

Assessing Social Capital Capacity: The Development of a Network Accessibility Scale

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An individual's ability to access social network resources may lead to professional success. Research has indicated that the utilization of social capital can assist in the upward mobility of an individual. By identifying an individual's ability to access network resources, we stand to learn much about how goals and objectives can be achieved. An instrument was developed to assess network accessibility. Suggestions for further development of the instrument and implications for HRD are provided.

Key Words: Social Capital, Networking Behavior, Assessment

The ability to access social capital has been recognized as an important component to upward mobility, both personally and professionally. Whether it's for the purpose of finding a job, starting a business or seeking a promotion, accessing network resources represents the needed advantage to achieving success. Research focusing on social capital have covered diverse topics including career development (Belliveau, 2005; Brass, 1984; Eby, 2001; Forret & Sullivan, 2002; Tempest, McKinlay, & Starkey, 2004), job attainment (Belliveau, 2005; Lamba, 2003; Villar, Juan, Corominas, & Capell, 2000) and new business formation (Baron & Markman, 2000; Chaston, 2000; Renzulli, Aldrich, & Moody, 2000). These studies were effective in illustrating the utility of social capital and the advantages it provides to achieving desired outcomes.

Scholarly research has suggested that an individual's network is critical to social mobility (Dominguez & Watkins, 2003; Erickson, 1996; Lin, 2001; Stanton-Salazar & Dombusch, 1995). More specifically, individuals with higher levels of social capital have access to social resources that can be utilized to achieve objectives, such as searching for a job, political power or social support (Burt, 2001; Flap, 1999; Lin, 2001). As a result, those people who possess superior networking skills may experience a more favorable social position within that network (Blau, 1993; Brass, 1984; Lin, 2001; Mehra, Kilduff, & Brass, 2001; Pfeffer, 1991). The social position determines the potential benefits the individual may receive from their network. These benefits can be viewed as the ability to access social capital, where certain structural attributes (i.e., centrality, structural holes, strength of ties) lead to resources that will help achieve a desired objective. Therefore, an individual's social position within a network may help to determine the utility of the network itself. What happens when a person's position within a network is not favorable? Altering an individual's social position may provide access to resources that were previously unavailable. (Burt, 2000; Chellappa & Saraf, 2002; Smith-Doerr, Manev, & Rizova, 2004).

Problem and Research Questions

In order for an individual to benefit from the resources inherent in a network, they must possess the ability to access information from the network that is useful and relevant to meeting their objectives. The utilization and growth of social capital therefore requires the ability and skills to effectively manage and gain access to network resources. Utilization of network resources varies greatly among individuals and as a result has caused social stratification and the inequality among people (Blau, 1993; Lin & Dumin, 1986). In order to maintain a level playing field within an organizational context, HRD practitioners must consider the impact poor networking skills have on an individual's ability to effectively contribute to the strategic direction of the organization. If for example, the selection of an individual for promotion is required, it is important that the best candidate is chosen for the position rather than choosing someone who is simply well connected. Providing employees with the skills necessary to utilize their network resources will likely increase the opportunities for those individuals who have the ability to perform the job (human capital) but can not gain access (social capital) to those who are in a position to help. At the same time, the organization will benefit by having a broader range of candidates to select from.

If social stratification is to be minimized, access to social capital must be leveraged in order to level the playing field. Assessing an individual's ability to access network resources represents the first step to improving the utility of networks. In order for individuals to take advantage of social resources, identifying their capacity to access network information must be determined. The goal of this study was to develop a network accessibility scale that measures the skills and abilities of an individual's ability to access network resources. Once an individual has been assessed, interventions can be adopted to change their network position. By changing network position, it is believed that the likelihood of achieving a desired objective would increase. Past research (Belliveau, 2005; Chaston, 2000;

Dominguez, & Watkins, 2003; Erickson, 1996; Granovetter, 1973; Lin, Ensel, & Vaughn, 1981a) has indicated the value of an individual utilizing their social network for the purpose of upward mobility. The need to create an instrument that addresses or identifies an individual's ability to access resources is critical to changing network position.

The field of HRD stands to gain much from the development of a network accessibility scale. First, no known instrument for measuring network accessibility has been validated through exploratory factor analysis. Second, the creation of an accessibility scale will provide HRD researchers with a standardized instrument that will help to generalize findings across a number of studies. Third, the identification of network accessibility skills will help determine the impact increased levels of social capital may have on HRD areas, such as, job performance, learning transfer, career development, organizational change and human capital transformation. Fourth, a network accessibility scale will provide HRD researchers with a means of predicting the future mobility of individuals within and between organizations, and, fifth, the literature on social networks has provided great insight into the dynamics of social structure but has not clearly identified the skills and abilities to alter that structure as a means for improving mobility through increased levels of social capital.

The study attempted to address the following research questions:

- 1) What variables assist an individual's ability to access network resources?
- 2) Do these individual variables interrelate to form meaningful patterns?

Social Capital Research

Social capital consists of the resources that are embedded within people's social networks. Coleman (1988, p.16) has defined social capital by its function as "a variety of entities with two elements in common: they all consist of some aspect of social structures, and they facilitate certain action of actors – whether persons or corporate actors – within the structure". He identified three forms of social capital: one, obligations, expectations and trustworthiness of structures; two, information; and three, norms and effective sanctions (1988). Obligations, expectations and trustworthiness refer to an individual's understanding that if they do something for someone, they trust that their actions will be reciprocated sometime in the future. Coleman believes that the more social credit is extended within a network, the higher the level of social capital that will exist. The second form of social capital refers to the fact that the potential for information is inherent in a social network and that individuals indirectly take advantage of others' knowledge, skills and other forms of human capital. Lastly, the third form involves norms and how they are created through the relations within a network. Within an HRD context, social capital represents an additional vehicle in which an individual can build human capital and advance the agendas of both themselves and the organization. Measuring an individual's ability to access network information can help to explain the impact relations have on human capital growth by observing the social structure and the relations which exist within that structure.

Many approaches have been made to conceptualize social capital. The most notable of these are weak tie theory (Granovetter, 1973), structural hole theory, (Burt, 1992) and social resources theory (Lin, Ensel, & Vaughn, 1981a, , 1981b). The first approach was the strength of weak ties theory, which was introduced by Granovetter (1973). The weak tie theory demonstrated that job opportunities for mid-level managers were most likely to come from an individual's weak ties versus the strong connections in their network. Strong ties consisted of close relationships (family, co-workers, close friends) that provided information that was widely shared and became quickly redundant within the clique. Granovetter (1973) viewed weak ties as a connection to densely knit networks outside the individual's direct contacts which could provide non-redundant information. Granovetter found that it was more likely that weak ties rather than strong ties would provide a greater opportunity for new information about job leads. Therefore, the weak tie theory focused on the characteristics of the tie between actors.

The second approach was introduced by Burt (1992), who identified gaps which existed between two groups of individuals within a network. The gaps were referred to as 'structural holes'. The focus was on the pattern of relations among the contacts within an individual's network. This was quite different from the weak tie theory as it did not focus on the characteristics of the ties. Burt's structural hole theory postulates that those individuals who possess many structural holes within their network are in an advantageous position, both from a power position and with regards to upward mobility. Burt (1992) believed that the structural hole theory addressed the bridging properties more succinctly than did the weak tie theory and as a result provided a stronger foundation for theory.

The third approach to social capital was the social resources theory (Lin, Ensel, & Vaughn, 1981a, , 1981b). Social resources theory focuses on the resources embedded within the network not necessarily the strength of tie nor the bridging properties between groups that lead to an individual's upward mobility (Lin, Ensel, & Vaughn, 1981a). Basically, an individual is more likely to utilize a contact within their network (regardless of tie strength) who can

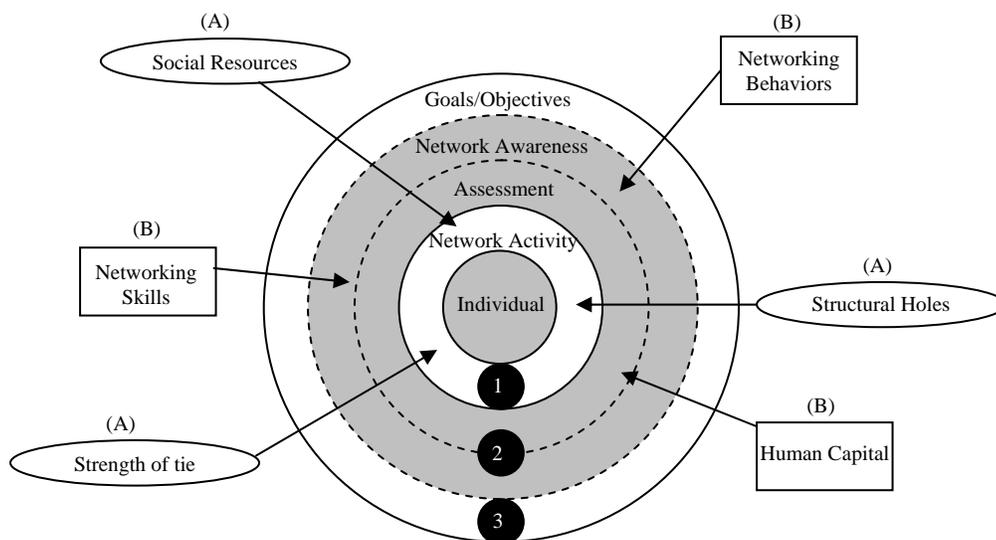
provide the resource necessary for them to meet their objectives. For example, a customer service representative seeking advice on how to deal with a difficult customer would seek out that individual who possesses the necessary experience to assist in the situation, regardless of the strength of their relationship. Lin actually found through his research that there was a negative relationship between the strength of the tie and the prestige of the occupation of those individuals who were contacted, which was contrary to the weak tie theory. Overall, the social resources theory focuses on characteristics of the contacts within the network versus the nature of the tie (weak tie theory) or the pattern of ties among contacts (structural hole theory).

The social capital research helps to explain a networked environment in which individuals are successful at achieving a desired objective. More importantly, if the network structure in which an individual operates were to alter as a result of a planned effort to change, what impact would that have on their ability to achieve their goals and objectives? The need to assess an individual's ability to alter their position within a network is important if HRD practitioners are to effectively assist in organizational development activities. Although, the more recent structural hole and social resources theories attempt to replace the weak tie theory, all of them represent theoretical relevance to dealing with individuals maximizing their potential for success.

Conceptual Framework

The conceptual model for this study is illustrated in figure 1. As the individual attempts to reach their desired goal/objective, social capital research (A) indicates that an individual's characteristic of ties, pattern among ties and knowledge of resources embedded in their network (1), determines the likelihood of them being successful (Burt, 1992; Granovetter, 1973; Lin, et al., 1981a). This phenomenon occurs once the individual has set a goal/objective, whether it is a conscious effort or not. For example, if an individual is seeking a higher paying job in their field, access to information via their weak ties may assist them in identifying new job opportunities through the influx of non-redundant information flowing into the network (Yakubovic, 2005). However, if they possess limited weak ties, a redundancy of information may exist as the network is closed to new opportunities emerging (Granovetter, 1973). If an individual is not situated in a positive position within their network or is unaware of available resources (B), the chances of success are dramatically diminished. However, if an intermediary stage is introduced to assess an individual's ability to access resources and information, improvement to their position within the network and knowledge of resources will occur (2). Once assessed, a greater opportunity to achieving the desired goal/objective is more likely to occur (3) as a result of uncovering the individual's level of accessibility within the network.

Figure 1. Conceptual Model



Methodology

Sampling and Data Collection

The survey population for this study consisted of individuals who were presently attending a college or university. An invitation was either sent out directly to students or via a career counselor through email asking them to fill out the online questionnaire. In total, there were 746 respondents to the questionnaire. Of the 746 individuals, females represented 65% of the total respondents. Sixty nine percent of respondents were between the ages of 21 to 30, 17% between 18 to 20 years of age, with the remainder of the respondents 31 or older. Seventy three percent of respondents were employed at the time of the study and 36% were employed over four years, 26% two to three years, 23% four to five years, 11% under a year and 4% had never been employed.

Instrumentation

The principal measurement device was the Network Accessibility Scale (NAS). It was embedded in a questionnaire that sought information about respondent background characteristics as well as the nature and extent of their ability to network. The first step in the construction of the NAS was to develop an interview schedule to obtain information on the required behaviors for acquiring resources from a volunteer sample of 27 individuals. As well, a review of the literature regarding social networking was conducted to determine any qualitative data that could be used for the questionnaire. Next, a prototype NAS was constructed by assembling, in random order, a list of statements highlighting social networking behaviors identified through the interviews and literature search. After elimination of equivalent statements, items were retained for pre-testing.

Item clarity was assessed by soliciting comments from 15 college students, who in addition, completed the prototype NAS. The prototype was subjected to standard item analysis procedures, including an overall measure of internal consistency. Although overall reliability was high ($\alpha = .92$), analysis of respondent comments and item statistics indicated that the scale could be shortened by revising or deleting certain items. Consequently, the questionnaire was revised and 18 of the original 92 were deleted. The alpha reliability for the shortened NAS was .90. The individuals who had participated test sample were not included in the final group of 746 respondents.

Respondents to the 74-item NAS were provided with the statement ‘Think of a time when you required some information, help or advice. The information you required may have had something to do with starting a business, looking for a job or learning how to cook. Whatever the task was, you required some assistance to meet your objective(s) from contacts you knew or didn’t know at the time. A contact can be defined as a family, friend, co-worker, neighbor, friend of a friend, teacher, doctor, etc. Looking at the following statements, assess each of the items as to their impact on your ability to gather the necessary information, help or advice to meet your goals/objectives’. A sample item is given below. The respondents were instructed to choose between 1 and 5, 1 being that they strongly disagreed with the statement and 5 being that they strongly agreed with the statement. A sample item is provided below.

1. I am confident in approaching people I don’t know
- | | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

Data Analysis

Because no firm theoretical basis exists for predicting the pattern of relationships among the NAS items, exploratory factor analytic procedures were employed. A principal components analysis, with unities in the diagonal of the correlation matrix, was utilized to extract the initial factors. The number of factors retained for rotation was determined by the Kaiser criterion. To avoid multicollinearity and to obtain the simplest possible factor structure (maximization of the variance of the squared loadings in each column of the factor matrix), orthogonal rotation using the Varimax procedure was utilized to reach a final solution.

Results and Findings

Fifteen factors were extracted by principal components analysis that met the criterion for retention (an eigen value of 1.0 or greater). However, only seven factors were retained as the remainder were not able to be interpreted due to weak factor loadings and the presence of multiple cross loadings. Only those variable loadings of .40 or greater were used to define a given factor. All items loaded ranged from .82 (item 19) to .46 (item 47). Overall scale reliabilities (α) for the six factors were .89, .90, .81, .64, .63, .58 and .63 respectively (Table 1). None of the 39 items loaded on more than one factor at the .40 level. The final solution, with a factorial complexity of zero, met the most rigorous criteria of simple structure.

Table 1. Factor Definitions and Descriptive Data

<i>Factor</i>	<i>Definition</i>	<i>Sample Item</i>	<i>Number Items</i>	<i>α</i>	<i>Average – Factor</i>
Information Gathering	These items deal with an individual's ability to seek out and utilize information from the network.	I find it easy to ask the right questions	11	.89	.61
Relationship Building	An individual's ability to cultivate, nurture and manage network relationships.	I find it easy to initiate a conversation	8	.90	.68
Network Spanning	The ability to connect network members and filter through degrees of separation.	I am introducing my contacts to each other on a regular basis	6	.81	.62
Self-awareness	An understanding and awareness of an individual's background, experience and education.	I have clear goals and objectives	4	.64	.59
Confidence	The confidence to seek out resources and information from network members.	I find it easy to ask for things I require	4	.63	.57
Flexibility	Willing to accept others and feedback.	I am not easily frustrated by others	3	.58	.65
Comfort with Technology	An understanding of technology and its uses.	I feel comfortable using a computer	3	.63	.59

Overall, 39 items were retained in the final instrument, encompassing seven factors. Table 2 shows factor loadings for items retained in the instrument. Cross-loadings of less than .20 have not been included in the table for purposes of clarity, demonstrating that very few items had any major cross-loadings. The mean scale scores were 3.9., 3.86, 3.39, 3.89, 3.16, 3.26 and 3.69 respectively. The overall mean importance for the 39-item scale was 3.60, roughly equivalent to the scale descriptor “somewhat agree with the statement.”

Table 2. Partial Factor Table with Loadings for Items Retained and Cross Loadings

<i>Item #</i>	<i>Factor 1</i>	<i>Factor 2</i>	<i>Factor 3</i>	<i>Factor 4</i>	<i>Factor 5</i>	<i>Factor 6</i>	<i>Factor 7</i>
5	.66				.26		
40	.65						
58	.64					.23	
14	.64		.25				
56	.63					.23	
25	.63						
16	.61	.29					
6	.59	.28					
58	.55			.24			
10	.55						
44	.54						
17		.82					
11	.25	.75					
45		.75					
12		.74					
43	.21	.67					
30	.20	.66	.22				
1	.25	.62					
38	.21	.46					
70			.68				
60		.23	.66				
64			.64				
63	.22		.62				
66			.61	.22			
62			.53				
73	.30		.24	.62			
74	.32			.61			
72	.33			.56			
71				.56			
37					.67		
33		.29	.22		.55		
32		.23			.54		
4	.26	.29			.52		
54						.75	
53						.70	
57	.33					.51	
23							.76
46							.60
39		.31					.54

Interpretation of Factors

Factor 1 – Information Gathering. The variables loading on this factor dealt with an individual's ability to gather information. More specifically, this factor looks at the skills required to effectively gather information and then know what to do with the collected information. The variables scoring highest in this factor were "I find the information I need easily" and "I know what to do next once I've gathered the information I need." These two variables help to assess how comfortable an individual feels in accessing information from their network and how to utilize it to reach their goals and objectives. An individual who would score highly in this factor would possess the ability identify contacts in the network who can provide specific information and then be able to use the information to complete a task or project. This factor was consequently named "Information Gathering."

Factor 2 – Relationship Building. All the variables loaded on this factor scored the highest on the scale. Building a relationship with network members is critical to accessing resources and information that can assist the individual in achieving their objectives. Also, being comfortable with people and proactive in approaching individuals for help is important for identifying what is available from the network. "I find it easy to meet new people" and "I find it easy to initiate a conversation" ranked the highest on this factor. Someone who would score highly in this factor would find it easy to approach someone for assistance in the network regardless of whether they know the individual or not. The factor was named "Relationship Building."

Factor 3 – Network Spanning. This factor included variables that dealt with an individual's ability to utilize contacts across their network. The highest loading item, "I find myself getting information from one contact and passing it on to another contact", demonstrates the importance of understanding who belongs to the network and what information would be useful to them. An individual strong in this factor would have the ability to connect many individuals in the network as well as utilize a members contacts. This individual is most likely very central to the network. The factor was labeled "Network Spanning."

Factor 4 – Self-awareness. The variables loading on this factor dealt with the perception of what the individual could offer to members in the network. If a person is not aware of the value they can bring to a relationship, the confidence to seek out information from contacts in their network may be diminished. "I have enough work experience that provides value to my contacts" was ranked the highest in this factor. Someone scoring high in this factor has the ability to promote their background, experience and education as valuable assets to the network. This factor was labeled "Self-awareness."

Factor 5 – Confidence. This factor dealt with the individuals comfort level in accessing resources from their network. The items reflect the individual's comfort with approaching contacts for information or resources. Confidence provides the opportunity for individuals to reach out to new members and seek assistance to meet their goals or objectives. An individual strong in this area would feel highly comfortable approaching individuals in the network for information and at the same time have the ability to provide support to others. This factor was named "Confidence."

Factor 6 – Flexibility. The items associated with this factor represented an individual's ability to deal with different types of people. Being flexible when accessing network resources is essential to acquiring the necessary information to reach an objective. Soliciting feedback from network members is a useful process for determining whether goals or objectives are realistic and if they are on the right track to achieving them. Someone scoring high in this factor would be able to accept criticism and not over react, which might damage the relationship. The factor was labeled "Flexibility."

Factor 7 – Comfort with Technology. The items found in this factor deal with an individual's comfort level with technology. Using technology to access network resources is becoming extremely common in today's computer enriched world. However, technology can also be a double-edged sword in that people can choose to gather information via a technological source versus making connections with individuals. This may eventually impact their ability to access the network in more traditional ways. An individual who is strong in this factor would embrace technology as a vehicle for gathering information from the network. This factor was aptly named "Comfort with Technology."

Implications for HRD

Accessing network resources can represent an important element to attaining success in such areas as, career mobility, implementation of human resource interventions or entrepreneurship (Forret & Dougherty, 2004; George, Wood, Rimler, & Sturm, 1997; Murphy & Southey, 2003). The development of the network accessibility scale will add significantly to the field of human resource development by providing an overarching method for assessing an individual's ability to access resources within a network. Altering an individual's position can assist an organization in identifying workers who can contribute to the strategic direction and who may have otherwise gone unnoticed.

An organizational member may possess the required human capital to function effectively in isolation, but may not be able to contribute to the overall organizational system. When this occurs, HRD initiatives which promote such diverse areas as, collaboration, information sharing, innovation, training transfer, change management and organizational culture may be compromised.

Manev and Stevenson (2001) observed that contemporary organizations are increasingly characterized by openness to the environment with permeable boundaries that allow and encourage open communication among organizational members. This opening of the organizational boundaries encourages information seeking and sharing by organization members. Making these organizational boundaries permeable is imperative if information sharing is going to exist within and between work groups. However, permeable boundaries are only one element to network utilization and if members do not possess the ability to develop relationships which encourage the exchange of resources and information, the likelihood that the network can support organizational objectives will be limited.

Going beyond these new boundaries and addressing the personal accessibility issues through new ways of coordinating and organizing work can be accomplished by the HRD practitioner. The coordination of work processes increasingly occur through informal networks of relationships instead of the traditional formal structures (Kahn, Cross, & Parker, 2003). Effective networking skills will ensure that network resources are being accessed and utilized for increased performance. Assessing the ability to access resources and providing interventions which maintain a well connected network may promote organizational flexibility, innovation, and efficiency.

An example of the utility of the NAS may include an HRD practitioner who is working with a knowledge intensive organization and is attempting to increase information sharing among employees. If access to information is being compromised due to an inadequate network position of certain individuals, the HRD practitioner can utilize the NAS to identify areas impacting their ability to access information and resources from the network. A pre- and post-test NAS can be implemented to determine if the interventions were successful in increasing the individual's networking ability and access to information.

The seven factor construct identified in this study will help to conceptualize network accessibility issues. It is important that network members have the opportunity to tap into the resources which exist within the organization. By assessing accessibility traits, HRD practitioners will understand the potential for improving relations among individuals and increase the likelihood of effecting change.

Conclusion & Recommendations

This study identified the skills necessary to access resources from a network. The seven factors that emerged from the analysis of the NAS leads to the development of a network accessibility construct with well-defined and logical components. The NAS has presented a logical sequence of the skills and abilities required to effectively access network resources, which has answered the research questions by illuminating accessibility traits and has categorized them in an understandable and simplified manner.

Although this study has sought to identify the abilities for accessing network resources, no claim to definitiveness can be made for the findings. Much more work is required and replication of this study with various populations is needed to establish the stability of the NAS. Additionally, further research is required to include the network accessibility construct as a means for measuring HRD interventions dealing with networking. Not only is it important to identify network access issues, it is essential that HRD practitioners provide targeted solutions that will assist in the acquisition of skills required to utilize social capital in the work place. Determining network access improvement can be accomplished through measuring access levels at different intervals of intervention implementation.

The study was an attempt to develop an instrument that would assist in the identification of an individual's ability to access social capital in order to meet their goals and objectives. By identifying the network member's ability to access information, interventions can be created to improve network position thus providing greater opportunity for both the organization and individual to reach their objectives.

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