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INSTITUTE OF SOCIAL SCIENCES
DEPARTMENT OF BUSINESS ADMINISTRATION
MASTER THESIS

**STRATEGY INFLUENCE AND PERFORMANCE OF CLUSTER MANAGEMENT
ORGANIZATIONS: AN ANALYSIS OF CLUSTER MANAGEMENT
ORGANIZATIONS IN TURKEY**

MİRAY ŐANLI

ADVISOR
ASSOC. PROF. DR. AĐRI BULUT

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KÜME YÖNETİMİ ORGANİZASYONLARININ STRATEJİK ETKİLERİ VE PERFORMANSLARI: TÜRKİYE'DEKİ KÜME YÖNETİMİ ORGANİZASYONLARININ ANALİZİ

Miray ŞANLI

Yaşar Üniversitesi
Sosyal Bilimler Enstitüsü
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Kümelenme sosyal refahı, rekabeti ve ekonomik kalkınmayı artırmak için yaygın olarak kullanılan araçlardan biri olarak kabul edilmektedir. Kümelenme, aynı zamanda bir değer zinciri içinde yer alan çeşitli aktörler arasındaki iletişimi ve işbirliğini desteklemek, bölgenin ve sektörün rekabet gücünü artırmak için küresel olarak yayılmaktadır. Son 20 yılda, kümelenme bir araç olarak yaygın bir şekilde kullanılmıştır. Türkiye'de ise kümelenme kavramı ilk olarak 2000'li yıllardan sonra strateji ve politika dokümanlarında tanımlanmaya başlamıştır. Kümeler genellikle destekleyici kuruluşlar ile birlikte sanayi paydaşları arasındaki karmaşık ilişkileri temsil etmektedir. Bu ilişkiler esasen küme faaliyetlerinin yönetildiği ve gerçekleştirildiği küme organizasyonları olarak da tanımlanan küme girişimleri tarafından yönetilmektedir.

Bu tezde, Türkiye'deki küme yönetimi organizasyonlarının faaliyetlerinin bir stratejiye dayanarak uygulanıp uygulanmadığı ve hizmetlerinin etkileri incelenmiştir. Bu tezin amacı küme yönetimi organizasyonlarının hizmetlerini stratejik plana göre belirlemeleri ve hizmetlerinin etkilerini arttırmaları için öneriler sunmaktır. Araştırma sektör ve bölgesel dağılıma göre seçilmiş 20 küme yönetimi organizasyonunun küme yöneticileri ile görüşerek yapılmıştır. Görüşmelerin amacı küme yönetimi organizasyonlarının yapısı, yönetim profilleri ve hizmetlerinin etkilerini ortaya çıkarmaktır. Tezin sonunda, Türkiye'de etkili küme yönetimi yapılarının kurulması için farklı yasal yapıdaki küme yönetimi organizasyonlarına yönelik öneriler sunulmaktadır.

Anahtar Kelimeler: Küme, kümelenme, küme yönetimi organizasyonu, küme yönetimi

ABSTRACT

Master Thesis

STRATEGY INFLUENCE AND PERFORMANCE OF CLUSTER MANAGEMENT ORGANIZATIONS: AN ANALYSIS OF CLUSTER MANAGEMENT ORGANIZATIONS IN TURKEY

Miray ŞANLI

**Yasar University
Institute of Social Sciences
Master of Business Administration**

Clustering is considered one of the widely accepted tools to increase competitiveness and economic development to stimulate social welfare. Clustering is also becoming more expansive globally to support communication and cooperation among various actors in a value chain and increase the competitiveness of the region and the sector. During the last 20 years, clustering “as a tool” was widely used all over the world. In Turkey, clustering concept was initially defined in strategy / political documents after 2000’s. Clusters generally represent complex relationships between stakeholders in an industry with supporting institutions. These relationships are mainly managed by cluster initiatives that are also described as cluster organizations where cluster activities are managed and implemented.

In this thesis, the impact of strategy over activities of cluster management was investigated in Turkey. This thesis aimed to propose recommendations for cluster management organizations to build their services based on a strategic plan and increase impact of their services. The research was conducted with interview of cluster managers of 20 cluster management organizations that were selected based on industries and regional concentration. The aim of interviews was to find out cluster management organizations’ structure, management profile and service influence. At the end of the thesis, the recommendations were presented to different legal type of cluster management organizations to constitute an effective cluster management in Turkey.

Keywords: Cluster, clustering, cluster management organization, cluster management

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ABBREVIATIONS

ECEI	European Cluster Excellence Initiative
EFQM	European Foundation of Quality Management
ESCA	The European Secretariat for Cluster Analysis
EU	European Union
GAP-	
GIDEM	Entrepreneur Support and Guidance Centres Project
İTKİB	General Secretariat of Istanbul Textile and Apparel Association
KOSGEB	Small and Medium Enterprises Development Organization
SMEs	Small and Medium-Sized Enterprises
UNDP	United Nations Development Program
URGE	Development of International Competitiveness Support Program

1. INTRODUCTION

The world economy has existed with limited resources for centuries. These limited resources have not been allocated in an effective and efficient way. Throughout history, different structures and concepts have been researched and discussed to determine the optimal resource allocation concepts. The effective and efficient allocation of the economic resources has affected nations' competitiveness and economic development. Under these circumstances, clustering is considered one of the widely accepted tools to increase competitiveness and economic development to stimulate social welfare. Clustering is also becoming more expansive globally to support communication and cooperation among various actors in a value chain and increase the competitiveness of the region and the sector. The term, "cluster" is described as "geographic concentrations of interconnected companies and institutions in a particular field" (Porter, 1998, p. 78).

During the last 20 years, clustering "as a tool" was widely used all over the world and became part of the many strategic documents for competitiveness, including the Lisbon Strategy of European Commission. The importance of clusters and cluster management has also been underlined as a priority in various sources in the world. In Turkey, in the White Paper, prepared during Development of the Clustering Policy in Turkey Project, the importance of clusters and cluster management were also highlighted. Moreover, Industry Strategy Paper (2011-2014) prepared by the Republic of Turkey Ministry of Science, Industry and Technology emphasized the importance of cluster based development. In both of these documents, it is revealed that Turkey needs to construct her competitive environment over cluster based development policy.

Ideally, clusters evolve spontaneously and represent complex relationships between stakeholders in an industry with supporting institutions. These relationships are mainly managed by cluster initiatives. As described in the "The Cluster Initiative Greenbook", "*Cluster initiatives are organised efforts to increase the growth and competitiveness of clusters within a region, involving companies, government or/and the research community*" (Sölvell, Lindqvist, & Ketels, 2003, p. 9). Cluster initiatives can be referred to as organizations where cluster activities such as

participating fairs, trainings etc. are managed. Cluster organizations have a crucial role to design and manage clusters' activities. For cluster organizations, there is no unique status or a concrete legal form. As a practical solution, cluster organizations are usually formed as associations or foundations all around the world.

The objective of this study is to examine the impact of strategy over activities of cluster management in Turkey. After this brief introduction firstly, concepts and historical evaluation of cluster and clustering was presented. Next, the structures of cluster organizations were examined. In addition, the selected cluster organizations in Turkey were mainly analysed in terms of clusters' legal structure, industry, establishment date, strategy and impact of the services offered. As presented in methodology section, semi structured interviews with cluster managers were made for the field study. In the conclusion part, results were presented in number of committed and non-committed stakeholders, annual total budget, strategy and impact on R&D, business and international activities for each three types of legal structure. The Final part concludes that recommendations in possible improvement areas were offered to constitute an effective cluster management in Turkey.

2. CLUSTER AND CLUSTERING

2.1. Cluster and Clustering

Clustering as an approach is widely accepted and provides great benefits to economic development and regional or national competitiveness. As a term, “cluster” has been used since 20 years in literature. However, as an economic activity, conceptualize of the cluster studies have been debated for many decades.

Firstly, the economist Alfred Marshall, in his book *Principle of Economy* (1890), identified an important concept “industrial districts”. The evolution of clustering is based on his theory. Marshall describes “industrial districts” as the agglomeration of related industrial activities. According to Marshall, specialised labour market, suppliers and knowledge spillovers may be effectively developed in industrial districts. Marshall’s concept of industrial districts was further developed in 1979 by the Italian professor Giacomo Becattini, in his work “Dal settore industriale al distretto industriale. Alcune considerazioni sull’unità d’indagine dell’economia industriale” (Gascon, Pezzi, & Casals, 2010).

Marshall’s paradigm shed light on to the cluster studies’ researchers for over a hundred years. More recently, in 1990, cluster was mainstreamed as concept for business strategy and economic development by Harvard Professor Michael Porter. The definition of cluster made by Porter is stated below;

“Clusters are geographic concentrations of interconnected companies and institutions in a particular field. Clusters encompass an array of linked industries and other entities important to competition. They include, for example, suppliers of specialized inputs such as components, machinery and services and providers of specialized infrastructure. Clusters also often extend downstream to channels and customers and laterally to manufacturers of complementary products and to companies in industries related by skills, technologies or common inputs. Finally, many clusters include governmental and other institutions- such as universities, standards-setting, agencies, think tanks, vocational training providers and trade associations – that provide specialized training, education, information, research and technical support” (Porter, 1998, p. 78).

2.2. Historical Evolution of Clusters and Clustering

The concept of cluster has been debated by various researchers for many years. In the general framework, there are three principal points of reference in the field of cluster; Alfred Marshall, Giacomo Becattini and Michael E. Porter.

Marshall Approach:

It is accepted that industrial districts were first analysed in depth by Alfred Marshall in nineteenth century. Marshall studied “external economics” in his study “the Principles of Economics” and defined how industrial districts, which were the precursor to the more recent notion of industry clusters, provided opportunities to firms (Morgan, 2004). He identified three fundamental reasons why the concentration of a group of companies from a particular sector in a particular location should be more productive together than they were separately (Gascon, Pezzi, & Casals, 2010). These reasons are labour market pooling, supplier specialization and knowledge spillovers as known with the assumptions of Marshallian Externalities or Marshallian Trinity (Alsaç, 2010).

Firstly, while similar companies attract, develop, and benefit from a pool of labour with common skills and abilities. Simultaneously, individual workers minimize their economic risks by being in close contact with many possible employers needing workers with specialised skills and abilities.

Secondly, similar companies create a good market for suppliers and provide necessary scale for them to increase and specialise their expertise. This situation presents companies a productive advantage for their customers.

Finally, ideas and innovativeness and their outcomes spill over rapidly from one company to another company within an industrial district, as if the knowledge were “in the air” (Gascon, Pezzi, & Casals, 2010). As explained above, Marshall’s Trinity converges on labour market pooling, supplier specialization and knowledge spillovers for supporting the clustering (Cortright, 2006).

Becattini Approach:

At the end of the 1970s and at the beginning of the 1980s, the studies of Giacomo Becattini and his disciples studied industrial districts of Terza Italia (Third Italy, northern and central Italy) which instituted on Marshallian industrial districts. During his studies in Terza Italia, the scope of the Marshallian industrial districts was broadened and referred to as “new” industrial districts by Becattini. In describing the new industrial districts, Becattini emphasized the importance of socio-cultural factors in facilitating the economic advantages of geographic proximity. The new industrial districts also emphasized geographic proximity and industrial specialization. At the same time, the influence of socio-cultural norms and the role of institutions in enhancing cooperation and collaboration between companies are put forward as fundamental factors for the novel reference of industrial districts concept (Morgan, 2004).

Porter Approach:

Apart the studies both by Marshall and by Becattini on industrial districts, another study was conducted and published by Michael E. Porter in his book “The Competitive Advantage of Nations”, 1990. In his book, Porter researched factors of competitive advantage in international level. At the same time, he developed his famous “Diamond Model”. Model covers various interdependent elements: the factor conditions, strategy and the structure of firms, demand conditions, related and supporting industries, with the aim to achieve sustainable competitive advantage of nations. Through this model, the concept of cluster became a phenomenon in both business and economics literature as well as for practitioners (Gascon, Pezzi, & Casals, 2010).

During the last 100 year, Marshall, Becattini and Porter had been focusing on industrial agglomerations on how competitiveness can be achieved with the interaction of stakeholders. This study observes that during historical evaluation of the researches, economic concepts attached with social and public administration that further affected triple helix concept for competitiveness.

2.3.Clusters and Clustering in Post-modern Era

Over the last decade, numerous studies on clusters were conducted. The closest and most accepted studies on clusters were made by Michael E. Porter. His work is widely recognized as one of the most important studies for competitiveness. His first study that formed cluster concept was published in his book “The Competitive Advantage of Nations” in 1990. Porter explored many techniques to analyse industries and competitors and to develop strategies for achieving competitive advantage (Choe & Roberts, 2011). In this book, Porter presented a model, known as the “diamond of competitive advantage” to develop strategies for achieving competitive advantage. This model is also used to position and develop business strategy for clusters, while this model was extensively concerned with the competitiveness of nations. In the model, there are four elements; firm strategy, structure and rivalry, factors conditions, demand conditions and related supporting industries.

Firm Strategy, Structure and Rivalry: conditions of companies, how they are created, organized, and managed, and the nature of domestic rivalry.

Factor Conditions: positions in the factors of production; skilled labour, resources, technology, and infrastructure.

Demand Conditions: home-market demand for products and services of companies.

Related and Supporting Industries: related industries that are internationally competitive and existence of other supporting industries.

The Role of Government: tasks that doing by government to create competitive advantage of companies in the international markets.

Chance: indirect factor, incidents that affect sectors and change the positions in the competitive environment.

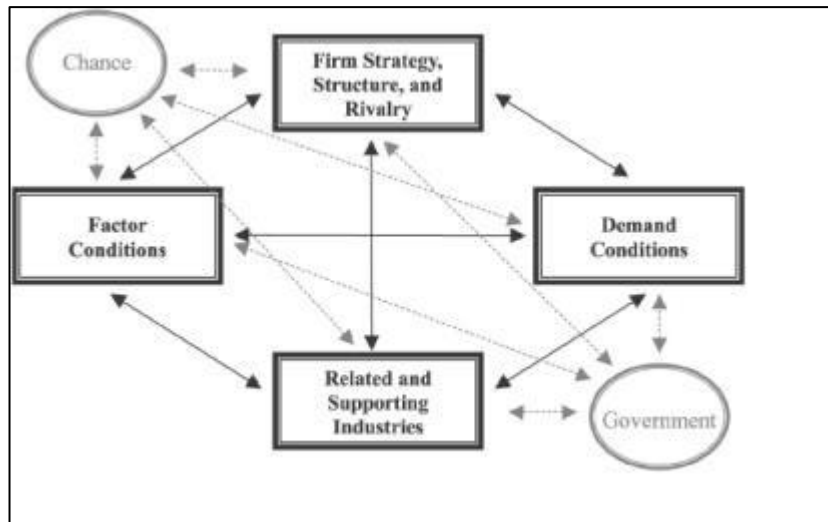


Figure 1: Diamond of competitive advantage

Source: (Wall, Burger, & Knaap, 2008)

In this study, Porter prepared an infrastructure for competitive advantage and created a model for it. Later, in his article, “Clusters and the New Economics of Competition” in 1998, cluster as a term was clearly defined and specified as an important instrument for improving productivity, innovativeness and competitiveness of companies (Karaev, Koh, & Szamosi, 2007). As a basic definition, clusters are defined as “*geographic concentrations of interconnected companies and institutions in a particular field*” (Porter, 1998, p. 78).

The California wine cluster is a good example of a cluster. According to Porter’s article (1998), the California wine cluster includes 680 commercial wineries and several thousand independent wine grape growers. It is supported by extensive industries to complement existing actors; suppliers of grape stock, irrigation and harvesting equipment, barrels and labels, specialized public relations and advertising companies etc. Moreover, several local institutions, universities, the Wine Institute and special committees also support the cluster.

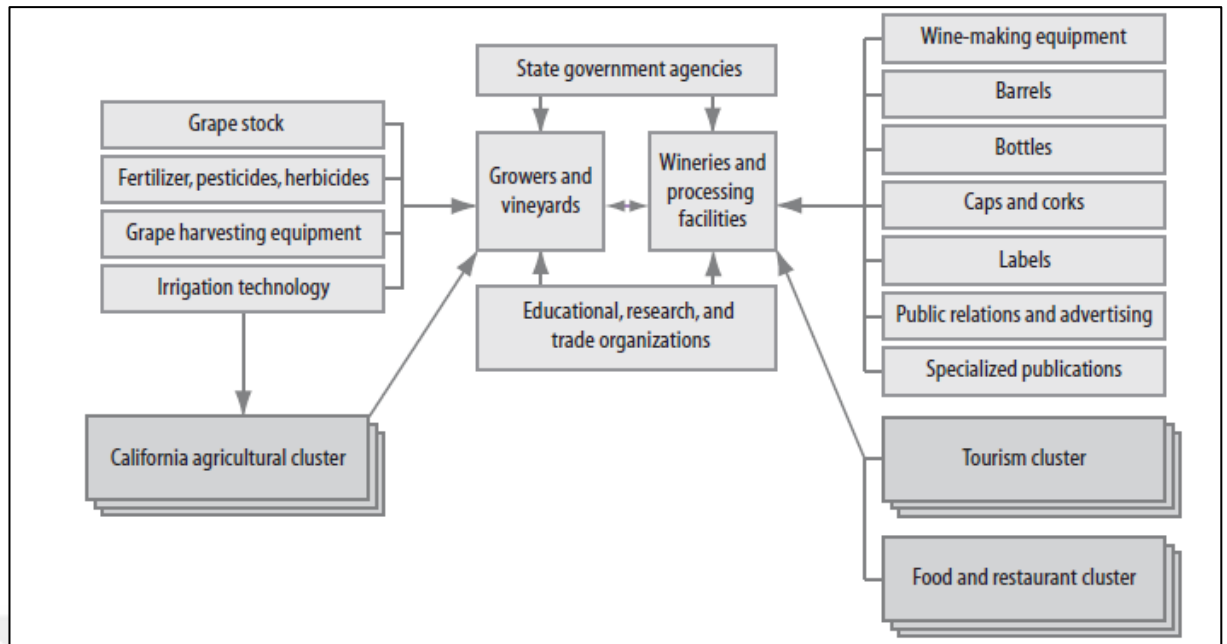


Figure 2: An example of cluster: California Wine Cluster

Source: (Porter, 1998, p. 79)

2.4. Clusters and Clustering in Turkey

Compared to Europe, clustering may be considered as a new concept for Turkey. The clustering concept was initially defined in strategy / political documents after 2000's. In this respect, the first political document was "SME Strategy and Action Plan" in 2004 that the clustering concept was first introduced. In this document, supporting local clusters was underlined. After that, this strategy document was revised for the period of 2007-2009. The clustering approach was accepted as a crucial tool for the competitiveness of SMEs and it was stated that clusters will be supported in the next period. Furthermore, issues related to the support of clusters were also emphasised in the 9th Development Plan (2007-2013) and Medium Term Program, prepared by Republic of Turkey Ministry of Development (former State Planning Institute) (Alsaç, 2010).

During the 2000s, cluster-based regional development projects were implemented in Turkey. The first cluster-based regional development project was conducted in the city of Bartın under the supervision of the Ministry of Development in cooperation with Small and Medium Enterprises Development Organization (KOSGEB) to increase the competitiveness of the sectors in global arena. In 2007, competitiveness and cluster analyses were conducted by Organized Industrial Region (OSTIM) in

Ankara. As a result of analysis, the Defence Industry Sector was determined to be the best for clustering activities (SME Networking Project, 2013).

In Southeast Anatolia, EU-GAP Regional Development Program was implemented in cooperation with the United Nations Development Program (UNDP) and Directorate General of GAP. Within this program, “Entrepreneur Support and Guidance Centres Project (GAP-GIDEM)” was implemented to carry out clustering activities for regional economic development”. In this project, cluster analyses were made for several clustering initiatives. Şanlıurfa organic agriculture, Adıyaman clothing and Diyarbakır marble clustering initiatives are several examples (Akgüngör, Kuştepelı, & Gülcan, 2013).

At the international level, EU-funded projects were also implemented. The first EU-funded clustering project was “The Fashion and Textile Cluster Project” (2005-2007) and The General Secretariat of Istanbul Textile and Apparel Association (İTKİB) is the main beneficiary of the project. Within this project, increasing cooperation among SMEs and related organizations in the textile and clothing sector, creating value added and developing strategies for the future of sector were aimed (Delegation of the European Union to Turkey, 2012), (Akgüngör, Kuştepelı, & Gülcan, 2013, p. 3).

The second EU funded project is the “Development of Clustering Policy Project” (2007-2009). The main objective of the project was to create National Clustering Policy and is the most comprehensive study to analyse the current conditions of clusters and cluster policies in Turkey and present strategic recommendations for the next period. The project consisted of three main components. Within the first component, various activities were implemented to strengthen institutional capacities. In the second component, “Cluster Strategy Document” (White Paper) was prepared for the National Cluster Policy. In the third component, many activities were conducted to make cluster mapping and analysis. At the same time, simultaneously, roadmaps of 10 pilot clusters in Turkey were prepared in the project (Akgüngör, Kuştepelı, & Gülcan, 2013). The roadmaps were prepared for the clusters that were stated in figure 3. The outputs of the project are based on constructing Turkey’s competitive environment over cluster-based development policy.

Innovativeness and Entrepreneurship	Developing a network between the Actors	Clusters Formation	Developing the Infrastructure of the Clusters	Factor Conditions
Mersin Processed Food Clusters	Ankara Machine Clusters	Konya Automotive Supply Industry Clusters	Eskişehir-Bilecik-Kütahya Ceramic Clusters	Manisa Electrical and Electronical Appliances Clusters
Ankara Software Clusters	Denizli-Uşak Home Textile Clusters	Muğla Yacht Building Clusters	İzmir Organic Food Clusters	Marmara Automotive Clusters

Figure 3: 10 Pilot clusters in Turkey

Source: SME Networking Project (SME Networking Project, 2013)

The third project was the “SME Networking Project” (2011-2013) which was co-financed by the European Union and Republic of Turkey. The project was conducted by Ministry of Economy in collaboration with regional chambers of commerce and industry in 5 areas in Gaziantep, Çorum, Kahramanmaraş, Samsun and Trabzon. The main objective of the project is to improve collaboration and cooperation between developed and the undeveloped regions in Turkey through developing and piloting cluster-based strategies (SME Networking Project, 2013).

Many support programs have been put into force to promote cluster in Turkey. Supporting institutions are the main players to constitute cluster policy and reshaping their support mechanisms in order to support the establishment and development of clusters. Currently, there are 2 main institutions in Turkey that provide support for clusters actively. Institutions and their supports are as follows;

Republic of Turkey Ministry of Economy:

In the scope of “Declaration on Supporting the Development of International Competitiveness”, UR-GE Support Programme (2010/8) is conducted to increase international competitiveness of exporters under the cooperating institutions within the framework of clustering and project approach. In this context, common actions and activities are supported with intent to export and these are common needs assessment on training and / or counselling services, marketing activities on publicity, brand, trade mission and matchmaking events. Since 2010, 180 projects have been approved to be supported, 44 projects of them were completed and 136 projects have been continued (SME Networking Project, 2013).

Republic of Turkey Ministry of Science, Industry and Technology:

Clustering Support Programme has been conducted under Clustering Support Programme Application Regulations (2012/9) by Republic of Turkey Ministry of Science, Industry and Technology. The overall objective of the program is to contribute competitiveness and increasing the efficiency of Turkish industry and convert them to mainly produce high-tech products, have qualified labour force and sensitive to the environment and society. In this context, program aims to constitute cooperation environment in order to initiate clusters and continue/manage them in a sustainable and effective way. In the scope of work plan, total budget of program is 25 million Turkish Liras during 5 years. The program is based on call procedure and the first call was opened in 2013, one cluster organization was approved to be supported. The second call was opened on February 2015.

3. FORMATION AND STRUCTURE OF CLUSTER ORGANIZATIONS

3.1.The Formation of Clusters

Various ideas have been discussed on how clusters are formed and whether they are formed in a natural process or formed as an effect of intervention. In literature, there are some factors that affect creation of clusters. These factors are presented in table 1.

Table 1: Factors that affect forming of clusters

Factors	In Literacy
Factor Advantage	Porter, 1990; Sölvell, 2008
Historical Conditions / Unexpected Developments	Porter, 1990; Sölvell, 2008
External Economies	Piore ve Sabel, 1984; Brusco, 1982
Leading Company	Wolfe ve Gertler, 2004
Public Investments and Actions	Porter, 1998b; Owen-Smith ve Powell, 2004
Local Demand and Market Structure	Porter,1998a

Source: (Yiğit & Ardiç, 2013, p. 41)

According to Porter and Sölvell, some factor advantages affect the forming of clusters such as forest resources, climate, soil, ore deposits, transportation routes or ports. As an example, wine clusters, forest/pulp and paper clusters may emerge in a location that production factors are provided as geographically. Unexpected developments also affect the emergence of clusters. In any location, an entrepreneurship might start a business and it may take the lead to increase a local demand. Therefore, new companies, spin offs might be established, and ultimately a cluster might be formed (Sölvell, Clusters Balancing Evolutionary and Constructive Forces, 2008).

The key actor that determines the forming of a cluster is companies. Particularly, a lead or anchor company is important to encourage the emergence of a cluster. One or two critical companies feed the growth of numerous small companies to develop clusters (Wolfe & Gertler, 2004).

Any cluster pass through a number of stages in its life-cycle. There are also some views on the lifecycle of clusters in the literacy. Several classifications are presented in the table 2.

Table 2: The cluster life cycle

Stages	In Literacy
Four Stages (embryonic, growth, maturity, decline)	Rosenfeld, 2002
Four Stages (embryonic, growth, mature, decline)	Menzel ve Forhnal, 2007
Five Stages (agglomeration, emerging cluster, developing cluster, mature cluster, transformation)	Andersson vd., 2004
Three Stages (Birth, Evolution and Decline)	Porter, 1998a

Source: (Yiğit & Ardiç, 2013, p. 42)

The most comprehensive stages of the cluster life-cycle were determined by Andersson that is stated in figure 4 (Andersson, Serger, Sörvik, & Hansson, 2004, p. 29).

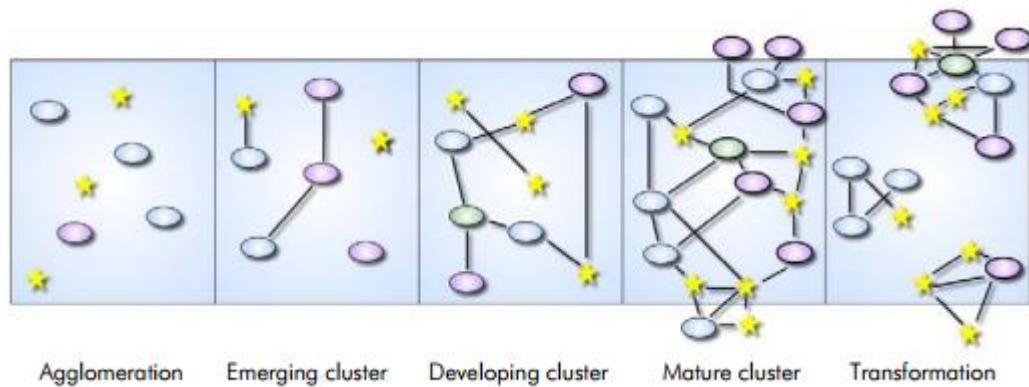


Figure 4: The cluster lifecycle of Andersson

Source: (Andersson, Serger, Sörvik, & Hansson, 2004, p. 29)

Agglomeration: A number of companies and other actors are located in a region.

Emerging cluster: A number of companies and other actors start to cooperate in the agglomeration for a core activity, and realise common opportunities through their linkages.

Developing cluster: New actors and new related activities emerge; attractiveness of the region increase and so, new linkages develop between all actors. Appearance of cluster starts.

The mature cluster: A certain critical mass of stakeholders for cluster has been formed. Relations with other clusters have also been developed. There is an internal dynamic in cluster to create new company through start-ups, joint ventures and spin-offs.

Transformation: Until cluster has emerged, markets, technologies, processes have been changed. Therefore, cluster has to be innovative and adapt in line with these changes to survive, sustainable and avoid stagnation and decay (Andersson, Serger, Sörvik, & Hansson, 2004)

3.2.Cluster Management

Cluster management is more comprehensive than management of an individual organization (PwC, 2011). It works as an interface to facilitate the relationships of cluster members whom their desires and expectations differ from each other. Here, the key challenge is to identify all various needs and expectations under common goal and create collective actions that encourage cluster members to participate in cluster activities. As a consequence, cluster management is more critical and special attention is needed.

According to PwC report (2011), cluster management is defined “*as the organisation and coordination of the activities of a cluster in accordance with certain strategy, in order to achieve clearly defined objectives*” (PwC, 2011, p. 8). Cluster management is a complex, interactive and non-linear process and continues activities are managed. Six main stages of the cluster management cycle have been identified that it is seen in figure 5.

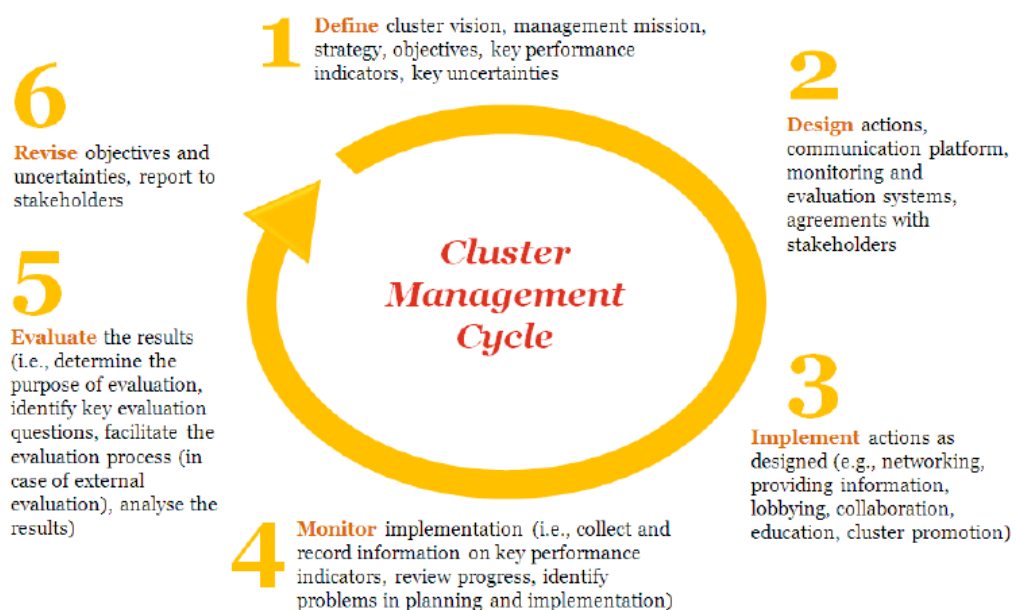


Figure 5: Cluster management cycle

Source: (PwC, 2011, p. 8)

As seen in figure 5, cluster management represents primarily six main stages. In a cyclical nature, continues activities have been carried out and the cycle has not been gone in order. Generally, clusters are managed in uncertain and highly complex environment (PwC, 2011). According to PwC's research and experience, there is no golden recipe for cluster management excellence. Each cluster is developed in various stages and their approaches are different. Management structure also changes over time, so adaptive management structure should be adopted.

In the adaptive cluster management;

- Management actions should be designed and carried out according to management experiments,
- Objectives of the cluster should be regularly reviewed,
- Various types of actions should be attempted and their results should be used as learning experiments,
- Each activity should be monitored and evaluated,
- Cluster members should be actively engaged in all stages of the management cycle.

Consequently, adaptive cluster management provides adaptive performance measurement systems and ensure long term efficient management structure (PwC, 2011).

Within the cluster management cycle, cluster organizations have also five main task to be implemented; Information and Communication, Training and Qualification, Co-operations, Marketing and PR and Internationalization.

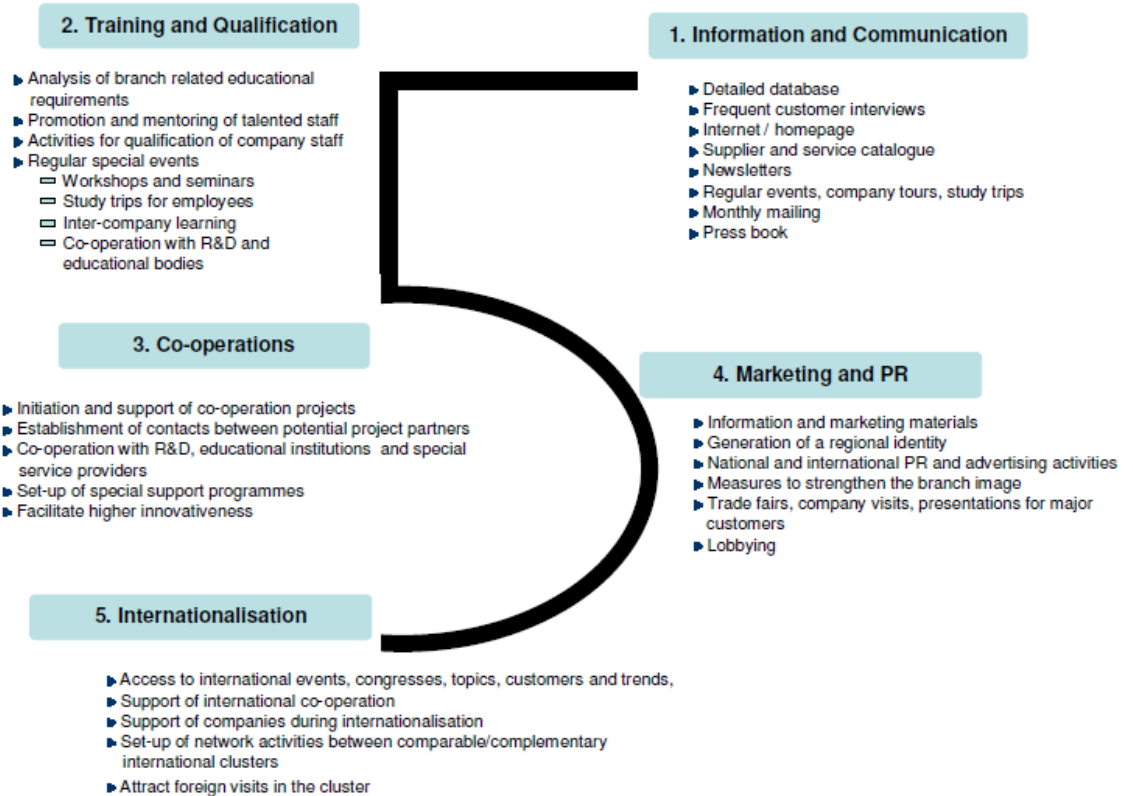


Figure 6: The five main tasks for cluster management cycle

Source: (*Clusters Linked over Europe (Cloe), 2006, p. 2*)

3.3. Structure of Cluster Organizations

Clusters are mostly very heterogeneous structures, consisting of diversified business actors and these actors have to be managed in line with their information, communication and cooperation (Scheer & Zallinger, 2007).

“Cluster initiatives are conscious actions taken by various actors to create clusters or strengthen them” (Andersson, Serger, Sörvik, & Hansson, 2004, p. 7). There are multiple members in a cluster initiative and the structure of a cluster initiative composes of following pieces;

- different companies and organizations (three main types of actors: private, public and academic)
- often have an office, cluster facilitator/manager, website etc.
- governance of the initiative

- financing of the initiative (international/ national/regional/local public (Sölvell, Clusters Balancing Evolutionary and Constructive Forces, 2008)

As indicated in the European Commission policy document, “*Cluster initiatives are increasingly managed by specialised institutions, known as cluster organisations, which take various forms, ranging from non-profit associations, through public agencies to companies. Multiple members involved in clusters need efficient, professional and appropriate services to get maximum benefits from their cluster organization*” (Commission of the European Communities, 2008, p. 8).

Consequently, the structure of a cluster organization has a central importance. A cluster organization is generally managed by a cluster manager. At the same time, it should be supported by all members of the cluster. The organization should also be transparent and operational. The organisational structure is also a key influence on a cluster’s competitiveness and efficient structures are essential for operating successfully in international markets (Scheer & Zallinger, 2007).

4. EUROPEAN APPROACH ON BENCHMARKING OF CLUSTER MANAGEMENT

This part was added to this thesis in order to present European approach on benchmarking study/methodology of cluster management. In the thesis, questionnaire was prepared in line with this approach to investigate cluster management organizations in Turkey.

Structures, processes, products and services of an entity are analysed in comparison with the peers in the same area within benchmarking study. The objective of benchmarking is to learn performance of other entities in order to improve their own structures, processes, products and services. As a widely accepted methodology, benchmarking provides the opportunity for mutual learning by comparing of quantitative indicators (Lämmer-Gamp, Kôcker, & Christensen, 2011).

In the “European Commission - Towards world-class clusters in the European Union” document, the importance of clusters has been indicated as driving competitiveness, innovation and job creation. European Union also promotes cluster excellence to increase benefits of clusters and encourages cooperation across the EU in order to strive for more world-class clusters (Commission of the European Communities, 2008). Successful world-class clusters can be established and survived with high quality cluster management. Strong management is needed and crucial for cluster organizations for providing professional services to cluster members. In this circumstances, European Commission, DG Enterprise and Industry launched in 2009 The European Cluster Excellence Initiative (ECEI) to create more world-class clusters by strengthening cluster excellence. Main aim of ECEI is to develop benchmarking methodologies and tools for cluster organizations to improve their capabilities and their internal management process.

European Commission has encouraged cluster management excellence by initiating ECEI and has conducted various works to determine benchmarking methodology and tools since 2009. Before 2009, a Cluster Benchmarking Project that its’ main overview was how clusters can be benchmarked in the knowledge based economy, was implemented in 2006. The pilot project was jointly financed by the Nordic Innovation Centre together with the Finnish Ministry of Trade and Industry,

the Swedish Agency for Innovation Systems (VINNOVA), and the Danish National Agency for Enterprise and Construction. As the conclusion of the project, building a model for benchmarking clusters had been found feasible. During the project, four methodologies for mapping had been examined and current projects of analysis and benchmarking clusters had been also analysed (Andersen, Bjerre, & Hansson, 2006). This project can be labelled as the starting point of the development of benchmarking tool for cluster organizations.

In 2009, an international workshop on “Measuring and Benchmarking the Quality of Cluster Organisations and Performance of Clusters” was hosted by the Agency of Competence Networks Germany and VDI/VDE-IT with the support of the European Commission, DG Enterprise and Industry. In this workshop, measurement and benchmarking way of cluster performance and quality of cluster organizations were debated.

From 2010 to July 2011, “NGPExcellence – Cluster Excellence in the Nordic Countries, Germany and Poland” project was conducted by 13 partners from 9 European countries. With the project, the cluster benchmarking approach was used (The NGPExcellence Project, 2011). In the project, more than 140 cluster organizations were benchmarked by the European Secretariat for Cluster Analysis (ESCA) experts. ESCA was established by one of the project partners, VDI/VDE Innovation + Technik GmbH to manage benchmarking mechanism in Europe.

The result of the benchmarking approach is based on “Quality Label”, Cluster Organisation Management Excellence Label, which was developed within ECEI. With Quality Label, the overall approach is to create an independent and voluntarily cluster management excellence that is accepted and recognised all over Europe (European Cluster Excellence Initiative- ECEI, 2012). All concepts and methodologies of benchmarking were developed in line with methodologies of EFQM, the European Foundation of Quality Management in order to provide an international recognition (European Cluster Excellence Initiative- ECEI, 2012).

Cluster management organization is assessed within Quality Label. The rationale of the Quality Label demonstrates that a cluster management organization is willing

to reach an excellent status of cluster management and show their improvement in this continues process. According to a harmonized approach of the ECEI and EFQM, cluster management organizations are awarded with Gold Label Certificate as cluster management excellence (European Cluster Excellence Initiative- ECEI, 2012). However, Gold Label requires continuous improvement and it is a tough process. Before, implementing the Gold Label Process, cluster management organizations are starting to get awarded with the Bronze Label to show their cluster management improvements. Cluster management organizations as voluntarily participate in a labelling process and their cluster management excellence is assessed by using Quality Indicators (European Cluster Excellence Initiative- ECEI, 2012). Within the Bronze Label, there is no justification for excellence status. All cluster management organizations that take part in a cluster benchmarking exercise, can reach the Bronze Label.

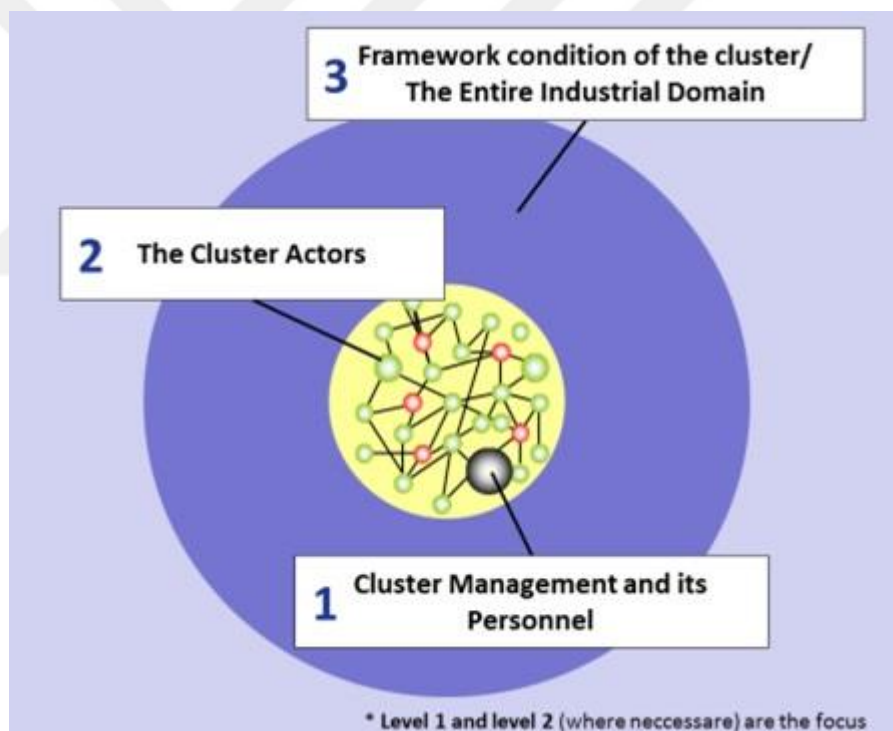


Figure 7: The shell model

Source: VDI/VDEIT

According to report prepared by ECEI “The quality label for cluster organisations-criteria, processes, framework of implementation”, cluster management excellence indicators cover three main aspects and detailed following dimensions:

1. Structure of the cluster (level 2)
2. Typology, governance, co-operation (levels 1 and 2)
3. Financing cluster organisation management (level 1)
4. Strategy, objectives, services (level 1)
5. Achievements, recognition (level 1)

747 cluster management organizations from 38 countries have been benchmarked by using the EU benchmarking methodology so far and all of them acquired the bronze label of cluster excellence (European Secretariat for Cluster Analysis, 2015).



5. METHODOLOGY

5.1. Sampling

In this analysis, 20 cluster management organizations were selected among cluster management organizations, which have been supported under “The Development of International Competitiveness Support Program (URGE)” by Republic of Turkey Ministry of Economy. The 20 cluster management organizations were determined based on industries and regional concentration among 107 cluster management organizations which were funded under URGE Support Program.

5.2. Scales

The questionnaire was developed in line with European Cluster Benchmarking Methodology and improved with various new variables for Turkey’s circumstances. Within this context, 24 questions on two parts were prepared with closed and multiple choice questions. In the first part, demographic information of cluster management organizations was asked. Here, the questions on industry, legal structure, establishment year, number of cluster stakeholders and annual total budget were designed.

The second part of the questionnaire was composed of strategy and impact questions. In the strategy question, the scale of “no strategy, strategy, strategy & monitoring, strategy & review, strategy & monitoring” was used to measure whether cluster organizations manage based on a strategy or not.

The impact of services was asked on R&D, business and international activities by using the scale format of “0.no impact yet, 1.limited impact, 2.measurable impact, 3.significant impact, 4.excellent impact”. Each cluster manager of cluster management organizations evaluated their impact of services for cluster stakeholders.

The questionnaire was conducted by semi-structured interviews with cluster managers of each selected cluster management organizations. Quantitative data about

key activities of cluster management organizations were obtained through the declaration of cluster managers. Data Analysis was carried out with MS Excel.

5.3. European Cluster Benchmarking Methodology

As indicated in the previous section, the questionnaire of this study was developed in line with European Cluster Benchmarking Methodology and improved with various new variables for Turkey's circumstances.

Cluster benchmarking was initially debated within Cluster Benchmarking Project which was implemented in 2006. The main overview of this project was how clusters can be benchmarked in the knowledge based economy. Afterwards, European Commission established European Cluster Excellence Initiative (ECEI) to encourage cluster management excellence and has conducted various studies to determine benchmarking methodology and tools since 2009. ECEI developed methodologies and tools to support cluster organisations to improve their capacities and capabilities in the management of clusters and networks (European Secretariat for Cluster Analysis, 2015).

Under the methodology, cluster management excellence indicators cover five following dimensions: Structure of the cluster, Typology, governance, co-operation, financing cluster organisation management, Strategy, objectives, services and achievements, recognition. "The Interview Guideline of Benchmarking of Cluster Management Organizations" is consisted of 40 main questions.

5.4. Results of Analysis

In this part, results of the data obtained from cluster management organizations were presented. All the answers given to 24 questions were discussed.

5.4.1. Part A – Demographic Information of Cluster Management Organizations

The questionnaire was conducted with 20 selected cluster management organizations in Turkey. The main objective of the first part of the questionnaire is to collect demographic information of cluster management organizations. Here, the results of general information are presented.

As stated in the figure 8, the selected cluster management organizations are located in 6 different cities in Turkey; İstanbul, İzmir, Ankara, Bursa, Eskişehir and Konya. 8 cluster management organizations are from İzmir, 6 cluster management organizations are from İstanbul, 3 cluster management organizations are from Ankara and one each is from Bursa, Eskişehir and Konya.

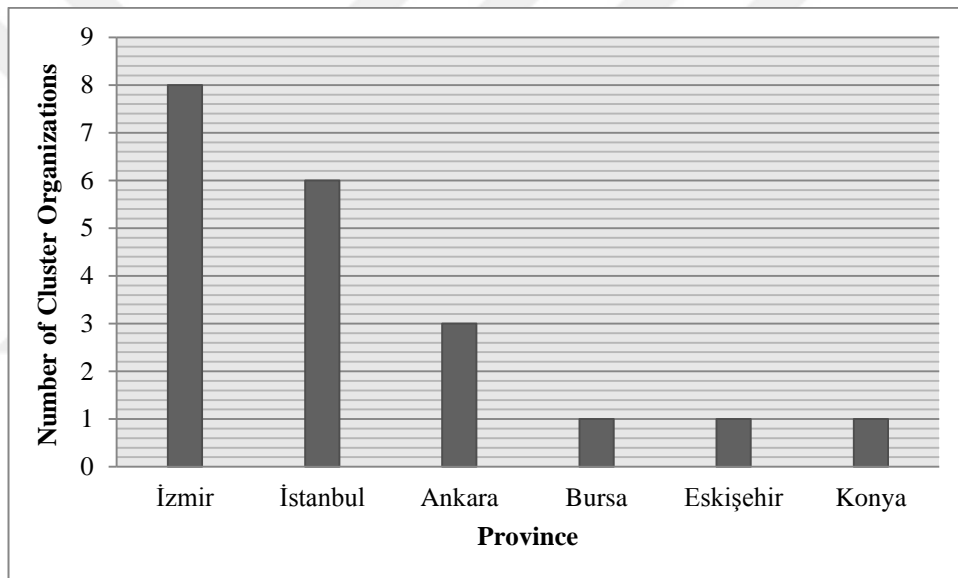


Figure 8: Divisions of location of cluster management organizations in concentration of industry

In this part of the questionnaire, 20 cluster managers of cluster management organizations were asked from which industry cluster management organizations are performed within 6 sectors. The industries were determined as main industries by Republic of Turkey Ministry of Economy. These main industries are grouped with sub-industries in table 3.

Table 3: Industries & Sub-Industries

Industry	Sub-industry
Chemical Industry	Chemical and Chemical Products
Mineral, Metal, Forestry Industry	Furniture, Paper and Forest Products
	Mining Products
	Iron and Steel Products
	Cement and Soil Products
	Ferrous and Non-Ferrous Metals
	Jewellery
Machinery, Automotive, Electronic Industry	Machinery and Accessories
	Electric and Electronic
	Health
	Ship and Yacht
	Automotive Industry
Agriculture	Fresh Fruit and Vegetable
	Cereals Pulses Oil Seeds and Products
	Dried Fruits and Products
	Fishery and Animal Products
	Ornamental Plants and Products
Textile	Apparel
	Textile and Raw Materials
	Leather and Leather Products
	Carpet
Software	

The most selected cluster management organizations have carried on their activities on mining, metal and forestry industry. Within this leader group, cluster management organizations are performed in the following sub-industries; furniture, ceramics, machinery, steel and white goods. The sector distribution was one of the most critical indicators during the selection of cluster management organizations to analysis various sectors. As seen in the figure 9, cluster management organizations do not concentrate in only one industry.

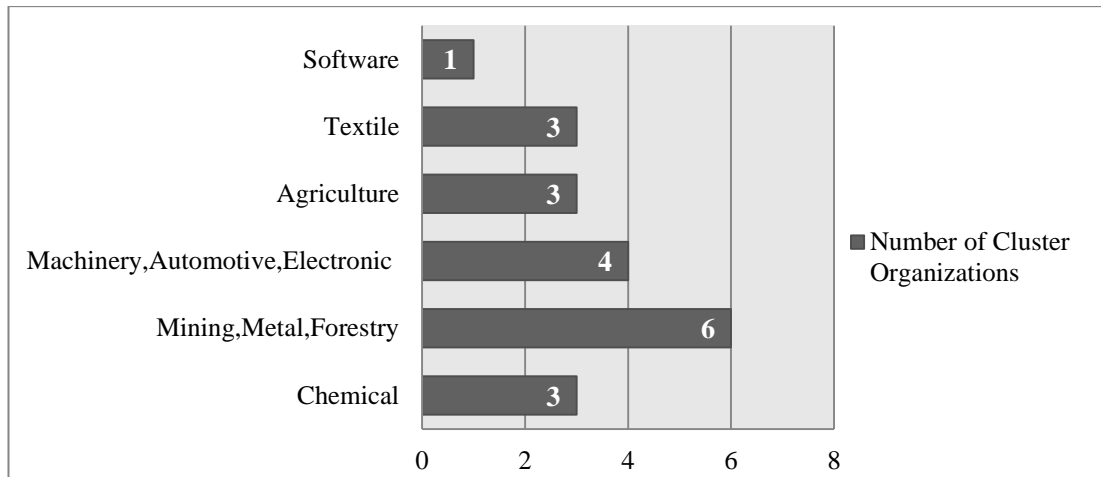


Figure 9: Concentration of industry

5.4.1.1. Legal Structure of Cluster Organizations

A legal structure of cluster management organizations is crucial to understand better management structure of cluster organizations and factors that affect performance of services of cluster management organizations. Legal structure of cluster management organizations was grouped as exporters' association, foundation/association and other organization. There are 62 exporters' associations in Turkey and these were established by law and they are rooted structures. Foundation/association option is used for "Dernek" in Turkish meaning. These structures are established as willingness by industry part. Chamber of Commerce and Industries, Industrial and Technology Zones etc. are described as other organizations. According to result, 8 cluster management organizations are foundation/association while 7 and 5 of them are exporters' association and other organization, respectively. As it is observed that, the commonly used legal structure of cluster management organizations is foundation/association in Turkey.

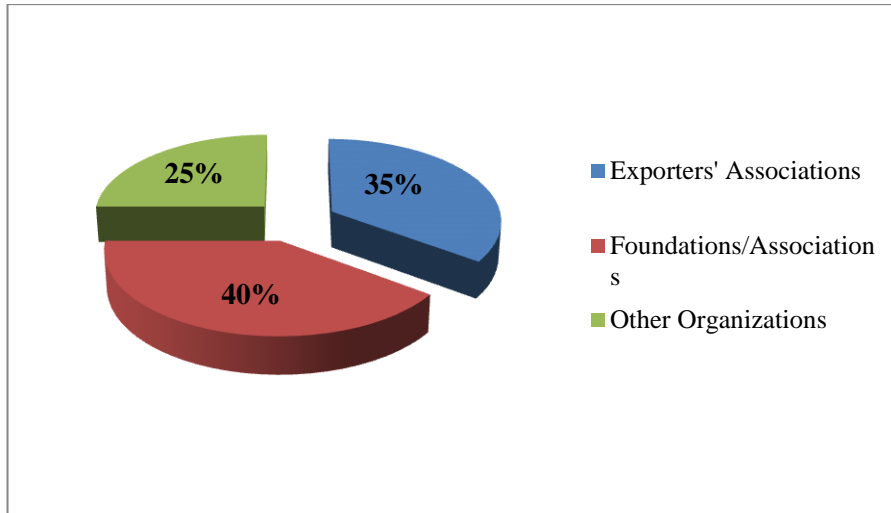


Figure 10: Legal structure of cluster organizations

5.4.1.2. Year of Establishment

The establishment years of the cluster management organizations give clues about their structure whether they are rooted or newly structures. The data are grouped in 4 periods; before 1990, 1990-2000, 2000-2010 and after 2010. Nearly in half, cluster management organizations, which were analysed in this study, are divided as young and old structures. The half of the selected cluster management organizations were established after 2000s.

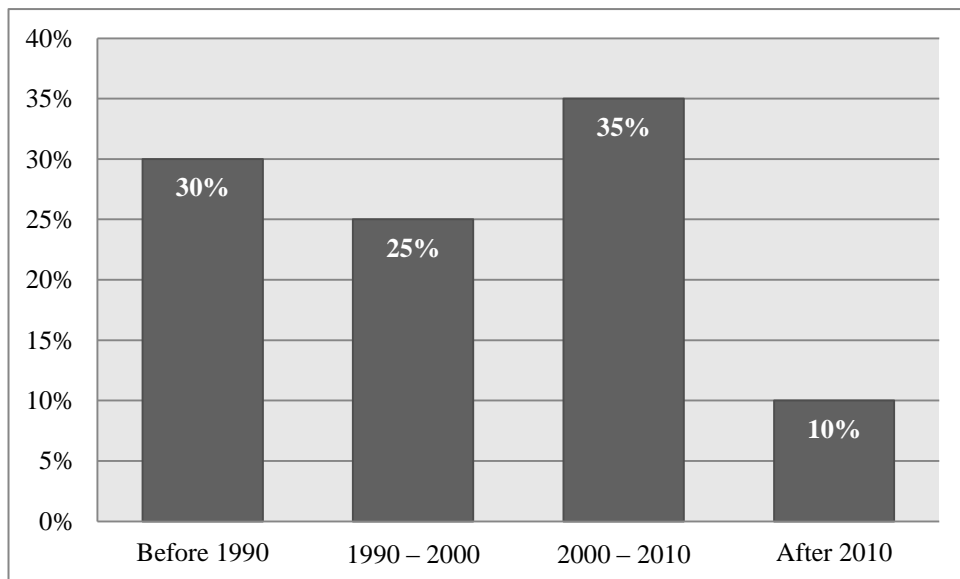


Figure 11: Year of establishment

Here, cross analysis between year of establishment and legal structure of cluster management organizations can show exact result of this data. As seen in the figure 12, year of establishment and legal structure of cluster management organizations were cross analysed. In total, there are 8 cluster management organizations are foundation/association while 7 and 5 of them are exporters' association and other organizations. All foundations/associations were established between the year of 1990 and 2010. Almost all exporters' associations were established before 1990s and other organizations were established after 2010s. According to results, the oldest cluster management organizations' legal structure is defined as exporters' associations. Other remaining legal structures can be described as newly established organizations.

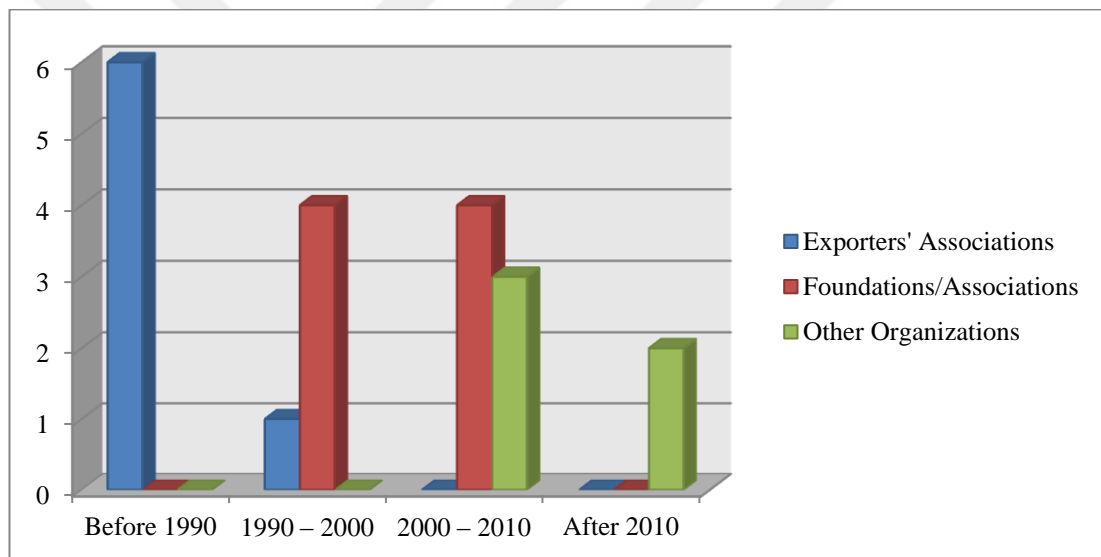


Figure 12: Year of establishment vs legal structure

5.4.1.3. The Number of Stakeholders of Cluster Management Organizations

In this part, the number of stakeholders of cluster management organizations was asked on 2 different sections as committed and non-committed stakeholders under 6 different stakeholders' types; SME, Non-SME, R&D Institutions, Universities, Training Providers and others. Committed stakeholder is described if it actively contributed to the cluster management e.g. providing financial support for the cluster management, participating cluster activities. Data of committed and non-

committed stakeholders is crucial for assessing intensity of efforts of cluster management organizations.

The total number of committed and non-committed stakeholders was diversified in each cluster management organizations. As a percentage, 55% of cluster management organizations have less than 100 committed stakeholders. 35% of cluster management organizations have committed stakeholders between the ranges of 100-200. In other words, the total number of stakeholders of 85% of cluster management organizations, which were selected for this study, has less than 200 committed stakeholders. Thus, almost all cluster management organizations implement their activities for less than 200 committed stakeholders.

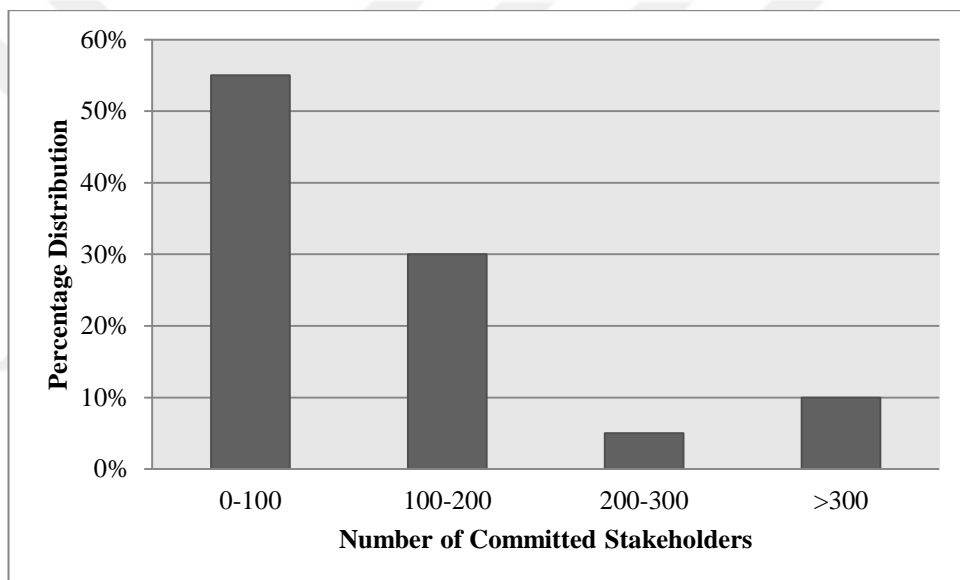


Figure 13: Percentage of committed stakeholders' distribution

The distribution of non-committed stakeholders is not so different from the distribution of committed stakeholders. The 50% of cluster management organizations have between 0 -100 non-committed stakeholders. Nearly 25 % of cluster management organizations have more than 300 non-committed stakeholders.

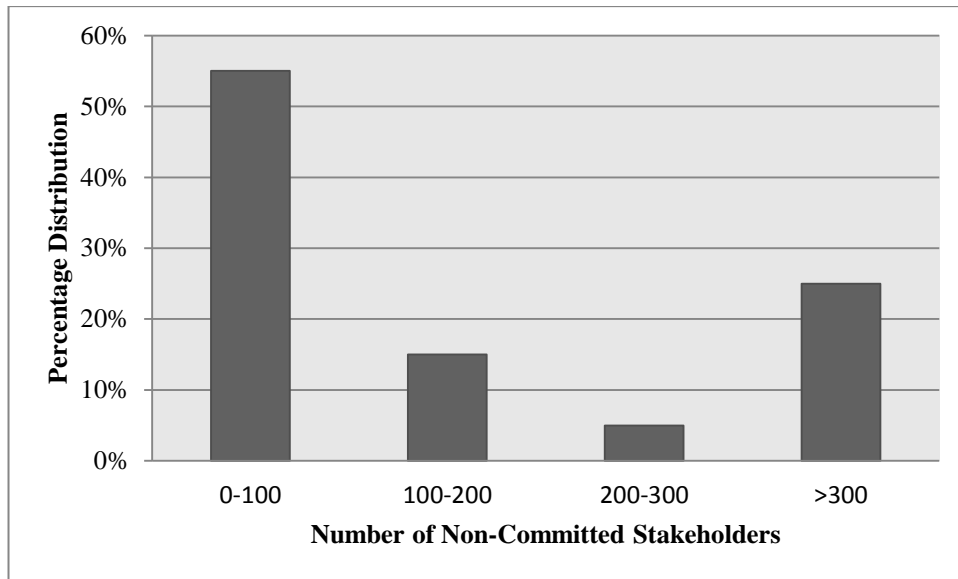


Figure 14: Percentage of non-committed stakeholders' distribution

As seen Table 4, the distribution of committed stakeholders is not diversified. The number of SMEs has almost formed of total number of committed stakeholders in each cluster management organizations. Many cluster management organizations do not have stakeholders from R&D Institutions, Universities and Training Providers. This result shows that member structures of many cluster management organizations consist of only industry part without other supporting organizations.

Table 4: The ratio of committed stakeholders of cluster organizations

Cluster Organization	Ratio of Committed Stakeholders					
	SME	Non-SME	R&D Institutions	Universities	Training Providers	Others
1	71%	29%	0%	0%	0%	0%
2	83%	4%	2%	2%	0%	9%
3	83%	17%	0%	0%	0%	0%
4	54%	46%	0%	0%	0%	0%
5	90%	6%	0%	1%	1%	2%
6	14%	3%	6%	57%	1%	19%
7	75%	25%	0%	0%	0%	0%
8	11%	73%	0%	11%	0%	4%
9	93%	7%	0%	0%	0%	0%
10	51%	33%	0%	5%	0%	10%
11	94%	5%	0%	0%	0%	0%
12	95%	5%	0%	0%	0%	0%
13	91%	7%	0%	2%	0%	0%

14	62%	0%	5%	3%	3%	26%
15	62%	5%	5%	2%	8%	18%
16	79%	0%	2%	4%	3%	13%
17	65%	7%	4%	8%	1%	14%
18	60%	40%	0%	0%	0%	0%
19	78%	21%	0%	0%	0%	1%
20	73%	10%	5%	0%	8%	3%

As seen in the table 5, SMEs has the highest ratio in the number of non-committed stakeholders in all cluster management organizations. The distribution of non-committed stakeholders is not also diversified.

Table 5: The ratio of non-committed stakeholders of cluster organizations

Cluster Organization	Ratios of Non-Committed Stakeholders					
	SME	Non-SME	R&D Institutions	Universities	Training Providers	Others
1	89%	11%	0%	0%	0%	0%
2	63%	37%	0%	0%	0%	0%
3	85%	15%	0%	0%	0%	0%
4	90%	10%	0%	0%	0%	0%
5	0%	0%	0%	0%	0%	0%
6	13%	0%	0%	0%	0%	87%
7	100%	0%	0%	0%	0%	0%
8	0%	100%	0%	0%	0%	0%
9	96%	4%	0%	0%	0%	0%
10	0%	0%	0%	0%	0%	0%
11	80%	20%	0%	0%	0%	0%
12	96%	4%	0%	0%	0%	0%
13	0%	0%	0%	0%	0%	0%
14	83%	17%	0%	0%	0%	0%
15	39%	0%	54%	4%	0%	2%
16	97%	0%	1%	2%	0%	0%
17	0%	0%	0%	0%	0%	0%
18	100%	0%	0%	0%	0%	0%
19	94%	6%	0%	0%	0%	0%
20	0%	0%	0%	0%	0%	0%

As seen in figure 15, legal structure of cluster management organizations was cross tabulated with committed and non-committed stakeholders. It is not surprising that the total number of committed stakeholders of exporters' associations is low

since they were established by law and membership is mandatory. The total number of committed stakeholders is high in foundations/associations and other organizations since membership is based on a volunteer basis.

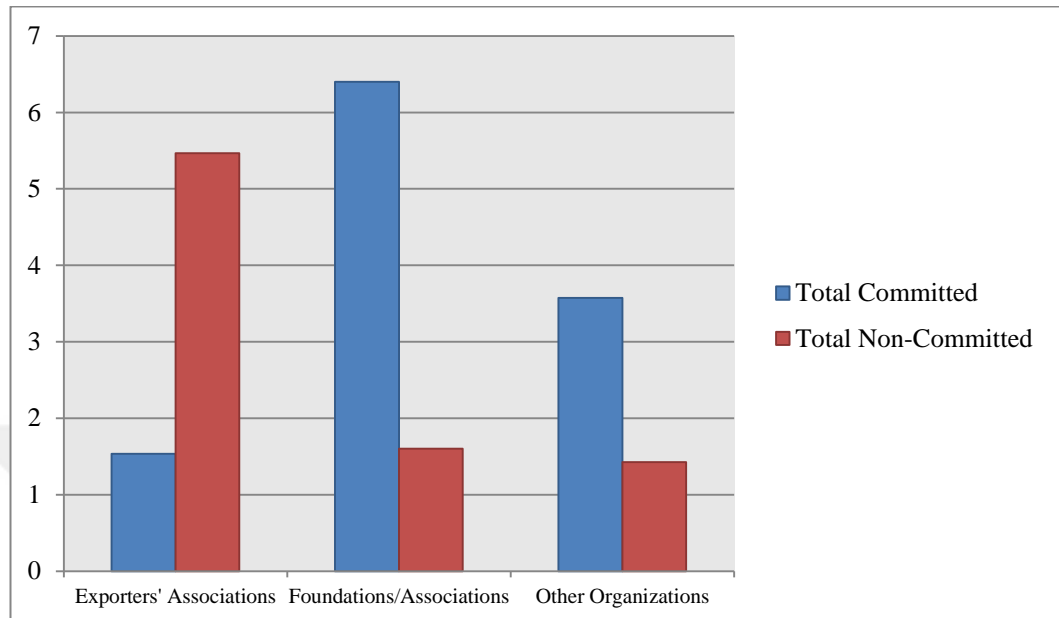


Figure 15: Total committed and non-committed stakeholders vs legal structure

5.4.1.4. The Annual Total Budget of Cluster Management Organizations

In this part, annual total budget of cluster management organizations including personnel cost and all other costs were asked in Euro to cluster managers. The annual total budget of almost half of the cluster management organizations is less than €100.000. It shows that many cluster management organizations implement their activities with limited financial resources. Besides, 35% of cluster management organizations implement their activities with more than total budget of €500.000.

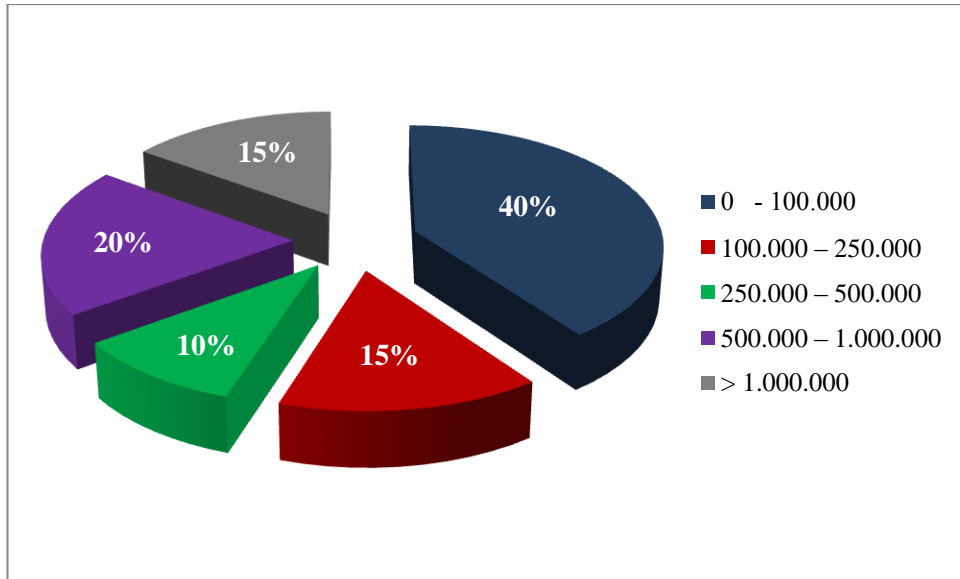


Figure 16: The distribution of annual total budget of cluster management organizations

The budget is one of the most important indicators that show the impact of services of cluster management organizations. It is observed that the total average budget of exporters' associations is much more than the budget of other organisations as seen in figure 17. This result is useful to evaluate results of impact of exporters' associations. On the other hand, foundations/associations and other organizations implement their activities with limited budget.

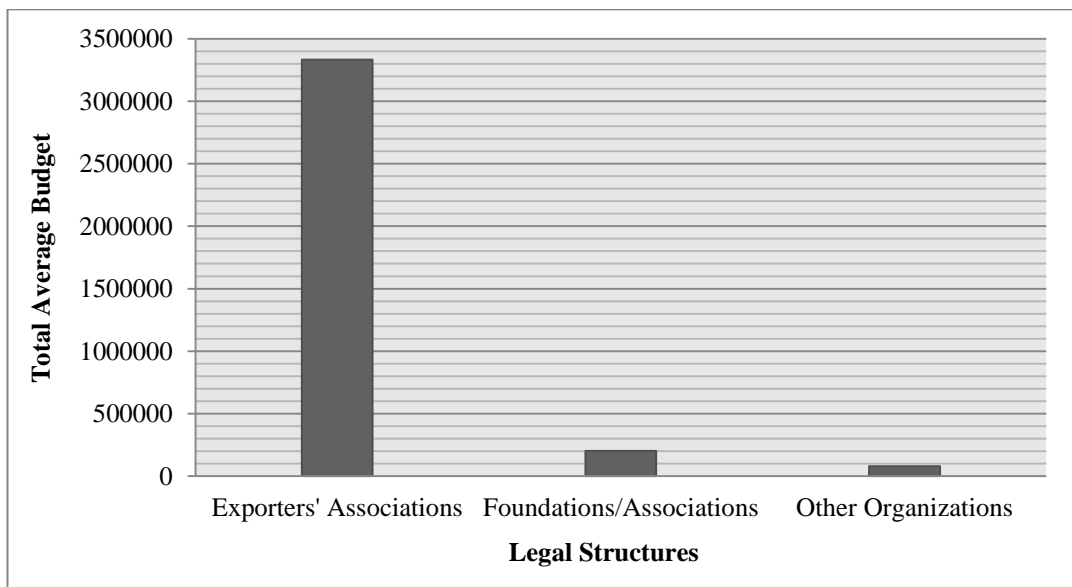


Figure 17: Total average budget vs legal structure

5.4.2. Part B – Strategic Plan & Impacts of Services of Cluster Organizations

In this part, 2 main questions related with each other were analysed. Firstly, strategy of cluster management organizations was asked whether their activities are implemented based on a strategic plan or not. Later on, 3 questions were asked to analyse impacts of services of cluster management organizations. These 3 questions are divided in 3 different services types; R&D, business and international activities. Impacts of each service types were analysed for each type of stakeholders.

5.4.2.1. Strategic Plan of Cluster Management Organizations

Strategy is base to be an effective organization. Making strategic plan, implementing and revising it is also crucial to create sustainable impact for stakeholders of cluster management organizations. In the questionnaire, strategy was asked in 5 following options:

- 1- No strategy: no written and accepted strategy
- 2- Strategy: a written strategy that is not implemented
- 3- Strategy & Monitoring : a written strategy that is monitored
- 4- Strategy & Review: a written strategy that is reviewed in a certain time period
- 5- Strategy & Monitoring & Review: a written strategy that is monitored and reviewed in a certain time period

As seen in the figure 18, 30% of cluster management organizations has a strategy which is monitored and reviewed while 35% of them has no a strategy. This data was mostly used to assess impact of services of cluster management organizations, which have strategy or not, in cross analysis.

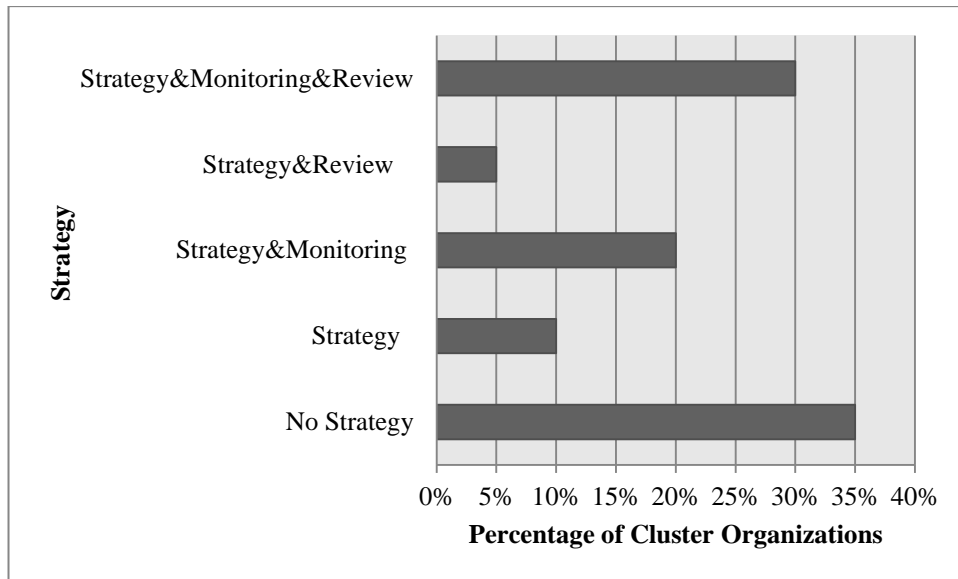


Figure 18: Strategic plan of cluster management organizations

5.4.2.2. Impacts of Services of Cluster Management Organizations

Impacts of services of cluster management organizations were evaluated within 3 types of services and for each type of stakeholders. R&D, business and international activities were grouped to evaluate impacts of services of cluster management organizations. The cluster managers of each cluster management organizations self-assessed impact of their services according to the 5 following scales:

- 0- There is no impact yet
- 1- There is limited impact for small number of cluster stakeholders
- 2- There is measurable impact for more number of cluster stakeholders
- 3- There is significant impact for reasonable number of cluster stakeholders
- 4- There is excellent impact for significant number of cluster stakeholders

Each cluster management organizations have different legal structure, so impacts of R&D, business and international activities were assessed for each type of legal structure. At the end of the part, total impact was also assessed with legal structure, concentration of industry, years of establishment, committed stakeholders and annual total budget.

The Impact of Services of Cluster Management Organizations on R&D Activities

As observed in the figure 19, the lowest R&D impact level is observed in exporters' associations compared to other cluster management organizations. It can be interpreted that the number of stakeholders of exporters' associations is mostly consisted of industry, SMEs and Non-SMEs. These organizations have limited or none R&D Institutions or Universities to support R&D activities of their stakeholders. At the same time, these organizations are not allocated their budget for R&D activities although their total budget is higher than other organizations.

Other organizations are including Industrial and Technology Zones. These organizations are mostly located in a complement ecosystem with R&D Institutions, Universities and other supporting stakeholders. They are also conducting their R&D activities with relatively less budget.

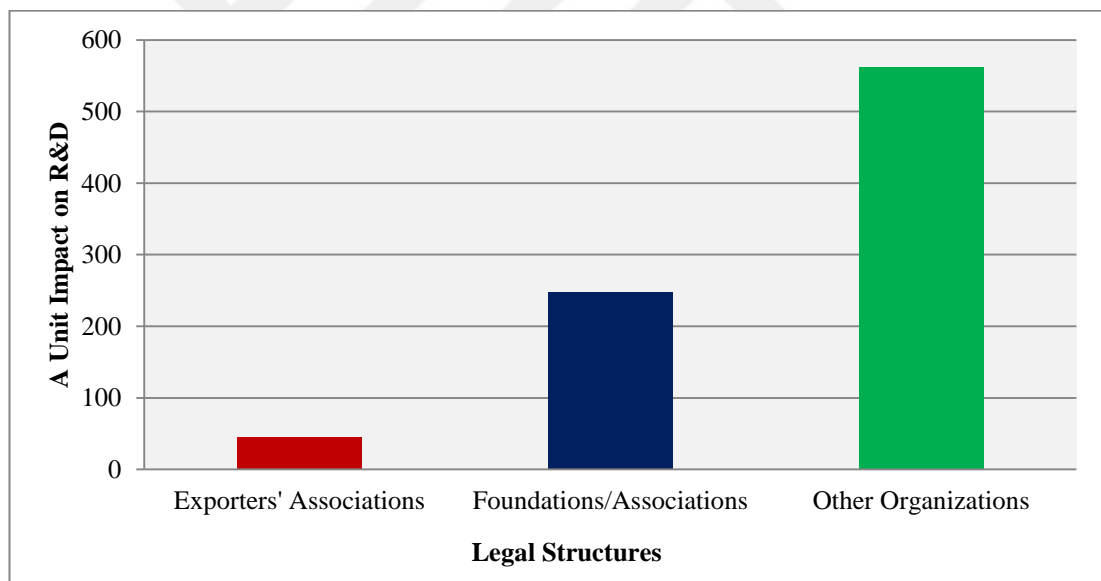


Figure 19: A unit impact on R&D activities for each type of cluster management organizations

The Impact of Services of Cluster Management Organizations on Business Activities

Business activities can be evaluated as core activity for each cluster management organizations. Therefore, the results of this data might be the most important indicator to assess the impact of cluster management organizations.

As seen in the figure 20, exporters' associations have the lowest impact on their business activities. A unit impact is approximately 75 for exporters' associations while 586 and 845 for foundations/associations and other organizations, respectively.

This result is not surprising that exporters' associations have rooted structures that were established by law, so they are not flexible to carry out their activities. The defined business activities have been implemented since their establishment year. They are also allocated their budget for certain business expenses and activities that are not planned and implemented according to needs of stakeholders. These reasons negatively affect the impact of services of exporters' associations.

The impact of services of foundations/associations and other organizations including industrial and technology zones, are higher than exporters' associations.

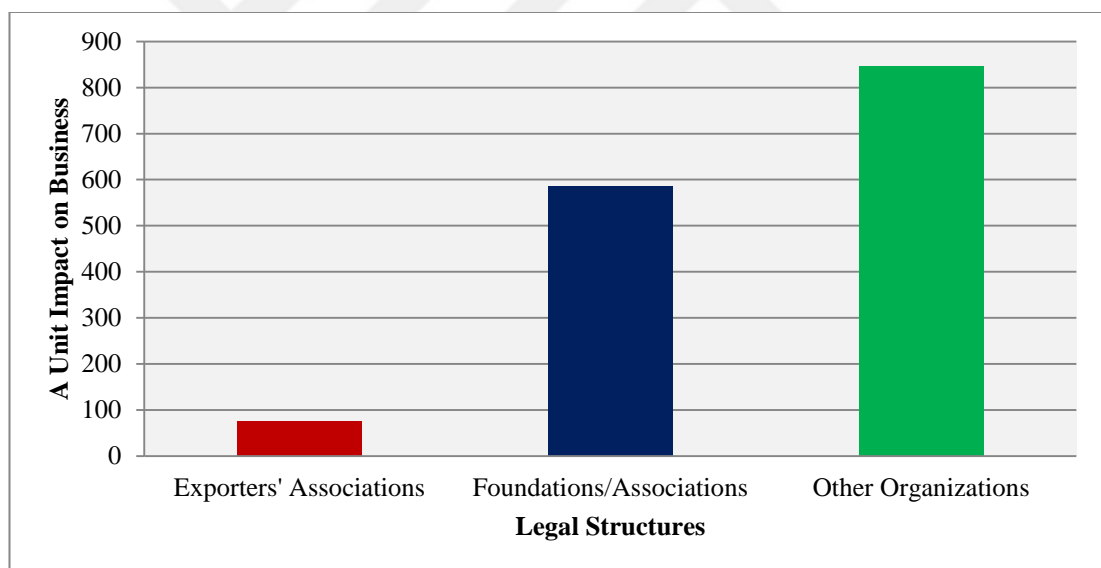


Figure 20: A unit impact on business activities for each type of cluster management organizations

The Impact of Services of Cluster Management Organizations on International Activities

As seen in the figure 21, the highest impact level on international activities is observed for foundations/associations while the impact of exporters' associations is the lowest. A unit impact for international activities is approximately 562 for

foundations/associations. The others are 76 for exporters' associations and 196 for other organizations. Foundations/associations have tried to carry out international activities such as representing their cluster stakeholders in international fairs, with low budget. Exporters' associations are also attending and organizing many international activities for their cluster stakeholders. However, the impact of services of exporters' associations for international activities is low if taking into consideration on high annual budget.

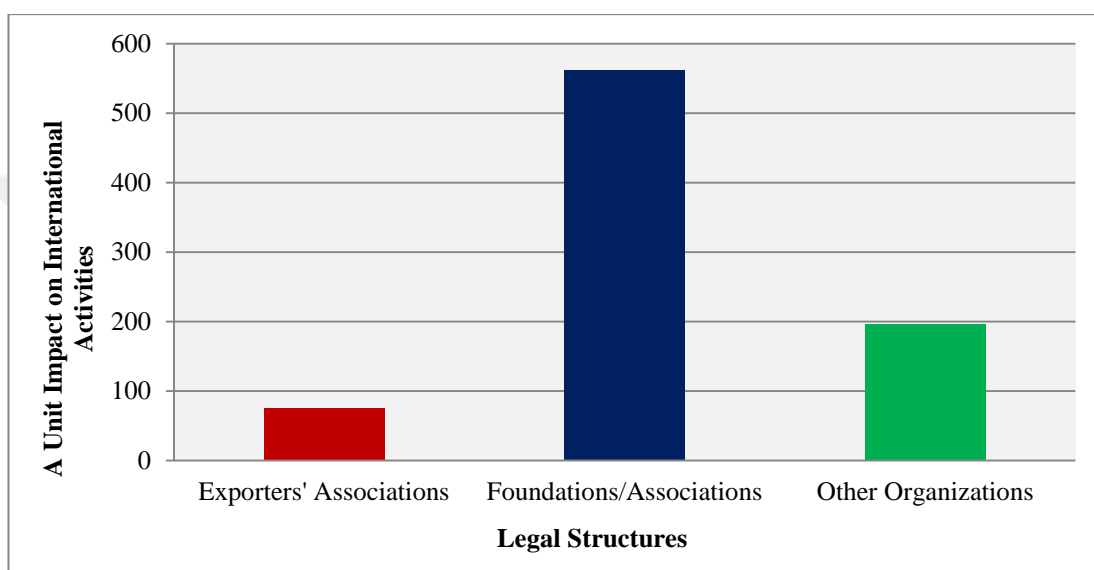


Figure 21: A unit impact on international activities for each type of cluster management organizations

Total Impact of Services of Cluster Management Organizations

The assessment of total impact shows an integrated result. In this part, total impact was cross tabulated with 5 different data; legal structure, and concentration of industry, year of establishment, committed stakeholders and the distribution of budget.

Total Impact vs Legal Structure

Legal structure is one of the most important indicators to assess the impact of services of cluster management organizations. Here, total impact was assessed for each of legal structure. As observed in the figure 22, exporters' association has the lowest impact. It might be interpreted that these structures are established by law and membership is not depended on willingness.

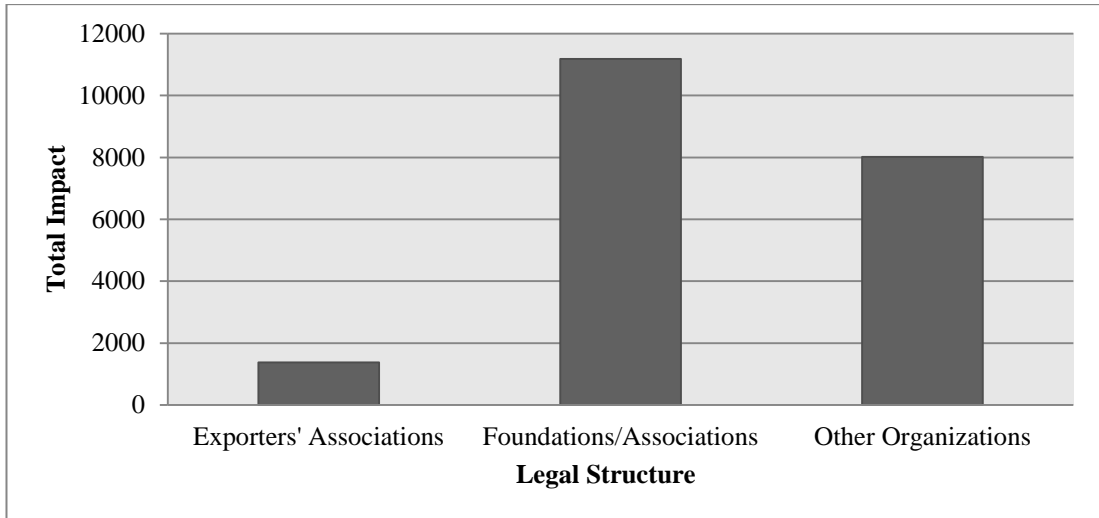


Figure 22: Total impact vs legal structure

Total Impact vs Industry

As seen in the figure 23, the group of machinery, automotive, electronics industry has the highest impact. Under this group, automotive spare parts, defence & aviation, medical and refrigeration sectors are stated. Furniture, ceramics, steel and white goods sectors have high impact as secondary. It can be explained that impact of services of cluster management organizations is high in R&D oriented sectors.

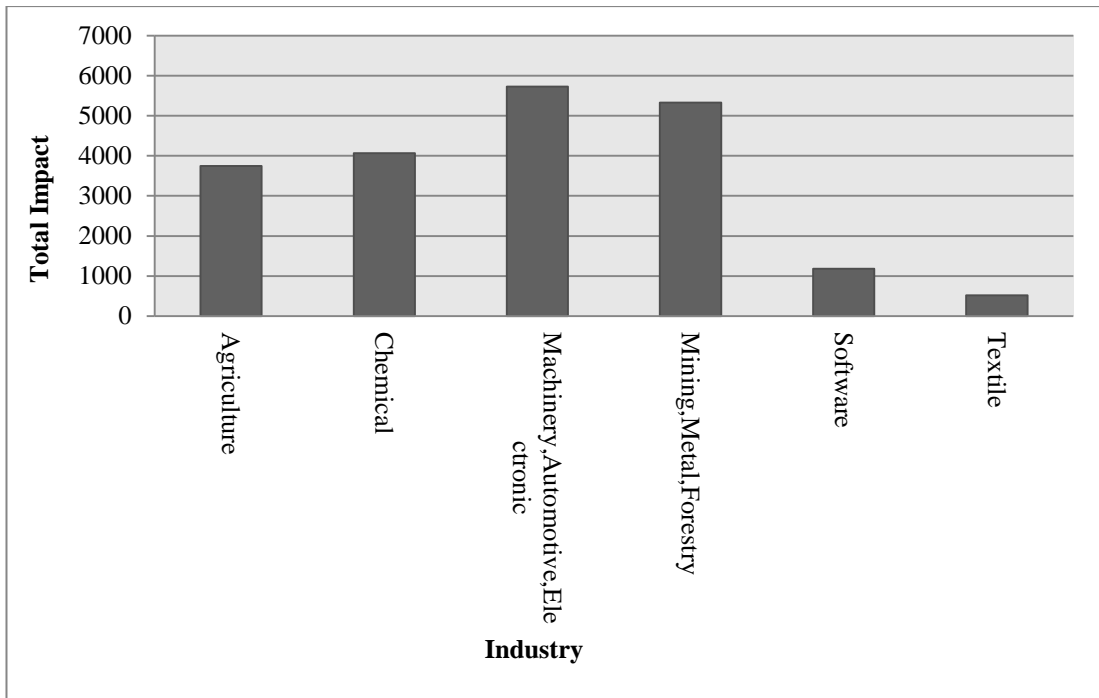


Figure 23: Total impact vs industry

Total Impact vs Year of Establishment

As seen in the figure 24, the impact of services of cluster management organizations which were established years of 2000 – 2010, are high. It is interpreted that the services of newly cluster management organization is more efficient.

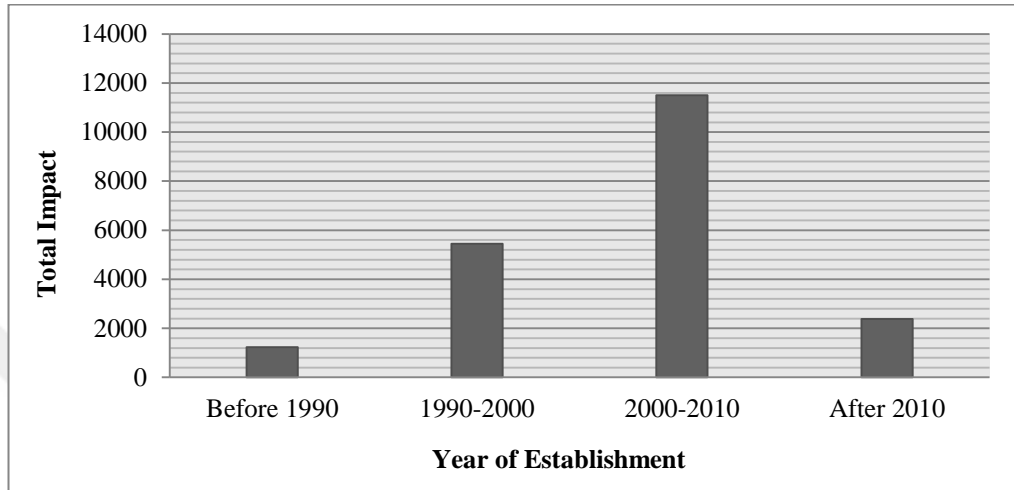


Figure 24: Total impact vs year of establishment

Total Impact vs Committed Stakeholders

It is obvious that committed stakeholders are crucial factor for high impact of services of cluster management organizations. Cluster management organizations, which have 100% committed stakeholders, have high impact on their services.

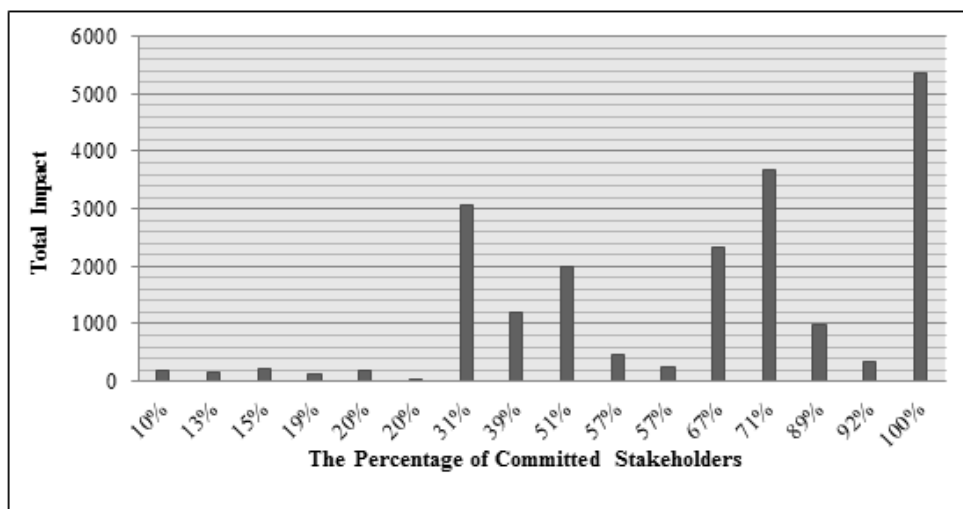


Figure 25: Total impact vs the percentage of committed stakeholders

Total Impact vs Budget

As the result of analysis, the high budget is not actually critical factor for the high impact of services of cluster management organizations. As seen in figure 26, this assumption was confirmed that the impact of services of cluster management organizations which have fewer budgets is higher than cluster management organizations which have high budget.

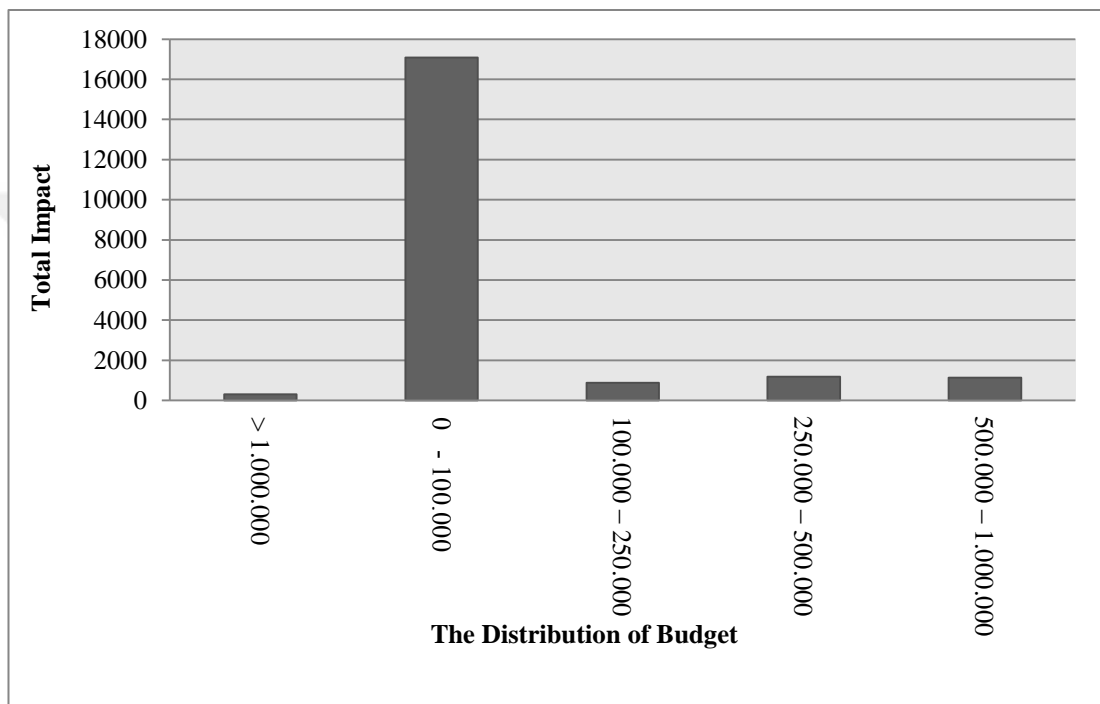


Figure 26: Total impact vs the distribution of budget

5.4.2.3. Cross Tabulation of Strategy with Main Indicators

Strategy was asked in 5 different options that are explained in 5.2.2.1. In this part, strategy was analysed with 5 main indicators; total impact, industry, year of establishment, legal structure and total annual budget.

Cross Tabulation of Strategy vs Total Impact

In this part, total impact of services and strategy of cluster management organizations were cross tabulated. As seen in the figure 27, it is surprising that impact of services is the highest for cluster management organizations which have no

strategy. Legal structure was also analysed with this data in the following paragraph to understand the main result.

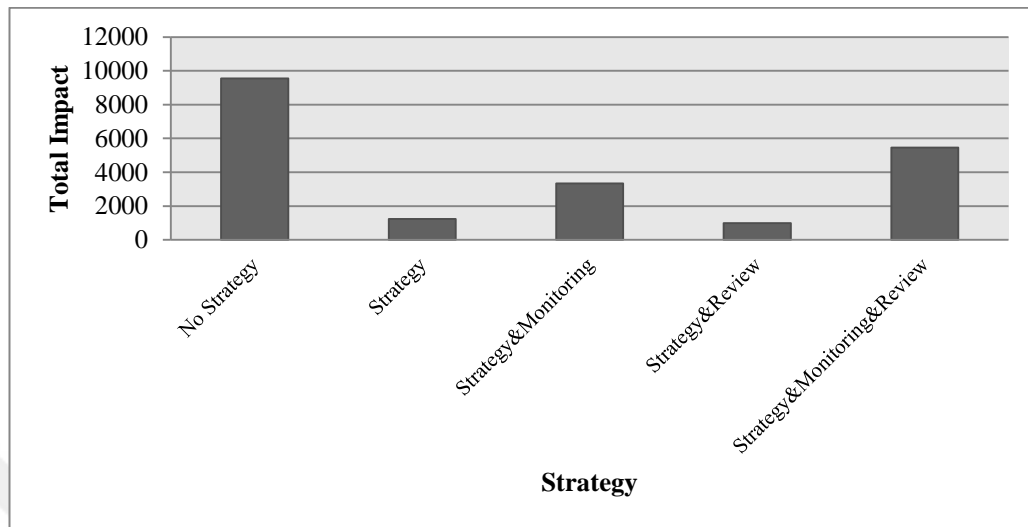


Figure 27: Cross tabulation of strategy vs total impact

As seen in the figure 28, strategy and total impact were analysed with legal structure. Strategy is figured as following number in the figure 28.

1. No Strategy
2. Strategy
3. Strategy & Monitoring
4. Strategy & Review
5. Strategy & Monitoring & Review

The impact of services of foundations/associations which have no strategy is high while the impact of services of exporters' associations is low. This result can be explained that legal structure is one of the most important factors for the impact of services of cluster management organizations.

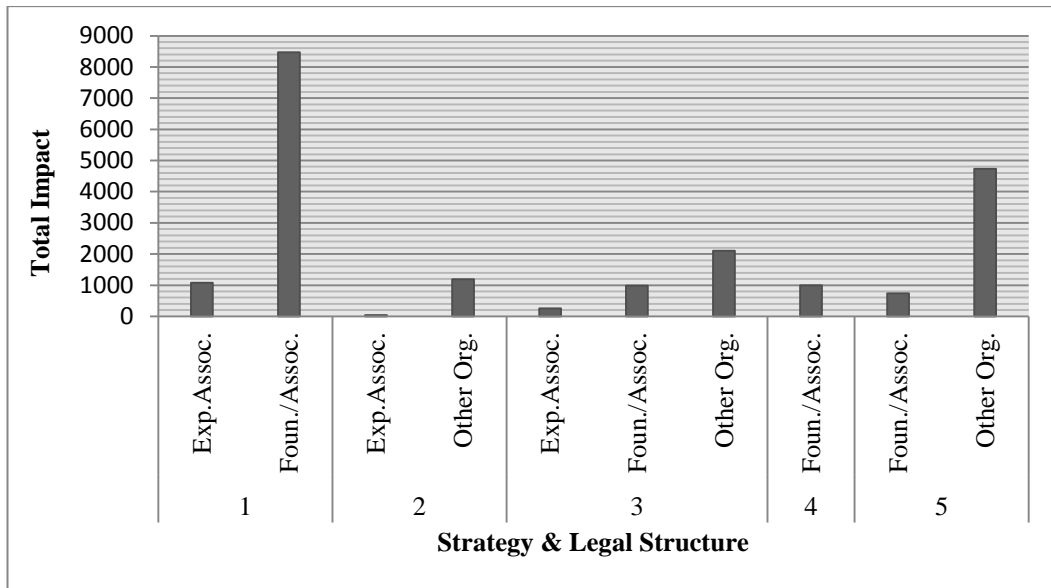


Figure 28: Cross tabulation of strategy vs total impact related with legal structure

Cross Tabulation of Strategy vs Industry

As it is observed in the figure 29, the impact of services of cluster management organizations which have a strategic plan is high in R&D oriented industries.

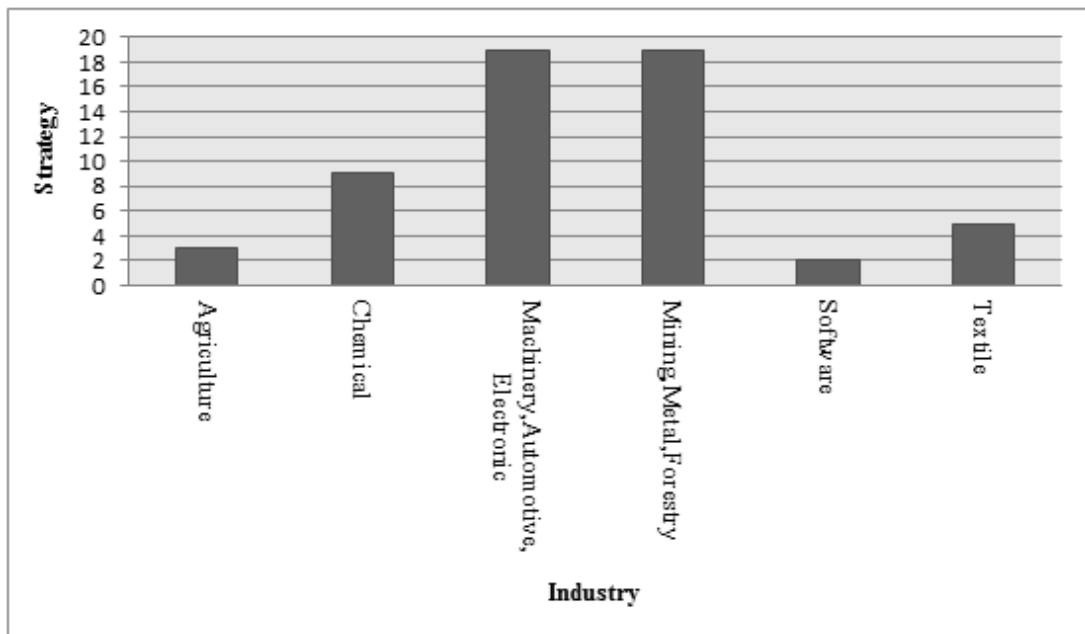


Figure 29: Cross tabulation of Strategy & Industry

Cross Tabulation of Strategy vs Legal Structure

As it is observed in the figure 30, other organizations mostly conduct their activities based on strategy. Exporters' associations do not mostly implement their activities in line with a strategy.

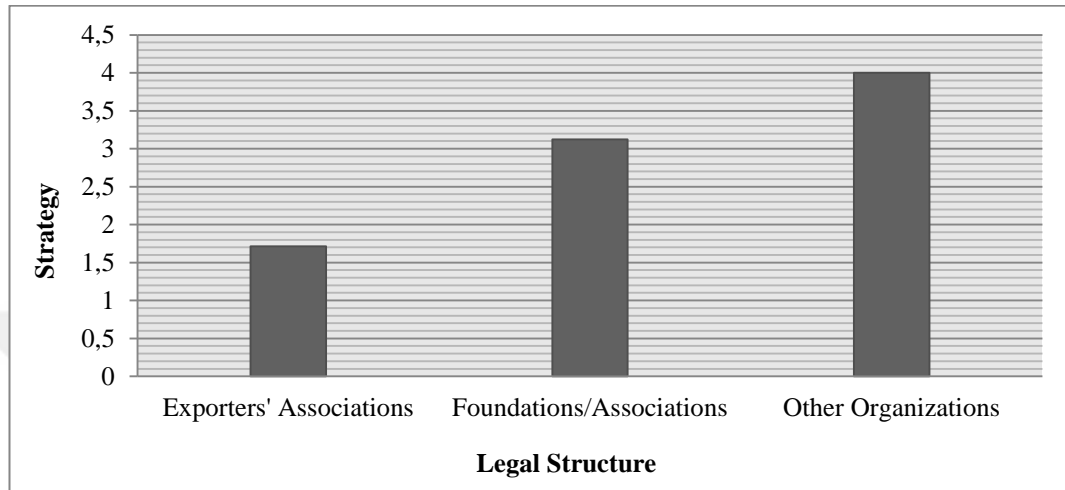


Figure 30: Cross tabulation of strategy vs legal structure

Cross Tabulation of Strategy vs Year of Establishment

Cluster management organizations that ratio of having strategy is high, were mostly established between the years of 2000 -2010. This result is also same in the assessment of total impact vs year of establishment. Thus, cluster management organizations that were established between years of 2000-2010, have a strategy and impact of their services is high compared to others.

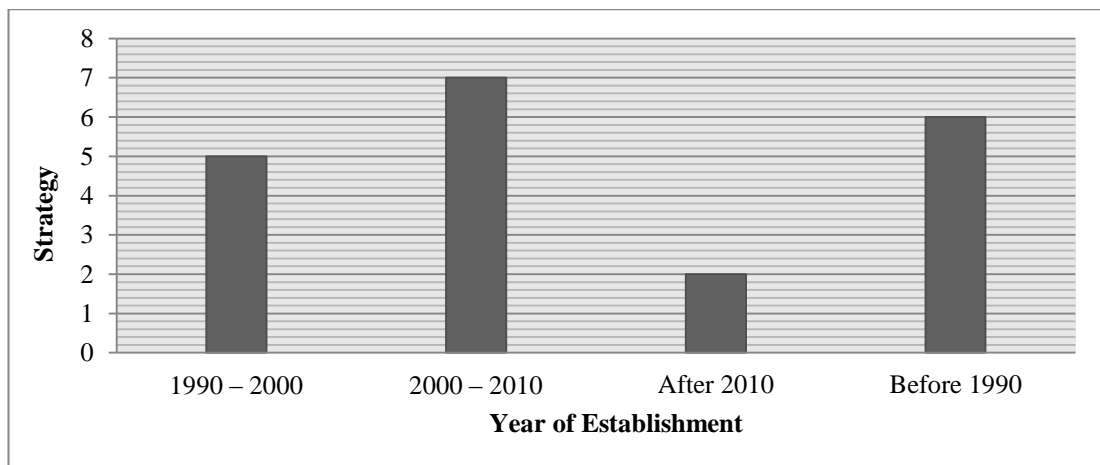


Figure 31: Cross tabulation of strategy vs year of establishment

Cross Tabulation of Strategy vs Budget

As it is observed that budget is not critical factor for cluster management organizations to implement their activities. The important issue here is to conduct cluster activities effectively according to needs of cluster stakeholders. Cluster management organizations which have a strategy do not have much budget. As seen in the figure 32, they have less than a budget of €100.000.

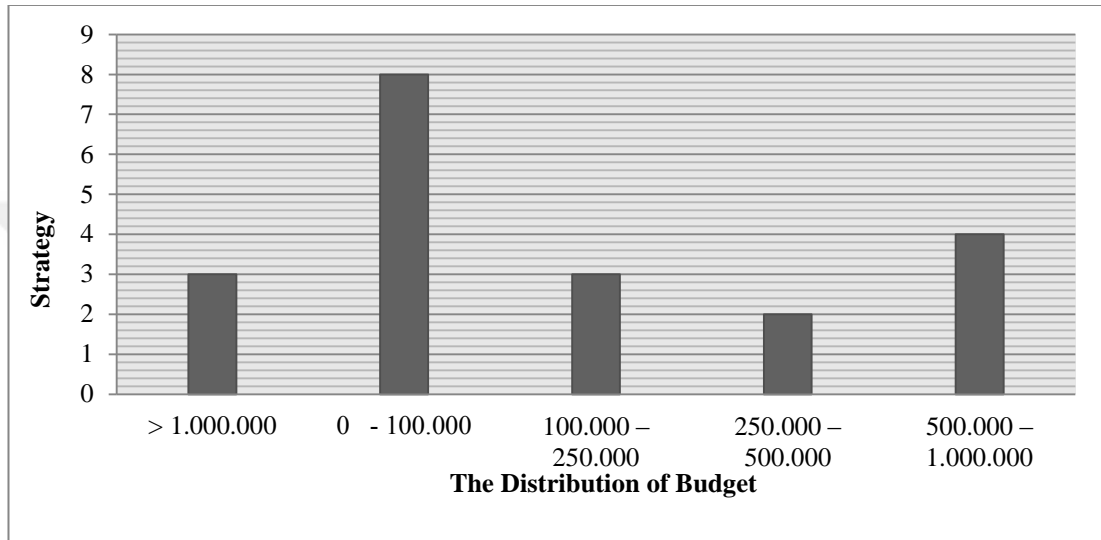


Figure 32: Cross tabulation of strategy vs budget

6. CONCLUSION

In the previous chapter, findings and results were presented in detail. In this chapter, results of analysis were presented from general perspective. The results of general characteristics, strategy and impact of services of cluster management organizations related with concentration of industry, year of establishment, legal structure, number of committed and non-committed stakeholders and annually total budget were analysed.

Beside raw data analysis, cross tabulation analysis of strategy and total impact of services with respect to concentration of industry, year of establishment, legal structure, number of committed and non-committed stakeholders and annually total budget were done in order to figure out relationship among data.

The objective of this study is to investigate the impact of strategy over activities of cluster management in Turkey. In order to analyse it, various indicators within 2 main indicators on cluster management organizations was analysed. Strategic plan whether or not and impact of services on R&D, business and international activities were evaluated as 2 main factors.

Table 6: Summary of Findings

Legal Structure	Exporters' Associations	Foundations/ Associations	Other Organizations
Year of Establishment	Before 1990	1990-2010	After 2010
Number of Committed Stakeholders	Low	High	High
Number of Non-Committed Stakeholders	High	Low	Low
Annual Budget	€ 3.300.000	€ 200.000	€ 100.000
Strategic Plan	Strategy	Strategy&Monitoring	Strategy&Review
Impact on R&D	Low	Low	High
Impact on Business	Low	High	High
Impact on International Activities	Low	High	Low

The conclusion of the chapter was presented as a whole in the table 6. The results of the data are shown for each legal structure within eight different indicators.

As first indicator, year of establishment is different in each legal structure. Most exporters' associations were established before 1990 while foundations/associations and other organizations were established between 1990 and 2010 and after 2010s, respectively. As seen in this result, exporters' associations are the oldest structures.

The next indicator is the number of stakeholders and this data was given as committed and non-committed stakeholders. The high number of committed stakeholders is crucial to evaluate intensity of stakeholders in the organizations. It is observed that the number of committed stakeholders of exporters' associations is low, committed stakeholders is approximately 18% and remaining 82% is composed of non-committed stakeholders. This result is exact opposite in foundations/associations and other organizations. 67% of stakeholders of foundations/associations is committed while 31% of them are non-committed. Other organizations have also same result, 69% of stakeholders is composed of committed stakeholders and 33% is non-committed stakeholders.

At the end of the first part of the questionnaire, annual total budget in Euro was asked to cluster managers. As seen in the table, average annual total budget is shown in each legal structure. The annual budget of exporters' associations is significantly high compared to other legal structures. The annual budget of foundations/associations and other organizations is approximately 5% of annual budget of exporters' associations.

In the second part of the questionnaire, strategy and impacts on services of cluster management organizations were investigated. Generally, most selected cluster management organizations have a strategy but it is important that how this plan is implemented. It is observed that most exporters' associations have a written strategic plan which is stated on the shelf and not monitored and/or reviewed. On the other hand, foundations/associations have a strategic plan which is monitored. Other organizations have also a strategic plan and review it in a certain period.

In the last part of the questionnaire, impact of the services of cluster management organizations was evaluated. The impact of the services was asked on three different services; R&D, business activities and international activities. The impact of services on R&D activities is low in exporters' associations and foundations/associations while the impact of services on R&D activities is high in other organizations. Exporters' associations and foundations/associations have generally limited or none stakeholders from R&D Institutions or Universities to support them on R&D activities. At the same time, it is observed that these organizations are not allocated their budget on R&D activities. Other organizations are including Industrial and Technology Zones and these organizations are mostly located in a complement ecosystem with R&D Institutions, Universities and other supporting stakeholders. Therefore, they are conducting their R&D activities to their stakeholders.

As seen in the table 6, the impact of services of exporters' associations on business activities is low compared to others. It is not surprising that exporters' associations are the oldest structures and membership of these organizations is mandatory. These organizations have to allocate their budget for their certain business expenses and activities that are not planned and implemented according to needs of stakeholders. On the other hand, membership is based on a volunteer basis in foundations/associations and other organizations, so their stakeholders make their activity plan and implement them according to their needs. Therefore, the impact of services of foundations/associations and other organizations on business activities is high compared to exporters' associations.

The impact of services of exporters' associations and other organizations on international activities is low. In fact, exporters' associations organize many international activities such as attending international fairs, trade mission for their stakeholders. It is observed that outputs of these activities are not identified according to stakeholders' priorities and needs. This result shows that not well-defined output of activities and unplanned budget allocation affects negatively the impact of services of cluster management organizations. Other organizations are also organizing many international activities. Although they implement their international activities with limited budget, lack of non-well defined outputs cause low impact of services of cluster management organizations. The impact of services of

foundations/associations is high compared to others. These organizations organize limited international activities with low budget. It is showed that the allocation high budget is not determinant factor for the impact of services on international activities. The important factor in international activities is the well-defined activities with specific outputs for stakeholders of cluster management organizations.

Table 7: Recommendations for Exporters' Associations

Focus Areas	Recommendations
Stakeholders	The number of committed stakeholders should be increased.
Strategy	A strategy which is planned based on priorities and needs of stakeholders should be prepared. It should be monitored and reviewed in a certain period.
Budget	The annual total budget should be allocated equivalently according to strategy.
Impact on R&D Activities	Collaboration should be increased with universities and research institutions. Cooperation should be established with universities and research institutions on specific and needs based issues.
Impact on Business Activities	The needs of stakeholders should be specifically determined and they should be prioritised according to the action plan of business activities.
Impact on International Activities	International activities should be determined according to needs of stakeholders. They should be well-defined and specific outputs should be described.

Table 8: Recommendations for Foundations/Associations

Focus Areas	Recommendations
Stakeholders	Membership activities for non-committed stakeholders should be conducted to increase their participation to cluster activities. Therefore, more stakeholders can be benefit from cluster activities.

Strategy	Foundations/associations have generally a strategy but it should be reviewed in a certain period.
Budget	Foundations/associations have provided limited services to their stakeholders since they conduct their activities with limited budget. These organizations should apply various funding programs in order to increase their budget, in this way, more activities can be organized for their stakeholders. There are many national and international funding programs that these organizations can apply.
Impact on R&D Activities	<p>Collaboration should be increased with universities and research institutions and they should be encouraged to be member of cluster management organizations.</p> <p>Cooperation should be established with universities and research institutions on specific and needs based issues. The needs based projects might be developed with all stakeholders of cluster management organizations.</p>
Impact on Business Activities	The impact of the work of foundations/associations is higher than exporters' associations. However, it is observed that it is not required level. Therefore, business activities should be prioritised and implemented according to strategy.
Impact on International Activities	It is observed that the impact of the work of foundations/associations on international activities is considerably high compared to exporters' associations and other organizations. Thus, most stakeholders of foundations/associations are satisfied on their work. Nevertheless, organizing more international activities by using funding opportunities should be suggested.

Table 9: Recommendations for Other Organizations

Focus Areas	Recommendations
Stakeholders	The number of committed stakeholders is higher than the number of non-committed stakeholders. In order to increase participation of non-committed stakeholders to cluster activities, their needs and expectations should be firstly analysed and after that specific activities should be conducted for them.
Strategy	Most selected industrial and technology zones have a strategic plan and it is reviewed according to result of this analysis. However, these organizations should revise their strategies according to result of the implementation of cluster activities in order to prepare viable strategic plan.
Budget	Other organizations implement their activities for their stakeholders with their own limited financial resources. These organizations should diversify their financial resources in order to provide more services to their stakeholders. The new financial resources might be provided by collecting membership fees from their stakeholders and applying funding programs. The membership fees might collect annually or service based contribution might be taken from cluster stakeholders. It may provide embracement for stakeholders.
Impact on R&D Activities	The impact of the work on R&D activities is high according the result of the analysis. As it is observed, project based cooperation should be increased with universities and research institutions. At the same time, common R&D infrastructures can be established.
Impact on Business Activities	Although the impact of the work on business activities is high, business activities of other organizations should be diversified and implemented as prioritising them.
Impact on International	As the result of the analysis, the impact of the work of other organizations on international activities is low

Activities	<p>compared to other cluster management organizations. Therefore, these organizations should make more effort on their international activities.</p> <p>They should describe international activities according to needs and priorities of their stakeholders.</p>
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APPENDIX – A: QUESTIONNAIRE

A. General Information about Cluster Organizations		
Q1. In which industry cluster is performed?		
<input type="checkbox"/> Chemical <input type="checkbox"/> Mining, Metal, Forestry <input type="checkbox"/> Machinery, Automotive, Electronic <input type="checkbox"/> Agriculture <input type="checkbox"/> Textile <input type="checkbox"/> Software		
Q2. What is the legal structure of cluster organization?		
<input type="checkbox"/> Exporters' Association <input type="checkbox"/> Foundation/Association <input type="checkbox"/> Other Organization		
Q3. When was the cluster management organization established?		
<input type="checkbox"/> Before 1990 <input type="checkbox"/> 1990 – 2000 <input type="checkbox"/> 2000 – 2010 <input type="checkbox"/> After 2010		
Q4. What is the number of cluster stakeholders?		
Type of Stakeholders	Committed Stakeholders	Non-Committed Stakeholders
SME		
Non-SME		
R&D Institutions		
Universities		
Training Providers		
Others		
Q5. What is the current annual total budget of cluster organization? (in Euro)		
<input type="checkbox"/> 0 - 100.000 <input type="checkbox"/> 100.000 – 250.000 <input type="checkbox"/> 250.000 – 500.000 <input type="checkbox"/> 500.000 – 1.000.000 <input type="checkbox"/> > 1.000.000		

B. Strategy and Impact of Services
Q6. Is there strategy of cluster organizations?
<input type="checkbox"/> No Strategy <input type="checkbox"/> Strategy <input type="checkbox"/> Strategy & Monitoring <input type="checkbox"/> Strategy & Review <input type="checkbox"/> Strategy & Monitoring & Review

Please evaluate impact of the services of cluster organization on R&D activities?

0-No impact yet	1-Limited impact	2-Measurable impact	3-Significant impact	4-Excellent impact
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Q7. SME	0	1	2	3	4
Q8. Non-SME	0	1	2	3	4
Q9. R&D institutions	0	1	2	3	4
Q10. Universities	0	1	2	3	4
Q11. Training and education providers	0	1	2	3	4
Q12. Others	0	1	2	3	4

Please evaluate impact of the services of cluster organisation on business activities?

0-No impact yet	1-Limited impact	2-Measurable impact	3-Significant impact	4-Excellent impact
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Q13. SME	0	1	2	3	4
Q14. Non-SME	0	1	2	3	4
Q15. R&D institutions	0	1	2	3	4
Q16. Universities	0	1	2	3	4
Q17. Training and education providers	0	1	2	3	4
Q18. Others	0	1	2	3	4

Please evaluate impact of the services of cluster organisation on international activities?

0-No impact yet	1-Limited impact	2-Measurable impact	3-Significant impact	4-Excellent impact
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Q19. SME	0	1	2	3	4
Q20. Non-SME	0	1	2	3	4
Q21. R&D institutions	0	1	2	3	4
Q22. Universities	0	1	2	3	4
Q23. Training and education providers	0	1	2	3	4
Q24. Others	0	1	2	3	4