

Changes in Korean Core Discussion Networks from 1996 to 2011: *More Connected, Less Isolated**

KIM Eunbin

Abstract

This study explores how the global trend toward networked individualism has been amplified in the Korean context by investigating changes in core discussion networks over the last 15 years. Secondary data from two national surveys are compared in regard to network structure and demographic variation. Koreans were more socially connected in 2011 than in 1996: the proportion of socially isolated people has decreased from 12.0% to 3.5%; and the mean size of core networks has increased from 2.7 to 3.1. This change is evident among the younger generations. The expansion of networks is attributed to the increased number of non-kin alters rather than kin ones, such as family members and relatives. Network density has increased despite the decreased proportion of kin. The effects of gender, age, and education on network attributes are subtle, inconsistent, or diminished.

Keywords: Networked individualism, social connectedness, social isolation, core discussion network, communication network, social network, secondary analysis

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KIM Eunbin is a Ph.D. candidate at the Department of Communication, Seoul National University. E-mail: eunbin2@snu.ac.kr.

Introduction

Among our various layers of personal relationships, the core ones play an essential role in our lives. Firstly, more intimate and stronger ties can provide a broader range of social support in terms of both emotional and material aid (Wellman 1992). Secondly, as a significant source of normative pressures, these relationships affect the way we think and behave (Burt 1984; Christakis and Fowler 2009). Thirdly, core networks serve as important social capital that links us to actual or potential resources and benefits (Coleman 1988; Lin 1999).

Close interpersonal relationships can be defined and measured in many ways, but their results tend to be consistent (McPherson, Smith-Lovin, and Brashears 2006). Burt (1984) suggested a set of questions regarding core discussion networks for the General Social Survey (GSS) that were designed to gain a better understanding of strong-tie connections. Those network questions have been primarily used for the studies on intimate social networks since the 1985 GSS (Marsden 1987; Yee 2000; McPherson, Smith-Lovin, and Brashears 2006; Brashears 2011; Hampton, Sessions, and Her 2011; Boase and Ikeda 2012; Smith, McPherson, and Smith-Lovin 2014).

With the development of communication and transportation technologies over recent decades, many scholars predicted a significant change in networking behavior toward *networked individualism*. That is, people, who used to be bound to given social groups, would now actively establish their own social networks (Van Dijk 1999; Wellman 2002; Wittel 2001). As Korean society experiences a gradual shift in social values from collectivism toward a higher degree of individualism with this trend, the social networks of Koreans are changing in both range and composition (E. Kim 2013; Na and Cha 2010; Palantiri 2008; Yi 2000).

This study explores how this transformation is manifested in the Korean context by investigating changes in the core discussion networks of Koreans from 1996 to 2011. Many researchers have articulated the characteristics of networked individuals; however, due to the difficulties of obtaining such data, only a few studies have empirically proved this trend by tracking longitudinal data of Korean social networks (J. Kim 2013).

This is the first study to track long-term changes in Korean core discussion networks; it is expected to broaden the scope of network research by revealing how the global trend toward networked individualism is amplified in Korean society.

The Meaning of Core Discussion Networks

Interpersonal relationships are formed and maintained through communication. The quality of relationships affects, and is also influenced by, the content, frequency, and type of communication. Altman and Taylor's (1973) social penetration theory and the concept of self-disclosure show how communication is closely related to relationship development: people share a wider range of topics in more depth with intimate ties than with less intimate ones.

Core discussion networks, which consist of people with whom we share personally important matters, represent "an important set of close, routinely contacted people who make up [one's] immediate social circle" (McPherson, Smith-Lovin, and Brashears 2006, 356). These ties take place at the very core of the multiple layers of networks one can have.

Close interpersonal relationships are significant in respect to social support, social influence, and social capital. Firstly, in regard to social support, the quantity and quality of the aid provided by those we share intimate relationships with is usually greater than the aid provided by those with whom we share less intimate relationships (Fischer 1982; Wellman 1992; Wellman and Wortley 1990). While there are several dimensions of social support, largely divided into emotional and material aid, their effects have been mainly discussed in relation to mental well-being. Social support provided by interpersonal networks can buffer the negative effects of stress on mental health and increase levels of subjective well-being and happiness (Albrecht and Adelman 1984; Cohen and Wills 1985; Kwon et al. 2013; Shor, Roelfs, and Yogev 2013; Zhu et al. 2013; Zimet et al. 1998).

Secondly, core networks are an important source of normative pressure and influence the way people think and behave (Bond et al. 2012; Burt

1984). Network studies argue that socially proximate actors are likely to influence one another (Marsden and Friedkin 1993). From a psychological point of view, individuals tend to conform to others' beliefs or behaviors in order to maintain or develop meaningful relationships; this phenomenon of conformity occurs both unconsciously and deliberately (Cialdini and Goldstein 2004). A series of empirical studies by Christakis and Fowler (2009) demonstrated how emotion, health status, behavior, and others (e.g. happiness, obesity, smoking, and voting) are transferred between interconnected persons.

Thirdly, interpersonal networks are also significant in regard to social capital (Bourdieu 1986; Coleman 1988; Lin 1999). According to Bourdieu (1986, 249), network members can access the actual or potential resources of others belonging to the same network and possess "collectively-owned capital," and relationships are strategically produced and maintained to be useful and beneficial: the amount of an individual's social capital varies according to the size of available networks and to the aggregate of capital owned by the members of said networks. "Access to and use of social resources (resources imbedded in social networks) can lead to better socioeconomic statuses" (Lin 1999, 35). Core discussion networks can be a valuable investment and basis for securing social capital in this respect.

Surveys and Research on Core Discussion Networks

Survey questions regarding core discussion networks were first included in the 1985 GSS. On the basis of a research tradition established by Paul Lazarsfeld, Burt (1984) devised a set of network questions to better understand the interpersonal environments of respondents. The questions cover the number of confidants with whom a respondent discusses important matters, the intensity of relationships among confidants, and the demographic backgrounds (such as gender, age, education, race, and religion) of respondents and confidants.

Using the 1985 GSS data, Marsden (1987) analyzed core discussion networks of Americans in two aspects: network characteristics (such as size,

density, and diversity) and demographic variations in the results. The same network questions were asked in the 2004 GSS. McPherson, Smith-Lovin, and Brashears (2006), applying an analytical method originally utilized by Marsden (1987), compared the 2004 GSS data with the 1985 data to assess how the core networks of Americans changed over two decades: it was found that the average size of networks among Americans decreased while the number of people who had no confidants almost tripled. They assumed that the use of new technology, such as the Internet and mobile phones, was one possible reason for increased social isolation in America (McPherson, Smith-Lovin, and Brashears 2006).

Their findings, however, have been seriously challenged by other studies. Fischer (2009) raised the possibility of internal anomalies in the 2004 GSS results and argued that the core discussion networks of Americans have not shrunk. Paik and Sanchagrin (2013) also argued the decrease in American core discussion networks to be an artifact caused by interviewer effects. Hampton, Sessions, and Her (2011) replicated the GSS network questions in their 2008 survey and compared the 1985, 2004, and 2008 survey data. Although their results indicate that the size of core discussion networks has, indeed, declined, they suggest that social isolation has not increased as significantly as McPherson, Smith-Lovin, and Brashears (2006) reported. Moreover, Hampton, Sessions, and Her (2011) suggest that Internet and mobile phone usage is positively, rather than negatively, related to network size. Similarly, Wang and Wellman (2010) also found a positive relationship between Internet use and the number of friends reported by respondents.

Instead of studying network trends within a single country, some researchers focused on cultural differences. Yee (2000), for instance, compared the core discussion networks of Koreans with those of Americans in accordance with the analytic frame of Marsden (1987) and concluded that Koreans have larger and more homogeneous networks than Americans. What needs to be addressed, however, is the substantial time gap between the two datasets used in Yee's study: Korean data was from the 1998 Survey on the Consciousness and Everyday Life of Contemporary Koreans (SCEK) and American data was from the 1985 GSS. More recently, Boase and

Ikeda (2012) studied how Japanese core discussion networks differ from American ones in aspects of collectivism and individualism. Their findings revealed that Japanese have larger and more enduring networks than Americans, yet other assumptions regarding collectivistic attributes of Japanese networks were not supported.

As described above, questions on core discussion networks from the 1985 GSS have been replicated in many other nationally representative surveys, and studies using secondary data of such surveys have been consistently conducted. Those studies have proved that the characteristics of core discussion networks may vary depending on time or culture. However, the existing studies on longitudinal changes in core networks have been limited to Western countries and have not yet been conducted in the Korean context. This study is the first to examine how the core discussion networks of Koreans have changed over the last decades.

Traditional Korean Networks

The patterns of interpersonal relationships differ across cultures. Macroscopically, cultures are classified oppositionally according to collectivism or individualism (Triandis 1995), high- or low-context cultures (Hall 1976), and those that hold an interdependent or independent self-construal (Markus and Kitayama 1991). Korean culture, as well as other East-Asian cultures, has the former attributes—it is a collectivist, high-context culture, with an interdependent view of the self. Contrarily, Western cultures have the latter attributes—they are individualistic, low-context cultures, with an independent view of the self.

Rather than forming a voluntary group based on individual needs, Koreans tend to establish groups whose membership is predetermined based on kinship, regionalism, and school ties. Through these associations, Koreans not only strengthen psychological bonds with each other, but also pursue advancement in their career (Cheong 1996). An example of a comparative analysis between Western countries and Korea in terms of social relationships shows that Americans, for instance, generally do not hold a

high expectation of social support from relatives unless they are close family members (Wellman and Wortley 1990); Koreans, however, emphasize kinship as they move closer to their core relationships, and thus show *the strength of strong ties* (S. Kim 1992). According to an analysis of the type of groups to which middle-aged males belong, the typical Korean and American is, on average, a part of five different social groups. Despite this similarity, the mean number of involuntary groups (groups formed by relatives, alumni, or people from the same hometown) was 2.1 for Koreans and 0.3 for Americans (Yi 1992).

Koreans, on the first layer, establish friendship based on blood ties, regionalism, and school relations, and expand their human networks to the second and third layers based on the people they know from the first layer rather than forming a network with a stranger with whom they share no such connections (H. Kim 1995). Therefore, Koreans are more likely to enjoy a much higher density in their social networks.

Korean society, however, has gone through major changes during the past decades; a transformation in values from collectivism to individualism has been pointed out as a notable change in South Korea (Na and Cha 2010; Yi 2000). It is assumed that Korean core discussion networks have also changed along with this trend.

Changes in Networking Behaviors: Toward Networked Individualism

A significant change in networking behavior, the phenomenon called *networked individualism*, has been observed since the beginning of the 21st century (Wellman 2002). Networked individualism means changes in the formation of social networks from group-oriented to individualized networks (Wellman 2001). People used to belong to solidarity communities that comprised family members, or long-lasting ties based on a shared history within a short distance. The combination of accelerated urbanization with the enhancement of global transportation and communication technologies now enables individuals to establish their own networks.

Social networks are regarded as social capital, and people actively con-

nect themselves with others, forming more open networks rather than being bound to closed social groups (Wittel 2001). Traditional communities are dissolving, but other kinds of relationships are being built in the context of individualized networks.

This trend is globally salient, particularly with the rapid development and widespread use of social media. People build and maintain relationships through various media, which have become much more portable and ubiquitous. The boundary between mass and interpersonal media has blurred, and the converged media now pervade our lives (Livingstone 2009).

Early studies on the new media's effects on our social relationships assumed that media technology itself has considerable power to directly alter the way people connect to each other (Walther 2011). It turned out, however, that new media play their own role in the growing trend toward networked individualism, rather than simply creating sudden effects on our social relationships. New media neither destroy our existing relationships nor transform them into cyber relationships all at once; rather, they gradually strengthen the individualization of networks (Boase and Wellman 2006). The new media help to strengthen and make intimate ties more robust, as well as provide weak ties or previously unconnected ties with opportunities to build and develop relationships (Haythornthwaite 2002).

The rise of networked individualism has been amplified in Korean society, which has gone through major social changes since the late 1990s, including financial restoration from the IMF crisis, the growth of mass culture, the high level of urbanization, the spread of online communities and personal media, and so forth. During this turbulent time, Koreans started to question the existing social systems and hierarchical relationships among individuals, groups, and communities and are now becoming networked individuals (E. Kim 2013). Koreans' collective identity (e.g. nationalism or a shared identity as the 386 generation) was very strong among the older generation, but that has been weakening as individuals increasingly value their personal identities and have voluntarily formed small groups to which they are emotionally attached (Palantiri 2008, 28–29).

Such changes can affect the composition of core discussion networks. It is assumed that Korean confidant networks have become more open and

have expanded to include not only given ties but also various kinds of social relationships that each individual has built and sustained through their own networking activities.

Research Questions

Core discussion networks represent interpersonal communication networks that are essential in terms of social support, social influence, and social capital. This study asks how the core discussion networks of Koreans have changed in regard to social connectedness and demographic variation.

Traits of core discussion networks, such as size, density, and diversity, indicate how people are socially connected. Network size (the number of confidants) is linked to the issue of social isolation. Socially isolated people are defined as those who have no one with whom to discuss important matters (McPherson, Smith-Lovin, and Brashears 2006). They are likely to receive less social support for well-being, to not have a reference group to be influenced by, and to possess less or a weaker basis for securing social capital.

It is also important to look at a network's composition in order to investigate how networked individualism manifests in the Korean context: how many confidants are family members or relatives? How densely interconnected are network ties? What level of diversity is present among one's confidants in terms of their gender, age, and education?

- RQ1: How have the attributes of Korean core discussion networks (size, density, and diversity) changed from 1996 to 2011?

Since core discussion networks serve as important social capital it follows that demographic variations within the network, or a lack thereof, may affect social inequality. Differences in network traits among demographic subgroups could indicate a gap in social capital. It is, therefore, necessary to examine whether the core discussion networks of less advantaged groups, such as women, the elderly, and people with lower levels of educa-

tion, are different from those of more advantaged groups, such as men, the young, and people with higher levels of education. Many studies found that more educated people have significantly larger and more diverse core discussion networks, while the effects of gender and age were found to be partial and relatively minor (Marsden 1987; McPherson, Smith-Lovin, and Brashears 2006; Yee 2000).

- RQ2: How have the effects of demographic attributes (gender, age, and education) on the attributes of Korean core discussion networks (size, density, and diversity) changed from 1996 to 2011?

Methods

Data

A secondary analysis was conducted using data from two nationally representative surveys: the 1996 Survey on the Consciousness and Values in Transitional Society (SCV) and the 2011 Korean General Social Survey (KGSS). The Institute for Social Development and Policy Research at Seoul National University conducted the former and the Social Research Center at Sungkyunkwan University conducted the latter (S. Kim 2011; Lim 1996).

To compare data from the two different surveys, it is necessary to first compare the methodologies and samples of the surveys because a comparison would only be valid if the survey samples were similarly representative. Both the 1996 SCV and 2011 KGSS surveys selected respondents from the nationwide adult population using a multistage stratified cluster sampling method and a multistage area probability sampling method, respectively.¹ Cell weighting is used in order to make the samples representative of the total population for each corresponding year. Each sample is weighted to match the year's population's demographic parameters, includ-

1. The 1996 SCV limited the age range of its respondents from 20 to 59 years old, while the 2011 KGSS had no upper limit and included people older than 18 years old. This study only included respondents between 20 and 59 years old from both sets of survey data.

ing gender, age, and education.²

Both surveys were conducted by trained interviewers and adopted the same network questions from the GSS. Although the Korean wording used in each survey was slightly varied, both surveys began with the following sentence:

Looking back over the last one year, who are the people with whom you discussed matters important to you?³

Respondents were then asked to list the first names or initials of up to five discussion partners and answer questions regarding network range and composition including questions about demographic information such as the gender, age, and education of each alter, the type and period of the respondent's relationship with each alter, and closeness among alters.

Measures

This study adopted the same measures as Marsden's 1987 study (the first of its kind) on core discussion networks using GSS data. Network attributes include size, density, and diversity, and demographic attributes include gender, age, and education (years of schooling).

The size attribute refers to the number of alters in an individual's core discussion network, or people with whom the respondent discussed important matters. Among discussion partners, kin alters are distinguished from non-kin alters. Kin alters include family members and relatives, while non-kin alters include coworkers, alumni, neighbors, friends, or any other types of relationships.

The density attribute refers to how tightly a network is connected. According to Marsden (1987, 124), density is related to the availability of social support and the strength of normative pressures toward conformity.

2. Demographic information was obtained from the 1995 and 2010 Korean Census for each respective year.

3. To be more precise, the wording of the 2011 KGSS question is, "During the past year, who did you talk to when you had some important matters?"

In the survey data, it is coded 1 if two alters have a close relationship with each other and 0 otherwise. Density is calculated as the proportion of actual ties among all possible ties.

The diversity, or heterogeneity, attribute measures variation among alters a respondent can contact in terms of their gender, age, and education. People with highly diverse networks are advantaged because they are more likely to reach different sources of information (Marsden 1987). Diversity is measured using the index of qualitative variation (IQV) for alters' gender, and the standard deviation for alters' age and education.⁴ Both density and diversity, by their definitions, can only be measured for respondents who have at least two confidants.

Possibilities of Bias

This study analyzes survey data obtained from the same core network questions over a span of time while ensuring the samples are representative of the total population. Nonetheless, it is necessary to examine any potential bias to assure the validity of comparing the two datasets, the 1996 SCV and 2011 KGSS.

One such possibility is the effect of fatigue on question answers due the varying order of the 1996 and 2011 questionnaires (McPherson, Smith-Lovin, and Brashears 2006). The network module appeared at the end of the 1996 SCV questionnaire while it was placed in the middle of the 2011 number KGSS questionnaire. Respondents could have been more tired and, as such, reported a smaller of confidants in the 1996 survey. The first question of network items was numbered 68 out of 76 total questions in the 1996 SCV, and 94 out of 117 in the 2011 KGSS. Thus, the absolute number of questions answered before the network module was larger in 2011. It is unlikely that the difference in respondents' tiredness affected their question answers strongly enough to change the results; however, it is

4. IQV is calculated by the following formula: $IQV = (k/(k-1))(1 - \sum_{i=1}^k P_i^2)$, where k represents the number of categories, and P_i represents the proportion of cases in the i th category.

still possible that respondents answered in a less trustworthy manner hoping to finish the survey as quickly as possible as they got nearer to the end.

To solve this problem, a further analysis is conducted by controlling the cooperativeness and reliability of respondents. The cooperativeness of respondents affects the number of discussion partners they report. According to McPherson, Smith-Lovin, and Brashears (2006), a high level of cooperativeness can be related to a larger size of core discussion networks. Thus, the results are further compared to minimize bias, after controlling for respondents' cooperativeness and reliability.

Results

Changes in Social Connectedness

RQ1 asks how attributes—including size, density, and diversity—of core discussion networks have changed over the last 15 years in South Korea. Table 1 presents the changes in the size of core discussion networks from the year 1996 to 2011. The number of discussion partners in Koreans' interpersonal networks has increased, on average, from 2.7 ($SD=1.8$) to 3.1 ($SD=1.6$). In particular, the proportion of people with no confidants has decreased by more than one third (from 12.0% to 3.5%), and that of people with five or more confidants has increased (from 27.4% to 34.6%) (Fig. 1).⁵

5. The 1996 SCV measured cooperativeness and reliability of respondents by interviewers' ratings of high, medium, and low. If I only include the 1996 respondents rated high or medium in both measures ($n=1,344$), the mean size of core discussion networks is 2.8 ($SD=1.7$). This is slightly larger than the original result of the 1996 data ($N=1,579$)—a mean size of 2.7 ($SD=1.8$)—but, importantly, it is still smaller than the result of the 2011 data that measured a mean size of 3.1 ($SD=1.6$). Additionally, the proportion of socially isolated people is 9.6% in the more cooperative and reliable sample of the 1996 survey, which is lower than the original 12.0% result but still higher than the 3.5% result from the 2011 data. Likewise, the proportion of people who reported five alters, the maximum number asked by the question, is 28.9% in the more cooperative and reliable sample of the 1996 survey. This marks an increase from the original result of 27.4% but is still lower than the 34.6% result from the 2011 data.

Table 1. Size of Koreans' Core Discussion Networks, 1996 and 2011

Size	Total network		Kin network		Non-kin network	
	1996	2011	1996	2011	1996	2011
0	12.0%	3.5%	32.3%	35.9%	37.2%	24.2%
1	19.6%	17.9%	30.5%	28.9%	23.3%	24.3%
2	17.6%	19.3%	21.5%	18.5%	17.0%	20.3%
3	16.9%	17.8%	8.8%	10.9%	12.6%	13.1%
4	6.7%	6.8%	4.2%	4.1%	5.8%	8.3%
5+	27.4%	34.6%	2.7%	1.7%	4.0%	9.9%
Mean	2.69	3.11	1.30	1.24	1.38	1.87
Mode	5.00	5.00	0.00	0.00	0.00	1.00
SD	1.76	1.63	1.27	1.26	1.44	1.60

Note: N (1996)=1,579; N (2011)=1,039.

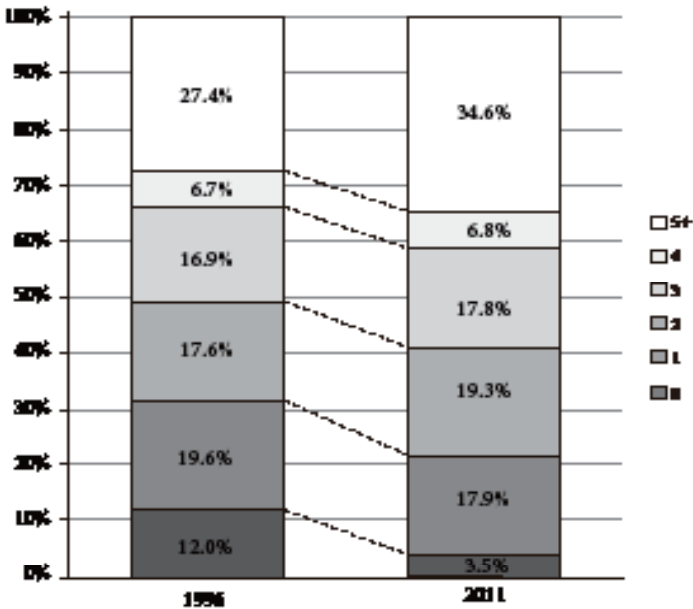


Figure 1. Size of Koreans' core discussion networks, 1996 and 2011

The expansion of core discussion networks seems to have occurred in non-kin alters rather than kin alters. While there is a slight decrease in the number of kin, the number of non-kin has increased from 1.4 ($SD=1.4$) to 1.9 ($SD=1.6$). The modal number of non-kin has also changed from zero in 1996 to one in 2011, and the proportion of people with zero non-kin alters in their networks has decreased (from 37.2% to 24.2%).

Figure 2 shows in detail the changes in the composition of core discussion networks from 1996 to 2011. Among the total of 4,342 ties with 1,579 valid respondents, nearly half (47.3%) of the network ties were family members or relatives in 1996. The proportion of kin ties decreased to 39.5% in 2011 among the total of 3,256 ties with 1,039 valid respondents. The proportion of school ties has also decreased from 23.9% to 20.3%, while work

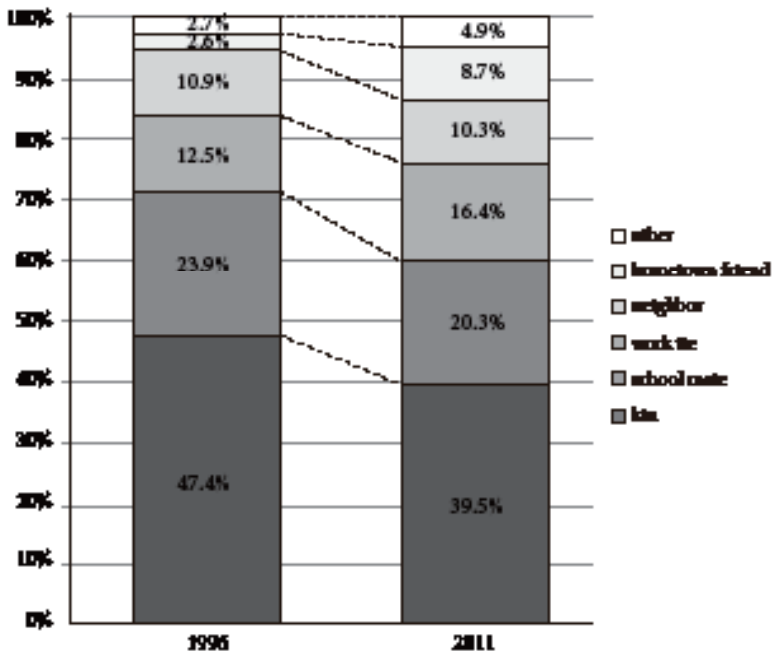


Figure 2. Composition of Koreans' core discussion networks, 1996 and 2011

ties, hometown friends, and other kinds of confidants have increased from 12.5% to 16.4%, from 2.6% to 8.7%, and 2.7% to 4.9%, respectively. The proportion of neighbor ties has remained relatively the same. Overall, the imbalance in the proportion of relationship types has been reduced.

Table 2 shows the changes in the density and diversity of core discussion networks from the year 1996 to 2011. The results demonstrate that Koreans had more densely knitted core discussion networks in 2011 than they had in 1996: the 2011 mean density of .59 ($SD=.38$) is slightly raised when compared with the mean density of .55 ($SD=.39$) from 1996. The difference between the mean densities may be minor but it is more significant than it seems; this is because of the positive relation between diversity and kin proportion: family members and relatives tend to have highly interconnected relationships. The density of Koreans' core networks has increased even though the kin proportion has decreased. When kin proportion is controlled in the regression analysis described later, the increase is significant (Table 4). Additionally, the proportion of people whose network density is less than .25 has decreased from 29.2% to 22.4%, while the proportion of people whose network density is larger than .74 has increased from 38.0% to 41.4%.

The diversity measures of core discussion networks have gone through only subtle changes. There was a slight, almost imperceptible, increase in gender diversity from .57 ($SD=.42$) to .59 ($SD=.41$) on average. The decrease in age diversity, from the mean of 6.9 ($SD=5.6$) to 6.1 ($SD=5.2$), is related to the reduced kin proportion: family members and relatives are more likely to cross generational lines than friends are, so kin proportion is positively related to age diversity. When kin proportion is controlled in the regression analysis described later, there is no significant decrease in age diversity (Table 4). The mean measure of education diversity among alters has declined from 1.9 ($SD=1.7$) to 1.5 ($SD=1.3$); that said, this seems to be a reflection of national changes in the population's educational diversity, which has also decreased from 3.2 to 2.7 over the same period.

Table 2. Density and Diversity of Koreans' Core Discussion Networks, 1996 and 2011

	1996 (N=1,081)	2011 (N=817)
Density		
<.25	29.2%	22.4%
.25-.49	18.6%	21.1%
.50-.74	14.2%	15.1%
>.74	38.0%	41.4%
Mean	.55	.59
SD	.39	.38
Gender diversity		
0	32.7%	31.0%
.01-.90	39.2%	36.8%
>.90	28.0%	32.2%
Mean	.57	.59
SD	.42	.41
Population gender diversity	1.00	1.00
Age diversity		
<5	48.7%	55.4%
5-<10	16.9%	13.5%
10-<15	25.3%	26.8%
>15	9.1%	4.4%
Mean	6.93	6.13
SD	5.62	5.24
Population age diversity	10.63	10.70
Education diversity		
0-1	33.6%	43.1%
>1-2.5	36.6%	36.5%
>2.5	29.8%	20.4%
Mean	1.89	1.51
SD	1.66	1.30
Population education diversity	3.24	2.69

Note: Both density and diversity can only be measured for networks larger than 1. Thus, the sample included 1,081 (68.5%) among the total of 1,579 valid respondents in 1996 and 817 (78.6%) among the total of 1,039 valid respondents in 2011.

Changes in Demographic Variation

RQ2 asks how the effects of demographic attributes (including gender, age, and education) on the attributes (including size, density, and diversity) of Korean core discussion networks have changed from 1996 to 2011. The results are shown in Table 3 and Table 4.

Table 3. Differences by Gender, Age, and Education in Network Size and Kin Proportion

	Size			Kin proportion		
	1996	2011	Pooled	1996	2011	Pooled
Female	.034 (.178)	.097** (.002)	.057** (.003)	.101*** (.000)	.099** (.002)	.099*** (.000)
Age	-.045 (.116)	-.091** (.009)	-.062** (.005)	.228*** (.000)	.124*** (.000)	.184*** (.000)
Education	.203*** (.000)	.163*** (.000)	.195*** (.000)	-.011 (.714)	-.041 (.259)	-.026 (.275)
2011			.077*** (.000)			-.145*** (.000)
R ²	.049*** (.000)	.051*** (.000)	.062*** (.000)	.064*** (.000)	.030*** (.000)	.062*** (.000)
N	1,579	1,039	2,618	1,389	1,002	2,392

Note: The values are standardized OLS regression coefficients (significance in parentheses). Kin proportion can be measured only for networks larger than 0.

*<0.05 **<0.01 ***<0.001

Network size tends to be larger for female, younger, and highly educated respondents. While the other two variables have inconsistent and relatively less significant effects, education is the strongest indicator of network size. Nevertheless, the impact of education has diminished; this has been related to the fact that education levels have become more equalized among the total South Korean population.

Kin proportion seems to be influenced by gender and age, while edu-

Table 4. Differences by Gender, Age, and Education in Network Density and Diversity

	Density			Gender diversity			Age diversity			Education diversity		
	1996	2011	Pooled	1996	2011	Pooled	1996	2011	Pooled	1996	2011	Pooled
Female	-.087** (.005)	-.044 (.181)	-.066** (.003)	.018 (.530)	.057 (.077)	.035 (.011)	.044 (.121)	.009 (.763)	.029 (.161)	.012 (.702)	-.001 (.978)	.006 (.798)
Age	.047 (.162)	.087* (.018)	.060* (.018)	.022 (.494)	-.047 (.183)	-.012 (.605)	-.053 (.085)	-.077* (.025)	-.065** (.005)	.077* (.021)	.036 (.345)	.061* (.015)
Edu- cation	-.175*** (.000)	-.068 (.067)	-.139*** (.000)	.047 (.139)	.152*** (.000)	.089*** (.000)	0.62* (.044)	.061 (.077)	.062** (.009)	.006 (.847)	.017 (.645)	.010 (.710)
Kin propor- tion	.178*** (.000)	.360*** (.000)	.256*** (.000)	.410*** (.000)	.442*** (.000)	.426*** (.000)	.475*** (.000)	.530*** (.000)	.499*** (.000)	.302*** (.000)	.326*** (.000)	.309*** (.000)
2011			.113*** (.000)			.047* (.039)			-.023 (.288)			-.102*** (.000)
R ²	.075*** (.000)	.154*** (.000)	.103*** (.000)	.169*** (.000)	.209*** (.000)	.181*** (.000)	.222*** (.000)	.273*** (.000)	.247*** (.000)	.104*** (.000)	.105*** (.000)	.117*** (.000)
N	1,081	817	1,898	1,081	817	1,898	1,072	814	1,885	1,056	813	1,869

Note: The values are standardized OLS regression coefficients (significance in parentheses). Both density and diversity can be measured only for networks larger than 1.

* <0.05 ** <0.01 *** <0.001

cation has no significant effect. Female and older respondents are likely to have a higher proportion of family members or relatives in their core discussion networks. The effects of both variables, especially in the case of age, have decreased.

In the analyses of the effects of demographic attributes on network density and diversity, kin proportion is controlled since it is positively related to both of them. Family members and relatives are usually well aware of each other and more densely interconnected which results in higher density ratings. Additionally, the fact that kin alters are more likely to vary in terms of their gender (e.g. spouse), age (e.g. parents), and education (e.g. grandparents) compared to other close friends has led to higher diversity ratings.

Among three demographic variables, education is the strongest indicator of both density and diversity. In the case of density, more highly educated respondents had less dense networks in 1996, but the effects of edu-

cation appear to be insignificant in 2011. Education, on the other hand, was not a significant indicator of network density in 1996, but appears to have become one in 2011: higher education is also related to more diverse networks in terms of the alters' genders. Overall, differences in network density and diversity were not significant among subgroups divided by demographic variables in both 1996 and 2011.

Cohort Trends

To find out more about where the increase in the size of core discussion networks occurred, a cohort analysis was conducted. Cohort analysis requires a series of data with representative samples for a long period of time. Although three-way cohort analysis using a regression model, suggested by Mason, Mason, Winsborough, and Poole (1973), is desirable for rigorous analysis, this study adopts simple cross-tab analysis to present a sketch of cohort trends because its datasets are limited to only two points of time, 1996 and 2011.

Table 5 represents the means of network size according to cohort and age, which are respectively grouped into five-year categories. Among six birth-cohort groups, the size of core discussion networks is relatively constant for the four oldest groups born before 1967, while it has increased for the two youngest groups born in or after 1967 (Fig. 3).

For all eight age groups, network size has increased partly because of cohort effects and partly because of period effects (Fig. 4). As old cohorts are replaced by younger ones, the mean size of networks has increased. Additionally, cohorts born between 1967–1971, and 1972–1976 had larger networks in 2011 than in 1996. The new cohort groups born after 1976 are included in the 2011 data, and their mean network sizes are the largest among all groups. In sum, an overall expansion in Koreans' core discussion was observed among respondents born between 1967 and 1991, aged between 20 and 44, in 2011.

Table 5. Network Size Means by Cohort and Age Group: 1996 SCV and 2011 KGSS Data

Cohort (year of birth)	Age								Gap	
	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59		60-64
1937-1941								1.92		
1942-1946							2.34			
1947-1951						2.40			2.37	-0.03
1952-1956					2.81			2.71		-0.10
1957-1961				2.62			2.65			+0.03
1962-1966			2.88			2.82				-0.06
1967-1971		2.83			3.21					+0.38
1972-1976	2.95			3.22						+0.27
1977-1981			3.21							
1982-1986		3.35								
1987-1991	3.63									
Gap	+0.68	+0.52	+0.33	+0.60	+0.40	+0.42	+0.31	+0.79		

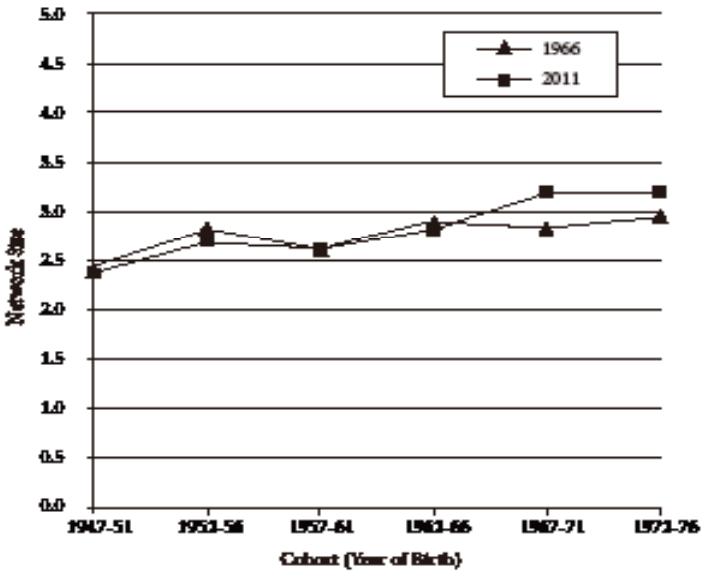


Figure 3. Cohort trends in network size within survey years

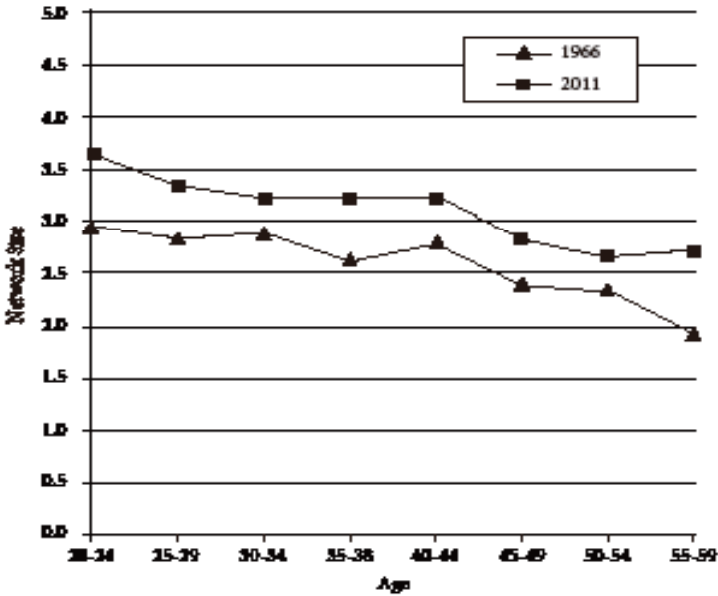


Figure 4. Age trends in network size within survey years

Discussion

This study examines longitudinal changes in the core discussion networks of Koreans using secondary datasets from the 1996 SCV and 2011 KGSS. RQ1 asks how network attributes (such as size, density, and diversity) have changed. RQ2 asks how the effects of demographic variables (including gender, age, and education) on the network attributes have changed.

The results of this study suggest the following: firstly, social isolation has decreased in South Korea over the last 15 years. Korean respondents are more socially connected: their size of core discussion networks has increased, on average, from 2.7 ($SD=1.8$) to 3.1 ($SD=1.6$), and the proportion of socially isolated people has decreased from 12.0% to 3.5%. This change is assumed to have occurred among younger generations who were in their twenties to early forties in 2011.

Secondly, Koreans now have more open relationships beyond their

family circle. Core discussion networks in 2011 comprised considerably fewer family members and relatives and more non-kin alters than those in 1996. The imbalance in the proportion of relationship types has mitigated accordingly. Kin alters and school ties represented the two largest portions in 1996 networks, but both decreased their percentage in 2011 networks. Instead, other types of relationships (work ties, hometown friends, and others) that represented a smaller proportion in 1996 networks increased in 2011.

Thirdly, the core discussion networks of Koreans have become more tightly knit. In general, kin proportion has been positively related to network density. In the case of Koreans' networks, however, density has increased despite a decreased proportion of kin alters.

Fourthly, differences in network attributes are not great among sub-groups divided by demographic variables. The impacts of gender, age, and education are either inconsistent, subtle, or have diminished altogether. That said, education is the strongest indicator among them.

The aforementioned aspects reflect how the growing trend of networked individualism is related to the changes in Korean core discussion networks. Korean society was traditionally based on a collectivist culture, but social values have changed to a greater degree of individualism during the past decade (Na and Cha 2010). Networked individualism is a global phenomenon, whereby people are relying less on traditional social groups comprising kinship, school ties, and regionalism and are forming voluntary groups of their own in a wider scope (Wellman 2002).

Along with this trend, Koreans' social relationships have expanded and become more open. One of the most notable changes is that there are now fewer family members, relatives, and school connections and more various types of ties in Korean core discussion networks. There are, however, some unique aspects that were not predicted by the existing discussions on networked individualism. Networked individuals are supposed to have more loosely connected networks that are formed based on each individual's own needs, yet Korean core discussion networks have shown the opposite: that is, Koreans are more densely connected than they were 15 years ago, despite the decrease in the number of kin alters. Additionally,

the proportion of hometown friends has increased.

One possible reason is that core discussion networks mostly represent strong tie connections.⁶ The phenomenon of networked individualism has been generally discussed in regard to a broader range of social networks that include both strong and weak ties, which might bring about different changes according to the closeness of relationships. That is, the development of communication technologies enables people to not only manage more flexible and temporal weak-tie relationships on demand but also to maintain constant connectivity with each other and to strengthen their existing strong ties (Boase and Wellman 2006; Haythornthwaite 2002; Licoppe and Smoreda 2006; Wittel 2001). The use of social media, in particular, helps people to find and reconnect with hometown friends or childhood friends and prevents them from drifting apart by making it easy to keep in touch and share details of their daily lives (Im and Kim 2011).

In this respect, the changes in Korean core discussion networks reflect networked individualism specifically in regard to intimate social circles, which have both expanded to include various types of ties and have strengthened their connections.

Based on the results of this study, future research is required to investigate the following subjects: Firstly, a broader range of social networks, including those with weak ties, can be examined to further our under-

6. A recent study by Small (2013) suggested that the core discussion networks surveyed with the GSS name generator are composed of weak ties, rather than strong ties or close relationships. He argued that 45% of American core discussion networks are unimportant alters to whom respondents relate their personal matters “without feeling emotionally attached,” because the alters are either knowledgeable or readily available (Small 2013, 470). However, that seems not to be the case in Korean core discussion networks. Korean respondents are assumed to have rightly named their intimate and strong ties for the GSS questions, as demonstrated by many other studies on core discussion networks. The reason for this assumption is that when the 2011 KGSS asked how long they have known the alters in their core discussion networks, Korean respondents answered that the duration of their relationships was 18 years on average. Only 1% answered less than one year, while 93% said more than three years (85% said more than five years and 70% said more than ten years). The 1996 SCV did not include the same question about relationship duration, but it specifically asked respondents to name up to five close associates in order of importance.

standing of changes accompanying networked individualism in Korea. It is very difficult to obtain data for tracking changes in the entire network but it will be highly worthwhile to study this, if possible. The concept of networked individualism has been theoretically articulated but not often empirically studied. This study showed the actual changes that occurred in the strong-tie networks of Koreans regarding networked individualism, and future research can expand its range to include weak-tie networks.

Secondly, a comparative study among various cultures is desirable to investigate the differences in social networks. Interpersonal networks are affected by cultural background, but globalization and *mediatization* might reduce the differences. Still, even the global trend of networked individualism develops differently according to culture. The size of core discussion networks, for instance, has expanded among Koreans but decreased among Americans, although the results of American studies are still being debated, as mentioned earlier (Hampton, Sessions, and Her 2011; McPherson, Smith-Lovin, and Brashears 2006; Paik and Sanchagrin 2013). It seems necessary to determine further how and why the trend varies among countries.

Thirdly, the effects of expanded networks should be a focus of future study. Core discussion networks are regarded as related to social support and mental wellness. As Korean networks are expanding, one can ask whether or not Koreans are becoming happier and less lonely. Technically, they are now less isolated in terms of the existence of confidants, and they have larger core networks. However, this does not necessarily mean that Koreans now feel emotionally better and more supported than they did 15 years ago. Some studies argue that what matters is the level of intimacy rather than the number of core ties (Binder, Roberts, and Sutcliffe 2012). It is worth researching the links between the expanded networks of Koreans and possible changes in their levels of happiness or other emotional indicators.

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