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Creating a geodemographic classification model within geo-marketing: the case of Eskişehir province

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Abstract. Businesses today face great competition in their operations, making it necessary for them to adopt a "customer-oriented" approach. In this competitive environment, where customers are more valuable, enterprises accrue great advantages from an understanding of the characteristics of the target audience in all dimensions. This is where the importance of geo-marketing and demographic segmentation for enterprises emerges. This study performed a geo-demographic segmentation of the urban neighbourhoods of Eskişehir province and sought to determine the characteristics of the people living in these neighbourhoods at the household level. The Groups created using the SPSS package program as well as Principal Components Analysis (PCA) and Hierarchical Clustering Analysis were then mapped on the GIS platform as urban neighbourhoods.

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1. Introduction

In recent years, there have been radical changes in the marketing strategies of businesses. The main reasons for this are the unpredictable development of technology and increasing competition. Businesses that fail to update their marketing strategies in accordance with these conditions may lose their customers by staying behind in the competition. The enterprise can only step ahead of the pack by relying on marketing strategies created using the latest technology, and this is where the importance of location-based marketing and location-based demographic segmentation, which is a decision support system, emerges for businesses. Geo-marketing could be offered through both web-based and in-app advertising interfaces (Banerjee, 2019: 1) By linking location data to demographic data, marketing managers can make more efficient decisions through location-based marketing practices. They can also follow the implementation of these decisions through interactive location-based marketing practices. With geo-marketing practices, spatial analyses can be performed in many areas, from the selection of retail outlets, to financial risk analysis, to determining the most appropriate distribution-route-to-customer analysis. It is important to note that the data used during this analysis is up to date (Allo, 2010: 186).

In addition to the need for profit and survival, businesses are engaged in a battle to gain a competitive edge over others. This is especially relevant in today's stiffly competitive environment. Location analysis accords businesses this advantage and helps them determine who and where their customers are and makes important contributions to decision-making. With location analysis, the business can geo-examine the buying behaviour of its customers. In addition, it may examine the success of marketing campaigns being implemented or determine the most appropriate location for a new business. In general, location analysis is the core of geographic information and provides great benefits to business decision-making (Shaffer, 2015: 12). Geodemographic classification systems can find applications in many areas, such as market analysis and decision-making. These applications may include customer profiling, branch location analysis, credit score calculation, direct marketing, sample survey selection, demand forecasting and the selection of the media organisation to place advertisements (Mitchell and McGoldrick, 1994: 70). Location-based marketing tools provide the necessary information flow for geo-marketing. Geo-marketing information enables the user to make better and faster decisions about marketing and sales activities. Geo-marketing information consists of demographic information, statistical and geographic data from external sources and internal company data (Krek, 2000: 2). Geo-marketing is the integration of spatial intelligence into various areas of marketing, including sales and distribution. Geo-marketing research is the use of geographic parameters in marketing research methods such as sampling, data collection, analysis and presentation. Location is an important factor in this discipline. The geographic location is used in the geo-marketing analysis to perform routing planning, zone planning, and site selection using demographic data (Suhaibah et al., 2016: 1).

Geo-marketing, which has a direct impact on the development of modern trade and the reorganisation of retailing, also automates the selection of market places with applied scientific methods, and saves time and cost. In geo-marketing, base maps, appropriate data layers and reliable consumer profiling criteria are used (Suhaibah et al., 2016: 1).

It is possible to obtain the following marketing solutions using a simple Geo-marketing application (Fidan, 2009: 2167);

- Getting an insight into where customers are located using a digital map
- Classification of consumers according to their various characteristics
- Analysis of the places where the firm is strong and weak, and finding out which firm dominates the market and where it is not strong
- Decision on the strategy to be implemented
- Measurement of the performance of branches connected to the enterprise
- Decision on the preferred locations for new branches/units
- Optimisation of logistics activities.

GIS and geo-marketing also allow the user to combine geographic analysis of different types of data onto a single, easy-to-access screen. This anal-

ysis helps the user to decide which marketing strategies to use and in which areas. It also enables them to make faster decisions about sales activities that increase productivity throughout the company (Kaar and Stary, 2019: 165).

Geo-marketing allows the targeting of customers with a strong potential in a specific trading area. The best customers can be determined by overlapping the data generated for those living in these regions based on the principle that the place of residence is partly influential in purchasing behaviour. For example, customers who have the potential to buy luxury vehicles live in neighbourhoods with expensive houses. This profiling map may allow targeting of populations of similar potential customers (or non-customers) and may allow mapping of people living in the same neighbourhood or the same area based on the hypothesis that they have relatively similar socio-economic and cultural characteristics. In addition, considering the development of the trade area, it is possible to adapt this situation to the customer's profile (Cliquet, 2006: 95).

In many segmentation models, customer data is used separately and is not categorised, so there may be deficiencies in the data. In this case, if the missing data is added later, the efficiency obtained may decrease. Without segmentation, decision-makers cannot target a homogeneous segment and may find it difficult to produce efficient strategies that are different from those of target customers. For example, a VIP section created in terms of customer value may vary completely according to the characteristics or needs of the customers. This means that customers' needs can also be heterogeneous, as the customers are independent in terms of what they want for themselves. If the target segment is homogeneous in all aspects including characteristic value and needs, it is relatively easy to choose the target, satisfy them and ultimately create value for them (Woo, Bae ve Park, 2005: 763–764).

However, the marketer should be aware of some possible shortfalls of segmentation analysis. A segmentation-based strategy is more costly than a mass marketing approach. For example, differentiation often means new products/services, various promotional campaigns, channel development and expansion, increased internet costs, and additional resources for implementation and control. On the positive side, target marketing means a limited amount of waste (advertising reaching only potential customers) and improved marketing performance (Weinstein, 2004: 16).

Geodemographic segmentation is used to identify groups that are demographically similar and whose boundaries are limited by postal code, neighbourhood, or smaller areas. Geodemographic segmentation theory is based on the assumption that "birds of a feather flock together" (Goss, 1995; Nelson and Wake, 2005: 1). For example, such systems typically divide an average-sized country into up to 60 segments, which are then used when selecting target markets for groups that are created later. Geodemographic segmentation enables the identification of the target audience, where they are located and how to reach them. This segmentation system uses a statistical technique called "clustering analysis", and these segments are often called "clusters". But clusters do not necessarily have to show geographic proximity. Clusters with a similar socio-economic and population profile can also be found in a scattered way (Nelson and Wake, 2005: 1).

Geodemography and lifestyle data are used in GIS applications in two basic ways. First, they are used to identify areas of high population and to identify desired customer profiles, looking at data from a retail product or service perspective. The second way is to measure customer demands and potentials in specific areas (Murad, 2003: 331–32).

The purpose of the geodemographic classification can be summarised as the implementation of systematic principles at the neighbourhood or postal code scale by collecting scientifically valid information on issues such as socio-economic status, consumption habits and attitudes towards public service delivery. The spatial dimension is inherently important for end users in such classifications (Singleton and Longley, 2009: 290).

Commercial geodemographic classification systems do not reveal the methods and resources they use. Commercial geodemographic classifications encourage niche market ideas with natural "black box" characteristics and show that individuals and families are more useful in grading wealth in a different way from the census variables describing their social status (Longley, 2012: 2230).

In this study, geodemographic classifications were created in the urban neighbourhoods of Eskişehir. Since no such study was found in the liter-

ature review, this study is the first of its kind. This paper is organised as follows: the first section is a literature review. The second section outlines the methodology and purpose of the study, followed by the implementation of PCA and Hierarchical Cluster Analysis. The last section outlines results, followed by the conclusion of the study.

2. Literature Review

Studies on geodemographics and marketing can be considered in two parts, the first being geodemography in terms of marketing and the second, geodemographic studies as it relates to other disciplines. Goss (1995) made a general evaluation and critique of geodemography and its commercial applications. He examined the success or failure of these applications in determining consumer characteristics. Debenham (2002), on the other hand, applied a postal-code-based geodemographic segmentation in the county of Yorkshire in England and managed to identify eight main clusters from the classification made by k-means and principal components analysis using 51 variables. In addition to these studies, Harris and Longley (2002) studied the deprivation index based on socio-economic and environmental conditions and mapped low-income households based on the hunger threshold score. Hess, Rubin and West (2004) attempted to integrate GIS with marketing information systems (MIS). They stated that MIS, which deals with the cost and effectiveness of marketing in multidimensional ways, will increase the benefit of marketing and production decisions together with GIS.

In addition, Harris, Sleight, and Webber (2005) extensively described geodemographics, its areas of application, geo-marketing, and their relationship with GIS, as well as their applications around the world. Using case studies, they tried to analyse the geodemographic segmentation studies applied previously and tried to reveal ways to make more successful applications.

With the development of technology and software systems, studies have started to become more specific. For example; Kaynak and Harcar (2005) examined the perspectives of US consumers on commercial banks by comparing local and national bank customers through geodemographic classification. Musyoka et al. (2007) examined the effect of the geodemographic segmentation practices of a beverage company on operational decisions in Kenya and found that mapped data were more rapid and effective than other data when making business decisions.

Singleton and Longley (2009), in their article, criticised commercial geodemographic segmentation systems and proposed the development of software compatible with social networks. They emphasised the need to keep academic studies at the forefront while creating demographic profiles and segments based on location. Badea et al. (2009) used socio-economic data to make a target-customer profile for an electronics store. They outlined the relationship between socio-economic status and demographic structure and consumption habits.

Gürder (2010) demonstrated the feasibility of risk analysis in the insurance and banking sector using geo-marketing applications, and she also explained that geodemographic segmentation can be evaluated using the neighbourhood effect rule and can be used effectively in risk analysis.

Allo (2012) demonstrated the feasibility of geo-marketing and geodemographic segmentation in developing countries in the case of the Shomolu region of Nigeria and obtained socio-economic maps of the region using the dasymetric mapping method. Longley (2012) evaluated geodemographics and its applications to date from a general point of view and emphasised that geographic information systems could be used more specifically and, in an area-specific way with these applications. Fisher and Tate (2015) compared clustering algorithms used in the demographic classification study based on the 2001 population data from the UK Office for National Statistics (ONS). They showed that both c-means and fuzzy c-means were successful in making the results of location-based segmentation more significant. Leung, Yen and Lohmann (2017) made postal-code-relevant location-based segmentation of airline customers in and around Brisbane, Australia. They mapped the areas in which the customers lived based on the destinations they fly to.

The most used geodemographic segmentation systems in the world are commercial systems (Burrows and Gane, 2006: 793). In the academic studies conducted so far, geodemographic segmentation

systems have been made on a country-by-country basis and data have been evaluated and groups formed according to the country's cultural characteristics. There are socio-economic segmentation studies in Turkey, but there is no detailed geodemographic segmentation study. The aim of this study is to fill this gap in the literature.

3. Material, methodology and purpose

Digital map data including the boundaries of 132 urban neighbourhoods within the Eskişehir province, which is the study area, were obtained from the Metropolitan Municipality of Eskişehir. The population and demographic data used in this study was obtained from the database on the official website of the Turkish Institute of Statistics and Eskişehir Metropolitan Municipality. ArcGIS was used to produce the thematic maps and design the spatial database, and SPSS was used for the analysis of the survey data.

The order of the methodology used in this study is as follows:

1. The data were obtained from relevant institutions.
2. A spatial database was designed to store the data obtained.
3. Data conversion and editing was done to transfer raw data to GIS.
4. The spatial data and attribute data were correlated and thematic maps were created, and the number of samples for the survey study was determined based on population and demographic data.
5. Survey questions for geodemographic segmentation were determined.
6. A location-based survey was conducted in the city centre.
7. Survey results were transferred to GIS by associating them with the point feature.
8. Data obtained from surveys were transferred to the SPSS package program.
9. Data were analysed using the principal component analysis method in the SPSS package program.
10. The components (segments) obtained through the principal component analysis were identified and the number of sets to be formed was determined.
11. Hierarchical clustering analysis was performed in accordance with the data obtained from the principal component analysis. As a result of this analysis, the spatial point to be assigned to which cluster was determined.
12. Spatial points obtained as a result of hierarchical clustering analysis were transferred to the ArcGIS program as attributes.
13. Attribute tables and spatial points were associated (Join Relate).
14. As a result of this process, a geodemographic segmentation map was obtained within the boundaries of the neighbourhood according to absolute majority of the groups assigned to the neighbourhood polygons. (See Fig. 2)

4. Implementation of Principal Component Analysis

Principal Component Analysis, which is a statistical analysis method for variance-based and multivariate problems, prepares the available data set for further analysis (Tayalı, 2016: 37). Using different data analysis techniques and different clustering algorithms to analyse the same data set, very different results may be obtained (Yee and Ruzzo, 2000: 1). In TBA, generally, only important information must be extracted from a data matrix. In this case, the most important problem is to find out how many components should be there (Abdi and Williams, 2010: 441). The main issue in the Principal Component Analysis is to reduce the dimensionality of a dataset of multiple interrelated variables and at the same time to preserve the variation in the dataset as much as possible. This process is done by converting a new group of variables into several main components, which are unrelated to each other and retain some of the variations present in all of the actual variables (Jolliffe, 2002: 1).

The objectives of PCA are: (Abdi and Williams, 2010: 434)

- to find the most important information from the data table;

- to compress the size of the data set by simply protecting this important information;
- to simplify the definition of the data set; and
- to analyse the structure of observations and variables.

When investigating the appropriateness of the data to be used in the analysis, it is necessary to evaluate whether there is a significant and sufficient correlation between the variables in order to reduce the dimensions. Kaiser–Mayer–Olkin (KMO) statistics should be at least 50% for the analysis to be applicable (Albayrak, 2005: 223). KMO and Barlett tests were used to determine the suitability of the data for principal components analysis (a value of 0.807 was obtained, showing that the data is suitable for principal components analysis) (Katz and Koutroumpis, 2012: 11) and then the component numbers were determined and component matrices formed (Appendix).

5. Implementation of Hierarchical Cluster Analysis

Clustering is the separation of data with similar characteristics into groups (Demiralay and Çamurcu, 2005: 2). Hierarchical clustering is a tree structure that represents a nested cluster array called a "dendrogram". This sequencing represents multiple segmentation levels. At the top is a single cluster that contains all other sets. At the bottom, there are data elements representing the single element clusters. Dendrograms can be built from top to bottom or from bottom to top. The bottom-up method is also known as the "heap approach"; where each data element starts as a separate set. At each step of a heaped algorithm, the two most similar clusters are grouped based on similarity measurements in the next steps, and the total number of clusters is reduced by one. These steps can be repeated until a large cluster remains or until a certain number of clusters is obtained or the distance between the two nearest clusters is above a certain threshold. The top-down method, also known as a "grouper approach", runs in the opposite direction. Aggregate methods are the most commonly used methods in the literature. There are also many different variations of hierarchical algorithms in the literature. Basically, these algorithms can be distinguished by their definitions of similarity and how they update the similarity between current clusters and combined clusters combined (Anders, 2003: 2–3).

This study is based on the assumption that people with similar educational and income levels will live close to each other. Waldo Tobler (1970: 236) said that: "*As the first law of geography, everything is related to everything, but the relationship of close things with each other is more than the relationship of distant things.*" For example; retailers should consider the different cultural characteristics of the markets they want to trade in because of their proximity to the consumer (Reynolds, 1998: 245). Each country or community, therefore, has different cultural characteristics, making the geodemographic segmentation systems unique to each country or community. In other words, segments in the geodemographic segmentation system produced for Japan cannot be used for Turkey or Italy. Accordingly, as its purpose, this study sought the answers to the following assumptions;

- Socio-economic levels, demographic characteristics, lifestyles and shopping habits are more similar among people living in a single neighbourhood than they are between people living in different neighbourhoods,
- The socio-economic levels, demographic characteristics, lifestyles and shopping habits of people living in different, remote neighbourhoods may be the same (like two neighbourhoods that are in the same segment).

6. Results

In this study, geo-segmentation was applied in the urban neighbourhoods of Eskişehir and the results were mapped and visualised. This study was carried out in 132 urban neighbourhoods. The questionnaires prepared for urban neighbourhoods had questions in seven different categories and were carried out face to face by moving door to door. The data obtained were analysed with the help of the SPSS package program and the main groups formed. Hierarchical clustering analysis was per-

formed using the same program and each group was mapped separately.

As stated in the first part of the study, data were collected by face-to-face surveys by going to some households in urban neighbourhoods. As seen in Fig. 1, the surveyed regions comprised of neighbourhoods in Eskişehir city centre and district centres. Eskişehir city centre was evaluated as a whole without any distinction in the form of Tepebaşı and Odunpazarı. This is because there is no sharp distinction between these two central districts.

Even though the mapping of Mihalgazi and Sarıcakaya as well as Mahmudiye and Çifteler districts was done together because they are adjacent to each other, they were evaluated separately. Spatial points obtained for each neighbourhood were numbered and a thematic map obtained. Mode analysis for the points falling in each neighbourhood (polygon) and the majority group was determined in each polygon. Each polygon was then assigned the colour of the majority groups. In addition, using the query feature of GIS, the number of all groups in a neighbourhood and the positions can be queried. In Fig. 1, the points assigned to the groups are coloured.

The study tried to determine the general characteristics of each group based on the result of the component matrix created for urban neighbourhoods. The most important feature of the principal component analysis is that there is no correlation between the components formed. Thus, the properties of each component can be interpreted and defined independently of the other components. The seven main components obtained are the dependent variables, and the survey questions used to obtain these components are the independent variables.

Urban Group 1: The people in this group are socially and economically active. They like shopping. The age range of this group is predominantly above average. For example, stores selling branded products can open branches in their regions.

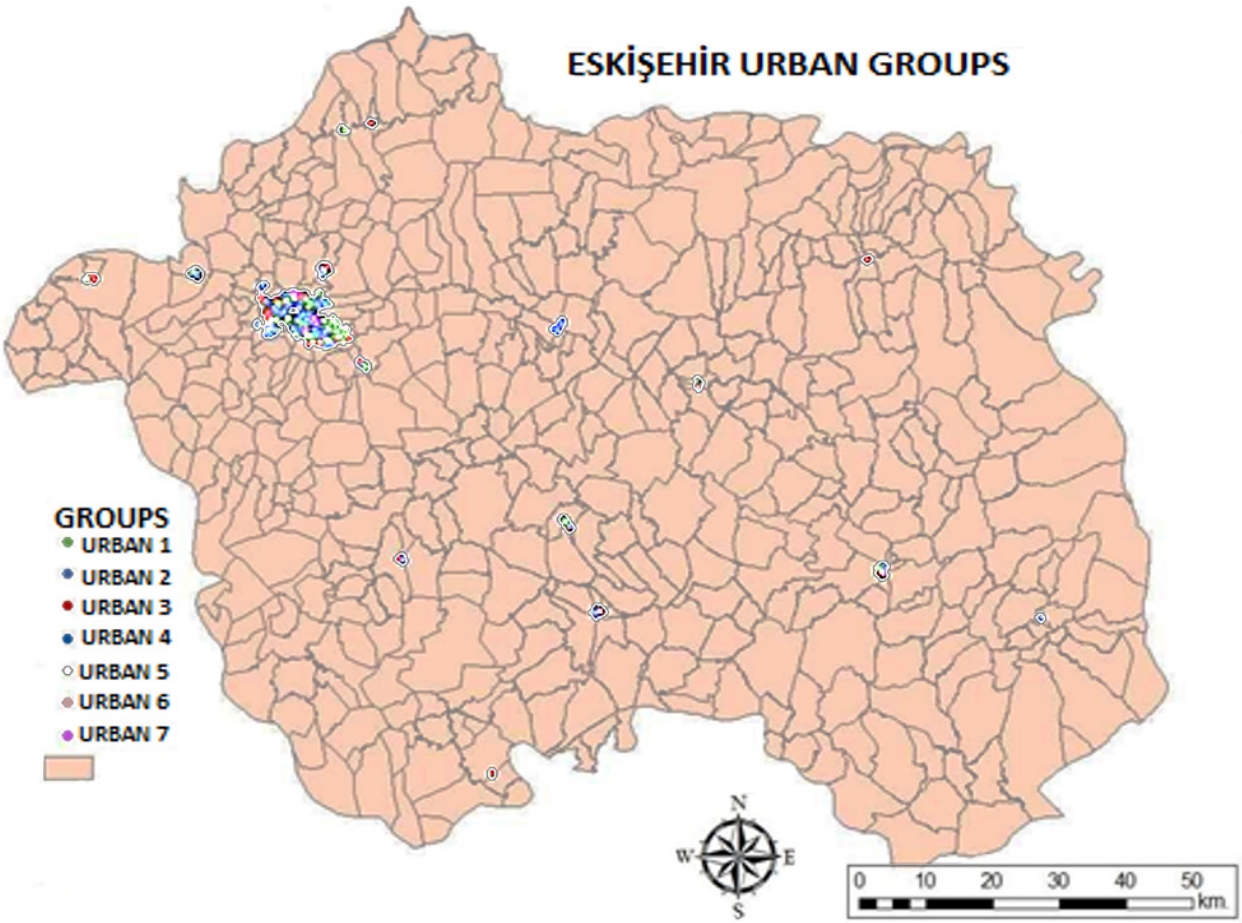

Fig. 1. Point-of-view representation of assigned urban groups on the map

Urban Group 2: This group consists mostly of families with children. The rate of subscription to paid television channels is high among the members of this group. Group members can sometimes use public transport. For example, shops or entertainment businesses that cater to families with children can evaluate them.

Urban Group 3: Members of this group are well educated. They enjoy staying at home and watching TV and listening to music. This group consists mostly of people who are married with children. For example, bookstores may be opened in areas where these people live.

Urban Group 4: This group consists of elderly households with children and young adults. Their education is slightly above average. For example, gyms can be opened in the areas where this group lives.

Urban Group 5: People in this group actively enjoy sports. Most households in this group have a vehicle. Personal pension plans are quite high. For example, sporting goods stores can be opened in the regions where this group lives.

Urban Group 6: The house ownership rate of this group is high. Most of the members are above middle age and they have retirement plans. The rate of active sports is low. For example, fine dining restaurants can be opened in regions where this group lives.

Urban Group 7: In this group of mostly young people, there are a lot of people who use public transport. They usually live in rented houses. For example, fast food restaurants can be opened in regions where this group lives.

Tepebaşı and Odunpazarı districts are the central districts of Eskişehir. The results show that people from each of the groups live in the urban neighbourhoods of these two districts. Results further show that the area around Anadolu University is intensively occupied by students. The students, according to the findings, do not display a standard profile and thus can be classified into different groups. This necessitates a review of stereotyped marketing strategies for students.

An examination of places like Vişnelik and Batıkent reveals increased living standards. One of the issues that should be considered by those who are considering establishing a business in these neighbourhoods, where income level is above average, is that people living in these areas are limited in their use of public transport and mostly use their own private vehicles. For example, in order for a person returning from work to be able to shop comfortably, they will prefer businesses with convenient car parks. Similarly, since the rate of pet ownership is high in these neighbourhoods, enterprises that can develop different alternatives for this area are likely to enjoy increased profitability ratios.

The levels of education in neighbourhoods such as Kırmızı Toprak and İstiklal were observed to be high. This should be taken into account in the investments to be made in such neighbourhoods. It would be appropriate to open private schools or study centres in neighbourhoods where there are families who care about their children's education. Moreover, culture and art centres may be thought to be in high demand in these neighbourhoods.

It was observed that families with more children and average income level lived in neighbourhoods like Fatih, Kumlubel and Bahçelievler. The concentration of discount stores such as A101, Şok and BİM selling affordable products may be attributed to the geodemographic status of these neighbourhoods. Businesses may attain more profitable results if they consider the position of competitors and the creation of product diversity in accordance with the geodemographic features while opening new stores in these neighbourhoods. For example, it is more appropriate for discount stores to increase the range of stationery because there are more school-age children living in these areas.

The situation is slightly different for urban neighbourhoods in district centres. They are mostly inhabited by households with children and people of above average age. Those planning to invest in these areas, especially for districts such as Sarıcakaya and Mihalgazi, should make evaluations not only in the neighbourhood but also in the whole district. This is because the population of Eskişehir districts is generally very small and the overall profile of the customers is quite similar.

When the data are examined, the hypothesis that for urban neighbourhoods "Socio-economic levels, demographic characteristics, lifestyles and shopping habits are more similar among people living in a single neighbourhood than they are between people living in different neighbourhoods" is confirmed. The characteristics of the people living in

the neighbourhoods examined showed more similarity to each other than did the characteristics of people living in remote neighbourhoods. In the same way, the hypothesis that "The socio-economic levels, demographic characteristics, lifestyles and shopping habits of people living in different, remote neighbourhoods may be the same" was proven on the examination of the thematic maps of Eskişehir city centre and district centres. As can be seen from the maps, neighbourhoods that belong to the same urban groups may be located away from each other.

Below are the thematic maps created for each district:

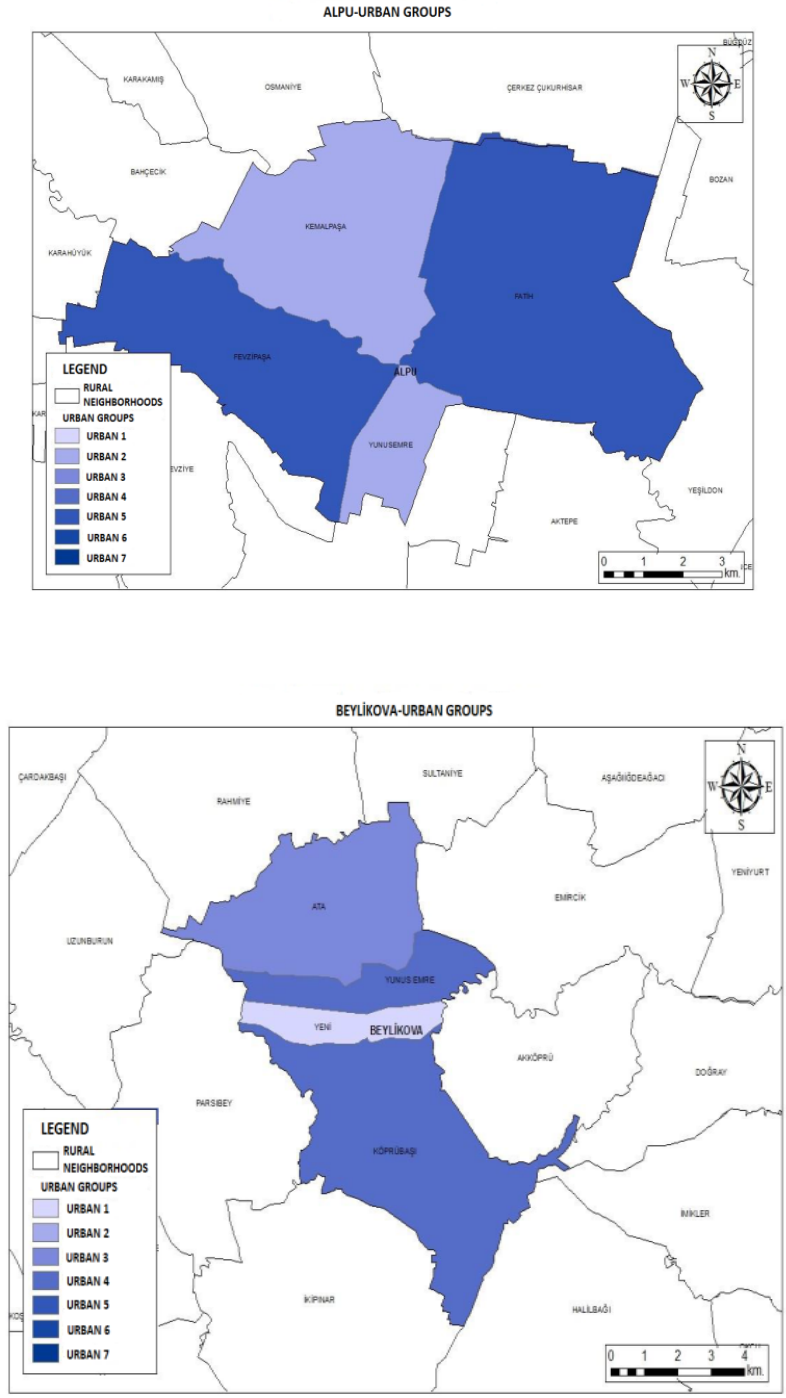

Fig. 2. Urban groups created for Eskişehir districts' neigbourhoods (10 maps)

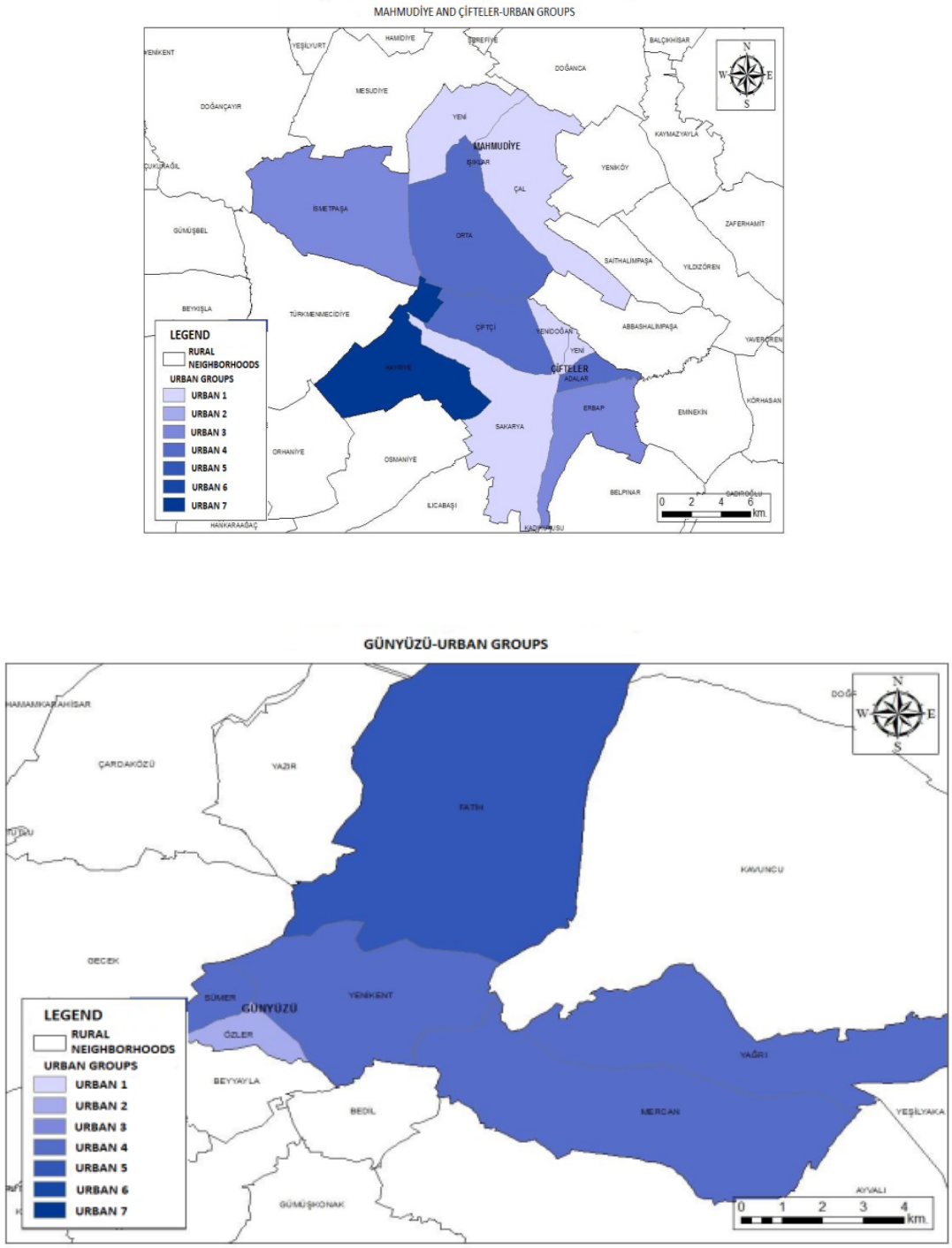

Fig. 2. Urban groups created for Eskişehir districts' neigbourhoods (10 maps) - continuation

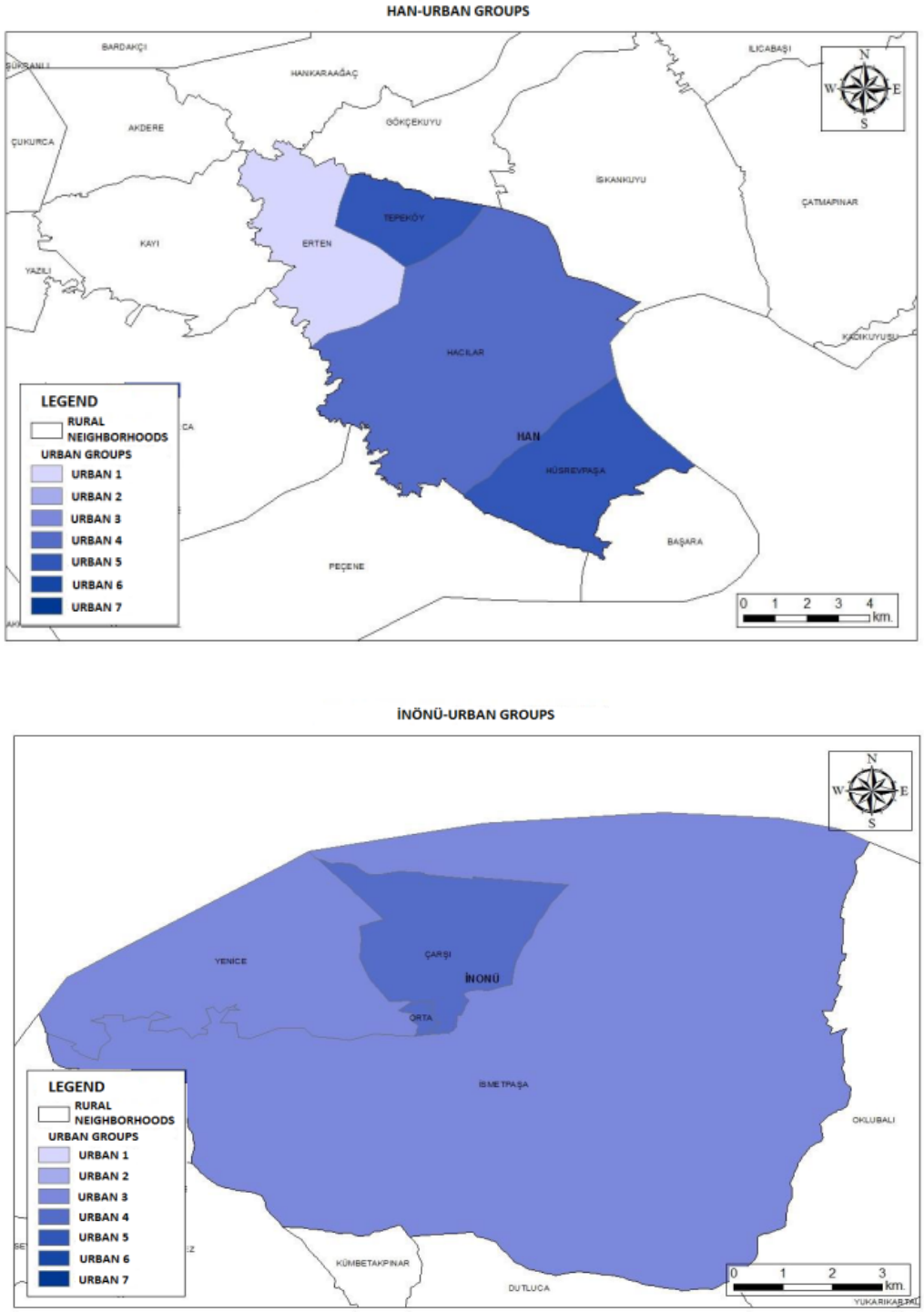

Fig. 2. Urban groups created for Eskişehir districts' neigbourhoods (10 maps) - continuation

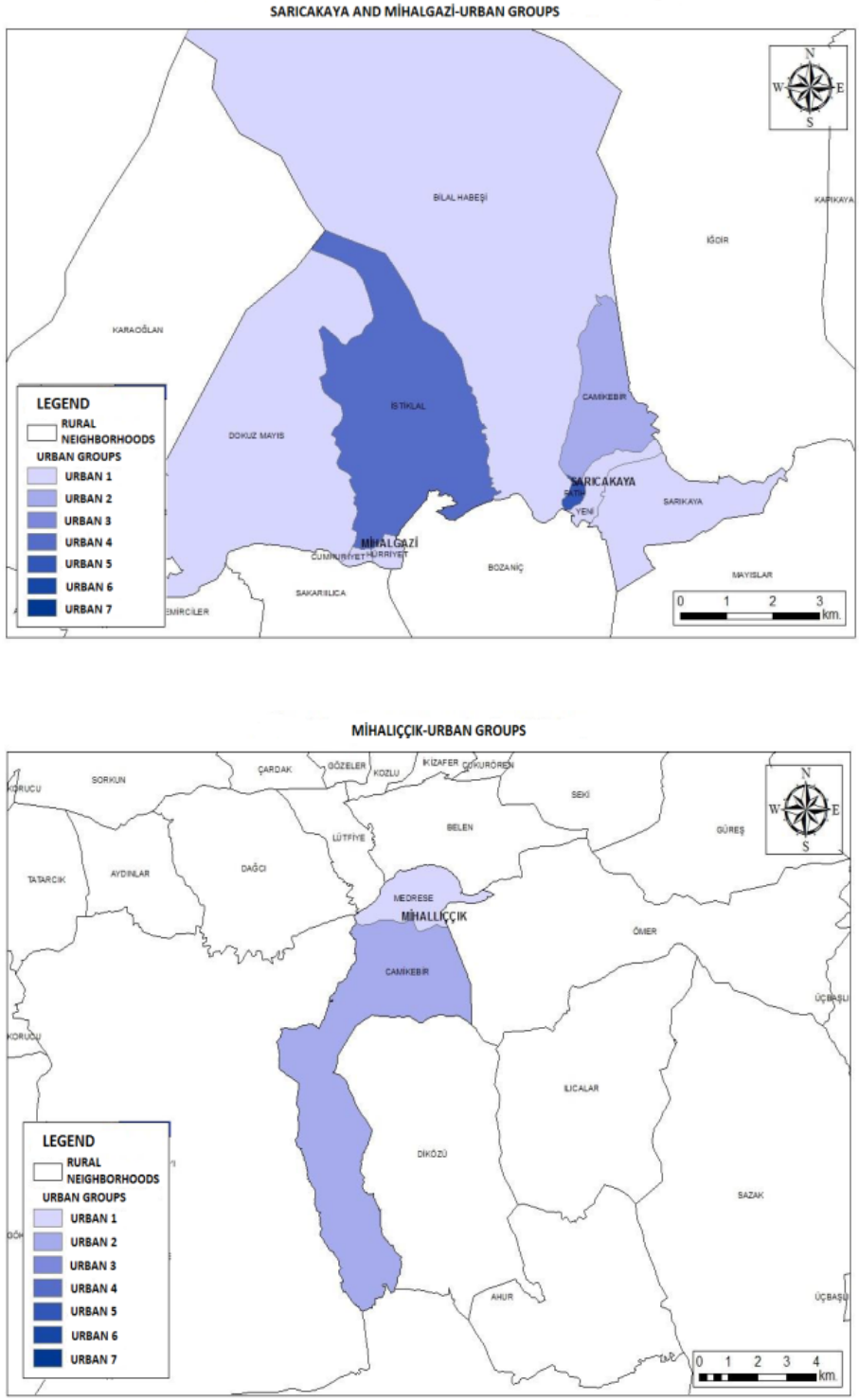

Fig. 2. Urban groups created for Eskişehir districts' neigbourhoods (10 maps) - continuation

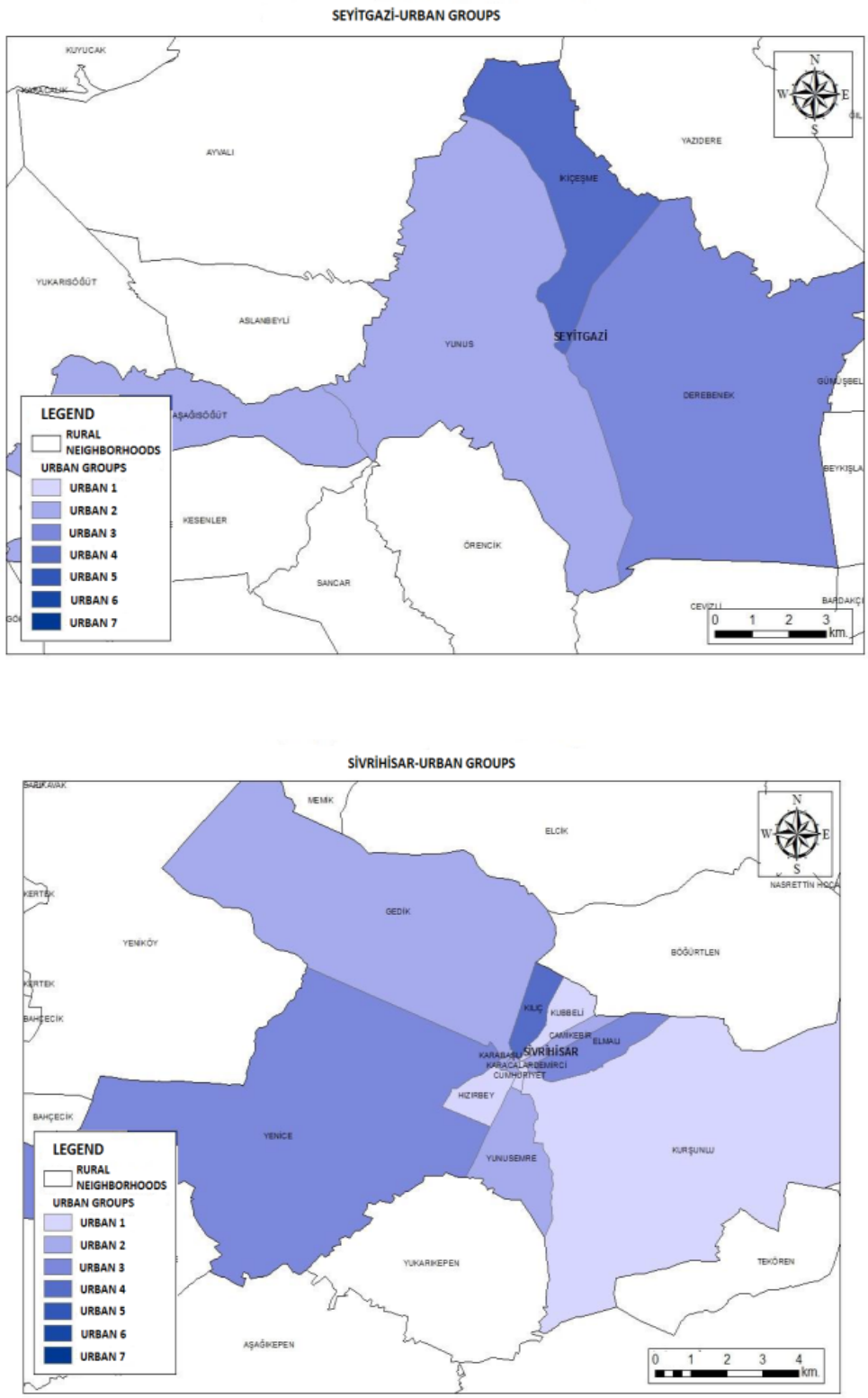

Fig. 2. Urban groups created for Eskişehir districts' neigbourhoods (10 maps) - continuation

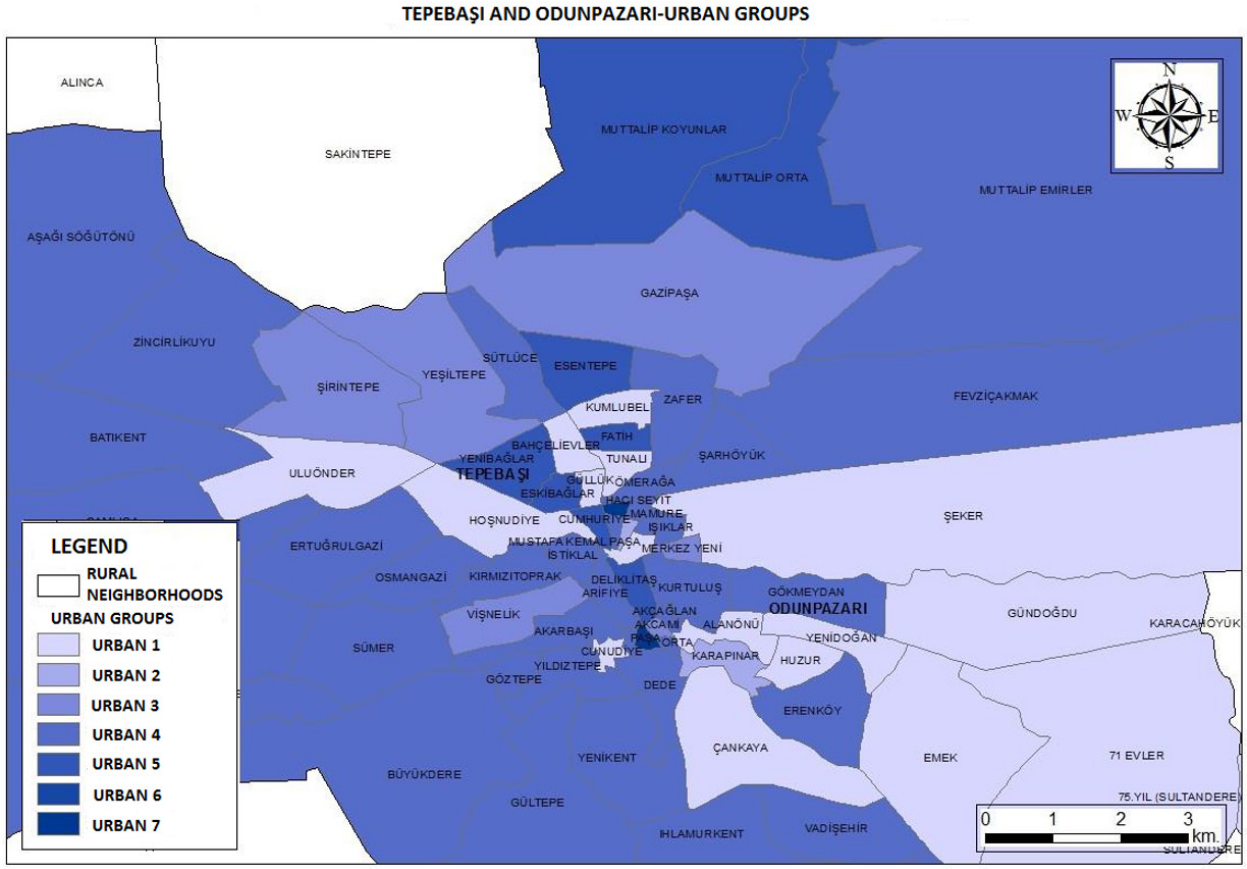

Fig. 3. Urban groups created for Eskişehir central neighbourhoods

7. Conclusion

The survival of businesses in today's commercial environment is directly proportional to the competitive advantage over their competitors. In order to achieve this competitive advantage, it is of utmost importance that the enterprises know the characteristics of the target customer population in every respect, especially in terms of purchasing characteristics, demographic characteristics and lifestyle. Geographic information systems and geo-marketing are a decision support system. They make it easier for managers, and the decisions they make are more reliable when they use the resultant visualised data when making business decisions. This is because tabulated data may be too copious and complex, making it more prone to mistakes when making business decisions. In this study, the number of samples taken from neighbourhoods was determined by quota sampling because the number of samples was limited by cost constraints. The small number of samples decreased the expected homogeneity. In future studies where there are no cost constraints, data obtained from survey as well as credit card data, traffic record data, data from local markets and data obtained from e-commerce sites will likely lead to much better results.

In this study, we tried to create a template for those who would wish to do research and work in this area in Turkey. In the academic field, there is a significant gap in the areas of both geo-marketing and geodemographic segmentation. Due to the interdisciplinary nature of geographic information systems and their applicability in all areas, very radical changes can be made, especially in the field of marketing.

In this study, we applied a geodemographic segmentation based on the administrative boundaries of neighbourhoods and districts. The dominant group in each neighbourhood was designated as the main segment of the neighbourhood. However, in future studies, it would be more useful to determine segment boundaries independently of administrative boundaries. For this purpose, GIS tools and methods such as dasymetric mapping, neigh-

bourhood effect could be used. In this way, a more efficient segmentation system is obtained for the enterprises by revealing more distinctive segments.

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Appendix 1. Component matrix and scale for urban neighbourhoods

	COMPONENTS						
Data Group	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Interest in modern technology	0.888	-0.057	0.268	-0.045	-0.049	-0.102	0.046
Young adult	0.884	-0.059	0.268	-0.064	-0.053	-0.160	0.022
Retirement status	0.836	0.235	-0.027	0.026	-0.066	0.049	0.008
News-reading habit	0.780	-0.149	0.250	-0.197	-0.045	-0.156	0.114
Home ownership	0.736	0.077	0.067	0.155	-0.201	0.269	-0.038
Education status	-0.715	0.111	0.384	0.215	0.041	-0.032	0.069
Credit card usage	0.714	-0.021	0.147	0.016	-0.093	-0.031	-0.066
Home assistance	0.705	-0.103	-0.162	0.279	-0.062	0.063	0.042
Status of the house lived in	0.697	0.198	-0.059	0.264	-0.173	0.330	-0.061
Use of public transport	0.682	0.040	-0.043	0.024	0.102	0.059	0.211
Children and other care needs	-0.644	0.327	0.344	0.478	-0.014	-0.043	0.022
Interest in culture and art	-0.612	-0.035	0.357	0.016	0.189	0.120	0.019
University students	0.597	0.557	0.106	-0.083	0.107	-0.028	-0.209
Shopping habits	0.434	0.176	0.085	0.233	0.046	0.249	0.195

	COMPONENTS						
Data Group	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Doing some sports actively	0.4	0.197	0.057	-0.055	0.392	-0.26	-0.163
Special days celebration	-0.03	-0.591	0.213	0.189	0.046	-0.055	-0.191
Employee status	-0.264	0.58	0.234	-0.503	-0.338	0.253	0.028
Middle Age Group	-0.473	0.543	0.193	-0.505	-0.28	0.19	0.025
Watched TV channels	-0.337	-0.524	0.403	-0.085	0.073	0.29	-0.094
TV programmes watched	0.197	-0.522	0.453	-0.239	0.183	0.248	-0.19
Vehicle ownership	0.188	0.521	-0.055	-0.02	0.435	-0.041	-0.015
School-age children	0.28	0.275	0.72	0.333	-0.111	-0.299	0.067
The habit of listening to music	0.381	-0.352	0.46	-0.048	0.124	0.307	-0.134
Families with children	-0.495	0.367	0.395	0.561	-0.108	-0.06	0.021
Participation in e-commerce	0.191	0.289	0.376	-0.506	0.143	-0.119	0.107
Elders	0.366	0.232	-0.169	0.372	-0.089	0.305	-0.155
Paid television channels	0.152	0.49	-0.071	0.008	0.534	0.136	-0.126
Participation in social life	0.298	-0.279	0.046	-0.063	-0.043	-0.135	0.605
Retirement plans	-0.163	0.011	0.011	0.098	0.362	0.388	0.555

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