

A Study of Social Network Analysis: The Âyan of Bursa in the Late 18th Century

Bir Sosyal Ağ Analizi Çalışması: 18. Yüzyıl Sonlarında Bursa Âyanı

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Abstract

A large number of researches have been conducted on the âyans who made their marks on 18th century Ottoman history. These researches have generally focused on some of the most powerful and influential âyan dynasties. However, the findings about the exact sources of âyan's influence on society and administration are still limited. This study suggests using social network analysis (SNA) in order to expand the knowledge base about âyans as a social stratum. In this study, on two Bursa court registers belonging to the late 18th century, in which âyans of Bursa were most effective, the method of social network analysis was carried out according to the debtor-creditor relation as a variable. In this paper, the results of this experiment are presented.

Key Words: Social Network Analysis (SNA), âyans, Bursa, 18th century, court registers.

Özet

18. yüzyıl Osmanlı tarihine damgasını vuran âyanlar hakkında çok sayıda araştırma yürütülmektedir. Bu araştırmalar genellikle en güçlü ve nüfuzlu âyanlar ve âyan hanedanları üzerinde yoğunlaşmaktadır. Âyanın toplum ve yönetim üzerindeki etkisinin asıl kaynakları hakkındaki tespitler ise hâlen sınırlıdır. Bu çalışma, âyanlar hakkındaki bulguları genişletmek için sosyal ağ analizi metodunu kullanmayı önermektedir. Bursa'da âyanların en etkili olduğu dönem olan 18. yüzyıl sonlarına ait Bursa Kadı Sicilleri üzerinde, alacaklı-borçlu ilişkisi temel değişken olarak alınmış ve sosyal ağ analizi metodu kullanılarak bir analiz yapılmıştır. Bu makalede yapılan analizin sonuçları sunulmaktadır.

Anahtar Kelimeler: Sosyal Ağ Analizi (SAA), âyanlar, Bursa, 18. yüzyıl, kadı sicilleri

Introduction

From 17th century henceforward and especially in the 18th century, âyan exceedingly came into prominence in the Ottoman provincial administration and social life¹. Since, the political causes and the results of these developments were

1 For detailed information about the transformation of Ottoman administration system and the rise of âyans during 17th and 18th century; see Halil İnalçık, "Centralization and Decentralization in Ottoman Administration", *Studies in Eighteenth Century Islamic History*, Southern Illinois University Press, USA 1977, pp. 27-52; Halil İnalçık, "Military and Fiscal Transformation in the Ottoman Empire 1600-1700", *Archivum Ottomanicum*, VI, 1980, pp. 282-337; Halil İnalçık, "The Emergence of Big Farms, Ciftliks: State, Landlords and Tenants", *Contributions à l'Historie Économique et Sociale de l'Empire Ottoman*, ed. J.L. Bacqué-Grammont and P. Dumont, Paris-Louvain 1983, pp. 105-126; Yücel Özkaya, *Osmanlı İmparatorluğu'nda Âyanlık*, TTK Basımevi 1994;

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analysed by many historians, these issues excluded from the study. However, at first “âyan” has to be explained as a term. Âyan which could briefly be defined as local notables was consisted of some sub-groups²:

1. Members of ulema such as mollas, qadis, muderrises, nakibs (the head of the descendants of the prophet -*seyyids*) and the sheikhs of tariqas.
2. Servants and soldiers of the Porte (kapıkulları) who carried the title of *ağa* such as kethüdayeri, serdar (commander of janissaries) and the former kapıkulları with their children.
3. The people trading precious goods such as *bezzaz* (textile dealer or cloth merchant), *kemhacı* (one who dealt in brocades, silk and velvet) etc.
4. Leaders of guilds: *kasabbaşı* (chief butcher), *bakkalbaşısı* (chief grocer), *pazarbaşısı* (market-head) and *şehir kethüdâsı* (intendant of city).

As is seen from this classification, âyan was consisted of different groups in terms of both social and financial status. Additionally, a hierarchical structure and a vertical mobility were in question. On the one hand, there were some people passing from ordinary people to the âyan and on the other hand, there were some âyans reaching the positions above other notables by using their property and dignity. The members of the latter group were on the top of the social pyramid in city life and they generally disposed some official positions in urban management. For instance, the attorneyship of the real governor (the position of *mütesellim*), the management of waqfs and the control of state revenues were obtained by âyans. Moreover, this group due to the conditions of the period, took various roles according to the region they resided in: They frequently became an agent about executing orders for central administration in province, a protector of *reâyâ* against the governors' misuse or a de facto governor.

These whole roles taken by *âyan* have determined the main titles of the subject of *âyan* in the 18th century Ottoman studies. They have mostly discussed in terms of the analysis of their political actions they conducted between centre and periphery and their wealth as one of the important basis for their all actions. In addition, the relevant literature largely focused on some of the famous *âyan* dynasties³. The findings were limited about what was the rate of this social stra-

Dina Rizk Khoury, *State and Provincial Society in the Ottoman Empire, Mosul*, Cambridge University Press, Cambridge UK 1997; Suraiya Faroqhi, “Krizler ve Değişim”, *Osmanlı İmparatorluğu'nun Ekonomik ve Sosyal Tarihi*, c. 2, çev. Ayşe Bertay, ed. H.İnalçık-D.Quataert, Eren Yay., İstanbul 2004, pp. 543-757; Karen Barkey, *Empire of Difference The Ottomans in Comparative Perspective*, Cambridge University Press, USA 2008, p. 197-289.

2 İnalçık, “Centralization and Decentralization”, p. 37-38; Özcan Mert, “Ayan”, *Türkiye Diyanet Vakfı İslam Ansiklopedisi*, 4, 1991, p. 195-196.

3 Most probably, this situation stems from both the existence of lots of unanswered questions about the 18th century Ottoman Empire and the difficulty of generalization due to many differences in different parts of Empire in this period.

tum totally in the city population or how a person was included in âyan or how an âyan could rise further among his similarities. This essay suggests using the social network analysis method for expanding the findings on these questions.

Especially, it is aimed to acquire information about the social network⁴ among *âyan* and between *âyan* and the rest of the city residents in the case of 18th century Bursa. In the preliminary research, it is determined that the âyans of Bursa were most effective in the late 18th century and they were extremely engaged in moneylending. Therefore, it is wanted to delineate a social network profile using debtor-creditor relations as a variable. The network data were provided from the probate inventories within the court registers containing detailed data about the people's monetary relations. In this paper, the results of analysis on two court registers are introduced.

The Social Network Analysis⁵

The social network analysis (SNA)⁶ is a method to analyze the relationships among individuals, groups, organizations and other social units. In this method, the social units in a social network⁷ are *nodes* (actors) and the relations between them are *ties* (sometimes edges or links). There are many kinds of relations may form the "network" between nodes; such as shared ideas, social contacts, kinship, financial exchanges, joint membership in organizations and group participation in events, etc. SNA gives more importance to the connections than the attributes of individuals for understanding the social structure. The basic principle of SNA is that the greater the number of ties connected with a node, the greater is this node's potential to communicate, influence or

4 The importance of the relations of âyans with other local notables and city residents for their dignity and power were emphasized by Ergenç and Tamdoğan. Ergenç, Özer, "Osmanlı Klâsik Dönemindeki <Eşraf ve A'yan> Üzerine Bilgiler", *Osmanlı Araştırmaları*, 3, 1982, p. 114, et seq. Işık Tamdoğan, " 'Büyükleri Saymak, Küçükleri Sevmek' 18. yüzyıl Adanası'nda Ayanların İlişki Ağları ve İki Farklı İlişki Yürütme Üslubu", *Tarih ve Toplum Yeni Yaklaşımlar*, 1, Bahar 2005, p. 82.

5 For information about the social network analysis and its development see Stanley Wasserman and Katherine Faust, *Social Network Analysis Methods and Applications*, Cambridge University Press, USA 1994, p. 1-27; John Scott, *Social Network Analysis A Handbook*, 2.ed, Sage Publications, London 2000, p. 3-37; Thomas Lee, "A Social Network Analysis of the Founders of Institutionalized Public Accountancy", *The Accounting Historians Journal*, 27/2, p. 8-10

6 The pioneer researches in social network analysis came from sociology and social psychology. Some examples of the first researches in social network analysis are as follows: J.L. Moreno, *Who Shall Survive?: Foundations of Sociometry, Group Psychotherapy, and Sociodrama*, Nervous and Mental Disease Publishing Co., Washington D.C. 1934 ; D. Cartwright and F. Harary, "A Graph-theoretic Approach to the Investigation of System Environment Relationships", *Journal of Mathematical Sociology*, 5, 1977, pp. 87-111; J.A. Barnes, "Class and Committees in a Norwegian Island Parish", *Human Relations*, 7, 1954, 39-58; J.C. Mitchell, *Social Networks in Urban Settings*, Manchester University Press, Manchester 1969. After many researches in SNA and the developments in web and computer technologies, SNA has become an increasing application for many fields in addition to social sciences: such as epidemiology, business organization, electronic communications and even for ethology.

7 Social network briefly is a term to describe the social structure determined by interactions among social units. In SNA, social networks are represented by maps of nodes and ties among them.

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transfer resources with other nodes in network.

SNA maps and measures formal and informal relationships in social networks and then use it to understand the social structure. By this method, it is possible to obtain information about the positions of the actors in a social structure, the size and the density of the network formed by connections among these actors, the groupings in network and etc. This information is acquired by the application of mathematical methods on the dataset representing the social network. Today, there are some software programs providing both mathematical and visual analysis of network data. UCINET, Pajek, Gmine, NetMiner, MultiNet, STRUCTURE and STOCNET are some of these programs⁸.

The data for network analysis are mostly gathered by the way of questionnaire. Nevertheless, as is tried in this study, using archival sources for obtaining data for SNA isn't new either⁹. For example, the study of Burt (1975, 1983) about the interactions among corporate actors based on the data collected from the front pages of back issues of *The New York Times*. Another important example is the study of Rosenthal, Fingrutd, Ethier, Karant, and McDonald (1985). They used biographical records to study the organizational affiliations of women reformers in the 19th century in New York¹⁰.

In this respect, particularly, Işık Tamdoğan's instructive article (2005)¹¹ about Âyans of Adana should also be mentioned. Seemingly, Tamdoğan made in the case of Adana, which is wanted for 18th century Bursa here. Using two court registers of Adana dated 1750 and 1777, Tamdoğan analyzed the social networks of âyans. However, most probably, the researcher didn't use SNA software and followed more manual way. According to her explanation about her method¹², she determined the names of 30 âyans by scanning court registers instead of deriving them by SNA. Then she investigated the relation types of them. Consequently, it could be expressed that the application of visualization software aforementioned is quite new in historical researches¹³.

8 Harun Kuduğ, "Anlamsal Web Tabanlı Kurumsal İş Ağının Analizi", Ege University, the Institute of Sciences, İzmir 2011, p. 21 (Unpublished Master Thesis); Necmi Gürsakal, *Sosyal Ağ Analizi*, Dora Yay. Bursa 2009, p. 239-452.

9 For other gathering techniques; see Wasserman, *Social Network Analysis*, p. 45-54; Gürsakal, *Sosyal Ağ Analizi*, p. 227.

10 Wasserman, *Social Network Analysis*, p.50; Thomas Lee, in his study, examined the social relations of founders of the first institutions of modern public accountancy (dated as the mid 19th century) in Scotland. He used a former version of UCINET program without visualization. Lee, "A Social Network Analysis", p. 1-48.

11 Tamdoğan, "Büyükleri Saymak, Küçükleri Sevmek", pp. 77-96; In Ottoman Studies also see Barkey, *Empire of Difference*, p. 28-64. (In her book, Barkey tried to delineate the ego networks of Osman Bey and Orhan Bey) by a similar method with Tamdoğan.

12 Tamdoğan, "Büyükleri Saymak, Küçükleri Sevmek", p. 82-83.

13 The first results of this study were presented in a panel in MESA's 45th Annual Meeting. Nilüfer Alkan Günay, "An Analysis of Social Structure: The Âyan in Bursa (1770-1800)", also see Zeynep Dörtok Abacı, "The Employment of Ottoman Shariyyah Registers as a Historical Source for Analyzing Social Networks in the Ottoman Society: The Case of Bursa", in the panel of *Clio Harnessing The Spider: SNA (Social Network Analysis) of Ottoman Bursa (15th-20th Centuries)*,

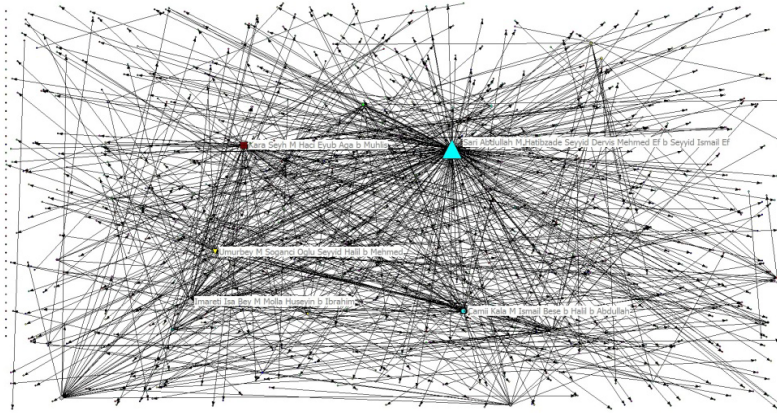
The Probate Inventories and Their Effects on Analysis

In this research, two Bursa court registers (B 226 and B 232) containing probate inventories dated 1784-1787 were chosen. The probate inventories are briefly the lists of the decedents' properties, credits and debts. Even though these registers are so detailed, they don't provide complete standard data. It isn't possible to reach the same identical information about the each name appeared in registers. The identities of the decedents were widely informative: their neighborhoods, their full names together with their nicknames and titles if they had and sometimes their occupation were recorded¹⁴. In contrast, only the first names of a few debtors who were presumably seen as unimportant by the clerk were recorded: such as Mehmed, Fatma or Abdullah. Therefore, when the same uninformative names were detected a second time in registers, if there was no way for confirming that they were the same persons, the connections of them with others couldn't be shown in network dataset.

Analysis

1. The results of the Analysis on the Bursa Court Register Numbered B 226

In this register, 141 decedents who died in 1784-1785 were detected. The names of decedents and the people connected with them as debtors or creditors were entered to the UCINET program¹⁵. In the period of scanning registers, it was seen that the decedents borrowed money not only from the people but also from the cash waqfs. These 24 cash waqfs were recorded as nodes too. Totally, 855 nodes were entered to the program for one register. The social network of this dataset was delineated in the environment of NETDRAW.



MESA's 45th Annual Meeting (1-4 Dec.2011), Washington (Unpublished Papers).

14 For example "From the neighborhood of Sarı Abdullah, Hatibzâde Es-Seyyid Deriș Mehmed Efendi ibn el-Merhûm Es-Seyyid İsmail Efendi". Bursa Court Register, B 266, 40 a.

15 In this study, UCINET (version 6.260) was used for analyzing and visualization of social network. UCINET is a SNA program developed by Steve Borgatti, Martin Everett and Lin Freeman. The program is distributed by Analytic Technologies. UCINET works in tandem with a program called NETDRAW for visualizing networks.

Figure 1¹⁶

In the figure 1, the analysis of the social network with the measure of degree centrality¹⁷ can be seen. In social network analysis, *the measure of degree centrality* gives the numbers of direct ties of every node has. The node whose degree is the highest is interpreted as the most active and the most prominent member of the network. According to this analysis, the node having the highest degree centrality is Hatibzâde Seyyid Derviş Mehmed Efendi from the neighborhood of Sarı Abdullah, (The up-triangle node, his degree is 196).

The other prominent nodes (in order):

2. Hacı Eyub Aga bin Muhlis
3. İsmail Beşe bin Halil bin Abdullah
4. Molla Hüseyin bin İbrahim
5. Soğancı Oğlu Seyyid Halil bin Mehmed

The nodes seen in the left part of the Figure 1 are the isolated nodes (32 people) and their measure of degree centrality is zero. At this point, it has to be reminded that this network doesn't indicate the whole relations of these people. It shows only the monetary relations among the people who died in 1784-1785 and their debtors and creditors.

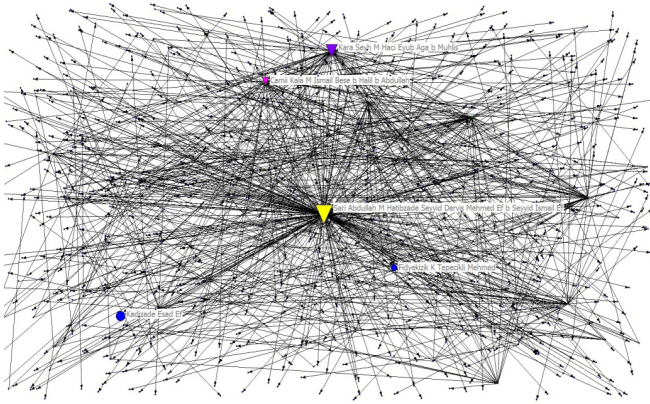


Figure 2

The same social network was analyzed by the measure of betweenness centrality (Figure 2). The measure of betweenness centrality shows that how much a node is connected with other nodes which are not directly connected with each other. In other words, it indicates the nodes playing the bridge

¹⁶ Some abbreviations were used in the course of entering data: M (Mahalle/Neighborhood); K (Köy/Village); b (bin/sun of); bti (binti/daughter of); Ef. (Efendi).

¹⁷ Many types of measures are possible in SNA. The measures of centrality are three sorts: "Betweenness", "Closeness", and "Degree" are all measures of centrality. The measure of centrality gives a rough indication of the social power of a node based on how well they connect the network. In this study, especially the degree centrality was used in order to reveal the persons in central positions in network.

role. In the figure 3, the nodes whose measure of betweenness was zero were removed for showing the prominent nodes.

The most prominent nodes (according to the measure of betweenness)

1. Hatibzâde Seyyid Derviş Mehmed Efendi
2. Hacı Eyub Aga bin Muhlis
3. Kadızâde Esad Efendi
4. İsmail Beşe bin Halil bin Abdullah
5. Tepecikli Mehmed

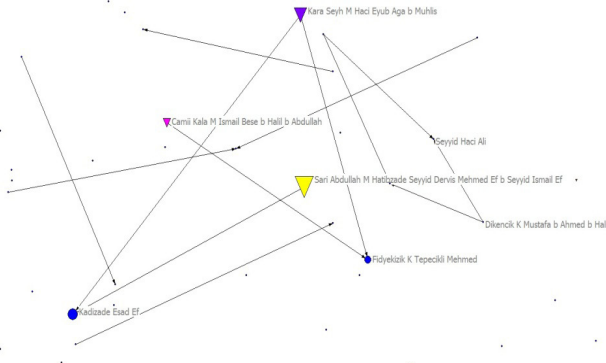


Figure 3

The first and second nodes with the highest degree are the same in this measure, too. In addition to them, another names are seen: Kadızâde Esad Efendi and Tepecikli Mehmed¹⁸. They are on the joint points in network. In fact, these are the nodes providing the indirect relations among Hatibzâde, Hacı Eyub Aga and İsmail Beşe.

Another noteworthy point is that the indirect relations were limited in this network. It is especially seen in the Figure 3. Naturally, it can be explained as a result of the limits of the analysis. It is a visualization of only one relation and there were many people having any or only one credit or debt relation. When the nodes were eliminated, these people were totally removed in the network.

Nevertheless, when the personal networks of the five actors with the highest centrality degrees are taken into account, another reason is realized.

18 Given his name (*Kadızâde*) and his title, it is possible to express that he was the member of âyan. In the period investigated, there were a lot of âyans called by the names emphasizing their *ulema* origin such as Kadızâde, Müftizâde, Müderriszâde and Hatibzâde. İnalçık, "Centralization and Decentralization", s. 38-39. Unfortunately, it couldn't be detected any information about Tepecikli Mehmed except the village he lived in (Fidyekizlik).

They gave credits not only to the city residents but also to the different villages and townsmen living around Bursa. Particularly, when the villages are in question, it is seen that each of five actors mostly took control of the whole credit works of different villages. Therefore, some debtors were recorded totally as “the inhabitants of X village”. For example, among the debtors of Hatibzâde, there were the inhabitants of Küçük Kumla, Serme, İsaviran and Mashara Hasan villages. Moreover, it is safe to express that there were a similar characteristic in the city, too. As it appears from the probate inventories, the people when they needed credits more than once preferred to appeal to the same moneylenders instead of different persons. This situation might have caused the limited indirect relations in network.

In the figure 4, the diversity of Hatibzâde’s relations was tried to show. This figure shows only the relations of Hatibzâde (the triangle node). The light nodes are the people from the countryside of Bursa and the dark nodes are the city residents. As is seen in figure, %70 of his relations was from the villages and towns around Bursa. Besides, in his probate inventory, another important feature draws attention. Some names of persons with whom he was connected were most probably members of âyan: Turanzâde Hacı Mustafa, Ahmed Ağa the old commander of Gemlik (Sabıkân Gemlik Serdarı), Çalıkzâde Ahmed Ağa, Kadızâde Seyyid Esad Molla Efendi etc.

2. The Analysis of Bursa Court Register Numbered B 232

The second court register analyzed was B 232. It contains the probate inventories dated 1786-1787. In this register, 119 decedents were determined and together with their debtors and creditors 1461 nodes were entered to the UCINET program.

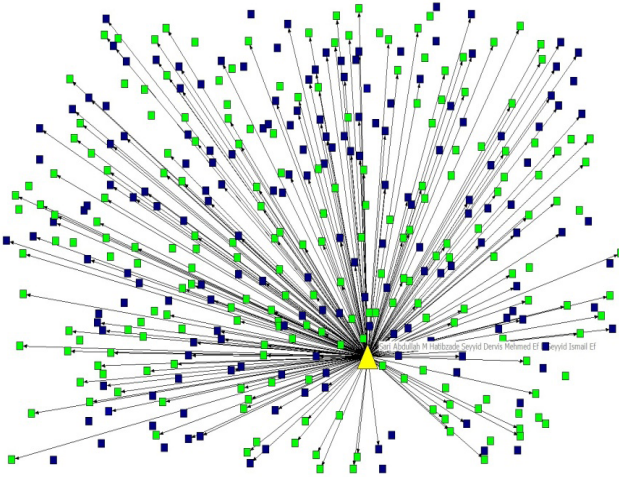


Figure 4

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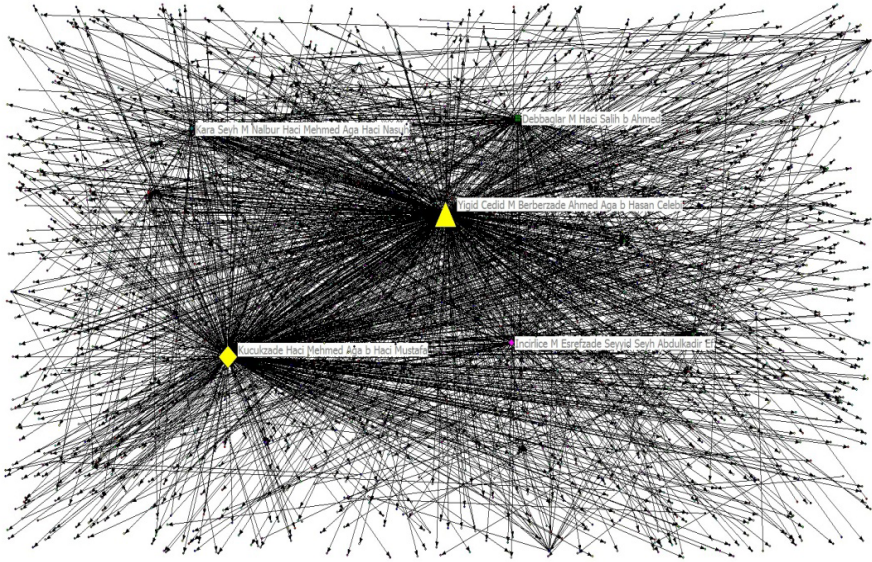


Figure 5

In the Figure 5, the visualization of the social network according to the measure of degree centrality can be seen. There are five people in the central positions in network. The nodes in the central positions in network;

1. Berberzâde Ahmed Aga bin Hasan Çelebi (his degree is 580)
2. Küçükzâde Hacı Mehmed Aga bin Hacı Mustafa (His degree is 480)
3. Hacı Salih bin Ahmed
4. Esrefzâde Seyyid Şeyh Abdülkadir Efendi
5. Nalbur Hacı Mehmed Aga Hacı Nasuh ¹⁹

The same social network was analyzed by the measure of betweenness centrality, too. In this measure, different from the results of measure of degree centrality, another name included to the list of prominent nodes²⁰: Üftadezâde Seyyid Mehmed Hasim Efendi.

Both the family of Üftadezâde and the family of Esrefzâde were among the notable families of 18th century Bursa. These families frequently cited in the many sources of the period²¹. Moreover, both of them originated from

19 Who was Hacı Salih bin Ahmed from the neighborhood of Debbaglar? He didn't bear a title peculiar to *askerîs* and a family name ending with "zâde". When we look at his probate inventory, we observe that he had a shop and was occupied with precious textile dealing. His wide personal network might be depended on his business network.

20 According to the measure of betweenness the prominent nodes: 1. Berberzâde Ahmed Aga bin Hasan Çelebi; 2. Küçükzâde Hacı Mehmed Aga bin Hacı Mustafa; 3. Hacı Salih bin Ahmed; 4. Üftadezâde Seyyid Mehmed Hasim Efendi; 5. Esrefzâde Seyyid Seyh Abdülkadir Efendi.

21 About the tekkes of Esrefzâde and Üftade see Mehmed Şemseddin, *Bursa Dergâhları*, (prepared by M.Kara-K. Atlansoy), Uludağ Yay., Bursa 1997, p. 85-117; Kamil Kepcioğlu, *Bursa Kütüğü*, 2,

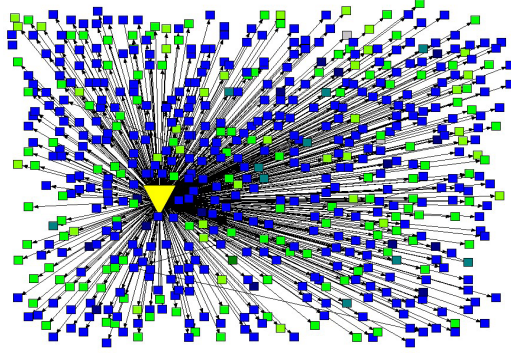


Figure 6 (the triangle node is Berberzâde)

tariqa. The probate inventory of Üftadezâde Mehmed Haşim wasn't recorded in this court register. Nevertheless, Eşrefzâde Şeyh Abdülkadir Efendi's²² probate inventory shows that when he was died there were 94 people who owed him.

The profiles of Berberzâde and Küçükzâde's relations are similar. *Roughly thirty percent* (%30) of their connections was from the countryside of Bursa. The majority of the nodes connected with them are the city residents: Artisans, traders, the members of *ulema* and *ümera*, males and females, muslims and non-muslims etc.

The figure 6 shows the relations of Berberzâde according to the regions of the nodes resided in. The dark square nodes are the city residents and the light square nodes are the villagers and townsmen.

In the analysis relying on two court registers, Hatibzâde, Berberzâde and Küçükzâde were the names in central positions in social network. The names of them were descriptively recorded by the clerks: All of them possessed family names ending with "zâde" and bore the titles signifying that they belonged to *askerî* (Ağa, Efendi, Seyyid). It is apparent that they were the members of *âyan-ı belde* (local notables)²³.

At this point, a question can be asked, "what is the reason of difference appeared in figure 4 and 6?" All three lived in the city of Bursa. However, as is seen in their probate inventories, they had houses, farms and gardens in the countryside of Bursa, especially in the villages in which their debtors resided. This factor might have directed and simplified their relations. But, it doesn't explain the situation of majority of the countryside relations in Hatibzâde's network. It is guessed that that he inherited these properties together with the dignity and relations of his family in the region from his father.

Bursa Büyükşehir Belediyesi Yay., Bursa 2009, p.74-75, 249.

22 He must have been "eş-Şeyh Abdülkadir Necib Efendi (d.1202)" who was the sheikh of *Eşrefzâde Dergâhı*. See. Mehmed Şemseddin, *Bursa Dergâhları*, p. 103-104.

23 More information about these three persons couldn't be found in other court registers and other archival sources.

Conclusion

Consequently, it is seen that it is possible to determine the identities of âyans and their relations by the method of social network analysis. Nevertheless, scanning the relations according to the debtor-creditor relations emerged only the one side of their personal networks. It showed their relations with the ordinary people rather than with other âyans. In order to reveal the relations among âyans, it is needed to analyze other relation types by this method too, such as testimony, suretyship and partnership.

In both analysis, another prominent persons with lower centrality degrees than the three persons aforementioned were found. This result seems to verify the interpretation about the hierarchical structure of âyan. Finally, in order to get more information, especially about the process of vertical mobility in âyan, it is required to scan all the registers belonging to a specific period. By this method, more information concerning the ways of rising in the social pyramid in the 18th century can be found.

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