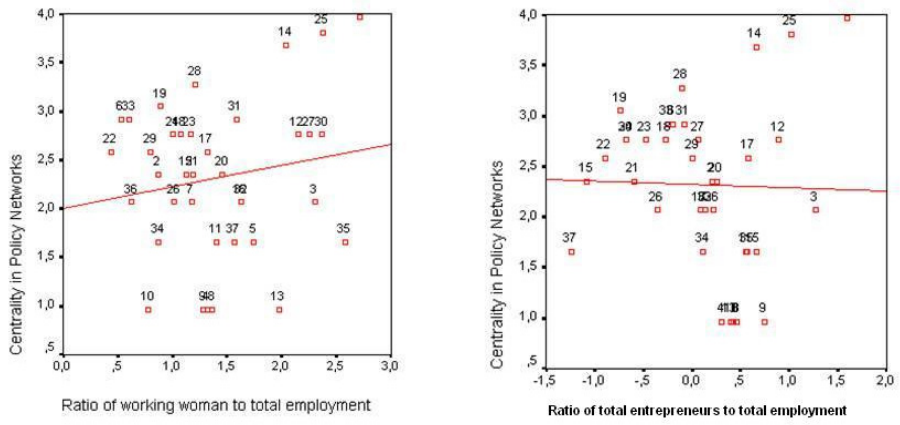


Figure 33 Ratio of working woman to total employment and ratio of entrepreneurs to total employment by centrality in policy networks

Entrepreneurship is a variable determining economic performance of settlements like creativity and risk tolerance. In terms of centrality in policy networks neither the literature nor the case study defines a direct relationship with entrepreneurship. It can easily be observed from the figures that settlements with high values of ratio of working woman or ratio of employees to total employment have at the same time low values of centrality in policy networks.

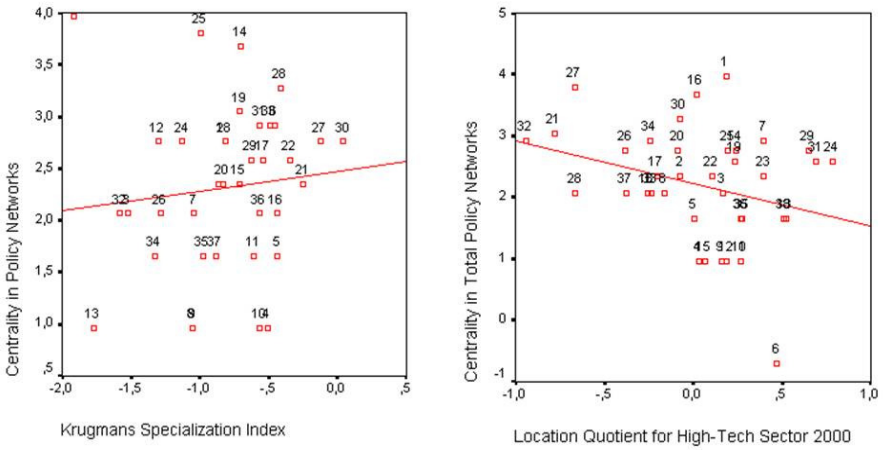


Figure 34 Krugman's Specialization Index and location quotient for high-tech sector

Like entrepreneurship, specialization is a factor does not have a determining effect on centrality in policy networks although it is an important determinant of economic performance of settlements. Krugman's specialization index and location quotient for high-tech sector variables are used to indicate specialization and from the figures above it is not observed a clear tendency of positive relationship between specialization and centrality in policy networks.

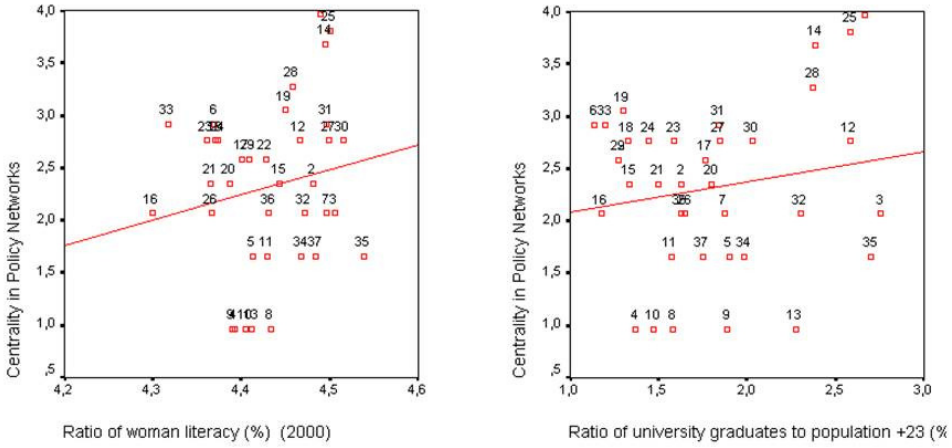


Figure 35 Ratio of woman literacy and ratio of university graduates to population by centrality in total policy networks

Human capital is a determining variable especially for economic performance of settlements but for centrality in policy networks, neither ratio of woman literacy nor ratio of university graduates to population has determining effect on centrality in policy networks.

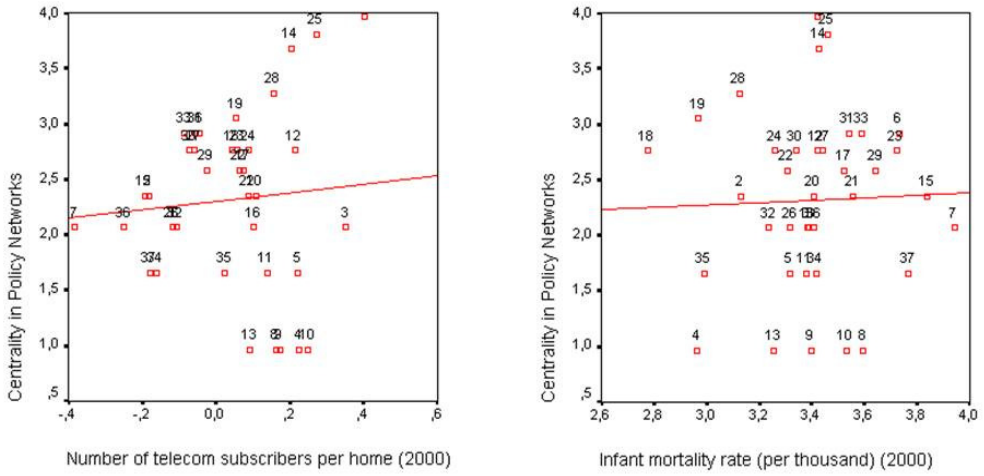


Figure 36 Number of telecom subscribers per home and infant mortality rate by centrality in policy networks

Such as human capital, technical infrastructure indicated by number of telecom subscribers per home and quality of life indicated by infant mortality rate has determining power on centrality in policy networks.

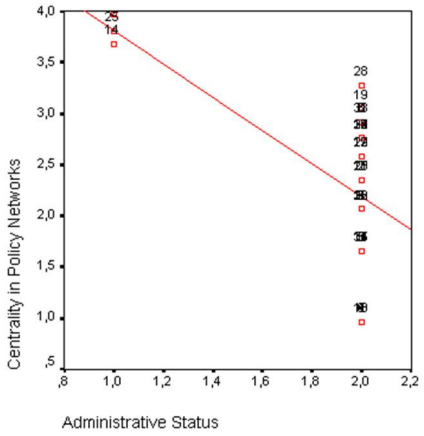


Figure 37 Administrative Status by Centrality in Policy Networks

Last variable the effects of which can be examined on centrality in policy networks is the administrative status of the settlements which is included to the model as a dummy variable, 1 symbolizing province centers and 2 symbolizing district centers. It can be easily seen from the figure that administrative status of settlements has a positive effect on their centrality in policy networks.

5.2.4 Data analysis on Economic Performance of Settlements

Economic performance of settlements is represented by employment level of settlements and it is possible to make cross sectional analysis on the relations between economic performance and other variables.

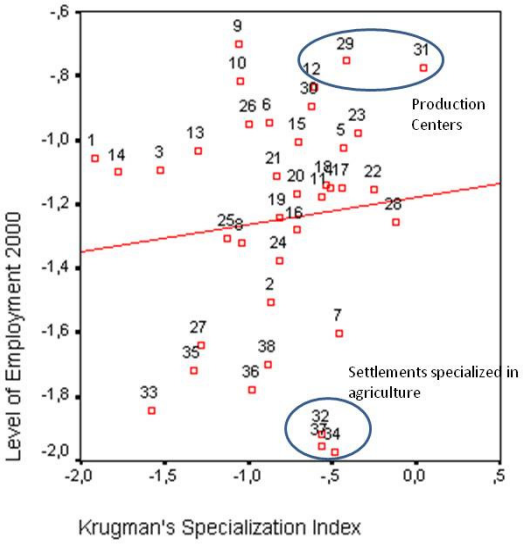


Figure 38 Krugman's Specialization Index by Level of Employment in 2000

Specialization is one of the important determinants of economic performance in a world of competition. Concentration of workforce and other facilities enables firms to increase productivity and as a result increases economic performance of

settlements. Krugman's specialization index is used as an indicator of specialization in this study. Data analysis in the region shows that manufacturing centers of Gönen and Eğirdir have high values of specialization and economic performance. But this trend is not true for all of the settlements in the region. There is also another interesting group of settlements which are specialized in agriculture with high values of specialization however they do not have high values in terms of employment level.

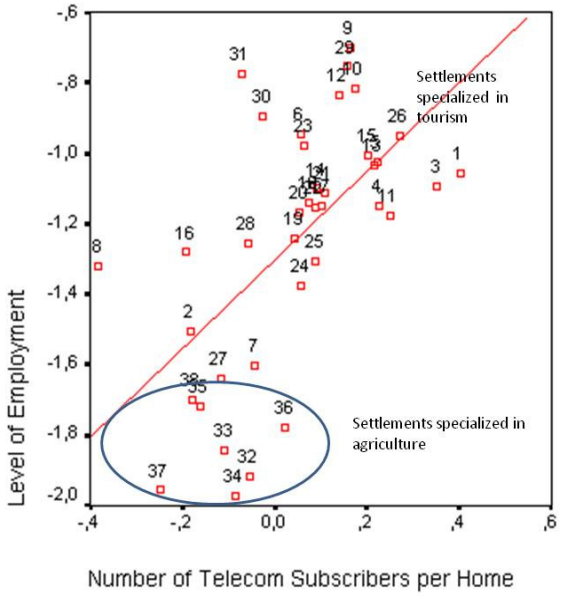


Figure 39 Number of telecom subscribers per home by level of employment

Technical infrastructure is an important factor because it is vital to meet the needs of local sectors and clusters. According to Wong, 1998, telecommunication facilities are increasingly seen as a vital tool for business administration as they can handle massive flows of information and transactions concurrently to provide spatial integration of different sectors of economic activity. Technical infrastructure is also a determining factor in Antalya City Region. Settlements specialized in tourism have

high values in both level of employment and number of telecom subscribers. In contrast settlements specialized in agriculture have low level in both variables. There is a significant correlation between competitive power and technical infrastructure according to the results of the data analysis.

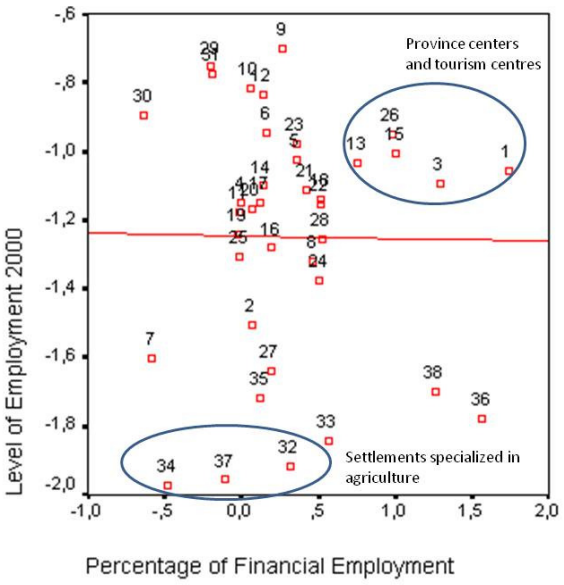


Figure 40 Percentage of financial employment by level of employment

Specialization in new and popular sectors like finance is also a source of economic performance for settlements. Financial sector is crucial to increase start-up rates and survival rates that are desirable characteristics for firm level success and so the performance of settlements in an urban network. In Antalya Region, province centers and tourism centers have high values in terms of both level of employment and percentage of financial employment. In contrast settlements which are specialized in agriculture have low level both variables.

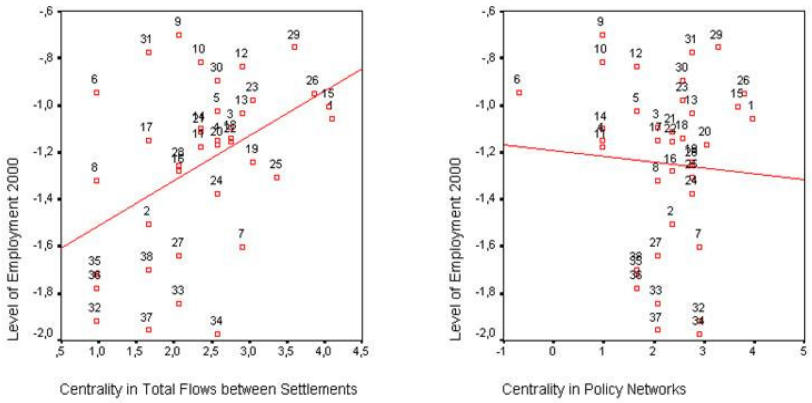


Figure 41 Centrality in total flows and centrality in policy networks by level of employment

Relations between economic performance and centrality in networks can also be examined. In Antalya City Region there is a positive relation between centrality in total flows and level of employment. Settlements attracting people for working, public services and leisure activities have also high level of employment. But the relation of between economic performance and level of employment is not that clear.

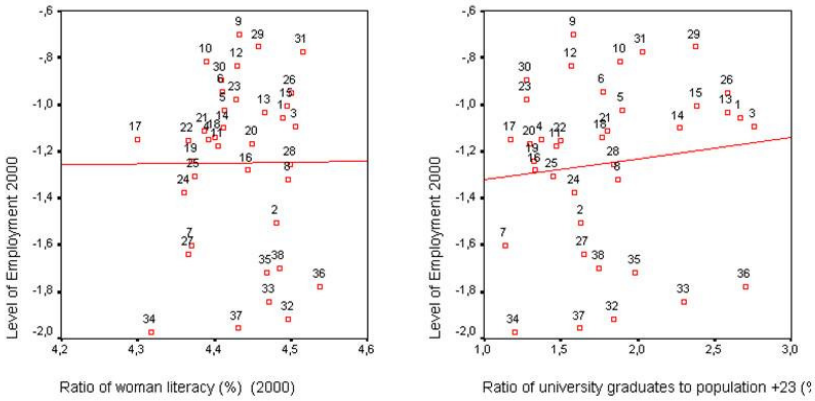


Figure 42 Ratio of woman literacy and ratio of university graduates to population by level of employment

Human resources including skill levels, availability and cost of labor are important sources of economic performance for settlements. In successful regions, skills of the

workforce and the share of educated and skilled labor in total population are high. According to Webster and Muller, 2000, the ability of an urban region to move up value chains is directly related with its human resources. Data analysis on economic performance shows that the condition is roughly true for Antalya City Region. In the figures above it can be seen that there is a low but positive correlation between ratio of university graduates and level of employment. For ratio of woman literacy the power of relationship is even lower. Province centers, Alanya, Manavgat as tourism centers and Eğirdir as a major production center have high values in terms of human resources and economic performance; in contrast agricultural settlements have low values in both terms.

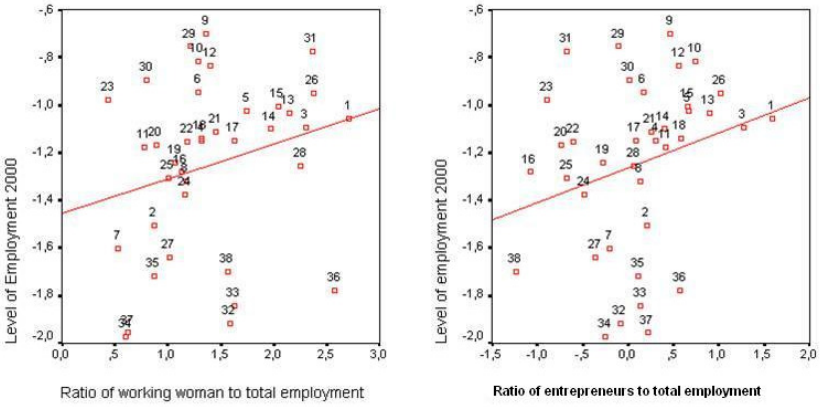


Figure 43 Ratio of working woman and ratio of entrepreneurs to total employment by level of employment

Level of entrepreneurship of a settlement is a part of its human resources with creativity and risk tolerance that has a positive effect on its economic performance. In Antalya City Region, there is a clear tendency between entrepreneurship variables (ratio of working woman to total employment and ratio of employees to total employment) and the economic performance variable (level of employment). Similar to the human capital variable entrepreneurship and economic performance values are

high in province centers and tourism centers and low in settlements with agricultural characteristics.

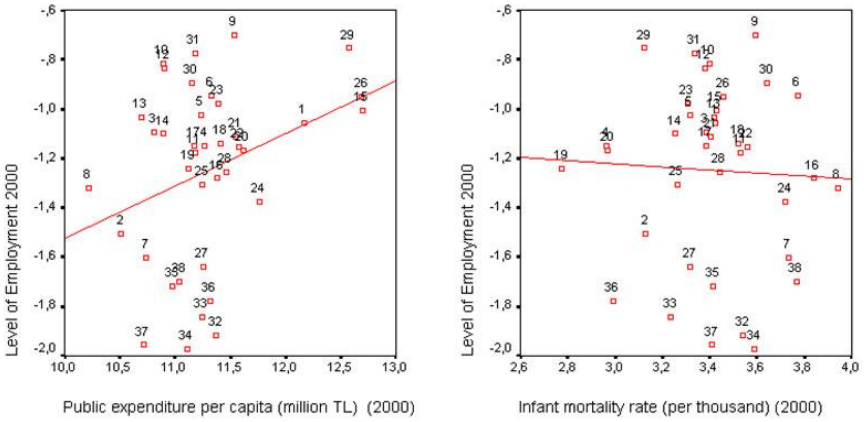


Figure 44 Public expenditure per capita and infant mortality rate by level of employment

Another crucial factor for economic performance of settlements is a responsive public sector because it directly effects the local business environment and willingness of mobile workers. It also affects social and environmental factors like the quality of the residential accommodation, urban environment and quality of life, climate conditions, pollution levels, public safety, health and education facilities, recreational and cultural facilities. In the data analysis for Antalya City Region, a positive correlation is observed between public expenditure for capita and level of employment of settlements. Public expenditure and economic performance is high in the province centers and major production centers and low in especially the agricultural settlements in the north of the region.

Quality of life is another source of economic performance crucial to attract mobile workers and increase the human capital level of a settlement. But in Antalya City Region there is not a clear relationship between quality of life (represented by infant mortality rate) and economic performance (represented by level of employment).

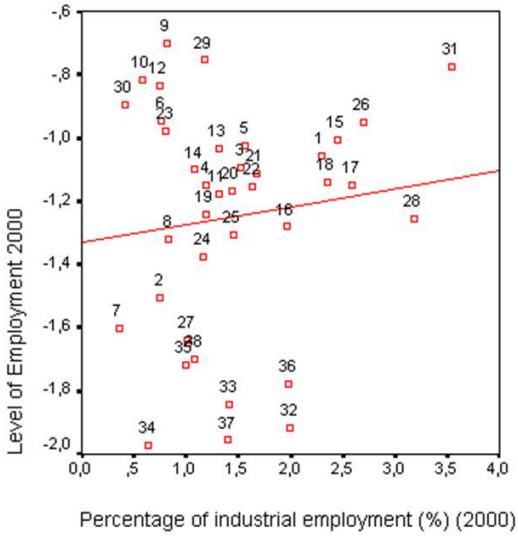


Figure 45 Percentage of industrial employment by level of employment

Last variable is percentage of industrial employment in the region. But it is not a determining factor because settlements with high level of industrial employment have moderate values of economic performance.

5.2.5 Relations between different measures of attractivity, economic performance and centrality in policy networks

The level of relations between of attractivity, economic performance and centrality in policy networks is also important. Some of the coefficients of correlation among these factors are significant (Table 3). However, they are not very high and so they can be accepted as independent indicators that can be used in the econometric analysis.

Table 7 Correlation Coefficients Between Different Variables used in the models

Source: Calculated Based on the Study of Socio-Economic Development Level of Districts in Turkey (2004), SPO

	Level of Employment	Centrality in Total Flows	Centrality in Policy Networks	Percentage of industrial employment	Percentage of financial employment	Location Quotient of High Tech Sector	Ratio of working woman to total employment	Ratio of employees to total employment
Level of Employment	1,00	0,45	-0,06	0,12	-0,01	0,02	0,25	0,26
Centrality in Total Flows	0,45	1,00	0,57	0,09	0,12	0,14	0,12	0,24
Centrality in Policy Networks	-0,06	0,57	1,00	0,41	0,16	-0,25	0,16	-0,03
Percentage of industrial employment	0,12	0,09	0,41	1,00	0,40	-0,49	0,67	0,12
Percentage of financial employment	-0,01	0,12	0,16	0,40	1,00	0,18	0,72	0,41
Location Quotient of High Tech Sector	0,02	0,14	-0,25	-0,49	0,18	1,00	-0,21	0,20
Ratio of working woman to total employment	0,25	0,12	0,16	0,67	0,72	-0,21	1,00	0,53
Ratio of employees to total employment	0,26	0,24	-0,03	0,12	0,41	0,20	0,53	1,00
Ratio of woman literacy	0,01	-0,14	0,18	0,37	0,56	-0,19	0,57	0,25
Ratio of university graduates to population +23	0,12	0,14	0,15	0,36	0,70	-0,08	0,80	0,63
Public expenditure per capita	0,32	0,58	0,46	0,44	0,30	-0,06	0,32	0,10
Number of telecom subscribers per home	0,60	0,65	0,07	0,17	0,33	0,17	0,43	0,59
Infant mortality rate	-0,04	-0,21	-0,10	-0,11	0,00	0,17	-0,13	-0,12
Krugmans Specialization Index	0,11	-0,06	0,10	0,23	-0,45	-0,18	-0,30	-0,45
Administrative Status	-0,20	-0,58	-0,51	-0,40	-0,51	0,05	-0,48	-0,46
Centrality in Flows for Work	0,32	0,76	0,58	0,26	0,44	0,04	0,41	0,47
Centrality in Flows for Public Services	0,30	0,66	0,46	0,31	0,49	0,03	0,44	0,49

Table 8 Cont'd

Source: Calculated Based on the Study of Socio-Economic Development Level of Districts in Turkey (2004), SPO

	Ratio of woman literacy	Ratio of university graduates to population +23	Public expenditure per capita	Number of telecom subscribers per home	Infant mortality rate	Krugmans Specialization Index	Administrative Status	Centrality in Flows for Work	Centrality in Flows for Public Services
Level of Employment	0,01	0,12	0,32	0,60	-0,04	0,11	-0,20	0,32	0,30
Centrality in Total Flows	-0,14	0,14	0,58	0,65	-0,21	-0,06	-0,58	0,76	0,66
Centrality in Policy Networks	0,18	0,15	0,46	0,07	-0,10	0,10	-0,51	0,58	0,46
Percentage of industrial employment	0,37	0,36	0,44	0,17	-0,11	0,23	-0,40	0,26	0,31
Percentage of financial employment	0,56	0,70	0,30	0,33	0,00	-0,45	-0,51	0,44	0,49
Location Quotient of High Tech Sector	-0,19	-0,08	-0,06	0,17	0,17	-0,18	0,05	0,04	0,03
Ratio of working woman to total employment	0,57	0,80	0,32	0,43	-0,13	-0,30	-0,48	0,41	0,44
Ratio of employees to total employment	0,25	0,63	0,10	0,59	-0,12	-0,45	-0,46	0,47	0,49
Ratio of woman literacy	1,00	0,69	0,13	-0,06	-0,05	-0,20	-0,32	0,27	0,17
Ratio of university graduates to population +23	0,69	1,00	0,29	0,36	-0,14	-0,53	-0,47	0,52	0,37
Public expenditure per capita	0,13	0,29	1,00	0,49	-0,11	0,08	-0,67	0,69	0,57
Number of telecom subscribers per home	-0,06	0,36	0,49	1,00	-0,28	-0,18	-0,43	0,56	0,56
Infant mortality rate	-0,05	-0,14	-0,11	-0,28	1,00	0,06	-0,03	0,00	-0,03
Krugmans Specialization Index	-0,20	-0,53	0,08	-0,18	0,06	1,00	0,26	-0,27	-0,31
Administrative Status	-0,32	-0,47	-0,67	-0,43	-0,03	0,26	1,00	-0,84	-0,85
Centrality in Flows for Work	0,27	0,52	0,69	0,56	0,00	-0,27	-0,84	1,00	0,85
Centrality in Flows for Public Services	0,17	0,37	0,57	0,56	-0,03	-0,31	-0,85	0,85	1,00

5.3 Findings of the econometric models

5.3.1 Findings of the econometric model related to economic performances of settlements

To identify the factors of economic performance, a regression analysis is used that dependent variable is level of employment. In the first model, one independent variable is employed which is the number of telecom subscribers per home (R2: 0,322, significant at 0,001). Then, second model adds percentage of financial employment and increases the coefficient of determination. (R2: 0,429, significant at 0,001). Finally, ratio of woman literacy is the last variable determining is the last factor determining the competitive power of settlements (R2: 0,513, significant at 0,001) in the third model.

To conclude, the variables of technical infrastructure (number of telecom subscribers per home), development of new sectors (percentage of financial employment) and human capital (ratio of woman literacy) are the factors which describe the economic performance of settlements (level of employment) best.

Table 8 Findings of the model

Model 1 Dependent: Level of Employment	Coefficients	Standart Error	T- ratio	Significance
Constant	-0,025	0,081	-0,307	0,761
Number of telecom subscribers per home	0,31	0,075	4,136	0
R2: 0,322, F: 17,10 sig at 0,001				
Model 2 Dependent: Level of Employment				
Constant	-0,057	0,076	-0,74	0,462
Number of telecom subscribers per home	0,388	0,076	5,102	0
Percentage of financial employment	0,031	0,012	2,569	0,015
R2: 0,429				
F:13,18 sig at 0,001				
Model 3 Dependent: Level of Employment				
Constant	-0,702	0,275	-2,55	0,015
Number of telecom subscribers per home	0,443	0,075	5,928	0
Percentage of financial employment	0,052	0,014	3,652	0,001
Ratio of woman literacy	0,007	0,003	2,427	0,021
R2: 0,513 F:11,97 sig at 0,001				
Durbin-Watson:1,589				
All Variables	Coefficients	Standart Error	T ratio	Significance
(Constant)	-1,057	0,504	-2,097	0,048
Centrality in policy networks	-0,003	0,003	-1,145	0,265
Percentage of industrial employment	**0,003**	**0,005**	**0,648**	**0,524**
Percentage of financial employment	0,075	0,024	3,043	0,006
Location Quotient of High Tech Sector	0,058	0,033	1,777	0,089
Ratio of working woman to total employment	0,013	0,015	0,867	0,395
Ratio of employees to total employment	-0,003	0,041	-0,086	0,933
Ratio of woman literacy	0,008	0,004	1,89	0,072
Ratio of university graduates	-0,008	0,012	-0,666	0,513
Public expenditure per capita	0	0	1,44	0,164
Number of telecom subscribers per home	0,339	0,146	2,326	0,03
Infant mortality rate	0,002	0,002	1,055	0,303
Krugmans Specialization Index	-0,111	0,118	-0,936	0,36
Administrative Status	0,167	0,142	1,175	0,253
Centrality in flows for work	0,001	0,005	0,229	0,821
Centrality in flows for public services	0,006	0,005	1,219	0,236
R2: 0,70				
F:3,46sig at 0,004				

5.3.2 Findings of the econometric model related to attractivity of settlements

To identify the factors determining the attractivity of settlements a regression analysis is used. In the first model, one variable is employed which is centrality on total policy networks (R2: 0,741, significant at 0,001). Then, second model adds variable of communications infrastructure and increases the coefficient of determination. (R2: 0,850, significant at 0,001). Job opportunities created in the settlement is another determinant of attractivity of settlements and it increases R2 to 0,873. Finally, responsiveness of the public sector is the last variable determining the attractivity of the settlements (R2: 0,890, significant at 0,001).

To conclude, the variables of centrality in policy networks, an advanced communication infrastructure (number of telecom subscribers per home), availability of job opportunities (percentage of industrial employment) and a responsive public sector (public expenditure per capita) are the factors which describe the attractivity of the settlements (centrality in total flows) best.

Table 9 Findings of the model

	Coefficient	Standart Error	T ratio	Significance
Model 1 Dependent: Centrality in Total Flows				
Constant	1,124	1,819	0,618	0,541
Centrality in Policy Networks	1,061	0,105	10,137	0
R2: 0,741, F: 102,750 sig at 0,001				
Model 2 Dependent: Centrality in Total Flows				
(Constant)	-26,404	5,623	-4,696	0
Centrality in Policy Networks	0,904	0,086	10,471	0
Number of telecom subscribers per home	27,896	5,518	5,056	0
R2: 0,850, F:99,20 sig at 0,001				
Model 3 Dependent: Centrality in Total Flows				
(Constant)	-23,98	5,336	-4,494	0
Centrality in Policy Networks	0,977	0,086	11,396	0
Number of telecom subscribers per home	26,662	5,172	5,155	0
Percentage of industrial employment	0,346	0,139	2,489	0,018
R2: 0,873, F:78,02 sig at 0,001				
Model 4 Dependent: Centrality in Total Flows				
(Constant)	-22,318	5,083	-4,391	0
Centrality in Policy Networks	0,794	0,114	6,991	0
Number of telecom subscribers per home	23,607	5,055	4,67	0
Percentage of industrial employment	0,353	0,131	2,699	0,011
Public expenditure per capita	0,004	0	2,292	0,028
R2: 0,890, F:67,14 sig at 0,001 **Durbin-Watson: 2,509**				

All Variables	**Coefficient**	**Standart Error**	**T ratio**	**Significance**
(Constant)	72,767	33,513	2,171	0,04
Centrality in Policy Networks	0,721	0,136	5,299	0
Percentage of industrial employment	0,095	0,307	0,31	0,76
Percentage of financial employment	1,563	1,726	0,906	0,375
Location Quotient of High Tech Sector	2,739	2,173	1,26	0,22
Ratio of working woman to total employment	-1,658	0,951	-1,742	0,095
Ratio of employees to total employment	-3,404	2,355	-1,446	0,162
Ratio of woman literacy	-0,426	0,277	-1,536	0,138
Ratio of university graduates	1,538	0,728	2,113	0,046
Public expenditure per capita	0	0	-1,052	0,304
Number of telecom subscribers per home	16,159	10,45	1,546	0,136
Infant mortality rate	-0,21	0,115	-1,833	0,08
Krugmans Spec. Index	4,48	7,78	0,576	0,57
Level of Employment	26,68	13,146	2,029	0,054
Administrative Status	-26,868	8,876	-3,027	0,006
R2: 0,937 F:24,6sig at 0,001 Durbin-Watson: 2,32				

5.3.3 Findings of the econometric model related to centrality in policy networks

To identify the factors determining being in a central position in total policy networks, a regression analysis is used that dependent variable is Freadman's centrality measures in total policy network. In the first model, one independent variable is employed which is centrality in total flows (R2: 0,740, significant at 0,001). Then, second model adds variable of percentage of industrial employment and increases the coefficient of determination. (R2: 0,796, significant at 0,001). Finally, responsiveness of the public sector is the last variable determining the central position in policy networks (R2: 0,820, significant at 0,001) in the third model.

To conclude, the variables of centrality in total flows (Freadman's centrality measures in total flows), availability of job opportunities (percentage of industrial employment) and a responsive public sector (public expenditure per capita) are the factors which describe the central position in total policy networks. (Freedman's centrality measures in total policy networks) best.

Table 10 Findings of the model

	Coefficients	Standart Error	T ratio	Significance
Model 1 Dependent: Centrality in Total Policy Networks				
Constant	2,651	1,417	1,871	0,069
Centrality in Total Flows	0,698	0,069	10,137	0
R2: 0,740, F: 102,749 sig at 0,001				
Model 2 Dependent: Centrality in Total Policy Networks				
Constant	0,502	1,45	0,346	0,731
Centrality in Total Flows	0,677	0,062	10,86	0
Percentage of industrial employment	0,412	0,133	3,094	0,004
R2: 0,796, F:68,39 sig at 0,001				
Model 3 Dependent: Level of Employment				
Constant	7,999	2,484	3,22	0,003
Centrality in Total Flows	0,743	0,057	12,942	0
Percentage of industrial employment	0,486	0,118	4,133	0
Public expenditure per capita	0,002	0	1,084	0,286
R2:0,820, F:64,372 sig at 0,001 **Durbin-Watson: 1,86**				
All Variables	**Coefficients**	**Standart Error**	**T ratio**	**Significance**
(Constant)	-24,746	37,485	-0,66	0,516
Level of Employment	-26,345	13,616	-1,935	0,065
Centrality in Total Flows	0,763	0,144	5,299	0
Percentage of industrial employment	0,039	0,316	0,123	0,903
Percentage of financial employment	-1,221	1,789	-0,683	0,502
Location Quotient of High Tech Sector	-2,916	2,23	-1,308	0,204
Ratio of working woman to total employment	1,409	0,999	1,411	0,172
Ratio of employees to total employment	3,513	2,422	1,451	0,16
Ratio of woman literacy	0,28	0,294	0,955	0,35
Ratio of university graduates	-1,258	0,775	-1,624	0,118
Public expenditure per capita	0	0	1,635	0,116
Number of telecom subscribers per home	-15,193	10,84	-1,402	0,174
Infant mortality rate	0,14	0,123	1,143	0,265
Krugmans Specialization Index	1,272	8,056	0,158	0,876
Administrative Status	9,806	10,6	0,925	0,365
R2: 0,89 F:14,69 sig at 0,001				

The overall findings of the three models give that in Antalya Region public sector is still an effective actor shaping the patterns of performance. Creating employment opportunities can also be an effective policy choice to generate new nodes in the network.

CHAPTER 6

CONCLUSION

-Justification and findings

Effects of globalization changed traditional relations between settlements. With modern information and communication technologies, old traditional relations between capital and labor changed. Nation states lose importance and instead of hierarchic relations, heterarchical relations gained importance. This change made network type of spatial representations and network relations very popular themes of regional development. Also production patterns have changed with liberalization of financial flows and this resulted in an increase in the economic performance of individual settlements and regions another core issue.

So in such an era where networking as a spatial representation concept and economic performance of cities gained importance, this study aimed to explore the factors affecting the differences of economic and centrality of settlements in an urban network. The spatial reflections of this above stated trends can be defined as "city-regions" which is one of the basic parts of new regionalism approach. Because of this the case study of this thesis is designed on a "city region" which includes Antalya, Isparta and Burdur provinces.

City region approach and network metaphor is closely related because network emphasizes the complex and strong relationships between cities and thus the coherence and unity of the region. Centrality of cities in an urban network can be defined in several contexts. In this study factors affecting attractivity of settlements

in terms of human flows and centrality of a settlement in policy networks is determined in Antalya City Region context.

Economic performance of cities depend mainly on sectoral trends, business environment, innovativeness and learning, R&D facilities, human and social capital, technical infrastructure, government structures, specialization, entrepreneurship according to the related literature.

The related literature defines attractivity measures for cities as level of salary, employment rate, fiscal expenditures, and quality of housing markets, metropolitan character, regional amenities, environmental quality and quality of life.

In this study three models are employed to determine the factors affecting economic performance, attractivity and centrality (in joint activity networks) of settlements in Antalya Region. Available district level data to test the hypotheses consists of dependent variables as level of employment for economic performance and central positions of settlements in terms of human flows and joint activities. As independent variables employment opportunities, sectoral structure, human resources, public sector responsiveness, technical infrastructure, quality of life and administrative status of the settlement are employed. Data analysis includes the interrelations between these individual variables and different networks between settlements.

Network analysis showed that in some categories like human flows for working purposes and for leisure activities, administrative borders are not determinant; the relations are observed between settlements that belong to different provinces. In contrast, networks of human flows for public services, network of knowledge sharing and consultancy, network of common project and common investment depends mainly on administrative borders. Another important result of this analysis is that some settlements which have locational disadvantages (inner settlements located in the rural area and some coastal settlements far from the center) are excluded from these networks.

Last findings of this study are based on the three econometric models aiming to identify the above stated (from the related literatures) factors affecting the economic performance, attractiveness in terms of human flows and centrality in joint activity networks of settlements in Antalya Region.

The findings on economic performance of settlements are mainly parallel to what literature offers in this area. Technical infrastructure is one of these factors which is a crucial element of local productive environment is one of the determinant factors in this case study. Another similar finding to the literature is human capital as a factor of economic performance. In Antalya City Region, ratio of woman literacy as a proxy of human capital is found as a determinant of economic performance. However, employment opportunities which literature defines as a factor of attractiveness rather than economic performance is found to be one of the most determinant factors of economic performance of settlements in the region.

Second econometric model was employed to determine the factors affecting attractiveness of settlements in terms of human flows and the results of this part are again mainly parallel to the related literature. The factors which are common in the literature and in the model employed are employment opportunities available in the region and the public sector responsiveness as factors of attractiveness. The model also gives that (different from what literature offers) centrality in joint activity networks and level of technical infrastructure are determinant factors of attractiveness for human flows in Antalya City Region context.

Last model tries to define the factors affecting the centrality of settlements in policy networks determinants of which are not defined clearly by the literature. According to the last model, in Antalya City Region context, centrality in total human flows, employment opportunities and public sector responsiveness are powerful determinants of being central in policy networks.

Implications

Antalya City Region is studied in this thesis and it is possible to make a comparison with the situation in the Antalya City Region and the theoretical discussions over city regions. It can show whether this case is conditional or challenging the theory.

City region theory defines the concept as functionally interrelated geographical area includes networks of urban centers and rural hinterland. In the case of Antalya City Region, the network analysis shows that functional relations in the region are limited. Administrative borders define the nature of relations. Cooperation networks, knowledge sharing and consultancy networks have a hierarchical structure limited by administrative borders. Common projects, common investment and financial support tendencies are even not available.

Another important assumption is that city region should include localized networks with global market reach. This assumption is true for the coastal area in the region where the tourism activities are densely located.

City region theory also states that dynamism and prosperity of the city region positively affects the semi urban and rural population. Spillover effects create a win-win type of relations between the core and the periphery. The analysis give that while the population increase rate in the coastal zones are high recently, the inner rural areas are losing population. There is also a tension between the two important sectors in the region which are agriculture and tourism.

City regions defined by the literature also include relations exceeding beyond administrative borders. But in Antalya City Region case the administrative borders define the nature of relations in most cases.

Specialization in different areas of the region is observed in the location quotient

analysis which is also crucial for developing complementary relations that create the unity and competitive power of the region. In Antalya City Region, manufacturing, mining, and construction sectors are specialized in the north while coastal zones are specialized in tourism. But what is lacking is that these sectors do not form complementary relations.

So it cannot be claimed that Antalya City Region fulfills theoretical requirements of city regions, it lacks the unity although compared to the 1950s it gains a more polycentric structure in terms of population distribution. Antalya City Region includes separate specialized locations that have cooperation networks within themselves. But it has no unity as a one city region including functional relations between different specialized units.

However only in the coastal area of Antalya, a limited area even lower than the province level, city region characteristics are observed based on one sector based structure which is tourism. And this kind of a spatial organization is a new form of city region formation.

To conclude regarding the factors that are determined in this thesis as factors of centrality in urban networks, sub-regional policies should be generated to ensure collaboration, interaction and participation among different part of the region. The scale of institutionalization should be based on not the province level but city region level and the Regional Development Agency that includes Antalya, Isparta and Burdur is an opportunity for this. Improving better networking between settlements specialized in different sectors which is not under the limitations of administrative borders may help the region enjoy the benefits of city regions. Sub regional policies can be formulated to develop networks regarding employment opportunities and public expenditures as common determinants of centrality in Antalya City Region networks.

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