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ORIGINAL ARTICLE

Taxonomy of Buenos Aires Capitular Elite Network, 1776-1810

Taxonomía de la red de la élite capitular de Buenos Aires, 1776-1810

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ABSTRACT

We analyze structural properties and visualization of a historical-data-constructed social network of the families with members in the Cabildo (city council) of colonial Buenos Aires. The data was obtained through the review of birth, marriage and death records kept in various institutions and expanded from online genealogical sources. We find structural properties and visual presentations and also a link centrality analysis that show that ritual relationships represents an important glue that held together the network.

Keywords*:* Cabildo; Visualization; Social Network Analysis; Historical Network

RESUMEN

Analizamos las propiedades estructurales y la visualización de una red social construida por datos históricos de las familias con miembros en el Cabildo (ayuntamiento) de la Buenos Aires colonial. Los datos se obtuvieron a través de la revisión de registros de nacimientos, matrimonios y defunciones mantenidos en varias instituciones y ampliados de fuentes genealógicas en línea. Encontramos propiedades estructurales y presentaciones visuales y también un análisis de centralidad de enlace que muestra que las relaciones rituales representan un pegamento importante que mantuvo unida la red.

Palabras clave*:* Cabildo; Visualización; Análisis de Redes Sociales; Red Histórica

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1 INTRODUCTION

The present contribution illustrates the social network of the Cabildo (city council) families of colonial Buenos Aires. The Cabildo emerged as a central institution in urban and regional political life, with a wide scope in its decisions. As a colonial institution, the metropolis played a key role in deciding the criteria for members to participate in. This way, Spaniards had privileges over locals for occupying seats in the council. Candidates for seats were mainly immigrants from the peninsula with increasing participation from natives. Then heads of capitular families were mainly native Spanish and a minority of *creoles*. These selected migrants arrived and developed commerce as the main activity (Socolow, 1991). Fortunes were built and new families arranged around these new enriched candidates under Spanish rule. Local families tried to marry their daughters to newly arrive and formerly established merchants. As long as the 18th century move closer to the following century Spain decided for strategic reasons to create the Viceroyalty of the River Plate. Buenos Aires gained importance and so its Cabildo. Authorities traced back their origin mainly on main local merchant families and metropolitan (Spanish) authorities.

It is important to note that the Council elite is a category that is based on a complex network of relationships, formed by strong and indissoluble reciprocal links between its members. These ties constituted the backbone of that network because each relationship or bond allowed individuals and families to have a direct or indirect exchange with all the individuals or families with which they were related. The access to the network was by blood, descending directly from a family, by marriage, or by religious kinship. Entering allows access to the social, symbolic, and material capital that circulated inside the family network, such as social prestige, economic support, or political power, among others. This network of relations worked as a sort of structure of ties that gave power to its members and facilitated, in some way, access to the Council. Moutoukias (1995) argues that links were a tool to observe the dynamics of the system and the space in which the mechanisms that generated them were located. We believe that these reflections can also be applied to the network of capitular families.

The purpose of this contribution is to present structural metrics and attributes of different identified colonial social networks in the context of the Cabildo of Buenos Aires during the Viceroyalty of the River Plate. For this to be accomplished we will describe the data, visualize the social network, and estimate and analyze structural metrics.

We follow with section 2 describing the database, section 3 describing how the database was created and reporting individual data. Section 3 shows information at the level of nuclear families and section 4 ends the contribution con conclusions.

2 THE DATABASE

The main sources of data have been the registrations of birth, marriage, and death during the period in different historical churches of Buenos Aires. This information has been collected and organized in del Valle (2014). The selection of actors to perform social network analysis initially involved a group of 1,215 actors, men, and women. By using information from different sources we identify relationships out of this initial group. The data that identify a relationship that links two actors is called relational data. From this relational data, we initially create the first sample of 550 individuals that we call a network of individuals. Relational data was constructed by actors that verify one of the following types of relationship:

- Marriage (first, second, and third marriages);
- Blood relationship (children, siblings);
- Witness/best man/maid of honor;
- Godfather/godmother;
- Witness of the funeral;
- Business partner.

Each actor with one or more of these relations was added to the network with a link. After identifying actors and their relationships, we have been able to identify family groups.

Structurally, marriage networks are sparse (Newman, 2006; White, 2004, 2005) given the nature of the relationships. Also, these ties are strong, i.e. frequent interaction relations and source of direct emotional support and other resources; as opposed to the weak links postulated by Granovetter (1973). It should be noted that the population of the city of Buenos Aires for these dates averaged thirty-two thousand (Besio Moreno (1939), Comadrán Ruiz (1963); Johnson (1973), Johnson et al. (1980)), so the initial sample covers 3.8% of the population while the analyzable network comprises 6.73% of the total population of the city at that time. We use NodeXL (Smith et al. (2010)) and Gephi (Bastian et al. (2009)) for relational data analysis and visualization. Figure 1 shows the complete network of individuals where the square represents the female, the sphere represents the male, and green lime nodes are council actors; red edge represents council family relationship and black the rest of relationships.

Following previous contributions (del Valle y Larrosa, 2019a,b,c) we begin on a first stage by forming the families of the members of the Cabildo during the period 1778—1810. This first stage obtained a network of 558 nodes and 870 edges. We extend the database by using the information provided by genealogical online databases such as Geni (https://www.geni.com/), Genealogía Familiar (https://www.genealogiafamiliar.net/) and Geneanet (https://en.geneanet.org/). For this contribution, we widen the database to 2,135 nodes and 3,480 edges, including many new families and overall new siblings.

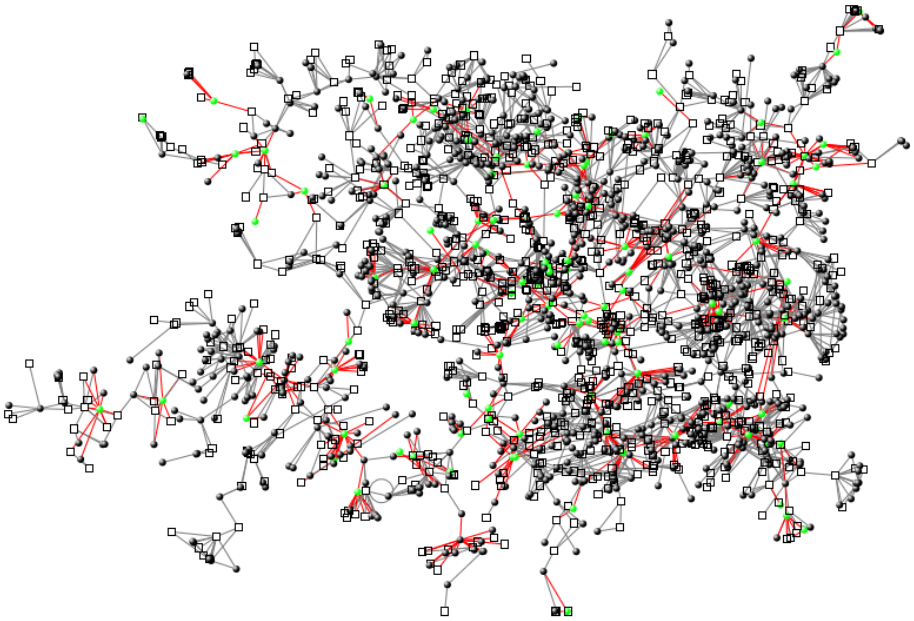

Figure 1. Complete network with the nodes and Cabildo family edges in red (v=2,154; e=3,514). ***Note****: Squares are women and spheres are men. Light green nodes are councilmen. Layout algorithm: Harel-Koren Fast Multiscale (NodeXL).*

For the whole period we can isolate council family relationships. Figure 2 presents this network where it only depicts the subgraph and it is clear the trees and branches formed by head of families and their siblings. As observed, capitular actors developed a dense network of relationship mainly sustained by a numerous own family that in the 18th century averaged more than 7 members reached a maximum of 24 in one case.

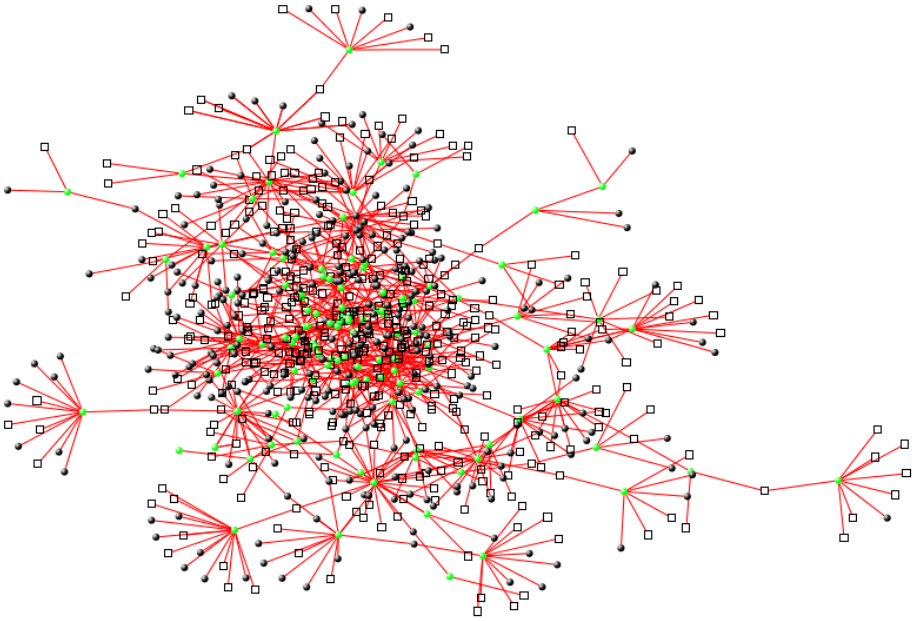

Figure 2. Isolated network of councilmen and their ties (841 edges). Note: Squares are women and spheres are men. Light green nodes are councilmen. Layout algorithm: Harel-Koren Fast Multiscale (NodeXL).

3 NUCLEAR FAMILIES

However, contributions from the history of this particular period remark the importance of the family as a unit of decision. While actors alone may take divergent paths from that stipulated from the family (cases such as Martín de Álzaga Necochea or Juan Manuel Ortiz de Rozas later became Juan Manuel de Rosas are good examples) it was a common practice and a cultural pressure to follow the head of family's dispositions. Political power emerges and interacts from the core of the Cabildo elite families because political action in the world of the Old Regime has essentially a group feature. Mainly, because the aim of that policy is to achieving for them or for their relatives and friends power appointments in the institutions, especially those that may produce greater benefits, social influence, or dignity (Guerra, 1993, 116-117).

We define a nuclear family as a wife and husband married with their children. We identify them by using data from previous contributions and added newly generated ones by genealogical online databases where each member of the sample is clearly defined by all his/her names and all his/her last names. The Spanish tradition of using as long as four last names (father's father's last name followed by father's mother's last name and in many cases joined by mother's father's last name and even mother's mother's last name) allows us to accurately identify family composition member by member. There are 161 families with one member given we could not identify blood or in-law relatives of the particular actor. The construction of the database was done by applying a snowball procedure departing from knowing Cabildo members of the time. Each member related obtained through online databases or related literature and the nature and time of the relationship, if obtained, was added to the network. Following this procedure, we identify 799 nuclear families that are represented.

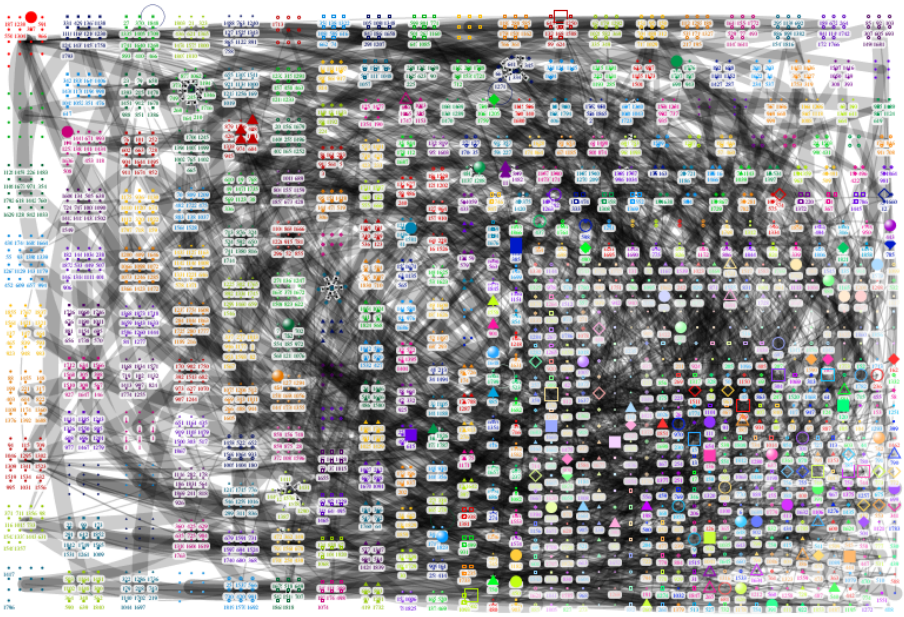

Figure 3. Nuclear family network representation (n=799).

As shows, there was a lot of interaction among nuclear families as defined by the ties. We can also observe that the degree distributions depicted in Figure 4 show that few families concentrated many relationships and a lot of families have few relationships in a power-law distribution, so it is expectable to detect highly connected nuclear families.

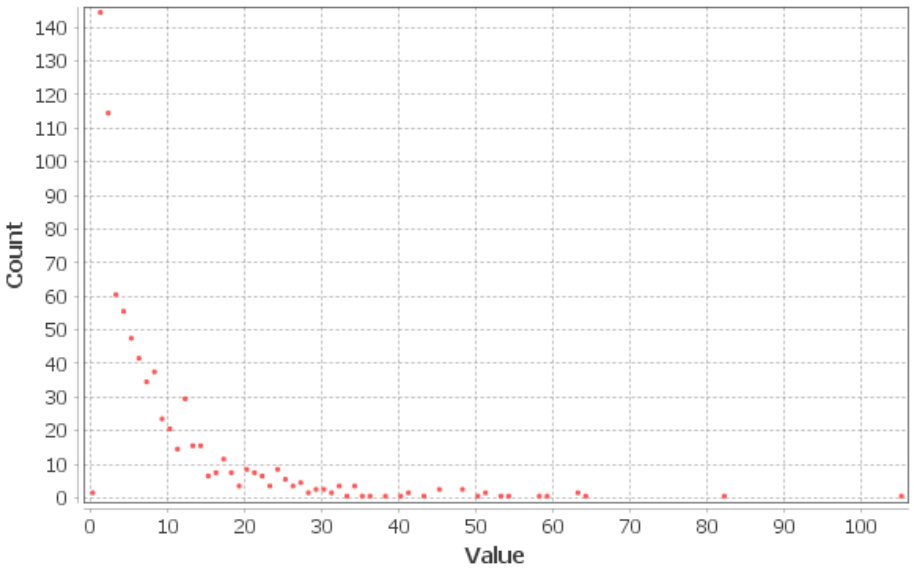

Figure 4. Degree distribution.

For heading one step ahead in presenting a clearer image of the main nuclear families we identify clusters of families by using the Clauset-Newman-Moore cluster algorithm. As presented in Figure 5 we can appreciate 11 main clusters of families linked by blood and business or in-law ties. As the figure depicts there were many families joined by relationships and a kind of Mathew effect emerges where more connected families join to more connected ones.

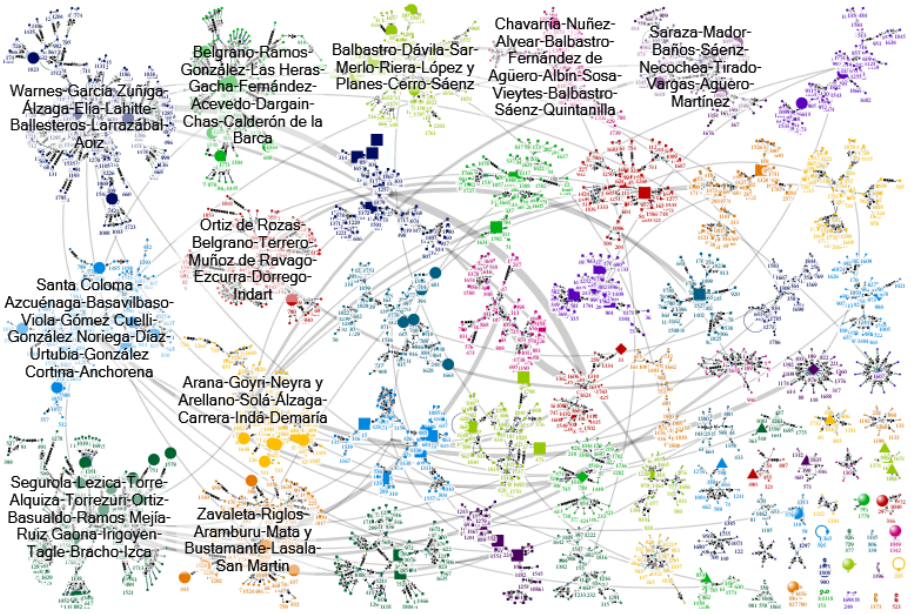

Figure 5. Nuclear family clusters by CNM algorithm (top 10 family clusters are tagged).

If we focus on the positions in the Cabildo we obtain the following network among office seats and ties in the whole network. Positions in the Cabildo were alderman 1st to 6th, Mayor of 1st and 2nd Vote, Trustee, Treasurer Accountant, Notary, and Viceroy. These positions give differential power nominations made for appointments in the Cabildo of Buenos Aires. Every 1st of January between 1776 and 1810 these seats were elected and that seat gave the

power to legislate on mainly urban issues but accessing also to prerogatives in terms of socially escalating and even credit rewarding.

Families tend to relate to each other for weaving a structure of connections that facilitates business and social endorsement (del Valle and Larrosa, 2019a; Socolow, 1991). Figure 6 shows how this family cluster or gropus is detected by modularity (Louvain algorithm) with added information on betweenness and eigenvector of the nuclear families. As observed large clusters emerge with different families playing a role of bridges (high betweenness) or associating with influential families (high eigenvector).

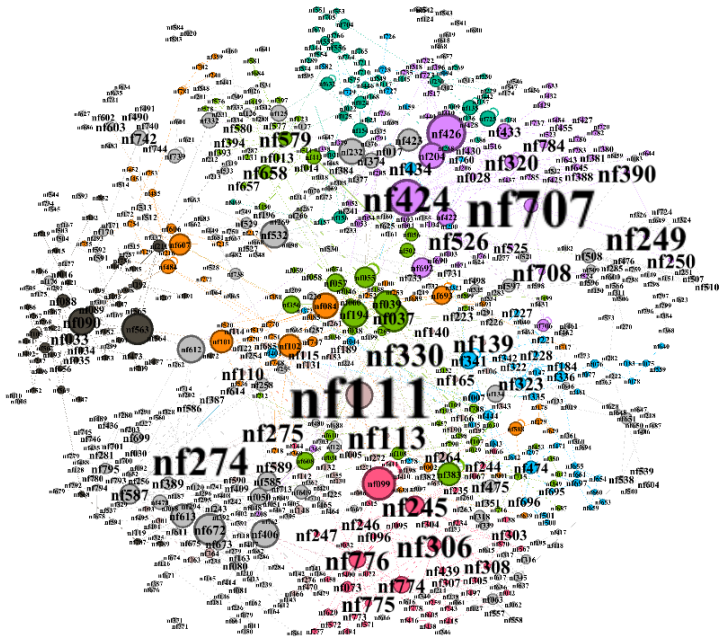

Figure 6. Nuclear family networks, clustered by color, size according to betweenness, and tag size according to eigenvector. Clustered by Louvain algorithm. Source: The Authors

Nuclear families related through these types of relationships engaged in mutual and reciprocal ties but we could not detect all possible connections. In Figure 7, 17 connected components and giant components (n=739) are exhibits. It shows the degree of connectedness of the network. In the giant component coexists all main families and is the subgraph where all centralities are worth measured.

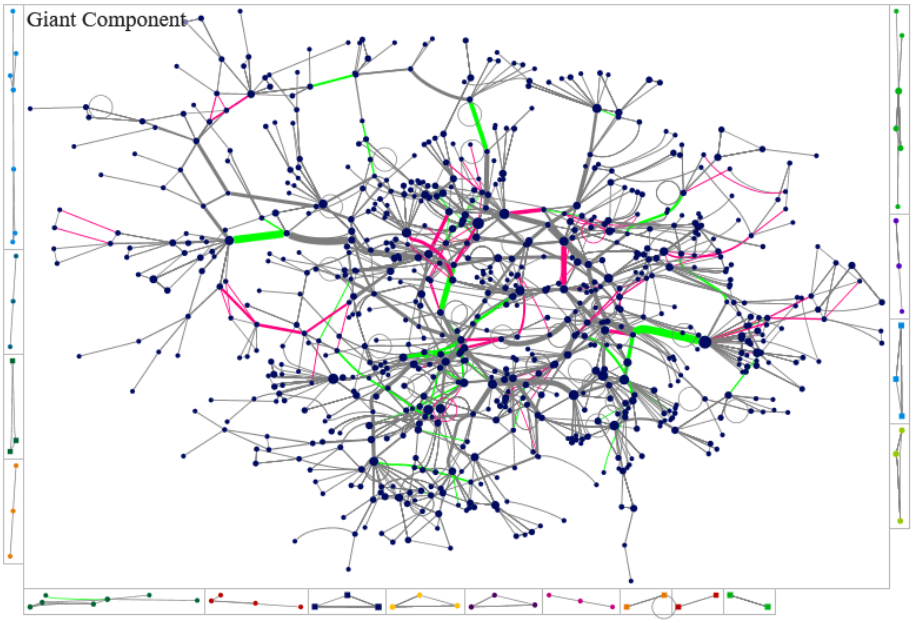

Figure 7. Connected components (17) and giant components (center).

Network structural properties are presented in Table 1. The density is accordingly low and the average geodesic distance and diameter are large. The average degree is almost 9 showings that families were highly integrated and the average betweenness is low depicting that the chance that a specific nuclear family plays a bridge role was congruently low.

Table 1: Structural properties of the network

Metric or type	**Value**
Network type	Undirected
Vertices	803
Total links	3,480
Self-loops	89
Connected components	18
Maximum number of nodes in a connected component	732
Maximum geodetic distance (Diameter)	18
Average geodetic distance	7,716
Network density	0,0108
Average degree	8,711

Metric or type	Value
Network Betweenness Centralization	0,1267
Degree Assortativity	0,623

We estimate link centralities of the network, specifically eigenvector and betweenness link centralities. Betweenness link centrality measures the importance of links by estimating the average number of nodes to whom they transfer information during a diffusion process. Eigenvector link centrality measures how links connect to other links that are also adjacent to more connected links. In Table 2, we summarize the average value of each edge according to the type of relationship. This would represent the information on what type of relationship was more important in terms of the structural relevance inside the network. For instance, godfather and wedding witness are the most important relationships following by spouses of second nuptials and son and daughter. What is remarkable is that the two most important relationships are ritual in nature. By accepting being godfather or wedding witness nuclear families create strong links with important families. By marrying for the second time allows nuclear families to links also own members to more important nuclear families. Notice that matrimony of second nuptials may be seen as a correction in the path of connecting with more important families (higher link eigenvector). On the other hand, links of the type such also godfather of baptism and spouses of second nuptials but now adding godmother of wedding reflect the relationship that tends bridges between families (higher link betweenness).

Table 2: Average eigenvector and betweenness centralities for the whole period by relationship

Type of Relation	Average eigenvector	Average betweenness
Godfather of baptism	0.06293	0.13111 (1°)
Wedding witness	0.04145	0.08205
Spouses second nuptials	0.03443	0.12083 (3°)
Son	0.03362	0.01592
Daughter	0.02527	0.01875
Spouses first nuptials	0.02340	0.05754
N.D.	0.01969	0.00020
Business/Political Partners	0.00075	0.08912
Sponsor of marriage	0.00046	0.03511
Godmother of baptism	0.00028	0.08801
Wedding godmother	0.00007	0.12922 (2°)

Type of Relation	Average eigenvector	Average betweenness
Groomsman	0.00004	0.03480
Spouses third nuptials	0.00000	0.06655

Sorted by average eigenvector. N.D.: Not identified relationship. Source: The Authors

This is interesting because it is a probe of the importance of ritual relationships in the context of positioning the family in the most favorable locus for obtaining future resources (social capital).

4 CONCLUSION

In this essay, we present information on an enhanced database of a colonial social network. The purpose of the contribution is exploratory and illustrative. We show certain structural properties of the social network, showing initial information regarding the importance of the network structure of certain types of relationships with respect to others. Likewise, network connectivity and family groupings were analyzed.

We find that links related to ritual ties (compadrazgo) are important in detecting important links that engross and expand the network. In the same vein, the marriage of second nuptials (remarriage) played a similar role emerging in these three types of relationships a potential strategic behavior of families that move into the network for increasing their social capital.

We expect future works to expand this information with statistical analysis that allows us to answer questions regarding gender issues, concepts of extended family, the relationship between the wealth growth of merchants, and the political power of families, among many other questions to analyze.

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