Illegal networks or criminal organizations*:*

Power, roles and facilitators in four cocaine trafficking structures

by

Andrea Giménez-Salinas Framis
Instituto de Ciencias Forenses y de la Seguridad
Universidad Autónoma de Madrid

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Abstract:

This paper aims to present the findings of a research that studies the structure, roles and legal facilitators of four mid level (wholesale suppliers) groups involved in cocaine trafficking. To this end, we have collected information from police files relating to four investigations of criminal organizations through a questionnaire of 76 variables divided into four main areas: features of the organization, illicit market, instrumental or transversal activities and profile of the members of the group. We have also gathered information regarding wiretappings and meetings registered by the criminal investigation in order to analyze the organization from an SNA perspective. The four networks have been examined taking into consideration four aspects: a) structure; b) key players and internal roles and c) legal facilitators.

Key words: social network analysis, organized crime structure, drug trafficking networks.

Introduction

The study of adult group offending has become a priority in criminological literature due to the traditional lack of empirical studies conducted to understand this kind of deviance. One of the main topics in criminology concerns the field of group offending, especially by juveniles (Klein, 1967). Nevertheless, the core of adult criminal groups and their characteristics is an essential topic that has become more popular over the last few years. Even with the efforts of recent years, many questions remain unanswered. How do the offenders organize themselves? How are the roles distributed within the groups? What are the main structures in the most common illegal markets? How do organizations respond to disruption? What are the most relevant legal facilitators of the organizations?

This paper describes the results of a study of four mid level criminal organized groups operating in the Spanish cocaine market. The goal of the research was to compare information provided by the police investigation and the information under the SNA for the four networks. To this end, four main areas have been analyzed: a) the structure of the networks; b) the key players and their roles and c) the legal facilitators in the network.

The organized crime groups analyzed can be classified as mid level (wholesale suppliers) groups involved in large-scale cocaine distribution. Two of them are family-based groups with a more traditional structure and the other two have an ethnic element and the illegal business is the common ground. All the groups were investigated by the police between 2007 and 2009.

Criminal organizations and illegal networks

The core of criminal organizations is a new hot topic in the criminological literature studying group offending. Decades ago, criminal organizations were mainly analyzed through the *corporate* model based on Weberian postulates (Cressey, 1972). This model tackles criminal organizations from several formal traits: centralized and organized hierarchy, clear division of labor, assignment of functions on the basis of personal ability and formal internal rules. In the following decade, some authors showed the inaccuracy of the model on the basis of the existing variety of organizations and the incorporation of changes and new trends in criminal organizations due to globalization and State scrutiny (Williams, 2002). In recent years, the study of organizations has taken a step forward with the social network analysis (SNA). This method constitutes an alternative way of looking into the criminal organizations by means of studying the social relationships within a network. The SNA focuses on the nodes (subject, groups, etc.) or units in a network and the links existing between them, providing a more in-depth and contemporary understanding of patterns and characteristics of organized social groups (McIllman, 1999, Morselli, 2008).

This paper considers the SNA as a complementary, but not an exclusive, method of analyzing criminal organization. The *Bureaucratic* model is a limited method to currently explain criminal networks operating in European countries. Network representation is a more accurate method of explaining criminal enterprises operating in an interrelated world where relationships between them are more cooperative than competitive (Paoli, 2001). Both methods are still used and embrace different ways of applying the network concept. The first approach conceives the network as a form of organization in the midst of an organizational continuum from more hierarchical and complex organizations to a more horizontal and loosely connected group (networks) (Von Lampe, 2003). According to the second approach, the network transcends all forms of organization (Morselli, 2008).

This paper will adopt the first approach considering criminal organizations and illegal networks different forms of organized crime groups. In this regard, if we examine the definitions of network organizations in contrast with those of criminal organizations under traditional approaches, we find the following features of each of the concepts.

Table 1. Features of criminal organizations versus Illegal networks

Criminal organizations	**Illegal networks**
Hierarchical structure	Horizontal structure
Division of labor, specialization	Interchangeable operational roles
Promotional systems and recruitment procedures (merit or competency oriented)	Recruitment and placement based on the nature of the activity: prior working relationships,

	kinship/ethnicity, short term assignments, contacts, etc. (Donald & Willson, 2000, Schiray, 2001, Zaitch, 2002)
Formal and secret rules	Flexible and non-stable rules
Vulnerable structures	Resilient structures
Formal communication	Direct communication

In addition, many authors believe that organization with an alternative rationale such as the network approach are resistant to identification and detection as a result of their structural advantages in relation to hierarchical and structured organizations (Zhang and Chin, 2003; Zaitch, 2002, Williams, 1998): number of members, minor vertical bureaucratic structure, very adaptable to circumstances and external threats (Benson and Decker, 2010), loose connections between members, less centralized organization reduces visibility (Reuter, 1985).

Internal organization of drug smuggling

Regarding the organizations or networks involved in drug smuggling, we can distinguish among importers (high level, Reuter, 1983 and Reuter and Haaga, 1989), wholesale suppliers (mid level) and retailers (lower level or street-level dealers, Adler 1985). A considerable body of knowledge, especially ethnographic studies regarding drug dealing in lower levels, has revealed that groups involved in this activity are not criminal organizations as such. The kind of subjects involved, their roles and methods to avoid prosecution and detection, the methods of adulteration used, the profit they make, etc. are not features common to highly structured and organized criminal groups. Moreover, low-level drug smugglers are usually tightly bonded groups, with embedded ties based on kinship, territory and other non-negotiable qualities where trust guarantees commitment beyond self-interest (Gambetta, 1988).

Several studies have confirmed these results in the earlier stages of the drug distribution process (mid or upper-level dealing) (Adler, 1985, 1992, Reuter and Haaga, 1989, Dorn et al. 1992, Natarajan and Belanger, 1998, DesRoches, 1999, Natarajan 2000), although they provide little evidence of vertical hierarchies in drug smuggling. Other studies have identified not two (structured and badly structured) but four main types of organization: corporations, communal business, family businesses and freelance (Natarajan and Belanger, 1998).

Some of these studies concerning the earlier stages (mid and high level dealing) provide evidence that; a) illegal drug markets are not managed by large and very structured criminal syndicates but by small groups or loosely linked entrepreneurs (Natarajan and Belanger, 1998; Benson y Decker, 2010, Zaitch, 2002); b) members are involved in illegal markets because of opportunities and family or ethnic ties (Morselli, 2004, Kleemans and van de Bunt, 1999); c) they have a flexible division of labor where operational roles in the organized crime groups are interchangeable and many of them can carry out multiple functions; d) middle-level brokers or wholesale suppliers play a significant role between importers and retailers. These brokers carry out their activities using their contacts.

With this evidence in mind, the following part of the paper will describe the results of the analysis of four middle groups involved in the cocaine market in Spain. An insight into these groups will enable us to understand more clearly whether they respond to the concept of criminal organization, well integrated by the police investigators, or whether they fit better into an illegal network profile. Through the SNA, we will discern whether the network perspective confirms the conclusions of the police investigations.

Sources and Research design

This study analyzes data obtained from police files relating to four cases investigating criminal groups involved in cocaine trafficking mainly in Madrid (Spain). The information gathered by the police for each group was done so as part of a police operation. The four operations are summarized below:

a) Operation MAMBO (N=22). The investigation started in 2006 and involved Colombian citizens that were introducing 50 kg of cocaine to be adulterated and distributed in Madrid (Spain). Ultimately, the group was involved in smuggling cocaine from Colombia through Brazil and Uruguay to be distributed in Spain. This is a typical Spanish middle cocaine group acting as wholesale supplier between a South American importer group and retailers in Madrid.
b) Operation JUANES (N=51). In 2009, the police investigation detected a group involved in the smuggling of cocaine from Mexico to be distributed in Madrid (Spain). In this case, the group operated in close cooperation with another organization that was laundering the illegal income from drug distribution from this and other groups. The cocaine traffickers earned an estimated EUR 60 million.
c) Operation JAKE (N=62). In 2008, the group investigated was operating as a wholesale supplier and retail distributor of cocaine and heroin in a large distribution zone located in Madrid (Spain), where gypsy clans traditionally carry out similar activities. The group was in charge of acquiring, manipulating and selling the drugs in the gypsy quarter.
d) Operation ACERO (N=11). This investigation started in 2007 and involved a smaller family-based group. The group was composed mainly of members of a same family and was led by a female. They distributed cocaine in Madrid (Spain) that was provided to them by other groups based in a northwest region of the country, one of the most active areas in the

provision of cocaine from the countries of origin. The group also had their own procedures to launder money.

The objective of the research was put into practice by collecting qualitative and quantitative information from police files with two main goals: first, to gather information from investigation files (wiretappings, observations, registrations, police reports, etc.) to complete a questionnaire designed with 74 variables regarding the following aspects: features of the organized group, illegal business undertaken, instrumental activities conducted and profile of the members of the group. Second, wiretappings were reviewed to identify the phone contacts and meetings uncovered during the investigation. This second source of information was necessary to conduct the SNA through the UCINET software. The contacts have been analyzed using the 1 mode matrix created in UCINET 6.

Results

General structure of the networks

The analysis of the structure of an organized crime group is a complex task given the variety of qualitative and quantitative measures used by the researchers for this purpose (Natarajan, 2000). Nevertheless, the SNA has additional values to assess the structure of the organizations in comparison to more hierarchical perspectives emphasizing an internal structure based on roles and positions. The SNA gives weight to the existing relations among members, it helps to identify the most important members by the contacts they have with other members and it also allows the identification of subgroups or clusters within the general group, among others.

As mentioned, one of the goals of the research was to understand the structure of the four organizations. In this regard, the structure has been analyzed to test the information provided by the police according to the investigation files. To this end, we compare the information of the structure provided by the investigation with that of the SNA, using a matrix of contacts gathered from 4 networks. The SNA has been conducted according to the following aspects: centralization, density of the group and core/periphery group (Borgatti & Everett, 1999)[1].

Finally, the key players and role distribution within the organized groups have been analyzed to examine police information. We have conducted the SNA to identify centrality and betweenness measures. The degree of centrality is based on the number of direct ties between one player and other players in the network. Betweenness centrality measures the importance of the intermediary position held by players in a network (Sparrow, 1991). Apart from knowing the key players in each network, the study of the internal positions tries to contrast police information with the information regarding the degree of centrality of each member provided by the SNA.

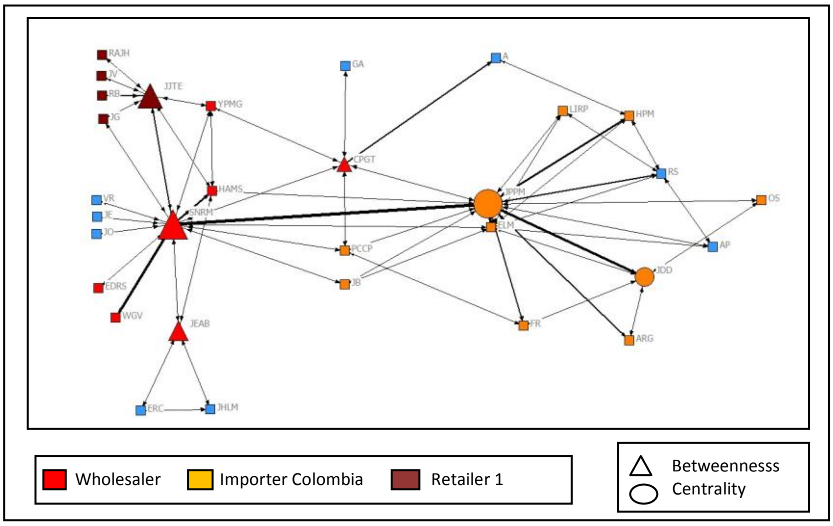
Operation MAMBO

Network structure

According to the police files, the structure of the MAMBO group was threefold: The importer of cocaine from Colombia through Uruguay; the Spanish group (wholesale supplier) in charge of transporting, adulterating and storing the drug, and; the retailer group in charge of distributing the cocaine in Madrid (Spain). The police investigation concluded that the group had a hierarchical and complex structure, which was an indicator of dangerousness[2]. Nevertheless, when we carried out the SNA, we found that the measures provided did not lead to similar results. According to the SNA measures, the entire network has a centralization of 5.21% and a density of 13% with a Std. Dev. of 1.35. The network density is very low in comparison with the densities provided by other similar networks (Ciel Network-Morselli, 2009). Finally, if we calculate the core of the network, the result is 7 members (PCCP, JPPM, HPM, SNRM, JDD, HAMS and WGS) out of 58, which means that 12% of the members have a strong relationship within the general structure. This description does not confirm the police structure, no centralization is found, the network has a low density and the core of the network is composed of a medium pull of members sharing similar relationship patterns.

Chart 1 below shows the network graph provided by the SNA regarding a network including the three organizations.

Figure 1. MAMBO network



Key players and role distribution

This network offers different members playing a key role (centrality and betweenness) within the network (see figure 1 and table 2). First, we have the central player (JPPM) who has the highest degree of centrality in the network[3] (128.000). JPPM is a 60 year old male from Ecuador with permanent residence in Madrid (Spain). He is the leader of the importer group and everyone in this group depends on him to a great extent. Second, the broker role is carried out by SNRM (the head of the wholesale supplier group) who has the highest betweenness centrality (247.967). His broker role in Spain derives from his position in the market as a cocaine wholesale supplier to several retailers in the Spanish distribution market. Apart from of these two important members, CPGT is also a relevant player as JPPM's coordinator. He also has a low level betweenness but plays a key role between the two groups of the network (gatekeeper).

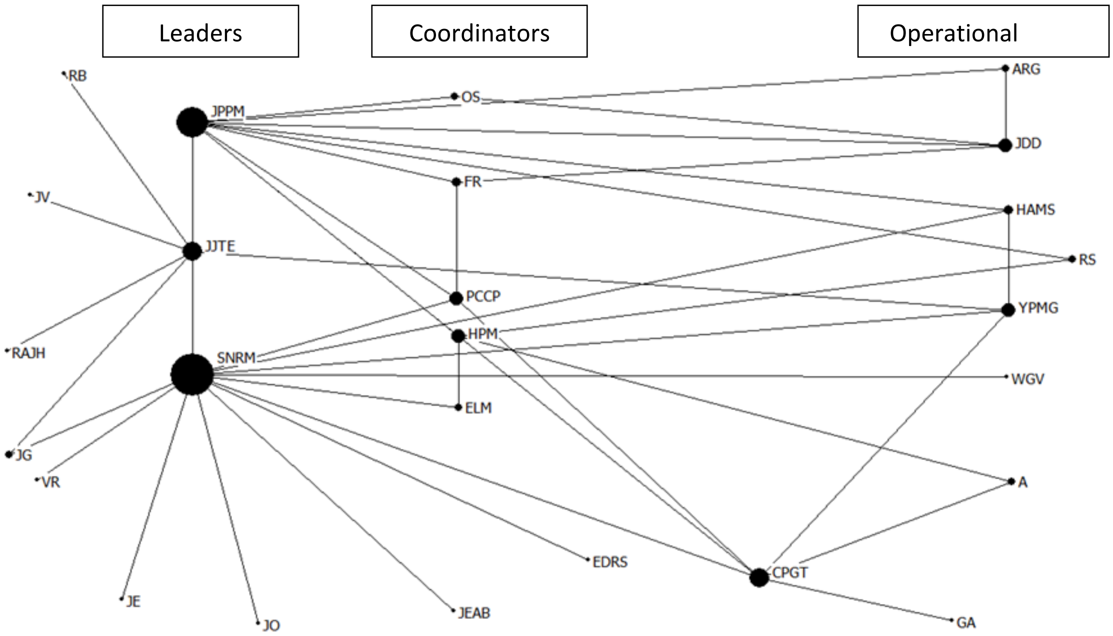
Table 2. Degree of centrality and betweenness of the most important members

Member	Out/In Degree centrality	Betweenness
JPPM	**128.000**	**145.000**
JDD	35.000	3.000
SNRM	**112.000**	**247.967**
JJTE	34.000	85.000
JEAB	7.000	56.000
CPGT	15.000	52.550

Apart from the key players in the network, we have also analyzed the roles of most of the members in order to contrast police information regarding the network division of labor. The traditional chart in the criminal investigation showed a conventional hierarchical distribution between roles and positions where the most relevant members were the leaders of the three organized groups (importer-JPPM, wholesale supplier-SNRM and retailer-JJTE), below whom were the coordinators (FT,OS,FR, HPM, ELM and PCPP) and at the bottom of the groups we found operational tasks such as transport, adulteration, distribution or protection carried out by the following members: JDD, VAD, ELF, WGV, HAMS and YPMG.

From the analysis by tasks carried out under the SNA (see figure 2) we found that the results essentially confirmed the police information and those members with a high degree of centrality had higher positions in the network. In some cases, certain subjects (JDD and YPMG) had a higher degree of centrality than the position described in the investigation although the difference was insignificant. Nevertheless, one case is worth highlighting. CPGT is SNRM's wife, who the police files consider a member holding a secondary or auxiliary position. However, the SNA shows a key central role in the network according to her degree of centrality. This can be appreciated in the following chart.

Figure 2. Distribution of roles by degree of centrality in the MAMBO network



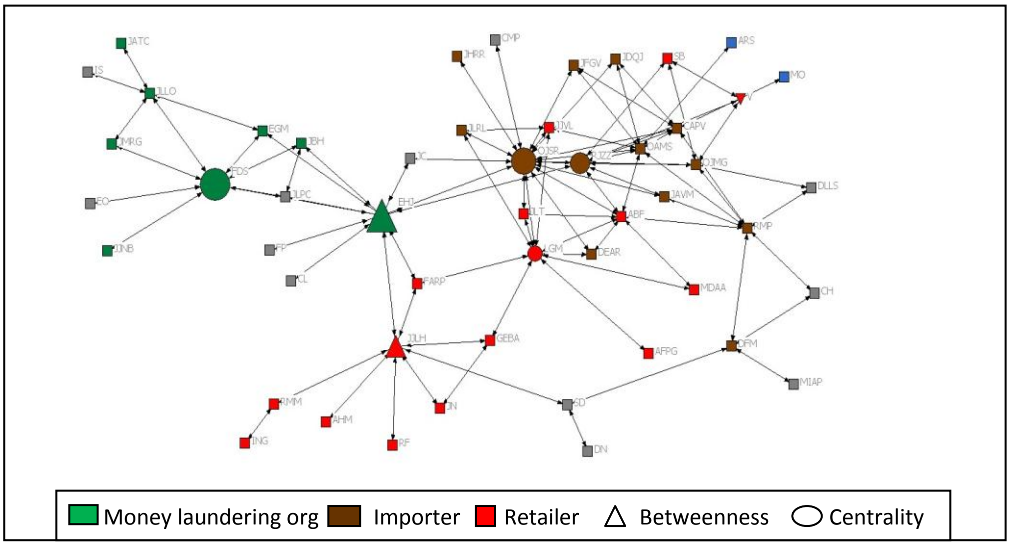
Operation JUANES

Network structure

The JUANES network is composed of two autonomous branches according to the police files. The police operation started with the money laundering investigation and ultimately led to the identification of a wholesale supplier group in charge of cocaine distribution in Madrid (Spain). It was also clear from the police files that the main organization was the group in charge of the illegal transportation of cocaine from Mexico (importer) to be distributed by a wholesale supplier in Spain. This group was classified by the police as unsafe, due to the fact that it had access to weapons and its members were dangerous. In this case, the main importer was JLT and the head wholesale supplier was OJSR. Conversely, the money laundering group who carried out this activity for more than one organization is exposed. Its leader (EHJ) was the owner of a jewelry store that was used as a screen company to conceal the laundering activities of some collaborators and many low executors changed the unlawfully obtained money in order to send it back their countries of origin.

The SNA was performed for the whole network with the following results: a very low centrality of the network of 6.8% and a very low density (10%), with a Std. Dev. of 0.81. The core of the group is composed of 19 members out of a total of 41 (46%), which means that around half the organization has density of contacts and flows of information among each other. In addition, the network in figure 3 below does not confirm the police perception. It seems that the relationships between the two groups are more intense than what the police investigation perceived and the links between the two organizations are not channeled through the main leaders, other members being connected directly and circumventing their own leaders.

Figure 3. JUANES network



Key players and role distribution

By identifying the key players in the whole network we have the following information: the most relevant members of the network are part of the money laundering organization despite drug trafficking[4] being the main activity perceived by the police. As table 3 shows, FDS has the highest degree of centrality (114.000). He is a 31 year old male, who is a coordinator and EJH's right hand man, in charge of transportation and laundering the money in the jewelry store. In terms of betweenness centrality, we have EHJ, who is a 40 year old male, owner of the jewelry store in which the money made through cocaine trafficking is laundered. OJSR is also a key member because he comes second in the centrality and betweenness chart. The table below provides the most significant scores.

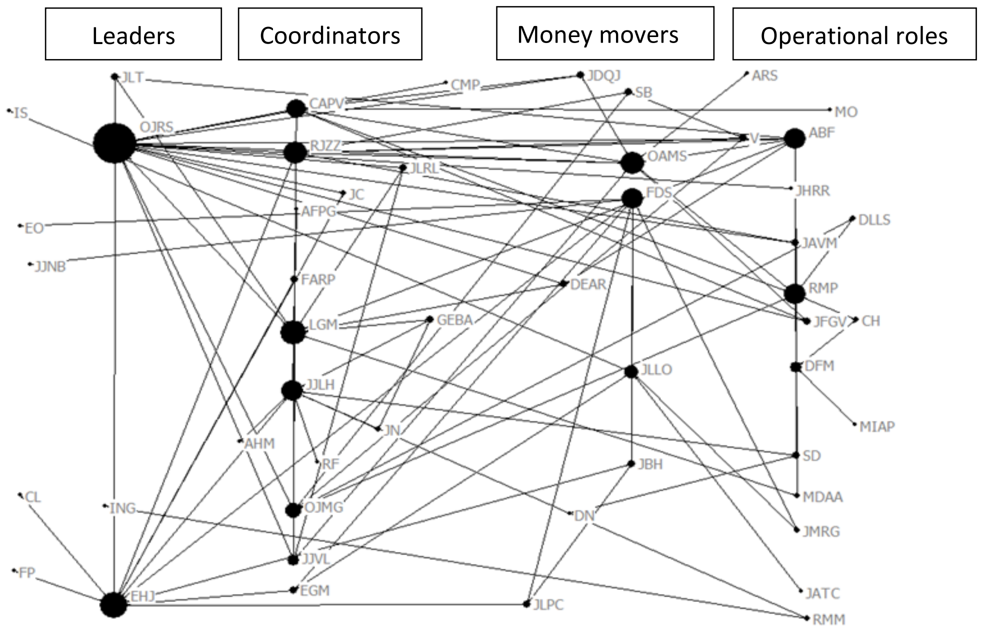
Table 3. Degree of centrality and betweenness of the most important members

Members	Out/In Degree centrality	Betweenness
FDS	**114.000**	209.000
OJSR	**84.000**	**416.316**
RJZZ	42.000	167.059
LGM	40.000	139.938
EHJ	46.000	**604.667**
JJLH	26.000	321.582

Regarding the roles and positions of the members of the JUANES network, the police files identify two hierarchical structures in which the two branches are clearly independent. The wholesale supplier had a coordination rank composed of FARP, JJVL, AEPG and LGM. It was led by JLT and was in contact with the distributor group led by OJSR, coordinated by JFVG, CAPV, RJZZ and OJMG, and composed of a third group in charge of transport, protection and logistics through SD, JHRR, DFM, RMP and JAVM. Finally, the money laundering group shows a more horizontal structure with a leader (EHJ), a coordinator (FDS), three members in charge of collecting money (JBH, JLLQ and EGM) and 12 members in charge of laundering the money throughout the Spanish territory.

The distribution of roles in view of the degree of centrality in the JUANES network does not coincide with the police perception of two separate groups with different structures. The degree of centrality of certain members does not correspond to the position and role they play in the organization. Some leaders, such as JLT, appear to have a minor degree of centrality and many middle and low profile members have a lower or higher degree of centrality according the role they play in the organization (ABF, RMP, FARP, JJVL and EGM). The following chart shows these differences.

Figure 4. Distribution of roles by degree of centrality in the JUANES network



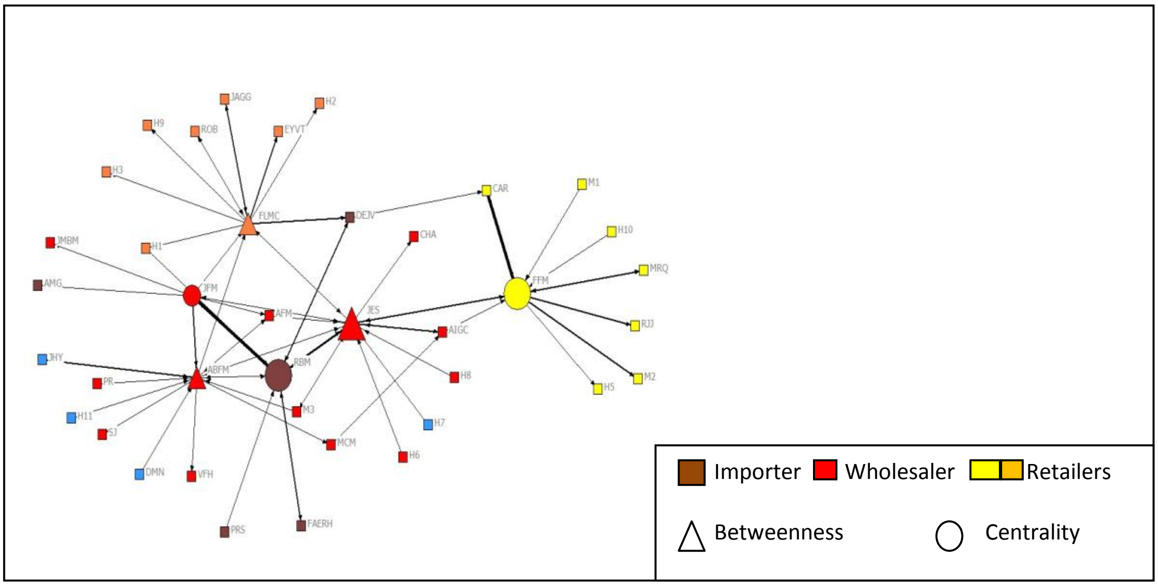
Operation JAKE

Network structure

The aim of this operation was to remove three groups: a wholesale supplier of cocaine and heroin from a large distribution area in Madrid (Spain) called Cañada Real and two retailer groups. The main group was a family-based group with strong ethnic ties (Spanish gypsies), whose members have been traditionally in charge of distributing heroin in marginal areas of large Spanish cities. JFM is the leader of the clan and is responsible for the distribution of cocaine imported from Peru by RBM. According to the police files, this is a typical Spanish wholesale supplier of cocaine and heroin network with a hierarchical structure and strong family ties. In this case, at the time of the investigation, the leader of the wholesale supplier group (JFM) was in jail for a previous offence committed in 2008. Nevertheless, this situation did not prevent him from coordinating the business through two of his brothers, although mainly through JES. From the hierarchical chart prepared by the police, we could see an organization with a small hub characterized by strong family bonds (JFM, JES, AFM and ABFM). The other collaborators had secondary roles.

By contrast, according to the SNA, the network revealed a very low centralization of 3.3% and a very low density (8%) with a Std. Dev. of 0.86. The core is also composed of 18 members out of a total of 41 (43%). The results show a very flexible and horizontal organization which contrasts with the description provided in the police files.

Figure 5. JAKE network



Key players and role distribution

Within this family-based clan, FFM and RBM have the highest degree of centrality, with similar results (37.000 and 34.000). FFM is a 49 year old Spanish male (of gipsy descent), who is JES' main provider of heroin and the person in charge of distributing heroin in Cañada Real and other areas of Spain. RBM is the main importer of cocaine for the organization led by JES, while JFM is the former leader of the organization. RBM is a 38 year old Dominican male holding Spanish nationality and with permanent residence in Madrid (Spain). Finally, it is worth noting that the former leader (JFM), who was in jail during the investigation, comes fourth in terms of centrality, continuing in operation and in communication despite being in jail, as shown in table 3 below. Therefore, imprisonment is not an obstacle to maintaining contacts and leading an illegal business.

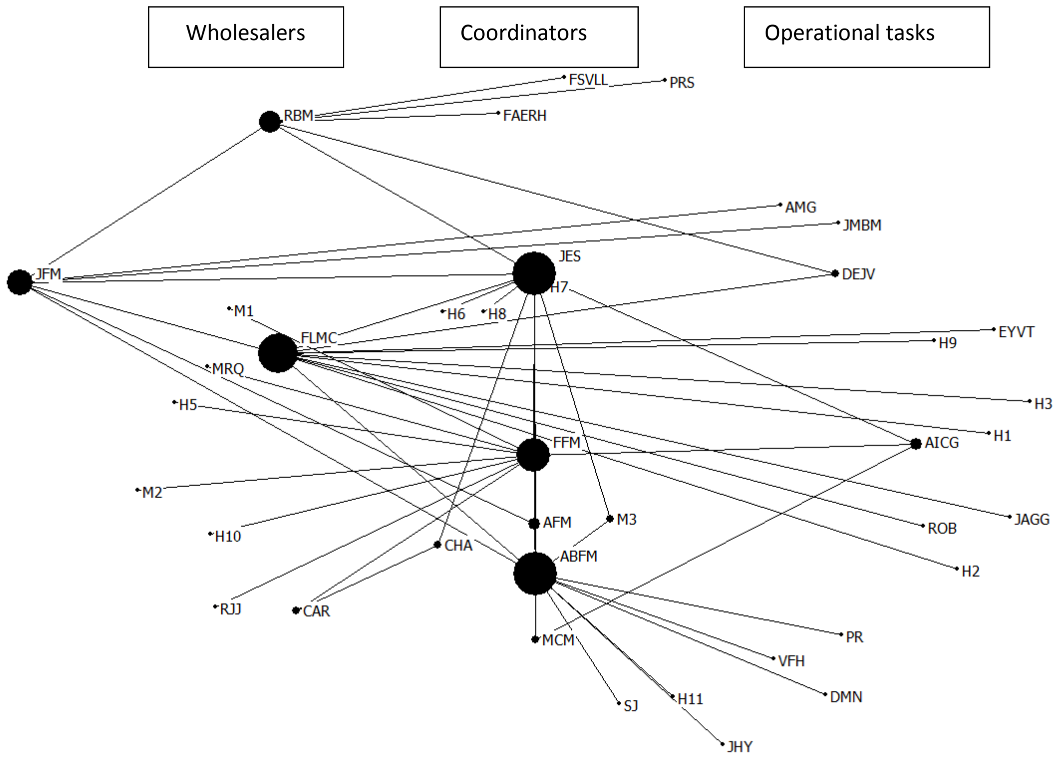
As regards the broker role, JES has the highest score. JES is a 42 year old Spanish male with an extensive police record for robbery, drug trafficking (6 arrests) and domestic violence. He coordinates drug distribution while his brother is in jail and keeps in contact with the main providers. The following table shows the key members in terms of centrality and betweenness.

Table3. Degree of centrality and betweenness of the most important members

Member	Out/In Degree centrality	Betweenness
FFM	**49.000**	229.500
RBM	**46.000**	120.233
JES	39.000	**406.067**
JFM	32.000	106.067
FLMC	24.000	**262.767**
CAR	23.000	3.500
ABFM	23.000	241.367
DEJV	11.000	10.667

If we consider the distribution of roles within the network, the SNA offers no surprises in relation to the information in the police files. Nevertheless, we can see JFM's important role at the time of the investigation even from jail, from where he was able to keep his contacts alive and ensure immunity by bribing two police officers. The chart below shows the distribution of roles according the degree of centrality of the most relevant members. As we can see, the general trend does not differ from the description provided by the police. The centrality of key members matches their position in the general network.

Figure 6. Distribution of roles by degree of centrality in the JAKE network

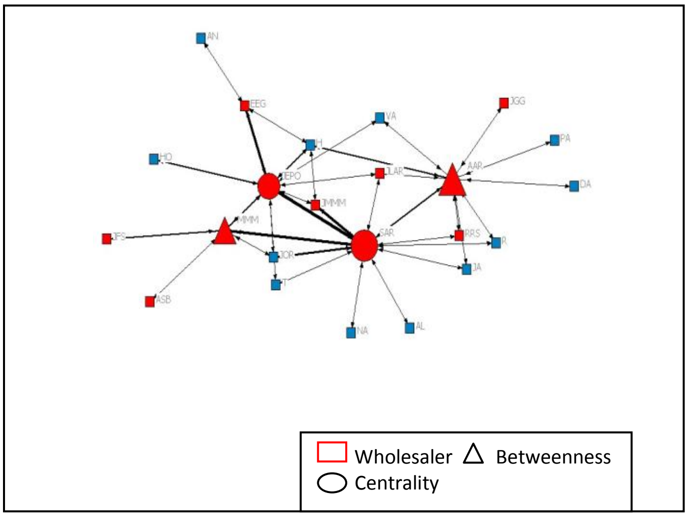


Operation ACERO

Network structure

The network described in figure 7 is also a Spanish family-based wholesale supplier group involved in cocaine (from Colombia) distribution in three provinces in Spain. JFS is the main Colombian importer and SAR is a female who is head of the organization. JEPO is SAR's closest collaborator, and he transports drugs and collects money for SAR. According to the police investigation, this was a small group with a complex structure and a unsafe profile due to certain factors: use of weapons, complex structure, personal qualification and dangerousness of its members. The police files show a centralized hierarchical structure with a central leader and JEPO as the main coordinator. The other members depend greatly on her (SAR). Conversely, the SNA shows a more centralized and hierarchical network as compared to the other three networks analyzed. This network has the highest centralization (15.5%) and a high density of 54% with a Std. Dev. of 2.06. The core is composed of three members (MMM, SAR and JEPO) out of a total of 11 members (27%). The results show a more traditional profile and hierarchical structure where SAR is the central leader.

Figure 7. ACERO network



Key players and role distribution

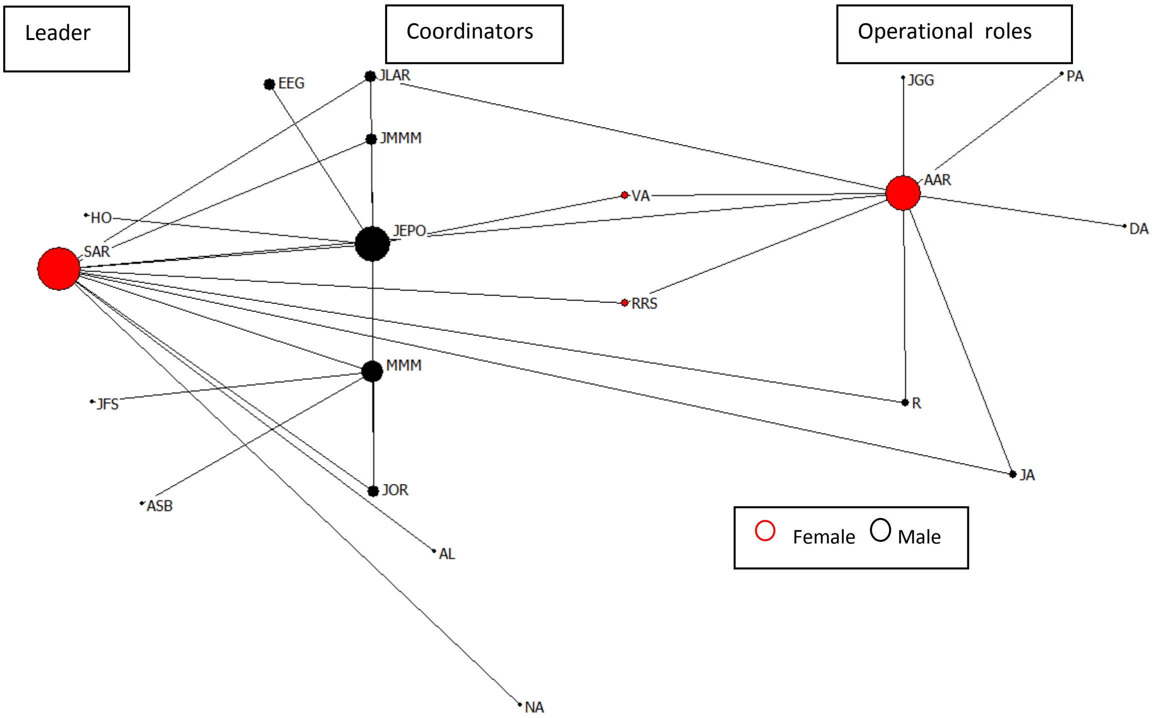
This is a small centralized family-based network in which SAR has a central and broker role and the highest degree of centrality (71.000) and betweenness (96.000). She is a 44 year old female in charge of the group and of keeping personal contacts with cocaine importers. She has an autonomous role in relation to the rest of the group except for JEPO, her close collaborator. In terms of betweenness, ARR, who is SAR's sister and is in charge of the drug distribution together with her husband, comes second (75.000). The third female involved in the network is SAR's mother (RRS), who is in charge of managing the money.

Table 5. Degree of centrality and betweenness of the most important members

Members	Out/In Degree Centrality	Betweenness
SAR	**71.000**	**96.000**
AAR	24.000	**75.000**
JEPO	**46.000**	60.250
MMM	31.000	42.250

The conclusions of the study of roles within the network according to the degree of centrality of its members are similar to those of the police. As we can see in figure 8, the role distribution matches the police structure profile, except for AAR, who has a high degree of centrality and is performing less important roles or positions within the organization. There could be two reasons for this. First, the family bonds in the network could explain the inclusion of a family member with a high degree of centrality performing lesser roles within the network. Second, the role of females within criminal groups has always been less qualified than that of males, which could explain why women with a low qualification role can be so important in terms of degree of centrality.

Figure 8. Distribution of roles by degree of centrality in the ACERO network



Legitimate facilitators

The association of criminal groups with legitimate interests is a long-established fact. On the one hand, it is a source of resilience (Williams, 2001) and a strategy to avoid detection and disruption. On the other hand, organized crime enables legal professionals to complement legitimate funds with extra illegal income. This association could encompass many groups but it focuses mainly: a) on public authorities through corruption at three levels: police departments, judicial institutions and politicians; and b) on legitimate business in order to conceal the illegal nature of the activity or income by offering very beneficial opportunities to legitimate professionals. The latter case would include law-abiding businesses, accountants, legitimate businesspersons or lawyers.

The police files reveal relationships with two types of legitimate players: public authorities and players involved legitimate business activities. Regarding operation MAMBO, as it is a typical transnational cocaine trafficking group, we found legal facilitators for cocaine transportation. In this case, the importer in Uruguay had at least one legal enterprise to conceal cocaine transportation to Spain. There is no evidence of a legal business in Spain to conceal illegal activities, although there is proof of corruption involving judicial authorities to obtain judicial immunity.

Since ACERO is a more traditional local group, it has its own legal facilitators to conceal the activity and launder illegal funds. The group has brothels and transportation companies to conceal the illegal activity and launder the capital coming from cocaine trafficking and other illegal activities.

Operation JUANES is a classic case of money laundering being outsourced to another specialized organization. The organization in charge of money laundering is composed of some key players (lawyers and accountants) and many independent collaborators in charge of laundering money all over the Spanish territory before it is sent to the organized crime groups after charging a commission. A jewelry store owned by the head of the organization is the legal business concealing the movement of capital.

Finally, operation JAKE is a rooted local group in a gypsy ghetto where many similar clans live from illegal activities such as drug trafficking. In this case, no legal outlet for the illegal business is necessary since the neighborhood is deeply involved in underworld activities. Community support for these types of activities provides a general consensus against illegal activities. What seems to be more effective in terms of protection is to avoid police detection and inspection. In operation JAKE, this kind of protection came in the form of JMF's close contact with two police officers in charge of inspecting the market in the area. JFM, despite being in jail, maintained his personal contacts by bribing police officers in exchange for immunity.

The following table provides a summary of activities detected in the police investigation for each organization in terms of legal facilitators.

Table 6. Administrative and economic facilitators in drug trafficking

Operation	***Administrative penetration***	***Economic penetration***
MAMBO	Judicial corruption	Legal business in Uruguay
JUANES	No indication	Money laundering outsourced
JAKE	Police corruption	Illegal background
ACERO	No indication	Legal business in Spain

Discussion

From the study of the structure of the four criminal groups and comparing the police investigation and the SNA results, we can conclude that the structure determined by the police investigations overrates the hierarchy and rank positions within the criminal groups. The SNA reveals more flexible and horizontal structures in groups classified by the police as hierarchical and complex structures. As a consequence, the four structures could be described more as illegal networks than criminal organizations, except for ACERO. Based on the SNA of the four groups, three of the networks (MAMBO, JAKE and JUANES) have low percentages of centralization and very low percentages of density (below 10%). This means that the network structure with a higher horizontal division of labor is the most common structure for the wholesale supply of cocaine in Spain. The only exception with a more hierarchical and centralized structure is ACERO, which has the highest percentage of centralization and density. These networks show a more traditional structure with a substantial centralization in the group's main leader.

Regarding the key players in the networks, the SNA offers the possibility of identifying the most relevant members of the network in terms of his/her degree of centrality and betweenness. First, it is surprising that three networks have different members with betweenness and centrality scores. In general, members with the highest degree of centrality are consistent with the hierarchical leaders of the network provided in the police files. In operations MAMBO and JAKE, members with the highest centrality scores are the importers of cocaine. In operation JUANES, the most central member is the second coordinator of the money laundering group, while in operation ACERO, the leader of the group is female. If we analyze the brokers of the network, we can state that the most important members are leaders of middle groups (wholesaler suppliers) in charge of receiving the drugs and selling them to the retailers. In operation MAMBO, SNRM is the leader of the distributer in Spain, while in operation JAKE, the broker is substituting the leader while he is in jail and is contacting providers directly. In operation JUANES, the broker is the leader of the money laundering group. Finally, in ACERO, given the network's small size, the leader (SAR) shares the high degree of centrality and betweenness.

From the analysis of the members' degree of centrality and the roles performed in the network, we can state that generally, the SNA confirmed police intuition or perception as regards the positions and roles performed by the most important members in the network. Nevertheless, from the graphs regarding the ACERO and JUANES operations, it is interesting to look at the low positions in the organization. Some of the lower members in the police files were overrated according to their relevance in terms of degree of centrality. This kind of analysis could give added value to police investigations to identify relevant members in less qualified positions or in the network periphery.

By integrating all the results provided in this paper regarding the groups, we can arrive at a profile for each network. The first group (MAMBO) is a classic organized criminal group of wholesale suppliers in which the key members are the importer and wholesale supplier of cocaine. The structure analysis shows a horizontal network where members share their own resources to develop the illegal activity (Haller, 1990). We can also see operation JAKE, in which the common structure is not only business-orientated but also family-based where tradition has an influence on the network structure. In this case, the whole community has a cultural tradition in this type of illegal activities. As regards JUANES, it is a similar organized group that is closely related to an organization in charge of money laundering where we find the most important members. As mentioned previously, the economic business seems to be the main activity finding provision from other groups involved in other illegal activities. Finally, the ACERO network seems to have a different profile. Even if it is also family-based, it has the most traditional structure with a high degree of centrality concentrated in one leader while the rest of the group is subject to the leader's guidance. In this case, family bonds and trust are essential for the relationship of members.

The last part of the paper analyzes the legal facilitators providing additional protection or assisting the illegal business, in other words, the existing association with legitimate businesses or politics. The results show that all the networks had legal facilitators that supported the illegal business and prevented external detection. MAMBO shows the most sophisticated strategies with political and economic connections: judicial corruption was detected in Spain and legal enterprises were used in Uruguay to conceal the illegal transportation of cocaine. Operation ACERO has a legitimate business through which money coming from the illegal activities is laundered. Operation JUANES only appears to have legitimate connections to conceal legal earnings in its money laundering branch. Finally, operation JAKE is a group rooted in a local community which lives from informal economy. This is an example of how counterproductive an association with a legitimate business can be in certain criminal backgrounds. In this case, community support, acceptance by the local authorities and personal contacts with police officers are the criminal facilitators.

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[1] The core periphery model consists of two classes of nodes, namely a cohesive subgraph (the core) in which players are connected to each other in some maximal sense and a class of player that are loosely connected to the cohesive subgraph by a lack of maximal cohesion with the core (Borgatti & Everett, 1999: 377).

[2] The questionnaire created to gather police information contains a section where the investigator is asked to assess the dangerousness of the organization from 0 to 5. The investigator is requested to mention the indicators from the investigation taken into account for the decision.

[4] This could be biased because the contacts of the money laundering group were overrepresented in the matrix.