

Job Consequences of Trustworthy Employees:
A Social Network Analysis

by

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ABSTRACT

This study examines the consequences of being trustworthy at work. The Performance Enhancement argument suggests that trustworthy employees are likely to occupy central positions in various social networks and such positions may enable trustworthy employees to perform better and feel more satisfied at work. On the other hand, the Resource Depletion argument proposes that trustworthy employees tend to attract help seekers and therefore they will experience more work overload and burnout.

Direct health-care providers at a local rehabilitation center were surveyed. While trustworthy employees tended to occupy more central positions in both work and friendship networks, such positions did not relate to better performance or higher job satisfaction. Trustworthy employees were found to perform better only when the negative impact of their network centrality was controlled for. A two-edged sword explanation is proposed that the central positions in the instrumental network occupied by trustworthy employees enabled them to be natural boundary spanners. Extra coordination work across programs hampered the work performance of trustworthy employees. After controlling for the negative influence of being boundary spanners, trustworthiness was found to positively relate to work performance. In addition, trustworthy employees were found to do more extra-role behaviors. The Performance Enhancement argument is partially supported.

Contrary to the Resource Depletion argument, trustworthy employees, especially benevolent ones, reported less emotional exhaustion than those who were less trustworthy. The relational literature suggests that trustworthy employees, due to their concern for others' interests, are able to benefit from their deep, strong, and mutual relations with their colleagues. Such relations allow trustworthy employees to feel more meaningful at work and therefore able to better deal with burnout.

Two more findings are discussed. First, benevolence was found to be the major driver, among all trustworthiness components, of work performance and burnout. It is suggested that positive attributions of trustworthy employees' intentions are critical in drawing assistance, favors, and support from their colleagues. These social exchanges are important foundations of better work performance and reduced emotional exhaustion. Second, central positions in the instrumental network were found to negatively relate to work performance. Instead of possessing information benefits and information brokering advantages, these central positions were found to correlate with boundary spanning activities. These extra coordinating activities added to the workload of trustworthy employees. Practical implications, potential limitations, and suggestions for future research are discussed.

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CHAPTER 1

RESEARCH QUESTIONS

Interpersonal trust is essential in organizational activities: It enables events to take place that may not be possible without trust (Coleman, 1990). It enhances information sharing (Zand, 1972, Pruitt & Carnevale, 1993), increases cooperation (Parks, Henager, & Scamahorn, 1996; Deutsch, 1958), leads to more citizenship behaviors (McAllister, 1995), reduces monitoring and other transaction costs (Chiles & McMackin, 1996), and brings people together for win-win solutions (Coleman, 1990; McEvily & Zaheer, 1996). All these benefits require a person to place trust on a trustworthy other and a trusted other to meet the expectations imposed. However, these benefits do not come without risk (Deustch, 1958). If the trustee fails to fulfill the obligation or decides to take advantage of the trustor's exposed vulnerability, the trustor may be worse off than not trusting (Coleman, 1990).

Current trust research emphasizes trustors' reasons for trusting (Tyler & Kramer 1996), their determinants for selecting trusted others (Butler, 1991), and the benefits (or detriments) of trusting (McAllister, 1995; Robinson, 1996). Relatively unexplored are the benefits (or detriments) of being trustworthy. Because trusting relationships require reciprocated interactions between trustors and their selected trustworthy others, the behaviors and responses of these trustworthy others represent an important input in understanding the dynamics in a trusting relationship. If being trustworthy is detrimental, it will be difficult to build and maintain trusting relationships.

In addition, current interpersonal trust models, including the one proposed by Mayer and his colleagues (1995), examine dyadic exchanges between two parties. Within a relationship, focal individuals' trustworthiness is evaluated by their exchange partners. I extend their models from a dyadic to a group level of analysis by examining an aggregate perception of colleagues, or a reputation, of the focal individuals. Colleagues' aggregate

perceptions are related to their attitudes and behaviors towards focal individuals. If focal individuals are regarded as experts in accounting, many colleagues will ask them for advice when they encounter problems in this area. When focal individuals are known as benevolent, colleagues will likely be friendly to them. When many colleagues share the same attitudes or show similar behaviors, it may affect group-level flow of information and resources and therefore job outcomes. In this study, I will examine the positive and negative job outcomes of trustworthy people at work.

Having a trustworthy reputation may have many advantages. First, a reputation of trustworthiness enables employees to obtain favors from colleagues more easily because they can be trusted to reciprocate favors. This advantage allows trustworthy employees to complete their work with critical information and resources. Positive work outcomes may include better work performance, faster promotion rates (Burt, 1992), and the ability to find better jobs (Granovetter, 1973). Second, being trustworthy brings popularity, an important source of social support in the work place. Informal relationships at work are suggested to be a source of satisfaction and positive affect at work (Roy, 1959) and they may act as buffers when trustworthy employees encounter stressful events (Fenlason & Beehr, 1994).

On the other hand, a trustworthy reputation may pose constraints on individuals. Trustworthy people tend to attract many advice seekers and providing constant assistance is energy and time consuming (Kipnis, 1996). Even when trustworthy people may not be the appropriate helpers, others ask them for referrals. Due to their dependability and reliability, trustworthy people may be given challenging projects and more responsibilities from their supervisors. Although these opportunities may have career advancement consequences, trustworthy employees may experience work overload and burnout.

To understand the relationship between trustworthiness and job outcomes, it is important to examine the embedded social context. The social network literature suggests that

certain network positions, such as central positions in a network, are associated with strong individual influence (Brass, 1984; Krackhardt, 1990) and positive career outcomes (Burt, 1992). Network patterns, such as having weak ties or multiplex ties, have different impacts on information communication (Granovetter, 1973), social support (Ibarra, 1993), and the strength of persuasion (Weenig & Midden, 1991). Asymmetric network ties, another social network pattern, may predict work burnout. When trustworthy employees are occupied by their colleagues' requests, they may find themselves under heavier time pressure and possibly feel more stressed in completing their own work (Newton & Keenan, 1987).

To answer the research question of whether trustworthy employees do better or worse at work. In particular, what do trustworthy employees do well and what do trustworthy employees not do well, two major arguments are discussed. The Performance Enhancement argument suggests that trustworthy employees are better linked to other employees so that they have better access to resources, information, and social power to do their work better. On the other hand, the Resource Depletion argument describes a more pessimistic view that trustworthy employees will attract many help seekers so that much of their own time and resources will be used in areas other than their own work area. Negative work consequences, such as work overload and burnout, are suggested. These two lines of arguments will be tested simultaneously to understand the relationship of trustworthiness and employees' attitudes and behaviors at work.

In this dissertation, I first discuss the literature on trust, social networks, job outcomes, and social exchange theory. Then I build a model regarding the relationship between trustworthiness and job outcomes, using a social network perspective and social exchange theory. After introducing the general model, I discuss individual hypotheses regarding the potential effects of trustworthiness components. A research design including the rationale for the choice of my sample, data collection method, measures, and a method of analysis is then

presented. Results are then described and discussed. Finally, I discuss contributions, limitations, theoretical and practical implications of this study. Suggestion for future research are also made.

CHAPTER 2

LITERATURE REVIEW

Four sets of literature are reviewed in this section. The first set is the trust literature: definitions of personal trust, trustworthiness, and their known impacts on interpersonal relationships are discussed. The second set of literature under review is the social network literature. In particular, I discuss definitions of various network characteristics and their relationships with work behaviors and attitudes. The job outcomes literature includes work performance, extra-role behaviors, and various job attitudes including job satisfaction, and burnout. I focus on the antecedents leading to these outcomes and their relationships with interpersonal trust and social network attributes. To understand the relationships among these sets of literature, social exchange theory (Blau, 1964) is reviewed. A review of these areas helps to identify the need and potential contributions in addressing trustworthiness and its related effects.

INTERPERSONAL TRUST

There are many definitions of trust but most involve some or all of the following elements. Trust involves an expectation, a belief, or a probabilistic assessment about an exchange partner (Deutsch, 1958; Gambetta, 1988; Hosmer, 1995; Kee & Knox, 1970; Korsgaard, Schweiger & Sapienza, 1995; Kramer, 1995; Mayer, Davis & Schoorman, 1995; McAllister, 1995; Parks, Henager, & Scamahorn, 1996; Pruitt & Carnevale, 1993; Robinson, 1996; Smith, Carroll & Ashford, 1995) under a condition of risk, vulnerability or loss potential (Chiles & McMackin, 1996; Craswell, 1993; Currall & Judge, 1995; Deutsch, 1958; Gambetta, 1988; Mayer et al., 1995; Rempel, Holmes & Zanna, 1985; Robinson, 1996; Williamson, 1993; Zand, 1972). Trustors show a willingness to assume risk (Mayer et al., 1995), or be cooperative in mixed-motive settings where strong supportive reasons exist for both

cooperating and competing choices (Lewicki & Bunker, 1996; Pruitt & Carnevale, 1993). They expect reciprocity from their exchange partners (Burt & Knez, 1996; Creed & Miles, 1996) even when trustors' vulnerability is exposed (Gambetta, 1988; Kimmel, Pruitt, Magenau, Konar-Goldband, & Carnevale, 1980; Zand, 1972). Mayer and his colleagues (1995: 712) summarize these elements into a parsimonious definition of trust: "the willingness of a party to be vulnerable to the action of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party."

Trustors select trustworthy others to reduce risks involved in exposing their vulnerability (Mayer et al., 1995). The selection process implies that trustworthiness is evaluated in the eyes of the trustors. This approach matches with Rotter's behavioral approach (1967) that trustworthiness is determined by observing focal others' behaviors, such as being honest and consistent, or not lying or cheating, as perceived by others through direct interactions.

Trustworthiness may also be self-evaluated. Individuals may regard themselves as highly trustworthy while other people disagree. Deutsch (1958) described trustworthiness as internalized values with regards to responsibility. Individuals feel obligated to act for the benefits of others when they are trusted. Others may or may not know about the felt responsibility because it may not be exhibited in behaviors.

Each approach suggests unique behavioral consequences. When individuals are regarded as trustworthy by others (the behavioral approach), it is expected that others' attitudes and behaviors will be favorable towards the trusted others. On the other hand, when individuals evaluated themselves as trustworthy (the internalized value approach), their own attitudes and behaviors will be favorable towards others. When the felt responsibility is exhibited through behaviors and is observed by others, it is likely that both approaches share

similar consequences: others' attitude and behaviors will be favorable towards the trusted individuals. However, when the individuals do not show any favorable behavior, or the behaviors are not readily observable, then others' attitudes and behaviors towards these individuals may not change. In this dissertation, my focus is on the behavioral and interpersonal impact of being trustworthy as regarded by others and therefore I adopt the behavioral approach.

Trustworthiness of a person is defined as the aggregate perception and evaluation of people around the focal person in terms of the focal person's expertise, benevolence and integrity regarding a particular task, setting, or domain. Mayer and his colleagues (1995) suggest that individuals will evaluate the trustworthiness of exchange partners in terms of their partners' ability to complete a given task in a specific situation (expertise), their partner's intention to act for the good of the focal parties (benevolence), and the similarity between their partners' and their own moralistic and ethical standards (integrity). Other researchers concur that trustworthy others should be reliable, consistent (Currall & Judge, 1995, Rempel et al., 1985), and should act for the benefits of the trustors (Deutsch, 1958; Gambetta, 1988; Kimmel et al., 1980; McAllister, 1995; Smith et al., 1995; Zand, 1972).

Competence or expertise is context-specific. An expert in computers may be a trustworthy person in dealing with software problems but may not be a suitable person to ask for financial advice. On the other hand, benevolence and integrity are more general: to be noted as reliable and ethical, the trusted others need to exhibit similar behaviors across contexts and time. Some researchers (Tinsley, 1996; Hosmer, 1995) suggest that benevolence and integrity together form an ethics-based definition of trust, while competence, a capability concept, should not be included among the trustworthiness attributes. I concur with Schoorman and his colleagues (1996) that all three elements are essential for a complete evaluation. It is difficult to trust an expert who is known to be inconsistent or to take advantage of other people.

Opinions from benevolent and honest individuals are usually worth considering. However, if they lack expertise in the domain of concern, their opinions are likely to be discounted. The discussions reveal the necessity of including both sets of attributes in evaluating trustworthiness. However, the exact formula for how these trustworthiness components should be combined to create trust is not known. Mayer & Davis (1999) suggest that the combination may be idiosyncratic and situationally dependent.

Another important element in the definition is the risk component. Risk is a necessary element in the definition of trust: a person decides to trust another party, it is more likely that he or she becomes vulnerable, take risks, and may subject to potential losses (Mayer et al., 1995). Being trusted involves the other side of the same coin. Trustworthy persons are people with whom other people are willing to take risks, such as sharing personal information, believing their words, and acting on their advice. Trustworthy individuals are frequently "tempted" to make immediate gains from others' exposed vulnerability. Their decision to protect, instead of take advantage of, others' trust on them will determine whether the trusting relationships will continue.

In summary, trustworthiness involves perceptions people hold about a focal person, a specified domain, three components, and risk. Before evaluating trustworthiness, individuals need to collect information about potential trusted others either by direct interactions, talking to others who are willing to provide information (Zucker, Darby, Brewer, & Peng, 1996), or picking up social cues (Salancik & Pfeffer, 1978).

Past experiences in direct interactions provide information about a person's attributes (Tyler & Kramer, 1996) and expected future exchanges provide incentives for knowing this person more (Pruitt & Carnevale, 1993). McAllister (1995) found that past interactions, such as interaction frequency and citizenship behaviors, were significant predictors of interpersonal trust between managers. Similarly, Robinson (1996) found that employees who believed that

their initial psychological contract was breached lost their trust towards their employers due to loss in integrity and benevolence.

An alternative to direct interaction is collecting information from third persons. Social information theory (Salancik & Pfeffer, 1978) suggests that individuals' attitudes and behaviors are influenced by the behaviors of salient others who are proximate or powerful (Shah, 1998). In particular, when information about trusted others is ambiguous or lacking, others' opinions become more influential. In work settings, opinions from immediate work groups, and norms of groups or organizations are essential input to trustworthiness evaluations. In other settings, such as political voting, where information about the candidates is limited, opinions of salient others are critical. However, information from others may not be accurate. Burt and Knez (1996) found that information provided by third parties was exaggerated: selective information released by third parties enhanced trusting relationships but worsened distrusting relationships (Burt & Knez, 1996).

Sometimes perceived and actual trustworthiness may not be correlated. Trustworthy people may not be perceived as trustworthy if incorrect or no information is communicated. Building a reputation for trustworthiness is a long and gradual process of social information accumulation (Dasgupta, 1988). For new employees or social isolates, it is difficult to establish their trustworthiness due to the lack of information. Inaccurate assessment of a person's trustworthiness may lead to over-protective or over-generous social exchanges (Krackhardt, 1990). A rational and calculative process of trustworthiness evaluation may be subject to various sources of errors. Lack of previous interactions, attributional biases in interpreting past experience, exaggerated third person accounts, or biased perceptual factors such as demographic similarity, may lead to inaccurate trustworthiness assessment. A positive bias in trustworthiness evaluation may encourage trustors to take a higher level of risk which increases the temptation of the trusted others and thus a higher likelihood of trust betrayal (Elangovan &

Shapiro, 1998). On the other hand, a negative bias in trustworthiness evaluation may induce protective and defensive behaviors and therefore non-trusting relationships.

SOCIAL NETWORKS

Social networks are patterns of connections among social actors who may be individuals in a community (e.g., Wellman, Carrington, & Hall, 1988), managers in an organization (e.g., Carroll & Teo, 1996), organizations within an alliance (e.g. Gutati, 1995), or competing organizations within an industry (e.g. McEvily & Zaheer, 1996). These patterns of social links and contacts affect many intraorganizational factors (Krackhardt & Brass, 1994) such as individual power (e.g. Brass, 1984), career advancement (Burt, 1992), homogeneity in group opinions (e.g., Friedkin, 1984), as well as organizational advantages (Nahapiet & Ghoshal, 1998).

Social networks are conduits of information. Work or personal information may be communicated through either formal or informal networks. At times of uncertainty or ambiguity, employees need to search for information through their networks (Stevenson & Gilly, 1991). Employees who are well connected tend to receive more information, receive information faster, and are able to assess the accuracy of information received (Burt, 1992). Employees with these information benefits are found to advance faster and earlier in their career path (Burt, 1997; 1992).

Social network ties create social capital, a form of social asset that capitalizes on the continuous relationships among individuals (Coleman, 1990). Besides information benefits, social capital may take the form of social credits: doing favors for another party and expecting the other party to reciprocate in the future. This reciprocity norm (Gouldner, 1960) forms the basis of social exchanges when immediate repayment is not possible.

Social capital, created through time and many past social exchanges, enables a party to uniquely combine resources. Relationships with unconnected network actors and knowledge of their strengths and weaknesses allow socially rich individuals to resolve conflict effectively. By pulling appropriate resources or making unique combination of these resources, win-win solutions are more possible. In addition, socially rich individuals are known to reciprocate social exchanges. Their reputation creates a strong basis of trust and others are therefore more willing to take risks with them. McEvily and Zaheer (1996) found that competing organizations within an industry were able to cooperate and establish an industry standard because of the presence of a socially rich and neutral party.

Besides information flow and social capital, social networks carry emotional support and identity. In their study of the East York community, Wellman and his colleagues (1988) found that East York residents used their personal networks for exchanging small services and favors such as taking turns in babysitting and looking after others' houses when the owners were on vacation. Social pleasures were also provided when house parties were held. Although huge favors, or big financial requests, such as house mortgages, were not involved in these community ties, emotional aids and a sense of belonging were available.

Networks at work are expected to affect employees via their information exchanges, social capital possession, and the provision of social support. Network effects can be better understood by examining various types of networks and positions within networks.

Network Types

Instrumental and friendship networks involve different content which, in turn, influence network characteristics, including tie strength and symmetry. Instrumental networks carry work-related information and network actors contact others to gain or disseminate information to complete their work goals (Ibarra & Andrews, 1993). Employees who possess critical information or resources usually occupy central positions in the instrumental network and

therefore have a strong influence on their colleagues (Brass, 1984). Ties in instrumental networks tend to be weak, asymmetrical, and spread out to disparate parts of the work place (Ibarra & Andrews, 1993).

Friendship network ties are more likely built for social support (Walker, Wasserman, & Wellman 1994). Unlike instrumental ties, employees have more discretion and control over whom they want to socialize with in their free time. As a result, friendship ties tend to evolve among similar people and are, very often, symmetric, proximate, and strong (Ibarra & Andrews, 1993). Small services, emotional and material aids tend to be exchanged and reciprocated (Walker et al., 1994).

Network Positions

Network positions affect information diffusion, social capital accumulation, and power distribution. Network centrality, a dominant concept in network position, is defined as the position of network actors relative to other network actors (Scott, 1991). Two types of centrality, degree and betweenness, are used in this study. Degree centrality refers to the number of direct contacts between the focal network actor and the other actors (Scott, 1991). An employee with high degree centrality is seen as active in communication and popular (Mullen, Johnson, & Salas, 1991). When employees have high in-degree centrality (i.e., many employees initiate contact with them), they enjoy high prestige and influence (Blau, 1964). Employees who are constantly being consulted and asked for advice, have more power because many people owe them favors. If the favor recipients are unable to return the favor, social exchange theory suggests that they need to pay respect, prestige, or other types of social rewards as a form of reciprocation (Blau, 1994).

Occupying a betweenness central position means that the network actor is situated between many dyads of unconnected network actors so that information or resource flow may be controlled by him/her (Ibarra & Andrews, 1993). Network actors who occupy central

(betweenness) positions in friendship networks are perceived as more powerful than those in other positions (Krackhardt, 1990). Betweenness centrality is found to be more influential in spreading the opinions of the central actors in both instrumental and friendship networks and centrality in instrumental networks has stronger and more consistent effects (Ibarra & Andrews, 1993).

Individuals who have high betweenness centrality enjoy information benefits (Burt, 1992). The many and unique information sources of these people enable them to receive information faster and to receive accurate information by comparing information sources. In addition, their network positions make them a popular referral candidate when opportunities arise. Making use of opportunities in a timely manner gives them advantages over others who receive the same information later.

Besides information benefits, high betweenness centrality allows individuals to understand where human resources are and therefore be able to make combinations when necessary. It will be difficult for people who are not connected with each other to know how they may have common interests or complementary skills. Knowing each individual in a group situation enables a third person to come up with solutions that would otherwise be overlooked (Burt, 1997).

JOB OUTCOMES

Two arguments are presented in this dissertation. The Performance Enhancement argument examines the relationship of being trustworthy and the performance of trusted individuals. Following this argument, employees' in-role behaviors (work performance) and extra-role behaviors are examined. The second argument, the Resource Depletion argument, examines the relationship of being trustworthy and employees' resource levels, namely work overload and burnout levels. In addition, employees' attitude, namely job satisfaction, is

examined to validate the above approaches. Job satisfaction is expected to be positive when the Performance Enhancement argument is supported. On the other hand, job satisfaction should be negative when the Resource Depletion argument is prevalent. Previous studies about the antecedents of these job outcomes are reviewed in the following sections.

Work Performance

Social network perspectives suggest that employees who take network central positions receive critical information or resources (Brass, 1984). They are promoted faster and earlier (Burt, 1992). They tend to be influential in affecting others' attitudes (Ibarra & Andrews, 1993) and are perceived as more powerful (Krackhart, 1990). With sufficient information and resources, and the power to influence colleagues, it is likely that they will perform better at work.

Although human capital theory (e.g. Becker, 1964) suggests that individual education and work experience are contributing factors to better work performance, social capital theory (Coleman, 1990) adds that appropriate social ties enable these human capital to be used more effectively (Burt, 1997; Ibarra, 1993). The accumulation of social capital allows employees to exchange favors and seek help when necessary. Unique knowledge of where human resources are allows central network actors to solve problems more effectively and efficiently. All these benefits are potential work performance enhancers.

Extra-Role Behaviors

Extra-role behaviors refer to discretionary work behaviors that are beyond the formal job requirements (Morrison, 1994; Smith, Organ, & Near, 1983). In a meta-review, Organ and Ryan (1995) summarize the antecedents of extra-role behaviors into two sets: attitudinal and dispositional factors. Attitudinal factors include perceived fairness, job satisfaction, leader supportiveness, and organizational commitment while dispositional factors include agreeableness, conscientiousness, positive and negative affectivity. The social exchange

perspective explains that when employees perceive that they are treated fairly, they tend to exhibit more extra-role behaviors (Konovsky & Pugh, 1994). In addition, if employees internalize or identify with their employers, i.e. higher organizational commitment, they will more likely exhibit extra-role behaviors (O'Reilly & Chatman, 1986).

Researchers disagree on the size of the effects of dispositional factors on extra-role behaviors. Organ and Ryan (1995) find that personality factors such as conscientiousness and agreeableness have weak but positive effects on extra-role behaviors. Attitudinal factors have stronger effect sizes than dispositional factors. However, McNeely and Meglino (1994) find that other dispositional factors, such as concern for others and empathy, are positively and significantly related to extra-role behaviors. Effect size may depend on the choice of dispositional factors. Trustworthiness components, such as benevolence and integrity, are similar to empathy and concern for others, therefore it is expected that the trustworthiness is a significant predictor of extra-role behaviors.

Job Satisfaction

Job satisfaction refers to employees' overall assessment of their attitudes and feelings towards their job (Katz, 1964). Past research on job satisfaction indicates that there are three sets of antecedents to job satisfaction: dispositional, situational (Arvey, Carter, & Buerkley, 1991) and the social information processing approaches (Salancik & Pfeffer, 1978). Dispositional predictors include individual demographic variables, such as age and gender, and personal attributes, such as negative affectivity (Judge & Hulin, 1993). While demographic variables produce relatively weak and inconsistent results, recent studies with a longitudinal design show that employees have stable and consistent job satisfaction over time (e.g., Staw, Bell, & Clausen, 1986). In addition, Arvey and his colleagues (1989), in their study of monozygotic twins who were reared apart, suggest a genetic influence on job satisfaction.

The effects of situational factors on job satisfaction are extensively studied and the job characteristics model is a well-accepted model in this category (Hackman & Oldham, 1980). This model suggests that job satisfaction comes from the design of task elements. Employees are more satisfied with their job if they perceive that their jobs involve a great variety of skills, identify strongly with their job, perceive that their job is important, feel that they are responsible for their own output, and receive timely and sufficient feedback. These factors are found to be consistent and important across jobs (Roberts & Glick, 1981).

The social information processing approach (Salancik & Pfeffer, 1978) argues that job attitudes are socially constructed and are determined by how other people perceive the job or observations of other's behaviors and attitudes. Different from the dispositional and the situational approaches, the context and the socially constructed meaning of the jobs are the important predictors of job satisfaction.

Some researchers suggest a combination approach to compare the effect size of the dispositional and the situational models. Apparently, situational factors explain individuals' job satisfaction more than dispositional factors (Arvey et al., 1991). Others suggest that people self-select themselves into jobs where they feel they fit or are satisfied (Schneider, 1987). In other words, a person's dispositional inclinations plus previous work experience and satisfaction predict his/her job choice (situational factors).

Despite the volume of studies on job satisfaction antecedents, few examine the impact of interpersonal relationships on job satisfaction. Although social support is often suggested as a buffer against job stress (Fenlason & Beehr, 1994), the relationship between social ties and job satisfaction is relatively unexplored. Roy (1959), in the classical story of banana time, suggests that informal relationships at work are a significant factor for job satisfaction. Employees who have many friends at work will feel better and enjoy going to work. In

addition, employees who receive sufficient information and resources from their instrumental network are likely to be more satisfied with their work.

Burnout

Burnout is defined as "a syndrome of emotional exhaustion and cynicism that occurs frequently among individuals who do 'people-work' of some kind" (Maslach & Jackson, 1981). The concept of burnout was originally established in the health care industry where health care providers were found to experience emotional depletion and a loss in commitment and motivation (Kahn, 1993; Meyerson, 1998). In providing continuous and quality services to patients, many health care providers were exhausted. This situation was accentuated by a perceived lack of organizational support (Leiter & Maslach, 1988).

Burnout consists of three elements: emotional exhaustion, depersonalization, and the lack of personal accomplishment (Leiter & Maslach, 1988). Emotional exhaustion refers to the feelings of being emotionally overextended regarding job and interpersonal issues at work. Depersonalization describes an unfeeling and callous attitude towards care or service recipients. Personal accomplishment refers to the feelings of competence and successful achievement at work (Maslach & Jackson, 1981).

Employee burnout may be the consequence of organizational factors and interpersonal relationships (Winnubst, 1993). Organizational demands may be a source of burnout when organizations cannot provide the necessary discretion or resources for employees to complete their job (Landsbergis, 1988). The nature of work ties may affect burnout: unpleasant relationships are found to be a major source of emotional exhaustion while pleasant relationships are capable of reducing depersonalization or increase the sense of personal accomplishment (Leiter & Maslach, 1988). The source of work ties is also a potential antecedent of burnout. Supervisory support in providing work resources and role clarification is helpful in reducing job strain and burnout (Fenlason & Beehr, 1994; Russell, Altmaier & Van

Velzen, 1987). The role of coworker ties is less clear. Some researchers suggest that coworker ties are voluntary so that only pleasant and supportive relationships last (Leiter & Maslach, 1988). Therefore coworker ties should reduce burnout. Other studies found reverse buffering effects in coworker networks: when social ties are associated with negative information or role conflict, employees experience more job strain, a high correlate with burnout (Fenlason & Beehr, 1994).

SOCIAL EXCHANGE THEORY

Social exchanges are basic but essential elements of human interactions (Blau, 1964; 1994). They are "voluntary actions of individuals that are motivated by the returns they are expected to bring and typically do in fact bring from others" (Blau, 1964: 91). Through exchanging favors, help, support, recognition, or even instrumental benefits, individuals build relations with other people and gain social rewards through the process (Blau, 1964; 1994). Social rewards include interpersonal attraction, opinion approval, paying respect and prestige, instrumental services, and compliance (Blau, 1964).

Interpersonal trust building and social exchanges cannot be separated. Two strangers start to know each other through social exchanges. When one party initiates an exchange, it is up to the other party to respond to continue the relationship building process (Blau, 1964; Ekeh, 1974). If the responding party fails to reciprocate in an expected manner, the relationship may cease or even reverse. This process is very similar to a trust building relationship in terms of multiple rounds of initiation and reciprocation and the requirement to take risk (Zand, 1972). Between the exchange initiation and reciprocation, the exchange initiator does not know whether the other party will respond or whether the form of reciprocation will be satisfactory. Taking the first step is risky.

The goal of social exchange is to build social bonding and be rewarded by the mutual gratification people provide each other in the relationship building process (Blau, 1994).

Friendship is a source of gratification. An ethnographic study of low-income black women in the event of job loss (Uehara, 1990) indicates that network actors who relied more on network support received more financial and emotional support and were more satisfied about their relationships. These exchanges of resources increase social solidarity and bonding.

Social exchange theory suggests that imbalance in social exchanges may have power implications (Blau 1964, 1994). When a person initiates a favor or a gift to another person where the other party is unable to reciprocate favors or gifts of the same type, then the initiator claims superiority. For instance, if a person needs a large amount of money to buy a house and a relative agrees to lend it to him, the inability of this person to return the same favor in the future puts this person in a socially indebted position. Besides repaying the loan, the person probably pays respect and feels at service to the lender in other areas (Blau 1994). This imbalance in social exchanges creates a superior-subordinate relationship between the person and his relative.

On the other hand, if a person requires baby sitting services for one night and his neighbour offers to provide this service if in the future the same service will be reciprocated, these two people have a balanced and equal relationship and will probably become friends. A third scenario is that a favor recipient is unwilling to return the favor and, unlike the lack of ability scenario, the favor recipient will be seen as unwilling to build a relationship and violating the reciprocity norm (Gouldner, 1960). Such information is expected to spread through social networks (Burt & Knez, 1996).

CHAPTER 3

CONCEPTUAL MODEL AND HYPOTHESES

In this chapter, I will build a conceptual model of how individuals' trustworthiness relates to positive and negative job consequences using a social network perspective. Social network attributes enable us to understand the information and social resource exchanges among employees which are essential for facilitating work performance and enhancing job attitudes. Based on social exchange theory (e.g., Blau, 1964) and social network theory (e.g., Burt 1983), I will demonstrate how work and friendship network attributes mediate or moderate the relationship between employees' trustworthiness and their job outcomes, including work performance, extra-role behaviors, work overload, burnout, and job satisfaction. The theoretical model is illustrated in Figure 3.1.

POSITIVE OUTCOMES - PERFORMANCE ENHANCEMENT ARGUMENT

Trustworthy employees are expected to occupy central positions in both instrumental and friendship networks. A reputation for being trustworthy tends to attract others in terms of help and advice seeking. For instance, competence brings popularity, at least in the instrumental network, especially when their expertise is critical to work completion and few people have such knowledge. Colleagues who do not possess such knowledge are bound to consult or seek advice from these experts. Employees who are perceived as benevolent and with high integrity are expected to be popular in the instrumental network because of their concern for others' interests and high moral standards. It is unlikely that they will take advantage of others' exposed vulnerability. Colleagues are expected to ask them for advice and help in both work and personal issues.

Trustworthy employees are likely to have high betweenness centrality in the instrumental network. Trustworthy employees are considered experts in their knowledge

domain. Non-expert colleagues, whether or not they are directly tied to each other, are expected to go to experts for work-related consultation. It is likely that experts will be "between" pairs of unconnected network actors, and therefore they have high betweenness centrality (Freeman, 1979).

Central network positions increase the capacity of trustworthy individuals to influence others' attitudes and control information and resource flow (Brass, 1984; Ibarra & Andrews, 1993; Krackhardt, 1990). Faster access to more and better quality information enables trustworthy employees to complete work successfully (Burt, 1992). Knowledge of where resources are and the ability to make unique combination of resources enhances the power and control of trustworthy employees. In addition, the ability to have high work performance and control part of their work process increases their power and leadership perception as well as their own satisfaction level (Mullen et al., 1991).

H1: The higher an employee's trustworthiness, the better is his/her work performance. This relationship is mediated by their betweenness centrality in their instrumental network.

H2: The higher an employee's trustworthiness, the higher is his/her job satisfaction level. This relationship is mediated by their betweenness centrality in their instrumental network.

Trustworthy employees are expected to engage in more extra-role behaviors because they are benevolent and they consider others' interests (Mayer et al., 1995). It is expected that trustworthy individuals are willing to provide help and assistance that is outside of an individual's work role, even when not rewarded (Smith et al., 1983). Besides helping colleagues, trustworthy individuals, due to their high integrity, are also expected to contribute to organizations through proper usage of work time, protecting company assets and properties, and follow company rules and policies (Organ & Ryan, 1995). Their assistance and contributions to both individuals and organizations form bases of their extra-role behaviors.

The reputation for being trustworthy reflects higher expectations on trustworthy employees to be experts, to care for others' interest, and to be honest and reliable. Colleagues expect trustworthy employees to continue to behave in these manners consistently and exhibit more of such behaviors than other less trustworthy colleagues. Such expectations may create a strong sense of responsibility and obligation on trustworthy employees to maintain or exceed the expectations, in particular when the perceptions are made known (Deutsch, 1958).

H3: An employee's trustworthiness is positively related to the extent of his/her extra-role behaviors.

NEGATIVE OUTCOMES - RESOURCE DEPLETION ARGUMENT

Trustworthy employees will likely experience resource depletion. Having a reputation of being experts, being benevolent, or having high integrity, colleagues are likely to go to them for advice and consultation. These requests draw on the resource pool of these trustworthy employees. Being consulted and sought for help is a form of prestige and respect but helping others uses up time and energy of trustworthy employees (Blau, 1964).

Assuming that resources are in scarce supply and can be depleted through usage, focal network actors may deplete their own resource pool through more giving than receiving. Examples of such resources include personal time and energy. If employees spend more time providing advice and helping others than receiving assistance, it is likely that they would experience time pressure in meeting organizational deadlines, feel overloaded with their work, experience fatigue at work, and finally burnout (Fenlason & Beehr, 1994; Landsbergis, 1988).

The helping literature indicates that help seeking involves high risk, including the possibility of being refused help and therefore the danger of losing face, admission of inadequacy and low self-esteem, and the loss of autonomy due to indebtedness or obligations. Help seeking risks are negatively related with helping behaviors (Anderson & Williams, 1996).

Help seekers are expected to select trustworthy individuals to ask for assistance because trustworthy employees are likely to protect the status and self-esteem of help seekers, and therefore the cost of help seeking is reduced. Therefore trustworthy individuals tend to attract many help seekers.

Being perceived as trustworthy can be a source of honour or a source of burden and responsibility. A reputation for being trustworthy carries a high standing: being trusted is a vote of confidence from colleagues. On the other hand, honour is associated with high expectations. Being known and treated as a benevolent person will increase an employee's intention to act benevolently in continuously providing assistance when necessary. Such high motivation to provide help when possible increases the likelihood of resource depletion (Bandura, 1986; Eden & Kinnar, 1991).

In addition, the reputation for being trustworthy is an important asset in mediating conflict. Trustworthy employees are capable of resolving interpersonal or inter-divisional conflict. One reason is that conflicting parties lose confidence in each other's words and very often they fail to communicate effectively. A trustworthy mediator is able to transmit facts, promises, and explanations with more credibility and their words tend to be believed by conflicting parties (Ross & Wieland, 1996). Although this is not a required work role, it is likely that they will take this role for the good of others (Frost & Robinson, 1999). In addition, their extensive networks allow them to recommend win-win solutions by combining unconnected people and their resources (Burt, 1992). Without such solutions, conflict is difficult to resolve.

Supervisors are more willing to take more risks with trustworthy subordinates. When allocating work assignments, they are expected to allocate projects with higher knowledge requirements or greater responsibilities to trustworthy employees. Supervisors believe trustworthy employees have the knowledge and motivation to do the job well.

Trustworthy employees have limited time and energy to do their own work. Within the limitation of resources, trustworthy employees need to find resources to do their own work, help others, do more challenging tasks, and resolve conflict. With an imbalance of resource flow, trustworthy employees will probably feel that there is not enough time to complete their work and therefore they feel overloaded with work. Persistent resource depletion will probably lead to burnout: emotional drainage, depersonalization (a desire to separate one's identity from the services rendered), and perception of lack of personal accomplishment at work (Leiter & Maslach, 1988; Landerbergis, 1988).

Effects of resource depletion can be mitigated by social support. Trustworthy employees who have many friends are expected to feel less overloaded with work and less burnout. Social ties, though time and energy consuming, generate social support among network actors (Manning, Jackson, & Fusilies, 1996; Russell et al., 1987). Instead of resource depletion, social actors gain through networking. Stress literature indicates that social support is a strong buffer against job stress and burnout (Fenlason & Beehr, 1994; Russell et al., 1987). The number of social ties was found to decrease health care costs of employees (Manning et al., 1996). Supervisory support helped to reassure employees' self worth (Russell et al., 1987), and clarified ambiguous or conflicting work roles for employees (Newton & Keenan, 1987). Co-worker ties are an important source of support for work difficulties (Uehara, 1990). Community studies (Wellman et al., 1988) indicate that social ties can be effective "band-aids" when difficulties arise.

Degree centrality in friendship network, i.e. the number of friendship ties, brings trustworthy employees friendship, small services, social and emotional support (Wellman et al., 1988). When trustworthy employees encounter difficulties at work, they have many friends to listen and share their experience, provide emotional support, discuss and find solutions to their

problems. The social support received by trustworthy employees is expected to mitigate work overload and burnout.

H4: The higher an employee's trustworthiness, the greater is his/her perception of burnout. This relationship is moderated by his/her degree centrality in the friendship network.

H5: The higher an employee's trustworthiness, the greater is his/her perception of work overload. This relationship is moderated by his/her degree centrality in the friendship network.

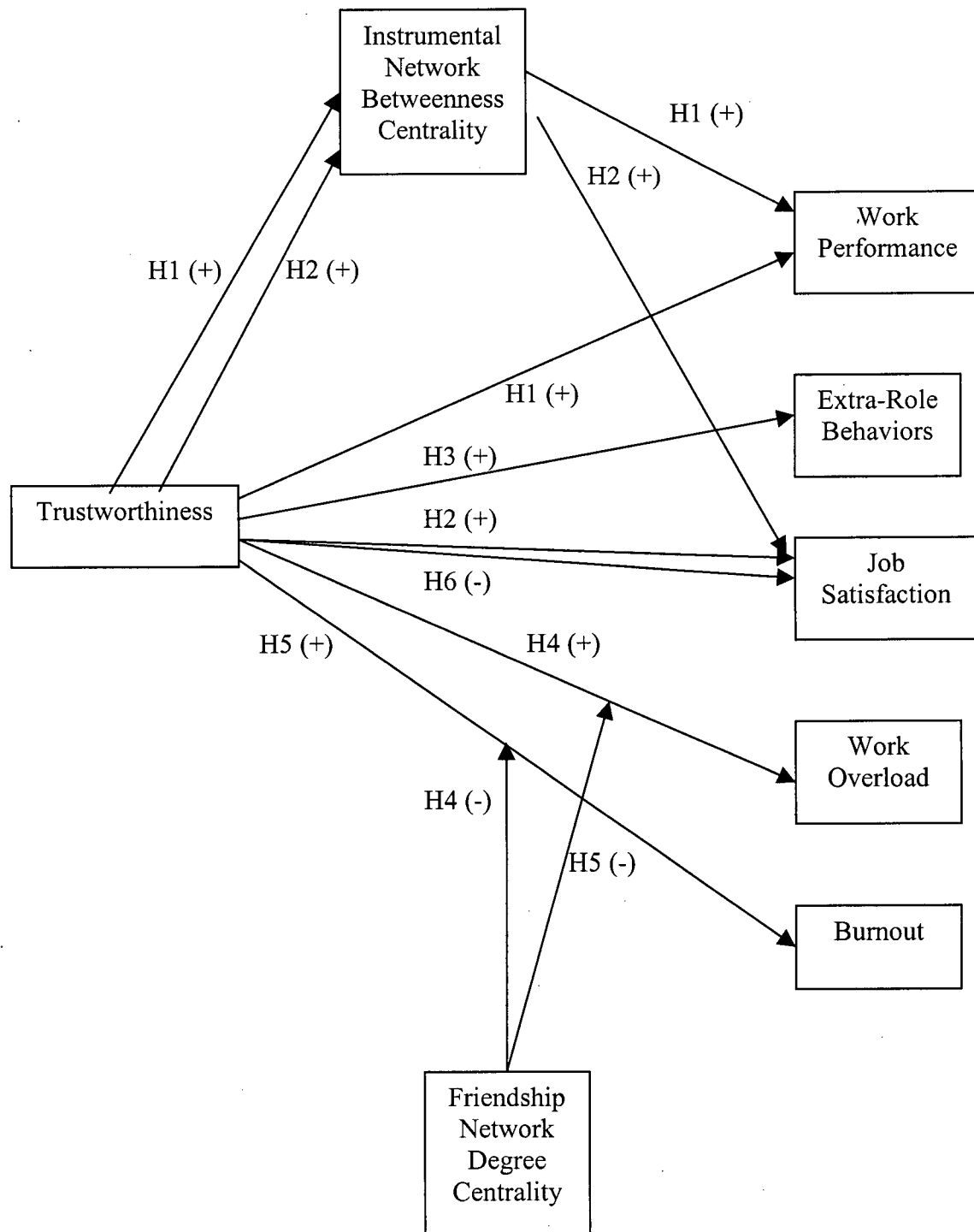
Resource depletion, potential burnout, and work overload will likely reduce job satisfaction. Job satisfaction refers to employees' overall assessment of their attitudes and feelings towards their job (Katz, 1964). The resource depletion argument suggests that trustworthy employees attract help seekers and therefore need to deal with extra personal and organizational matters. Without the time and energy necessary to complete the prescribed extra work, employees may be frustrated and feel dissatisfied (Landsbergis, 1988). Besides the lack of time, emotional depletion from feeling burnout adds to the frustration and the dissatisfaction of trustworthy employees. Previous studies show that employees who experienced burnout reported higher levels of dissatisfaction towards the job, clients, and the organization (Corder & Dougherty, 1993; Jackson & Maslach, 1982; Maslach & Jackson, 1985).

H6: The higher an employee's trustworthiness, the lower is his/her job satisfaction level.

Hypotheses 2 and 6 are competing hypotheses. Trustworthy employees gain resources through their instrumental networks to complete their jobs (H2). However, they face energy and time depletion due to continuous help and advice requests (H6). Both explanations are possible and an empirical test is necessary to examine their effects.

Figure 3.1

Effects of Trustworthiness on Positive and Negative Job Consequences



CHAPTER 4

RESEARCH METHOD AND DESIGN

I tested the above hypotheses by surveying a group of employees within an organization. My focus was on the nature and the pattern of relationships between actors and their personal job outcomes, therefore a within-organizational design was appropriate because it controlled for unique organizational variances such as policy, culture, industrial and other contextual factors.

SAMPLE

The population for this study consisted of employees in a rehabilitation center in the province of British Columbia in Canada. The rehabilitation center specialized in treating patients with neurological disabilities such as brain injury, spinal cord injury, neuro-muscular conditions. Their patients included adults as well as adolescents. The workforce was multi-disciplinary and included more than 20 occupations. Larger occupational groups included occupational therapists, physiologists, nurses, social workers, speech-language pathologists, and psychologists. The research site had characteristics of a social work culture, rather than a medical culture (Meyerson, 1994). A medical culture was characterized by a hierarchical structure between doctors as well as patients and doctors and the rest of the medical staff. Doctors had knowledge in what was best for patients and other medical employees were supposed to follow their orders to treat patients. In this rehabilitation center, patients were called clients because they had a say in choosing types of treatments. Doctors represented one voice in recruiting, treating, and dismissing patients and other occupational groups had equal voices.

The rehabilitation center was chosen for this study for two reasons. First, employees in the rehabilitation center had frequent interactions through working in self-managing teams.

These teams were used in making decisions regarding patient admissions, treatments, and dismissals. Work interdependence provided the necessary contact and experience to evaluate the competence, benevolence, and integrity of each employee. Person A's trustworthiness might be gained by multiple rounds of direct experience with Person A or through communicating with other colleagues about Person A. A dense and stable network facilitated the spread of reputation (Tyler & Kramer, 1996). Second, the long average tenure in the rehabilitation of eight and half years enabled the development of a stable network for information accumulation (Tyler & Kramer, 1996).

In this study, I only included employees with direct patient contacts, the dominant tasks in the rehabilitation center. This criterion enhanced the specificity and relevance of the expertise domain – patient care delivery¹. This screening criterion reduced the sample size, but increased the relevance of the study for employees, and was expected to increase response rate and the quality of data collected. A sample of 284 employees was identified. Out of the questionnaires distributed, I received 126 completed questionnaires (44% response rate). Demographic characteristics of the respondents are shown in Tables 4.1 and 4.2. The sample, consisting of a majority of female, Caucasian, well-educated, full-time paramedical employees, reflected a similar picture of the population. In addition, the average tenure of this sample is 8.5 years.

Respondents came from five different departments or programs: Acquired Brain Injury Program (ABI), Spinal Cord Injury Program (SCI), Neuromuscular Sclerosis Program (NMS), Arthritis Program, and Clinical Support Program (CSS). Each program was responsible for

¹ Although sampling criterion limited the domain, various types of patient care still existed. Various professional workers, such as occupational therapists, social workers, nurses, used their own professional knowledge and care to attend to patients.

dealing with a particular type of neuromuscular injuries, therefore had their own discretion in admitting, treating, and dismissing clients. Sample proportions in terms of programs were compared to the population. Chi-Square test showed a non-significant result ($\chi^2=5.054$, sig. = .409) indicating that the proportional number of respondents in terms of program in the sample was not different from that of the population. Similar results were found in terms of occupations. A total of 27 occupations were reported. Some of them had only one employee. Because Chi-Square test results are sensitive to groups with less than five respondents (Gibbons, 1993), occupational groups with less than 5 employees were combined. After comparing the observed and expected frequencies of each occupational group, Chi-Square test showed non-significant results ($\chi^2=10.274$, sig. = .174). In other words, respondents were a representative sample of the rehabilitation center in terms of occupational groups².

MISSING DATA TREATMENTS (MDT)

Out of the 126 respondents, some did not provide answers to all the questions. Deleting those cases was not desirable for several reasons. First, smaller sample sizes led to reduced power in testing. Second, missing data might be systematic rather than random. If systematic missing data were deleted, biases were incurred. Third, many cases had missing data for only one or two questions. Deleting these cases implied throwing away useful information for other questions.

Roth (1994) compared the benefits and drawbacks of four commonly used missing data treatments, including listwise deletion, pairwise deletion, replacing with mean, and regression imputation. Listwise deletion refers to the deletion of all cases that contain missing

² Population data were available for program and occupation only, therefore chi-square tests were processed on

data when running a particular analysis. This method is easy to use because most statistical packages include this option. However, it eliminates data in cases where only few answers are missing. Pairwise deletion refers to the deletion of data associated with the missing data when running a particular analysis. Similar to listwise deletion, it is easy to use because most statistical packages include this option and it assumes that the missing data is not systematically distributed. Also, it does not delete data not associated with the missing data, thus preserving some information collected. However, a different subgroup of the sample is used in each analysis and it may produce impossible factor loadings or correlation coefficients, i.e., bigger than +1 or smaller than -1. Mean replacement refers to replacing missing data with the mean for that variable. This method is easy to use but it runs the risk of attenuating variance for variables with missing data. The attenuation will increase if the proportion of missing data to total data increases and the sample size is small. Regression imputation method refers to the substitution of missing data with regression predictions from other available data. This method does not delete any data collected and it includes a stable number of cases for all analyses. In addition, if missing data are due to characteristics of certain subgroups, gender, for instance, it will be picked up through the regression analyses. However, as with the mean replacement method, the regression imputation method may attenuate the variance of the variables.

In this study, the regression imputation method was used because of its better potential to produce unbiased results and to maintain the power of testing (Roth, 1994). For variables with missing data, I regressed them on the other variables of the same category, i.e. independent variables were regressed on all other independent variables, using a stepwise forward inclusion

these two dimensions only.

estimation. With the generated regression equations, I replaced the missing data with the regression estimates.

SURVEY PROCESS

To introduce the purpose of the study, I attended a team meeting for each self-managing work team. Participation was voluntary. Questionnaires, attached as Appendix 1, were then distributed to the employees. Employees were asked to complete the questionnaires at their choice of location and time. After completing the questionnaires, respondents either handed them to me directly or they mailed them to me in pre-postaged pre-addressed envelopes. Reminders were sent to all potential participants two weeks after the initial distribution. To increase response rate, participants were offered the aggregate results if they requested them and all respondents were eligible to participate in a lucky draw for three prizes of \$100 dinner certificates of their choices.

One possible concern is that the researcher will know participants' identities. Due to the unique nature of social network analysis of identifying relationships among people, researchers need to know employees' names. Although employees' identities are not anonymous, the researchers guaranteed that only aggregate results would be used, and no individual was identified to anyone other than the researchers.

MEASURES

Independent Variables

Trustworthiness was measured by the aggregate of three trustworthiness components: expertise, benevolence, and integrity. As described in Part V of the questionnaire, a hypothetical event regarding patient care delivery was described in a scenario to set the domain for trustworthiness evaluations. Patient care was chosen because this is the major work

component at the research site. The story involved a newcomer to the organization who has many questions regarding patient care delivery. Respondents were asked to nominate a maximum of five colleagues with whom the newcomer should consult. In addition, respondents were asked to rank their choices in order of importance. To operationalize the risk element, a necessary component of trust, respondents were asked to nominate colleagues carefully because nominating inappropriate people, seeking and acting upon inappropriate advice might cause harm to patients and damage the hospital's reputation.

One question was included for each component of trustworthiness. Expertise was measured by the question "When Pat (the newcomer) wants professional or expertise advice in delivering patient care, whom would you recommend?" Benevolence was measured by the question "Pat (the newcomer) would like to talk to colleagues who will consider Pat's best interests. Whom would you recommend?" Integrity was measured by the question "Pat would like to talk to colleagues who will give Pat fair, honest, and truthful advice. Whom would you recommend?"

Respondents were asked to write down names of their choices in the space provided. Name lists were not provided because the purpose of these questions was to sort out the most important references in the minds of respondents rather than an exhaustive list of references (Marsden, 1990). In this case, free recall, rather than the roster method, is appropriate.

When surveys were collected, the nomination data were entered into a matrix format. For purpose of illustration, the nomination pattern, in terms of expertise, of a hypothetical group of 5 people, A, B, C, D, & E, is shown below:

	A	B	C	D	E
A		3	0	0	0
B	0		4	2	0
C	0	2		4	1
D	5	4	0		0
E	0	2	0	0	
Total	5	14	4	6	1

The rows describe the respondents or the evaluators while the columns represent employees who are being evaluated. In each cell, numbers “1” to “5” represent the ranked importance of expertise nomination from a person (row) to another person (column), with “5” being the most important and “1” being the least important. For instance, Person A nominates Person B only but not Persons C, D, or E. Person D suggests that Pat should contact Person A while Person D thinks that Person E is not an appropriate person to consult. The column total, representing the group’s perception of members’ expertise, was used as the measure of expertise in this study. In this example, Person B is perceived as the expert and Person D is second on the list. The diagonal in the matrix is left blank because it is meaningless to examine a person’s relationship with him/herself. Benevolence and integrity data were analyzed in a similar manner. After calculating the expertise, benevolence, and integrity scores of each member, the trustworthiness score is calculated by averaging the three components.

Psychometric properties of the trustworthiness measure and its components were described in Table 4.2. All trustworthiness components had wide ranges (zero to 55 for ability and zero to 38 for integrity) and large standard deviations. The distribution of each component was plotted in Figures 4.1, 4.2, and 4.3. The lowest possible value of this scale is zero, i.e. no respondent nominated the focal individual. If all respondents nominated the same focal individual, other than oneself, as the most trustworthy individual, the maximum possible value would be 625, 5 points x 125 nominees. The distribution was positively skewed as the mean of the trustworthiness components and aggregates, ranging from 5.6 to 6.47, were much smaller than their midpoints of the reported range, 38 to 55. In addition, more than 35% of the respondents had a score of zero in each trustworthiness component nomination. Two implications can be drawn from the distributions of the trustworthiness components. First, a few individuals received an unproportionally high number of nominations. These individuals

were popularly regarded as trustworthy among the respondents. Second, respondents agree on whom they regard as less trustworthy.

Large correlation coefficients, ranging from 0.80 to 0.82, were found among trustworthiness components of the reputation measure ($r_{\text{ability-benevolence}} = .82$, $r_{\text{benevolence-integrity}} = .81$, $r_{\text{ability-integrity}} = .80$; $p < .001$). These significant correlations among the components of the trustworthiness reputation measure and a high Cronbach's alpha (0.92) support Mayer and his colleagues' (1995) argument that all three components are part of trust and ability, though different in nature, should also be included. The components were averaged to form the aggregate trustworthiness measure.

The trustworthiness measure and its components were normalized before processing multiple regression analyses. The skewness of the measures of ability, benevolent, integrity and the aggregate trustworthiness were 2.73, 2.62, 1.77, and 2.31 while their kurtosis measures were 8.47, 8.83, 2.78, and 5.88 respectively. Due to its positive skewness and kurtosis, the natural log transformation was processed. After such transformation, the skewness and scores of these variables were lowered to .363, .287, .158, and .259 and their kurtosis scores were -1.083, -1.149, -1.316, and -1.127.

Mediating / Moderating Variables (Network Variables)

Instrumental networks represent exchanges of work-related resources. To assess instrumental ties, I asked respondents to answer two questions in Part V Section 2 of the questionnaire: 1) In the past month, who have contacted you for professional advice on work-related matters or decisions? And 2) In the past month, whom did you go to for professional advice on work-related matters or decisions? These two questions were designed to capture the potential asymmetric relationships in advice seeking or giving (e.g. Ibarra & Andrews, 1993; Burt, 1992). Instrumental betweenness centrality is high when an actor is often found to be between two other actors on their geodesic paths (the shortest social distance between two

network actors) in their instrumental network (Freeman, 1979). Betweenness centrality is calculated as the number of times when the focal actor lies within the geodesic path between two actors divided by the total number of geodesic paths between these two actors in the network, summed across all pairs of actors in the network (Wasserman & Faust, 1994). To facilitate the calculation of betweenness centrality, a non-directional network index, the two directional network questions were combined: a network tie existed when either the respondent contacted a colleague or vice versa. This matches the operation definition used in past studies (Ibarra & Andrews, 1993) and the requirement for resource exchange.

Friendship networks consist of exchanges in social resources. To assess friendship ties, I asked respondents to indicate "Who are your friends at work?" Friendship degree centrality refers to the number of friends as reported by both the respondent and the named colleague. Mutual friendship ties are sources of social support (Uehara, 1990). This reciprocation pattern was calculated using UCINET 5.0 (Borgatti, Everett, & Freeman, 1999) by symmetricizing the friendship network using the minimizing criterion. In other words, a friendship tie exists only when both parties recognize its existence. Normed friendship degree centrality is calculated by dividing the number of reciprocated friendship ties by the total number of network actors less one to allow comparison of results from other studies (Wasserman & Faust, 1994).

Initially the roster method was used: Employees' names, categorized by their programs, were provided. After each question, respondents were asked to check against names of colleagues whom they have contacted. The advantages of the roster method are its exhaustiveness and ease in answering (Marsden, 1990). Because the study emphasized the access of information and resources through central network positions, an exhaustive list was appropriate. However, one employee became upset about her name appearing in the questionnaire and the management was worried about the leak of the name lists to external people. As a result, the name lists were removed. Instead, respondents were asked to write in

their colleagues' names whenever applicable and they were asked to refer to their phone directory if they required references. Free recall tends to cover people with greater salience to the respondents but may not be as exhaustive or as easy to the roster method (Marsden, 1990). To control for this difference, a dummy variable, roster method, was created to test whether it affected the theoretical model and the hypotheses.

Both the work betweenness centrality and the friendship degree centrality measures were calculated using the UCInet software version 5.0 (Borgetti et al., 1999). The range of these measures was wide, ranging from zero to 17.41 and 11.22 respectively while their averages were just 1.60 and 2.58. Histograms of work betweenness centrality and friendship degree centrality were plotted in Figures 4.4 and 4.5. Similar to the distribution of the trustworthiness measure, many respondents had low network centrality while a few individuals were found either in critically central positions in the instrumental network or having many mutual friends at work, i.e. their friendship was recognized by both parties. On average, our respondents had about two to three mutual friends. However, the variance was large. Some of them had more than eleven while some had no mutual friend at work.

The skewness of the work betweenness centrality variable was 2.48 and its kurtosis score was 6.51. Log transformation was processed to normalize the distribution of this variable. After the transformation, the skewness and kurtosis scores became 1.08 and .91. The friendship degree centrality variable had a relatively normal distribution (skewness = 1.21 and kurtosis = 1.66) and no transformation was necessary.

Dependent Variables

Work performance was measured by a five-item scale created by Pearce and Porter's (1986) and used by Black and Porter (1991) (Part IV Section 1 of the questionnaire). Respondents were asked to recall how their supervisors would rate their performance relative to other employees in similar positions based on a percentage basis. Respondents may rate

themselves as the top 5%, top 10%, top 25%, top 50%, or bottom 50% of the work force. The percentage method was used to standardize the results because each program used different performance evaluation processes and wordings. Performance dimensions included the ability to get along with others, the quality of performance, the ability to get the job done efficiently, achievement of work goals, and the overall performance. This measure was found to correlate highly with supervisors' rating of performance because respondents were not asked to assess their performance based on their own standards (Pearce & Porter, 1986). Internal consistency reported in this study was high (Cronbach's $\alpha = 0.91$).

Extra-role behaviors were measured by a ten-item Likert-type scale (Pearce & Gregersen, 1991). This scale, listed in Part IV Section 2 of the questionnaire, is a one-dimension scale that covers activities and behaviors that are beyond normal work requirements. It includes extra-role behaviors towards individuals as well as the organization. Sample questions included "I work before and after regular working hours in order to finish a task", "I orient new people even though it is not required", and "I make especially helpful suggestions to improve the organization". Respondents were asked to indicate their consent with these statements with either "strongly agree", "agree", "neither agree nor disagree", "disagree", or "strongly disagree". Internal consistency reported in this study was satisfactory (Cronbach's $\alpha = 0.79$).

Burnout is a composite measure of employees' perception of emotional exhaustion, depersonalization, and the lack of personal accomplishment in people-related industries. Maslach and Jackson (1981) have created a reliable and valid scale for measuring all three components, as listed in Part II of the questionnaire. Sample questions of the nine-item emotional exhaustion subscale (Questions 1, 2, 5, 9, 14, 15, 18, 20, & 21) included "I feel emotionally drained from my work" and "Working with people all day is really a strain for me". The five-item depersonalization subscale (Questions 4, 6, 16, 17, & 23) consisted of questions

such as "I have become more callous toward people since I took this job" and "I feel I treat some recipients as if they were impersonal 'objects'". Sample questions of the eight-item lack of personal accomplishment subscale (Questions 4, 10, 11, 19, 22, 24, & 25) included "I can easily understand how my clients feel about things" and "I feel I am positively influencing other people's lives through my work". These questions were reverse-scored to measure the lack of personal accomplishment. Respondents were asked to rate how much they agreed with the above statements. In this study, the internal consistency of the whole scale, the emotional exhaustion subscale and the depersonalization subscale were satisfactory (Cronbach's alpha = 0.74, 0.90, 0.80 respectively). Although the internal consistency of the lack of personal accomplishment subscale was lower than the generally-accepted level of 0.70 (Cronbach's alpha = 0.67), it was close and therefore marginally acceptable (Nunnally, 1978).

To confirm the acceptability of the three subscales, the burnout scale was factor analyzed using the principal component extraction method and varimax rotation. Five components were found. After rotating the factor structure, the results showed that the first component, explaining 33% of the variance, included all eight emotional exhaustion items. The second component, explaining 10% of the variance, included all five depersonalization items. The lack of personal accomplishment items were scattered among the third, fourth, and fifth components, explaining 7.3%, 5.6%, and 4.8% variance respectively. The results confirmed the low reliability of the lack of personal accomplishment subscale. However, when the third, fourth, and fifth components were analyzed individually, their internal reliability was lower than the aggregate lack of personal accomplishment subscale. As a result, they were combined to form one subscale rather than three.

Work overload refers to a perception of workload and the resources given to complete it. A three-item scale, included in Part II Questions 7, 8, & 12 of the questionnaire, was used to measure respondents' perception in this area (Schaubroeck, Cotton, & Jennings, 1989). Sample

questions included "I have too much work to do everything well" and "I never seem to have enough time to get everything done". Respondents were asked to rate how much they agreed with the above statements. The internal reliability of the work overload scale was satisfactory (Cronbach's alpha = 0.82).

Job satisfaction is a measure of employees' feelings and attitude at work. I selected the Female Faces Scale (Dunham & Herman, 1975), a one-item non-facet job satisfaction scale as described in Part I of the questionnaire. It involved 11 female faces with different facial expressions and respondents were asked to circle the face that best represents how they felt at work. Respondents were asked to indicate how they felt about their job in general, how they felt about their co-workers, and how they felt about their supervisor(s). The Female Faces Scale had good discriminant and convergent validity when compared with Job Description Index (Smith, Kendall, & Hulin, 1969).

Control Variables

Variables that may potentially confound the effects of trustworthiness need to be controlled. Questions relating to the control variables were included in Part VI of the questionnaire. Within a business unit, employees of various status or rank might be involved. Higher rank employees were often consulted due to their organizational rank and their associated decision making discretion, but not their trustworthiness. Therefore, organizational rank needed to be controlled before examining the effects of trustworthiness. Organizational rank was measured by a self-report question on whether employees were supervisors.

In addition, employees who had been working at the organization for a long time tended to be known by more people. Regardless of their trustworthiness, more people would talk to them. Controlling for organizational tenure allowed the effects of trustworthiness to be seen more clearly. Respondents were asked how long they had been working at the rehabilitation center.

Program (department) and occupational effects needed to be controlled. Out of the five programs, Clinical Support Program was unique in that it did not have its own patients and it served other programs. This might pose different network patterns and it needed to be taken into account. Also some occupations, such as physicians and social workers, might be more respected than others, such as clerks and rehabilitation assistants. Thus, I controlled for Occupational differences. After some preliminary analyses, dummy variables for larger occupational groups such as social workers, nurses, and clerks were created.

METHOD OF ANALYSIS

Hierarchical multiple regression procedures were used to test the mediation model (Baron & Kenny, 1986). Four sets of hierarchical equations were processed, one for each dependent variable. In the first step, the control variables were entered as the first block. Then trustworthiness was entered. It was expected that trustworthiness was a significant predictor of the dependent variables and would add explained variance to the model beyond the control variables. In the third step, the network centrality variables, such as instrumental network betweenness centrality and friendship network degree centrality, would be entered as a block. If the network variables were full mediators between trustworthiness and job outcomes, then the mediating network variables would become significant in predicting job outcomes while trustworthiness would become a non-significant predictor (Baron & Kenny, 1986).

Hypotheses with moderating effects were also analyzed using hierarchical multiple regression. First, control variables were entered. Then main effect variables, such as trustworthiness and network characteristics were entered. When interaction terms were included, the main effect variables were mean-centered (subtracted from its average) to avoid multi-collinearity problems (Aiken & West, 1991). Finally the cross products of

trustworthiness and network characteristics were entered in the third step. It was expected that the cross products would be significant predictors of burnout and work overload.

Table 4.1
Sample Demographics

		Frequency	%
Programs	Acquired Brain Injury	36	28.6
	Arthritis	13	10.3
	Neuromuscular Sclerosis	15	11.9
	Spinal Cord Injury	38	30.2
	Clinical Support	20	15.8
	Practice Leaders/Managers	4	3.2
Occupations (>10)	Nurses	31	24.6
	Physiologists	15	11.9
	Occupational Therapists	20	15.8
	Clerical Staff	8	6.3
	Social Workers	6	4.8
	Recreation Therapists	5	4.0
	Other Occupations	41	32.6
Gender	Male	13	10.3
	Female	112	88.9
Ethnicity	Caucasian	106	84.1
	Non-Caucasian	12	9.5
Education	High School	3	2.4
	Some College or University	5	4.0
	College / Technical School Certificate	26	20.6
	University Bachelor Degree	45	35.7
	Some Postgraduate Training	11	8.7
	Postgraduate Training	30	23.8
	Other	2	1.6
Employment Status	Full-time	83	65.9
	Part-time	38	30.2
	Other	2	1.6
Schedule	Fixed - Day	105	83.3
	Fixed - Night	5	4.0
	Rotating	13	10.3
Supervisor	Yes	29	23.0
	No	97	77.0
Roster	Yes	60	47.6
	No	66	52.4

Table 4.2
Descriptive Statistics

Variables	Mean	Standard Deviation	Minimum	Maximum	Cronbach's Alpha
Demographics					
Occupational Tenure (years)	13.30	9.72	1	40	
Organizational Tenure (years)	8.53	6.37	1	26	
Age	39.88	9.32	25	61	
Trustworthiness					
Ability	6.47	10.39	0	55	
Benevolence	5.60	8.37	0	52	
Integrity	6.22	8.25	0	38	
Trustworthiness	6.10	8.42	0	44.33	0.92
Network Variables					
Work Betweenness	1.60	2.38	0	17.41	
Friendship Degree	2.58	2.31	0	11.22	
Dependent Variables					
Work Performance	3.75	0.86	2.00	5.00	0.91
Extra-Role Behaviors	3.57	0.50	1.60	5.00	0.78
Work Overload	2.93	0.97	1.00	5.00	0.82
Job Satisfaction	8.47	1.40	4.00	11.00	0.74
Burnout	2.21	0.52	2.14	3.77	0.74
Emotional Exhaustion	2.35	0.73	1.11	4.33	0.90
Depersonalization	1.93	0.79	1.00	4.80	0.81
Lack of Personal Accomplishment	2.23	0.45	1.13	3.50	0.67

Figure 4.1
Histogram - Ability Reputation

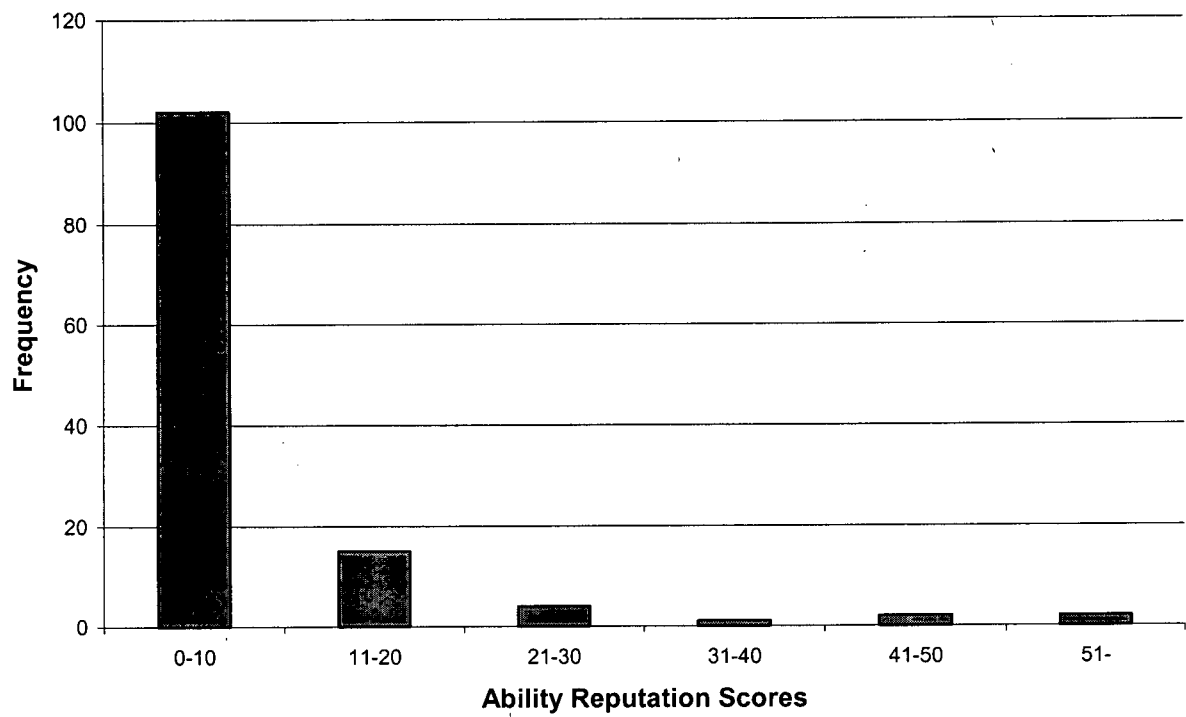


Figure 4.2
Histogram - Benevolence Reputation

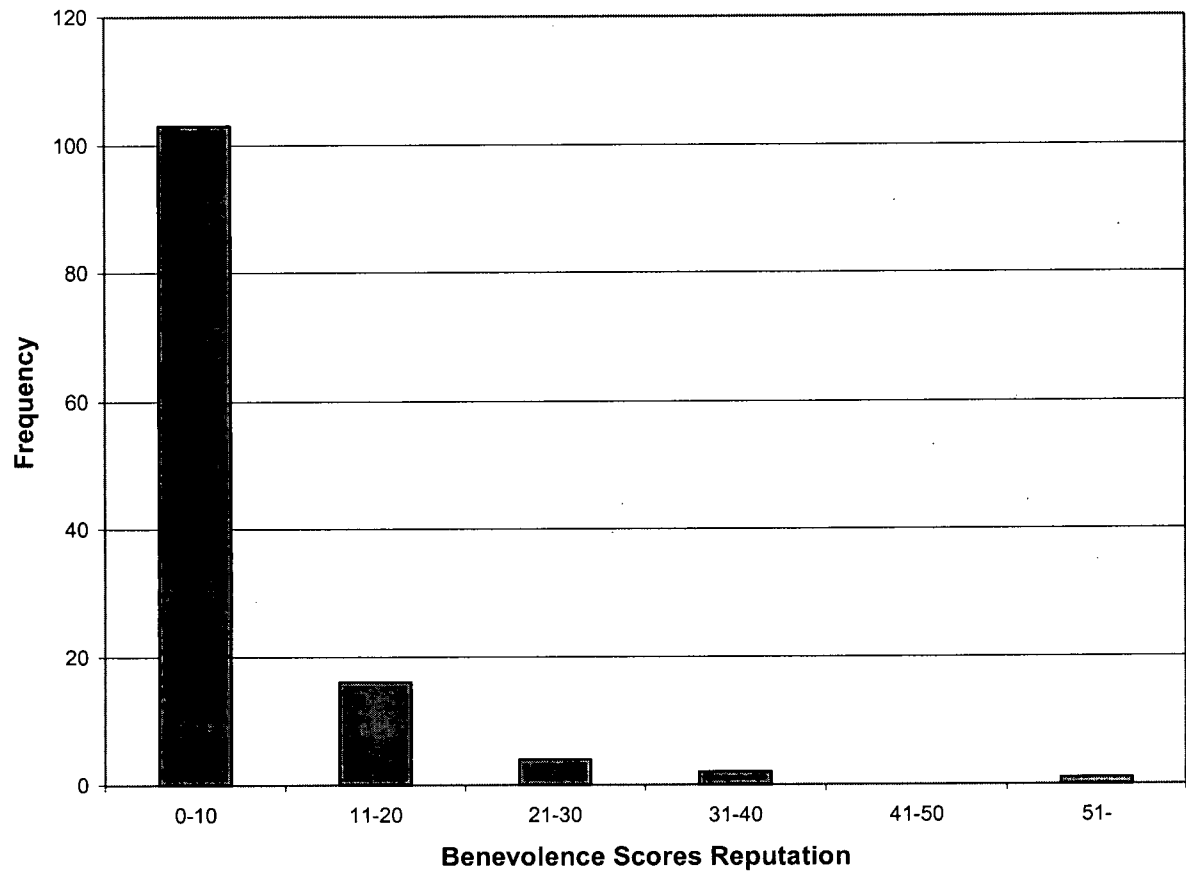


Figure 4.3
Histogram - Integrity Reputation

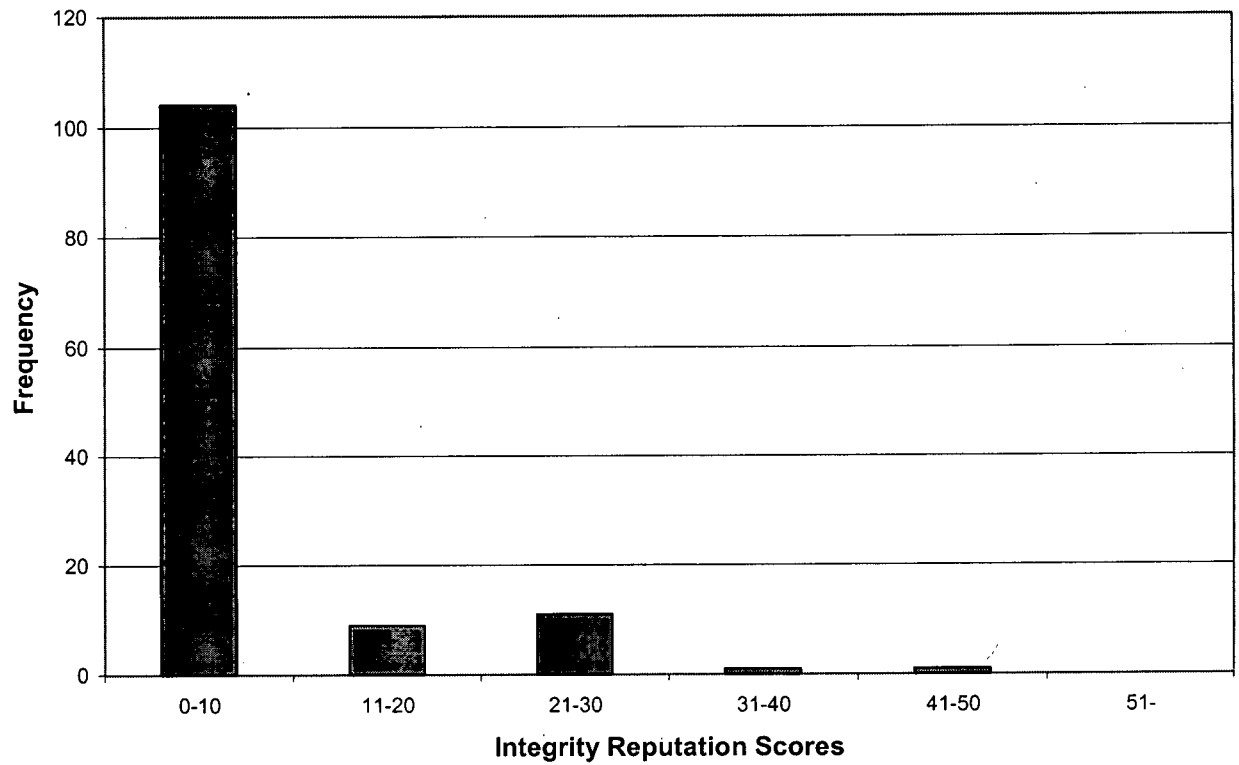


Figure 4.4
Histogram - Instrumental Betweenness Centrality

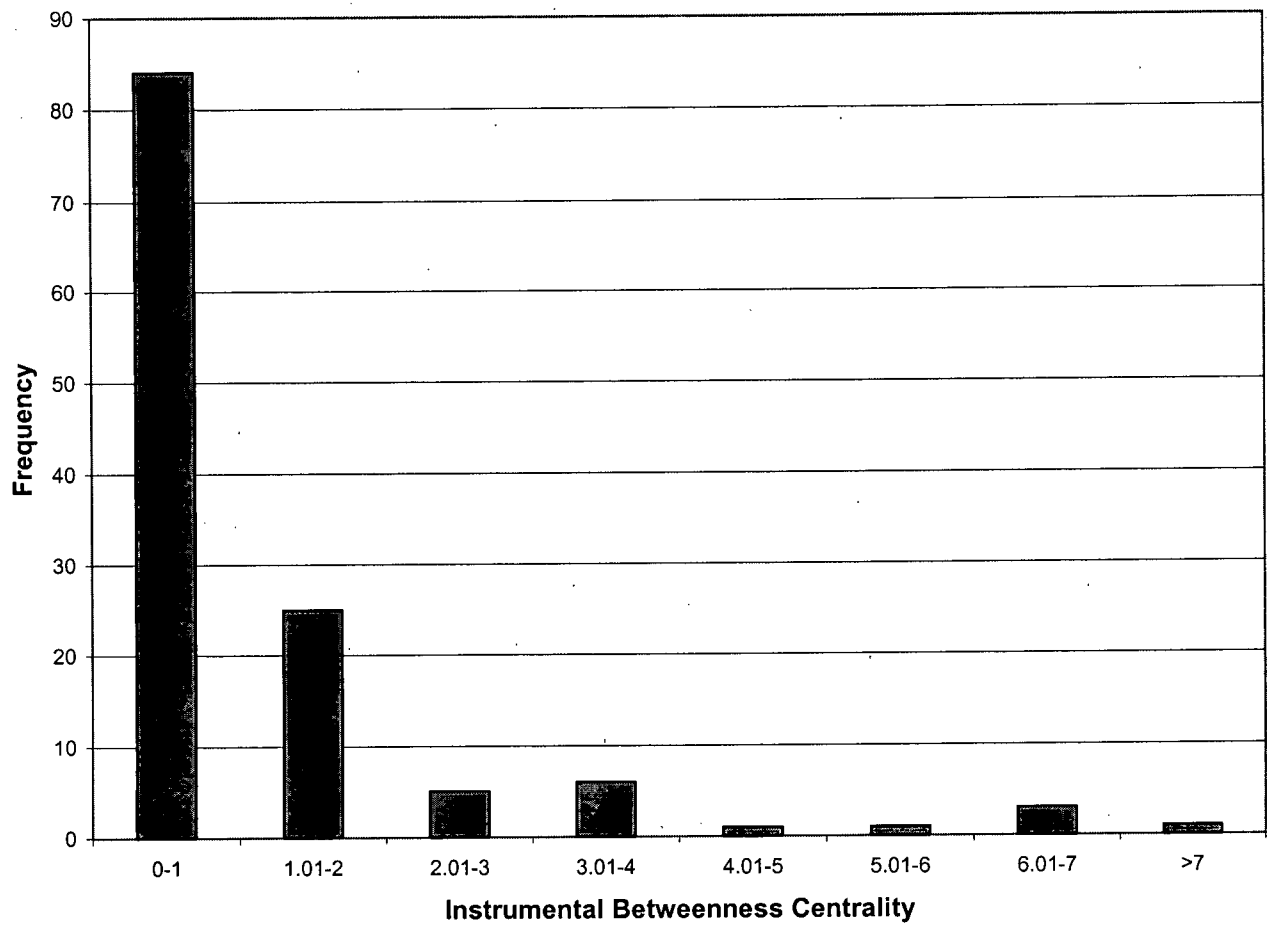
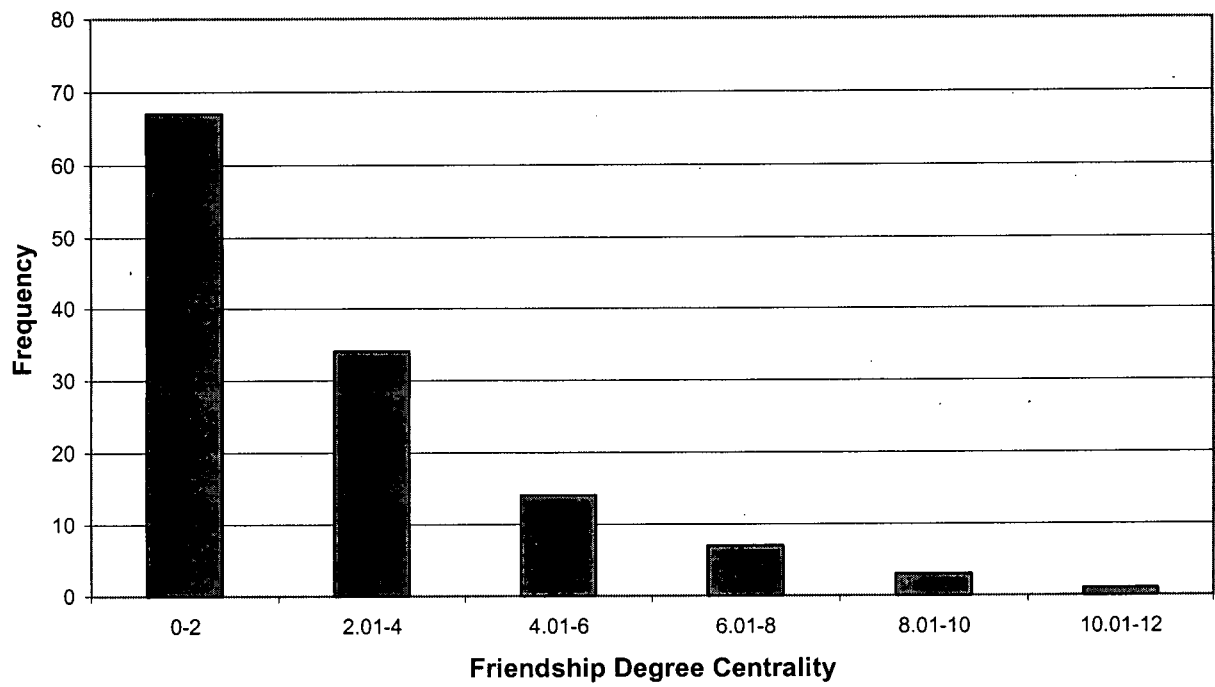


Figure 4.5
Histogram - Friendship Degree Centrality



CHAPTER 5

RESULTS

In this chapter, I present the analysis and the results of the data collected. Hypothesis-testing results using multiple regression analyses are presented. Results of some post-hoc analyses on the effects of various trustworthiness components and different network data collection methods are then presented.

Correlation coefficients among the independent and dependent variables were shown in Table 5.1. Trustworthy people occupied more central positions in both instrumental ($r = .37$, $p < .01$) and friendship networks ($r = .37$, $p < .01$). Compared to less trustworthy colleagues, they worked longer for the organization ($r = .26$, $p < .01$) and were more likely be a supervisor ($r = .28$, $p < .01$). The correlational results confirmed the necessity to control for the confounding influence of organizational tenure and supervision. Besides the correlations among the trustworthy components, the highest correlation coefficient found among other independent variables was 0.40: Employees of integrity were more likely to have more friends. Multicollinearity was not a concern.

Trustworthy employees were found to participate in more extra-role behaviors ($r = .26$, $p < .01$). This positive relationship was also found among each trustworthiness component, including expertise, benevolence, and integrity, and the amount of extra-role behaviors ($r = .27$, $.23$, $.21$, $p < .01$, $.01$, $.05$ respectively). Trustworthiness was not related significantly with other dependent variables such as work performance, job satisfaction, burnout, and work overload. Employees who occupied more central positions in the instrumental network were found to have lower work performance ($r = -.18$, $p < .05$). Instrumental betweenness centrality was not significantly related to other dependent variables. Friendship degree centrality was not significantly related to any dependent variable.

TRUSTWORTHINESS - HYPOTHESES TESTING

Hypothesis 1 suggested that the higher an employee's trustworthiness, the better is his/her work performance and this relationship was mediated by their betweenness centrality in their instrumental network. After controlling for organizational tenure, program and occupational effects, and supervisory status in the first step of the hierarchical regression, trustworthiness did not significantly explain work performance ($\beta = .11$, n.s.), as shown in Table 5.2. However, after adding in the instrumental network betweenness centrality variable in the third step, trustworthiness became positively related to work performance ($\beta = .19$, $p < .10$). Apparently, the mediating model specified in Hypothesis 1 was not supported because trustworthiness, by itself, was not significantly related to work performance and therefore instrumental network betweenness centrality did not mediate between trustworthiness and work performance. In addition, instrumental network betweenness centrality was found to be negatively related to work performance ($\beta = -.24$, $p < .05$), contrary to the prediction suggested by the structural hole theory that central network actors possess information advantages and brokering capability in doing their work.

Instead, trustworthy people were found to be better performers after accounting for their instrumental network betweenness centrality. This result did not seem to be a result of multicollinearity because trustworthiness and instrumental network betweenness centrality were only moderately correlated ($r = .37$). One plausible reason was model misspecification in predicting trustworthiness as the major driver of work performance, rather than the structural factor, instrumental network betweenness centrality. Comparing the size of the beta coefficients of trustworthiness and betweenness centrality, respondents' network position ($\beta = -.24$) explained more variance of work performance than their trustworthiness ($\beta = .19$). Further analyses were processed later in this chapter.

Hypothesis 2 argued that the higher is an employee's trustworthiness, the higher was his/her job satisfaction and this relationship was mediated by his/her betweenness centrality in the instrumental network. On the other hand, Hypothesis 6 suggested that an employee's trustworthiness would likely decrease his/her job satisfaction due to felt work overload and burnout. Results in Table 5.2 indicated that both hypotheses were not supported because trustworthiness was not significantly related to job satisfaction. In addition, the mediation hypothesis (H2) was not supported. Instead of trustworthiness, the strongest predictor of job satisfaction was the program. Spinal Cord Program employees ($\beta = -.39, p < .01$) were more dissatisfied (mean = 7.63) with their job relative to those in the Acquired Brain Injury Program (mean = 8.72), Neuromuscular Sclerosis Program (mean = 8.89), Arthritis Program (mean = 9.07), and Clinical Support Program (mean = 8.83) (ANOVA F-test = 5.56, $p < .01$).

Hypothesis 3 argued that the trustworthiness of an employee was positively related to the extent of his/her extra-role behaviors. Results indicated that Hypothesis 3 was supported. Trustworthiness was positively related to extra-role behaviors ($\beta = .31, p < .01$). Trustworthy people were found to show more extra-role behaviors. Trustworthiness, alone, explained 7.2% of the variance of the extra-role behaviors and it was the strongest predictor among all the variables.

Hypothesis 4 predicted trustworthy employees would more likely experience burnout but the experience would be buffered by the social support provided by their friends. Results were shown in Table 5.3. Control variables were included in the first step of a three-step regression analysis. Then the mean-centered trustworthiness and the mean-centered friendship degree centrality, main effect variables, were added in the second step. Finally, the interaction term between trustworthiness and friendship degree centrality were entered in the third step. Contrary to Hypothesis 4, trustworthiness did not lead to more burnout experience. All the beta

coefficients were negative ($\beta_{\text{emotional exhaustion}} = -.13$, $\beta_{\text{depersonalization}} = -.04$, $\beta_{\text{Lack of Personal Accomplishment}} = -.12$), however, they did not reach the required level of significance. In addition, the interaction terms were not significant ($\beta_{\text{emotional exhaustion}} = -.09$, $\beta_{\text{depersonalization}} = -.06$, $\beta_{\text{Lack of Personal Accomplishment}} = .09$). Instead, program and occupational effects were significant in predicting emotional exhaustion. Respondents in the Acquired Brain Injury program (ABI) and Spinal Cord Injury program (SCI) were found to be more emotionally exhausted when compared with employees of the Clinical Support Program (CSS). In addition, employees in SCI experienced a significant lack of personal accomplishment ($\beta = .33$, $p < .05$). Nurses reported strong experience of being depersonalized ($\beta = .35$, $p < .01$) and a lack of personal accomplishment ($\beta = .21$, $p < .10$) when compared to other occupational groups.

Hypothesis 5 suggested that trustworthy employees would experience more work overload but such experience would be buffered by the number friends they had. Results showed that Hypothesis 5 was not supported because neither the main effect variable of trustworthiness ($\beta = .12$, n.s.) nor the interaction term ($\beta = -.04$, n.s.) was significantly related to work overload. Similar to the results regarding burnout experience, program and occupational effects were found. Employees in the Spinal Cord Injury program (SCI) and the Neuro-Muscular Sclerosis program (NMS) experienced more work overload ($\beta = .289$ & $.258$, $p < .05$) when compared to those in the Clinical Support Program. Contrary to their experience in feeling burnout, nurses experienced less work overload when compared to other occupational groups ($\beta = -.276$, $p < .05$).

POST-HOC ANALYSES ON TRUSTWORTHINESS COMPONENTS

Because each trustworthiness component is different in nature and may have a different impact on job outcomes, they were analyzed separately. Each trustworthiness component was

regressed on the same dependent variables and in the same hierarchical manner as the aggregate trustworthiness variable. Results were shown in Tables 5.4 to 5.6.

Similar to the aggregate trustworthiness variable, none of the trustworthiness components significantly explained work performance beyond the control variables. Out of the three components, benevolence became a significant predictor of work performance after controlling for instrumental network betweenness centrality ($\beta = .23, p < .05$). Ability and integrity did not relate to work performance in a significant manner after controlling for the instrumental network betweenness centrality significant ($\beta_{\text{ability}} = .14, \beta_{\text{integrity}} = .13$). The implications of this result would be explained later in this chapter together.

Respondents reported more extra-role behaviors if they were known as capable ($\beta = .31, p < .05$), benevolent ($\beta = .27, p < .05$), and with high integrity ($\beta = .23, p < .05$). Ability was the strongest predictor and explained more than 7% variance of extra-role behaviors. Both benevolence and integrity explained about 5.6 % and 4.4% of extra-role behaviors respectively. Although benevolent people are expected to be helpful and exhibit more extra-role behaviors, capable people may not necessarily, by nature, be willing to do the extra work. It is likely that their reputation for being capable attracts many advice seekers so that they exhibited more extra-role behaviors.

Similar to the aggregate trustworthiness measure, no trustworthiness component significantly explained job satisfaction, as shown in Table 5.5 ($\beta_{\text{ability}} = .00, \beta_{\text{benevolence}} = .09, \beta_{\text{integrity}} = -.07$). Only program effects were found.

In summary, results for the positive impact of the aggregate trustworthiness variable and the trustworthiness components were similar. Both the aggregate and the trustworthiness components were significantly related to in-role work performance after controlling for instrumental network betweenness centrality, but no such relationship was found without the

control for respondents' network centrality position. In addition, both the aggregate and the trustworthiness components were significant predictors of extra-role behaviors but not job satisfaction. All trustworthiness components were found to have effects of similar direction but slightly different degree of significance.

The resource depletion argument suggests that trustworthy employees will likely experience more burnout and this experience will be buffered by their degree centrality in the friendship network. Among the three trustworthiness components, only benevolence was found to mitigate emotional exhaustion (Table 5.6). Respondents who were perceived as highly benevolent reported less emotional exhaustion ($\beta = -.19, p < .10$). Results of the other two components showed similar direction but of a lesser magnitude ($\beta_{\text{ability}} = -.13, \beta_{\text{integrity}} = -.03$). Instead of a resource-depleting picture, the result suggests that people who care about others' interests and generously provide help gain energy through their helping behaviors. Interactions between trustworthiness components and friendship degree centrality were not significant in predicting burnout ($\beta_{\text{ability} \times \text{fnd.deg.cen.}} = -.10, \beta_{\text{benevolence} \times \text{fnd.deg.cen.}} = -.07, \beta_{\text{integrity} \times \text{fnd.deg.cen.}} = -.08$).

No such result was found for depersonalization. None of the trustworthiness components ($\beta_{\text{ability}} = -.05, \beta_{\text{benevolence}} = -.05, \beta_{\text{integrity}} = .00$) or their interactions with friendship degree centrality ($\beta_{\text{ability} \times \text{fnd.deg.cen.}} = -.09, \beta_{\text{benevolence} \times \text{fnd.deg.cen.}} = -.08, \beta_{\text{integrity} \times \text{fnd.deg.cen.}} = .01$) was significant in predicting depersonalization.

Among the three trustworthiness components, only ability was significant in predicting the lack of personal accomplishment. Being capable reduced the feeling of a lack of personal accomplishment ($\beta = -.17, p < .10$). Both benevolence and integrity were not significant in predicting the lack of personal accomplishment ($\beta_{\text{benevolence}} = -.11, \beta_{\text{integrity}} = -.03$). This result is obvious because capable people are able to do their work well which gives them a sense of achievement. It is less likely that they experience a lack of personal accomplishment. Similar

to the other two burnout factors, emotional exhaustion and depersonalization, none of the interaction terms was significant in predicting the lack of personal accomplishment factor ($\beta_{\text{ability} \times \text{fnd.deg.cen.}} = .08$, $\beta_{\text{benevolence} \times \text{fnd.deg.cen.}} = .11$, $\beta_{\text{integrity} \times \text{fnd.deg.cen.}} = .09$).

Results on work overload were more aligned with the resource depletion argument that trustworthy employees were likely to feel work overload and friendship degree centrality would buffer this relationship. Component analyses showed that respondents with high integrity were overloaded with heavy work demand and pressing time limits ($\beta = .19$, $p < .10$) but not ability ($\beta = .06$) and benevolence ($\beta = .04$). None of the interactions between trustworthiness components and friendship degree centrality was significant ($\beta_{\text{ability} \times \text{fnd.deg.cen.}} = -.07$, $\beta_{\text{benevolence} \times \text{fnd.deg.cen.}} = -.03$, $\beta_{\text{integrity} \times \text{fnd.deg.cen.}} = -.02$).

Although work overload and emotional exhaustion were positively correlated ($r = .52$, $p < .01$), different trustworthiness components led to opposite predictions in each of them. Benevolence and ability were found to mitigate burnout through lowering emotional exhaustion and the lack of personal accomplishment respectively. On the other hand, respondents with high integrity experienced work overload. These seemingly opposite results would be discussed in the final chapter.

POST-HOC ANALYSES ON WORK PERFORMANCE

The Performance Enhancement argument suggested that trustworthy employees would be likely to perform better at work because they occupy central positions in the instrumental network. The results do not support the performance enhancement argument because instrumental network betweenness centrality did not mediate the relationship between trustworthiness and work performance. Although trustworthy employees were more likely to occupy central positions in the instrumental network, such positions had a negative, rather than

positive, impact on work performance. After controlling for instrumental network betweenness centrality, trustworthy employees were found to be better performers.

Several explanations for this relationship can be considered. One explanation may be that the results reported in Table 5.2 may be due to multicollinearity because trustworthiness and instrumental network betweenness centrality are highly correlated. However, as stated before, the correlation coefficient ($r = .37, p < .01$) between these two variables was only modest and therefore this reason is unlikely.

The second possible explanation is that the initial model was misspecified and that instrumental network betweenness centrality should be included as the major driver and that trustworthiness should mediate between work centrality and work performance. To test this explanation, I ran a 3-step hierarchical regression analysis on work performance with the control variables in the first block, instrumental network betweenness centrality in the second block, and the trustworthiness components and the aggregate in the third block (Baron & Kenny, 1986). Results are shown in Table 5.7 and they do not support this explanation. Instead of diminishing the level of significance, the instrumental network betweenness centrality became more significant after adding the trustworthiness components. In addition, ability and integrity were not significant in predicting work performance.

A third explanation is that trustworthiness may be a two-edge sword with regards to its impact on performance. Other than their positional advantage as represented by instrumental network centrality, trustworthy employees might have other qualities that allowed them to outperform less trustworthy colleagues. Being trustworthy is potentially beneficial in two ways. First, individuals who are being trusted carry much vested discretion and they are frequently given the benefit of the doubt. In a longitudinal study of trust dynamics, Robinson (1996) found that prior trust moderates the negative effects of psychological contract breach on subsequent trust. In other words, individuals who are being trusted initially enjoy more

discretion and freedom in their behaviors. Colleagues continue to trust them even when the trusted others occasionally perform below expectation. These benefits enlarge the capability of trustworthy individuals to be creative and to perform well in their work.

Second, trustworthy individuals tend to be chosen as favorable exchange partners (Blau, 1964). Trustworthy people are seen as benevolent and as possessing high integrity (Mayer et al., 1995): they will take care of other's interests, and are fair and honest. It is unlikely that they will cheat and behave unethically. If favors are granted once, it is likely that they will reciprocate. Other people will be willing to deal with them knowing that the risk of loss will be minimized. When trustworthy individuals need advice or assistance, others are willing to provide it to them because trustworthy individuals will more likely reciprocate in the future. In addition, trustworthy individuals are probably known for their trustworthiness due to their past helping behaviors to others. When necessary, they may claim their accumulated social credits to get help or favors. This is crucial for doing interdependent work when no individual can complete work alone. The ability to seek out and combine talents becomes the key to task completion.

The two-edged-sword argument explains the regression results in this study. Trustworthiness, by itself, was not related to work performance ($\beta = .11$, n.s.). Apparently, trustworthiness had both positive and negative impact on work performance. On the one hand, trustworthy people suffered from being central in the instrumental network. After controlling for the negative effects of instrumental network betweenness centrality ($\beta = -.24$, $p < .05$), trustworthiness became a significant and positive predictor of work performance ($\beta = .19$, $p < .10$). In other words, after taking into account the negative effects of being central in the instrumental network, the positive impact of trustworthiness was found to be significant.

To further test this argument, I ran a residual analysis to test the relationship between trustworthiness and work performance after taking out the variance of work performance as explained by instrumental network betweenness centrality. I ran a regression analysis with instrumental network betweenness centrality as one of the independent variables on work performance, followed by a residual analysis on the effect of trustworthiness on work performance. First, I regressed the control variables and instrumental network betweenness centrality on work performance and then saved the residuals. Then I ran a two-tailed correlation analysis between the residuals and ability, benevolence, integrity, and the aggregate trustworthiness and the coefficients were 0.11 (n.s.), 0.16, ($p < .10$), 0.10 (n.s.) and 0.14 (n.s.) respectively. Although only the correlation between the residuals and benevolence was significant, the correlation became stronger after the partition.

POST-HOC ANALYSIS ON SOCIAL NETWORK DATA COLLECTION METHOD

As described in the previous chapter, two methods were used in collecting social network data. The roster method included a list of employees' names in the questionnaires and respondents were asked to check names where appropriate while the listing method required the respondents to write out names of colleagues. When compared to the listing method, the roster method is known to produce more ties but with more errors (Marsden, 1990). It is then necessary to check whether the social network collection method has any effect on the above results.

To investigate the effects of the roster method, all regression runs were repeated with the addition of the roster method as an additional control variable. Tables 5.8 to 5.13 are presented below. No significant difference was found regarding the regression runs on work performance. Table 5.8 shows that respondents' trustworthiness was positively related with

their work performance ($\beta = .19, p < .10$), after controlling for their work centrality. Examining the trustworthiness components, only benevolence ($\beta = .23, p < .05$), but not ability ($\beta = .14, p > .10$), and integrity ($\beta = .13, p > .10$), was a significant predictor of work performance.

Adding roster method as a control variable did not affect the results on extra-role behaviors. Both the aggregate trustworthiness ($\beta = .31, p < .01$), and the components, including ability ($\beta = .31, p < .01$), benevolence ($\beta = .27, p < .01$), integrity ($\beta = .23, p < .01$), were significant predictors of extra-role behaviors. The significance level was not affected.

Different methods in collecting social network data had no effect on job satisfaction. Both the aggregate trustworthiness and its components did not relate to job satisfaction, as shown in Table 5.2, Table 5.5, Table 5.8, and Table 5.11.

Similar to the previous results, the aggregate trustworthiness was not a significant predictor of work overload and all the burnout components - emotional exhaustion, depersonalization, and the lack of personal accomplishment after adding the roster method variable as a control variable (Table 5.9). Examining the trustworthiness components, the results were again similar despite the addition of the roster method as a control variable. As shown in Table 5.12, benevolence was a significant predictor of emotional exhaustion ($\beta = -.19, p < .10$), ability was a significant predictor of the lack of personal accomplishment ($\beta = -.17, p < .10$), and integrity was a significant predictor of work overload ($\beta = .19, p < .10$).

In summary, the methodological difference in collecting social network did not affect the results of the hypothesis testing. Similar results were found with or without the roster method variable.

Table 5.1
Correlation Table

Variables	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Ln Trustworthiness	.90**	.93**	.91**	.37**	.37**	.09	.26**	.05	.06	-.08	-.10	.00	-.08	.26**	.28**	.11
2. Ln Ability		.76**	.71**	.30**	.24**	.07	.27**	.05	.00	-.11	-.12	-.02	-.11	.31**	.26**	.09
3. Ln Benevolence			.79**	.38**	.38**	.11	.23**	.08	.04	-.09	-.12	.01	-.07	.20*	.26**	.12
4. Ln Integrity				.33**	.40**	.06	.21*	-.01	.13	-.02	-.03	.03	-.03	.20*	.25**	.10
5. Ln Work Betweenness					.29**	-.18*	.13	.01	.06	.02	-.07	.10	.07	.10	.08	.20*
6. Centrality																
6. Friendship Degree						.06	.07	.04	.02	-.01	-.03	.07	-.04	-.07	.05	.07
7. Centrality																
7. Work Performance							-.03	.27**	-.09	-.20*	-.16°	-.06	-.29**	.03	.04	-.04
8. Extra-Role Behaviors								-.00	.01	-.14	-.09	-.03	-.27**	.05	-.00	.10
9. Job Satisfaction									-.09	-.52**	-.47**	-.41**	-.38**	.13	-.01	.19*
10. Work Overload										.34**	.52**	.05	.08	-.06	-.05	.22*
11. Burnout											.90**	.79**	.71**	-.07	.12	-.20*
12. Emotional Exhaustion												.55**	.45**	-.05	.10	-.16°
13. Depersonalization													.42**	-.10	.11	-.18*
14. Lack of Personal Accomplishment														-.00	.08	-.17°
15. Organizational Tenure															.38**	.03
16. Supervision																
17. Roster																-.11

° Coefficient is significant at the 0.10 level

* Coefficient is significant at the 0.05 level

** Coefficient is significant at the 0.01 level

Table 5.2
Hierarchical Multiple Regression Results on Positive Outcomes
(Standardized Regression Coefficients reported)

	Work Performance		Job Satisfaction	Extra-Role Behaviors
Control				
Programs				
ABI	-.005	-.001	-.099	-.103
SCI	-.174	-.148	-.391**	-.185
NMS	-.125	-.090	-.089	-.079
Arthritis	-.051	-.053	.068	-.202 ^o
Occupations				
Social Workers	.168 ^o	.168 ^o	.042	.021
Nurses	.126	.115	-.099	-.013
Clerks	.103	.112	-.063	.036
Supervision	.015	.006	-.062	-.075
Organizational Tenure	-.054	-.045	.119	.005
Trustworthiness				
Ln Trustworthiness	.107	.192 ^o	.013	.309**
Work Network				
Ln Betweenness		-.236*	.019	
Centrality				
R²	.058	.105	.186**	.114
Adjusted R²	-.024	.067	.115	.036
Change in R²	.009	.047*	.000	.072**

N=126

^o Coefficient is significant at the 0.10 level

* Coefficient is significant at the 0.05 level

** Coefficient is significant at the 0.01 level

Table 5.3
Hierarchical Multiple Regression Results on Negative Outcomes
(Standardized Regression Coefficients reported)

	Burnout Emotional Exhaustion	Burnout Depersonalization	Burnout Lack of Personal Accomplishment	Work Overload
Programs				
ABI	.257*	.151	.182	.183
SCI	.339*	.179	.316*	.295*
NMS	.110	.005	.109	.257*
Arthritis	.094	-.060	.129	-.050
Occupations				
Social Workers	.086	-.010	-.077	.058
Nurses	.045	.354**	.225*	-.276*
Clerks	.102	.091	.110	.103
Supervision	.178°	.155	.076	-.013
Organizational Tenure	-.100	-.186°	-.024	-.048
Main Effect Variables				
Ln Trustworthiness (c)	-.133	-.043	-.123	.115
Friendship Network	-.021	.136	.055	-.114
Degree Centrality (c)				
Interactions				
Tw. x Frnd deg.cen.	-.092	-.063	.093	-.043
R²	.118	.208**	.175*	.193**
Adjusted R²	.032	.132	.095	.115
Change in R²	.015	.014	.010	.013
				.002

N=126

° Coefficient is significant at the 0.10 level

* Coefficient is significant at the 0.05 level

** Coefficient is significant at the 0.01 level

Table 5.4
Trustworthiness Components - Hierarchical Multiple Regression Results on Work Performance & Extra-Role Behaviors
(Standardized Regression Coefficients reported)

Work Performance					Extra-Role Behaviors				
Control									
Programs									
ABI	.004	.013	-.011	-.006	.002	.007	-.088	-.096	-.091
SCI	-.162	-.131	-.186	-.164	-.169	-.145	-.154	-.193	-.177
NMS	-.110	-.069	-.141	-.109	-.112	-.076	-.052	-.084	-.053
Arthritis	-.044	-.042	-.051	-.051	-.048	-.052	-.189°	-.190°	-.202°
Occupations									
Social Workers	.176°	.182°	.160°	.157°	.169°	.168°	.046	.014	.020
Nurses	.119	.105	.128	.118	.128	.122	-.035	-.012	-.002
Clerks	.092	.094	.111	.120	.091	.095	.023	.025	.011
Supervision	.028	.028	.005	-.005	.026	.021	-.055	-.069	-.054
Organizational	-.054	-.048	-.051	-.037	-.044	-.031	-.014	.026	.030
Tenure									
Trustworthiness									
Ln Ability	.079	.142					.310**		
Ln Benevolence			.141	.229*				.273**	
Ln Integrity					.068	.133			.234*
Work Network									
Ln Betweenness		-.216*		-.247*		-.215*			
Centrality									
R ²	.054	.095	.064	.116	.053	.093	.118	.098	.085
Adjusted R ²	-.028	.008	-.017	.030	-.029	.006	.041	.019	.005
Change in R ²	.005	.040**	.015	.051*	.004	.040*	.077**	.056**	.044*

N=126

° Coefficient is significant at the 0.10 level, * Coefficient is significant at the 0.05 level,

** Coefficient is significant at the 0.01 level

Table 5.5
Trustworthiness Components - Hierarchical Multiple Regression Results on Job Satisfaction
(Standardized Regression Coefficients reported)

	Job Satisfaction					
Control						
Programs						
ABI						-.086
SCI						-.384**
NMS						-.075
Arthritis						.081
Occupations						
Social Workers						.050
Nurses						-.104
Clerks						-.081
Supervision						-.063
Organizational Tenure						.126
Trustworthiness						
Ln Ability						
Ln Benevolence						
Ln Integrity						
Work Network						
Ln Betweenness Centrality						.040
R²						.190**
Adjusted R²						.112
Change in R²						.001

N=126

o Coefficient is significant at the 0.10 level

* Coefficient is significant at the 0.05 level

** Coefficient is significant at the 0.01 level

Table 5.6
Trustworthiness Components - Hierarchical Multiple Regression Results on Burnout Components & Work Overload
(Standardized Regression Coefficients reported)

	Emotional Exhaustion					Depersonalization				
Control										
Programs										
ABI	.253*	.246*	.262*	.262*	.244*	.245*	.151	.145	.151	.146
SCI	.330*	.314*	.351**	.344*	.335*	.328*	.176	.162	.182	.177
NMS	.099	.093	.132	.128	.083	.077	.004	-.001	.010	-.006
Arthritis	.090	.090	.093	.093	.087	.086	-.060	-.061	-.061	-.063
Occupations										
Social Workers	.077	.072	.095	.091	.084	.084	-.014	-.018	-.008	-.012
Nurses	.050	.051	.048	.048	.034	.044	.358**	.359**	.355**	.351**
Clerks	.105	.119	.092	.099	.124	.138	.089	.101	.090	.100
Supervision	.172°	.164	.191°	.189°	.157	.149	.156	.149	.157	.147
Organizational Tenure	-.093	-.094	-.101	-.101	-.122	-.121	-.180°	-.181°	-.188°	-.194*
Main Effect										
Ln Ability (c)	-.134	-.126					-.060	-.054		
Ln Benevolence (c)			-.185°	-.185°					-.049	-.050
Ln Integrity (c)					-.025	-.027				.002
Friendship Network	-.034	-.034	-.003	.007	-.058	-.030	.136	.136	.138	.120
Degree Centrality (c)										.117
Interactions										
Tw. x frnd deg.cen.		-.103		-.070		-.075		-.093		.007
R²	.119	.130	.128	.133	.107	.111	.210**	.218**	.208**	.207**
Adjusted R²	.034	.037	.044	.041	.020	.017	.133	.135**	.132	.131**
Change in R²	.017	.010	.026	.005	.004	.005	.015	.008	.014	.012

N=126

° Coefficient is significant at the 0.10 level, * Coefficient is significant at the 0.05 level,

** Coefficient is significant at the 0.01 level

Table 5.6 (cont'd)
Trustworthiness Components - Hierarchical Multiple Regression Results on Burnout Components & Work Overload
(Standardized Regression Coefficients reported)

Lack of Personal Accomplishment													Work Overload		
Control															
Programs															
ABI	.182	.186	.181	.182	.171	.170	.190°	.186	.191°	.191°	.173	.174			
SCI	.306*	.318*	.321*	.332*	.312*	.319*	.301*	.292*	.296*	.293*	.290*	.288*			
NMS	.105	.110	.113	.119	.085	.092	.275**	.271**	.274*	.272*	.244*	.242*			
Arthritis	.128	.128	.125	.125	.123	.124	-.044	-.044	-.043	-.043	-.063	-.063			
Occupations															
Social Workers	-.087	-.083	-.073	-.068	-.079	-.079	.064	.061	.059	.057	.050	.050			
Nurses	.235*	.235*	.223*	.223*	.215°	.205°	-.274*	-.274*	-.269*	-.269*	-.274*	-.271*			
Clerks	.106	.096	.112	.101	.130	.115	.091	.099	.087	.090	.114	.118			
Supervision	.076	.081	.076	.078	.057	.067	.000	-.005	.001	.000	-.026	-.029			
Organizational Tenure	-.007	-.006	-.032	-.031	-.043	-.044	-.042	-.043	-.032	-.032	-.053	-.053			
Main Effect															
Ln Ability (c)	-.166°	-.172°					.064	.069							
Ln Benevolence (c)			-.116	-.114					.039	.039					
Ln Integrity (c)					-.028	-.026					.193°	.192°			
Friendship Network	.054	.054	.052	.036	.022	-.012	-.089	-.089	-.087	-.082	-.145	-.136			
Degree Centrality (c)															
Interactions															
Tw. x Frnd deg.cen.		.075		.107		.087		-.065		-.030		-.022			
R ²															
	.185*	.191*	.174*	.185*	.165*	.172*	.187*	.191*	.185*	.186*	.209**	.210**			
Adjusted R ²	.107	.107*	.094	.098*	.085	.084*	.109*	.105*	.107*	.100*	.133**	.126**			
Change in R ²	.021	.005	.009	.011	.001	.007	.008	.004	.006	.001	.030	.000			

N=126

° Coefficient is significant at the 0.10 level, * Coefficient is significant at the 0.05 level,

** Coefficient is significant at the 0.01 level

Table 5.7
Post-Hoc Analysis on Work Performance
(Standardized Regression Coefficients reported)

		Work Performance									
Control											
Programs											
ABI	.029	.013	.029	-.006	.029	.007	.029	.029	.029	.029	-.001
SCI	-.130	-.131	-.130	-.164	-.130	-.145	-.130	-.130	-.130	-.130	-.148
NMS	-.053	-.069	-.053	-.109	-.053	-.076	-.053	-.053	-.053	-.053	-.090
Arthritis	-.032	-.042	-.032	-.051	-.032	-.052	-.032	-.032	-.032	-.032	-.053
Occupations											
Social Workers	.180°	.182°	.180°	.157°	.180°	.168°	.180°	.180°	.180°	.180°	.168°
Nurses	.113	.105	.113	.118	.113	.122	.113	.113	.113	.113	.115
Clerks	.085	.094	.085	.120	.085	.095	.085	.085	.085	.085	.112
Supervision	.052	.028	.052	-.005	.052	.021	.052	.052	.052	.052	.006
Organizational Tenure	-.020	-.048	-.020	-.037	-.020	-.031	-.020	-.020	-.020	-.020	-.045
Work Network											
Ln Betweenness Centrality	-.181°	-.216*	-.181°	-.247*	-.181°	-.215*	-.181°	-.181°	-.181°	-.181°	-.236**
Trustworthiness											
Ln Ability		.142									
Ln Benevolence				.229*							
Ln Integrity						.133					.192°
Ln Trustworthiness											
R²	.080	.095	.080	.116	.080	.093	.080	.080	.080	.080	.105
Adjusted R²	.000	.008	.000	.030	.000	.006	.000	.000	.000	.000	.019
Change in R²	.031°	.015	.031°	.036*	.031°	.013	.031°	.031°	.031°	.031°	.025°

N=126

° Coefficient is significant at the 0.10 level,

** Coefficient is significant at the 0.01 level

* Coefficient is significant at the 0.05 level,

Table 5.8
Hierarchical Multiple Regression Results on Positive Outcomes - Controlling for Social Network Data Collection Method
(Standardized Regression Coefficients reported)

	Work Performance	Job Satisfaction	Extra-Role Behaviors
Control			
Programs			
ABI	.015	-.145	-.106
SCI	-.172	-.395**	-.185
NMS	-.089	-.167	-.085
Arthritis	-.054	.077	-.202°
Occupations			
Social Workers	.173°	.029	.021
Nurses	.107	-.058	-.010
Clerks	.096	-.047	.037
Supervision	.009	-.069	-.075
Organizational	-.050	.112	.005
Tenure			
Roster	-.070	.158	.011
Trustworthiness			
Ln Trustworthiness	.106	.016	.310**
Work Network			
Ln Betweenness	-.233*	.002	
Centrality			
R²	.061	.199**	.114
Adjusted R²	-.030	.114	.028
Change in R²	.009	.000	.072**

N=126

° Coefficient is significant at the 0.10 level, * Coefficient is significant at the 0.05 level, ** Coefficient is significant at the 0.01 level

Table 5.9
Hierarchical Multiple Regression Results on Negative Outcomes - Controlling for Social Network Data Collection Method
 (Standardized Regression Coefficients reported)

	Burnout		Burnout		Burnout		Work Overload	
	Emotional Exhaustion	Depersonalization	Lack of Personal Accomplishment					
Programs								
ABI	.321*	.322*	.156	.157	.193	.193	.184	.184
SCI	.347*	.334*	.180	.172	.329*	.317*	.295*	.289*
NMS	.220°	.218°	.026	.013	.130	.128	.259*	.258*
Arthritis	.083	.082	-.061	-.062	.128	.127	-.050	-.051
Occupations								
Social Workers	.105	.103	-.009	-.010	-.071	-.074	.058	.057
Nurses	-.015	-.012	.349**	.351**	.212°	.215°	-.277*	-.276*
Clerks	.080	.095	.089	.098	.094	.107	.102	.108
Supervision	.161	.152	.154	.149	.080	.073	-.014	-.017
Organizational Tenure	-.090	-.090	-.185°	-.185°	-.023	-.023	-.048	-.048
Roster	-.217°	-.226°	-.019	-.025	-.029	-.038	-.004	-.008
Main Effect Variables								
Ln Trustworthiness (c)	-.133	-.133	-.043	-.043	-.123	-.123	.115	.115
Friendship Network	-.030	-.010	.135	.147	.036	.053	-.114	-.106
Degree Centrality (c)								
Interactions								
Tw. x Frnd deg.cen.		-.103		-.064	.091			-.044
R²	.142	.152	.208**	.212**	.183*	.175*	.176*	.183*
Adjusted R²	.051	.053	.124	.121	.096	.095	.088	.089
Change in R²	.017	.010	.013	.004	.008	.010	.010	.008

N=126

° Coefficient is significant at the 0.10 level, * Coefficient is significant at the 0.05 level,

** Coefficient is significant at the 0.01 level

Table 5.10
Trustworthiness Components - Hierarchical Multiple Regression Results on Work Performance & Extra-Role Behaviors -
Controlling for Social Network Data Collection Method
(Standardized Regression Coefficients reported)

Work Performance					Extra-Role Behaviors				
Control									
Programs									
ABI	.025	.025	.008	-.001	.022	.016	-.086	-.101	-.095
SCI	-.160	-.130	-.184	-.163	-.167	-.145	-.154	-.194	-.177
NMS	-.072	-.049	-.107	-.100	-.077	-.060	-.049	-.094	-.060
Arthritis	-.048	-.044	-.054	-.052	-.052	-.054	-.190°	-.189°	-.202°
Occupations									
Social Workers	.182°	.186*	.166°	.159°	.174°	.170°	.047	.013	.019
Nurses	.099	.094	.111	.113	.110	.114	-.037	-.007	.001
Clerks	.085	.090	.104	.119	.084	.092	.022	.027	.012
Supervision	.021	.024	.000	-.007	.020	.019	-.055	-.068	-.053
Organizational	-.051	-.046	-.048	-.037	-.040	-.029	-.014	.025	.029
Tenure									
Roster	-.075	-.041	-.065	-.018	-.070	-.031	-.007	.019	.013
Trustworthiness									
Ln Ability	.080	.141					.310**	.274**	
Ln Benevolence			.138	.228*					.234*
Ln Integrity					.066	.131			
Work Network									
Ln Betweenness		-.212*		-.245*		-.212*			
Centrality									
R ²	.057	.096	.067	.116	.056	.094	.118	.098	.085
Adjusted R ²	-.034	.000	-.023	.022	-.035	-.003	.033	.011	-.004
Change in R ²	.005	.038*	.014	.049*	.003	.038*	.077**	.057**	.044*

N=126

° Coefficient is significant at the 0.10 level, * Coefficient is significant at the 0.05 level, ** Coefficient is significant at the 0.01 level

Table 5.11
Trustworthiness Components - Hierarchical Multiple Regression Results on Job Satisfaction -
Controlling for Social Network Data Collection Method
(Standardized Regression Coefficients reported)

	Job Satisfaction				
Control					
Programs					
ABI					
SCI					
NMS					
Arthritis					
Occupations					
Social Workers					
Nurses					
Clerks					
Supervision					
Organizational Tenure					
Roster					
Trustworthiness					
Ln Ability					
Ln Benevolence					
Ln Integrity					
Work Network					
Ln Betweenness					
Centrality					
R²					
Adjusted R²					
Change in R²					

N=126

° Coefficient is significant at the 0.10 level, * Coefficient is significant at the 0.05 level, ** Coefficient is significant at the 0.01 level

Table 5.12
Trustworthiness Components - Hierarchical Multiple Regression Results on Burnout Components & Work Overload -
Controlling for Social Network Data Collection Method
(Standardized Regression Coefficients reported)

Depersonalization											
Emotional Exhaustion											
Control											
Programs											
ABI	.315*	.309*	.329**	.334**	.309*	.312*	.156	.151	.158	.161	.151
SCI	.338*	.332*	.360**	.351**	.343*	.336*	.176	.162	.183	.175	.178
NMS	.205°	.200°	.248*	.251*	.194	.190	.012	.008	.020	.023	.004
Arthritis	.079	.079	.082	.081	.076	.075	-.061	-.062	-.062	-.062	-.064
Occupations											
Social Workers	.096	.091	.115	.112	.103	.103	-.013	-.017	-.006	-.009	-.010
Nurses	-.009	-.009	-.014	-.018	-.026	-.017	.354**	.354**	.349**	.345**	.345**
Clerks	.086	.099	.069	.077	.103	.116	.088	.099	.088	.095	.098
Supervision	.154	.146	.174°	.170°	.140	.131	.155	.147	.156	.153	.145
Organizational Tenure	-.085	-.086	-.090	-.090	-.111	-.110	-.179°	-.180°	-.187°	-.186°	-.194*
Roster	-.211°	-.213°	-.223°	-.240°	-.218°	-.222°	-.016	-.018	-.020	-.035	-.019
Main Effect											
Ln Ability (c)	-.127	-.119					-.060	-.053			
Ln Benevolence (c)			-.190°	-.192°					-.049	-.051	
Ln Integrity (c)					-.028	-.030					.002
Friendship Network	-.045	-.045	-.011	.002	-.067	-.035	.135	.135	.137	.148	.119
Degree Centrality (c)											
Interactions											
Tw. x frnd deg.cen.		-.106		-.093		-.083		-.093		-.082	
R²	.142	.153	.154°	.162°	.131	.137	.210**	.218**	.209**	.215**	.207**
Adjusted R²	.051	.055	.064	.065	.038	.036	.126	.127	.125	.124	.123
Change in R²	.017	.011	.029	.008	.006	.006	.015	.008	.014	.006	.012
											.000

N=126

° Coefficient is significant at the 0.10 level, * Coefficient is significant at the 0.05 level, ** Coefficient is significant at the 0.01 level

Table 5.12 (cont'd)
Trustworthiness Components - Hierarchical Multiple Regression Results on Burnout Components & Work Overload -
Controlling for Social Network Data Collection Method
(Standardized Regression Coefficients reported)

	Lack of Personal Accomplishment					Work Overload				
Control										
Programs										
ABI	.190	.194	.193	.189	.182	.180	.192	.189	.193	.174
SCI	.307*	.319*	.323*	.333*	.313*	.321*	.302*	.292*	.293*	.288*
NMS	.120	.124	.135	.131	.104	.109	.278*	.275*	.276*	.243*
Arthritis	.126	.126	.123	.124	.121	.123	-.045	-.045	-.043	-.063
Occupations										
Social Workers	-.084	-.081	-.069	-.066	-.076	-.076	.064	.061	.058	.050
Nurses	.227*	.227*	.212°	.217°	.205°	.196°	-.276*	-.276*	-.271*	-.271*
Clerks	.103	.094	.108	.099	.127	.112	.090	.098	.089	.118
Supervision	.073	.079	.072	.077	.054	.064	-.001	-.006	-.001	-.029
Organizational Tenure	-.006	-.005	-.030	-.030	-.042	-.042	-.042	-.043	-.032	-.053
Roster	-.029	-.028	-.041	-.023	-.038	-.033	-.007	-.009	-.008	-.001
Main Effect										
Ln Ability (c)	-.165°	-.171°					.064	.069		
Ln Benevolence (c)			-.117	-.115					.038	
Ln Integrity (c)					-.029	-.027			.193°	.192°
Friendship Network	.052	.052	.050	.036	.020	-.012	-.090	-.090	-.083	-.136
Degree Centrality (c)										
Interactions										
Tw. x Frnd deg. cen.		.074		.105		.086		-.065	-.031	-.023
R²	.186*	.191*	.175*	.185*	.166*	.173°	.187*	.191*	.185*	.209**
Adjusted R²	.099	.097	.087	.090	.078	.076	.101	.097	.092	.118
Change in R²	.020	.005	.009	.010	.001	.006	.008	.008	.001	.000

N=126

° Coefficient is significant at the 0.10 level, * Coefficient is significant at the 0.05 level, ** Coefficient is significant at the 0.01 level

Table 5.13
Post-Hoc Analysis on Work Performance -
Controlling for Social Network Data Collection Method
(Standardized Regression Coefficients reported)

	Work Performance					
Control						
Programs						
ABI	.041	.025	.041	-.001	.041	.016
SCI	-.129	-.130	-.129	-.163	-.129	-.145
NMS	-.032	-.049	-.032	-.100	-.032	-.060
Arthritis	-.034	-.044	-.034	-.052	-.034	-.054
Occupations						
Social Workers	.184°	.186*	.184°	.159°	.184°	.170°
Nurses	.102	.094	.102	.113	.102	.114
Clerks	.061	.090	.061	.119	.061	.092
Supervision	.048	.024	.048	-.007	.048	.019
Organizational Tenure	-.018	-.046	-.018	-.037	-.018	-.029
Roster	-.043	-.041	-.043	-.018	-.043	-.031
Work Network						
Ln Betweenness Centrality	-.177°	-.212*	-.177°	-.245*	-.177°	-.212*
Trustworthiness						
Ln Ability		.141		.228*		
Ln Benevolence						
Ln Integrity						.131
Ln Trustworthiness						.190°
R²	.081	.096	.081	.116	.081	.094
Adjusted R²	-.008	.000	-.008	.022	-.008	-.003
Change in R²	.029°	.015	.029°	.035*	.029°	.013

N=126

° Coefficient is significant at the 0.10 level, * Coefficient is significant at the 0.05 level, ** Coefficient is significant at the 0.01 level

CHAPTER 6

DISCUSSION

This dissertation examines the concept of trustworthiness and its positive and negative job consequences. Many findings did not support the original hypotheses. The implications of these results are discussed in this section. This chapter begins by addressing the findings about the structure of trustworthiness and its components. Then the positive outcomes and negative outcomes are examined. In particular, the performance enhancement and the resources depletion arguments are discussed in light of the research results. Finally, theoretical implications, practical implications, limitations of this study, and future research topics are examined.

STRUCTURE OF TRUSTWORTHINESS

The three components of trustworthiness, ability, benevolence, and integrity, were found to correlate significantly with each other, despite the doubts expressed by some trust researchers (Tinsley, 1996; Hosmer, 1995) that ability was different from benevolence and integrity in nature. Actually, the strength of correlation was beyond expectation. Trustworthiness, as perceived by colleagues around the focal person, resembles individuals' reputation for being trustworthy. The corporate reputation literature examines a similar issue of the dimensionality of reputation. Fombrun and Shanley (1990) examined eight seemingly independent dimensions of corporate reputation among Fortune 500 companies, including the quality of management, the quality of products/services, innovativeness, the ability to keep talented people, etc., and found that all these dimensions were highly correlated. When these dimensions were summed into one scale, the reliability was extremely high (Cronbach's $\alpha = .97$). This result implies a strong spillover effect among these seemingly independent dimensions of trust. Fombrun and Shanley (1990) suggest that the competitive environment surrounding these corporations, together with

information asymmetry, increase the spillover effects among dimensions of corporate reputation. However, in this study, the long tenure and the interdependent nature of work should have minimized the inefficiency of information flow. As a result, the information asymmetry explanation may not be sufficient for explaining the results reported here.

Another explanation is the cognitive biases or heuristics exhibited by the evaluators in decision-making under uncertainty (Tversky & Kahneman, 1982). When individuals evaluate another person, they typically integrate information on a number of criteria. Raters often commit halo bias by over-relying on the general impression of a target individual in evaluating the particular criteria (Anderson, 1981). This bias results in exceptionally high correlations among particular criteria and the general impression. The halo explanation fits our results. Respondents may have demonstrated strong halo bias so that each of the trustworthiness components reflects a general evaluation of trustworthiness.

Strong halo effects imply that employees who are strong in any one trustworthiness component may be perceived as highly trustworthy in general. However, trusting personal secrets with a technically capable but unreliable person may be risky. Seeking financial advice from an honest and fair person may not be helpful if that person's financial knowledge is minimal. In addition, halo effects may be spread across domains. A trustworthy person in delivering patient care may be trusted to deal with organizational conflict or to handle administrative projects. Not only will trusted persons feel stretched in their capability, trustors may feel betrayed by the wrong person if the trusted persons cannot meet their expectations. Consequently, the halo heuristic forms a potential source of trust disappointment and possibly perceived betrayal.

POSITIVE OUTCOMES

Trustworthiness relates differently to in-role and extra-role performance. The performance enhancement argument suggests that trustworthy people tend to occupy central positions in the instrumental network which are positively related with work performance. The results of this study showed that work performance significantly related to instrumental network betweenness centrality only, but it was not related to trustworthiness. Although trustworthy employees tended to occupy central positions in the instrumental network, network centrality did not mediate between their trustworthy reputation and work performance.

Unexpectedly, results showed that central positions in the instrumental network were related to lower work performance. Structural hole theory (Burt, 1993) argues that network actors who are connected to otherwise unconnected people are likely to gain from these "structural holes". The reason is that central actors have career advantages because they have access to fast and quality information access and they have the capability to broker information and resources among unconnected network actors. One assumption of this argument is that such benefits take place in a competitive context where promotion, pay increases, or job openings are of scarce supply. The ability to find out and act upon such opportunities quickly can be crucial. Given this study was conducted in a completely unionized setting, with little promotional opportunities and a non-merit-based pay system, competition was reduced. Thus, occupying central positions might not serve the same benefit to the network actors in this study.

Being high in betweenness centrality means that occupants are the critical links among many pairs of network actors. Without them, the networks may disintegrate into isolated subgroups. Employees occupying central network positions may naturally become boundary role persons – individuals responsible for contacting people outside their groups (Friedman & Podolny, 1992; Currall & Judge, 1995; Seabright, Levinthal, & Fichman, 1992). They

communicate task-oriented and socio-emotional information from their own group to other groups and they also convey messages from the other groups back to their own group members. When there is role conflict between the groups, boundary spanners³ may need to broker information in and out of their own groups to negotiate with the other groups (Friedman & Podolny, 1992). These cross-group coordinating tasks are essential in an interdependent setting operated by self-managing work teams. However, the same tasks take away time and focus from the main performance tasks (in this case, patient care delivery). In addition, belonging to multiple groups may lead to conflicting group identities and boundary spanners may experience more frustration (Krackhardt, 1992). The Canadian health care system is in great turmoil due to a shortage of resources. Inter-program or intergroup competition for resources is accentuated. The negative relationship between instrumental network betweenness centrality and work performance suggests increasing tension for boundary spanners who try to keep the system functioning well.

After controlling for the negative impact of instrumental network betweenness centrality, trustworthiness (in particular the benevolence component) contributed positively to work performance. Given trustworthiness and instrumental network betweenness centrality were positively related, the result suggests being trustworthy may be a two-edged sword. On the one hand, trustworthy employees perform better because of accumulated social credits and discretion given to them in doing their work. On the other hand, because they are trustworthy and central in various social networks, they became natural boundary spanners. Extra

³ Post-hoc analysis of the relationships between boundary spanning activities and instrumental network betweenness centrality was processed. Boundary spanning activities were measured by the number of out-of-program ties in the both the in-tie and out-tie instrumental networks. Correlation between instrumental betweenness centrality and out-of-program in-ties was found to be 0.55 and that between instrumental betweenness centrality and out-of-program out-ties was found to be 0.48. Both correlations were significant at the level of .01.

coordination and conflict resolution duties may distract them from their prescribed work activities. After adding the instrumental network centrality variable, the negative effects were controlled for and only then did the positive effects become clear.

Trustworthiness was also significantly related to extra-role behaviors. Many prior studies on the antecedents of extra-role behaviors have focused on perceived fairness in social exchanges (Organ & Ryan, 1995). When employees feel that they are being fairly treated, they will participate in more extra-role behaviors. Previous findings (Organ & Ryan, 1995) suggest that dispositional factors are weak predictors of extra-role behaviors; but the results from this study suggest that the predictive power of disposition may depend on which dispositional factors one examines. Similar to McNeely and Meglino's (1994) findings that empathy and concern for others were significant predictors of extra-role behaviors, benevolence and integrity were found to be significant predictors of extra-role behaviors. It may be that trustworthy employees, in contrast to other employees, define their role more widely (Morrison, 1994) and perceive that extra-role behaviors are a greater part of their jobs.

In summary, central network positions undermine the work performance of trustworthy employees. After controlling for negative impact of being central in the instrumental network, trustworthy employees are able to outperform their less trustworthy colleagues. Besides in-role performance, trustworthy employees also excel in extra-role performance.

NEGATIVE OUTCOMES

The resource depletion argument, which suggested that trustworthy people would experience more work overload and burnout because of depletion in time and energy, received mixed results. First, although trustworthiness, as a whole, did not significantly relate to self-perceived work overload, analysis of trustworthiness components showed that employees of high

integrity felt overloaded with work. Second, contrary to the resource depletion argument, no sign of burnout was found. Surprisingly, benevolent employees reported *less* emotional exhaustion, a major factor of burnout. In addition, capable people experienced more personal accomplishment, another burnout reduction factor. Although the impact of the aggregate trustworthiness variable did not reach the level of significance required, it showed some burnout reduction effects. Third, the friendship centrality buffering hypotheses were not supported. Fourth, the results were not very strong: all showed a significance level of $p < .10$, instead of the generally acceptable level of 0.05. This may be an issue of statistical power due to the small sample size.

The results suggest that resources are divided into two types: physical and psychological. Physical resources, such as time, are certainly fixed in supply and can be depleted. When employees face requests for assistance, advice, and extra work, time will be spent on dealing with tasks beyond the normal job descriptions. Employees are bound to feel more time pressure in completing their own work.

Psychological resources, such as energy, are not in fixed supply (Rothbard, 1999). Through meaningful interactions, participating parties may gain energy from them. The relational literature suggests that the key to energy enrichment, rather than depletion, is in mutuality (Miller & Stiver, 1997; Kahn, 1998). Mutuality refers to the sharing, understanding, and communicating of feelings and thoughts among participating parties. It is more than just reciprocity: giving and receiving social exchanges. Empathy is a critical element leading to relationship growth and empowerment. Through these empowering relationships, it is expected participating parties will receive more energy or zest, feel a stronger sense of worth, and will be more willing to connect with others (Miller & Stiver, 1997). Empirical studies (Buss, 2000; Myers, 2000) show that individuals who possess deep connections, have a strong sense of

belongingness, and have close relationships, are happier than those do not have such relationships.

Benevolent individuals are excellent exchange partners because they have a reputation of caring for others' interests. Colleagues feel less at risk to share with benevolent others their feelings and thoughts and benevolent individuals are more likely listen, understand, and engage in mutual relationships with those who approach them. They have a greater ability to build mutually empowering relationships with others so that they gain energy from these relationships. The energy enriching perspective of the relational literature explains why benevolent employees experienced a lower level of emotional exhaustion than others (Miller & Stiver, 1997).

Besides being energy enriching, mutual relationships lead to a stronger sense of worth (Miller & Stiver, 1997). The burnout literature shows that enhancing self-worth is a critical element in reducing burnout because strong self-worth helps to establish the meaning of work (Russell et al., 1987). Satisfying the need to be recognized by others proves to be energizing for the participants.

After understanding the nature of the relationships around benevolent individuals, the lack of results for the social support moderating hypotheses is not so surprising. In the original theoretical model, I argue that trustworthiness is a source for resource depletion and will likely increase burnout. Friendship degree centrality, a source of social support, will help to mitigate burnout. However, results in this study showed that both benevolence and friendship degree centrality had a negative impact on burnout: both factors reduced burnout. It is likely that both factors represent similar sources of social support and benevolence, through mutual and deep relations, is probably a stronger predictor of burnout than friendship degree centrality, the total number of mutual friends. The latter variable may include friendship of various degrees of strength and therefore friendship degree centrality may include acquaintances as well as close

friends. Provided that social support comes from deep and mutual relations rather than the number of friends, trustworthy employees will likely experience less burnout. As a result, friendship degree centrality lost its role as a third variable to clarify or disentangle the relationship between trustworthiness and burnout (Baron & Kenny, 1986).

Three contextual factors contribute to building empowering relationships in this study. First, the social work culture in the present health care institution leads to a relatively equal distribution of power in delivering patient care (Meyerson, 1994). It is more difficult to build empathic connections in an environment characterized by unequal power status. If the more powerful party refuses to connect, it is very difficult for the less powerful party to open up and share. Such relationships tend to be more depleting than enriching. Second, the institution in this study is 100% unionized which minimizes the competition for pay raises and promotion. Cooperation, a source of mutual gain, becomes more prevalent (Buss, 2000). Third, the institution is predominantly female. The results and arguments presented by the relational literature (Miller & Stiver, 1997) suggest that empowering relationships are often found among females and in female-dominated industries, such as health care and education. However, this does not suggest that men do not engage in empathic relationships, but rather, that female-dominated organizations are more likely to emphasize relationship building.

Capable people reported less burnout through having more personal accomplishment. Capable people have the necessary knowledge, skills, and expertise to do their work well and therefore able to feel more accomplishment. Medical knowledge is a crucial element in delivering patient care. Having the knowledge adds control to daily work which, in turn, helps to do work well and feel good about it (Erickson, 2000).

In summary, the quality of relationships established by trustworthy, in particular benevolent, employees is the key to burnout reduction. Frequency and reciprocity may not be

sufficient to provide the necessary social support to enrich employees. Together with an empathetic and cooperative work setting, trustworthy individuals are enriched by their deep and mutual relationships with their colleagues.

THEORETICAL IMPLICATIONS

Benevolence as a Major Driver of Job Consequences

Trustworthiness components include ability, benevolence, and integrity. Although these components were significantly and strongly correlated, their impact on work performance and emotional exhaustion differed. Among the three components, only benevolence was found to relate positively to work performance and negatively with emotional exhaustion.

One difference between benevolence and ability is that benevolent individuals are socially popular because they highly value their concern of others. Their helping and altruistic behaviors, as found in this study, attract many colleagues to seek help from them or to make friends with them (Anderson & Williams, 1996). These social ties enable benevolent employees to ask favors from others to enhance their work performance. On the other hand, capable employees may be popular only when their area of expertise is in demand.

Benevolence and integrity differ in their target parties. Benevolent individuals take care of another person's interests. Their concern is relational and dyadic. When the other persons make accurate attributions and reciprocate with similar behaviors, benevolent individuals and the selected others are able to build strong and mutual relationships over time (Rousseau & McLean-Parks, 1993). Obtaining favors in unusual circumstances, being given the benefit of the doubt during uncertain situations, and receiving social support during difficult times become possible with strong mutuality in interpersonal relationships.

On the other hand, integrity, a concept regarding moralistic and ethical standards, can be

exhibited either towards individuals, organizations, or even the society. Individuals may evaluate the integrity of another person through direct interactions or indirect observations. Knowing that a person is honest through third persons may not lead to deep and strong relations between the observer and the target individuals. In addition, integrity concerns moralistic and ethical principles that may not have direct or proximate consequences on observers (Simons, 1997). Because of the possible indirect or distal consequences of integrity, its impact on performance and emotional exhaustion can be limited.

Trustworthiness and the Social Context

Trustworthy employees were embedded in various social networks: They occupied central positions in both instrumental and friendship networks. Surprisingly, their social positions did not bring much benefit beyond their reputation of being trustworthy. Instrumental network centrality was found to have a negative impact on work performance and friendship network centrality did not moderate the relationship between trustworthiness and burnout or work overload. As noted above in the positive outcomes section, certain positions in the social structure may undermine the positive impact of trustworthiness. The power and influence associated with such positions may create attributions of self-interest maximization. In addition, power differences in relationships make trust building more difficult. Behaviors may be interpreted as risk-taking or strictly obedience on the less powerful side. Equal exchanges are difficult to establish when one party has the power to reward or penalize the other party.

The competitiveness of the social context is an important factor in understanding the relationship between trustworthiness and job outcomes. Past findings (Ibarra & Andrews, 1993, Burt, 1997) on the impact of network centrality are based on the assumption that resources at work are scarce. Employees who can get access to and broker these resources to their own advantage will do well at work. However, results in this study indicated that network centrality

was negatively related with work performance. Through information access and brokerage, the central network actors did not gain in promotions or increase in pay. On the other hand, holders of information and resources became natural boundary spanners with workload beyond their prescribed role. Findings suggest that the competitiveness of the social context can act as a moderator between individuals' trustworthiness and their job outcomes. Future research is necessary to test this proposition.

Job Satisfaction

Competing hypotheses were put forward about the effects of trustworthiness on job satisfaction. On the one hand, the benefits from network centrality give trustworthy people the knowledge and resources to do their work well and feel satisfied. On the other hand, the resource depletion argument suggests that trustworthy people will be dissatisfied due to time pressures and burnout experience. As discussed above, both network centrality and the psychological perspective of the resource depletion arguments were not supported, therefore the results imply no significant relationship between trustworthiness and job satisfaction.

The null result may be further confirmed by the existence of both physical resource depletion and psychological enrichment. Trustworthy people were found to experience work overload but less emotional exhaustion than less trustworthy people. This seemingly opposite experience may neutralize the experience of job satisfaction. Future research studies may need to disentangle these effects.

Work Overload and Burnout

In the burnout literature, work overload is cited as a source of burnout (Cordes & Dougherty, 1993). When individuals feel significant time pressure to complete their work, they will feel exhausted, seek to detach themselves from work, and believe that they have accomplished little. In this study, the relationships were significantly positive: respondents who

reported work overload also experienced emotional exhaustion and depersonalization. However, employees who had high levels of integrity experienced work overload but not burnout and benevolent employees experienced less emotional exhaustion and no work overload. Two explanations are possible. First, benevolence and integrity have different influences on work overload and burnout. Given the strong halo effects among the trustworthiness components, it is less likely that these two trustworthiness components have opposite effects on work overload and burnout. Second, work overload is associated with physical resources and burnout is associated with psychological resources. Trustworthiness may decrease physical but increase psychological resources. In other words, the relationship between work overload and burnout is potentially moderated by individuals' level of trustworthiness. Future research needs to confirm this implication.

PRACTICAL IMPLICATIONS

Two sets of practical implications are suggested by the results. The first set is for selecting trustworthy partners. Due to the strong halo bias, employees are likely to select trustworthy partners without evaluating all appropriate trustworthiness components. Evaluations based on inappropriate components may lead to mistrust. For instance, trusting an expertise with personal secrets may lead to frustrations and disappointment when the expert is not benevolent or with integrity. Trustors may suffer losses from taking too much or too little risk. Rationally speaking, to minimize halo bias, it is more helpful to identify the requirements for each trustworthiness component and to evaluate them individually before deciding the trustworthiness of another person.

Another implication is whether employees should strive to be known as trustworthy in the work place. Results indicate that employees who are known as trustworthy, especially

benevolent, perform better if they are not boundary spanners, do more extra-role behaviors, and are less likely to be exhausted emotionally. To their employers, they contribute in the non-prescribed areas and stay emotionally healthy to complete their work. As colleagues, they are helpful and tend to occupy central positions in the social networks. These benefits suggest that trustworthy employees are intangible assets to organizations and employees should not be hindered from building their reputation for being trustworthy. On the other hand, organizations should watch whether these employees spend too much time in boundary spanning activities and feel overloaded or do not perform their work as expected.

POTENTIAL LIMITATIONS

This study has several limitations in measurement, causality, and generalizability. Results including the instrumental network centrality measure should be interpreted with caution. The response rate of this study is 44% and the missing responses may create bias to the centrality measure. Betweenness centrality is measured by assessing the extent to which a social network actor is a critical link between two otherwise unconnected network actors (Scott, 1991). A totally unbiased betweenness measure should include relationship data on all network actors. For instance, if there are ten social network actors and two do not participate in the study, then, instead of losing 20% of the network data, the loss is 36% ($[10 \times 10 - 8 \times 8] \times 100\% / 10 \times 10$). Some of the losses are partially mitigated through two means: having a representative sample and including both instrumental in-ties and instrumental out-ties in the measure. A representative sample ensures that relationships within and among employees in each program and occupation are included in the instrumental network. Second, respondents' instrumental in-ties and instrumental out-ties include ties initiated from or to non-respondents. By including both in-tie and out-tie data, some lost data regarding ties with non-respondents were restored.

Trustworthiness was measured as an average of expertise, benevolence, and integrity. This compensatory model on trustworthiness may mix the effects of high expertise, low benevolence, low integrity, with low expertise, high benevolence, and low integrity. However, the high correlations among the trustworthiness components suggest that most employees who are high in one component are likely to be high also in other components, and vice versa. The washing out effects are not expected to be significant.

This study is a cross-sectional study and causal relationships among the variables are difficult to establish. Conceptually the reputation for being trustworthy predicts certain social network characteristics, which, in turn, leads to job outcomes. However, the reverse may be true: central network positions increase individuals' visibility and therefore promote their reputation for being trustworthiness (Tsai & Ghoshal, 1998). However, visibility can be a two-edged sword: Visibility may increase surveillance on both positive and negative behaviors (Brass, Butterfield, & Skaggs, 1998). A self-interested individual occupying a central position may increase his/her reputation for being untrustworthy.

Similarly, successful job outcomes may enhance individuals' expertise reputation. This situation is likely when individuals' job outcomes are measured, recognized, and rewarded, and colleagues may have access to this information. However, in the present research site, performance evaluation was not conducted in the whole rehabilitation center. Some programs designed their own evaluation forms mainly for developmental purposes. The appraisal emphasizes detailed behavioral descriptions rather than quantifying work performance. No information on performance ranking or direct comparison of work performance was available. The impact of work performance on employees' reputation was likely to be limited to individual judgment, rather than organizational consensus.

In this study, I proposed and found that trustworthy people were likely to more extra-role

behaviors. However, it is equally likely that people who do more extra-role behaviors will be identified as trustworthy. Through helping others and the organization, employees may be attributed as being genuinely altruistic or being opportunistic to impress others (Eastman, 1994). While both trustworthiness and extra-role behaviors may be the cause or the effect, the cross-sectional design in this study limits the possibility in separating the two causal relationships. Future research is needed.

Generalizability in the choice of domain may be limited in this study. Expertise is a domain-specific concept in that the choice of domain determines who are the experts. Depending on the issue at stake, a different group of experts may be relevant. I chose patient-care issues as the focus of expertise because they represent the purpose of the organization and core work activities of many hospital workers. However, experts may be found in other areas such as union issues, technology, the operation of certain equipment, and interpersonal conflict resolution.

Generalizability to other industries may be limited. Hospital employees are medical professional workers in the non-profit sector. They are different from the for-profit sectors in that their employees have few career advancement opportunities. Nurses are trained to take care of patients. Unless they give up their medical training, they will probably remain in their profession throughout their whole career. Besides moving on to be supervisors, few promotion opportunities exist. Their salary is governed under a collective agreement that provides little incentive for improving performance. As some models, such as the structural hole theory (Burt, 1992), are based on the assumption of a competitive environment, researchers need to be cautious in generalizing results from this study to for-profit organizations.

In addition, the medical profession is stressful because human lives may be at stake. Doctors and nurses need to make important decisions promptly. When time for consultation is limited, trust may become a bigger issue than in other industries where employees have more

time to research and contemplate before making decisions.

FUTURE RESEARCH

Findings indicate that trustworthiness is like a two-edged sword that trustworthy employees may benefit or suffer from their trustworthiness. One possible way to differentiate between the benefits from the detriments may be tie strength. When individuals are known for being trustworthy, they attract others to make ties with them so that they become central in various social networks. These ties tend to be weak, usually asymmetric, and instrumental but they are efficient in collecting and disseminating information to complete competitive work goals (Granovetter, 1973; Ibarra & Andrews, 1993). However, these ties may also be a burden to trustworthy employees. Findings in this study showed that popularity added to workload, such as dealing with help seekers, coordinating multiple departments or programs, providing extra-role assistance to their employers. In an interdependent and cooperative work place, the burden may exceed gains in information access and power.

On the other hand, the benefits gained from being trustworthy may be attributed to the deep and mutual ties which are characterized by non-immediate reciprocity, symmetry, and accumulated knowledge of trusted others (Wellman et al., 1988). Findings in this study showed that trustworthy employees performed better after the negative impact of their central positions in the instrumental network was controlled. Only those who know the trustworthy employees well from past exchanges will not be affected by the potentially negative attribution of their central positions in the instrumental network. The psychological resources gained and the meaning of work generated came from the mutuality in deep connections. The relationships between trustworthiness, tie strength, and various job outcomes are worth examining.

The strength of social ties may be associated with the difference between the reputation

for being trustworthy (Rotter, 1967) and genuine trustworthiness (Deustch, 1958). When individuals are known for being trustworthy but lack genuine trustworthiness, they may establish a wide network with weak instrumental ties. It is likely that they will experience the extra burden. However, genuinely trustworthy individuals are better able to build strong connections because others are able to build a consistent impression from their consistent behaviors through time. The interactions of the reputation for being trustworthy, dispositional trustworthiness, and the strength of their social ties are worth investigation in the future. Future research may help to further disentangle the job consequences of being trustworthy.

One basic assumption in trust research is the importance of face-to-face interactions in determining trust. People know and evaluate each other through past exchanges. With the emergence of e-commerce, business exchanges without face-to-face interactions become more common. In these internet transactions, more trust is necessary because facial expressions of the other party cannot be seen and interpersonal contact with the other party is limited. The reputation for being trustworthy becomes an important asset for attracting business exchanges. Research in finding how a reputation for being trustworthy is built is particularly valuable.

Besides the difference between the reputation for being trustworthy and genuine trustworthiness, trustworthiness may be perceived by others as well as by the focal individuals. Research on self-serving bias predicts that most people will evaluate themselves as trustworthy (Anderson, 1981). However, others may not agree. Self-regarded trustworthy people will likely feel frustrated because they do not feel trusted. For instance, subordinates may believe they are capable of working in some highly rewarding projects, or worthy of a promotion, but are not selected because they are not being trusted by their supervisors. The perceived lack of trust may lead to withdrawal behaviors, such as absenteeism, turnover, decreasing commitment, work efforts, extra-role behaviors, and performance (Robinson, 1996; McAllister, 1995). Future

research should look into the interaction between these two sources of trust evaluation.

Being trustworthy was found to be beneficial to both the employers and the individuals. Building a reputation for being trustworthy requires an understanding of the antecedents to perceived trustworthiness. A longitudinal study in this area will be very helpful, especially in how to maintain or increase trustworthiness, the shape of the building process (whether it is incremental or step-wise), and under what conditions will a trustworthy individual ceased to be trusted.

The methodological issue of trustworthiness evaluation versus selection requires further study. In this study, I choose to ask respondents to nominate whom they will trust in particular circumstances. Other researchers (for instance, Mayer & Davis, 1999) asked respondents to evaluate each colleague using Likert-typed scales. The nomination method, which is very common in making many human resource decisions such as promotion and recruitment, may lead to more halo bias because respondents are not prompted to evaluate all dimensions individually. How these two methods differ in their impact in studying trustworthiness is an interesting research issue to be studied.

CONCLUSION

This study targets a relatively unexplored area in the trust literature: Effects of trustworthiness on individuals' job outcomes (Whitener, Brodt, Korsgaard, & Werner, 1998). Understanding the personal and organizational outcomes of trustworthy employees enables researchers to see the costs and the benefits of being trustworthy. Some negotiation researchers (Fisher & Brown, 1988) suggest that negotiators should be totally trustworthy, but not completely trusting. Results from this study indicate that being trustworthy can be energy creating, instead of resource depleting. Moreover, being trustworthy is like a two-edged sword:

when they occupy central positions, their work performance will suffer. Apart from the influence of their central positions, trustworthy employees outperform their less trustworthy colleagues. Besides in-role performance, trustworthy employees excel in discretionary behaviors at work, such as extra-role behaviors. Recognizing the potentials of trustworthy employees and avoiding the pitfalls, organizations will be able to benefit from their efforts.

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APPENDIX 1

QUESTIONNAIRE



University of British Columbia
Research Project

INTERPERSONAL RELATIONSHIPS

AT WORK SURVEY

***How do interpersonal relationships at work
affect patient care delivery ?***

Please return the completed questionnaire in the envelope provided
to qualify for the lucky draw.

You have 3 chances to win a \$100 dinner certificate.

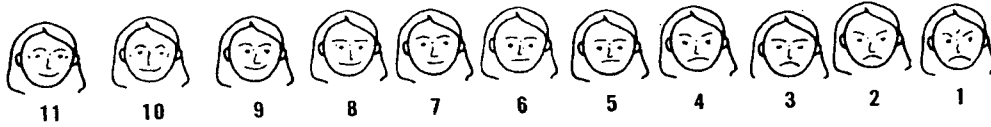
This questionnaire requires about 20 minutes to complete.

YOUR RESPONSES WILL BE KEPT STRICTLY CONFIDENTIAL.

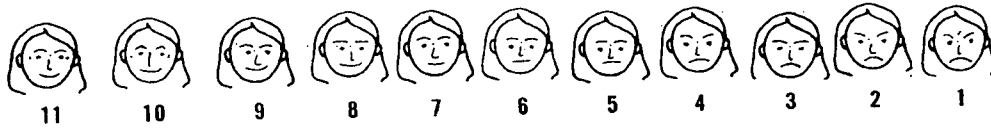
PART I JOB SATISFACTION

In the following questions, I would like to know your satisfaction level with your job, coworkers, and supervisor(s).

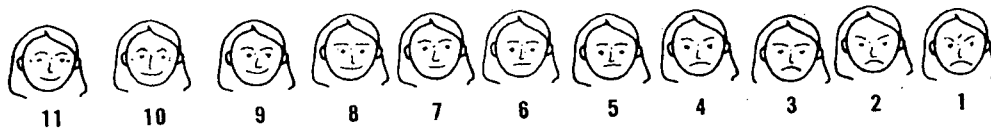
1. Please circle the face that best describes how you feel about your job in general.



2. Please circle the face that best describes how you feel about your co-workers.



3. Please circle the face that best describes how you feel about your supervisor(s).



PART II WORKLOAD PERCEPTIONS

Please answer ALL questions as best you can and circle the appropriate number beside each statement to indicate how much you agree or disagree with each statement.

	1 Strongly Disagree	2 Disagree	3 Neither Disagree Nor Disagree	4 Agree	5 Strongly Agree
1. I feel emotionally drained from my work	1	2	3	4	5
2. I feel I am working too hard on my job.....	1	2	3	4	5
3. I feel very energetic.....	1	2	3	4	5
4. I have become more callous toward people since I took this job ..	1	2	3	4	5
5. I feel like I am at the end of my rope	1	2	3	4	5
6. I feel clients blame me for some of their problems.....	1	2	3	4	5
7. I have too much work to do everything well.....	1	2	3	4	5
8. The amount of work I am asked to do is fair.....	1	2	3	4	5
9. I feel burned out from my work.....	1	2	3	4	5
10. I feel I am positively influencing other people's lives..... through my work	1	2	3	4	5
11. In my work, I deal with emotional problems very calmly	1	2	3	4	5
12. I never seem to have enough time to get everything done	1	2	3	4	5
13. I feel exhilarated after working closely with my clients.....	1	2	3	4	5
14. Working with people directly puts too much stress on me	1	2	3	4	5
15. I feel used up at the end of the workday.....	1	2	3	4	5
16. I don't really care what happens to some clients	1	2	3	4	5
17. I worry this job is hardening me emotionally	1	2	3	4	5
18. Working with people all day is really a strain for me	1	2	3	4	5
19. I deal very effectively with the problems of my clients	1	2	3	4	5
20. I feel fatigued when I get up in the morning and have to face another day on the job	1	2	3	4	5
21. I feel frustrated by my job	1	2	3	4	5
22. I have accomplished many worthwhile things in this job.....	1	2	3	4	5
23. I feel I treat some recipients as if they were impersonal 'objects'..	1	2	3	4	5
24. I can easily create a relaxed atmosphere with my clients	1	2	3	4	5
25. I can easily understand how my clients feel about things	1	2	3	4	5

PART III WORK DEPENDABILITY

The following questions are about your dependability at work. For each statement, please circle the number that best describes how much you agree or disagree with each statement.

	1 Strongly Disagree	2 Disagree	3 Neither Disagree Nor Disagree	4 Agree	5 Strongly Agree
1. I am well qualified.....	1	2	3	4	5
2. I will go out of my way to help my colleagues	1	2	3	4	5
3. My actions and behaviors are not very consistent	1	2	3	4	5
4. My colleagues' needs and desires are very important to me	1	2	3	4	5
5. I have much knowledge about the work that needs done	1	2	3	4	5
6. Sound principles seem to guide my behaviors	1	2	3	4	5
7. I have specialized capabilities that can increase my group's performance.....	1	2	3	4	5
8. I really look out for what is important to my colleagues.....	1	2	3	4	5
9. I have a strong sense of justice	1	2	3	4	5
10. My colleagues like my values	1	2	3	4	5
11. I am very capable of performing my job.....	1	2	3	4	5
12. My colleagues never have to wonder whether I will stick to my words..	1	2	3	4	5
13. My colleagues feel very confident about my skills	1	2	3	4	5
14. I try hard to be fair in dealing with others	1	2	3	4	5
15. I am known to be successful at the things I try to do	1	2	3	4	5
16. I am very concerned about colleagues' welfare	1	2	3	4	5
17. I would not knowingly do anything to hurt my colleagues	1	2	3	4	5

PART IV WORK PERFORMANCE

Section 1

How do you think your supervisor would rate you on each of the following performance dimensions, relative to others in your position? Please select one of the options below for each of the five dimensions.

Note: Your response may be very different from how you would evaluate your performance. What would your supervisor's rating be?

1	2	3	4	5
Top 5%	Top 10%	Top 25%	Top 50%	Bottom 50%

1. _____ Ability to get along with others
2. _____ Quality of performance
3. _____ Ability to get the job done efficiently
4. _____ Achievement of work goals
5. _____ Overall performance

Section 2

The following questions are about your other work behaviors. Please indicate how much you agree or disagree with each statement by circling the appropriate response.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Disagree Nor Disagree	Agree	Strongly Agree

	Strongly Disagree			Strongly Agree
--	----------------------	--	--	-------------------

- | | | | | | |
|--|---|---|---|---|---|
| 1. I attend nonrequired training educational sessions on my own time | 1 | 2 | 3 | 4 | 5 |
| 2. I make especially helpful suggestions to improve the organization | 1 | 2 | 3 | 4 | 5 |
| 3. I work before or after regular working hours in order to finish a task | 1 | 2 | 3 | 4 | 5 |
| 4. My standard of work quality is higher than the stated standards | 1 | 2 | 3 | 4 | 5 |
| 5. I actively and constructively seek to get my suggestions adopted
by the organization | 1 | 2 | 3 | 4 | 5 |
| 6. I orient new people even though it is not required | 1 | 2 | 3 | 4 | 5 |
| 7. I make special attempts to gain more knowledge about job-related
techniques and skills. | 1 | 2 | 3 | 4 | 5 |
| 8. I attend functions that are not required, but that help this organization. | 1 | 2 | 3 | 4 | 5 |
| 9. I go out of my way to help others with job-related problems | 1 | 2 | 3 | 4 | 5 |
| 10. I look for additional responsibilities and/or tasks despite the fact that
it increases my work load | 1 | 2 | 3 | 4 | 5 |

PART V INTERPERSONAL NETWORKS

Part V consists of 2 sections. Section 1 involves a hypothetical scenario in which you are asked to make referrals to particular colleagues. Section 2 is about your personal contacts at work.

Section 1 (3 questions)

In the first section, imagine that you are asked to deal with the following scenario.

Pat is a newcomer to your program and has recently completed the required professional training in your discipline. Being new in the profession and the work place, Pat has many questions regarding patient care delivery. Pat comes to you to ask for referrals to appropriate people. These referrals are important because inappropriate advice may cause harm to patients and raise complaints against the rehabilitation center.

You may recommend people, other than yourself, in your program or in other programs, but they have to work in G. F. Strong Rehabilitation Center. You may refer to the same people in each of the question. Please write their names (first & last) in the spaces provided and list the more important referrals first. For instance, according to your opinions, the person suggested in (1) is the most important referral and Pat should definitely consult with this person. On the other hand, the person suggested in (5) is relatively less important and Pat may or may not contact the person suggested in (5) depending on time availability. Please limit the number of recommendations to a maximum of 5.

1. When Pat wants professional or expertise advice in delivering patient care, whom would you recommend?

1. _____
2. _____
3. _____

4. _____
5. _____

2. Pat would like to talk to colleagues who will consider Pat's best interests. Whom would you recommend?

1. _____
2. _____
3. _____

4. _____
5. _____

3. Pat would like to talk to colleagues who will give Pat fair, honest, and truthful advice. Whom would you recommend?

1. _____
2. _____
3. _____

4. _____
5. _____

Section 2 (4 questions) Contacts in the Past Month

In this section, I would like to know your actual contacts with your colleagues in the past month. Each question will focus on a particular type of relationship. You may include colleagues either in or outside of your work group. You may include as many colleagues as appropriate and you may list the same colleagues for more than 1 question. Five or ten spaces are provided for each group but you may not need them all. However, if you have more than 10 contacts, please use the available white space. Should you need references to your colleagues' names, please refer to your phone directory.

1. In the past month, who have contacted you for professional advice on work-related matters or decisions? Please write down their first and last names.

Acquired Brain Injury

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Arthritis

11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

Clinical Support

21. _____
22. _____
23. _____
24. _____
25. _____

26. _____

27. _____

28. _____

29. _____

30. _____

Neuro-Muscular Skeletal

31. _____

32. _____

33. _____

34. _____

35. _____

36. _____

37. _____

38. _____

39. _____

40. _____

Spinal Cord Injury

41. _____

42. _____

43. _____

44. _____

45. _____

46. _____

47. _____

48. _____

49. _____

50. _____

Physicians

51. _____

52. _____

53. _____

54. _____

55. _____

Practice Leaders

56. _____

57. _____

58. _____

59. _____

60. _____

Other G.F. Strong Contacts

61. _____

62. _____

63. _____

64. _____

65. _____

Contacts Outside of G. F. Strong (Please write down their professions / names of organizations. e.g. wheelchair suppliers, high school teachers, Ministry of Health, etc.)

66. _____

67. _____

68. _____

69. _____

70. _____

2. In the past month, whom did you go to for professional advice on work-related matters or decisions? Please write down their first and last names.

Acquired Brain Injury

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Arthritis

11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

Clinical Support

21. _____
22. _____
23. _____
24. _____
25. _____
26. _____

27. _____
28. _____
29. _____
30. _____

Neuro-Muscular Skeletal

31. _____
32. _____
33. _____
34. _____
35. _____
36. _____
37. _____
38. _____
39. _____
40. _____

Spinal Cord Injury

41. _____
42. _____
43. _____
44. _____
45. _____
46. _____
47. _____
48. _____
49. _____
50. _____

Physicians

51. _____
52. _____

53. _____
54. _____
55. _____

Practice Leaders

56. _____
57. _____
58. _____
59. _____
60. _____

Other G. F. Strong Contacts

61. _____
62. _____
63. _____
64. _____
65. _____

Contacts Outside of G. F. Strong

(Please write down their professions / names of organisations. e.g. wheelchair suppliers, high school teachers, Ministry of Health, etc.)

66. _____
67. _____
68. _____
69. _____
70. _____

3. Who are your friends at work (at G. F. Strong Rehabilitation Center)? Please write down their first and last names.

Acquired Brain Injury

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Arthritis

11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

Clinical Support

21. _____
22. _____
23. _____
24. _____
25. _____
26. _____
27. _____
28. _____
29. _____
30. _____

Neuro-Muscular Skeletal

31. _____
32. _____
33. _____
34. _____
35. _____
36. _____
37. _____
38. _____
39. _____
40. _____

Spinal Cord Injury

41. _____
42. _____
43. _____
44. _____
45. _____
46. _____
47. _____
48. _____
49. _____
50. _____

Physicians

51. _____
52. _____
53. _____
54. _____
55. _____

Practice Leaders

56. _____
57. _____
58. _____
59. _____

60. _____

**Other G. F. Strong
Contacts**

61. _____
62. _____
63. _____
64. _____
65. _____

4. To your best knowledge, who would consider you as their friends at work (at G. F. Strong Rehabilitation Center) ? Please write down their first and last names.

Acquired Brain Injury

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Arthritis

11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

Clinical Support

21. _____
22. _____
23. _____
24. _____
25. _____
26. _____
27. _____
28. _____
29. _____
30. _____

Neuro-Muscular Skeletal

31. _____
32. _____
33. _____
34. _____
35. _____
36. _____
37. _____
38. _____
39. _____
40. _____

Spinal Cord Injury

41. _____
42. _____
43. _____
44. _____
45. _____
46. _____
47. _____
48. _____
49. _____
50. _____

Physicians

51. _____
52. _____
53. _____
54. _____
55. _____

Practice Leaders

56. _____
57. _____
58. _____

59. _____
60. _____

**Other G. F. Strong
Contacts**

61. _____
62. _____
63. _____
64. _____
65. _____

PART VI PERSONAL INFORMATION

Recall that all information will remain strictly confidential.

1. Your Occupation: _____
2. How long have you been working in your profession?
_____ Years
3. How long have you been working at G. F. Strong Rehabilitation Center?
_____ Years
4. Which patient group do you serve primarily?
_____ Inpatients
_____ Outpatients
_____ Out-of-Center patients
5. Your employment status (please check one):
_____ Full-time
_____ Part-time
_____ Casual
_____ Other
6. Your typical time schedule (please check one):
_____ Day
_____ Night
_____ Rotating
7. Your gender (please check one):
_____ Male
_____ Female
8. Most people in Canada think of themselves as Canadians but also partly identify themselves based on the ethnic background of their ancestors. What would you say is the main ethnic background (or nationality) of your ancestors? (e.g. Australian, First Nations, Chinese, English, Scottish, French, Korean, Slovakian, etc.)

9. How old were you on your last birthday? _____
10. How long have you been living in Canada?
_____ Since Birth OR _____ Years

11. Your highest education level (please check one):

- ☐ High school
- ☐ Some college or university
- ☐ College / technical school certificate
- ☐ University bachelor degree
- ☐ Some postgraduate training
- ☐ Postgraduate degree
- ☐ Other

12. Your professional designation: _____

13. Do you supervise employees? (please check one)

- ☐ Yes How many employees do you supervise? _____
- ☐ No

14. Would you like to know the results of this study? [Only aggregate results, e.g. averages, will be reported and no individual responses will be released]

- ☐ Yes
- ☐ No

If yes, please contact me by phone (604) 822-5876, by fax (604) 822-8517, or through email (lau@phdlab.commerce.ubc.ca). I will be happy to share with you the results.

Thank you!

If you have any comments that you would like to make concerning the questionnaire, please write on the back page or send a separate letter to Dora Lau, Faculty of Commerce, University of British Columbia, 2053 Main Mall, Vancouver, B.C., V6T 1Z2.

Your contribution to this research study is greatly appreciated.

COMMENTS