

An Empirical Analysis of Cultural Economy in Turkey's Metropolitan Regions

Türkiye'nin Metropol Bölgelerindeki Kültür Ekonomisinin Analizi

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Abstract

Since 20th century, culture has been counted among one of the major contributors to economic growth and development. As a concept with three dimensions as social, political and economics, it has been taking increasing attention especially in regional economics. Numerous books, reports and studies on cultural economy have been published worldwide, but in comparison with them, the Turkish literature on cultural economics is still quite inadequate. This study contributes to the literature by applying a three-star analysis for three large metropolitan areas of Turkey and this paper aims to analyze clustering potentials of cultural activities in three large Turkish metropolitan areas. The empirical results reported in this paper imply that cultural industries in Istanbul and Ankara have more intense cultural clusters than Izmir. In addition, while Istanbul and Ankara have the same numbers of mature cultural clusters, Istanbul has a bigger potential for cultural clusters compared to Ankara.

Keywords: Cultural Economy, Industrial Cluster, Three-Star Analysis

Öz

20. yüzyıldan itibaren kültür, iktisadi büyümeye ve kalkınmaya katkı sağlayan temel kavramlardan biri olarak sayılmıştır. Sosyal, politik ve iktisadi açıdan

kültür kavramı özellikle bölgesel ekonomide artan bir ilgi ile karşılaşmıştır. Kültür ekonomisi üzerine dünya genelinde birçok kitap, rapor ve çalışma yayınlanmış, ancak dünya genelinde yapılmış çalışmalar ile Türkiye'yi karşılaştırdığımızda Türkiye literatürünün oldukça eksik kaldığı görülmüştür. Bu çalışma, Türkiye'nin üç büyük metropol bölgesine üç yıldız analizinin uygulanması ile literatüre katkı sağlamayı ve Türkiye'nin en büyük üç metropol bölgesi için, kültür ekonomisi faaliyetlerindeki kümelenme potansiyelini analiz etmeyi amaçlamaktadır. Analiz sonuçları, İstanbul ve Ankara'da kültür endüstrilerinde İzmir'e kıyasla daha yoğun bir kümelenmenin olduğunu söylemektedir. Ayrıca İstanbul ve Ankara'da eşit sayıda olgun kültür kümesi tespit edilirken, potansiyel kültür kümeleri açısından İstanbul'un Ankara'nın önünde yer aldığı sonucuna ulaşılmaktadır.

Anahtar Kelimeler: Kültür Ekonomisi, Endüstriyel Küme, Üç Yıldız Analizi

Introduction

The cultural economy concept has recently received a great deal of attention from academics due to contributions to regional competitiveness and growth. Besides, with the recent recession in world economy, policy makers and academics started to examine cul-

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tural economy from an innovation perspective. Its rising importance in regional economics created a need for a clear definition. Culture with three dimensions as social, political and economic dimension is a difficult and comprehensive concept to explain and to define. There are still debates on what to include or not to include in the definition of cultural industries. In this paper, we adopt the United Nations' cultural economy definition. It defines the cultural economy as all the economic activities performed by public or private enterprises with the purpose of supporting cultural heritage, creative arts and cultural industries (United Nations, 2010).

There is no doubt that the comprehension of economic dimension of culture has not been rapid, but took some time. Although many economists like Smith, Jevons, Marshall and Keynes stated the role and importance of art and cultural sectors in their studies during eighteenth and nineteenth centuries, a systematic approach to cultural economics has emerged in twentieth century (Towse, 2005, p. 263; Throsby, 1994, p. 3). Especially, the concepts of agglomeration and clustering gave rise to the new studies analyzing the spatial behaviors of cultural activities. Moreover, at the end of the 20th century, Porter (1990) suggested the view that agglomeration is the necessary but not sufficient condition of clusters. And in the same year, Krugman (1990) introduced the New Economic Geography Paradigm and in this context, agglomeration was introduced as an economic condition that causes higher productivity rates and hence higher economic growth rates.

However, although the roots of cultural economics concept date back to the mid of twentieth century, the quantitative analyses have risen at the beginning of twenty-first century due to the emergence of new empirical methods. One of the first attempts to analyze cultural industries empirically came from Greco (2000). Greco (2000) has conducted a research for Consumer Books sector, which has an important role among the cultural industries in the United States (US). The study, using the Herfindahl-Hirschman Index to detect the concentration during 1995-1996 period, observes that although cooperation and trade increased in this industry, the market concentration has decreased. Further, Florida (2002) suggested the new concept of the creative economy, which captures cultural economic activities. In his book *The Rise of*

Creative Class, he analyzed the rise of the creative economy and the structural transformation of US society for the time period 1950 – 2000. In his next book *Cities and the Creative Class*, the geographical behavior of creativity and its impact on economic outcomes have been taken into account. Another remarkable study is Garcia et al. (2003). This study discussed economic dimension of cultural economics in Spain from national, sectoral and regional aspects and showed that the cultural sectors yield prosperity in Spain. It was determined that most of the cultural activities take place in Madrid and Catalonia and also, 70% of them take place in the field of Performing Arts, Musical and Audio-Visual Arts. Moreover, Kelly and O'Hagan (2007) used data collected from art history dictionaries and focused on the birthplaces and migrations of famous artists who lived between thirteenth and twentieth centuries. Empirical evidence shows that there is a geographical clustering tendency in both birthplaces and migration behaviors of famous artists. Following these leading studies, Lazzeretti et al. (2008) used 'cultural and creative industries' term to overcome the problem of fuzziness about the creative economy concept and creative industries classification. They classified cultural and creative industries more briefly. Also, this study made a spatial analysis to examine the concentration of creative industries in Italy and Spain.

Lazzeretti et al. (2008) is quite important in the literature due to the fact that the results showed the concentration of cultural and creative industries in the largest urban areas which call attention to the importance of metropolitan areas for cultural economy. With this increasing attention to cultural and creative industries, United Nations Conference on Trade and Development (UNCTAD) (2008) published its first report on cultural economy. In this report, UNCTAD made a brief description of cultural and creative industries and explained some analysis methods to measure cultural and creative industry activities. Moreover, De Propriis et al. (2009) published another report about the geography of creativity. They drew attention to the point that there exist some evidence about the agglomeration and urbanization of creative industries, but there still remains lack of information about geographical patterns of these industries. Hence they made Location quotient (LQ) analyses for UK economy. Chapain et al. (2010) also conducted LQ analyses to see regional clustering behaviors of

cultural industries. This report's main importance is that it examined the issue from the new approaches to the local economic policy. Last but not least, Power and Nielsen (2010) prepared another report on creative and cultural industries in Europe. They applied LQ analyses for European regions and they realized that large urban areas dominate the creative and cultural industries. This report is quite important since it is the first report covering all European regions in terms of cultural and creative industrial activities.

In comparison with the developments in the world, literature on cultural economics in Turkey is quite inadequate. There is only one study (Akdede and King, 2006) using an empirical analysis for cultural activities in Turkey and this study attempts only to analyze the demand elasticities for state theaters. The data of 99 theater performances of the 2002-2003 season, a 8-month-period (except children's theatre), were used for this analysis. The results show that the demand elasticity was greater for the underdeveloped provinces. However, it is observed that, the musicals and comedies were subject to more attendance and the nationality of the scriptwriter had not a significant impact on the attendance decision. Furthermore, it was also observed that, when the scriptwriter was famous, it had a significant impact on the demand in the developed provinces, but it didn't have any impact in underdeveloped ones. The study is the first one in the literature that analyses the data according to the developmental differences of the cities.

In the 21st century, there exist also lots of econometric studies such as: De Vaan et al. (2012), Denis-Jacob (2012), Chisholm and Norman (2012), Zieba (2009), Akdede and King (2006), Van der Wurff (2005), Blanco and Pino (1997) and Heilbrun (1996). Some of these studies focus on more than one country or world economy, and some focus on national or regional economies for a certain country. However, since econometric methods are not employed in this study, the details of those econometric studies are not given here.

Hence, to the best of the authors' knowledge, this study is the first attempt to empirically test the cluster potential of Turkey from the view of cultural industries. Most studies in the literature employ the LQ analysis. This study also employs the LQ index, but employs the term of specialization rather than LQ. In addition to the LQ, this study also examines size and

focus criteria of industries to identify clusters. The employment of three criteria rather than a single LQ increases the reliability of the results. Consequently, the main motivation of this study is to contribute to the literature by analyzing clustering potentials of cultural activities in the main metropolitan areas -Istanbul, Ankara and Izmir- of Turkey. In this study, after an introduction section including the definition and emergence of cultural economics, activities constituting cultural economy are defined. In the following section, some basic indicators about cultural economy in Turkey and regional profiles of the metropolitan areas are given. In the fourth section, the empirical analysis is explained. In this part of the study, three-star analysis and its results are presented to analyze the clustering potential of cultural economy activities in Turkey.

Literature Review

In order to analyze cultural economics correctly, the scope of cultural economics and the activities it includes should be defined. The European Union (EU) defines these activities as the activities completely or partially related to the culture. In other words, the EU states that direct cultural activities and supportive activities for culture should be counted in the context of cultural economics (Eurostat, 2011). From this point of view, in this section, the activities defined as cultural activities are determined by following the EU's study of *Cultural Statistics in Europe*.

Detailed Classification of Cultural Economic Activities

European Union defined the cultural economic activities using 4-digit The Statistical Classification of Economic Activities in the European Community Revision (NACE Rev) 1.1 classification until 2008, after this year, it began to define them using 4-digit NACE Rev.2. Since NACE Rev.2 classification is more detailed, it enables the determination of the extent of cultural economy better. On the other hand, in Turkey this classification cannot be used in the definition of cultural economic activities at regional level because of the fact that Turkish Statistical Institute (TurkStat) doesn't provide data according to 4-digit NACE Rev.2 at the regional level. The regional data on economic activities in Turkey are published according to NACE Rev1.1 classification only for 1992 and 2002 (Data of General Census on Industry and Busi-

ness). In the data set in 1992, economic activities are detailed at 2-digit, however, they are given at 4-digit in 2002. After the year 2002, the data published by TurkStat is either 2-digit at regional level or 4-digit at national level. In order to clearly determine the activities that constitute cultural economy, 4-digit national data should be used. For this reason, the NACE Rev.2 classification could not be used directly in this study. Instead of this, the EU's definition of cultural economic activities in compliance with NACE Rev1.1 is extended by taking NACE Rev.2 classification into account. Those activities constituting cultural economy are given in Table 1. with their explanations.

Cultural Economy in Turkey

As it is mentioned in the previous section, the latest data on cultural economic activities (employment and number of business) at the regional level at 4-digits were published in 2002. However the same data (employment, number of enterprise, manufacture, value added etc.) at national level were published for the period 2003–2008. Therefore in this section, the cultural economy profile is given at national level for the period 2003–2008 and then cultural economic activities (employment and enterprises in 2002) at regional level are presented. Also, analysis of those activities will be stated in this section.

Table 1. Cultural Economic Activities in Turkey: Extended NACE Rev1.1 Definition

NACE Rev.1.1	Activities
22.11	Publishing of books
22.12	Publishing of newspapers
22.13	Publishing of journals and periodicals
22.14	Publishing of sound recordings
52.47	Retail sale of books, newspapers and stationery equipments
64.20	Telecommunications
71.40	Renting of personal and household goods n.e.c
72.21	Software publishing services
72.40	Database activities
74.20	Architectural and engineering activities and related technical consultancy
74.81	Photographic activities
74.87	Other business activities n.e.c.
75.14	Supportive service activities for the government
80.42	Education of adults and other education activities n.e.c.
92.11	Motion picture and video production
92.12	Motion picture and video distribution
92.13	Motion picture projection
92.20	Radio and television activities
92.31	Creation and interpretation of fine arts and literary arts
92.32	Operation of arts facilities
92.34	Other entertainment activities n.e.c.
92.40	News agency activities
92.51	Librarianship and archiving activities
92.52	Museums activities and preservation of historical sites and buildings

Source: It is constructed by extending the Eurostat 's (2011) definition by the authors.

Country Profile

Table 2. and Table 3. present the Turkey's cultural economic profile. As it is seen in the following tables, the Turkey's cultural economy is a field of activity that employs the 2.4% of total employment with 160,419 workers, the 2.6% of the total number of enterprises with approximately 45,000 enterprises, produces the 4.6% of the total production with 20,159 billion TL, creates the 1.6% of the total value added with over 2

billion TL and receives the 3% of the total investment with over 1 billion TL.

The values given in Table 2 express an increasing trend over years. In the year 2008, cultural economic activities employed the 3.8% of total employment, included the 3% of total number of enterprises, produced the 4% of total amount of production and created the 6.6% of total value added (see Table 3).

Table 2. The Turkey's Cultural Economy Profile

	2003	2004	2005	2006	2007	2008
Employment	160 419	188 690	299 214	326 386	349 420	378 971
Number of Enterprises	44 600	52 642	57 324	66 636	73 381	77 085
Production (Million TL)*	20 159	26 091	23 704	29 984	27 179	27 375
Value Added (Million TL)*	2 264	2 647	10 362	10 844	11 494	11 630
Investment (Investments on Tangible Goods) (Million TL) *	1 193	13 142	656	1 045	1 031	3 148

Source: The table is constructed by authors by using the data set by TurkStat (2003-2008).

* The nominal value is converted into real value by using Consumer Price Index (CPI) based 2003.

Table 3. The Shares of Culture Economic Activities in Turkey (%)

	2003	2004	2005	2006	2007	2008
Employment (%)	2.4	2.5	3.3	3.5	3.6	3.8
Number of Enterprises (%)	2.6	2.6	2.4	2.7	2.9	3.0
Production (%)	4.6	5.1	4.2	4.9	4.3	4.2
Value Added (%)	1.6	1.7	6.6	6.6	6.9	6.6
Investment (Investments on Tangible Goods) (%)	3.0	3.4	1.4	1.0	1.4	4.8

Source: The table is constructed by authors by using the data set by TurkStat (2003-2008).

The most remarkable increase in Table 3. appears in value added. Although cultural the economic activities' value added had a share of approximately 2% in 2003 and 2004; it increased dramatically to 6.6% and then stayed around this level.

General Profile of Metropolitan Areas

Due to the lack of data, the regional analysis of cultural economy is carried out by taking into account

“The Statistics of General Census of Industry and Business” which was published in 2002. Table 4. gives cultural enterprise and employment figures for Istanbul, Ankara and Izmir which are three main metropolitan regions of Turkey. In 2002, while the total employment in cultural economic activities in Izmir was 15,408 employees, this number was 64,560 for Istanbul and 34,021 for Ankara.

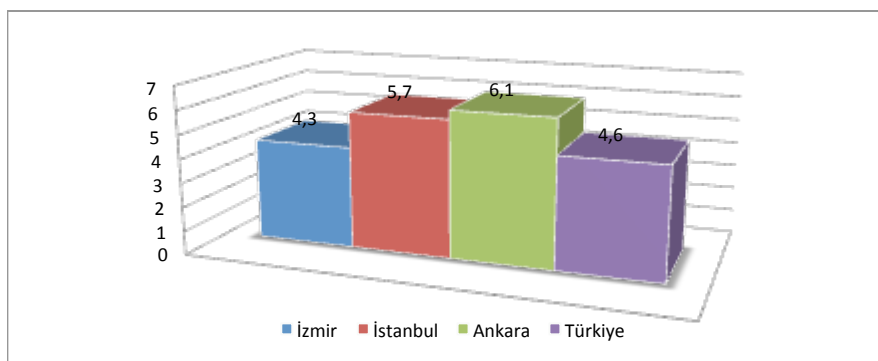
Table 4. Regional Business Statistics for Cultural Economics, 2002

	No. of Enterprises	Employment (Person)
Izmir	3 623	15 408
Istanbul	11 255	64 560
Ankara	5 564	34 021
Turkey	52 935	246 012

Source: This table is constructed by authors by using TurkStat (2002) data set.

Although cultural enterprises create employment for an average of 4.6 people at the national level, this figure is 5.7 people for İstanbul, 6.1 for Ankara and

4.6 for Izmir (See Figure 1.). The capacity for creating employment of Izmir fell behind the national average as well as the average of other two areas.

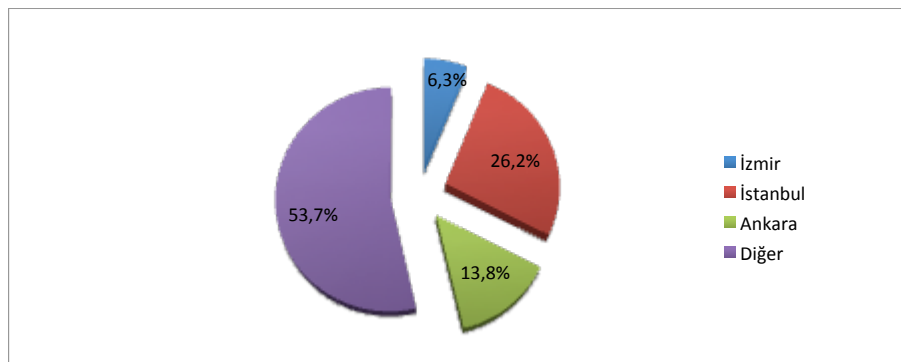


Source: This table is constructed by authors by using TurkStat (2002) data set.

Figure 1. Cultural Economics: Employment per Enterprises (employee/business), 2002

Figure 2. shows the shares of Izmir, İstanbul and Ankara in Turkey in 2002 from the point of cultural economic employment. Figure 2 expresses that 6.3% of all cultural economics employees works in Izmir. However, again İstanbul and Ankara have very higher

values as 26.2% and 13.8% respectively. It also follows from the graph that approximately one half of the cultural economics employment of Turkey is provided by these three metropolitan regions.



Source: This table is constructed by authors by using TurkStat (2002) data set.

Figure 2. The Shares of Regional Cultural Economy Employment in Turkey's Total Cultural Economy Employment (%)

Empirical Analysis

This section aims to analyze cluster potentials in three large metropolitan areas - Istanbul, Ankara and Izmir- of Turkey using cultural economics data that are published in 2002. The selection of the year are based on the availability of data for the level of regional 4-digit. For this purpose, we use the three-star analysis based on a technique introduced by European Cluster Observatory Platform. This method has been used to identify mature clusters, potential clusters and possible clusters. According to the empirical analysis, the clustering potentials of the cultural industries in İstanbul, Ankara and Izmir are specified and the results are given.

Data Sources

It has a critical importance to determine which data to take into account, while conducting an empirical analysis about cultural economics. Hence it is the first step to determine which industries to focus in an empirical analysis about cultural economics. Table 5. is given by following this purpose. According to the industrial activities classification in Turkey, the oldest available regional data are “General Census of Industry and Business Establishment” published in 1992. However these statistics describe economic activities at 2-digit level, so it’s not possible to create cultural economy data (at the regional level) from aforesaid statistics (in the regional level). In 2002 ver-

Table 5. The Sources of Statistics about Cultural Industries

Period	Source	Data Name	Scope	Level	Classification	Explanation
1992	TurkStat	General Census of Industry and Business Establishment	Regional	2 Digit Level	NACE Rev.1.1	The Number of Employment and Business
2002	TurkStat	General Census of Industry and Business Establishment	Regional	4 Digit Level	NACE Rev.1.1	The Number of Employment and Business
2003-2008	TurkStat	Annual Industry and Service Statistics	Regional	2 Digit Level	NACE Rev.1.1	Employment, Production, Revenue, Value added, Investment, Salary, etc.
2003-2008	TurkStat	Annual Industry and Service Statistics	Entire Turkey	4 Digit Level	NACE Rev.1.1	Employment, Production, Revenue, Value added, Investment, Salary, etc.
2009	TurkStat	Annual Industry and Service Statistics	Regional	2 Digit Level	NACE Rev.2	Employment, Production, Revenue, Value added, Investment, Salary, etc.
2009, 2010, 2011	TurkStat	Annual Industry and Service Statistics	Entire Turkey	4 Digit Level	NACE Rev.2	Employment, Production, Revenue, Value added, Investment, Salary, etc.
2008-2010	SSI	Statistics of SCI	Regional	-	Classification of SSI	Number of Insured Employees

Source: It's summarized by authors.

sion of the same statistics, economic activities are detailed at the regional 4-digit level. Therefore, the most appropriate cultural economics data for usage at regional level is published in 2002. However, this data set includes only the employment and the number of business (local units). For this reason, our analysis restricted to this available data.

TurkStat published the new statistics with the title of "Annual Industry and Service Statistics" for the period of 2003-2008. However, these statistics include 4-digit data for economic activities for Turkey but 2-digit data for economic activities of the regions. Hence, by using this data, only the evaluations can be carried out for the Turkey's cultural economy (employment, production, value-added, investment etc.), but a cultural economy profile in the regional level cannot be produced.

TurkStat has started to compile its "Annual Industry and Service Statistics" according to NACE Rev.2 since 2009. The different approaches in the classifications make it impossible to compare these data to the former data set. Another data in this field are the SSI (Social Security Institution) statistics for the years 2008-2010. These statistics reveals the number of the employees who work related to 99 financial activities determined by SSI. As this activity classification isn't detailed enough, it is not possible to determine the cultural economic activities clearly. Consequently it is not possible to carry out an analysis by using this data set.

Three-Star Analysis

The three-star analysis is a technique introduced by European Cluster Observatory Platform which is financed by European Commission. While most of the studies using Three-star Technique carry out their analyses with sectoral employment figures, a small number of the studies carry out their analyses by using number of businesses. Since using the number of business data in the analyses can be misleading, only the employment figures are used in this study.¹ Aforesaid analysis is based on "evaluating the relative rates of employment by comparing them to a threshold value."

In the three-star analysis, there are three main indicators as "size, focus and specialization". For each of the indicators, a threshold value is determined. If the estimated value for any business segment exceeds the predetermined threshold value, related activity gets one star from this criterion. In other words, if an activity exceeds the threshold value of an indicator, it gets one star; if it exceeds the threshold value of two indicators, it gets two stars and if it exceeds the threshold value of three indicators, it gets three star. If an activity gets three stars, it is accepted that there is "clustering in the region."

The three main indicators for three-star analysis are calculated as follows:

$$\text{Size} = \text{Employment of Region in Activity } i (e_i) / \text{Employment of Turkey in Activity } i (E_i) \quad (1)$$

$$\text{Focus} = \text{Employment of Region in Activity } i (e_i) / \text{Total Employment of Region } (e_t) \quad (2)$$

$$\text{Specialization} = \frac{\text{Employment of Region in Activity } i (e_i) / \text{Total Employment of Region } (e_t)}{\text{Employment of Turkey in Activity } i (E_i) / \text{Total Employment of Turkey } (E_t)} \quad (3)$$

1 For example when the clustering analysis is carried out by using number of businesses, in a small-scaled region with 50 companies (e.g. businesses with 1-10 employees) a clustering tendency can be detected, but in a large-scaled region with 10 companies (e.g. businesses with 50-100 employees) it can be realized that there is no clustering tendency. However these results may be misleading.

The main problem in three-star analysis is determining the threshold value. For specialization the accepted value is 1, but for the other two indicators there are no accepted critical values in general. In the different studies, different threshold values are used, which are suitable for the purpose of the study. And for this study, the threshold values are indicated as follows:

- As a threshold for the Size, the share of cultural economy in the total employment of the Turkey is accepted. Threshold value of size for all regions is:

$$\text{Size} = E_{\text{culture}} / E_t = 246,012 / 6,497,040 = 0.0379$$

In other words, a higher value shows that the related activity has a share above Turkey's average and a lower value shows that it has a share below Turkey's average.

- For the Focus, a comparable average threshold value throughout Turkey is presented as follows:

Assuming that every city's share is equal in total cultural economy, the share of a city in cultural economy is 1/18. And assuming each of the sub activities, which form the cultural economies of the cities, this share is also equal to 1/18. As a result, expected value (share) of the sub activities of cultural economy in a region is:

$$\text{Focus} = 1/81 \times 1/81 = 0.000686$$

The result of the analysis shows that the differences in the number of the stars of the sub activities reveal that the cluster characteristics of them are also different. From this viewpoint, the names that show the cluster sets of the related activities are given in accordance with the number of the stars. In our study, as Küçük-kiremitçi (2010) has used, we use "mature clusters" for the activities with three stars, "potential clusters" for the ones with two stars and "possible clusters" for the ones with one star.

Analysis Results

Three-star analysis results for Izmir, Istanbul and Ankara are summarized in Table 6. As a result of the analyses, 7 mature clusters are observed in both Istanbul and Ankara in terms of the activities that form the cultural economy. The cultural activities that have

the highest specialization coefficient in Istanbul are "Publishing of books" with 2,42, "News agency activities" with 2,06 and "Radio and television activities" with 1,98. "Production of computer software services" and "Architectural and engineering activities and related technical consultancy" are the highest in Ankara. Analysis results show that Izmir has 4 activities that show the characteristics of mature clusters. "Publishing of software (code 72.21)" activity has the highest specialization coefficient among those mature clusters. It's also seen that this activity has a mature cluster structure in Ankara but it is just a possible cluster for Istanbul with one star. The fact that Ankara has a high specialization coefficient, 5,93, in the business segment coded 72.21 shows that this kind of activities are conducted more intensely than Izmir which has specialization coefficient of 1,66. The business segment coded 74.87 (for the sub activities such as fashion design and decoration) in Izmir has three stars for all the criteria and this field shows mature cluster characteristics in Izmir as it does in Ankara and Istanbul. "Architectural and engineering activities and related technical consultancy" exceeds the threshold values in our analysis and perform as a mature cluster in all three regions. "The education of adults and other education activities nec" has three stars in Ankara with the specialization coefficient of 1,44 and this value is higher than the specialization coefficient of Izmir.

Table 6. also shows that "Retail sale of books, newspapers and stationery", "Telecommunications" and "Photographic activities" have completed only two criteria in Izmir and hence they are called as potential clusters. However, analysis results show that "The retail trade of books, newspapers and stationary equipment" activities show mature cluster characteristics in other two regions. Furthermore, "Telecommunications" field performs a potential cluster characteristic in Istanbul as in Izmir, but performs a mature cluster characteristic in Ankara. "Photographic activities" cannot attain the specialization criterion in all three regions.

10 of the all cultural economic activities get two stars in Istanbul and in Ankara, 6 cultural activities attain two stars.

Table 6. Three-Star Analysis Results of Cultural Economic Activities: Ankara, Istanbul, Izmir

NACE Rev 1.1	Ankara				Istanbul				Izmir			
	Number of local units	SIZE	FOCUS	SPECIALIZATION	Number of local units	SIZE	FOCUS	SPECIALIZATION	Number of local units	SIZE	FOCUS	SPECIALIZATION
Publishing of books	112	0.1442	0.0008	1.6436	303	0.6655	0.0012	2.4263	26	0.0358	0.0003	0.5258
Publishing of newspapers	25	0.0546	0.0003	0.6227	66	0.3488	0.0005	1.2719	10	0.0373	0.0002	0.5472
Publishing of journals and periodicals	1	-	-	-	23	0.7901	0.0001	2.8808	1	-	-	-
Retail sale of books, newspapers and stationery equipments	1484	0.1046	0.0054	1.1923	3851	0.2757	0.0046	1.0052	1078	0.0670	0.0045	0.9832
Telecommunications	228	0.1288	0.0168	1.4683	421	0.1976	0.0083	0.7203	104	0.0503	0.0085	0.7381
Renting of personal and household goods n.e.c	20	0.0275	0.0001	0.3139	112	0.3347	0.0003	1.2205	53	0.0501	0.0002	0.7359
Software publishing services	169	0.5204	0.0027	5.9317	83	0.1788	0.0003	0.6520	77	0.1131	0.0008	1.6597
Architectural and engineering activities and related technical consultancy	1710	0.1904	0.0139	2.1699	1934	0.2857	0.0067	1.0416	841	0.0680	0.0064	0.9986
Photographic activities	484	0.0718	0.0016	0.8185	1306	0.2113	0.0015	0.7703	467	0.0621	0.0018	0.9121
Other business activities n.e.c.	477	0.2050	0.0054	2.3363	1162	0.3938	0.0033	1.4359	429	0.0850	0.0029	1.2478
Education of adults and other education activities n.e.c.	497	0.1262	0.0098	1.4384	738	0.1991	0.0050	0.7258	269	0.0755	0.0076	1.1082
Motion picture and video production	21	0.0499	0.0001	0.5688	201	0.8142	0.0005	2.9687	16	0.0416	0.0001	0.6104
Motion picture projection	27	0.1315	0.0005	1.4993	85	0.3744	0.0004	1.3649	25	0.0669	0.0003	0.9826
Radio and television activities	45	0.0915	0.0006	1.0430	84	0.5445	0.0012	1.9852	26	0.0369	0.0003	0.5417
Creation and interpretation of fine arts and literary arts	48	0.1049	0.0003	1.1953	185	0.2959	0.0002	1.0790	60	0.0641	0.0002	0.9412
Operation of arts facilities	64	0.1332	0.0003	1.5185	144	0.4960	0.0003	1.8084	18	0.0594	0.0002	0.8717
Other entertainment activities n.e.c.	109	0.0651	0.0005	0.7425	498	0.3061	0.0008	1.1161	105	0.0447	0.0005	0.6557
News agency activities	43	0.1032	0.0006	1.1765	51	0.5668	0.0010	2.0667	17	0.0332	0.0002	0.4870

Source: calculations made by the authors

Notes: It cannot be calculated due to the lack of data in the region.

Add to this, the industries of publishing of sound recordings (2214), database activities (7240), supportive service activities for the government (7514), librarianship and archiving activities (9251), motion picture and video distribution (9212) and museums activities and preservation of historical sites and buildings (9252) cannot be analyzed due to the lack of data.

In the Table 7, there is a spreadsheet showing the number of stars that three metropolitan areas attain. According to the table 7, the industries of architectural and engineering activities and related technical consultancy and other business activities n.e.c have the capability of being mature clusters in Turkey's 3 biggest metropolitan regions. Besides, the industries of publishing of newspapers, renting of personal

and household goods n.e.c, motion picture and video production, motion picture projection, creation and interpretation of fine arts and literary arts and operation of arts facilities have relatively weaknesses

of being mature clusters in the whole 3 biggest metropolitan regions in Turkey. In general, Istanbul and Ankara are ahead of Izmir with regard to mature and potential clusters.

Table 7. Summary Table of Three-Star Analysis of Cultural Economic Activities

Industrial Code	Ankara	Istanbul	Izmir
Publishing of books	***	***	-
Publishing of newspapers	*	**	-
Publishing of journals and periodicals	-	**	-
Retail sale of books, newspapers and stationery equipments	***	***	**
Telecommunications	***	**	**
Renting of personal and household goods n.e.c	-	**	*
Software publishing services	***	*	***
Architectural and engineering activities and related technical consultancy	***	***	***
Photographic activities	**	**	**
Other business activities n.e.c.	***	***	***
Education of adults and other education activities n.e.c.	***	**	***
Motion picture and video production	*	**	*
Motion picture projection	**	**	*
Radio and television activities	**	***	-
Creation and interpretation of fine arts and literary arts	**	**	*
Operation of arts facilities	**	**	*
Other entertainment activities n.e.c.	*	***	*
News agency activities	**	***	-

Source: Table is constructed by authors.

Conclusion

Although the economic importance of the cultural activities has been addressed since the Classical economists, the importance of this subject has attracted attention in the literature since the second half of the 20th century. With the United Nations' and Euro-

pean Union's publications including definitions and statistical classifications about the cultural economy, the subject started to be among the current economic issues and it became possible to carry out empirical analyzes in this field. In recent years the cultural industries and their clustering behaviors, which have a

key role with regards to especially sustainable growth and development policy became significant from the point of regional administrations. Cultural economy activities give major opportunities to the regions especially on the subjects of triggering their potentials and reaching a more competitive level on a global scale. From this viewpoint, in this study, the clustering potentials of the cultural industries in İstanbul, Ankara and Izmir, which are Turkey's 3 biggest metropolitan regions, were analyzed. According to the results of Three-Star analyze which was carried out for Istanbul, Ankara and Izmir, the cities provided nearly half of the cultural employment, there are 7 mature clusters in Istanbul and Ankara. The number of mature clusters in Izmir is only 4. When the potential culture clusters are examined, it can be seen that there are 10 potential clusters in İstanbul, 6 in Ankara and 3 in Izmir. The clustering in İzmir is more likely to be in the form of possible clusters. In summary, it can be observed that in İstanbul, as the biggest metropolis of Turkey, had a tendency to clustering in some way in the all of the cultural industries that were analyzed. With regards to clustering of the cultural industries, Istanbul has both the highest performance and the highest potential. In terms of clustering performance of the culture industries, Ankara follows Istanbul. And Izmir is Turkey's 3rd biggest metropolitan region but it has mostly possible clusters and its performance falls behind compared to the 2 metropolitan regions.

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