

# Formal and Informal Networks' Characteristics and their Effect in Terms of Gender

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## Abstract

The purpose of this study is to identify formal and informal networks among male and female employees in different organizations in order to examine their characteristics and related gender differences. Moreover, this study aims to analyze the impact of these networks on both the career development of female workers and on organizational outcomes. For these purposes, a review of previous research, an egocentric social network analysis via an online survey, and a whole-network analysis of three enterprises, including interviews with managers and employees, were conducted. Key findings are as follows: Both male and female workers showed sex homophily, which is characterized by networking with people of the same gender. Networks were significantly associated with career satisfaction and career outlook among both male and female workers, but only associated with position among female workers. Informal networks showed higher density than did formal networks, and network connection was highly related with gender and department. In addition, gender proportion was related to network composition, which is associated with organizational outcome. Based on these findings, improving awareness of networking at the individual level, providing networking opportunities and shifting the manner of thinking about networks as well as diagnosing organization at the corporate level, establishing mentoring and network programs and supporting women's councils, promoting online network activities at the governmental level, and the reation of social and cultural environments that promote networking are all suggested.

**Key Words:** Formal and informal networks, gender differences, network characteristics, network analysis, organizational outcomes

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## Introduction

As society becomes increasingly complex and science and technology continue to make rapid advances, networks have become an integral part of people's lives. This is also the case in the labor market, where networks greatly affect not only the promotion and turnover of individual employees, but also marketing strategies and corporate contracts. The concept and methodology of networks have been explored in various contexts, including in relation to traditional factors such as social capital, trust, norms, and culture, as well as at the individual, organizational, corporate, community and national levels. In particular, at the organizational level there is increasing interest in the study of how personal networks impact individual performance, such as in terms of promotion and pay, as well as how they affect corporate performance, such as in terms of decision-making efficiency, productivity, and turnover. However, although a more concrete and systematic approach is required in order to apply networks as a source of social capital at the policy level, there has been only limited empirical research on the subject in South Korea.

This study aims to identify formal and informal networks employed by male and female wage workers in different organizations; to better understand gender differences, related characteristics, and their possible causes; and to analyze the influence of these networks on both the career development of female workers and on organizational outcomes. It also aims to provide baseline data on the use by women of their formal and informal networks in the workplace, and thereby to contribute to more fully recognizing women as human resources and advancing their roles in the workplace while enhancing corporate performance.

As women progress on their career paths, how they form and utilize social networks becomes especially important for their career development in a male-dominated work culture. This study attempts to understand how men's and women's networks differ in composition and to explore ways to advance women's opportunities and participation in the workplace. In addition, by examining how network structural relationships among members are connected to the performance of an organization, this study will analyze how formal and informal networks affect both individual and organizational performance. In other words, it aims to present empirical evidence that the effective management of social networks of and among individual employees can be an important factor in not only individual performance (evaluation, promotion, and compensation), but also organizational performance (efficient communication, commitment to the organization, and enhanced productivity).

## Research Methods

This study applies three empirical analyses. First, it reviews previous research and examines the gender differences in the use of networks. The existing body of research includes the Korean General Social Survey (2012), Research on Corporate Social Capital (2007) by the Korea Research Institute for Vocational Education and Training, and the third Korean Women Manager Panel Survey (2010) by the Korean Women’s Development Institute. This data is analyzed in order to identify the characteristics of men’s and women’s networks, explore gender differences by network type, examine their relations with the organization, and draw implications for further research on social networks.

Second, in order to learn about the social network profiles of male and female wage workers, an online survey was conducted among a sample of 1200 full-time employees holding professional, clerical, sales, and service positions. Respondents were asked to list the five most important people with whom they have contact through formal and informal networks. Although such an egocentric social network analysis does not provide the entire network structure, it features the advantage of examining the characteristics of the network ties surrounding individual respondents. The goal of this survey is to obtain information on with what kind of people the employees within an organization maintain contact, what they think about their networking activities, and how they use their networks. The survey was conducted with a sample of 1,200 full-time employees with differing sex, age, marital status, occupation, and company-size characteristics. The survey’s goal was not to obtain representation across all employees, but to select those who engage in meaningful network relationships while working in an organization. The composition of our sample is as follows:

Table 1. Composition of the sample

(unit: people, %)

		Size of Sample	Proportion
Total		1,200	100.0
Sex	Men	641	53.4
	Women	559	46.6
Age	20 - 29	205	17.1
	30 - 39	424	35.3
	40 - 49	396	33.0
	50 - 59	175	14.6
Marital status	Single	455	37.9
	Married	745	62.1
Occupation	Professional	400	33.3
	Clerical	400	33.3
	Sales and service	400	33.3
No. of employees	Less than 300	813	67.8
	300 or more	387	32.2

The survey questions are shown in Table 2.

Table 2. Survey questions

	Question Methods	Question Contents
Informal networks (Part 1)	Listing the five most important people with whom they maintain close personal relationships (those with whom they can discuss their personal problems and receive psychological and emotional support)	Their sex, age, relationship (formal/informal), period of acquaintance, frequency of contact, extent of support, content of support, etc.
Formal networks (Part 2)	Listing the five most important people upon whom they rely for consultation, information, and advice on work, jobs, and career	Their sex, age, relationship (personal/work-related), period of acquaintance, frequency of contact, extent of support, content of support, etc.
Work life	General questionnaire	Attitudes (views) toward social networks in the workplace, organizational culture, career satisfaction, career outlook, target positions
Demographic & work-related characteristics	General questionnaire	Sex, age, educational background, marital status, number of children, family income (single vs dual-income)
		Occupation, job, title and position, work hours, wages, etc.

Third, in order to offset the limitations of the egocentric network analysis, another survey was conducted in order to illuminate the overall network structure of the organization. To this end, three enterprises from different sectors and of differing sizes were selected and all of their employees were included in a survey. In addition, in an effort to reflect qualitative aspects that can be difficult to attain from data alone, interviews were conducted with HR managers and female employees (female managers). The profiles of the three enterprises are shown in Table 3.

Table 3. Profiles of the three enterprises

	Enterprise A	Enterprise B	Enterprise C
No. of employees	45	109	21
Sex of CEO	Female	Female	Male
Proportion of women	64.4%	64.2%	33.3%
Proportion of women managers	64.0%	59.0%	15.4%
Year of foundation	1987	1993	2006
Sales (FY 2014)	4.6 billion	46 billion	5 billion
Turnover rate (Most recent three years)	About 33%	About 43%	About 25% (As of 2015)
No. of working mothers	5	4	0
Wage system	Performance-based pay	Performance-based pay	Performance-based pay
Evaluation system	Group evaluation	Individual/Group evaluation	Individual evaluation by head director

As this survey was limited to only three enterprises, it did not attempt to draw any generalized conclusions. Instead, it aimed to explore the importance of social networks at the organizational level by comparing the characteristics of the company with those of the networks.

## Research Results

### *Characteristics of men's and women's networks*

According to the results of the three analyses employing unique methods and subjects, men's and women's networks showed certain common characteristics. First, there was strong sex homophily in both types of networks. Men and women socialized within gender-segregated networks in formal and informal settings, indicating that the sex ratio in the labor market has a significant impact on the characteristics of networks. While women had stronger network ties and greater network centrality in groups with a high proportion of women, they tended to be marginalized and excluded from networks in groups with a high proportion of men. This shows that the gender composition of a workplace influences the characteristics of an individual's social network.

Table 4. Sex homophily by demographic characteristic

(unit: %)

		Informal-sex homophily		Formal-sex homophily	
		Men	Women	Men	Women
Age	20 - 29	72.3	74.6	70.9	73.5
	30 - 39	74.9	76.0	77.7	75.7
	40 - 49	76.0	76.1	80.3	75.2
	50 - 59	82.7	76.9	84.0	75.7
Education level	High school or less	79.6	76.1	81.5	78.5
	Associate’s degree	75.7	79.4	80.2	76.6
	Bachelor’s degree	75.9	79.8	78.2	79.3
	Master’s degree	75.5	74.1	78.0	74.5
	Doctoral degree	75.4	71.9	72.3	71.2
Marital status	Married	76.4	74.2	79.5	73.7
	Single	75.6	78.7	76.5	77.5

Note: Homophily was calculated as the percentage of alters who are the same sex as the respondent.

Second, as indicated in previous research, men used networks more effectively and obtained more resources through them than did women. They had larger and broader networks than did women, interacted with more diverse people, and applied networks better for instrumental purposes. In comparison, women’s networks were more limited and closed, and had stronger ties than did men’s networks. From the point of view of ‘structural holes’, men are better positioned than are women within networks. In addition, although men had weaker network ties, they tended to use work-related-informal networks more effectively, while women used personal-formal networks that were more relationship-oriented and provided emotional and psychological support. According to the results of the online survey, while men actively engaged in networking, whether formal or informal, women did not participate to the same degree in networking activities, excluding company meetings and gatherings. In other words, men gained more from social networking than did women. Unlike women, men made effective use of private relationships, such as school and regional ties, in formal networks as well. (Within formal networks, relationships such as attending the same school or coming from the same hometown accounted for 18.8 percent among men, higher than the 12.3 percent reported by women.)

Table 5. Relationship between ego and alter

(unit: %)

		Men		Women	
		Informal	Formal	Informal	Formal
Personal relationships	Family and relatives	22.8	14.5	31.7	22.0
	Friends	25.1	17.5	25.1	19.5
	Same high school	12.4	8.3	7.4	5.2
	Same college or university	10.0	7.9	6.0	5.7
	Same hometown	3.6	2.6	1.7	1.4
	Neighbors	2.8	2.2	4.6	3.8
	Religious gatherings	3.3	2.2	3.7	2.6
	Non-work-related gatherings	3.0	3.4	3.0	3.1
Work relationships	Work-related meetings	4.8	5.5	3.6	4.4
	Colleagues who joined around the same time as the respondent	2.5	5.6	3.2	6.1
	Work superiors	8.4	13.3	5.0	9.1
	Same department	10.6	17.3	11.0	17.2
	Other department	4.2	7.2	3.2	5.5
	Other companies in business relationships	3.0	6.0	1.5	3.1
	Previous workplace	3.4	6.0	3.3	4.9

Third, although women did not use social networks for instrumental purposes as effectively as did men, they showed similar network characteristics as did men when they rose to higher positions in the labor market. In other words, women with more extensive educational backgrounds, more professional jobs and higher positions showed lower sex homophily, broader network range, and more active participation in networking. In addition, women with high aspirations for career advancement and a strong sense of goals were proactively engaged in work-centered network activities even when conditions were unfavorable to them. These characteristics indicate that although women’s use of networks is in general weaker than is men’s, women recognize the importance of networks and attempt to make effective use of them as they move up to assume higher positions in the labor market. Women also employed their own network strategies in a male-dominated work environment. They had high betweenness centrality within male-dominated organizations, and women in high positions made good use of network resources by building external networks and mentoring networks with men.

Fourth, although both men and women recognized the value and necessity of networks, they were passive in actually using them. This could be due to individual personality factors, low awareness of the necessity of networks, or structural constraints, such as long work hours

and hierarchical organizational culture. On the other hand, some network activities were not as productive on the inside as they seemed active on the outside. Of course, there is no absolute standard for determining which network activities are good or bad, but it is absolutely essential to maximize the benefits of a network by using it as a social capital resource. This is particularly helpful for women who do not use social networks actively. According to the online survey results, both male and female workers hoped to be allowed ample networking opportunities. Among the networking support options, “provide opportunities to meet people in the same line of business or customers who will be helpful for work or career development” was selected most frequently, followed by “support the company’s formal gatherings, including manager network, work management, study, and councils” and “mentoring and networking-related support, including mentoring projects, lectures, and providing information”.

#### *Impact of network characteristics on personal performance*

To examine how the network characteristics of male and female workers influence their personal performance, this study conducted a regression analysis on related variables. In the analysis, dependent variables included career satisfaction and career outlook as subjective indicators for performance, and position as an objective indicator for performance. Control variables included demographic and working characteristics, while independent variables included corporate and network characteristics. When the effects of network characteristics on career satisfaction were examined in the analysis, the more effectively both male and female workers used networks, the higher was their career satisfaction. It was therefore found that the active use of networks had a positive impact on the career development of male and female workers. Also, in the case of female workers, those who attached greater importance to the impact of networks on work or career and made better use of networks expressed higher satisfaction with their careers. In the case of male workers, those who made better use of private relationships in formal networks had higher career satisfaction, showing that male workers’ use of relationships, including family members and other relatives as well as school and regional ties, is an important factor for career performance within South Korean organizations.

Table 6. Impact of corporate and network characteristics on career satisfaction

		Model 1		Model 2		Model 3		
		Men	Women	Men	Women	Men	Women	
Constant		2.668***	2.751***	1.022***	1.530***	.274	.895***	
Control variable	Marital status (married)	-.140*	.166**	-.184**	.118*	-.165**	.119*	
	Educational level	.004	-.041	.012	-.053 <sup>+</sup>	.009	-.038	
	Occupation type 1 (professional)	.004	.081	.027	.082	.029	.065	
	Occupation type 2 (clerical)	.014	-.043	.028	-.060	.038	-.061	
	Months of service in current workplace	-.001	-.001	-.001 <sup>+</sup>	.000	-.001 <sup>+</sup>	.000	
	Position	.072**	.129***	.083***	.092***	.078***	.089***	
	Monthly average income	.119***	.068**	.096***	.058**	.096***	.052*	
	Goal status	.058**	.019	.050**	.018	.028 <sup>+</sup>	-.004	
Independent variable	Corporate characteristics	Size			.035*	.010	.029 <sup>+</sup>	-.001
		Proportion of female workers			.020	-.014	.014	-.004
		Horizontal organization culture			.489***	.444***	.415***	.362***
		Work-family reconciliatory culture			.070*	.032	.046 <sup>+</sup>	.011
	Network characteristics	Network size					.015	-.007
		Network behavior					.203***	.148***
		Influence of network					.044	.094**
		Work-related informal network					.071	.066
		Private-formal network					.135*	.084
	R2		.098	.137	.359	.356	.407	.399
ΔR2				.261	.219	.048	.043	
F		9.738***	10.917***	30.920***	26.700***	26.876***	22.819***	

\*\*\*p<0.001, \*\*p<0.01, \*p<0.05, +p<0.1

When the effects of networks on career outlook were examined, the better they made use of their networks and the higher they rated the influence of networks, the more positive was the career outlook possessed by both men and women. In the case of men, the higher the proportion of private-formal networks, the more positive was their career

outlook, as was the case with career satisfaction. On the other hand, other network variables showed differences between men and women. The smaller the network size and the lower the proportion of work-related informal networks, the more the positive was the career outlook reported by women, while these variables had no significant impact on men. In other words, the less women formed informal networks with people related with work, the more positive was their career outlook. This means that women who divided their private and work-related relationships between formal and informal networks evaluated their career outlook as higher.

Table 7. Impact of corporate and network characteristics on career outlook

		Model 1		Model 2		Model 3		
		Men	Women	Men	Women	Men	Women	
Constant		2.963***	2.842***	1.528***	1.677***	.545*	1.019***	
Control variable	Marital status (married)	-.080	.190**	-.015	.149*	-.089	.122*	
	Educational level	.011	-.051	.024	-.067+	.012	-.044	
	Occupation type 1 (professional)	.064	.234**	.089	.244**	.095	.228**	
	Occupation type 2 (clerical)	.027	.099	.047	.082	.060	.083	
	Months of service in current workplace	-.001*	-.001	-.001*	.000	-.001*	-.001	
	Position	.048*	.059*	.032	.030	.024	.027	
	Monthly average income	.109	.070*	.110	.058*	.111***	.053*	
	Goal status	.039+	.072**	.038*	.073**	.008	.041+	
Independent variable	Corporate characteristics	Size			-.004	.021	-.015	.008
		Proportion of female workers			.010	-.017	.001	-.001
		Horizontal organization culture			.405***	.369***	.287***	.254***
		Work-family reconciliatory culture			.001	.024	.040	.088*
	Network characteristics	Network size					.003	-.028+
		Network behavior					.236***	.270***
		Influence of network					.158***	.087*
		Work-related informal network					.067	-.143+
		Private-formal network					.139*	-.043
	R2		.063	.096	.233	.237	.324	.321
△R2				.170	.141	.091	.084	
F		5.287***	7.304***	15.860***	14.108***	17.537***	15.077***	

\*\*\*p<0.001, \*\*p<0.01, \*p<0.05, +p<0.1

When the impact of networks on position was examined as one of objective indicators for personal performance in the labor market, the variable of network characteristics did not have a significant impact on men. However, it did have an impact on women. In other words, the larger the network size and the better they used networks, the higher was their position. Therefore, it was confirmed that networks were more important for women than for men in developing their careers within an organization.

Table 8. Impact of corporate and network characteristics on position

		Model 1		Model 2		Model 3		
		Men	Women	Men	Women	Men	Women	
Constant		.474*	.020	1.039**	.140	.923*	-.288	
Control variable	Marital status (married)	.793***	.234*	.702***	.188+	.688***	.162	
	Educational level	.034	.256***	.108+	.311***	.118*	.329***	
	Occupation type 1 (professional)	-.045	.080	.061	-.013	.067	-.029	
	Occupation type 2 (clerical)	-.194	.226+	-.083	.049	-.091	.035***	
	Months of service in current workplace	.003***	.003***	.004***	.005***	.004***	.004***	
	Monthly average income	.496***	.220***	.578**	.253***	.576***	.246***	
	Goal status	.116**	.184***	.106***	.152***	.099**	.147***	
Independent variable	Corporate characteristics	Size			-.325	-.189***	-.330***	-.190***
		Proportion of female workers			-.070	-.081+	-.074+	-.077+
		Horizontal organization culture			.017	.169*	.001	.149*
		Work-family reconciliatory culture			.089	.052	.090	.054
	Network characteristics	Network size					-.003	.046+
		Network behavior					.063	.148+
		Influence of network					-.007	-.119
		Work-related informal network					.156	.124
		Private-form al network					-.038	.079
	R2		.421	.265	.540	.338	.543	.347
△R2				.119	.073	.003	.009	
F		65.712***	28.429***	67.226***	25.385***	46.344***	18.039***	

\*\*\*p<0.001, \*\*p<0.01, \*p<0.05, +p<0.1

*Impact of structural characteristics of networks on individuals and enterprises*

This study performed a survey of overall networks to analyze the structural characteristics of networks and the impact of structural characteristics on individuals and enterprises. As a result, the network characteristics as identified from three enterprises that differ in terms of business type, size, and proportion of women can be summarized as follows: First, informal networks had more connections and higher density than did formal networks. Second, when connecting to networks both men and women were greatly influenced by gender and by the department for which they worked. That is, networks were mostly formed among same-sex workers and within the same departments. Third, network structures differed depending on the gender composition of the enterprises. Fourth, structural characteristics of networks influenced corporate performance.

Specifically, structural characteristics of networks had the following impacts on corporate performance: First, the overall organizational climate had an impact on the formation of formal and informal networks, which facilitated cooperation between departments (teams) and thus enabled the efficient performance of work. Second, the proportion of female workers within the organization brought about gender differences in network activity due to the tendency toward sex homophily. In particular, the minority sex tended to be marginalized within the organization and thus strengthened hierarchy by gender when connected with gendered job segregation. Third, women with a strong sense of goals and a desire for achievement reported active networking activity on their own accord and attached greater importance to work-centered formal networks. They therefore tended to concentrate on external network activities that were helpful for work rather than pursue their network within the company. Unlike the characteristics of women at large, who in previous studies were seen to concentrate more on expressive networks than on instrumental networks, this finding showed the characteristics of women who used networks instrumentally according to their needs. Fourth, all three enterprises surveyed left external network activity up to individuals. If support were provided for work-related external network activities at the enterprise level in order to make use of the above-mentioned characteristics of women, it would be conducive to corporate performance. Fifth, enterprise "B", which experienced the highest turnover, used this activity as a strong point to attract external network resources and assist the company.

Table 9. Network characteristics of the surveyed enterprises and corporate performance

	Network characteristics	Network-related corporate performance
Enterprise "A"	<ul style="list-style-type: none"> <li>• Horizontal and flexible organizational climate</li> <li>• Women built more active networks than did men, and were particularly active in establishing work-centered formal networks</li> <li>• Informal networks were supported by the enterprise, but formal networking activity was conducted separately according to demand or tendencies</li> <li>• Strong tendency of sex homophily, but relatively homogeneous network structure</li> </ul>	<ul style="list-style-type: none"> <li>• No major changes in financial performance but has operated in a stable manner for about 30 years</li> <li>• Advantageous to forming work-centered relationships owing to numerous customers from the public sector and being a favorable place for women to work</li> <li>• Free communication and good cooperation between teams stemming from non-hierarchical relationships</li> <li>• Workers showed low awareness of networking in spite of having the most active networking activity among the three enterprises, so additional support for networking activity seems necessary</li> </ul>
Enterprise "B"	<ul style="list-style-type: none"> <li>• Largest in network size but lowest in network density among the three enterprises</li> <li>• Had support for formal and informal networking activities within the company</li> <li>• Lowest in network centralization value among the three enterprises</li> </ul>	<ul style="list-style-type: none"> <li>• Highest sales performance among the three enterprises and high growth potential</li> <li>• As a growing enterprise showed a highly stressful organizational climate with excessive workload and difficult work-family reconciliation, yet high worker satisfaction thanks to financial rewards</li> <li>• Achieved frequent personnel replacement and recruitment on the strength of network resources</li> </ul>
Enterprise "C"	<ul style="list-style-type: none"> <li>• Overall, quiet and non-communicative atmosphere</li> <li>• Smallest in network size but highest in network density among the three enterprises</li> <li>• No support for networking activity within the company</li> <li>• High centralization (particularly betweenness centralization) value, featuring male-centered network formation and marginalized women</li> </ul>	<ul style="list-style-type: none"> <li>• Positive sales performance and low turnover compared to the other enterprises</li> <li>• Work divided by gender with more men in the planning division and more women in the manufacturing division and hierarchical work relationships led to gender relationships</li> <li>• The low proportion of women alienates them and causes them unite among themselves, so women had more active networking activity outside the company than inside</li> </ul>

## Policy suggestions

The analysis results showed that active network activity and a positive attitude regarding the impact of networks had a significant influence on personal performance, including improvements in work and career performance and satisfaction. It was also found that efficient communication within the company fostered cooperation, and that the personal use of network resources was conducive to corporate performance. As such, making use of networks brought positive performance to individuals and to enterprises as well. In particular, women had weaker network activity than men and had relatively less instrumental networks compared, so support for network activity is expected to be more helpful to women than to men.

Policy implications are discussed largely in four areas, including individual, corporate and governmental roles, and the creation of social and cultural environments to promote networks. Lastly, suggestions are made for future research agendas.

### *Individual roles*

#### *Improve awareness and make efforts to promote networking*

Individual women need to change their attitude toward networking activities and raise their awareness of networks. The results of the analysis showed that overall, female workers had lower career aspirations and weaker motivation for or awareness of using networks to expand their careers compared to male workers. According to online surveys, 33.5% of women answered “because of my personality or personal propensities” to the question on why they did not make good use of networks. Although this trait may have been formed due to social and structural limitations placed on women or to inequality in the labor market, women still need to extend an effort to make use of networks for their own benefit. Also, the online surveys showed that compared to the average of 4.15 points women assigned to the importance of networks in their work or career, they gave an average of 3.18 points to “I put a lot of time and effort into networking,” revealing a considerable discrepancy between their evaluation of the importance of networks and the time and effort they actually dedicated to networking. Therefore, women need to make more active use of networks, at least to the degree that they themselves consider networks to be important. Also, women tended to avoid active participation in network activities because they still hold negative images of networking activity in association with entertainment or get-togethers involving drinking. In addition, where women were a minority in the organization, people around them still viewed their strategic networking activity negatively without recognizing the legitimacy of the this activity. Therefore, people’s view of women’s networking activity should be improved.

### *Corporate roles*

#### *Providing networking opportunities*

Because enterprise-based support for formal and informal network activities had a

positive impact on workers’ networking activities, companies need to provide direct support for this activity. In particular, if women are a minority in the organization, they tend to be alienated from networks. Therefore, rather than leaving this issue up to individual women, enterprises need to formally support their networks. Nevertheless, the reality is that a mere 24.2% of businesses responded that they had formal “women’s networks” within their companies (Korean Women’s Development Institute, 2014).

According to online surveys, both male and female workers hoped to be allowed extensive networking opportunities. Among the networking support options, “provide opportunities to meet people in the same line of business or customers who will be helpful for work or career development” was most popular, followed by “support the company’s formal gatherings, including the manager network, work management, study, and counselling” and “mentoring and networking-related support, including mentoring projects, lectures, and providing information.”

In addition, since compared to men women with children had considerable restrictions on their time outside of work, they could not help but focus exclusively on network activity that offered practical returns. Therefore, they should be given opportunities to engage in the kind of content-oriented networks they prefer rather than simply quantitatively expanding support for networks. For example, if women can exchange information about other firms in the same line of business through networks or attain specific goals from networks when they require information about changing jobs, such networking will encourage women’s voluntary and active participation.

Mentoring is even more important for women. Under the present conditions in which the number of women drastically decreases as their position rises, opportunities for the vertical transfer of knowhow and human networking between seniors and juniors must be provided through mentoring. Specific measures for operating mentoring programs are presented below.

Table 10. Measures for operating mentoring programs

Steps	Measures
1	Identify mentoring needs
2	Establish formal mentoring plans in compliance with corporate policy guidelines
3	Develop mentoring guidelines (goals, periods, monthly or quarterly agenda, content of support from the company, and basic matters including code of conduct)
4	Select mentors and mentees and conduct training: career goal-setting, communication and feedback skills, code of conduct for mentors and mentees, and gender issues in the organization
5	Monitor mentoring programs and select outstanding cases for awards

Source: Data from the Ministry of Gender Equality and Family (2015).

*Shift toward a belief that network resources can lead to raising corporate performance*

It was found from the results of the analysis that active use of networks on the part of workers within the organization is conducive to businesses. In other words, the network resources of each member can be harnessed for the performance of the company, or corporate performance can be elevated through efficient and rational communication structures and cooperation. As seen in the case of enterprise “B”, which took advantage of the diverse network resources of workers who had changed jobs and arrived from other firms, businesses need to make full use of the network resources of individual workers. In this regard, companies need to shift toward the understanding that their support for networking activities by individual workers can lead to improved corporate performance.

*Diagnosing organizations through analysis of the structure of networks within the organization*

Businesses need to pay constant attention to the management of the network structure within the overall organization as well as of individuals. Still, CEOs and personnel managers have placed little emphasis on network management. However, it is possible to improve network structures through the analysis of the structure of networks within the organization by using members with high betweenness centrality as core communication paths, or by identifying members alienated from networks and leading them into the communication structure. Furthermore, “using members with high centrality can help overcome distortion of communication in the organization, limitations of information delivery, or obstacles to dissemination of innovation” (Chang-hyeon Choi, 2006:21).

Recently, innovative enterprises have gradually been taking greater interest in the management of networks within the organization. They use “organizational network” as one of main indicators for organizational diagnosis because they are able to establish strategies for personnel management by analyzing the patterns of communication between organization members and expanding the pattern not only to communication and cooperation, but also to knowledge, innovation, and trust. One case in point is “CYRAM,” a company that provides “consulting on organizational network analysis” for businesses. It presented the following step-by-step strategy, which can be found at its website (CYRAM, [http://www.cyram.com/solution/solution\\_01\\_01.jsp](http://www.cyram.com/solution/solution_01_01.jsp), date of search: Nov. 30, 2015.).

Table 11. Strategies for consulting on organizational network analysis

Steps	Strategies
1	Collect the patterns of communication between organizational members
2	Establish a strategy for effective intervention based on the results of cooperative network analysis
3	Diagnose communication culture in the organization from multiple perspectives
4	Based on the results of diagnosis, provide directions for improving the efficiency of cooperation and performance

his strategy shows that organizational network analysis as a major tool to elevate corporate performance can contribute to efficiently managing businesses and enhancing the competencies of organizational members.

### *Governmental roles*

#### *Establishing customized mentoring and network programs*

Women with high career aspirations and a sense of goals showed the strong characteristic of forming work-centered networks with transparent and fair relationships. When it was necessary for their work or career development, they tended to engage in active networking on their own accord, so businesses need to make good use of this characteristic and tendency. In other words, for supporting and managing women with high growth potential as leaders within the business, if businesses support not only their work skills but also their participation in external and formal network activities, they will be able to produce more competent women leaders.

Among the government-supported programs, one leading example was the “Korean Women’s Leadership Academy” operated by the Korean Institute for Gender Equality Promotion and Education under the Ministry of Gender Equality and Family. Its main services include basic empowerment training, leadership training, mentoring, and operation of women manager networks (Korean Women Leadership Academy, <http://kwla.kigepe.or.kr>, Date of search: November 30, 2015).

Regarding networks, the Academy supported the operation of group workshops, conferences, and “Network Day”. As programs were offered mostly in the form of collective training, workers from small- and medium-sized enterprises or local businesses had only limited access to the programs. Another shortcoming was that the programs could not take into account diverse corporate and working characteristics. Therefore, it is necessary to expand the budget and personnel for specific programs so that customized support can be made possible. If specific programs and guidelines can be established and provided according to the industry, types of businesses, forms of businesses, and business sizes, as well as workers’ jobs, positions, and life-cycle characteristics, companies will be able to achieve more practical results.

#### *Supporting and promoting the operation of women’s councils*

In order to improve women’s status within organizations and actively practice work-family reconciliation and gender equality, it is necessary to establish a formal body dedicated to the deliberation and determination of related agendas. A growing number of large companies and public institutions have recently been establishing and operating women’s councils. Women’s councils can assume various roles depending on the related purposes and organizational characteristics. If there is a small number of women or if the council is in an initial phase, its operations can be largely centered on mentoring and networking programs. These programs are significant for organizing women, and also help build mutual trust and affinity and reduce the burden of operations because of their

voluntary nature. Therefore, in general they can be considered representative programs for the initial phase of operating women's councils.

Cases of maintaining a women's council within a company showed that they achieved a broad range of accomplishments, from supporting women's career development and network formation to ultimately creating an organizational culture that is more favorable for the work of both male and female workers. GM Korea began to offer mentoring led by its women's council in 2008, initiated it as a personnel program in 2010, and has since expanded its operation into an enterprise-wide program. SK Group established its W-network under its Talented Human Resources Development Council. W-network is a prominent case of conducting a variety of activities, such as operating women's leadership programs, setting goals for recruiting women, expanding the proportion of female managers, and improving the organizational culture. Kyobo Life Insurance Co. established the Kyobo Women's Innovative Council in Korea (KWICK) in 2011. This council has since provided regular mentoring, held women's conferences, and published and distributed booklets based on the results of mentoring (Internal data of the Ministry of Gender Equality and Family, 2015).

The fact that a growing number of companies are maintaining women's councils means that these councils could eventually be conducive to corporate performance by developing women's careers and elevating their commitment to the organization. As the operation of a women's council may lead in turn to a diversity council as a human resources and managerial policy, women's councils may not be a system for women only. The government should publicize the need for establishing women's councils and serve in the role of offering diverse business cases and information in regard to organizational composition and the contents of specific activities considering corporate characteristics, as well as in the role of supporting consulting.

### *Promoting online networking activities*

In terms of participating in networking activities, most female workers who are heavily burdened with work-family reconciliation, including childcare, have difficulty making time for networking activities. Consequently, it is necessary to increase their online networking opportunities. The results of online surveys also showed that women prefer online networking because they have a higher frequency of contact through indirect means (using online networks) than do men: 31.8% of women and 23.7% of men had daily contacts via informal networks, while 28.2% of women and 22.9% of men had daily contacts through formal networks. Also, women may have more resources available because they can form networks with more diverse people through online activities. The usefulness of online networking increases when it is difficult to communicate within the company, as in when changing jobs.

(unit: %)

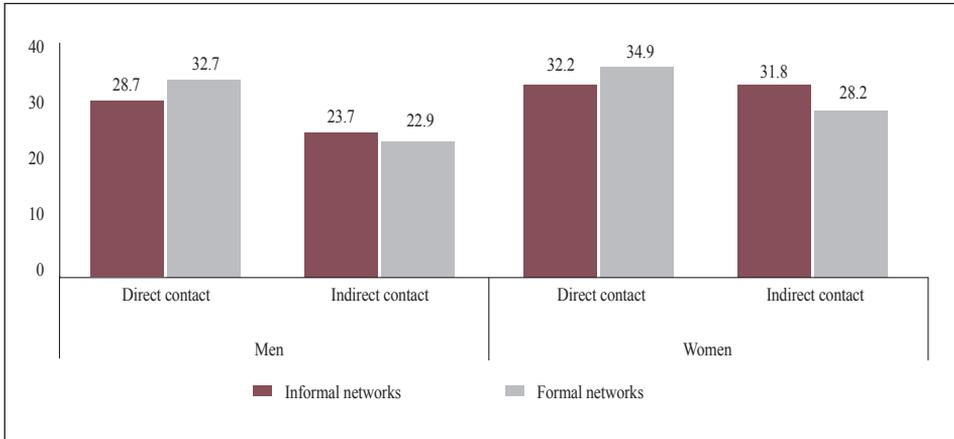


Figure 1. Proportion of daily contacts

*Creation of social and cultural environments to promote networks*

*Resolving gender imbalances in the labor market*

In order to analyze the network characteristics of male and female workers, this study re-analyzed previous data and conducted questionnaire surveys and interviews. As a result, it was found that the most important factor for networks was the difference in gender distribution within the labor market. Due to the tendency toward sex homophily, workers in many cases formed networks among same-sex co-workers. Also, due to gender imbalances in the labor market, gendered job segregation, and particularly to the characteristic that the higher the position in the labor market, the fewer women there were in that position, women had limited targets for forming networks compared to men. This limitation has an impact on network characteristics and their effects. In fact, the online surveys showed that sex homophily among both male and female workers surpassed 75%. In addition, the analysis of the overall network structure showed that female workers in businesses with a low proportion of women were marginalized within the network. On the other hand, women with high education, high position, and professional jobs showed lower sex homophily. In addition, in enterprises with a high proportion of women and women leaders, women participated in more active networking than did men.

As discussed by Granovetter, when stressing the strength of weak ties, if workers are connected with a number of diverse people, they are able to assume a better position within the network. Also, on the side of businesses, the more smoothly communication between members proceeds and the more resources workers gain through networking activities, the more conducive they were to corporate performance. Along these lines, gender balance within the organization will improve the strength of networks. In the case of female managers with strong career aspirations and a sense of goals, they were found to form work-centered networks more actively than did men. Therefore, enterprises should increase the number of female managers

with the capacity to grow as leaders. These findings can be used as basic data to support the need to take active measures to improve employment conditions.

#### *Creating an organizational culture favorable to work-family reconciliation*

Forming and maintaining networks as social capital requires the investment of time and effort. In this regard, the female workers with children who were interviewed for this study were so busy attempting to balance work and family that they took almost no interest in networking. They were at least able to work since they had family members or domestic help who could take care of their children on their behalf. Even so, they did not dare to become involved in any activity outside work. With the situation appearing so difficult, unmarried female workers stated in the interview that when planning their future career, they would prefer to quit their job upon having a baby. However, as explained earlier, female managers with strong career aspirations were very interested in networking activities and were determined to participate in them. Therefore, businesses should work to reduce the burden of work and family reconciliation so that female workers can become more actively engaged in networking activities.

Work and family reconciliation is a long-term task that men and women, businesses, and society as a whole must address together. To do so, the perception of “working hours” should first be improved. In the online surveys, both men and women answered “improve the culture of long working hours” to the question on what support is needed to make good use of networks. Although the proportion of the answer was not high, with 8.7% of men and 9.2% of women, the surveys showed that although direct support for networking activity was needed, the underlying culture should be first improved.

#### *Improving social and cultural awareness to promote networks*

As discussed earlier, Korean society holds many negative images of networking. It also includes a strong opposition to informal networks since decisions can be made based on school or regional ties and connections in an opaque and unfair manner and transactions are made secretly without offering fair opportunities. In such a situation, women at times exclude themselves from networks. According to the survey of the overall network, entertainment culture had weakened to a much greater extent than before at enterprise “C”, and when the company had to entertain clients after a main meal, it asked male workers to do so rather than female workers. Enterprise “A” had a high proportion of women, partially because it was less burdened with entertainment requirements since its customers mostly worked in the public sector. However, entertainment culture, although weakened, did still exist, and female workers and enterprises as well avoided women entertaining their clients.

However, this is merely one aspect of a closed network, and as examined in previous studies, networks between individuals, organizations, societies, and countries are formed in highly diverse units and forms. Depending on how networks are applied, the social capital that can be mobilized through networks may differ. If the aspects of Korean culture related to negative connections and ties gradually disappear and the situation improves into a fair and work-centered network culture with transparent contract relations, then it is expected that networks

will be used more positively and women will be able to better demonstrate their abilities.

### *Future agenda*

An empirical study of networks is no easy task since it becomes necessary to survey the relative degree of intimacy between individuals despite the difficulty of clearly identifying the related factors. In addition, it is a challenge to interpret the effects of a variety of the variables, including variables that affect network characteristics and variables that are affected by network characteristics. Neither is it easy to identify the cause-and-effect relationships within the network characteristics. This study features several limitations due to these difficulties, but it pursues significance from the fact that it attempted an empirical study of networks from a gender perspective. By presenting a future agenda based on the limitations of this study, it is expected that studies of networks from a gender perspective will continue.

First, as it was difficult to identify cause-and-effect relationships among network characteristics, a research design is needed in the future that can clarify the causal relationships. In other words, a time series analysis is called for, and to this end it is necessary to measure and reflect network changes and various achievements at multiple points in time. For example, it is possible to examine how a person's structural position within a network affects his/her personal performance by observing a growing business such as a startup company.

Second, because the online surveys limited the number of people allowed to answer, the surveys were unable to measure network size, the most representative indicator for networks. In addition, because the surveys eliminated respondents who had four alters or fewer in each network and allowed people who had five or more alters to answer, there may have been a selection bias toward people with relatively active networks. Therefore, surveys in the future should be conducted without limiting the number of respondents. In addition, the problem of dishonest responses or under-measurement that may occur when the number of alters is limited should first be resolved.

Third, this study surveyed and analyzed only the networks among people inside companies in order to identify the network structure of the overall organization. As it was found that some women were active in external networking activities, it is necessary to add surveys of network activity not only within an organization, but outside of it as well, and analyze the results of all the surveys together.

Fourth, due to limitations in the data, this study could not use objective indicators for personal performance (evaluation score, annual pay, etc.) and thus could not provide a more precise analysis. Information on personal performance was difficult to access because it was proprietary data. However, if a survey could be conducted with more enterprises as a parameter, such a survey would help develop a better model for diagnosing organizations and promoting corporate performance using the network structure.

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