The Conceptual Framework of Business to Business Network: Similarity and Difference of Strength of Ties, Structural Hole and Embeddedness
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The Conceptual Framework of Business to Business Network: Similarity and Difference of Strength of Ties, Structural Hole and Embeddedness

Network theory is the dominant paradigm to explain marketing channel relationship. We find out inconsistent and conflicting results depending on each focus, and then the necessity is aroused to generate coherent direction. To integrate these theories, we look closely at each theory and find out similarities and differences. Combining these seminar researches taking comparability and difference, this paper develops a conceptual framework to provide an integrative perspective. Extending from micro-level to macro-level, this research can embrace these theories that have different assumptions, outcomes, and critical roles in network. Also we examines not only main effects of embeddedness and structural hole but also moderating effects of type of network and type of information. As a result, this research can not only resolve existing conflicting empirical results of researches but also suggest a consistently predictable direction, and provide theoretical and practical implications.

Keywords: Network Theory, Strength of tie, Structural Hole, Embeddedness, Social Capital

Minhwan Lee & Yongjune Kim

Network theory has been the dominant paradigm in business-to-business relationship to explain their transactions, and it gives integrative insights as perspectives of multiple players comprising marketing channels. The three major network theories considering inter-firm relationship – the strength of tie (Granovetter 1973), structural hole (Burt 1992), network embeddedness (Uzzi 1997) – have accounted for large numbers of phenomena in this field. These researches provide a great store of explanations to several players who compose representative network, but have different assumptions and explanations for specific phenomena. To resolve these inconsistent results, the necessity is brought up for an integration drawing on their differences in both assumptions and preconditions.

The effort for coexistence and integration about these theories have been tried by many researchers. Gargiulo, Martin, and Benassi (2000) integrate traditional network theory focus their key concept as structural hole theory and suggest the network structure to maximize one’s profitable resources. Comparing some perspective about network structure, they suggest that network relational cycle can differently influence network structure formation. Especially they highlight the influence of information flow depending on network openness. It can be more important in response to external environmental changes, and the others consideration can be extended to information complexity.

Combining these seminar researches taking comparability and difference, this paper develops a conceptual framework and provides an integrative perspective proceeding from micro perspective to macro perspective. Furthermore, this study examines how embeddedness and structural hole have effects on social capital and economic performance, and also serve as moderating effects on exchange of information and network structure based on integrative framework. The findings suggest results of social capital and economic performance that depend on network characteristics, resolve the problem of the previous conflicting results and implications. Providing integrated directional results rather than mixed results that previous researches have provided, this study can give theoretical contributions and practical implications on relational networking management.
Theoretical Background
Granovetter (1973) deeply investigated the strength of tie, which is one-to-one relationship among nodes that compose network, from a relational dimension perspective, then highlight the important role of weak-tie efficient information flow. Based on this seminal research (Granovetter 1973), network theory has been developed and extended from tie strength at the micro level to network structure at the macro level such as structural hole theory (Burt 1992), network embeddedness theory (Uzzi 1997). Although these theories seemed to be specific to each specific situation at their analysis level, they concurrently have potential possibility to be compatible. With regard to network structure studies (Burt 1992; Granovetter 1973; Uzzi 1996), firms benefit from their network embeddedness and network brokerage, but their beneficial aspects which are driven by flow of resources result from somewhat different mechanism.

At the one-to-one relationship ties signify their strength of tie, and these ties can be extended to network structure that has more than three parties. Strong tie can be extended to, and conceptualized into, cohesive network, which means highly dense and embedded network structure; on the contrary, weak tie can be generalized into sparse network, which has not cohesive tie but structural holey network structure.

Theory of the Strength of Tie
Granovetter is the representative researcher of early network theory, and presents seminal research on the spread of information in social networks known as “The Strength of Weak Ties” by using the perspective of sociology (Granovetter 1973). This paper is a highly influential sociology paper, with over 23,000 citations according to Google Scholar (by February 2013). After this paper was published, a large body of literature and attention about this topic followed.

This paper provides a taxonomic definition about tie depending on strength of tie like strong tie, weak tie, no tie. Although previous literature has focused on strong tie, this paper highlights the importance of weak tie. Weak ties give access to populations and audiences that are not accessible via strong ties. In this manner, weak ties can perform a role of bridge that links with the others social networks for information searching, adaptation for external environmental changes. This result is meaningful and insightful due to the fact that it considers not only an ego-network but also various accessibilities to others social networks that exist in the real world. Specifically, it investigates information acquisition depending on information provider at the job market of Boston, and suggests that weak ties take high proportion of information related to a job. Through interactive bridge role of weak ties, which have excellent functionality of information transfer and enables connection between strong ties and other strong ties, it facilitates the flow of socially distant ideas, influences, and information.

Strength of tie is defined as combination of four components 1) how long they spend their time with each other, 2) how much they have deep emotional feeling, 3) how they trust each other, 4) how their relationship was established and maintained. Drawing on this classification, in case of strong tie, relationship can be easily overlapped, and it makes difficulty to accept innovation since network already has a high level of density, does not have a spare access bridge to external information. On the other hand, weak ties can play a pivotal role for information transfer and diffusion owing to accessible possibility to new information which is not duplicated. Therefore a member, who activates and utilizes weak ties efficiently, can create new opportunities and secure ability to coordinate with their parties of relationship, and eventually enhance the capability to access the resources.

To sum up this theory generally is as in the following. When members of network form a connection to each other through their time and effort, homogeneity of them influence their relationship formation process and relationship quality, also cognitive disharmony as well as opinion conflict influences transitivity of Granovetter. Results from this process, weak tie can only perform bridge role to connect other networks, it helps to facilitate information diffusion by reducing path length. If network has shorter path length through weak tie, network member is possible to make market-oriented opportunities and to obtain capability to coordinate one’s various resources. At the perspective of each member of network, weak tie can make one’s relationship closer, then it can not only provide more fruitful opportunities on job market but also increase possibility to useful resources.

Structural Hole Theory
Structural hole is defined in such a way that there is a structural hole between the two groups who have in common relationships with third parties, the third entrepreneurial party who is located at this structural hole can obtain opportunities to have information benefit and control benefit. The less number of networks has a degree of cohesiveness, the more number of networks can obtain benefits from high accessible possibilities through structural holes. Through this process, the scale of social capital between networks that the members belong to increase.

In contrast to the compacted social capital which is based on relationship of strong ties such as a family member, a close friend, a neighborhood, and bridging social capital, which is based on relationship of weak ties such as a distant friend, a joint member, a colleague, may exist at the gap, which means structural hole, between heterogeneous networks. This bridging social capital can be expected to be more contributable to relational growth than compacted social capital by reducing transaction cost among groups and transferring new information from the outside to the inside. Looking into the inside company people, who are good at promotion at their career, we discover that they are actually located at good positions in the network where it is not overlapped of information like a structural hole. As a result, a relatively advantageous position which has not overlapped with another relationship can connect relation among heterogeneous networks, but without this link they
cannot be linked with each other, and can obtain competitive advantage in information flow.

Burt (1992, 1997) suggests an alternative perspective about the benefits of relationship between network structure and social capital by proposing the definition of structural hole. Though cohesive network has usefulness of continuous social norm, it simultaneously has lack of autonomy so that it cannot negotiate about its own role and interest. Also, he emphasizes the results of brokering opportunities that result from connecting segregated clusters of networks in multiple information and network. He explains that the member is located at a position that can play a role of bridge among clusters and he knows better information and opportunities, and accounts for gaining an advantageous condition that they pursue and choose possible opportunity.

Early structural hole theory mainly deals with competitive advantage of resource, Burt (1997) suggests autonomy of member as important property to promote efficient coordination of organization. He argues that the member who has accessibility to network with abundant structural hole can gain benefits from speed of information flow and be possible to be evaluated well on their results since the parity of opportunities is guaranteed adding value depending on their resources. These brokerage effects are gaps in information flows between alters linked to the same ego but not linked to each other (Ahuja 2000), and indicate that the people on either side of the hole have access to different flows of information (Hargadon and Sutton 1997).

Additionally, Burt (2002) pays attention to characteristics at the aspect of network structure and specific condition that the member who occupies strategic position can obtain their autonomy and utilize their control for information communication and resources, and finally derive benefits from taking advantageous position. In this circumstance, he theoretically identifies four network mechanisms which can influence social capital of members who are located at different positions including 1) network model with contagion, 2) network model with prominence, 3) network model with range consisting of closure, and 4) network model with range consisting of brokerage. Through these mechanisms the members who occupy locations of structural hole can capture high level of social capital.

Network Embeddedness Theory
Embeddedness, which is suggested by Uzzi (1996), is largely considered as a factor that it can establish motivation and expectation of network member and facilitate well-coordinated adoption. In this research, network tie can be divided into two terminologies like arm’s length and embeddedness. Embeddedness provides the potential linkage of sociology and economics and highlights the influence of social tie for economic performance that existing theory has neglected or not explained. Though embeddedness is a very useful construct to understand market failures from the perspective of neoclassicism, it cannot provide a specific explanation about how social tie influences economic performance through certain process.

Embeddedness is different from structural hole so that it interprets structural position of network and it focuses on the relational aspects of network which has social solidarity, not viewing network from a structural perspective. Uzzi (1996) finds out three characteristics of embeddedness such as trust, fine-grained information transfer, and joint problem solving arrangement result from fieldwork by using ethnographical methodology. Trust is a kind of governance mechanism, and it affects relationship with embeddedness. Fine-grained information transfer can reflect characteristics of each member, mainly be treated with strategy, and enhance problem-solving capability depending on know-how development of information transfer. Joint problem solving arrangement can coordinate the role of members, and give solutions to possible problems. As a result, embeddedness is opposite and unique exchange system compared to market mechanism, the firm that is operationalized by both market system and relational system has high survival possibility than by only arm’s length tie.

In this research key finding provides simultaneously not only an explanation but also limitations about results that existing network of network and economical explanation cannot predict. This research establishes conflicting hypotheses related to economic performance, and also extends the range of arguments from how firm takes benefits from linkage of network to what kinds of network provide highest benefits further to integrated combination level of embeddedness tie and arm’s length tie.

Since then, Zukin and DiMaggio (1990) suggest their result that embeddedness consists of four components, 1) structural as described above; 2) cognitive-structured mental processes that direct economic logic; 3) cultural-shared beliefs and values that shape economic aims; and 4) political-institutional limits on economic power and incentives. In this typology, the last three denote embeddedness as a social context, whereas structural embeddedness focuses on the relational quality of inter-actor exchanges and the architecture of network ties. To sum up, this terminology highlights not only structural aspect of network, but also social context such as cognitive, cultural, and political ones, and it can investigate both quantitative and qualitative characteristics of network.

Conceptual Framework
To look at the results of integrating the theories discussed above, we firstly investigate similarities and difference among the theories.

Strength of tie - Structural hole
They have the similar opinion about the fact that the member who is located in a point of contact plays a role of connecting more than two individuals or groups for the information. Also, both weak tie and structural hole can deliver new information that is not exchanged and shared by reducing overlapped information unnecessarily. On the other hand, they have different characteristics of relationship in network. Tie of strength divides relationship linkage such as strong tie, weak tie, absence, and then it not only regards
absence as weak tie but also compares strong tie with weak tie. Structural hole highlights the role of brokerage and implies potential possibility to be operated by mechanism owing to control own strategically advantageous position.

**Strength of tie - Embeddedness**

They highlight commonality about the importance of not only strong tie but also weak tie. Examining closely the role of weak tie, it has something in common with giving importance about information flow from the perspective of network structure. The difference between these theories, although strength of tie insists that weak tie can play more effective role to obtain new information and resource, embeddedness insists that we should understand pros and cons of all relationship, and not underestimate the role of strong tie that is a socially embedded construct. Although strong tie affects more effectively before reaching a certain level of network, conversely weak tie affects more effectively after certain threshold. As a result, it needs to establish well-balanced network structure that is combination of strong tie and weak tie.

**Structural hole - Embeddedness**

Following the arguments that moderate level of structural hole of network facilitates effective information flow, this argument can be understood by similar perspective with tie valence of embeddedness. Both structural hole and embeddedness describe the negative effect of highly cohesive network, but, on the contrary, structural hole can effectively manage inefficiency of unnecessary information by linking non-overlapping information. Through focus on internal information flow of network, embeddedness focuses on economic performance like firm’s survival rather than utilization of information depending on formation of tie.

Based on the similarities and differences among major network theories, it can be expressed and tabulated as follows.

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**In Summary**

Granovetter (1973) investigates strength of tie as one-to-one relationship of network that consists of nodes, and highlights efficiency of weak tie in information flow. Based on this research, extension of network research related to network relationship can be connected from strength of tie to structural hole theory (Burt 1992) and network embeddedness theory (Uzzi 1997).

Strong tie can be conceptualized into structurally cohesive network, which means highly dense embedded network structure. Conversely, weak tie can be conceptualized into structurally sparse network, which means relatively holey network structure.

Along with this extension from micro-level to macro-level, we need to recognize positive and negative effects depending on strength of tie. Also, supposing existent assumptions about the threshold of combinations depending on kinds of linkage, we need to have necessity to look at firm’s financial outcome as well as information flow from the more integrated perspective.

**Research Model**

Based on former linkage between each theory, this paper provides an integrated conceptual framework to identify applicable range and scope of this framework from a new alternative perspective. This framework carries from individual relationship level to group relationship level, and examines the effects of embeddedness and structural hole on social capital and firm performance in terms of network structure. Furthermore, it can integrally refine and reestablish existing theories by looking at moderating effects of the type of network and the type of information.

Specifically, we establish hypotheses about the effects of embeddedness and structural hole on social capital and performance based on operationalized definition of each variable, and then examine the moderating effect of type of network and type of information both relationship embeddedness and structural hole.

Social capital is “the sum of resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition” (Bourdieu and Wacquant 1992, pp. 119). To begin with, social capital is defined as a variety of entities with two elements that all consist of actors within the structure (Coleman 1988; 1990); it is also defined in the business research as the sum of the actual and potential resources embedded within, available through and derived from the network of relationships possessed by an individual or social unit (Nahapiet and Ghoshal 1998). As a result, social capital can be conceptualized as a multi-dimensional construct, and it is an enormous construct with many subordinate concepts. Although social capital exists intangibly in the individual relationship, it can be extended and applied from person-to-person to business-to-business relationship based on individual interactions.

Both Bourdieu (1985) and Nahapiet and Ghoshal (1998) partially define social capital in terms of relationships of various dimensions of relating to relationships regarded as important. These dimensions include trust (Coleman 1990; Ramstrom 2008; Wu 2008), cooperation (Spence, Schmidpeter and Habisch 2003), reciprocity (Coleman 1990), credibility (Coleman 1990), goodwill
(Coleman 1990; Adler and Kwon 2002), and norms (Coleman 1990; Bourdieu and Wacquant 1992). Thus, social capital is an extensive concept containing enormous subordinate concepts. This intangible resource can be present not only among the individuals, but also among the firms in accordance with individual relationship formed by individual interactions.

From the perspective of exchange, social capital can be divided into tangible resources like product supplies and intangible resource like market information. Largely, social capital has three dimensions such as structural, relational, and cognitive, but it also focuses on how firms generate benefits from accessible opportunities. Previous researches related to social capital as multi-dimensional suggest diverse antecedent variables, and each researcher proposes combination of these variables. Based on Nahapet and Ghoshal’s (1998) definition, social capital is the total sum of the actual and potential resources embedded within, available through and derived from the network of relationships possessed by an individual or social unit.

Under the premise that firm fundamentally seeks for profits, the performance of firm is profit making, the firm can be retained on the basis of profitability. Therefore, the performance of the firm can be described by the financially sided economic outcome, these results guarantee survival of firm on the market. Gulati (1998) suggests that the network with multiple business partners is an important passage to accumulate worthy resources needed for survival and growth of a firm. That is, the performance of firms is influenced in important ways by the strategic network of relationships in which firms are embedded (Gulati, Nohria and Zaheer 2000). In this study, performance is growth rate based on financial performance that represents the firm’s sustainability and economic performance relate to growth in terms of network.

**Embeddedness on Social Capital and Performance**

Embeddedness is a directional, relationship-related concept that is not seeking for short-term economic profits in a narrow perspective but seeking for strengthening of the relationship through trust and reciprocity. It provides potential linkage between firm activities in accordance with sociology and economics, and can explain how social tie influences economic performance. Although embeddedness means social solidarity, structural embeddedness means cohesion on the network structure. Therefore, embeddedness means embeddedness in one’s involved network in the network structure with indirect as well as direct relationship. Based on Uzzi’s (1997) definition, embeddedness is structural embeddedness in belonging network by extending social solidarity with relational dimension to network structural dimension.

Coleman (1988) highlights the role of cohesive tie, which facilitates coordination of each other and foster normative environment. In this manner, it focuses on positive effects of cohesive tie and network closure to establish trust, social norm, and sanction. The accessible total amount of social capital is the function of surrounding network closure, which is similar to the contention of Granovetter (1985).

The higher a network is, the higher trust and cooperation among members are (Coleman 1988). Firms which have cohesive and linked network have each normative expectation, and form relationship with their partners who have control of insubordination that can appear in internal network. By mutual monitoring, members of network pursue profit sharing, trust building, and cooperation for their network, and it can also generate competitive advantage (Di Maggio and Powel 1983).

However, given limited time and resources, cohesive network intensifies a sense of obligation to maintain current linkage and neglects new relationship formation to sustain value of social capital. Although strong tie with long-term partner can enhance mutual understanding and trust, it can cut off surrounding external network if this situation repeats.

P1a: The higher an embeddedness is, the higher the positive effect is on social capital. When the level of embeddedness reaches a certain point, the inverted-curve shape of effects appears.

P1b: The higher an embeddedness is, the higher the positive effect is on performance. When the level of embeddedness reaches a certain point, the inverted-curve shape of effects appears.

**Structural Hole on Social Capital and Performance**

Structural hole means a specific location in sparsely linked network, and a member in this position achieves efficiency and gains advantage of a strong broker by exchanging non-redundant information than the others companies. This member, who takes the brokerage role among network clusters, can have access to better information and have more opportunities, and can enjoy superiority in negotiating and choosing better transactional conditions. Conversely, this position has a little autonomy to negotiate its own role about contract in strongly concentrated relationship. Based on Burt’s (1992) definition, structural hole is an advantageous location to secure superiority of brokerage and efficiency of information flow in network structure owing to lack of connection among disconnected clusters.

Burt (1992, 1997) focuses on benefits from social capital formed by brokerage opportunity rather than usefulness of enforced norm by cohesive linkage, and it can be a source of competitive advantage and effectively facilitate cooperation as core property by using autonomy. The administrator who has rich network with structural hole has relatively speedy promotion and incentive, also enhances value of organization with superior ability. Network betweenness is related ability to exchange or combine resources, it can improve value through product innovation (Tsai and Ghoshal 1998).

However, when structural hole exceeds a certain numerical point, structural hole also can make too many connections difficult and exceed utility value of non-redundant information that can obtain advantages from structural hole, and this situation can make inefficiency about duplication of information. Therefore, it would increase up to a certain point, if the ratio of too high efficiency will occur.
P2a: The higher a structural hole is, the higher the positive effect is on social capital. When the level of structural hole reaches a certain point, the inverted-curve shape of effects appears.

P2b: The higher a structural hole is, the higher the positive effect is on performance. When the level of structural hole reaches a certain point, the inverted-curve shape of effects appears.

**Moderating Effect of Type of Network**

The type of network means that the member who composes network structure has propensity to openness about the outside network in the inter-firm relationship. Openness is the attitude to the outside and the attitude of an external member to the inside inflow, and this attitude can be connected. In other words, this is the question about whether the inside member can adopt new information from the outside or not. In this manner, openness means an open and favorable attitude to the influx of the outside information, but, on the contrary, closure means a closed and hostile attitude to the influx of the outside information.

Closure of network can maximize information flow and make information flow efficiently up to a certain level at the stage of network development. But if this level passes a certain point, flexibility of network decreases due to strong internal cohesion. Then, these members can be indolent about external information flow and never be at the center of attention. Development of network is somewhat realized, adaption in response to information depending on changes of external environments becomes important corresponding to the level of network. These reactions to changes in market conditions can maximize information flow, and this is the point that the importance of new information increases. Depending on the openness of network, the effects on social capital and performance are differently influenced.

FIGURE 1

Research Model

If the network is open with generosity to the new contact with the outside world, the influence of structural hole is more likely to enhance by giving the possibility to strengthen brokerage between networks. On the contrary, the influence of embeddedness has an opposite direction of influence between solidarity and openness, and it will offset each other's influence owing to confused directionality. If the network is closed with hostile attitude to new outside contact only focusing on internal solidarity, the influence of embeddedness is more likely to enhance. Conversely, the influence of structural hole has a contrary direction in terms of connectivity with the outside world, and it will influence each other to offset.

P3a: If the network is open, more impact of structural hole will strengthen.

P3b: If the network is closed, more impact of embeddedness will strengthen.

**Moderating Effect of Types of Information**

The types of information mean classification types according to the complexity on its subject to information flow in the inter-firm relationship. The types of information are different both at individuals and companies in information processing. Since the length of time and the amount of effort differ in certain levels of awareness and understanding in terms of transfer information, these resource-differences can influence information transfer. In this manner, simplicity means transferable information that has low complexity and can be delivered by simple method. Also complexity means information to need further explanation or description, and following information is not only delivered by simple one-dimensional method due to high complexity.

Patents and information in high technology industry which needs to highly elaborate capability can be a good example. According to this type of information, the effects on social capital and performance are differently influenced.

Uzzi (1997) suggest that strong tie has great influence at the economically valuable and elaborate information...
transfer. A similar point of this view, Hansen (1999) suggest that although weak tie has advantages in exploring efficiently new information, strong tie has advantages in transferring complicated information and silent knowledge. The simpler information makes it easier to deliver information by simple and uni-dimensional method because it facilitates the information transfer to seize opportunities from the market. This concept can be connected to the role of brokerage, and the impact of structural hole will enhance. Though embeddedness can make information transfer by behavior patterns based on socially implicit norms from day-to-day information transmission, the degree of impact will be smaller than that of structural hole. The more complex information is difficult to transfer, and thus the premise of cohesive relationship is needed. This concept can be connected to embeddedness, and the impact of embeddedness will enhance. Even if information is delivered through structural hole, it is difficult to believe information transfer well. As a result, the degree of impact will be smaller than that of embeddedness.

P4a: As information moving through the network is simpler, the effect of structural hole on social capital will strengthen.

P4b: As information moving through the network is more complicated, the effect of embeddedness on social capital will strengthen.

The purpose of research model can be expressed like the following figure 1.

**General Discussion**

Through consolidated approach to integrate existing major network theory, the strength of tie (Granovetter 1973), structural hole (Burt 1992), and network embeddedness (Uzzi 1997), this research formulates conceptual framework that can provide resolving conflicted and complicated interpretation of results. Especially we look closely at each theory and find out similarities and differences. Combining these seminar researches taking comparability and difference, this paper develops a conceptual framework to provide an integrative perspective. Although performance of firms can be more fully understood by examining the network of relationships, we consider economic performance regarded as traditional dependent variable of performance. Through viewing two dependent variables, it suggest not only that different dimension of performance can be measured spontaneously but also that results can be compared with the other. Through this conceptual perspective, we suggest following proposition about social capital and performance.

This research postulates how embeddedness and structural hole have effects on social capital and economic performance, and also moderating effects of exchange information and network structure based on integrative framework focus on integrating existing network theories. Both embeddedness and structural hole are positively influence performance as well as social capital, but after certain optimal level of network the inverted-curve shape of effects appears. The more open network strengthens the role of structural hole, whereas more closure network strengthens the role of embeddedness. Furthermore, simple information can be easily transferred through structural hole, whereas complicated information can elaborately transferred within embeddedness. Considering these proposition, it can provide richer interpretation about role of network structure in performance. Both type of information and type of network activates differential the influence of network structure to determine the tendency in terms of exchange one’s information, cooperating one’s resources.

**Limitation and Future Research**

Although this research provides a conceptual framework for further research by theorizing literature review, it cannot provide empirical results to support our argument. To yield empirical finding, some comments are as follows. It needs not individual-level data but firm-level data to analyze network relationship of transactions. Measuring segmented multi-dimension such as structural dimension, relational dimension, and cognitive dimension is better than uni-dimension in terms of measurement of social capital. Like social capital, performance can be measured by two dimensions such as growth and survival.

Furthermore, there are control parts to need to minimize the influence of exogenous variables out of research model. Firstly, the concepts of embeddedness and structural hole are defined from network structural perspective, and it is needed to establish the range of network to be considered as one network. In other words, it needs to specify judgment criteria to evaluate one’s own network such as a range of ego-network. Secondly, the identical number of members consisting of networks is needed to minimize effect size, since network size varies. Network structural perspective looks into the network as comprising components, and thus these can be separated from minimum to maximum. Also the influence of network is subtle to network size, and it is necessary to limit the numbers of network.

This study will proceed research process with adju-tive restriction of network range and network size is needed to investigate the impact of embeddedness and structural hole at the same level. However, it is possible that there are some specific size to maximize the network effect in accordance with ego-network size and structural size that members of network have. Therefore, these the graded approach by analysis with differential network size can be able to derive optimal network size. The other graded approach can consider the relationship dynamics according the changes in the network through relational cycle, it can provide practically instructions for network administra-tion.
REFERENCES


