

**The Influence of Local-Tie and School-Tie Groups on Congressional Network:
Division in the Leading Opposition Party in South Korea in 2015-16**

by

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Thesis submitted in partial fulfillment of
the requirements for the degree of
Master of Arts in the Department of
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ABSTRACT

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Abstract

Power derived from personal relationships especially based on school ties and local ties has become accepted as a source of human capital, and has been shown since the 1960s to be an effective tool for attaining upward social mobility in South Korea. Many researchers have largely focused on public behavior or the role of political elites, not individual members in the National Assembly. Since social network analysis is an effective research tool for examining influence of relational attributes, it has the potential to be very helpful in understanding the behavior of members in the National Assembly. This study maps relationships among members of the leading opposition party in South Korea to determine whether they affected political events occurring in early 2016—specifically the split of the leading opposition party, NPAD, into two parties, MPK and PP. Mapping a network could be helpful to find a new way to analyze actions of political leaders in a certain political event as well. I used personal information about members of the opposition parties, including their hometowns, educational institutions attended, and previous achievements to map their social networks extant at the time of the split. I used values of centralities to determine who was the hub of the network and what relationships exist between and among its members. Examining the network connecting members of the opposition parties shows that, contrary to expectations, Chun Jung-bae was the hub not Ahn Chul-soo or Moon Jae-in unlike many expectations. Determining the relationships based on school ties and local ties between members can provide researchers with new perspectives on their research into political events in South Korea.

Dedication

To my awesome parents, Jin-myun and Jung-eun, and my lovely wife, Se Yeong,
with two amazing cats, Taemi and Bia.

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1. Introduction

In analyzing the characteristics of South Korean politics, researchers have focused on the role of political elites, the degrees of their power, certain political issues influencing public opinion, or relations between South Korea and other world powers, including the United States, Russia, China, and Japan (Kim, 2008). However, in studying this country's political leaders, few scholars have examined the relationships among members of the National Assembly. In fact, when considering such relationships, many scholars and political experts may regard them as playing auxiliary roles, at best. Since South Korea was an absolute monarchy before the advent of democracy, the public was accustomed to regarding a king as the national leader. Consequently, political leaders in the present democratic system have tended to be monarchical, with greater power than other members of the National Assembly. Therefore, political research in South Korea has tended to focus on the roles of political leaders or political elites, rather than the roles of other members of the National Assembly (Kil & Moon, 2001; Lee, 2011).

In South Korea, changes in the alignment of political parties occur frequently (Figure 1). In studying those political events, researchers have considered political circumstances at the time and the strong political opinions of political leaders or political elites who have the power to divide political parties or create new ones (Lee, 2011). As a result, researchers have usually considered members of the National Assembly to be passive actors in South Korean politics who follow their leader's opinions when

considering certain political issues. Moreover, if members of the National Assembly belong to specific factions within their political parties, then many researchers assume that these legislators will staunchly follow the opinions of their faction's leaders. For those reasons, when considering major political events in South Korea, researchers have tended not to focus on relationships among members of the National Assembly.

At the same time, when researchers have analyzed political behavior in South Korea, they have focused mostly on the public's behavior. For instance, they have sought to identify why people have chosen certain candidates or how they have made decisions whether they go to the poll during election season. Although some researchers have aimed to clarify the process of party nomination system in South Korean politics, they have not focused on relationships among members of the National Assembly, but instead have paid attention to members' past performance.

In South Korea, many people have stressed the importance of power derived from relationships. Since following certain roles in human relationships has been highlighted as a cultural norm, many Koreans believe that creating and maintaining good human relationships as one of key factors in having a good life. Based on this belief, if one has certain relationships to some groups, one would be dependent on those relationships and would not like to lose the power that results from such relationships, especially if they have used this power. If one does not have such relationships, one might try to gain connections to members who already have relationships with others in certain groups because they would like to procure power based on these relationships.

This tendency first arose as a social trend in the 15th century when old style faction politics or cliquish politics emerged in the Joseon Dynasty period (1392-1910) (Lee, 2005). Relationships based on blood ties school ties and local ties have been considered as having an influence on one's place in society. At that time, only the upper class could use the power from such kind of relationships. This tendency continued, even after their social stratum collapsed. After liberation, even though the power of blood-tie based relationships has diminished, the power of school-tie and local-tie based relationships have remained. The importance of human capital increased in political strategies of the government after the 1960s (Kim, 2003). For these reasons, many people used power from these kinds of relationships to improve their lives, and this tendency could be observed even in small groups. Therefore, analyzing relations between people could be an important key to understanding human behavior in South Korea.

At present, social network analysis is a popular approach to studying South Korean politics. Some researchers have also recently attempted to apply social network theory to the context of international politics (Kim, 2008). By using social network analysis, researchers can focus on several political issues based on relations among actors in a social network. Since social network analysis is concerned with the influence of relational attributes, it could be very helpful to understand the behavior of National Assembly members. It can be difficult to explain why members of the National Assembly sometimes act in a way that is inconsistent with their political creed. History shows that many members of the National Assembly changed their party affiliation to gain political

authority, regardless of their political creed (Kil & Moon, 2001). When it comes to the targeted event, many people think that members of the opposition party who defected may lose an opportunity to win the following election when they decide to join the new party. In this case, what could affect their decision? and did they decide to defect from the previous party in spite of accepting losing chance of winning in the next election? Contrary to popular belief, their political behavior can be influenced by external factors that transcend political ideology to obtain much more political power than before. Therefore, analyzing such external factors as school-tie based or local-tie based relationships can be helpful in understanding politicians' behavior. These external factors influenced by Korean culture can potentially play an important role in the networking behavior of National Assembly members.

Mapping a network based on relationship variables could also be helpful to find a new way to analyze the actions of political leaders in a certain political event. Unlike in the past, the power of political leaders has weakened. In this situation, using the existing methods to analyze the behavior of political leaders could fail to account for why they made a given decision. Since the characteristics of political elites have changed, new methods are needed for conducting research that analyzes their behavior. Social network analysis would be a useful way to understand their actions because political leaders do not have enough power to determine the opinions of other members of the National Assembly, so they must exert power based on their relations with others.

Analyzing relationships among people, including members of the National Assembly, however, can be difficult (Kim, 2011). Analyzing relationships among members of the National Assembly has most likely been neglected for that very reason, although studies using social network analysis to examine such relationships have the potential to elucidate decisions made by members of the National Assembly and manifest the reasons why certain political events have occurred. So, this study tried to make up for this neglected area and found that relationships based on local ties and school ties affected on decisions of members of the opposition parties, and the position of Chun Jung-bae closely located around the central point of the network in this paper rather than positions of Ahn Chul-soo and Moon Jae-in. It means that Chun Jung-bae could get more power to control information and resources in the network.

Therefore, this study seeks to map relations among members of the leading opposition party in South Korea, to determine whether their relationships affected the political events of early 2016—namely, when the leading opposition party, NPAD, split into two parties, MPK and PP. I will use personal information about members of the opposition parties, including their hometowns, educational institutions attended, and some of their previous achievements, in an effort to explain the relationships among certain specific members of the opposition parties. To that end, I will gather personal information about members of the leading opposition party during the relevant timeframe and map their social network. With that information mapped, I plan to analyze whether the variables chosen affected political decisions, such as whether to defect or to stay in

the party, and strategies of political leaders such as Ahn Chul-soo, Moon Jae-in, and Chun Jung-bae by finding their positions in the network.

2. Social Network Analysis (SNA)

Social network analysis has emerged to aid in the analysis of complex social structures (Law, 1992). It is the study of the social relationships among a set of actors. Specifically, social network analysis focuses on uncovering the patterns of people's interactions (Freeman, 2004). Social network analysis can also be used in the process of mapping and measuring the relationships and flows between people, groups, organizations, computers, URLs, and other connected information or knowledge entities (Krebs, n.d.).

A social network is composed of a set of actors such as people, groups, or organizations, a set of dyadic ties, and other social interactions between actors. The social network perspective provides a set of methods for analyzing the structure of entire social entities and can lead to a variety of theories explaining the patterns observed in these structures (Wasserman & Faust, 1994). Nodes and links may create a structure with a certain pattern. From this point of view, the main point of social analysis is studying the influence of structure by determining the connections between actors. According to Thompson (2003), a social network has several characteristics. The first is that actors and their actions are interdependent, instead of independent. The second is that relations called links between actors are paths for both material and immaterial resources. The third is that network structure could be a stimulus action or a limitation imposed on action. Lastly, social network structure should be able to represent continuous patterns of relationships between actors.

Researchers who study social networks look for patterns in the network structure, including the hubs, cliques, structural holes, brokers, and positional power. Social network analysis is helpful in understanding the roles of actors who occupy certain positions. According to social network theory, even actors with similar characteristics have different strategic options based on their positions in the network. This is because network relations could allow some actors more resources and information than others receive. A broker positioned as a hub could have more information and resources, and therefore more strategies, than others, thus giving brokers more chances to use positional power or brokerage power. Structural holes are empty spaces in the network. If nodes locate in structural holes, these nodes could take the role of connector to link other nodes, because they do not have overlapped connection with other nodes. These nodes could obtain more information and use it more easily than others (Kwak, 2014). Finding the centrality of a node gives a measure of the network location. These measures give researchers insight into the various roles and groupings in a network: the connectors, leaders, bridges, and isolates, the clusters, and who is in them, the core of the network and the periphery (Krebs, n.d.).

There are three types of social networks: ego-centric networks, socio-centric networks, and open-system networks (Claywell, n.d.). Ego-centric networks connect with a single node or actor. Actor-level analysis in such a network would focus on relationship strength and centrality. Socio-centric networks are closed networks by default. At this level, analysis focuses on interactions between each of the members of the network. Specifically, researchers have analyzed several factors such as why the individuals

interact, how they interact, and the level of closeness between members. In an open-system network, the boundaries are not clearly defined.

Homophily is the idea that individuals who are similar to one another are more likely to form ties (Lazer, 2011). There are many reasons why networks form patterns. In some cases, homophily may reflect a simple preference to be with others like oneself. In other cases, revealed preference may reflect an instrumental need to be with similar others, and in still other cases, homophily may simply be the result of a powerful opportunity structure (Lazer, 2011).

These features of social network analysis can be helpful in analyzing party politics in South Korea. Some researchers have used these concepts to find new perspectives from which to evaluate the political behavior of members of nomination screening committees and candidates for party nominations in 19th general election period (Eom & Yun, 2013). One could determine, for instance, whether variables such as school-tie based relationships and local-tie based relationships have influence on politicians' behavior. These factors have not been used before to analyze political behavior of National Assembly members in South Korea.

3. Background Information

3.1 Korean Culture and Interpersonal Relationships

The most distinguishing aspect of South Korea's political culture is its communitarian identity. Sharing the same racial, historical, cultural, and linguistic legacies, Koreans possess a strong feeling of covariance, or a sense of common destiny (Kil & Moon, 2001). The communitarian identity affects political behavior. On the positive side, it reinforces a strong social bond and solidarity, as well as promoting cooperation and mutual assistance by emphasizing social obligations, loyalty to the community, and a sense of collective indebtedness to society even though it regards as one of major reasons of some problems in the society such as a back-scratching alliance of government and business and revolving-door employment problems on the negative side (Kil & Moon, 2001; Kim & Park, 2004).

Social groups in South Korea could be originally classified into three distinct categories: blood-tie groups, local-tie groups, and school-tie groups (Kil & Moon, 2001). The most distinct social organization is a group formed through blood ties. Hyulyonjipdan (the blood-tie group) is composed of two subgroups, family and kinship. Jiyonjipdan (the local-tie group) has been the most controversial element in Korean politics. Since the mid-1960s, localism or regionalism has served as the most reliable predictor of electoral outcomes (Cho, 1998; Kil & Moon, 2001). Regardless of social status, educational level, and income, Koreans have shown voting behavior determined largely by local or regional origins. Political parties, or factions within them, are also framed around regional ties, rather than ideology or policy (Kim, 2011). Hakyonjipdan

(the school-tie group) is largely composed of two subgroups, based on the high school and college from which group members graduated. Koreans define social class by school ranking, because studying has been found to be the most effective way to improve one's social status. Even though the school ranking system has been eradicated, people still use this as an indicator of status. Groupings resulting from these attributes have played a major role in Korean society (Lee & Lee, 2014).

Although the influence of these social groups has weakened over time, the groups still significantly influence public behavior. Although the power of blood-tie based relationships has diminished, its influence can still be seen in the older generation (Kim, Choi & Cho, 2008). For example, when older people meet someone for the first time, regardless of the stranger's age or social status, they may initially ask about family origins. Also, when older Koreans consider their children's marriages, they may check family history of daughter-in-law or son-in-law. This blood-tie based relations had significant influence on people's relationships, and are still largely affected on their life. Secondly, in regard to local-tie based relationships, regionalism has not only influenced voting behavior but also affected individuals' social lives. For instance, when people join a certain group based on a shared interest (such as a hobby), some members may have a stronger bond with others who come from the same region or place. When people first meet each other, they usually ask each other's hometown to find common ground for building their psychological bond. This example could be applied to the case of school-tie groups, as well. When people meet others in their social lives, they may develop strong loyalties to others who graduated from the same school.

Moreover, nowadays, there is a new variety of school-tie based relationships. In some cases, people who have passed a national examination, such as the bar exam or civil service examination could have a strong bond with others who have similar experience. They may perceive that passing an important and difficult exam to be a gateway to the upper class in society (Choi, 2001a). In other words, these people may develop another social-tie relationship with others in the same social group. Since this relationship is based on one's achievement, it may be seen as a school-tie-based relationship.

While researchers have considered a relationship based on local ties to be an important factor in understanding an individual's political behavior, they have largely neglected the role of school-tie-based relationships in the field of political science in South Korea (Choi, 2001a). However, these relationships may be key factors in understanding political behavior because they have influence on one's behavior as a part of Korean culture, just as local-tie relationships do. There are several studies using school-tie relationships as a key variable in other fields. According to Choi (2001a), school-tie based relationships have played a big role in upper-class South Korea by determining the social networks of people who belong to the upper class. Especially women have made connections through their affiliation with top-ranked high schools or universities. They have used their school ties as a source of social capital to strengthen their status in society. For example, when they have gotten married, they have used power derived from their school-tie based relationships to make connections with future spouses from the South Korean upper class. According to Kim and Park (2004), business owners have tended to appoint professional CEOs who graduated from the same high

schools when their companies are in conglomerates or are in crisis situations, such as bankruptcy, legal management, and workout programming.

3.2 Research Trends in Korean Party Politics

Several interesting political events have occurred to spur the recent research on party politics. These include the frequent changes in South Korean politicians' party alignments. In analyzing these political developments, many researchers have regarded political party leaders as the key. This is because political leaders tend to be powerful political symbols, an effect that is strengthened by South Korea's history as a monarchy, suggesting that some people still consider political leaders as equivalent to kings or queens even though this tendency has decreased. Researchers have also tended to focus largely on the political circumstances in place at the time of a given political event (Cho, 1998). In the case of the Korean democracy movement, for instance, many researchers considered solely the political circumstances (Kil & Moon, 2001).

Since the 1960s, because of government strategy, regionalism has been intensified. As a result, relationships based on local ties have deepened, as well. This circumstance affected not only the political behavior of the public, but also their daily lives. Many people still tend to vote for a candidate who comes from their hometown or province, rather than a candidate from another province, even if the latter candidate has a higher level of education or is more popular than the local candidate. People have a strong tendency to favor a candidate who comes from the same place they do, even though s/he does not stand higher in popular esteem than other candidates (Knag, 2005; Lee, 2011).

In South Korea, the use of social network analysis has been increasing. A good example is the research focusing on the hyperlinks in websites established by members of the National Assembly (Park, 2004). Because of the increasing use of the Internet and individual websites by politicians to connect with the public, researchers have begun to pay attention to the network of hyperlinks existing between members of the National Assembly. However, focusing on hyperlinks only may not be the most productive research strategy by scholars because it fails to represent the real connection between members of the National Assembly. A better approach to identifying the relationships between actors in a political network might include the study of relationships that are based on school ties and local ties.

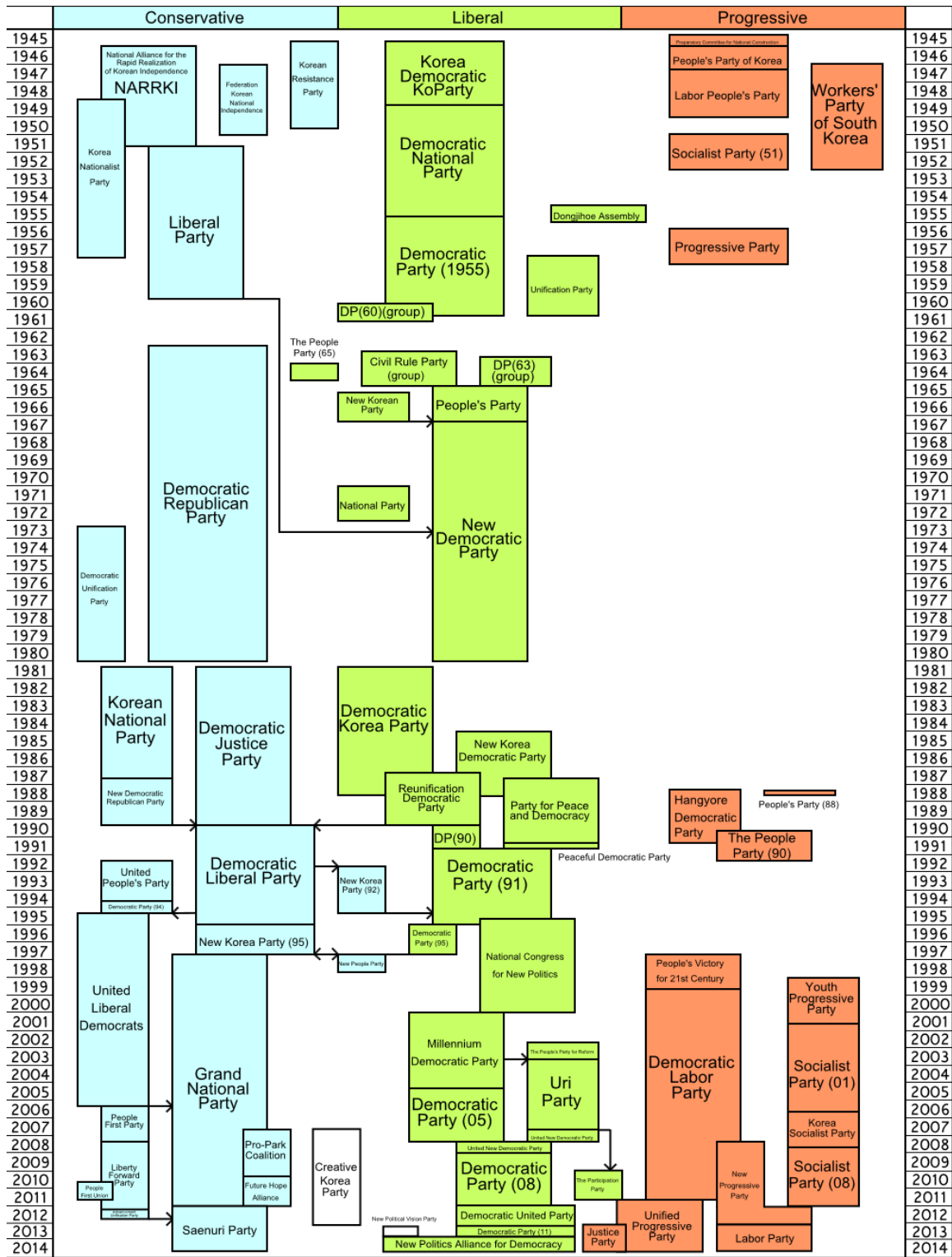


Figure 1: Political Parties in South Korea (1945-2014)

4. Political Reorganization from the Opposition Parties

Table 1: Time Table of Major Political Events in 2015-16

Date	Dec 13, 2015	Dec 28, 2015	Feb 2, 2016	Mar 17, 2016	Mar 28, 2016
Event	Ahn defects	MPK (renamed)	PP (formed new party)	PP becomes a Negotiation Party	Last Defection occurs

On December 13, 2015, Ahn Cheol-soo, one of the co-founders of the leading opposition party New Politics Alliance for Democracy (NPAD), announced his defection from the party, in order to achieve regime change. He disagreed with the party's leader, Moon Jae-in, about strategy for winning the upcoming election. Other members followed Ahn's defection, and the remaining members, including Moon Jae-in, wanted to change the party's name in order to refresh their political image. The leading opposition party changed its name to the Minjoo Party of Korea (MPK), and along with others who had defected, Ahn Cheol-soo formed a new political party, named the People's Party (PP) (Table 1). Many people regard the Minjoo Party as the mainstream opposition party, and it is still the leading opposition party, even after losing several seats, going from 129 down to 102. Even though many people did not expect, the People's Party merged with Chun Jung-bae's political group on January 25, 2016, and merged with Chung Dong-young's political group on February 18, 2016.

Researchers using traditional methods might study this event with a focus on the roles of the political leaders. However, analyzing the relations between members using social network analysis will allow the present research to focus on the actors' strategies and to find other variables that affected their political decisions.

4.1 Before Ahn's Defection

Table 2: Key People in the Opposition Parties in South Korea

Name	Remarks
Ahn Chul-soo	one of the co-founders of the leading opposition party, NPAD
Moon Jae-in	a former candidate of the presidential election from the opposition parties and a former representative of NPAD
Chun Jung-bae	a co-representative of The People's Party
Chung Dong-young	a former candidate of the presidential election from the opposition parties
Kim Han-gil	a four-term lawmaker and one of the co-founders of the leading opposition party, NPAD

Chun Jung-bae is a co-representative of The People's Party in 2016. After defecting from the leading opposition party, he was first elected in 2015 as an independent and announced that he was going to create a new political party. He argued that a new party was needed to win the 20th general election in 2016. Before his announcement, other well-known members of the opposition parties defected, such as Chung Dong-young who was a former presidential candidate, even though they were not members of the National Assembly at that time.

In addition, some National Assembly members from the leading opposition party announced that they were going to defect, either to create a new party or to join the new party that Chun Jung-bae was preparing to create. At that time, conflicts deepened between Ahn Chul-soo and Moon Jae-in about the way to lead the opposition party. Chun Jung-bae proclaimed that he would finish the process of forming new political party by

mid-January of 2016. At the same time, Chun Jung-bae considered that he would cooperate with Chung Dong-young to form a new party.

4.2 After Ahn's Defection

4.2.1 The People's Party (PP)

Table 3: The Major Opposition Parties in South Korea (2015-16)

Party	Leader	Start Date	# of Members (19th)	#of Members (20th)
NPAD	Moon, Jae-in	Mar 26,2014	129	x
MPK	Moon, Jae-in	Dec 28, 2015	103	123
PP	Ahn, Chul-soo	Feb 2, 2016	21	38

After Ahn Chul-soo defected from the leading opposition party, several National Assembly members decided to follow him. They announced that they wished to form a parliamentary negotiation body with Ahn Chul-soo as the central figure, and then merge political parties newly formed by opposition members. On December 21, 2015, Ahn Chul-soo announced that he was going to form a new political party. The ensuing defectors included Kim Han-gil, who is a four-term lawmaker and the most famous member of the National Assembly. He was one of the co-founders of the leading opposition party, NPAD, and a representative of the Democratic Party (2011), which was the leading opposition party before NPAD formed in 2014.

4.2.2 The Minjoo Party of Korea (MPK)

After Ahn's defection, the leading opposition party members demanded that their party name, NPAD, be changed to the Leader Group, because NP had come from the name of Ahn's previous political group. On December 27 2015, they announced their

new name, the Minjoo Party of Korea. Minjoo translates to democratic in English, and is one of most popular words in Korean politics, as it was used as a symbol of anti-communism in the late 20th century. South Korea's first liberal party used this word, as well, so its connotation works well for the opposition party.

4.3 Ahn Chul-soo versus Chun Jung-bae in 2016

After Ahn's defection, the mass media and the public more paid attention to Ahn's future movements than to Chun's, even though they had a huge interest in Chun's movement before Ahn's defection. Many incumbent members of the National Assembly announced that they had defected from the leading opposition party and joined the People's Party. At that time, Chun criticized that defected members had joined the People's Party to change their previous political images by changing their party identities. Also, Chun criticized Ahn's recruitment policy, through which he accepted defected members in order to adapt to the new political regime. In Chun's opinion, Ahn should not have done this because he proclaimed that he would uncover hidden talents to make a regime change and political renovation in South Korea when he announced his defection. In addition, Chun Jung-bae had some emotional baggage about Ahn Chul-soo because Ahn Chul-soo and Kim Han-gil had selected another candidate as the strategic candidate for the by-election in 2014. They passed over Chun Jung-bae even though he had declared his candidacy for the same election and had already begun to barnstorm. Eventually, he decided to withdraw from the election. For these reasons, many people did not expect that they would cooperate with each other to form a new party. After three-way talks hosted by Kim Han-gil, however, Ahn Chul-soo, and Chun Jung-bae

announced that they had reached an agreement to cooperate with each other and form a new party. At this point, Ahn chose to cooperate with the very person who he had previously dismissed as an icon of old-fashioned politics, and Chun decided to cooperate with the same person who had been continuously in conflict with him since the by-election in 2014. How can we find the reasons behind their cooperation with each other? Which strengths in their opponents did they want to use?

5. Model

5.1 Hypothesis

As mentioned above, there have been many instances of changes in the alignment of political parties in South Korea (Figure 1), and numerous studies have focused on the role of the relevant political leaders or political circumstances. However, relationships among actors have not been regarded as key factors for analyzing political events. Since relationships based on blood ties, local ties, and school ties are major factors in understanding people's behavior and political action, especially in South Korea, analyzing relations among members of the National Assembly and behavior of political leaders who need more power based on relationships with other members could yield a new understanding of party politics.

Some researchers have suggested that political party mergers result from the individual political predispositions of members of the National Assembly (Kil & Moon, 2001). However, in South Korea, several members have changed their party alliance regardless of party ideology (Kang, 2005). In those cases, the major reason for defecting from or joining a party might not stem from political creed or belief, but from an aspiration to attain political power, regardless of ideology. In such situations, local ties or school ties might be major factors in how members of the National Assembly form relationships to gain political authority. Even though they did not follow their political creed as a method to assume political power, following relations based on local ties or school ties could make an alternative way to obtain political power because power derived from these relationships could be helpful for them to improve their status in the

National Assembly. Similarly, some members who do not have enough political leverage or popularity of their own to impact on the public or their own party could lean on the political power derived from these relations because they could use the power of related groups (Kang, 2005). Moreover, they could use this situation, defecting from the previous party, as a chance to go forward to the mainstream of the new party, and gain political power by using relationships based on school ties and local ties. Therefore, it is not unreasonable to assume that members who decide to defect from their previous party could be affected by relationships based on school ties or local ties. To analyze the behavior of the political elite today, using relationship variables such as local ties and school ties, would be helpful to check where their positions located in a relationship network of members of the opposition parties.

Therefore, I would like to conduct a study on the effect of local ties and school ties on the social networks of members of the opposition party in South Korea. In doing so, I especially want to explore whether independent variables have influenced whether members of the National Assembly defected from or stayed in their parties during the events occurring in early 2016, and political leaders made their strategies such as cooperation with each other to form a new party. Since such events involved members of the National Assembly with similar political creeds and beliefs, it remains unclear what factors actually made a difference. That is, why did some members opt to defect, and why did others opt to stay? In addition, why some political leaders such as Ahn Chul-soo and Chun Jung-bae made their decisions to cooperate with each other when they form a new party even though they do not have similar political background?

In that series of political events, some members of the National Assembly decided to defect from their parties and join the new People's Party, even though many experts argued that it had dismal prospects (Namuwiki, n.d.). In that respect, why did some members of the National Assembly defect from the party likely to reap a winning percentage of votes in the 2016 general election? Also, why did Ahn Chul-soo and Chun Jung-bae agree on uniting their groups to form a new party?

By conducting this research, I will be able to gauge whether several independent variables could be deemed meaningful in analyzing whether political behavior in South Korea influences the behavior of members of the National Assembly in the congressional social network. In general, people do not pay attention to the relationships among every member of the National Assembly once elected, but considering these relationships could expand current perspectives on congressional networks. I would further like to identify hubs in the network and compare them with opinion leaders in the real world by using centrality methods. If the hubs in the network are different with in the real world, one could broad their perspectives toward a certain political event by checking hubs in the network, and understand their roles in that event by finding their positions in the network.

Centrality is an indicator commonly used in social network analysis. This indicator could represent how far an actor is from the central point of the whole network. It is possible to understand which node is a key player in the network by measuring centralities (Kwak, 2014). Also, one can understand how information and opinions could be passed through by those who could convey such information and opinions to others in relationships between members in their network.

There are four main ways to calculate centrality. The first is degree centrality, which is defined as the number of links incident upon a node, such as the number of ties that a node has. This could show the direct accessibility of the node. A node could have more options and autonomy in the network if it had more connections with other nodes. At this time, the node could have more influence in the network because it can reduce dependence on other nodes. By checking degree centrality, we could understand who had the most links with others in the opposition parties at the time when they divided into two major opposition parties (Kwak, 2014).

The second method is closeness centrality, which relates the shortest distances between nodes. This centrality is defined by the degree of proximity between nodes in the network. Especially, it calculates how a node locates closely on the central point in the network. If a node locates closer to the central point, the node could be able to diffuse resources and information to the whole network more quickly. In other words, as closeness centrality of a node is increasing, distances from the other nodes are shortened. By checking closeness centrality, we could understand who is most nearly located at the central point in the targeted network (Kwak, 2014).

The third way is betweenness centrality. This shows a network's level of dependence upon a certain node to keep connectivity to the network. The higher the betweenness centrality of a node, the more likely it is that the node has more power to control the flow of information and resources in the network. On the one hand, a node having a high degree of betweenness centrality could possibly threaten the network by distorting information and disturbing activities. By checking betweenness centrality, we

could identify who has control over resources and information in the network (Kwak, 2014).

The last way is eigenvector centrality. Compared to degree centrality, this centrality could be calculated by giving weight to centralities of nodes directly connected with another node. In other words, if a node could be more connected with other nodes that have high degrees of centrality, the eigenvector centrality of the node would be higher. It could explain how a node could have more influence even though it does not connect with many other nodes but rather connect with few nodes that are more powerful than many other nodes in the network. By checking eigenvector centrality, we could determine who connects with the more powerful nodes in the network (Kwak, 2014).

5.2 Data Collection and Coding

Table 4: Points for Variables

Local-tie Based Relations		School-tie Based Relations		Special Cases	
Variable	Points	Variable	Points	Variable	Points
City	1	High School	1	National	1
		College + Major	1	Examination + Class	
Province	0.5	College	0.5	National Examination	0.5

To verify the hypothesis, I have retrieved data about members of the opposition party, including personal information such as their hometown (for evaluating the local-tie variable) and schools attended, including high school and college (to evaluate the school-tie variable). A total of 127 members of the National Assembly form the two opposition

parties: The Minjoo Party of Korea (MPK) and the People's Party (PP). I also gathered information about members' occupations before joining the National Assembly and any additional information about the three major national examinations.

In South Korea, people when first meeting each other usually ask about the other's hometown. If they are from the same region, then they might ask about where the other attended high school and, if they went to the same school, then the other's college and major, as well. After identifying each other's personal information, they could check whether they are the same age or graduated in the same class (Choi, 2001b). Based on this hierarchy of ties, I will give different scores to relationships based on different variables.

Any connection between members will receive a score. For example, if actor A and B are from the same city, then their relationship will receive a point, and the score will be represented as the width of the link between them to show the strength of their relations. Likewise, if actor A and B graduated from the same high school, then their relationship will get a point. If they are from the same city and graduated from the same high school, then their relationship will be given two points.

I will assign different scores to each factor based on real-world influences. For example, I will award a point when actors went to the same high school, but only half a point if they attended the same college, largely because South Koreans put greater emphasis on high-school relationships than those developed in college. At the same time, people could have greater attachments with others who graduated with a degree in the same major from the same college than with others who simply graduated from the same

college. As such, I will award a point to any tie between people who have graduated with a degree in the same major from the same college. It means that they cannot get 1.5 points for being in the same college and in the same college and major.

Similarly, I will award a point to a relationship based on being from the same city and give half a point to a relationship based on being just from the same province. For example, if person A came from city A, which locates in province A, and person B came from city B located in province A, their link would gain half a point because they came from the same province, even though their hometowns are different. In South Korea, even though people may not come from the same hometown, they could have a closer relationship with others who came from the same province rather than others who came from different provinces.

As mentioned above, values of human capital have been stressed in South Korea because people think that academic achievements will guarantee their social status and likelihood of obtaining wealth (Kim, 2003). In particular, passing national examinations means that a person's ability is verified which can cause him or her to be regarded as a member of high class because the value of human capital is considered as an important factor in their society (Choi, 2001a). Among national examinations, the bar exam, civil services examination, and the foreign service examination are the most famous and widely acclaimed national examinations. Therefore, I will grant half a point when members of the National Assembly have a connection due to passing the same national examination. For example, if two individuals passed the same national examination and then held a position related to law or government, then I will give half a point to their

relationship, because they may feel a stronger sense of connection than people who have had other occupations. Plus, if the two individuals passed the same national examination at the same time, they could have a stronger relationship with each other than with those who merely passed the same examination. In this case, I will award a point to this relationship. In other words, a relationship based on the experience of passing the same national examination in the same year would take a point.

The highest score of a link would be 4: same city, same high school, same college + major, and same national examination + same class.

6. Data Analysis

6.1 General Description

For this research, I retrieved personal information about the members of the National Assembly in South Korea from their home pages, portal service pages such as Naver and Daum, and Korean Wikipedia. Finding some information was at times difficult because some members seem to hide their personal information, such as their high school or university. Also, some members received a GED, so they do not have information about graduating from high school or university.

Table 5: High Schools (more than 3 members graduated)

Name	# of Members	Location
Gyeonggi High School	8	Seoul
Gwangju Jeil High School	6	Jeolla-nam Do
Jeonju High School	6	Jeolla-Buk Do
Gwangju High School	3	Jeolla-nam Do
Mokpo High School	3	Jeolla-nam Do
Jemulpo High Schol	3	Incheon
Cheongju High school	3	Chungcheong-buk Do

In terms of information about school-based relationships, the total number of graduated high schools is 88. The high school that produced largest number of the members of the opposition parties is Gyeonggi High School that locates in Seoul and one of the famous top-ranked high school in South Korea (Choi, 2001b). Eight members of the National Assembly graduated from Gyeonggi High School. The next two high schools,

from which six members graduated from them are Gwangju Jeil High School in Jeollanam Do and Jeonju High School in Jeolla-buk Do (Table 5). These two high schools are also well-known as top ranked schools in Jeolla-do throughout the nation (Choi, 2001b).

Table 6: Top 3 Graduated Universities and Majors

University	# of Members	Major	# of Members
Seoul National University	33	Law (Seoul National University)	12
Korea University	14	Law (Korea University)	7
Yonsei University	12	Sociology (Seoul National University)	4

In addition, the total number of graduated universities is 29. Seoul National University is the university that produced the largest number (33) of opposition party members. Following that, 14 members graduated from Korea University in Seoul and 12 members graduated from Yonsei University in Seoul. These three universities represent the top-ranked schools in South Korea. People in South Korea use the name SKY for these three schools, after the first letters of their English names. A total of 59 members among 127 members of the opposition parties graduated from these three universities (46.5%) (Table 6).

Table 7: Top 3 Provinces and Cities

Province	# of Members	City	# of Members
Jeolla-nam Do	29	Seoul	18
Jeolla-buk Do	23	Goheung	6
		(Jeolla-nam Do)	
ChungCheong-nam Do	10	Incheon	5

In terms of information about local-based relationships, 29 members came from Jeolla-nam Do and 23 members came from Jeolla-buk Do. A total of 52 members came from these two provinces. These provinces are core foundation places of the opposition parties. Seoul, the capital of South Korea, is the city that produced the most members, 18, of the opposition parties (Table 7).

Lastly, in terms of information about national examinations, 24 members passed the bar exam and 7 members passed the Civil Service Examination. The most members, three, passed the bar exam in the same year, 1986 (28th Bar Exam). In the Civil Service Examination, no two passed the exam in the same year.

6.2 Social Network Analysis

Table 8: Overall Graph Metrics of the Network

Graph Metric	Value
Graph Type	Undirected
Vertices	127
Unique Edges	1937
Edges with Duplicates	0
Total Edges	1937
Connected Components	1
Maximum Vertices in a Connected Component	127
Maximum Edges in a Connected Component	1937
Maximum Geodesic Distance (Diameter)	4
Average Geodesic Distance	1.851448
Graph Density	0.242094738
Modularity	0.003429

As shown above (Table 8), the network of the members of the opposition parties in South Korea compose undirected links. The total number of vertices is 127, representing the number of members of two major opposition parties, such as MPK and PP. The number of unique edges is 1937 and no duplicated edges existed in the network. Also, there is only one component in this network. The maximum geodesic distance (diameter) of the network is 4 and the average geodesic distance is 1.85. Graph density represents that degree of connection between nodes. If the connection between nodes is increasing, graph density is also increasing. Graph density of this network is 0.242.

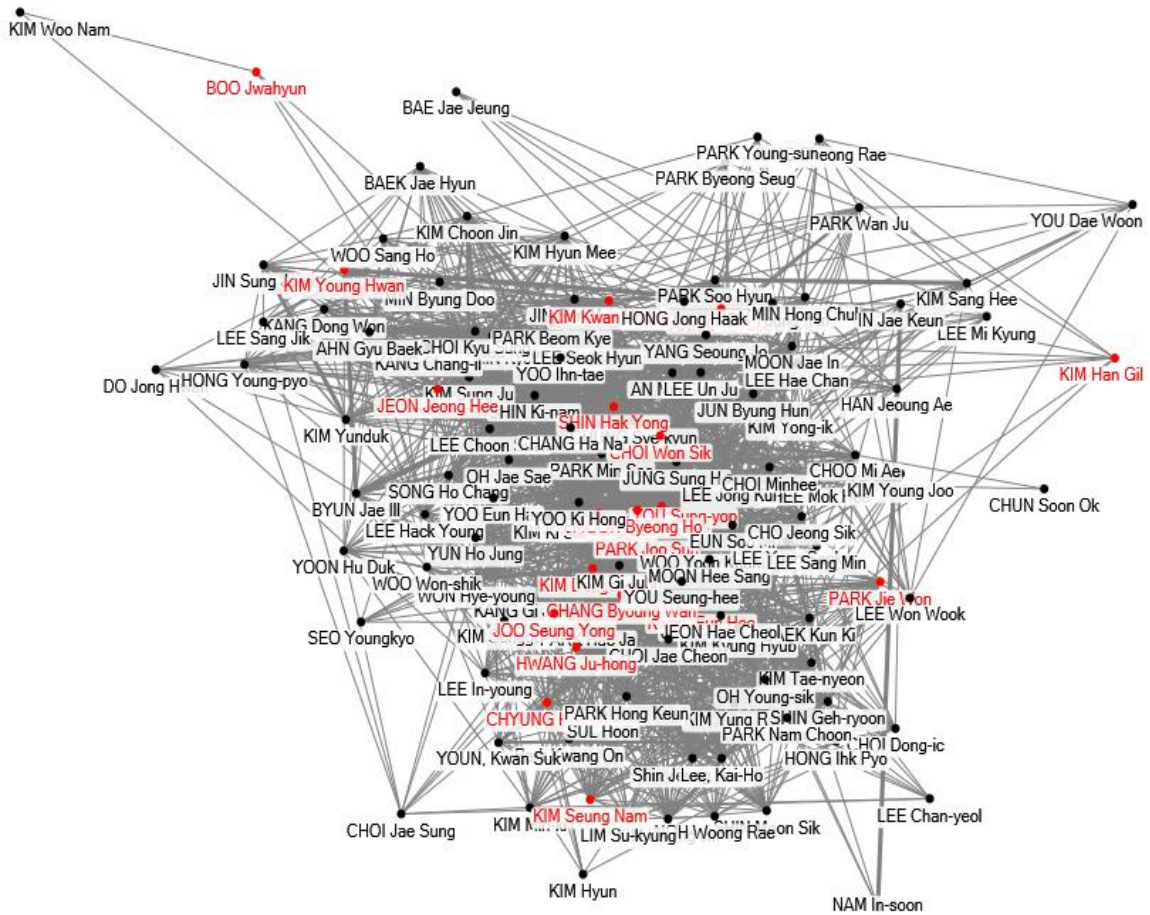


Figure 2: Social Network Map Based on School Ties and Local Ties of the Opposition Party Members

Figure 2 shows the network based on school ties and local ties of the members of the two major opposition parties in South Korea. Names in red represent members of the People’s Party (PP). Compared to the members of MPK, members of PP locate in the middle of the network (Figure 3 and 4). It is worth noting that Chun Jung-bae, who is a co-representative of the People’s Party closely locates around the central point, while Ahn Chul-soo and Moon Jae-in locate in the right upper side of the network (Figure 5 and 6). It means that Chun Jung-bae has a greater chance to control information and resources in the network than either Ahn Chul-soo or Moon Jae-in have, contrary to popular belief.

When Anh Chul-soo announced that he would form the new party with Chun Jung-bae, many people wondered why he had chosen Chun Jung-bae as his new political partner. This was because Chun Jung-bae was also prepared to form a new party separately, potentially in part due to his centrality in the network. In addition, one can see that Kim Han-gil, another possible political partner, locates in the right rim of the network. This shows that Kim Han-gil could not have more influence on the network as compared with his popularity.

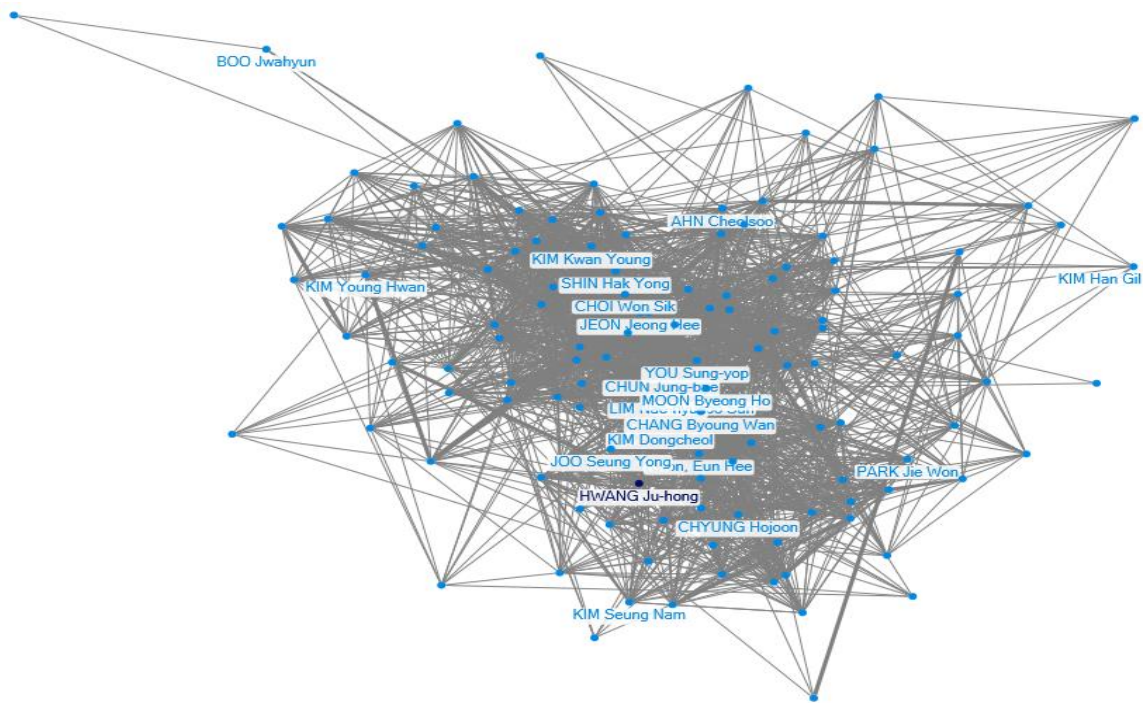


Figure 3: Locations of the Members of PP in the Network (Blue Names)

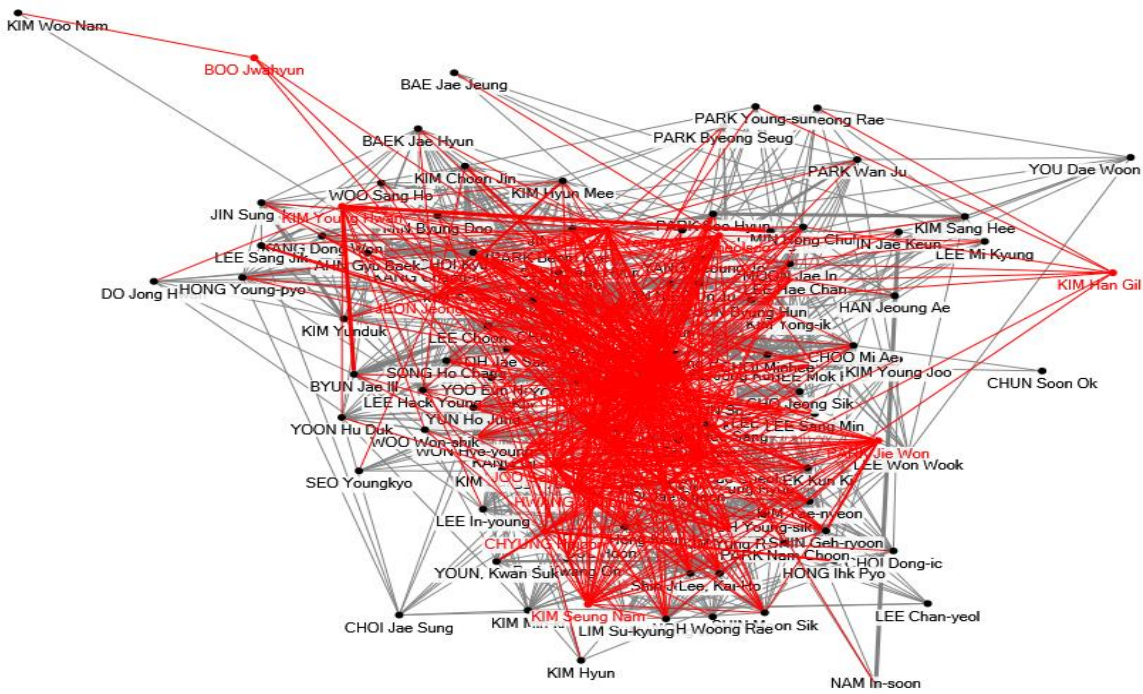


Figure 4: Links of the Members of PP in the Network (Red Lines)

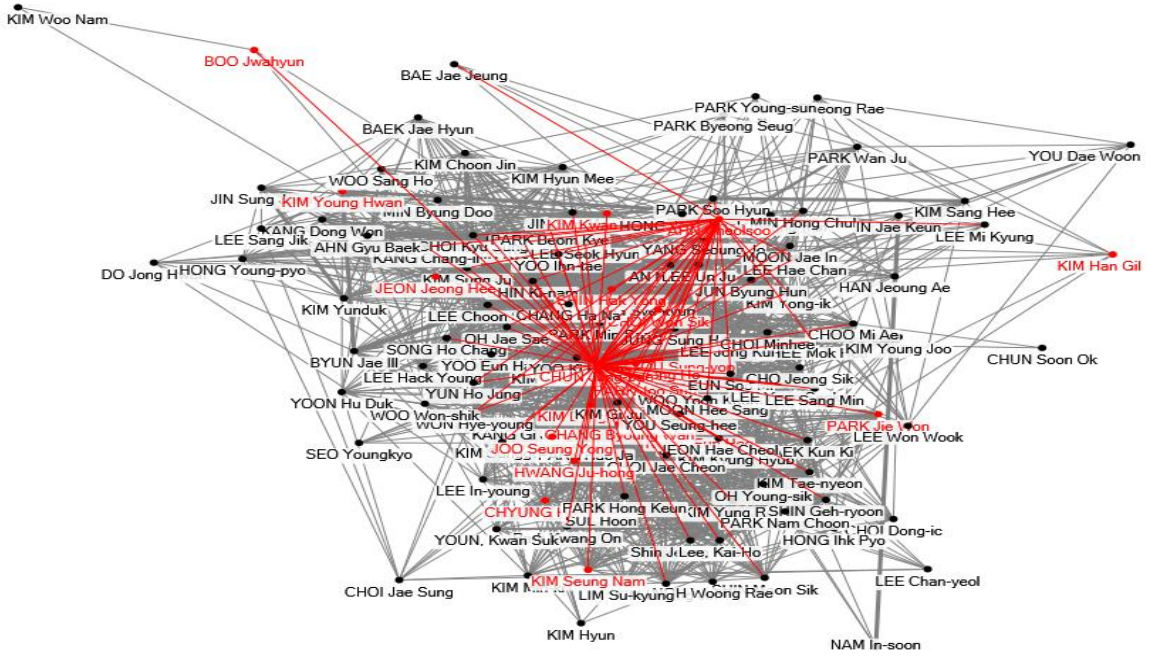


Figure 5: Positions of Ahn Chul-soo (top) & Chun Jung-bae (middle)



Figure 6: Positions of Ahn Chul-soo (left) & Moon Jae-in (right)

According to the network map (Figure 2 and 3), the majority of members who defected from their previous political party, MPK, to the new political party, PP, are located near around each other. Although Ahn Chul-soo, who is one of co-representatives of PP, locates in the upper side of the network, Chun Jung-bae, another co-representative of PP, locates around the central point in the network. This attribution could show that their influence caused other members to defect from the MPK. In addition, it can be seen that many members who defected from MPK locate in the network far from the node of Moon Jae-in (Figure 3 and 6).

Table 9: Ranges of Some Graph Metrics

Graph Metric	Degree	Betweenness	Closeness	Eigenvector	Clustering Coefficients
Range	2 – 68	0 – 236.1489	0.0029 – 0.0054	0.0003 – 0.0199	0 - 1

Table 9 shows ranges of some centrality metrics. The range of degree runs from 2 to 68. The range of values of the three centralities are as follows: Betweenness: 0 - 236.1489, Closeness: 0.0029 - 0.0054, and Eigenvector: 0.0003 – 0.0199. The range of clustering coefficients is 0 to 1. (Table 9)

Table 10: Values of Some Graph Metrics of Major Members

Name\Metrics	Degree	Betweenness	Closeness	Eigenvector	Clustering Coefficients
Ahn Chul-soo	34	43.413	0.005	0.012	0.899
Moon Jae-in	31	41.873	0.004	0.009	0.673
Chun Jung-bae	68	223.563	0.005	0.020	0.502
Kim Han-gil	8	4.285	0.004	0.001	0.571

As shown in Table 10, the number of degrees of Chun Jung-bae is 68; that is the highest number in the network. On the other hand, the degrees of Ahn Chul-soo and Moon Jae-in are 34 and 31, respectively. Among major players in the opposition parties, Chun Jung-bae has the highest values of graph metrics. There are some differences in centrality values between Ahn Chul-soo, Moon Jae-in, and Chun Jung-bae. While the betweenness centrality of Chun Jung-bae is 223.563, the betweenness centralities of Ahn Chul-soo and Moon Jae-in are 43.413 and 41.873, respectively. Also, while the eigenvector centralities of Ahn Chul-soo and Moon Jae-in are 0.012 and 0.009, respectively, the eigenvector centrality of Chun Jung-bae is 0.020. Based on these values, Chun Jung-bae could easily gain control over the processing of information and resources in the network. In addition, it can be seen that Chun Jung-bae connects with more important nodes in the network, based on the value of eigenvector centralities. However, the values of the clustering coefficients of Ahn Chul-soo and Moon Jae-in are higher than Chun Jung-bae's. In other words, these two nodes are more closely connected with their neighbor nodes rather than is Chun Jung-bae's. This means that the densities around these two nodes could be denser than other locations in the network.

Table 11: Graph Metrics of PP & MPK Groups

Graph Metric	Value (PP)	Value (MPK)
Graph Type	Undirected	Undirected
Vertices	21	106
Unique Edges	99	1175
Edges with Duplicates	0	0
Total Edges	99	1175
Maximum Geodesic Distance (Diameter)	4	4
Average Geodesic Distance	1.515	1.951
Graph Density	0.471	0.211

According to Table 11, the diameter, average geodesic distance, and graph density of the PP group are 4, 1.515, and 0.471, respectively. Even though the diameter is the same as the whole network, the average geodesic distance is reduced, and graph density is higher than the values of the whole network. In other words, connections between members of PP is higher than for members of the original group, and information and resources could be transferred faster in their new group than in the whole network. When it comes to graph metrics of MPK group, their average geodesic distance is higher than the value of PP group as well as the value of whole network. In addition, graph density of MPK group is lower than the value of PP group as well as the value of whole network. It means that connection between MPK members is lower than whole members and even PP members and information and resources could be transferred slower in their group than in PP group and whole network.

To sum up, the result of analyzing the network of the members of the opposition parties could provide fresh insight about the targeted political event that is about dividing the opposition party. Even though many people thought that the members who decided to

defect from the previous party had followed Ahn Chul-soo to form the new political party, they may have followed Chun Jung-bae as well, or their social positions based on school ties and local ties might have affect their decisions to defect. In other words, although many people thought that Ahn Chul-soo was the major actor in this political event, this analysis shows that Chun Jung-bae is a hub in the network. Apart from other variables, the network based on school-tie relationships and local-tie relationships shows that Chun Jung-bae could have enough power to control information and resources in their network. We might gather from this that Ahn used Chun because of his position in the network to secure enough members to be a negotiation party in the National Assembly. Also, based on the values of clustering coefficients, one could conclude that Chun tried to cooperate with Ahn to form a new party because his group did not have strong connections like Ahn's group had. The union power of Chun's group was not strong enough to cause its members' defection from their previous party.

Moreover, there are still other members between the members of PP in the network. Their locations are also as far from Moon Jae-in, who is the representative of MPK, as they are from other members of PP. Also, the connections of the remaining members of MPK seem to be enough to join the new political party. If the network could be continued, some of the remaining members located between PP members in the network might defect from their own political party. However, this political event happened just before the general election in South Korea, so the network would be changed into a new form based on the result of 20th General Election in April in 2016. In

the new network based on relationships between new members of the National Assembly, every characteristic could be changed, including the hubs and the values of centralities.

7. Conclusion

Social network analysis offers a new way to understand Korean politics. With the old methods, such as analyzing the roles of political leaders, it is not possible to fully understand the reason why they decided on their political actions. However, as shown by the present research, analyzing social networks of members of the National Assembly could provide new insights into some political events in South Korea.

As variables to conduct research analyzing Korean politics, using information about relationships, such as school ties and local ties of the members of the opposition parties, is useful to understand their political behavior, such as defection. In other words, using relationships could be a new method to analyze political behavior in South Korea even though some researchers in other fields already know that these variables are useful in understanding human behavior.

Although using two variables of relationships cannot explain each member's motivation to defect from their previously preferred party, the network in this paper could demonstrate that these variables do have some influence on decision-making based on the positions of individuals in the network. Moreover, graph metrics of the network may offer some reasons why some major members made the decisions they did about political coalition.

In the case of the cooperation between Ahn and Chun, some values of graph metrics could explain why they chose each other as partners to form a new party. As some experts mentioned after the cooperation (Hankyoreh Shinmun, Chosun Ilbo, and more, 2016), Ahn used Chun's political leverage on the Jeolla provinces, which is the

biggest area of political support for the opposition parties in South Korea. By uniting with Chun, Ahn could overcome a political crisis involving a fall in the approval rating for the People's Party from the Jeolla provinces. Ahn did not have a solid foundation of support from the Jeolla provinces because he did not originate from the region. On the other hand, Chun came from a city, Mokpo, in the Jeolla provinces, and he entered the political world through Kim Dae-jung, who is one of the icons of the Korean democracy movement and the Jeolla provinces. Thus, he gained a very strong foundation of support from the Jeolla provinces. At the same time, Chun also used Ahn's wide national popularity and the cohesive power of Ahn's political group to expand his political influence to a nationwide scale. By working with Ahn, Chun was able to overcome a political crisis that his group could still stay on at the level of local parties, not a national-level political party. His political backing was now based on the Jeolla provinces, and he had a strong relationship with the supporters of Kim Dae-jung and Roh Moo-hyun, who were previous presidents from the left-leaning party in South Korea. These features made him an icon of the left political party based in the Jeolla provinces, so his political group faced some pretty severe limits to becoming a nationwide political group. Their political decisions could be explained through some of the characteristics of social network analysis used in this paper, such as their positions and the values of clustering coefficients.

To make a more elaborate network in the future, other related variables can be added to represent relationships among members of the National Assembly: ties of local constituency, congressional committees, political positions in parties or in the National

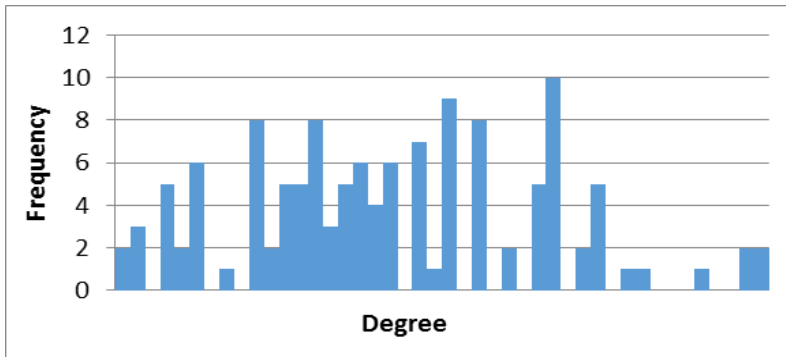
Assembly, popularity with the public, political faction, and number of reelections. Such variables could help to establish one's position in the congressional social network. In addition, weighted points could represent a person's political power in the network, while additional information could be used to understand which factors might strengthen or weaken ties among actors.

If the network covers the entire National Assembly, then could that network explain political events, such as party realignment based on aspirations to achieve political power? Lastly, adding information about voting on issues to the network could clarify relationships between members of the National Assembly in South Korea.

Appendix A

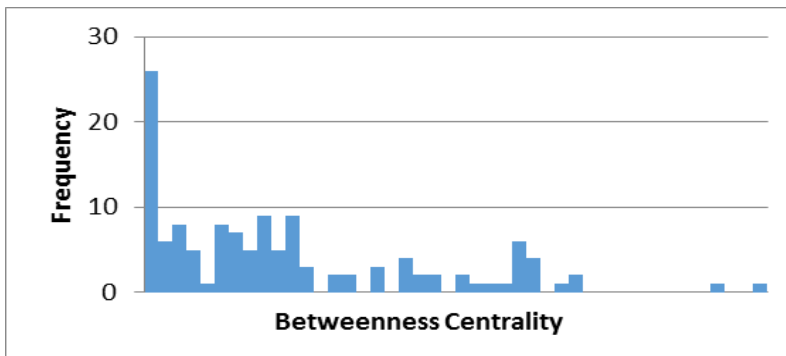
Centralities

Degrees of Members in the Network



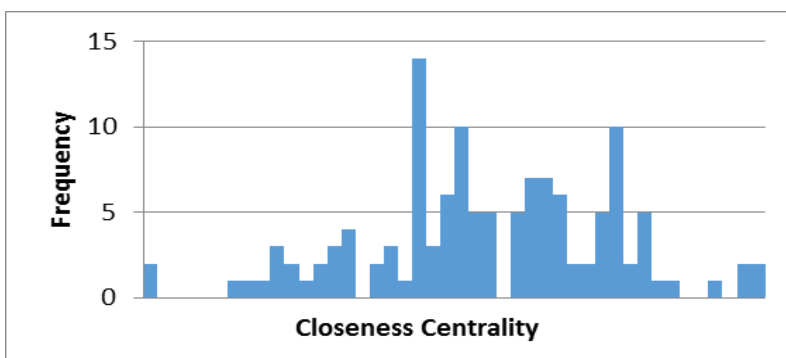
Minimum	0.000
Maximum	236.149
Average	54.567
Median	41.873

Betweenness Centralities of the Members in the Network



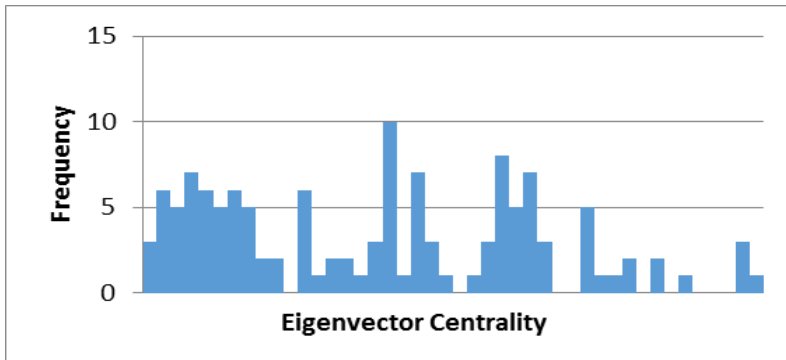
Minimum	0.000
Maximum	236.149
Average	54.567
Median	41.873

Closeness Centralities of the Members in the Network



Minimum	0.003
Maximum	0.005
Average	0.004
Median	0.004

Eigenvector Centralities of the Members in the Network



Minimum	0.000
Maximum	0.020
Average	0.008
Median	0.008

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