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A Study on Corporations' Formal and Informal Networks Characteristics on Gender and Its Effect

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[Figure 1] Proportion of Daily Contacts 27



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1. Research Goals and Needs

As society becomes more and more complex, and science and technology continue to make rapid advances, networks have become an integral part of our 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 strategy and corporate contracts. The concept and methodology of networks are explored in various contexts, including in relation to traditional subjects such as social capital, trust, norms and culture, as well as at the level of the individual, organization, corporation, community and nation. In particular, at the organization level, there is an increasing interest in the study of how personal networks affect individual performance, such as promotion and pay, and how they affect corporate performance, such as efficient decision making, productivity and turnover rate. However, although a more concrete and systematic approach is required in order to use networks as a source of social capital on the policy level, there has been limited

empirical research on the subject in the nation.

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

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

2. Research Scope and Methodology

There is a growing interest in how networks, one of the key concepts of social capital, affect individual and organizational performance in an increasingly complex work environment. This study attempts to verify empirically the previous assumptions that there are gender differences in the use of networks and the results they attain, and to provide more comprehensive and systematic empirical analysis to use networks with a gender perspective on the policy level. The results of our preliminary research show that there are gender differences according to the types of networks. In this study, networks are grouped into formal networks and informal networks based on the content of messages transmitted over them. Focusing on the networks in an organization as sources of social capital, this study attempts to identify gender differences, characteristics and their possible causes in formal and informal networks employed by male and female wage workers, and to analyze the influence of these networks on the career development of female workers as well as organizational outcomes. It also aims to demonstrate that effective management of social networks can be an important factor in affecting not only individual performance but also organizational performance, and thereby to derive implications that can contribute to advancing women's opportunities and participation in the workplace as well as enhancing corporate performance.

To this end, this study provides three empirical analyses. First, it reviews previous research and examines the gender differences in the use of networks. The previous research includes the Korean General Social Survey (2012); Research on Corporate Social Capital(2007) by

Korea Research Institute for Vocational Education and Training; and the third Korean Women Manager Panel Survey(2010) by Korean Women's Development Institute. By analyzing these data, it identifies the characteristics of men's networks and women's networks, explores the gender differences by network types, examines their relations with the organization, and draws 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 in professional, clerical, sales and service occupations. Respondents were asked to list the five most important people with whom they have contacts in formal and informal networks. Though this ego-centric social network analysis does not provide the whole network structure, it allows the advantage of examining the characteristics of network ties around individual respondents. The goal of this survey is to obtain information on what kind of people employees in an organization have contacts with, what they think about their network activities, and how they use these networks. The survey was conducted with a sample of 1,200 full-time employees from different sex, age, marital status, occupation and size of the company. The survey's goal was not to obtain representation of 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, %)

		No. 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 and More	(387)	32.3

The survey questions are shown in <Table 2>.

<Table 2> Survey Questions

	Question Methods	Question Contents
Informal Networks (Part 1)	List the five most important people in close personal relationships (those they can discuss their personal problems with, and receive psychological and emotional support from)	Their sex, age, relationship (formal/informal), period of acquaintance, frequency of contact, extent of support, content of support, etc.
Formal Networks (Part 2)	List the five most important people they rely on for consultation, information, and advice on work, job 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

	Question Methods	Question Contents
Demographic & Work-related Characteristics	General questionnaire	Sex, age, educational background, marital status, number of children, income (single-income vs. dual-income)
		occupation, job, title and position, work hours, wage, etc.

Third, in order to offset the limitations of ego-centric network analysis, another survey was conducted to understand the whole network structure of an organization. To this end, three enterprises of different sectors and sizes were selected, and all of their employees were included in the survey. In addition, in order to reflect the qualitative aspects that are 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 (Year 2014)	4.6 billion	46 billion	5 billion
Turnover Rate (Most Recent Three Years)	About 33%	About 43%	About 25% (As of year 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 a few enterprises, it did not attempt to draw a generalized conclusion. Instead, it aimed to explore the importance of social networks at the organizational level by comparing the characteristics of the company and the characteristics of the networks.

3. Analysis Results

1) Characteristics of Men's and Women's Networks

According to the results of the three analyses that employed different methods and objects, men's networks and women's networks showed certain common characteristics. First, there was strong sex homophily in both networks. Men and women socialized in 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 the 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 the networks in groups with a high proportion of men. This shows that the gender composition of the workplace influences the characteristics of an individual's social network.

〈Table 4〉 Sex Homophily by Demographic Characteristics

(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 by previous research, men used networks more effectively and obtained more resources from them than women. They had bigger and broader networks than women, interacted with more diverse people and used networks better for instrumental reasons. In comparison, women's networks were more limited and closed and had stronger ties than men's networks. From the point of view of 'structural hole', men are better positioned than women in 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 as much in network activity, except for company meetings and gatherings. In other words, men gained more from social networking than 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 of men, higher than 12.3 percent of women.)

〈Table 5〉 Relationship between Ego and Alter

(Unit: %)

		Men		Women	
		Informal	Formal	Informal	Formal
Personal Relationship	Family and relatives	22.8	14.5	31.7	22.0
	Friends (boyfriends and girlfriends)	25.1	17.5	25.1	19.5
	Same high school	12.4	8.3	7.4	5.2
	Same college	10.0	7.9	6.0	5.7
	Same hometown	3.6	2.6	1.7	1.4

		Men		Women	
		Informal	Formal	Informal	Formal
Personal Relationship	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 Relationship	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 departments	4.2	7.2	3.2	5.5
	Other companies in business relationship	3.0	6.0	1.5	3.1
	Previous workplaces	3.4	6.0	3.3	4.9

Third, although women did not use social networks for instrumental purpose as effectively as men, they showed similar network characteristics as men as they moved up to higher positions in the labor market. In other words, women with higher 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 their goals were proactively engaged in work-centered network activity even when conditions were not favorable to them. These characteristics indicate that although women's use of networks are weaker than men's in general, women recognize the importance of networks and try to make effective use of them as they move up to higher positions in the labor market. Women also employed their own network strategy in a male-dominated work environment. They had high betweenness centrality in male-dominated organizations, and women with 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 importance and necessity of networks, they were passive in actually using them. This might be because of their individual personalities, their 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 to determine which network activity is good or bad, but it is absolutely essential to maximize the benefits of networking by using it as a social capital resource. This will be 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 given ample networking opportunities. Of 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 council” and “mentoring- and networking-related support, including mentoring projects, lectures, and providing information”.

2) Impact of Network Characteristics on Personal Performance

To examine how network characteristics of male and female workers influence personal performance, this study conducted a regression analysis of 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 through the analysis, the more effectively both male and female workers used networks, the higher their career satisfaction was. 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 more importance to the impact of networks on work or career and made better use of networks had 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 families and relatives as well as school and regional ties, is an important factor for career performance in 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		2.658***	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+	.009	-.038
	Occupational type 1 (professional)	.004	.081	.027	.082	.029	.065
	Occupational type 2 (clerical)	.014	-.043	.028	-.060	.038	-.061
	Months of service in the current workplace	-.001	-.001	-.001+	.000	-.001+	.000
	Position	.072**	.129***	.083***	.092***	.078***	.089***
	Monthly average wage	.119***	.068**	.096***	.058**	.096***	.052*
	Goal status	.058**	.019	.050**	.018	.028+	-.004

			Model 1		Model 2		Model 3	
			Men	Women	Men	Women	Men	Women
Independent variable	Corporate characteristics	Size			.035+	.010	.029+	-.001
		Proportion of female workers			.020	-.014	.014	-.004
		Horizontal organization culture			.489***	.444***	.415***	.362***
		Work-family reconciliatory culture			.070+	.032	.046+	.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
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 evaluated the influence of networks, the more positive career outlook both men and women had. In the case of men, the higher the proportion of private-formal networks, the more positive their career outlook was, 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 positive career outlook women had, 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 their career outlook was. This means that women who divided their private and work-related relationships into formal and informal networks evaluated their career outlook as high.

〈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**	-.105	.149*	-.089	.122*	
	Educational level	.011	-.051	.024	-.067+	.012	-.044	
	Occupational type 1 (professional)	.064	.234**	.089	.244**	.095	.228**	
	Occupational type 2 (clerical)	.027	.099	.047	.082	.060	.083	
	Months of service in the current workplace	-.001+	-.001	-.001+	.000	-.001+	-.001	
	Position	.048*	.059*	.032	.030	.024	.027	
	Monthly average wage	.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
ΔR2				.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 as one of objective indicators for personal performance in the labor market was examined, the variable of network characteristics did not have a significant impact on men, while it did have an impact on women. In other words, the larger the network size and the better they used network, the higher their position. Therefore, it was confirmed that networks were more important for women than men in developing their careers in the 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***	
	Occupational type 1 (professional)	-.045	.080	.061	-.013	.067	-.029	
	Occupational type 2 (clerical)	-.194	.226+	-.083	.049	-.091	.035***	
	Months of service in the current workplace	.003***	.003***	.004***	.005***	.004***	.004***	
	Monthly average wage	.496***	.220***	.578**	.253***	.576***	.247***	
	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-formal network					-.038	.079

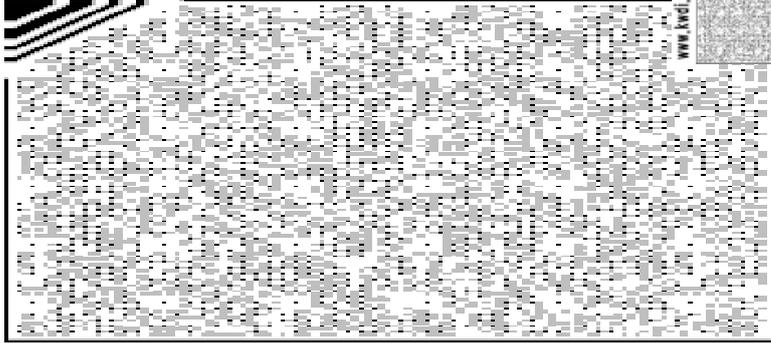
	Model 1		Model 2		Model 3	
	Men	Women	Men	Women	Men	Women
R2	.421	.265	.540	.338	.543	.347
ΔR2			.119	.073	.003	.009
F	65.712***	28.429***	67.226***	25.385***	46.344***	18.039***

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

3) Impact of Structural Characteristics of Networks on Individuals and Enterprises

This study performed a survey of the whole network to analyze structural characteristics of networks and the impact of structural characteristics on individuals and enterprises. As a result, the characteristics of network as identified from three enterprises that were different in business type, size and proportion of women can be summarized as follows: First, informal networks had more connections and higher density than formal networks. Second, both men and women were greatly influenced by gender and by the department they worked for when connecting to networks. That is, networks were mostly formed between the same-sex workers and in the same departments. Third, network structures differed depending on the sex 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 the cooperation between departments (teams) and thus enabled efficient performance of work. Second, the proportion of female workers in the organization brought gender difference in network activity due to the tendency of sex homophily. In particular, the minority sex tended to be marginalized in the



network activity of their own accord and attached more importance to work-centered formal networks, so they tended to concentrate on external network activity that was helpful for work rather than the network inside the company. Unlike the characteristics of women at large who concentrated more on expressive network than instrumental network in the previous studies, this finding showed characteristics of women who used networks instrumentally according to their needs. Fourth, all the three enterprises surveyed left external network activity to individuals. If support is provided for work-related external network activity at the enterprise level in order to make use of women's above-mentioned characteristics, it will be conducive to corporate performance. Fifth, enterprise "B" with the highest turnover used this activity as a strong point to attract external network resources, which was helpful for 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"> • Horizontal and flexible organizational climate • Women built more active networks than men, and particularly established work-centered formal networks actively. • Informal network was supported by the enterprise, but formal network activity was separately conducted according to demands or tendencies. • Strong tendency of sex homophily but relatively homogeneous network structure 	<ul style="list-style-type: none"> • No big changes in financial performance but operated in a stable manner for about 30 years • Advantageous to forming work-centered relationships owing to many customers from the public sector and favorable for women to work in • Free communication and good cooperation between teams because of non-hierarchical relationships • Workers had low awareness of network

	Network characteristics	Network-related corporate performance
		in spite of the most active network activity among the three enterprises, so additional support seemed necessary for network activity.
Enterprise "B"	<ul style="list-style-type: none"> • Largest in network size but lowest in network density among the three enterprises • Members formed and used network most actively among the three companies. • Had support for formal and informal network activities in the company • Lowest in network centralization value among the three enterprises. 	<ul style="list-style-type: none"> • Highest sales performance among the three enterprises with high growth potential • Being a growing enterprise, highly stressful organizational climate with excessive workload and hard work-family reconciliation, and yet high worker satisfaction thanks to financial rewards • Used frequent personnel replacement and recruitment as a strength of network resources
Enterprise "C"	<ul style="list-style-type: none"> • Overall, quiet and incommunicative atmosphere • Smallest in network size but highest in network density among the three enterprises • No support for network activity in the company • High centralization (particularly, betweenness centralization) value, featuring male-centered network formation and marginalized women. 	<ul style="list-style-type: none"> • Good sales performance and low turnover compared to the other enterprises • Work divided by gender with more men in the planning division and more women in manufacturing division, and hierarchical work relationships led to gender relationships. • Low proportion of women alienated them and made them unite among themselves, so women had more active network activity outside the company than inside the company

4. Policy Implications

The results of the analysis showed that active network activity and positive attitude toward the influence of network had a significant impact on personal performance, including improvements in work and career performance and satisfaction of individuals. It was also found that efficient communication in the company enabled cooperation, and that the personal use of network resources was conducive to corporate performance. As such, using networks brought positive performance to individuals and enterprises as well. Particularly, women had weaker network activity than men and did not have instrumental networks compared to men, so support for network activity is expected to be more helpful for women than 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.

1) Individual Roles

(1) Improve awareness and make effort to promote network

Individual women need to change their attitude toward network activity and awareness of network. The results of the analysis showed that female workers, overall, had low aspirations for career and weak motivation or awareness of using network to expand their careers compared to male workers. According to online surveys, 33.5 % of women answered “because of my personality or personal propensity” to the question why they did not make good use of networks. Although this trait may have been formed due to social

and structural limitations on women or inequality in the labor market, women still need to make an effort to use networks for themselves. Also, the online surveys showed that compared to the average 4.15 points women gave to the importance of network in their work or career, they gave an average 3.18 points to “I put a lot of time and effort in networking,” revealing a big difference between their evaluation of the importance of network and the time and effort they actually put in networking. Therefore, women need to make active use of networks as much as they themselves consider network to be important. Also, women tended to avoid active participation in network activity because they still had negative images of network activity in association with entertainment or get-togethers with drinking. In addition, where women were a minority in the organization, people around them still viewed their strategic network activity negatively without recognizing the legitimacy of the network activity. Therefore, people’s view of women’s network activity should be improved.

2) Corporate Roles

(1) Provide networking opportunities

Because support from the enterprises for formal and informal network activities had a positive impact on workers’ network activities, companies need to provide direct support for network activity. In particular, if women were a minority in the organization, they tended to be alienated from the network. Therefore, rather than leaving this issue to individual women, enterprises need to formally support their network. Nevertheless, the reality is that a mere 24.2 % of businesses responded that they had formal “women networks”

in the companies (Korean Women's Development Institute, 2014).

According to online surveys, both male and female workers hoped to be given a lot of networking opportunities. Of 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, followed by “support the company’s formal gatherings, including manager network, work management, study, and council” and “mentoring- and networking-related support, including mentoring projects, lectures, and providing information.

Also, because women with children had great restrictions on using time other than work compared to men, they could not help but pay attention only to network activity that offered practical gains. Therefore, they should be given opportunities for content-oriented networks, in which women can and want to participate rather than quantitatively expanding support for networks. For example, if women can exchange information on other firms in the same line of business through networks or attain specific goals from networks when they need information to change jobs, such networking will encourage women’s voluntary and active participation.

Mentoring is even more important for women. In the present situation where the number of women drastically decreases as their position goes higher, opportunities for knowhow transfer and human networking between seniors and juniors must be provided through mentoring. Specific measures for operating mentoring programs can be presented as below.

- Step 1: Identify mentoring needs.
- Step 2: Establish formal mentoring plans in compliance with the corporate policy guidelines.
- Step 3: Develop mentoring guidelines (goals, periods, monthly or quarterly agenda, contents of support from the company, and basic matters including code of conduct).
- Step 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
- Step 5: Monitor mentoring programs and select outstanding cases for awards.

Source: Inside data of the Ministry of Gender Equality and Family (2015).

(2) Shift toward a way of thinking that network resources can lead to raising corporate performance

It was found from the results of the analysis that workers' good use of networks in the organization is conducive to businesses. In other words, network resources of each member can be used for the performance of the company, or corporate performance can be raised through efficient and rational communication structure and cooperation. As seen from the case of enterprise "B" which used, as a strength, diverse network resources of workers who changed jobs from other firms, businesses need to make good use of network resources of individual workers. In this regard, companies need to shift toward a way of thinking that their support for network activity of individual workers can lead to improving corporate performance.

(3) Diagnose an organization through analysis of the structure of network in the organization

Businesses need to pay constant attention to management of the network structure of the whole organization as well as of individuals. Still, CEOs or personnel managers have paid little attention to network management. However, it is possible to improve the network

structure through the analysis of the structure of network in the organization by using members with high betweenness centrality as core communication paths or by identifying alienated members from networks and leading them into the communication structure. Also, “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 taken more interest in the management of networks in the organization. They use “organizational network” as one of main indicators for organizational diagnosis because they can establish strategies for personnel management by analyzing the pattern of communication between organizational members to expand the pattern not only to communication and cooperation but also to knowledge, innovation, and trust. The case in point is “CYRAM.” This company, which provides “consulting on organizational network analysis” for businesses, presented the following step-by-step strategy, which can be found at its web site (CYRAM, http://www.cyram.com/solution/solution_01_01.jsp, date of search: Nov. 30, 2015.).

- Step 1: Collect the pattern of communication between organizational members
- Step 2: Establish a strategy for effective intervention based on the result of cooperative network analysis
- Step 3: Diagnose communication culture in the organization from multiple aspects
- Step 4: Based on the result of diagnosis, provide directions for improving efficiency of cooperation and performance

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

3) Governmental Roles

(1) Establish customized mentoring and network programs

Women with high career aspirations and sense of goals had a strong characteristic of forming work-centered networks with transparent and fair relationships. If it was necessary for their work or career development, they tended to have active networking of their own accord, so businesses need to make good use of this characteristic and tendency. In other words, in supporting and managing women with high growth potential as leaders in 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.

Of the government-supported programs, a leading example was “Korean Women Leadership Academy” operated by the Korean Institute for Gender Equality Promotion and Education under the Ministry of Gender Equality and Family. Its main services included basic empowerment training, leadership training, mentoring, and operation of women manager networks (Korean Women Leadership Academy, <http://kwla.kigepe.or.kr>, Date of search: Nov. 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 limited access to the programs. Another limitation was that the programs could not take into account various corporate and working characteristics. Therefore, it is necessary to expand the budget and personnel to specify programs so that customized support is possible. If specific programs and guidelines are established and provided according to

industry types of businesses, forms of businesses, business sizes, workers' jobs, positions and life-cycle characteristics, companies will be able to achieve more practical performance.

(2) Support and promote operation of women's councils

In order to improve women's status in the organization and to actively practice work-family reconciliation and gender equality, it is necessary to establish an formal body dedicated to deliberation and decision on related agendas. A growing number of large companies and public institutions have recently established and operated women's councils. Women's councils can undertake various roles depending on purposes and organizational characteristics. If there is a small number of women or if the council is in its initial phase, its operation is 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 operation because of the feature of voluntary participation. Therefore, they are, in general, representative programs in the initial phase of operating women's councils.

Cases of operating a women's council in the company showed that they achieved a broad range of performance, from supporting women's career development and network formation to ultimately creating an organizational culture that is favorable for both male and female workers to work in. GM Korea Company began to offer mentoring led by its women's council in 2008, planned it as a personnel program in 2010, and has since expanded its operation as an enterprise-wide program. SK Group established W-network under its Talented Human Resources Development Council. W-network is a

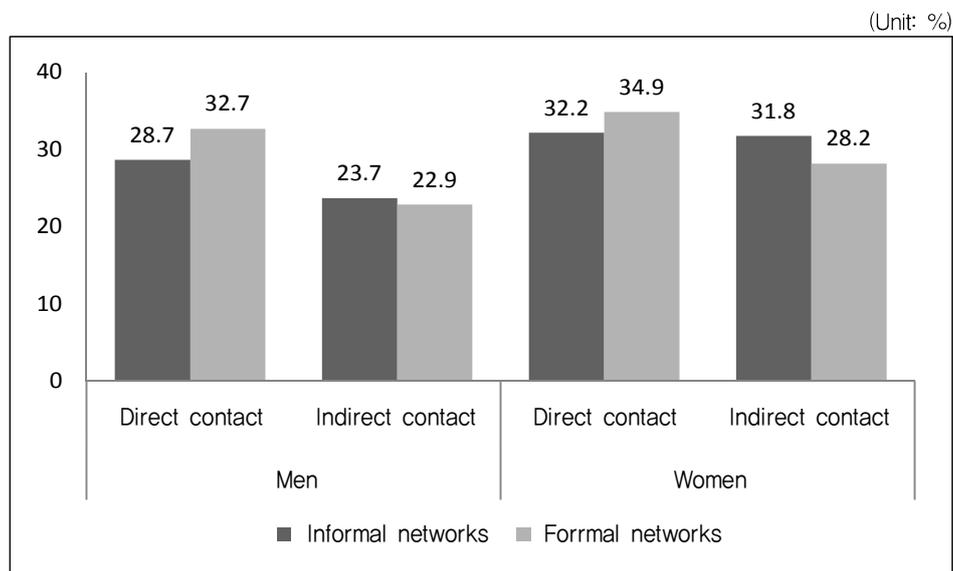
leading case of conducting various activities, such as running women leadership programs, setting goals for recruiting women, expanding the proportion of female managers, and improving the organizational culture. Kyobo Life Insurance Co. established the Kyobo Women's Innovative Council in Korea (KWICK) in 2011. The Council has since provided regular mentoring, held women's conferences, and published and distributed booklets based on the results of mentoring (Inside data of the Ministry of Gender Equality and Family, 2015).

The fact that a growing number of companies operate women's councils means that women's councils can be eventually conducive to corporate performance by developing women's careers and raising their commitment to the organization. As the operation of a women's council may lead to a "diversity council" as a personnel management and managerial policy, women's councils may not be a system for women only. The government should publicize needs for establishing women's councils and play the role of providing diverse business cases and information in relation to their organizational composition and contents of specific activities considering corporate characteristics as well as the role of supporting consulting.

(3) Promote online network activity

In the manner of participating in network activity, most female workers who are highly burdened with work-family reconciliation, including childcare, have difficulty making time for network activity. As such, it is necessary to increase online networking opportunities for them. The results of online surveys as well showed that women preferred online networking because they had a higher frequency of contact through indirect contact (using online network) than men:

31.8% of women and 23.7% of men had daily contacts on informal networks, while 28.2% of women and 22.9% of men had daily contacts on formal networks. Also, women may have more resources available because they can form networks with more diverse people through online activity. Usefulness of online networking will increase when it is difficult to communicate inside the company, like when changing jobs.



[Figure 1] Proportion of Daily Contacts

4) Creation of Social and Cultural Environments to Promote Network

(1) Solve gender imbalance in the labor market

In order to analyze 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 network was the difference of gender distribution in the labor market. Due to the tendency of sex homophily, workers in many cases formed networks between the same sex co-workers. Also, due to the gender imbalance in the labor market, gendered job segregation, and particularly the characteristic that the higher the position in the labor market, the fewer women in that position, women had limited targets to form networks compared to men. This limitation had an impact on network characteristics and their effects. Actually, the online surveys showed that the sex homophily of both male and female workers were over 75%. Also, the analysis of the whole network structure showed that female workers in businesses with a low proportion of women were marginalized on the network. On the other hand, women with high education, high position, and professional jobs had lower sex homophily. In addition, enterprises with a high proportion of women and women leaders participated in more active networking than men.

As discussed by Granovetter who stressed “the strength of weak ties,” when workers are connected with a lot of diverse people, they can take a better position in the network. Also, on the part of businesses, the more smoothly communication between members goes and the more resources workers gain through network activity, the more conducive they were to corporate performance. As such, gender balance in the organization will raise the strength of network. In the case of female managers with strong aspirations for career and sense of goals, they were found to form work-centered networks more actively than men. Therefore, enterprises should increase the number of female managers who can grow as leaders. These findings can be used as a base data to support the need for taking active measures to improve employment conditions.

(2) Create an organizational culture favorable for work–family reconciliation

Forming and maintaining networks as social capital requires investment of time and effort. In this regard, female workers with children who had to interview for this study were so busy balancing work and family that they took almost no interest in “network.” They could at least work because they had families or domestic help who could take full care of children for them. Even so, they did not dare to be involved in any activity other than work. With the situation being so hard, unmarried female workers said in the interview that in planning their future career, they would rather quit their job when they have a baby. However, as explained earlier, female managers with strong career aspirations were very interested in network activity and were determined to participate. Therefore, businesses should reduce the burden of work and family reconciliation so that female workers can be actively engaged in network activity.

Work and family reconciliation is a long-term task that men and women, businesses, and society as well should solve together and to do so, the perception of “working hours” should be first improved. In the online surveys, both men and women answered “improve the culture of long working hours” to the question what support is needed to make good use of network. 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 network activity was needed, the fundamental culture should be first improved.

(3) Improve social and cultural awareness to promote network

As discussed earlier, Korean society has many negative images of

networks. It also has a strong resistance to informal networks because decisions are made based on school and regional ties and connections in not a transparent and fair manner, and transactions are secretly made without even giving people fair opportunities. In this situation, women at times exclude themselves from networks. According to the survey of the whole network, the entertaining culture weakened much more than before in enterprise “C,” and when the company had to entertain clients after the main meal, it asked male workers to serve them instead of female workers. Enterprise “A” had a high proportion of women, partially because it was less burdened with entertainment as its customers mostly worked in the public sector. However, such openly entertaining culture, although weakened, still remained, and female workers themselves and enterprises as well avoided women’s serving clients.

However, this is merely an aspect of a closed network, and as examined in the previous studies, networks between individuals, organizations, societies, and countries are formed in very diverse units and appearances. Depending on how to use networks, social capital that can be mobilized from networks may be different. If Korean culture related to negative connections and ties gradually disappears and improves to be a fair and work-centered network culture with transparent contract relations, then it is expected that networks will be more positively used, and women will be able to better exhibit their abilities.

5) Future Agenda

An empirical study of networks is not an easy task because it is necessary to survey the relative degree of intimacy between individuals

though it is hard to clearly identify related factors. Also, it is not easy to interpret the effects of a variety of variables, including variables that affect network characteristics and variables that are affected by network characteristics, nor is it easy to identify cause-and-effect relationships of network characteristics. This study has several limitations due to these difficulties, but it seeks 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 will continue from a gender perspective.

First, as it was difficult to identify cause-and-effect relationships of network characteristics, research design is needed to clarify the causal relationships in the future. In other words, a time series analysis is needed, 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 in a network affects his/her personal performance by observing a growing business like a startup company.

Second, because the online surveys limited the number of people able to answer, the surveys could not measure network size, which is the most representative indicator for networks. Also, because the surveys dropped out respondents who had four "alters" or fewer in each network and allowed people who had five "alters" or more to answer, there may have been a selection bias so that people with relatively active networks were selected to answer. Therefore, surveys in the future should be conducted without limiting the number of respondents. Also, the problem of dishonest responses or under-measurement that may occur when the number is limited should first

be resolved.

Third, this study surveyed and analyzed only the network between people inside the companies to identify the network structure of the whole organization. As it was found that some women were actually active in external network activity, it is necessary to add surveys of network activity not only inside an organization, but also outside the organization and analyze the results of all surveys together.

Fourth, due to limitations of data, the study could not use objective indicators for personal performance (evaluation score, annual pay, etc.) and thus could not make a precise analysis. Information on personal performance was hard to access because it was inside data. However, if a survey can be conducted with more enterprises as a parameter, the survey will help develop a good model for diagnosing an organization and promoting corporate performance using the network structure.

References

- Cyram (2015). “Assessment of Organizational and Cooperative Networks”
http://www.cyram.com/solution/solution_01_01.jsp, Date of search:
Nov. 30, 2015.
- Korean Women Manager Panel Survey, 3rd wave (2010). original
data. Korean Women’s Development Institute.
- Korean Women Manager Panel Survey, 5th wave (2014). original
data. Korean Women’s Development Institute.
- Ministry of Gender Equality and Family (2015). *Support and Consulting
for Public-Private Partnerships to Put Gender Equality into
Practice*. Internal data (unpublished).
- Korean Women Leadership Academy (2015. 11. 30).
<http://kwla.kigepe.or.kr>, Date of search: Nov. 30, 2015.
- Korean General Social Survey (2012). Original data. Survey Research
Center at Sungkyunkwan University.
- Granovetter, M. S.(1973), “The strength of weak ties.”, *American journal
of sociology*, pp.1360-1380.