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Social Networking and Individual Performance: Examining Predictors of Participation

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SOCIAL NETWORKING AND INDIVIDUAL PERFORMANCE:

EXAMINING PREDICTORS OF PARTICIPATION

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DOCTOR OF PHILOSOPHY


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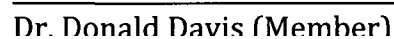
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ABSTRACT

SOCIAL NETWORKING AND INDIVIDUAL PERFORMANCE: EXAMINING PREDICTORS OF PARTICIPATION

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Old Dominion University, 2011
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This dissertation addresses relationships between social networking and individual performance. The “act” of social networking is a process and practice by which people and organizations are drawn together by family, work or hobby to interact via websites. The explosion of these new network connections in the workplace suggests the need for an exploration of the various ways organizations can affect and improve performance and productivity.

This dissertation suggests a social networking participation model that may help organizations predict and understand the value proposition that affects acceptance or rejection of participation. Innovation adoption, governing by network and social capital are important theories in developing an understanding of social networking behavior. Performance may be influenced when people are presented with evidence of a return on the investment of their time. Even if there is simply a perception of benefit, users may be more inclined to participate, or they may be moved to increase their participation levels. Therefore, this study explores the extent to which individual perceptions of usefulness and type of use predict social networking levels of participation.

This dissertation explores a theoretical framework promoting effective measurement of concepts to predict social networking adoption and participation. A review of the constructs of perceived usefulness, perceived improvement potential, perceived ease of use, perceived encouragement, intra-organizational trust, and type of use provides a potential benefit to understanding social networking in organizations. The perceived impact of social networking is widely supported, but much research is still needed to identify the psychological process of participating in these activities. This dissertation is an important first step in adding to the current body of literature.

Theoretical arguments about social networking and individual perceptions of performance are explored in this study. These arguments are tested using structural equation modeling. Data from 191 social networking participants are collected using a survey instrument of 37 questions. The research results show that perceived usefulness, perceived improvement potential, perceived ease of use, intra-organizational trust, and type of use are predictors of social networking participation. The study validates the survey instrument through model fit, and suggests future research to improve the instrument. Further, this dissertation urges organizations to ask questions about relationships between social networking and individual performance much earlier in the process than is now the case.

Co-Directors of Advisory Committee:

Dr. Berhanu Mengistu
Dr. Donald D. Davis
Dr. Katrina Miller-Stevens

Dedicated to the memory of my mother,
Mary Louvenia Johnson Brown, 1934-2010

ACKNOWLEDGEMENTS

I dedicate this work to my wife, Michele, my children Antoinette Michele, Michael Anthony Jr., and Nicole Denise, and to my grandson, Phillip Lee (PJ). I recognize the love and support of my brothers and sisters, John, Bobby, Brenda, the late Frederick Alan Brown, Sandie, and Angie, all so crucial helping me complete this amazing journey. I also give credit to my parents for creating me: the late Mary Louvenia Johnson Brown and the late John Henry Brown Jr. I'm especially grateful to Micki and Robert Holloway for your loving support.

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CHAPTER 1

RESEARCH PROBLEM

INTRODUCTION

Social networking is an umbrella term that refers to sharing and discussing information and then using social media, which are primarily Internet- and mobile-based tools. Social media sites are web-based services that allow individuals to use a protected system to construct a public or semi-public profile, maintain a list of people with whom they share a connection, and build and share their list of connections through interactive activities. The explosion of new network connections in the workplace suggests the need for an exploration of the various ways organizations can affect and improve performance and productivity or, at least, ways that workers can get better help in their social networking endeavors.

This research is intended to build an adoption and participation model that provides organizations with knowledge that both predicts and promotes social networking activities. The suggested analysis requires a theoretical framework that promotes effective measurement of concepts that predict social networking adoption and participation.

The study addresses social networking in communities that are inherently governmental, and as such it may not have relevance to widely-used tools or applications of choice, such as Facebook, Twitter, LinkedIn, or MySpace. The primary consideration in completing this examination is the “act” of social

networking as a process and practice by which individuals, businesses and other types of organizations are drawn together by family, work or hobby to interact through common websites and specialized areas within those websites. The process and practice allow people to share, access, download, provide and discuss a variety of types of information.

RESEARCH QUESTION

The overarching research question for this study is: What are organizational determinants for social networking levels of adoption and participation?

This dissertation involves use of a model that is intended to examine relationships involving the constructs of interest. Innovation adoption theory is relevant in addressing the social networking issue. The analysis involves an *understanding of the social networking construct and of related literature in the field of public administration and other disciplines*. The primary literature used for background concerns the technology acceptance model, governing by network, social capital theory, and trust.

Social networking is a voluntary process in which people are faced with choices. They accept or reject participation, they determine who they want to connect to while participating, and they decide how much time and effort they are willing to commit to the activity.

Selection of this research problem has some basis in the work of Svendsen and Sorenson (2006), which examined whether the levels of individual perception of productivity and levels of trust would be influenced by measuring

social capital as the density of voluntary networking activities. They further argued that any inquiry of this type should also focus on capacity of individuals to perform the necessary tasks in social networking activities.

JUSTIFICATION FOR THE STUDY

Social networking provides a vital source of information and numerous opportunities for all participants to build social capital. Researchers Igarria and Tan (1997) suggest that investigations into information technology applications should focus on the impacts of accepting or rejecting such tools and capabilities. The study suggests a framework that may provide organizations with tools and tactics that can affect creativity, idea exchange and communication effectiveness.

Many models and theories have been offered to examine social networking as it relates to adoption, diffusion, and acceptance of innovation. This research effort focuses on internal decision processes that occur at the individual level. The theoretical basis for this research involves adoption of innovation at the individual level. It also focuses on internal decision processes for innovation, how users are attracted to a system and how their behavior is affected.

Literature on innovation adoption (Hatala & Fleming, 2007), the technology acceptance model (F. D. Davis, 1989; Kwon & Wen, 2010), governing by network (Goldsmith & Eggers, 2004), social capital theory (Putnam, 1993), social network analysis (Hatala, 2006), and intra-organizational trust (Grey & Garsten, 2001) provide theoretical bases for this study.

Innovation adoption is the first successful application of a product or process for a potential adopter (Cumming, 1998). A key feature of this definition is that it considers that perception of newness matters, even if absolute newness does not apply (Fariborz Damanpour & Gopalakrishnan, 1998; Lyytinen & Rose, 2003). Innovation adoption is a way to change the interaction, for the individual to help with adapting to changing environments and, hopefully, to sustain or increase individual performance or, at least, the perception of improvement potential (Fariborz Damanpour & Evan, 1984; F. Damanpour et al., 2009; Makkonen, 2008).

Davis (1986; , 1989) developed the technology acceptance model (TAM) that is now the most widely applied model of user acceptance and usage. TAM was adapted from the Theory of Reasoned Action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). Davis found perceived usefulness and perceived ease of use to be especially important determinants of system use. For perceived usefulness, he argued that people are inclined to use or not use an application to the extent they believe it will help them perform their job better. Perceived ease of use, in turn, is based on the knowledge that even if potential users believe that a given application is useful, they may, at the same time, believe that the system is too hard to use and that the performance benefits of usage are outweighed by the effort of using the application. Therefore, according to Davis (1986), system usage is theorized to be influenced by perceived ease of use.

As organizations become more reliant on networks, social media tools are increasingly provided to improve business processes, create new business and enhance the lives of employees. Organizations commit to allowing employees to spend an unspecified number of hours making connections and joining communities. In *Governing by Network*, Goldsmith and Eggers (2004) provide a lens organizations can use to view and analyze social networking activities. Greater reliance on networks requires that organizations deal with making the interactions administratively effective and professionally accountable. *Governing by Network* (Goldsmith & Eggers, 2004) is focused on government and its networking challenges, but the arguments presented are relevant to this examination of social networking and the individual's perception of improvement based on the activity. The challenge for government is, in part, to rely more on a web of partnerships and alliances to meet its goals. That reliance is precisely the challenge organizations face when embarking, or continuing, on a social networking journey. Now, leaders want to know whether they can be sure their investment will lead to improvements in efficiency or performance. More important, leaders want to know why some employees reject the opportunity to participate in social networking.

The "governing by network" methods by which organizations seek administratively and professionally accountable social interactions are relevant for this study (Goldsmith & Eggers, 2004). The networking challenges presented and the way organizations address them is the key to ensuring a web of partnerships and alliances that foster goal achievement and personal enrichment.

The findings in this study may help leaders gain more insight into whether they can ensure that investments in social networking activities will lead to improvements in efficiency or performance.

Governing by network is one way to promote desired behaviors that may improve performance through social networking, but it is not the only way. Social capital theory (Putnam, 1993) and social network analysis (Hatala, 2006) are relevant for demonstrating and taking advantage of social networking benefits.

Organizations need concrete incentives to affect employees' decisions to participate in organizational social networking activities (Hatala, 2006). Related to this notion is organizational climate, which refers to the current perceptions of people in a work environment concerning the observable (social, political and physical) nature of the personal relationships that affect work accomplishment within an organization. Transfer climate is a subset of the perceptions of organizational climate concerning the transfer of training.

Organizational and transfer climates deal with perceptions, which have unique properties that influence individual motivation and behavior toward the transfer of training. An individual's perceptions of supervisor support, opportunity to use new training, level of peer support, supervisor sanctions, and positive or negative personal outcomes resulting from application of training on the job are all part of the transfer climate (Hatala & Fleming, 2007). Transfer climate is relevant because social networking continues to grow. Individuals

want to participate in an environment that interests them and that connects them with those who share those interests. While the training aspect of transfer climate is not a primary focus of this research, training can be very helpful in affecting desired behaviors as they relate to social networking. Because of the voluntary and extremely positive participative nature of social networking, utilization of a model similar to that used in corporate training is more comfortable for the participant. The key is to facilitate participation because use of social media can reinforce positive and self-selected learned behaviors.

Social capital theory suggests that the efficiency of society can be improved by facilitating coordinated actions. For organizations, social networking is a two-step, voluntary process where one accepts or rejects participation. It should be possible to develop a framework that identifies participation determinants and opportunities. Effective social networking requires creating networks that feature fluid communications and benefits that are easily understood. Social networking may be beneficial for companies dedicated to understanding the challenge of achieving desired behaviors (Putnam, 1993).

Social networking is similar to social capital theory in that it represents resources that are embedded in a positive social structure (which reinforces norms and values). These norms and values are easily accessed and or mobilized in purposive actions by the participant. Bolino et al (2002) defines social capital as a resource derived from relationships among individuals, organizations,

communities, or societies, and argues that these resources are reflected by the existence of close interpersonal relationships among individuals. Social networking has the same characteristics; however, there is quite often no face-to-face communication and the relationships can often be much more informal than those characteristic of social capital-building activities. Social capital practices are often meant to build relational contracts between and among employers, employees and coworkers within an organization (Leana & Buren, 1999).

Social networking provides a vital source of information and numerous opportunities for all participants to build social capital. Researchers Igbaria and Tan (1997) suggest that investigations into information technology applications should focus on the impacts of accepting or rejecting such tools and capabilities. If employees perceive that there is some return on the investment of their time or attention in terms of improved skills or the availability of new challenges or increased standing in the firm, they may be more inclined to participate in the organization's social media tool of choice.

RESEARCH METHOD

The unit of analysis for this study is the individual. The method of analysis in this dissertation is structural equation modeling (SEM), which is a confirmatory approach that provides a comprehensive way for researchers to assess and modify theoretical models. The study proposes that the conceptual model will fit the data, and Shipley (2000) argues that SEM provides evaluation of a model to represent translations of hypothesized cause and effect relationships between variables into a composite hypothesis concerning patterns of statistical

dependencies. The ability of SEM to test for statistical conclusion validity will allow interrelated research questions to be answered in a single, systematic and comprehensive analysis.

LIMITATIONS

The scope of this research is limited. This dissertation is the first-ever attempt to examine these constructs and their relationships in the manner proposed. Conducting this research in a population that is inherently governmental and focusing on three different groups limits the generalizability of any findings. Also, conducting this exploratory study can be hindered by unknown characteristics about online communities and their interactions.

The newness of social networking is also a limitation. The study involves members of several organizations, but it attempts to focus on them as one community that operates in many cases without regard to the rules and regulations of the members' employers. For that reason, it is possible that these findings cannot be generalized to other people or organizations.

The convenience sample used in this dissertation also presents problems of generalizability. There is limited ability to probe answers in this method. People who are willing to respond may share characteristics that don't apply to the audience as a whole, creating potential bias in the study.

Despite these problems, this method is useful for several reasons. Data collected can be analyzed fairly quickly and the results from the sample can be generalized to the entire population if the response rate is high enough. This survey can lead to an instrument that presents a reliable direction for planning

programs and findings may, in some cases, be generalizable beyond the participant group.

SUMMARY

Given the knowledge of the social networking environment, this study examines relationships between the construct and predictors of individual performance and participation in organizations. The social networking participation model proposed herein may help organizations predict and promote acceptance or rejection of these activities. Performance may be influenced when people are presented with evidence of a return on the investment of their time.

The next sections of the paper will provide explanations of the research problem, theoretical framework, and research design and methodology, ending with a full description of results and relevant conclusions. The Research Problem Section will address the problem in more detail with the intent to demonstrate that the problem is worthy of investigation. The Theoretical Framework Section will examine the relationship between six constructs and participation. The Research Design and Methodology Section will provide relevant objectives, hypotheses and design related to the development of research and theory for this study.

CHAPTER 2

THEORETICAL FRAMEWORK

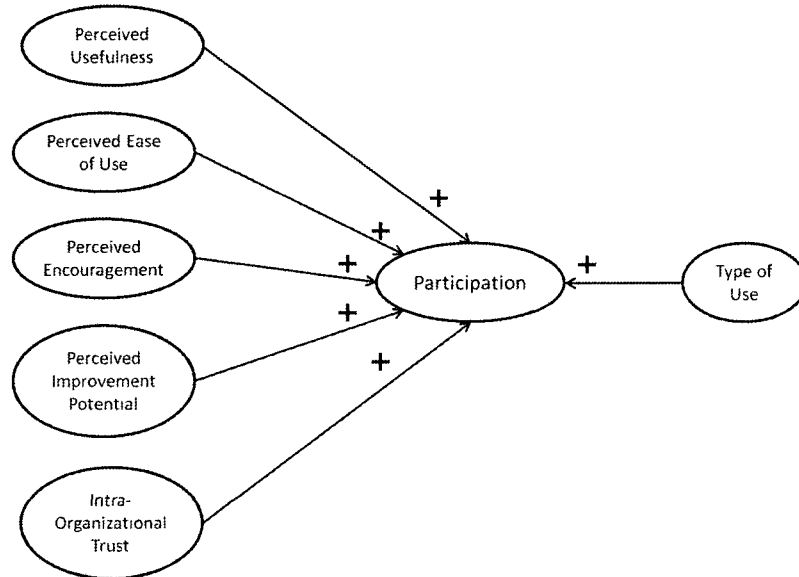
A model for this proposal began with a thorough understanding of the social networking construct, as well as an examination of internal decision processes that occur at the individual level. Additional insights relevant to the research effort are found in the models measuring technology acceptance, theories of network governance, analysis of networks, building social capital, and trust in organizations and their networks. These theories will be examined later in this section.

A model is required to allow consideration of this proposal. The model proposal process began with an analysis of innovation adoption theory to assist in what is a new and evolving area of interest. The model presented in Figure 1 is developed to suggest a framework that allows companies to identify determinants and opportunities that affect levels of acceptance and participation.

Workplace-based network connections should be a focus for exploration of ways organizations can affect and improve performance and productivity. Organizations and their employees could then get insight into predictors of adoption and participation, and that insight could lead to enhanced social networking activities. The hypothesis is that the model will fit data collected from a population, and that data will be positively correlated with participation.

SOCIAL NETWORKING PARTICIPATION MODEL

Figure 1: Conceptual Model



The model in Figure 1 is based on an understanding of key concepts and limitations in social networking literature. The literature review must begin with a view to concepts that are common in social networking activities.

LITERATURE REVIEW

There are several commonly referred to concepts in social networking that are used in the analysis of those activities (Wasserman & Faust, 1994; Wasserman et al., 1996). They are actor, relational tie, group, relation and social network. An actor is a discrete individual, corporate or collective social unit. A relational tie refers to the ways in which people are linked together, such as

evaluations, transfers of material resources, association or affiliation, behavioral interaction, movement between places or statuses, physical connection, formal relations or biological relationship. For the purposes of this examination, a group is a collection of all actors on which ties are measured. A collection of ties of a specific kind among members of a group is called relation. So, a social network is a finite set or sets of actors and the relation or relations defined on them.

There are a number of commonly used constructs for establishing or evaluating social networking activities. They include, but are not limited to, trust (including intra-organizational trust), improvement potential, social identity, altruism, telepresence, behavior, behavioral intention and encouragement, computer self-efficacy, computer anxiety, computer playfulness, perceived encouragement, perceived enjoyment, objective usability, perceived productivity, IT capability and user orientation (Hendrix, 1984; Kwon & Wen, 2010; Leaman & Bordass, 2000; Mazman & Usluel, 2009; Nakata et al., 2008; Venkatesh, 2000; Warshaw & Davis, 1985). The primary focus of the relevant literature review is on improvement potential, perceived encouragement and trust.

PERCEIVED IMPROVEMENT POTENTIAL

The construct perceived improvement potential (PIP) clearly refers to the challenge of getting people to believe that an action will lead to improvement of their performance. The challenge is twofold in this context. The first challenge involves understanding the dynamics of change processes. Management problems are created when people are reluctant to move from the status quo and accept new methods (Lasden, 1981). If leadership takes the critical first step of

developing understanding, they can address the four negative reactions to the introduction of a new system: sense of awkwardness, fear and suspicion, misunderstanding and resentment (Lasden, 1981). The keys to success involve improving participation through education and information programs, and beginning the change with mild participatory measures and then moving to tactics that are more forceful.

The second challenge involves addressing an individual's determination of whether the change will result in some level of performance improvement. For instance, a study conducted among 100 international senior executives involved in technological innovation within their firms examined barriers to in-house diffusion of new ideas (Vandermerwe, 1987). First among the barriers listed was the difficulty of making observable benefits clear to others. It is equally important to examine different forms of technological change resistance in this study. In one study, Kulmann (1988) summarized research findings about new product adoption, human stress and resistance to technological change. That summary lists five items:

1. Technical change is resisted only when employees perceive the change as a threat to their interests.
2. Employees will strongly support an innovation if they are confident in their prediction of the consequences that the change will have upon them.
3. The innovation will be better accepted if employees believe they have control over the changing situation.
4. The change will be accepted to the degree that those concerned perceive no hindrance to their established working habits and values.
5. Support for the innovation will increase if employees are given an opportunity to utilize it on a step-by-step basis.

Marsh (1990) argued that accepting change boils down to being open-minded, explaining that people generally have fatal failings when it comes to

embracing new ideas and making them work. One of the failings is especially relevant: people don't really believe the idea will work. This is why PIP is so important, because it involves a conscious determination of whether the activity or commitment involved will bring personal benefits. Social learning (Bandura, 1977) suggests the need for concrete incentives to participate in the kind of social networking that an organization values.

The key to PIP, then, is all about breaking down barriers. Dr. Tudor Rickards, an English consultant in creative problem solving, has identified four groups of barriers to change, or blocks: strategic, value, perceptual and self-image (Marsh, 1990). Strategic blocks deal with the way we implement ideas and are influenced by previous experience and habit. Value blocks deal with our approach to ideas, which are influenced by our prejudices, traditions and upbringing. Perceptual blocks deal with task orientation and are influenced by our single-mindedness or what we are doing at the time ideas are presented, especially if we are pressed for time or under stress. Self-image blocks deal with whether people believe they have the ability to implement new ideas and are influenced by experience and the reactions of others. Understanding these barriers, and adjusting to them, is important to, as Marsh (1990) says, "meeting the challenge of change."

It now becomes clear that the success of social networking activities and individual performance are both based on normative practices as well as relationships that build trust, foster interaction, and address participant needs. There are other commonalities, such as how social networking stresses focused

interaction between individuals (Sabatini, 2009) and how individual performance concerns task-specific interaction (Ivancevich, 2008). Further, Hatala and Fleming (2007) argue for a social network perspective that is characterized by “centrality (betweenness, closeness, degree), position (structural), strength of ties (strong/weak, weighted/discrete), cohesion (groups, cliques) and division (structural holes, partition).” Individual performance is based on somewhat related constructs, such as social interaction for centrality (Ivancevich, 2008), involvement and need fulfillment for position (Mayo, 1949), formal and informal ties for strength of ties (Ivancevich, 2008), two-way personal selection for cohesion (Mayo, 1949), and self-importance for division (Mayo, 1949). Self-importance, for example, may create instances where the individual’s inward focus contributes to disconnected activities in terms of the organization and its mission.

Social networking and individual participation share bonding, bridging and linking, and that shared relationship can be beneficial to all parties involved. The shared relationship does not, however, indicate ways to use social network benefits to influence, or even to drive, individual performance in a positive direction.

Social capital, contingency theory, and social exchange theory provide additional insights for social networking and individual performance relationships. Woolcock and Narayan (2000) discussed the evolution of social capital research that identified four distinct approaches: communitarian view, networks view, institutional view, and synergy view. The synergy view is

relevant for this study because it lends itself to the most comprehensive and coherent policy prescriptions. This view emphasizes incorporating different levels and dimensions, and recognizes the positive and negative outcomes that social capital can generate.

The synergy view attempts to “integrate the compelling work emerging from the networks and institutional camps (Woolcock & Narayan, 2000, p. 235).”

The researchers list three central tasks for theorists, researchers and policymakers:

1. Identify the nature and extent of the social relationships characterizing a particular community, its formal institutions, and the interaction between them;
2. Develop institutional strategies based on an understanding of these social relations, particularly the extent of bonding and bridging social capital in a society or a community; and
3. Identify ways and means by which positive manifestations of social capital, such as widespread cooperation, trust, or institutional efficiency, can offset, and/or be created from, negative manifestations like sectarianism, isolationism, or corruption.

Social capital can be defined as the value and cooperation that is created by social networks and other human relationships (Putnam, 1993). In *BOWLING ALONE* (1993), Putnam discusses social capital and its many features, all capable of helping people translate aspirations into realities. Three specific features of social capital deal with resolution of problems, facilitation of community advancement, and increased awareness of our lives as they relate to the lives of others.

“First, social capital allows citizens to resolve collective problems more easily. ... Second, social capital greases the wheels that allow communities to advance smoothly. Where people are trusting and trustworthy, and where they are subject to repeated interactions with fellow citizens, everyday business and social transactions are

less costly. ... A third way in which social capital improves our lot is by widening our awareness of the many ways in which our fates are linked. People who have active and trusting connections to others – whether family members, friends, or fellow bowlers – develop or maintain character traits that are good for the rest of society (Putnam, 1993, p. 288).”

Contingency theory argues that organizations must respond to new and changing environmental conditions by redesigning their internal processing capabilities through structures and technology (Rice, 1992). The theory is that no particular organizational design assures performance. Performance is contingent on an appropriate match between contextual variables such as task demands and organizational arrangements such as communication structures and media.

Social exchange theory proposes that social behavior is the result of an exchange process. This exchange is intended to maximize benefits and minimize costs, requiring people to weigh the potential benefits and risks of social relationships. When the risks outweigh the rewards, people will terminate or abandon that relationship.

Millen and Fontaine (2003) noted that most people in their study agreed that community activities influence various personal benefits, specifically productivity. That study's finding could be further development of the work of Dennis and Valacich (1994), part of which addressed synergy. Synergy develops when a participant builds on information provided by another participant to create new ideas, typically because that participant has additional information, different skills, or a different view of the problem. Through social networking, organizations have ways to archive shared experiences and then give community

members opportunities to recreate that success or to apply the same experience to a new effort.

PERCEIVED ENCOURAGEMENT

Perceived encouragement (Kwon & Wen) is a cultural consideration dealing with the organization's commitment to employee participation in social networking. It is important to understand how people perceive one another's encouragement. This study addresses the organizational level of encouragement to examine whether the culture encourages or discourages a person's use of social networking and whether it matters that use is loosely connected to the work at hand or is simply personal in nature. These are important considerations in any attempt to improve the employee's daily environment at work.

TRUST

Another important consideration for this examination of predictors of social networking participation is trust, which is a construct that has a relationship to dependence, satisfaction and commitment. Trusting relationships in organizations involves an ongoing decision to give most people the benefit of the doubt, and it can be extended even to people one does not know from direct experience. Relevant literature across several disciplines supports the widespread influence of trust.

McEvily, Perrone and Zaheer, serving as guest editors, answered the question “Why Trust?” in a special issue on trust in an organizational context (2003). The authors discuss the importance of trust and examine why it is so important “now.” They find that a part of the trend is explained by the fact that changes in technology had, at that point, reconfigured exchange and the coordination of work across distance and time. Those changes continue today. Focusing on, among other organizational forms, knowledge-intensive organizations, they write:

“A distinguishing feature of these new organizational forms is that they alter the patterns of interdependencies and the nature and extent of uncertainty. The consequence being that the individuals working in the new organizational forms become more dependent on, and more vulnerable to, the decisions and actions of others – both preconditions and concomitants of trust (McEvily et al., 2003, p. 1).”

The authors point out that organizational science has made some important advances that promote understanding of the meaning of trust and how it relates to certain factors that characterize organizations. They mention examples of an increasing number of journal articles and special issues (Bachmann et al., 2001; Rousseau et al., 1998) and books (Gambetta, 1988; Kramer, 1996; Lane & Bachmann, 1998) devoted to the topic of trust in and between organizations. The special issue published seven papers that represent a wide range of methodological approaches, a diverse set of theoretical disciplines, a variety of levels of analysis, and a blend of empirical models (McEvily et al., 2003).

Two of the papers in the special issue are important for the current focus on trust. Becerra and Gupta (2003) probed the influence of organizational context on trust, emphasizing how the influence of social structure in an organization is contingent on communication frequency. They argue that frequency of communication is related to emphasis, in that as frequency increases the emphasis shifts from the trustor's to the trustee's individual and contextual characteristics. The relationship among senior managers of a multinational organization is the basis for testing the hypotheses. Findings point to a view of trust production in organizations that consists of individual, dyadic and contextual components.

Another paper in the special issue argues that people tend to trust members of their own organizations more than they trust people from outside of the organization (Huff & Kelley, 2003). The authors also argue the notion that the effect of this trust is greater in collectivist than in individualistic societies. Trust on average is lower for people from collectivist society, a prediction that runs counter to conventional wisdom (McEvily et al., 2003). The authors generally find support for their hypotheses using data from a large sample (Huff & Kelley, 2003).

Examining the trust construct as it relates to performance in organizations requires an examination of two issues that seem central. The first involves trust as a means for dealing with uncertainty. The second focuses on trust and acceptance of vulnerability (Newell & Swan, 2000). Luhman (1988, p. 103) argues that trust occurs in situations of risk and uncertainty: "A system requires

trust as an input condition in order to stimulate supportive activities in situations of uncertainty or risk.”

Luhmann’s notion suggests that trust is an attitudinal mechanism that allows individuals to subjectively assess whether or not to expose themselves to situations where there may not be an acceptable trade-off in terms of possible damage versus received advantage. The attitude develops when individuals have accepted vulnerability to others.

Trust is also a multi-dimensional concept where values, attitudes and emotions or moods interact (Newell & Swan, 2000). There are three reasons someone may be able to develop trust (Sako, 1992):

1. Because of a contractual agreement that binds the parties in the relationship;
2. Because of a belief in the competencies of those involved; and
3. Because of a belief in the goodwill of those involved.

There are other dimensions to consider as well. The research of Dirks and Ferrin provide additional foundations for this study because they cover trust in organizational settings, using rewards to increase and decrease trust, and examining the effects of third-party relationships on interpersonal trust (Dirks & Ferrin, 2001; D. L. Ferrin & Dirks, 2003; D.L. Ferrin et al., 2006). A typology distinguishing between deterrence-based trust, knowledge-based trust and identification-based trust was developed in 1992 (Shapiro et al.). A developmental focus was argued by Zucker (1986), establishing three central mechanisms of trust production: process-based, characteristic-based and institutional-based. Process-based focuses on reciprocal, recurring exchange,

characteristic-based is defined by social similarity, and institutional-based is determined by expectations embedded in societal norms and structures.

INTRA-ORGANIZATIONAL TRUST

The literature offers a wide variety of ways to examine trust. This study narrows the focus to intra-organizational trust, which will be used to shed light on individual performance in organizations. Intra-organizational trust concerns interactions and activity within organizational relations (Grey & Garsten, 2001). Grey & Garsten argue that most literature gives more emphasis to inter-organizational trust, between-organization trust, but there are a number of researchers interested in what happens “within” organizations (Li & Betts, 2003; Mayer et al., 1995; Steinfield et al., 2009; van de Bunt et al., 2005).

Also relevant for this examination is a 2010 study concerning building trust in nonprofit networks (Lambright et al., 2010). That study examined factors influencing interpersonal trust in networks: propensity to trust, perceived trustworthiness of the trustee, the relationship between the trustee and trustor, and third-party relationships. The findings support the argument that trust between a trustor and trustee positively influences expected future cooperation. The study can be related to strength of ties (bonding, bridging or linking) in the network (Hatala & Fleming, 2007; Ivancevich, 2008), focusing on successful past cooperation and frequency of interactions as two of the most important factors influencing interpersonal trust in networks (Lambright et al., 2010).

There is also some relevance to trust in social learning theory, which indicates that behavioral change in organizations can be the result of vicarious learning through modeling and, if the learning is successfully accomplished, trust can be achieved. In vicarious learning, the nature of the observed model can influence the probability that an observer will imitate the modeled behavior and have a chance to be successful (Manz & Sims, 1981). People will normally seek out the model who possesses the greatest interpersonal attraction (Bandura, 1977a). Credible models are people perceived as being successful and who exert greater influence than non-credible models (Bandura, 1969, 1977a). Relevant literature supports the notion that modeling-based training programs will be more effective if the models presented have achieved high status and competence (Goldstein & Sorcher, 1974; Rosenbaum, 1978; Weiss, 1978). One study reported that subordinates showed greater similarity in behavior to superiors who were viewed as being competent and successful, indicating great possibilities for building trust.

In 2009, researchers analyzed the importance of trust and its consequences for management (Gursakal et al., 2009). A network analysis was conducted to determine which employees trust other employees on a personal level. Based on the findings, the researchers argue that trust can create effective cooperation within enterprises, thereby having a positive influence on performance, growth and survival.

The understanding of the constructs of PIP, perceived encouragement and trust are important to the objectives of this study. Equally important are the

difficulties that currently exist in finding social networking research in an area that is new and emerging.

LIMITATIONS IN SOCIAL NETWORKING RESEARCH

The newness of social networking leads to limitations in the body of research in terms of available data and depth of examination of the construct. There appear to be no direct examinations of social networking as it pertains to individual improvement potential, whether one considers productivity, performance or some other aspect of personal- or organizational-driven improvement possibilities.

One of the more important limitations in social network analysis concerns determining the true benefits of organization efforts. Also, a review of the literature does not reveal much in terms of organizations that evaluate individual improvement, skill, capacity, time, etc., in concert with innovation adoption prior to making the decision to engage in social networking. Studies show that it is relatively easy to convince individuals, and organizations, about the benefits of social networking activities (Boyd & Ellison, 2008; Brandyberry et al., 2010; Pallis et al., 2011; Preece & Shneiderman, 2009).

The large, and growing, numbers of people and organizations involved in social networking requires analysis. A key question for leaders might be, "Are my employees better off because we expended money or effort in social networking?" Employees who have limited participation, or those who do not

participate, might ask, "Will my participation make me a more skilled or more productive worker?"

Researchers Igarria and Tan (1997) suggest that investigations into information technology applications should focus on the impacts of accepting or rejecting such tools and capabilities. Their examination of IT applications indicated that system usage and user satisfaction can be used to indicate a performance impact. They stated that their results support prior research, suggesting that indicators of computer system acceptance, such as satisfaction and usage, may produce performance value and operational effectiveness. The researchers argue that IT acceptance helped individuals accomplish tasks more effectively and increased productivity. This significant link between acceptance, participation and impact on productivity has implications for this study.

Research is needed to define the most relevant methodologies for organizations to successfully deal with individual improvement concerns prior to making a decision to participate in social networking. This avoids the return on investment concern that is voiced at some point after the organization has made the commitment to network. There is also value in attempting to understand the difference between those who accept and those who reject participation, and the intent of this examination is to add perceptions of individual improvement to widely-used determining constructs in the social networking/social media field. This research will lead to the development of a model that organizations can use to evaluate a person's intent to participate in the desired behavior, to actually

exhibit the desired behavior, and to participate at a level that is personally and professionally significant. This evaluation has the potential to provide organizations with a formal process that would allow the greatest return on investment.

The scope of this study is limited, which is necessary because it appears to be the first-ever attempt to examine the constructs of interest and their relationships in this grouping. Generalizability of this research is limited due to the fact that it will be conducted in communities of interest rather than in a formal organization. This initial examination is necessary, however, because organizations require even informal benchmark evidence that social networking is able to establish a personal focus prior to implementation.

While there is no reason to believe that people will not continue to participate in social networking, there are concerns that those who accept participation could benefit from a higher level of activity and that their productivity might be improved. There is also concern that those who reject participation are self-selected into another category that requires additional directed outreach before these individuals could benefit from any activity at all. Positive results will contribute to development of a model that allows companies to develop and successfully implement social networking programs in a way that addresses individual values, attitudes and lifestyles at every step of the process.

Many companies have already embraced the fact that there are available benefits in terms of improved communication and morale, and in terms of

connecting people on related projects or responsibilities (Madden & Jones, 2008).

The Pew Internet & American Life Project (Madden & Jones, 2008, p. iii) found that “Wired and Ready Workers” have improved their work lives through information and communications technology (ICT):

- 80% say these technologies have improved their ability to do their job.
- 73% say these technologies have improved their ability to share ideas with co-workers.
- 58% say these tools have allowed them more flexibility in the hours they work.

The Wired and Ready Workers also note negative impacts of ICTs in the study:

- 46% say ICTs increase demands that they work more hours.
- 49% say ICTs increase the level of stress in their job.
- 49% say ICTs make it harder for them to disconnect from their work when they are at home and on the weekends.

The Pew Internet report establishes that 96% of employed adults are in some way making use of new communications technologies, either by going online, using e-mail or owning a cell phone (Madden & Jones, 2008). The challenge in this study is to show companies ways to determine levels of participation acceptance or rejection, develop positive participation to a higher level, determine the reason for rejection of participation, and address the negative perceptions that stand in the way of people using ICTs to their fullest capabilities.

This study is intended to address value propositions for participation that are clear to users. Currently, organizations wait for people to participate, and then leaders begin to seek individual-level benefits that promote greater

participation. At the heart of the issue is the need for a line of questioning concerning whether organizations and their employees are better off because of social networking activities, and that line of questioning is needed at the beginning of the process instead of while it is already in progress. The large, and growing, numbers of people and organizations involved in social networking requires this analysis.

A new social networking decision process is now suggested by introducing a new focus on a set of constructs to predict adoption and participation. Organizations that value social networking need to adopt formal processes to get the most value out of their programs. This research was conducted using social networking communities of practice to test the relationships between the constructs of interest. This examination is intended to improve understanding of social networking predictors of participation and to develop a decision model for organizations. This is accomplished in part with a thorough review of social networking literature.

SOCIAL NETWORKING LITERATURE

A review of relevant literature that allows a tighter focus on social networking suggests a framework to identify determinants and opportunities that affect levels of acceptance and participation. The framework is a vehicle to identify factors to consider in advance of the decision to participate in social networking.

This review begins with innovation adoption (Hatala & Fleming, 2007) and the diffusion of innovations theory. The study also requires examination of governing by network methodology (Goldsmith & Eggers, 2004) that focuses on linking social networking challenges to constructs intended to foster behavioral changes or adjustments that improve or enhance the networking experience. At the same time, individuals should be presented with value propositions that either convince them to participate at higher levels than they presently do or that break down their rejection barriers to the activity.

There is a growing body of literature on social networking, and it is most often examined based on social capital theory (Putnam, 1993) and social network analysis (Hatala, 2006). This study follows some of those examinations to promote an understanding of social networking. The literature review, then, focuses attention on the stated constructs of interest.

INNOVATION ADOPTION

Innovation adoption, or connectivity, is based on the ability of an organization to become connected at a level where performance is seen as optimal and leadership has created an atmosphere capable of maintaining the necessary structural support mechanisms for information sharing and knowledge management (Hatala & Lutta, 2009a).

Diffusion of innovation is the process through which some innovation is communicated within a social system (Perry, 2006). Perry's innovation-decision process has three main components: the innovation-decision process, the characteristics of an innovation, and adopter characteristics.

The information sharing adoption model below shows the domains of connectivity within an organization. An organization's connectivity position is constantly changing. Placing the organizations in one of the quadrants depends on three factors: density levels, social structure and demographic characteristics. Social network analysis (Hatala, 2006) can identify density level, which is connectivity among and between various network groups.

An organization's social structure is identified by examining the position of actors (centrality) in the network, and by examining the formal structure (Scott, 2000; Wasserman & Faust, 1994). Current state of social networking, company records and traditional surveys and interviews are demographic characteristics that can be examined to assist with connectivity (Hatala & Lutta, 2009b).

Figure 2: Domains of Connectivity

	Sharing Within Groups	Limited Sharing Between Groups
Sharing Between Groups	Connected (Open)	Interconnected (Dysfunctional)
Limited Sharing Between Groups	Intraconnected (Control)	Disconnected (Entropy)

The two columns in Figure 2 represent whether information sharing occurs or does not occur within a group, and the two rows represent whether information sharing is occurring or not occurring between two or more groups:

- Column 1: Optimal information sharing within a work group.
- Column 2: Minimal information sharing within a work group.
- Row 1: Optimal information sharing between work groups.
- Row 2: Minimal information sharing between work groups.

The upper left quadrant shows a high level of density within and between work groups. This is the quadrant where an organization should strive to be, where information is exchanged openly and freely and the culture of the organization supports the concept of information as a tool. This is the optimal position for an organization because it is characterized by social support mechanisms that promote information sharing and knowledge management.

The upper right quadrant shows a high level of density between groups within an organization but not within a group. The desired density level is based

on the level of information sharing required for optimal performance.

Information sharing within a group is limited, but access to information across groups, departments, units and divisions is promoted and carried out.

The lower left quadrant illustrates minimal information sharing between groups. This is where we find organizational development silos, and information is not shared within the organization even though it may flow freely within groups.

The lower right quadrant features little connectivity in a minimally dense organization that is drifting apart. Little to none of the potential of the organization is achieved because information is not shared freely and is not easily accessible.

GOVERNING BY NETWORK

The governing by network approach (Goldsmith & Eggers, 2004) is a fundamental part of the foundation upon which this evaluation was constructed. This argument involves helping governments ensure their network-based partnerships are administratively effective and politically accountable. Governments should move away from having employees view themselves as doers and instead try to create a culture where employees view themselves as facilitators, conveners, and brokers of how to engage the community's talents to accomplish the task at hand. This approach requires less reliance on public employees in traditional roles and more on a web of partnerships, contracts and alliances to do the public's work.

In this way, network initiatives can now address accomplishing public objectives with measurable performance goals, assigned responsibilities to each partner, and structured information flow. The ultimate goal of these efforts is to produce the greatest possible value proposition, greater than the total of what each player could accomplish on his or her own without collaboration (Goldsmith & Eggers, 2004).

Effective network governance that enhances performance first requires leaders who can master the challenges of goal alignment, providing oversight, avoidance of communications meltdown, coordinating multiple players, managing the tension between competition and collaboration, and overcoming data deficits and capacity shortages. Next, the organization needs to address issues of mission and strategy. What individual performance goals do leaders hope to accomplish through social networking, how do these goals address what members of the network ought to do, and how are these intentions communicated to employees? Starting with mission and then determining the process allows the necessary change from the tradition of deciding on a process and then trying to fit it to a mission. This allows the destination, not the path, to be the focus around which the components and interactions of the network are built (Goldsmith & Eggers, 2004). Finally, ask the right question about the outcome-based value proposition, or public value, the organization seeks.

Leaders must pay attention to cultural compatibility when selecting network partners. This is essential for fostering long-standing, mutually

beneficial relationships. The key is shared values across the culture. Creating ties that bind is related to cultural compatibility, and it requires that effective network ventures establish dependable communication channels, coordinate activities between network participants, and build trusting relationships. The challenge, however, goes beyond simply using the technology to manage relationships. Social networking still requires vigilance in addressing people issues, examining processes, aligning values, and building trust. Finally, network integrators must create and maintain the infrastructure and conditions that support long-term relationship building. Network governance, knowledge sharing, value and incentive alignment, trust building, and overcoming cultural differences are challenges every good integrator must face head on.

When responsibilities are managed effectively, they can open the door to the enormous value available to participants. The value is available because of the varied and unlimited points of employee contact that can be translated into useful responses by the many employees involved in the network, allowing each to adjust their responses appropriately. Governing by network is a way to address the limitations we find in social networking research.

OTHER THEORIES RELEVANT TO SOCIAL NETWORKING

Social capital theory (Putnam, 1993) and social network analysis (Hatala, 2006) are relevant to social networking and to the kind of analysis involved herein. However, limited resources and time constraints do not permit

examining those theories in detail and, therefore, they are not the focus of this effort. However, a basic understanding of social capital theory and of social networking is necessary based on their relevance to the constructs of interest.

The central ideas in social capital theory are that relationships matter and that social networks are a valuable asset (Field, 2003). People derive benefits from interaction that builds communities and commitment that creates ties as they knit a kind of "social fabric." This research sheds light on trust relationships that are considered essential for social networking experiences that build strong ties and a sense of belonging.

Social capital exists between individuals and is all about establishing relationships purposefully and employing them to generate intangible and tangible social, psychological, emotional and economical benefits in short or long terms. Social capital can be examined in terms of five dimensions: networks or lateral associations between individuals and/or groups, reciprocity and expectation, trust and risk based on assumptions, social norms, and personal and collective efficacy.

Social capital and organizational learning have been studied to understand knowledge transfer and perceived organizational performance. Rhodes et al (2008) examined these relationships, integrating organizational learning capability with social capital to shape a holistic knowledge sharing and management enterprise framework. They argued that an integrative model can produce a significant strategy to achieve organizational success. Their results

indicate that these dimensions are distinct and have different effects on knowledge transfer.

Examining social capital in the online era requires different sets of scales than have been historically used for these purposes. Researchers argue that existing approaches to studying social capital online have been stymied by importing measurements from older, functionally different media (D. Williams, 2006). Williams (2006) attempted to theorize, create, and validate a series of scales to measure social capital in online and offline contexts, finding 10-item scales that are valid and reliable. The confirmatory factor analysis used in the research was primarily concerned with bridging and bonding as two distinct but related dimensions of social capital.

Research by Sabatini (2009) contributed to social capital literature in three ways. The first was with a new framework for measurement of social capital and social networks, then with a single, synthetic measure dealing with the configuration of social capital and finally with an empirical assessment of the relationships between different types of social capital.

Social capital addresses the benefits of relationships while social network analysis offers ways to understand how relationships are structured. Social networks are made up of individuals or organizations that we refer to as "nodes." Nodes are tied or connected by one or more specific types of interdependency, such as common interest, kinship, friendship, financial exchange, sexual relationships, dislike, or relationships of beliefs, knowledge or prestige. There is

no attempt here to accomplish social network analysis; however, there is an examination of network ties, or the relationships between the actors, based on the constructs perceived encouragement and intra-organizational trust. Social network analysis provides a methodology to examine the structure among actors, groups and organizations, and it is effective in explaining the variations in beliefs, behaviors and outcomes. Organizational climate and transfer climate highlight the need for concrete incentives to convince employees to participate (Hatala, 2006). Organizational climate focuses on current perceptions of people in a work environment and their observable personal relationships that affect their performance (Hatala & Fleming, 2007). Transfer climate is a subset of the perceptions of organizational climate concerning the transfer of training. These constructs are beneficial because they shed light on an individual's perceptions of supervisor support, opportunity to use new training, level of peer support, supervisor sanctions, and positive or negative personal outcomes resulting from application of training on the job (Hatala & Fleming, 2007).

Prior literature is filled with various motivations for organizations to bring people together online and use social networking to integrate virtual communities (VCs) into existing business models. Companies are interested in social networking, for instance, because they gain measurable benefits, such as innovation, more effective marketing, more rapid access to information, lower costs and higher revenues (PaloAltoNetworks, 2009). In its Fall 2009 edition application and usage report, Palo Alto Networks reported that an Enterprise 2.0 survey showed that the top three business benefits identified were knowledge

sharing at nearly 60%, reduced effort in information gathering (nearly 50%), and improved efficiency/speed of delivery (35%).

Companies can address their communication, information, entertainment or transaction purposes through integrating VCs (Enders et al., 2008). Walden (2000) discusses how VCs support a company's physical products. Williams and Cothrel (2000) argue the benefits of creating a single point of access for information within the company. There are additional characteristics that stand out in the social networking business model. For instance, companies work toward the visualization of individual social and professional networks among users and tools that help to leverage these networks (Enders et al., 2008).

Studies of IT professionals whose performance depends in large part on the acquisition of technical and organizational knowledge have shown social networks to be an indispensable informing channel (Burton et al., 2010). Research reveals potential competitive advantages for organizations and individuals in dealing with social networks; however, much of the information has predominantly focused on R&D staff, e.g., (Brookes et al., 2007; Lee et al., 2005). Burton et al (2010) found that a particular trait of an IT professional, constraint in social networks, hence ability to span the "structural holes," did impact on job performance. According to the research, IT professionals who recognize the role of their social networks in channel expansion and who work to extend the reach of those networks stand a better chance of satisfactory job performance.

There is an increasing amount of information in the literature on social networking (Cerulo, 1990; Chung et al., 2007; Fowler et al., 2004; Zack & McKenney, 1995), trust (Newell & Swan, 2000; Nyhan, 2000), measuring performance or productivity (Akdere & Roberts, 2008; Bearman et al., 1985; T. R. V. Davis & Luthans, 1980; Otis, 2007), capacity or skill building (Eastin & LaRose, 2000; Erickson & Jacoby, 2003; Segrest et al., 1998; Shetzer, 1993) and other constructs. However, the social networking literature is primarily descriptive and categorizing without providing value-creation and value-capturing strategies. The literature does not contain information about linkages between social networking and performance in the manner that they are suggested here. The literature also does not specifically address individual performance or relevant perceptions, so there is no sufficient body of knowledge in this area. The lack of research and discovery in social networking as it pertains to social networking and individual performance constructs is primarily caused by the relative newness of the social networking phenomenon. The aforementioned lack of research indicates the need to examine social networking with a particular focus on perceived performance improvement.

To get a sense of current discovery in social networking, it is helpful to examine a number of dissertations in the last 5 years. One effort examined the use of social networking by college students to evaluate their sense of belonging (Walz, 2009). The research argued that social networking literature has demonstrated significant effects on both physical and psychological well-being for men and women who participate in social networks. The focus here is on a

sense of belonging, one aspect of psychological functioning. Walz (2009) argues that sense of belonging is considered a vital mental health concept that has been negatively correlated with depression, anxiety and loneliness, and positively correlated with social support. A basic understanding that a relationship exists between social networking and sense of belonging is evident in the literature, demonstrating that relationship as being important to well-being for men and women. The Walz (2009) dissertation identifies studies that have investigated the relationship between social networks and sense of belonging, but argues that few studies have explored whether social networking sites offer the same benefits to its users.

College students and the relationship between use of social networking sites and sense of belonging are the focus of this study. Further, the study considered differences between genders to examine face-to-face social networking as it compares to social networking and sense of belonging. The findings showed a positive relationship between student's use of social networking and sense of belonging. Those who were most active on social networking sites had more friends and may have, in fact, felt more accepted or valued by peers.

One can envision issues of trust in a 2009 study on team development social networking and spiritual leadership (Bryan). Bryan's research argues that low levels of spiritual leadership encouragement could inhibit the organizational effectiveness of nonprofit and religious organizations. An understanding of spiritual leadership is necessary for organizations that want to improve

organizational effectiveness. Spiritual leadership has the capability to increase intrinsic motivation and foster goal accomplishment. One test employed in this study seeks to determine whether team building through social networking encouraged spiritual leadership in a quantifiable manner. The Bryan research is relevant to the general study of social networking and individual performance because it addresses leadership intervention, specifically developmental work experiences (Yukl et al., 2002).

One of the hypotheses Bryan (2009; Yukl et al., 2002) tests is that *significant change occurs in the task productivity score for the group members participating in social networking activities*. The hypothesis was supported, and a transformational link with morale, intrinsic motivation and sense of community was more apparent in one of the groups studied.

A dissertation on online social networking focuses on relationships between user characteristics and use or performance, maintaining that they are not adequately addressed (Mew, 2009). In this work, the concept of “fit” is used to determine whether there are user, task and/or systems characteristics that are associated with the best performance and usage levels. Online Social Networking (OSN) systems such as MySpace, Facebook and Friendster have achieved tremendous popularity, but there has been little research done on factors motivating users to use and adopt OSN systems. Because relationships between user characteristics and use/performance are not adequately addressed, Mew (2009) focuses on how end user Computer Self-Efficacy (CSE) affects use of OSN systems.

This approach is directly related to the social networking issue of capacity and offers important questions. Do stronger computer skills relate to increased usage and participation in more complex OSN tasks? Can the concept of “fit” be used to determine whether there are user, task and/or systems characteristics that are associated with the best performance and usage levels? Are there a set of system of conditions in terms of self-efficacy levels in OSN system users that combine to produce higher performance or use?

Bandura's (1986; , 1989) Social Cognitive Theory suggests that human actions are the result of interaction between environment, personal traits and behavior. The theory defines self-efficacy as an individual's expectations regarding their ability to organize and complete tasks required to ensure specific outcomes. Bandura states, “There is a marked difference between possessing sub skills and being able to use them well under diverse circumstances. For this reason, different people with similar skills, or the same person on different occasions, may perform poorly, adequately, or extraordinarily” (Bandura, 1986, p. 391).

The Mew dissertation (2009) is valuable for its examination of social networking and individual performance because it investigates voluntary use of network software and performance measurement of users in non-mandatory systems. Users are influenced by network merits, rather than by the organization's mandate, and there are important interactions between CSE, task and OSN system characteristics.

These interactions have an effect on performance and utilization. A study of social networking and its relationship to individual performance in organizations seems to answer Mew's (2009) call for further research that poses questions about when people join social systems. That study examined who brings people in and what are the relevant networking and social effects of their participation.

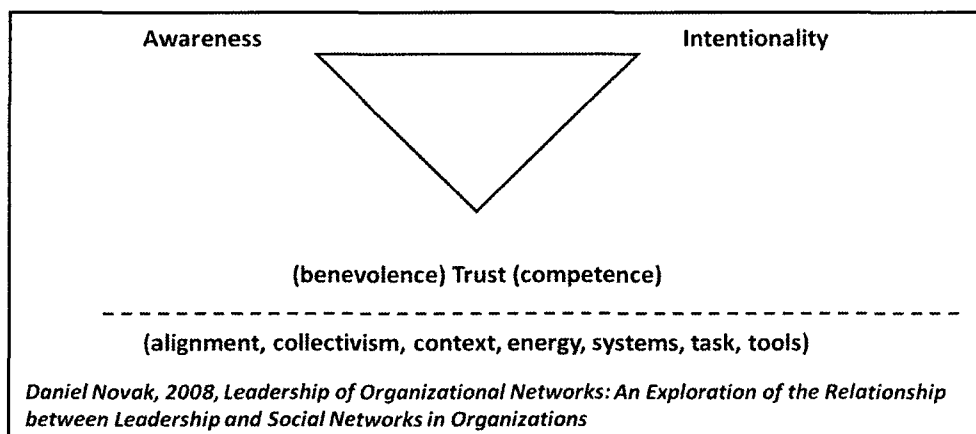
Daniel Novak (2008) employed social network analysis and qualitative content analysis to explore the extent of networking and the social antecedents of networks finding, in part, that leader influence is based on understanding and employing the concepts of awareness, trust and intentionality. Richardson (1991) described four primary principles that must be considered in developing or functioning in networks: reciprocity, spannability, complementarity and intentionality. Intentionality is a deliberate plan or design for forming or participating in a network to achieve a desired or intended purpose.

The Novak study (2008) explored characteristics and behaviors that are related to acts of leadership and building viable, persistent organizational networks. The research was intended to identify leadership antecedents and barriers to networks in organizations. Fundamentally, this was an examination of ways in which leadership can create, encourage and shape networks between individuals and groups.

Novak (2008) observed that while participants were highly networked and understood task-defined networking, they did not seem to understand the importance of networking beyond the short term. So participants did not employ

networking seeking long-term success and did not make strategic networking a priority. The study data revealed three primary factors that affected the organization's networks and networking – awareness, trust and intentionality. Three secondary factors were also discussed: energy, alignment and measurements, and learning and diversity. A high-level diagram of the primary themes and supporting factors is shown in Figure 3.

Figure 3: Primary Themes of Network Leadership



Ma (2007) conducted an analysis of interpersonal trust, friends and social interactions. The research contributed to existing literature on social interactions with an analysis of motivations to gain either a weak or strong tie. Finally, the computational problem of trust is to determine how much one person in the network should trust another person to whom they are not connected. This study examined determinants of an individual's choice to trust others based on an interactions-based model in which interpersonal trust is conditional based

on the individual's expectation of trust by others. Ma argued the possibility of multiple equilibria for trust within a social group and examined how individual and community characteristics might alter an individual's decision to trust.

Data from the research indicated that being disadvantaged with respect to income, educational attainment and race will tend to decrease an individual's trust of others. The adverse affect on trust indicated is an issue that must be addressed in the course of social networking. Ma (2007) explains the success of online social networking in terms of the benefit that it does not contain the same rigidities as formal organizations, but grants disadvantaged individuals, who would otherwise not have the opportunity, access to social networking ties that can be beneficial regardless of status or income.

Finally, a 2005 dissertation (Golbeck) employed two applications to rate levels of trust and use trust-based ratings as collaborative filtering techniques. "Trust was defined as follows: Alice trusts Bob if she commits to an action based on a belief that Bob's future actions will lead to a good outcome (Golbeck, 2005, p. 2)." This work was directed specifically at trust in web-based social networks, how it can be computed, and how it can be used in creating applications. The research involved a survey of web-based social networks to understand their scope, the types of relationship information available, and the current state of trust.

The study found that web-based social networks provide enough evidence to justify developing applications around them. One suggestion for future research is to integrate trust into social networks (Golbeck, 2005). The

relationship of this study to social networking and individual performance is focused in how powerful trust can be in getting users to participate in social networking, and in showing them how they might benefit personally and professionally from the activity.

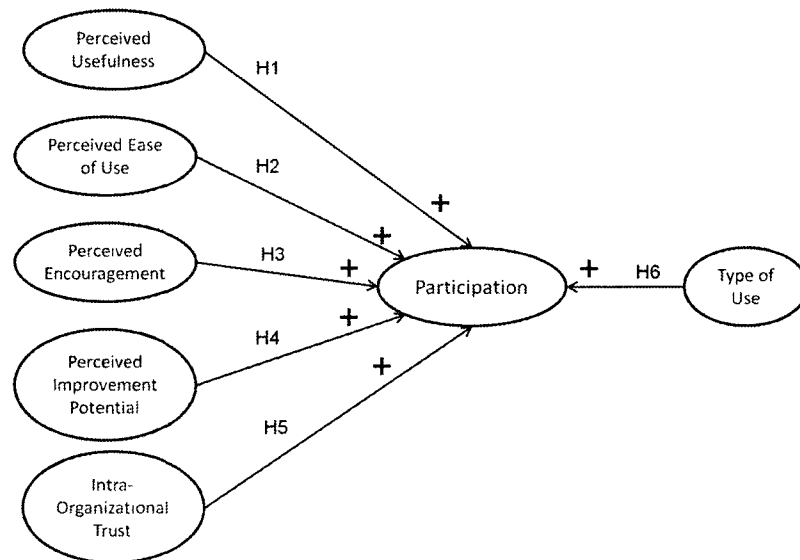
The preceding review of relevant literature reveals a growing body of knowledge addressing dramatic increases in the number of people who benefit from social networking. The rapid growth of the “social networking sign up process” requires continued analysis of the determinants that contribute to adoption and participation. A review of the constructs of perceived usefulness, PIP, perceived ease of use, perceived encouragement, and intra-organizational trust provides a potential benefit to understanding social networking in organizations. The perceived impact of social networking is widely supported, but much research is still needed to identify the psychological process of participating in these activities. The model proposed in this study could identify factors to consider in advance of the decision to participate in social networking. The following section will describe the methodology used in this research, the results of the analysis of data obtained, and a discussion of those results.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

The relevant and compelling hypothesis is that the structural model with all of its paths will fit the data collected from the population of interest (Figure 4).

Figure 4: Hypothesized Model



The research question and hypothesis focus on an examination of social networking as a two-step process that begins with acceptance or rejection, and then attempts to determine the “why” of individual choice. The current study is also influenced by individual impact (Igbaria & Tan, 1997), which refers to the

influence of IT on the perceived performance of the individual and on the quality of his or her decision making.

To that end, this study used a new focus to test determinants of social networking participation. Five constructs are examined as predictors of social networking participation: perceived usefulness, PIP, perceived ease of use, perceived encouragement, and intra-organizational trust. A sixth construct, type of use, is examined to measure its ability to predict participation. Igbaria and Tan (1997) suggest that investigations into information technology applications should focus acceptance or rejection of relevant tools and capabilities. There is good reason to extend the research beyond acceptance or rejection and examine social networking and individual performance under the lens of innovation adoption theory. This research extends social networking knowledge by presenting a new model that identifies factors organizations can consider in advance of making a decision to participate in these activities. A second purpose is to continue to identify the psychological process of participating in social networking, an area where much research is needed.

The perceived impact of social networking is widely supported, evidenced by the ease with which organizations sign up for these activities and from the ever-increasing number of social network services (SNS). There continue to be dramatic increases in the number of people who benefit from social networking; however, the speed of the “social networking sign up process” leaves potential individual benefits, or PIP, as an after-thought in many cases. This study is

important to the growing body of knowledge concerning determinants of social media and social networking activities because it suggests ways to increase effectiveness through fluid communications and benefits that are easily understood. The findings in this study are intended to assist in demonstrating a value proposition that can help organizations achieve desired behaviors for social networking activities. The findings may also help with understanding individual decisions to accept or reject participation.

The constructs of interest must be clearly defined. The construct definitions are part of a methodology involving scientific data collection and analysis using a survey instrument. The next sections will address each construct separately, defining them and addressing how each of the indicator variables was measured in the survey instrument.

MEASUREMENT OF HYPOTHESES: CONSTRUCT DEFINITIONS

The survey instrument contains 37 questions designed to address the hypotheses set forth in this study. The survey was designed from several sources. Kwon & Wen (2010) employed a technology acceptance model (TAM) based instrument to measure perceived usefulness, perceived ease of use, and perceived encouragement, and those scales are used herein. PU refers to the degree to which the user believes that using the technology will improve his or her work performance.

TAM, the most widely applied model of user acceptance and usage, was adapted from the Theory of Reasoned Action. Perceived usefulness and perceived ease of use are two specific beliefs that, according to the TAM, determine one's behavioral intentions to use a technology, which has been linked to subsequent behavior. Masrom (2007) reported Cronbach alpha reliability of 0.89 for perceived ease of use (PEoU) and perceived usefulness (PU) in a technology acceptance model study on work-related tasks with e-learning. Kwon and Wen (2010) reported Cronbach alpha reliability of 0.90 for PEoU and 0.89 for PU in an empirical study of the factors affecting social network use.

Perceived ease of use (PEoU) refers to a person's perception of how effortless use of the technology will be. PEoU is a construct that is linked to an individual's assessment of the effort involved in the process of using the system. Perceived Encouragement (PE) refers to the organizational encouragement to participate that is important for affecting human performance. Kwon and Wen (2010) argue that expressing encouragement could be literal as well as verbal, and that encouragement is a critical consideration.

PIP is suggested by previous studies of behavioral intention, behavioral expectation and perceived productivity. The intra-organizational trust (IOT) measure is taken from Nakata et al (2008) to examine the trust workers in an organization have in one another that creates and nurtures social bonds and collaboration in social networking activities. In that study, Nakata et al (2008) reported Cronbach alpha reliability of .87 for intra-organizational trust. IOT is

included in this framework because researchers have consistently argued the necessity for trust in organizational effectiveness. Intra-organizational trust is a vital part of achieving collective receptivity to and exploitation of computer technologies. Intra-organizational trust is defined as the positive expectations that workers across the organization have about one another's abilities, actions, and motives. It consists of cognitive, affective, and moral dimensions and describes the perceived intent and behaviors of organizational members.

The participation (P) measure is developed based on reasonable goals and objectives of those who conduct social networking activities and on the research of Anderson and Harris (1997) in a statewide telecomputing network, measuring usage and cognitive gratifications. The researchers reported an alpha for usage of .75. The cognitive gratifications obtained alpha ranged from .74 for personal, .75 for professional and .88 for instructional. The measures of participation used herein are very similar to those used in the studies referenced above.

Questions on type of use were developed for this study based on desired outcomes of social networking and are intended to measure the ability to predict participation. Finally, demographics questions were developed for this study to define the population of interest.

Prior studies form the basis for perceived usefulness, perceived ease of use, perceived encouragement and intra-organizational trust. PIP is based in self perception in social networks. Participation is measured using an approach from research involving a statewide telecomputing network, while type of use is an

attempt to understand the way in which people do or do not participate. These are all latent variables.

Latent variables are hypothetical or theoretical constructs that cannot be observed directly. Because latent variables cannot be measured explicitly, they are inferred through observing or measuring specific features that operationally define them (e.g., tests, scales, self-reports, inventories or questionnaires). The methodology can also be used to test the plausibility of hypothetical assertions about potential interrelationships between constructs and their observed measures or indicators. Latent variables are hypothesized to be responsible for the outcome of observed measures. Researchers often use a number of indicators or observed variables to examine the influences of a theoretical factor or latent variable. Raykov & Marcoulides (2000) recommend using multiple indicators for each latent variable considered in order to obtain a more complete and reliable view of relationships than would be provided by a single indicator. This dissertation follows that recommendation by establishing seven latent variables, which are described below and are shown in the measurement models in Figures 7 and 8 in Chapter 4.

PERCEIVED USEFULNESS (PU)

Davis (1989) argued that perceived usefulness and perceived ease of use are fundamental determinants of user acceptance. Perceived usefulness refers to capabilities that reinforce good performance in various ways within an organizational context; these capabilities can be used advantageously. Therefore,

a system that is high in perceived usefulness reinforces the user's belief in the existence of a positive use-performance relationship.

This study uses the perceived usefulness (PU) scale from the Technology Acceptance Model (TAM) (F. D. Davis, 1989; F. D. Davis et al., 1989). PU refers to the degree to which the user believes that using the technology will improve his or her work performance. TAM, the most widely applied model of user acceptance and usage, was adapted from the Theory of Reasoned Action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). Perceived usefulness and perceived ease of use are two specific beliefs that, according to the TAM, determine one's behavioral intentions to use a technology, which has been linked to subsequent behavior (Venkatesh, 2000).

Four observed variables measure perceived usefulness, dealing with the way people acquire information, share information, communicate with others and interact in social networking (Kwon & Wen, 2010). The respondents were asked to select level of agreement from a seven-point scale ranging from "strongly disagree to strongly agree."

PERCEIVED IMPROVEMENT POTENTIAL (PIP)

This construct is based on a person's self-perception of effectiveness. PIP has a two-fold purpose; to predict a person's intention to behave in a certain way and to determine whether they will actually exhibit that behavior. PIP will be measured using a factor analysis of a set of 5 items regarding the respondents'

personal intentions and attitudes toward social networking: (1) personal quality of output, (2) work group quality of output, (3) performance in comparison to others, (4) assistance with high priority tasks, and (5) identification of available resources (e.g. personnel and materials). Respondents are asked to self-position on a 1 to 6 scale for each item that runs from “strongly disagree to strongly agree.”

There is no attempt to determine whether perceptions of improvement potential are based totally on the current environment or on anticipated or expected improvements to the current process. There is also no attempt to determine whether other constructs not addressed in this study actually contribute to PIP. Nevertheless, measuring PIP with these indicators is a procedure suggested by Passy and Giugni (2001), who factor analyzed a set of 10 items regarding respondents' personal priorities.

That analysis yielded two principal dimensions: one along a left/right values axis and one along a postmodern/modern value axis. Passy and Giugni (2001) noted that the resulting measure of individual effectiveness is somewhat problematic because they could not determine the direction of causality. However, in-depth interviews related to the research (Passy & Giugni, 2000, 2001) suggest that individual effectiveness was crucial to join the organization. They found that although the perception of individual effectiveness changes in the course of participation, the interviews indicate that a positive perception before getting involved in the social networking endeavor was a major

determinant of participation. This study examines those predictors through the lens of social networking.

PIP is measured with five observed variables that characterize the respondents' social networking activity by type: personal, work, comparison to others, task accomplishment, and resources available (Passy & Giugni, 2001). The six-point scale for each measure ranges from "least important to most important."

PERCEIVED EASE OF USE (PEOU)

Bandura (1989) argued the significance of perceived ease of use through extensive research, defining it in terms of people making judgments as to how well they can execute courses of action required to deal with prospective situations. Bandura also illustrated the significance of perceived ease of use to self-efficacy. Perceived ease of use (PEoU) refers to a person's perception of how effortless use of the technology will be. PEoU is a construct that is linked to an individual's assessment of the effort involved in the process of using the system (Masrom, 2007; Venkatesh, 2000).

Perceived ease of use is measured by three observed variables that ask about the capacity to learn, understand and adapt easily to the social networking activity (Kwon & Wen, 2010). The respondents were asked to select level of agreement on a seven-point scale from "strongly disagree to strongly agree."

PERCEIVED ENCOURAGEMENT (PE)

Perceived encouragement refers to the organizational encouragement to participate that is important for affecting human performance. Kwon and Wen argue that expressing encouragement could be literal as well as verbal, and that encouragement is perceptual. The way a person perceives the other's encouragement is a critical consideration.

Kwon and Wen (2010) argued that encouragement is a sort of intangible social support that provides a specific individual with psychological wellness. People can avoid negative stimuli or recover from undesired states based on perceived encouragement. The researchers focused on literal encouragement through a blogging concept, examining how people perceive others' encouraging expression and analyzing whether that distinction was more critical than how the person expressed his or her willingness to encourage a different person.

Perceived encouragement is a construct measured by four observed variables that seek to understand whether the organization encourages or discourages participation, whether there is an in-house social networking site, and whether the respondent participates in that site (Baltatzis et al., 2008; Kwon & Wen, 2010; Lurey & Raisinghani, 2001).

INTRA-ORGANIZATIONAL TRUST (IOT)

Trust is crucial to any social networking activity. Intra-organizational trust is the trust people in an organization have in one another that creates and

nurtures social bonds and collaboration in social networking activities. It is included in this framework because researchers have consistently argued its necessity for organizational effectiveness. Intra-organizational trust is a vital part of achieving collective receptivity to and exploitation of computer technologies (Barney, 1991; Dedrick et al., 2003; Kramer, 1996; Nakata et al., 2008). Intra-organizational trust is defined as the positive expectations that workers across the organization have about one another's abilities, actions, and motives. It consists of cognitive, affective, and moral dimensions and describes the perceived intent and behaviors of organizational members (Chowdhury, 2005; Hosmer, 1995; McAllister, 1995; Nakata et al., 2008).

Thirteen observed variables measure intra-organizational trust: member competence, values, skill, concern for each other, closeness of feeling, emotional attachment, fellowship, ethics, fairness, respect, trustworthiness, privacy and goals (Nakata et al., 2008; Shin, 2010). The seven-point scale ranges from "strongly disagree to strongly agree."

PARTICIPATION (PART)

Participation refers to the level, type and duration of a person's participation. An extensive search failed to find a published survey instrument that is a good fit for this inquiry. For that reason, questions on participation are based reasonably on goals and objectives relevant to any social networking endeavor. They are also based on the research of Anderson and Harris (1997) in

a statewide telecomputing network. To examine how individuals use media to satisfy their needs and achieve their goals, the researchers employed a uses and gratifications approach to focus on possibilities in terms of cognitive, interpersonal, utility and diversion. Usage is intended as a measure of how people perceive receiving benefits from, being successful with, or being adept at the social networking endeavor and of the extent to which they participate.

Usage focused on 11 items concerning the frequency of various types of use, and 3 items were used to estimate the average frequency with which they logged on, the length of their sessions, and the total amount of time they spent online over a two-week period (S. E. Anderson & Harris, 1997; Beresford, 2009). Eight items measured various types of use, asking participants to indicate the frequency with which they participated in online activities. The four response options ranged from "seldom or never" to "almost always."

Cognitive gratifications refer to an individual's desire for information, interpersonal utility gratifications reflect the individual's need to establish a "social location" in relation to others in society, and diversion gratifications include relief from boredom, entertainment, and arousal. Fifteen items measured gratification benefits resulting from online activities. The items asked respondents to indicate the degree to which they agreed with statements describing various aspects of use by selecting from a five-point scale ranging from "strongly agree" to "strongly disagree." Factor analysis was used to classify the 15 items into three categories of five items each.

In this dissertation, participation is measured by three observed variables that address the amount of use over the last seven days (S. E. Anderson & Harris, 1997). The survey also asked respondents about how they use social networking to stay in touch. Measures for this variable addressed gratification benefits resulting from online activities. Respondents were asked about three criteria: personally with family and friends, professionally within their organization, and professionally outside of their organization. Response choices were arranged on a 7-point Likert scale, coded such that, from 1 to 7, responses ranged from 1 which equals “never” to 7 which equals “always.” Participation items were indexed to create a score that ranged from 3 to 21. This score was then recoded into “low”, “medium”, and “high” categories, and then the variables were scaled into a “participation range” variable.

TYPE OF USE (TOU)

Questions on type of use were developed for this study based on the kind of goals and objectives that are typical in social networking activities. Type of use is measured with five observed variables presenting a characterization of the effectiveness in achieving goals of collecting, archiving, or sharing best practices, and improving services or communication via technology (S. E. Anderson & Harris, 1997). Respondents are asked to make choices on a seven-point scale based on their level of effectiveness in these areas.

DEMOGRAPHICS

Questions on demographics were developed for this study to define the population of interest. Respondents were asked to specify the type of position they hold: manager, professional/technical, clerical/support, or other. The survey also asked respondents to define the type of organization they work in: federal, state/provincial, county/regional, city/municipal, special district, education related, health related, or other.

The survey asked respondents for information on gender, year of birth, and race/ethnic background (White non-Hispanic, Black non-Hispanic, Asian, American Indian Alaskan Native, other). Respondents were asked to report their... age, race, etc. Respondents were asked where they live, with choices of Australia, Canada, United Kingdom, United States, or other. In terms of education, respondents were asked to choose from the following items:

- Did not complete high school or equivalent
- High School ("A" level, GCSE, Baccalaureate)
- Technical or Associates Degree
- College or University (Bachelor's Degree)
- Master's or Professional Degree
- Ph.D. (Doctorate)
- Other

The survey instrument is at Appendix A. Tables 1-3 show the elements of this instrument and the relevant survey items that make up each latent variable.

Column 1 gives the source reference for each construct and the Cronbach alpha score for this instrument. The Cronbach alpha for this study was computed from the data collected. Column 2 gives the measurement variable name that is used in the data analysis.

Table 1: SNIP Question Matrix

CONSTRUCT, SOURCE & CRONBACH ALPHA	VARIABLE	QUESTIONS	
Perceived Usefulness Kwon & Wen 2009 Cronbach Alpha 0.874	INFORM	1	Participating in social networking services enables me to acquire more information or meet more people.
	SHARE	2	Participating in social networking services improves my efficiency in sharing information and connecting with others.
	COMMUNICATE	3	Social networking services are useful for communication with colleagues from other organizations who might face similar issues and challenges.
	INTERACT	4	Social networking services are useful for interaction with colleagues from other organizations who might face similar issues and challenges.
Perceived Ease of Use Kwon & Wen 2009 Cronbach Alpha 0.930	LEARN	5	Learning to use social networking services is easy for me.
	UNDERSTAND	6	The process of participating in social networking services is clear and understandable to me.
	EASY	7	Social networking services easy to use.
Perceived Encouragement Kwon & Wen 2009; Baltatzis, Ormrod & Grainger; Lurey and Raisinghani (2001) Cronbach Alpha 0.544	ENCOURG	8	My organization encourages the use of social networking.
	ENCOURG2	9	My organization does not support the use of social networking.
	IN-HOUSE	25	Does your organization have an in-house social networking site?
	PARTICIPATE	26	Do you participate in your organization's in-house social networking site?
Perceived Improvement Potential Passy & Giugni 2001 Cronbach Alpha 0.666 with RESOURCES deleted 0.623 with all measures		27	Thinking about your participation in social networking services in general, please indicate the order of importance of each item.
	PERSONAL	A	a. Personal quality of output
	WORK	B	b. Work group quality of output
	COMPARE	C	c. Performance in comparison to others
	TASK	D	d. Assistance with high priority tasks
	RESOURCES (SPSS reported improved alpha if deleted)	E	e. Identification of available resources (e.g., personnel and materials)

Table 2: SNIP Question Matrix (Continued)

CONSTRUCT, SOURCE & CRONBACH ALPHA	VARIABLE	QUESTIONS	
Intra-organizational trust Nakata 2008 Cronbach Alpha 0.923	COMPTNT	10	Members of my social networking services are competent at their jobs.
	VALUES	11	Members of my social networking services uphold professional work values.
	SKILLED	12	Members of my social networking services are skilled and knowledgeable to do their work.
	CONCERN	13	Members of social networking services really care and are concerned for each other
	CLOSNESS	14	Members of my social networking services are close enough to freely share ideas, thoughts and feelings.
	EMOTION	15	Members of my social networking services invest emotionally in their work relationships.
	FELLOWSHIP	16	Members of my social networking services enjoy and like one another.
	ETHICAL	17	Members of my social networking services do what is right rather than what is expedient.
	FAIRNESS	18	Members of my social networking services deal with each other fairly and justly.
	RESPECT	19	Members of my social networking services treat one another with dignity and respect.
Intra-organizational trust Shin 2010	TRUSTWORTHY	20	My social networks are trustworthy.
	PRIVACY	21	I can count on my social networking services to protect my privacy.
	GOALS	22	My social networking services can be counted on to pursue its stated goals of collecting, sharing and archiving best practices among its members.
Participation Anderson & Harris 1997; Beresford White Paper Cronbach Alpha 0.68 excluding USAGE WITH USAGE 0.66	PERFORM	23	Participation in social networking services has a positive effect on my performance.
	USAGE (SPSS reported improved alpha if deleted)	24	During the past 7 days, how many hours have you spent participating in social networking services activities?
		24	0
		24	0.1 to 4
		24	4.1 to 8
		24	8.1 or more
		28	I use social networking sites to stay in touch ..
	GRATIFY	A	a. Personally with family and friends
	PROFIN	B	b. Professionally within my organization.
	PROFout	C	c Professionally outside of my organization
No Associated Variable	EFFECT1	29	What would make social networking more effective for achieving your personal and/or professional goals?

Table 3: SNIP Question Matrix (Continued)

CONSTRUCT, SOURCE & CRONBACH ALPHA	VARIABLE	QUESTIONS	
Type of Use Typical social networking services goals Cronbach Alpha 0.905		30	Thinking about your use of social networking services in general, how effective were you in achieving the stated goals of the social networking site?
	COLLECTBP	A	a. Collecting best practices
	ARCHIVEBP	B	b. Archiving best practices
	SHAREBP	C	c. Sharing best practices
	CITTECH	D	d. Improving citizen services via technology
	COMMTECH	E	e. Improving communication via technology
Demographics	DEMOGRAPHICS		Areas:
	POSITION	31	a. Nature of position
	ORGTTYPE	32	b. Type of organization
	SEX	33	c. Gender
	BIRTHYEAR	34	d. Birth year
	RACE_ETHNIC	35	e. Race/ethnic background
	COUNTRY	36	Where do you live?
		A	Australia
		C	Canada
		UK	United Kingdom
		US	United States
			Other
		37	Education

METHODOLOGY

This was an exploratory study employing a convenience sample from the population of government-employed members of social networking sites. The unit of analysis for this study is the individual. There are three sample groups that make up the total population for this study: government-employed people from MuniGov 2.0, GovLoop and LinkedIn. An online survey was sent separately to three groups, which together claim more than 40,000 members. The convenience sample consists of people who agreed to participate. The convenience sample facilitates examination of the nature of members' social networking use and analysis of determinants of adoption and participation.

The survey was conducted in an online solicitation of members for the purpose of this analysis. It was distributed through websites using e-mails and a total of 8 weekly reminders to maximize the survey's response rate (Dillman, 2000). The first three reminders were general messages on the MuniGov 2.0 system, and they had virtually no impact on the response rate. However, overall response rate improved when weekly reminders were sent using the GovLoop and LinkedIn blogs.

PROCEDURE

Prior to data collection, the Old Dominion University Institutional Review Board reviewed this study and approved its procedures. The target population consisted of three groups (MuniGov 2.0, GovLoop, and LinkedIn) which were

surveyed using the same instrument; however, invitations were extended through the three different websites.

MEASUREMENT DEVELOPMENT AND PILOT TESTING

Pilot testing was used in the preliminary stages of this research to assess validity and reliability. A focus group was conducted with 15 people from Booz Allen Hamilton, a private consulting firm that places a lot of emphasis on social networking. The participants had prior government service, either in the military or in Civil Service. Booz Allen Hamilton has an award-winning, internal social networking site and encourages employees to participate in social media of all types.

Focus group pilot testing of the survey instrument with members who have similar characteristics with the target population for the study provides valuable feedback about individuals' perceptions of the instrument, its usability, and the value of the information included. The data collected in the pilot testing focus group was used to make recommendations for revisions and improvements to the instrument.

Since the Social Networking and Improvement Potential instrument is only partially based on existing, validated constructs, the pilot test was conducted to assess the quality of the instrument. This approach is suggested by Gall et al (2005), who described the purpose of pilot testing as a means to "develop and try

out data collection methods and other procedures,” and argued that the approach should help to identify and solve problems with the survey instrument before the actual administration (Gall et al., 2005, p. 37).

All participants were volunteers. Prior to the start of the focus group, participants were informed that their feedback would be used to evaluate the survey instrument. They were also informed that no identifying information would be used in any documents that would be produced. Focus group participants were then asked to take the survey and to comment about the clarity of the instructions and average time required to complete it. Participants were also asked for their suggestions or comments to check for correct branching, sequencing of items and pages, and overall functionality.

A summary of their comments indicated that:

1. All respondents finished in 10 minutes or less.
2. 86% felt comfortable answering the questions.
3. 71% said the transitions in the survey were effective.
4. 57% said the survey instructions were clear.
5. 57% said all of the questions were clear.
6. 2 people said that question 1 should be two questions: Participating in social networking enables me to acquire more information or meet more people.
7. 1 person said that some questions were redundant: 3 & 4, 10 & 12, 13 & 15.
8. 1 person said that question 23 should ask whether performance is affected positively or negatively: Participation in social networking affects my performance.
9. 1 person said ranking the order of importance for question 27 was confusing.

Next, two items on the pilot test comment list were addressed. Question 1 (item 6), “Participating in social networking enables me to acquire more

information or meet more people,” was not changed because it was from a validated survey instrument (Kwon & Wen, 2010). Question 23 (item 8), “Participation in social networking affects my performance,” was reworded to ask a positive question: “Participation in social networking has a positive effect on my performance.” With this minor modification, the 37-item survey was final.

DATA ANALYSIS USING SEM

The suggested method for evaluation of the survey data is structural equation modeling (SEM), which has gained some popularity in psychology and the social sciences (J. C. Anderson & Gerbing, 1988). This type of confirmatory method can provide a comprehensive way for researchers to assess and modify theoretical models. Shipley (2000) demonstrates that SEM provides evaluation of a model to represent translations of hypothesized cause and effect relationships between variables into a composite hypothesis concerning patterns of statistical dependencies. Parameters indicate the magnitude of the effect (direct or indirect) that independent variables (either observed or latent) have on dependent variables (either observed or latent) as a description of the relationships. SEM offers researchers a comprehensive method for quantification and testing of theoretical models by enabling the translation of hypothesized relationships into testable mathematical models. The confirmatory aspect of SEM involves testing the proposed theoretical model (Tenko Raykov & Marcoulides, 2000). The exploratory aspect of SEM promotes theory development and often

involves repeated applications of the same data in order to explore potential relationships between variables of interest (either observed or latent).

SEM combines the benefits of both factor analysis and multiple regression (Alkadry, 2000). Hoyle (1995) argues that SEM is similar to correlation analysis, multiple regression and ANOVA in four specific ways. First, SEM is based on linear statistical models. Second, assumptions such as independence of observations and multivariate normality will have to be met. Third, there is no test of causality in SEM; it merely tests relations among different variables. Fourth, post-hoc adjustments to the SEM model require the same cross-validations that any other quantitative analysis tool would require.

The potential for in-depth examination and advancement of theory development suggest SEM is a sound choice for the proposed research because it allows testing for statistical conclusion validity (Cook & Campbell, 1979). SEM has more robust estimation methods than regression and it enables researchers to answer interrelated research questions in a single, systematic and comprehensive analysis. By combining analysis of the measurement and structural models, SEM enables measurement errors of the observed variables to be analyzed as an integral part of the model (Gefen et al., 2000). Further, Gefen (Gefen et al., 2000) argued that SEM is beneficial because it allows the factor analysis to be combined in one operation with the hypothesis testing.

A more rigorous analysis of the proposed research model is possible through the use of a better methodological assessment tool (Bollen, 1989;

Bullock et al., 1994; Jöreskog & Sörbom, 1983). SEM techniques also provide better information about the extent to which the research model is supported by the data than do regression techniques.

The process begins with an assessment of the fit of the measurement model. Once the fit is validated, the model paths are tested (S. E. Anderson & Harris, 1997). The process provides internal rules to help with understanding the implications involved for the variances and covariances of the variables. The researcher then tests whether the variances and covariances fit the model, and reports the results of the testing as well as parameter estimates and standard errors for the numerical coefficients in the linear equations. All of this information allows the researcher to determine whether the model fits well with the data.

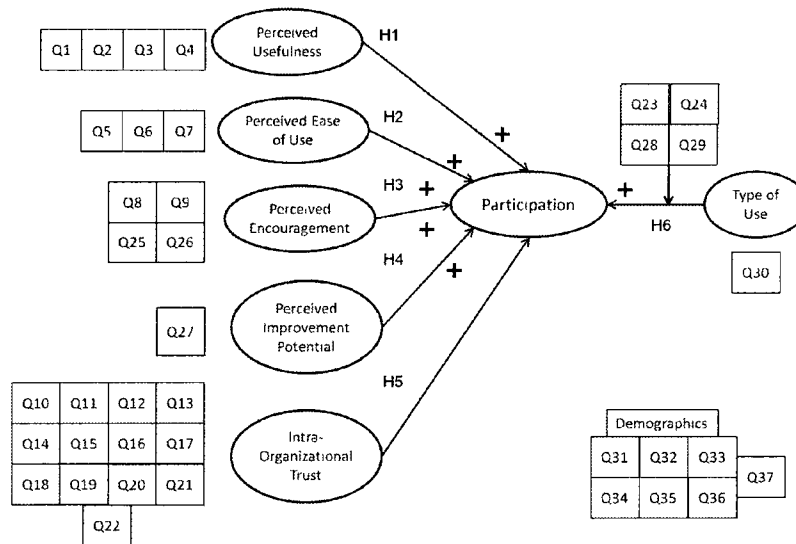
The results of this approach should reveal insights for further research in social networking and performance. The data collected will allow evaluation of predictor variables against several criteria, primarily to determine usability, participation and PIP.

RELIABILITY OF MEASURES

The model in Figure 5 illustrates the proposed relationships between participation and the latent variables perceived usefulness, perceived improvement potential (PIP), perceived ease of use, perceived encouragement, and intra-organizational trust. A sixth latent variable, type of use, was examined to measure its ability to predict participation. These constructs were

conceptually defined earlier in this paper. Factor loadings for each construct appear in Figure 5.

Figure 5: Social Networking & Individual Performance (SNIP) Factor Loadings



CHAPTER 4

DATA ANALYSIS

METHOD

This chapter discusses the methods used in the data analysis. It covers results and descriptive analyses. The measurement model will be examined, followed by presentation of the structural model. The steps identified earlier for the SEM methodology are used to present the statistical model. The characteristics of the survey population will be addressed, and then the descriptive data and underlying assumptions will be described. Findings and conclusions will be discussed in the next chapter.

SAMPLE

This was an exploratory study employing a convenience sample from the population of government-employed members of three different social networking sites. There are three sample groups that make up the population for this study: government-employed people from MuniGov 2.0, GovLoop and LinkedIn. An online survey was sent separately to three groups, which together estimate more than 40,000 members. The convenience sample consists of people who agreed to participate.

Initially, data collection proved to be problematic. After a long search for a population to study, MuniGov 2.0 agreed to allow a survey among its members. That population, however, did not provide an adequate number of responses to

conduct the research. One of MuniGov's leaders suggested that I could get better response rate by including GovLoop and LinkedIn military groups. My committee approved expanding the population to include three inherently governmental groups. A detailed explanation of the process follows.

To get the survey started, a MuniGov 2.0 leader sent an e-mail invitation in mid November (see Appendix B) to the membership explaining the purpose of the survey along with the survey URL. MuniGov 2.0 reported that it had more than 600 members; however, responses were very slow. I sent a reminder two weeks later, and the leader sent a reminder four weeks later. I followed with an e-mail two days later. Those actions netted only 39 participants. The MuniGov 2.0 leader suggested I try GovLoop and LinkedIn to get more survey responses. He then facilitated a meeting for me with the president of GovLoop, which reports that it has more than 40,000 members.

About four weeks after the MuniGov 2.0 inquiry, GovLoop's president sent a request to his community to assist in the research. It read: "A grad student from Old Dominion University is working on a dissertation relevant to social media use in government. His info would be greatly improved by our participation in a brief survey. Would you help him out?" I followed that with several blogs offering an incentive to participate. Those who complete the survey could register to win one of several cash gift cards of \$50 or \$10. I posted 8 blogs over the next six weeks, which were often featured on the front page of GovLoop

Weekly, the organization's online publication. This approach resulted in 108 participants.

GovLoop includes among its membership a MuniGov 2.0 site, and it also has memberships from LinkedIn members. Those relationships led me to also include LinkedIn as my MuniGov 2.0 colleague suggested. To increase responses further, I sent an invitation through LinkedIn to military members belonging to two groups: DINFOS Trained Killers and Military Public Affairs Specialists. This invitation went out 6 weeks after the initial MuniGov 2.0 e-mail. This group was also offered an incentive to win one of several cash gift cards of \$50 or \$10. That note is included at Appendix C. This approach resulted in 44 responses.

The data collection continued for about three months (84 days) before being closed. There was virtually no activity in terms of completing the survey for the last two weeks it was open.

This type of convenience sampling is not unusual in structural equation modeling studies with small samples, according to Hoyle (1995). In a 2009 study on communications patterns, network positions and social dynamics factors, the final N for this group was 49. The author argued that using this approach for experimental comparisons does not require as many subjects as exploratory model building (Hoyle, 1995).

The convenience sample includes a total of 191 government-employed people from the three groups. This sample is small. The concern here is that

small samples do not normally provide an accurate representation of the entire population and they may increase sampling error. This is basic sampling knowledge; however, several studies point to instances where researchers can effectively use small samples.

The maximum likelihood (ML) method with SEM was used in a study on the impact of infusing social presence in the web interface (Hassanein & Head, 2005). ML often has lower variance than is found in other methods, so it is frequently the method least affected by sampling error. the most robust approach to the violation of normality assumptions (Alkadry, 2000). The sample of 191 is considered adequate for testing in ML analysis (Gorsuch, 1983; Jöreskog & Sörbom, 1983), so it is used to test the measurement model.

Demographic information. In terms of sample characteristics, more than half of respondents (55.6%) were female. The median age of respondents is 47, ranging from 22 to 73 years of age. The respondents were overwhelmingly White non-Hispanic (85.2%), with the only other significant group being Black non-Hispanic (11.6%). More than half of respondents (51.6%) have a master's or professional degree, while 34.2%, 7.5%, 3.1%, respectively, have bachelors, PhD/doctorate, or associate's degrees.

Most of the respondents (59.3%) hold professional or technical positions. Twenty-nine percent are managers and 3.1% are in clerical or support positions. Of the survey respondents, 40.6%, 16.3%, 8.1%, 6.9%, 6.3%, 2.5% and 0.6%, respectively, work for federal government, city/municipal, state/provincial,

education-related, county/regional, health-related, and special district organizations.

Respondents were asked to specify their position and the type of organization they work in. Demographic data collected also includes country of residence and education. The purpose of collecting this data was to control for possible effects of geographic differences in some areas. Because the survey did not find many respondents in countries other than the United States, there was no further analysis of this variable. Table 4 provides more information about the demographic characteristics of the sample.

Table 4: Demographics

Variable		N	Percentage
Sex		(191)	
	Male	71	44.4
	Female	89	55.6
Origin		(191)	
	MuniGov 2.0	39	20.4
	Linked-In	44	23
	GovLoop	108	56.5
Race		(155)	
	White Non-Hispanic	132	85.2
	Black Non-Hispanic	18	11.6
	Hispanic	1	0.6
	Asian	3	1.9
	American Indian or Alaskan Native	1	0.6
Position		(162)	
	Manager	47	29.0
	Professional/Technical	96	59.3
	Clerical/Support	5	3.1
	Other	14	8.6
Country		(162)	
	Australia	1	0.6
	Canada	2	1.2
	United Kingdom	1	0.6
	United States	158	97.5
Organization Type		160	
	Federal	65	40.6
	State/Provincial	13	8.1
	County/Regional	10	6.3
	City/Municipal	26	16.3
	Special District	1	0.6
	Education-related	11	6.9
	Health-related	4	2.5
	Other	30	18.8
Education		161	
	Some College	5	3.1
	Technical Degree	1	0.6
	Associates Degree	5	3.1
	College or University (BA/BS)	55	34.2
	Master's or Professional Degree	83	51.6
	PhD (Doctorate)	12	7.5
Age		n=156	
		Mean = 46.42	
		Median = 47	
		Range = 22 - 73	
		S.D. = 11.42	

Perceived usefulness, perceived ease of use, and perceived encouragement have been used in previous studies and have acceptable reliabilities. There is no established reliability for this study's measures of perceived improvement potential, intra-organizational trust, type of use, and participation. A more detailed description of each scale used in this study appears below. Appendix A contains the full details of survey items.

Perceived usefulness. Perceived usefulness and perceived ease of use are fundamental determinants of user acceptance (F. D. Davis, 1989). These measures determine one's behavioral intentions to use a technology, which has been linked to subsequent behavior (Venkatesh, 2000). Perceived usefulness refers to the degree to which the user believes that using the technology will improve his or her work performance (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). Perceived usefulness is measured using four items. Each item uses a seven-point response scale. Kwon and Wen (2010) report a Cronbach alpha value of 0.89 for this measure. The composite reliability for the scale in this study is 0.874, and descriptive data are in Table 5.

Table 5: Perceived Usefulness

Latent Variable	Q#	Question	VALID N	%	MEAN	MEDIAN
Perceived Usefulness	1.	Participating in social networking services enables me to acquire more information or meet more people.	191		5.7487	6.0000
		Strongly Disagree		2.1		
		Disagree		2.1		
		Slightly Disagree		9.4		
		Neutral		16.8		
		Slightly Agree		44.5		
		Agree		25.1		
	2.	Participating in social networking services improves my efficiency in sharing information and connecting with others.	191		5.4293	6.0000
		Strongly Disagree		.5		
		Disagree		2.6		
		Slightly Disagree		3.1		
		Neutral		16.8		
		Slightly Agree		22.0		
		Agree		34.0		
		Strongly Agree		20.9		
	3.	Social networking services are useful for communication with colleagues from other organizations who might face similar issues and challenges.	186		5.6613	6.0000
		Strongly Disagree		0		
		Disagree		3.1		
		Slightly Disagree		3.1		
		Neutral		7.9		
		Slightly Agree		17.3		
		Agree		44.0		
		Strongly Agree		22.0		
	4.	Social networking services are useful for interaction with colleagues from other organizations who might face similar issues and challenges.	188		5.4362	6.0000
		Strongly Disagree		.5		
		Disagree		2.1		
		Slightly Disagree		4.7		
		Neutral		12.6		
	Slightly Agree		21.5			
	Agree		40.8			
	Strongly Agree		16.2			

Perceived ease of use. Perceived ease of use (Bandura, 1989) refers to people's judgments as to how well they can execute courses of action required to deal with prospective situations. Bandura also illustrated the significance of perceived ease of use to self-efficacy. It affects a person's perception of how effortlessly one can use the technology. Perceived ease of use is measured using three items with seven-point response scales. Kwon and Wen (2010) report a Cronbach alpha of 0.90 for this measure. The composite reliability of this scale in this study is 0.930, and descriptive data is provided in Table 5.

Table 6: Perceived Ease of Use

Latent Variable	Q#	Question	VALID N	%	MEAN	MEDIAN
Perceived Ease of Use	5.	Learning to use social networking services is easy for me.	191		5.4712	6.0000
		Strongly Disagree		0		
		Disagree		1.0		
		Slightly Disagree		9.4		
		Neutral		9.4		
		Slightly Agree		18.3		
		Agree		45.0		
		Strongly Agree		16.8		
	6.	The process of participating in social networking services is clear and understandable to me.	191		5.3717	6.0000
		Strongly Disagree		0		
		Disagree		2.1		
		Slightly Disagree		9.4		
		Neutral		12.6		
		Slightly Agree		17.8		
		Agree		41.4		
		Strongly Agree		16.8		
	7.	Social networking services easy to use.	189		5.4074	6.0000
		Strongly Disagree		0		
		Disagree		.5		
		Slightly Disagree		8.4		
		Neutral		12.6		
	Slightly Agree		20.9			
	Agree		41.9			
	Strongly Agree		14.7			

Perceived encouragement. Perceived encouragement refers to the organizational encouragement to participate that is important for affecting human performance. Kwon and Wen argue that expressing encouragement could be literal as well as verbal, and that encouragement is perceptual. The way a person perceives the other's encouragement is a critical consideration.

Perceived encouragement was measured using four questions. "My organization encourages the use of social networking" used a seven-point scale. The seven-point scale was also used for the question "My organization does not support the use of social networking." Questions regarding whether a respondent's organization has an in-house social networking site, and whether they participate in that site, both required yes/no answers. The composite reliability for the scale in this study was 0.544, which does not meet the minimum requirements of reliability. The descriptive data is still provided in Table 7.

Table 7: Perceived Encouragement

Latent Variable	Q#	Question	VALID N	%	MEAN	MEDIAN
Perceived Encouragement	8.	My organization encourages the use of social networking.	187		4.6364	5.0000
		Strongly Disagree		5.2		
		Disagree		9.4		
		Slightly Disagree		12.6		
		Neutral		15.7		
		Slightly Agree		19.4		
		Agree		16.8		
		Strongly Agree		18.8		
	9.	My organization does not support the use of social networking.	190		4.7737	5.0000
		Strongly Disagree		7.9		
		Disagree		8.4		
		Slightly Disagree		9.4		
		Neutral		13.6		
		Slightly Agree		16.2		
		Agree		21.5		
		Strongly Agree		22.5		
	25.	Does your organization have an in-house social networking site?	191		1.5707	2.0000
		Yes		42.9		
		No		57.1		
	26.	Do you participate in your organization's in-house social networking site?	70		1.0857	1.0000
		Yes		33.5		
	No		3.1			

Perceived improvement potential (PIP). PIP is based on a person's self-perception of effectiveness. PIP has a two-fold purpose; to predict a person's intention to behave in a certain way and to determine whether they will actually exhibit that behavior. The construct was measured using a factor analysis of a set of items regarding the respondents' personal intentions and attitudes toward social networking, and the respondents were asked to self-position on a 1 to 6 scale for each item. Measuring PIP with this factor analysis is a procedure suggested by Passy and Giugni (2001), who factor analyzed a set of 10 items

regarding respondents' personal priorities. They found that although the perception of individual effectiveness changes in the course of participation, the interviews indicate that a positive perception before getting involved in the social networking endeavor was a major determinant of participation. PIP is measured using one question with five criteria. Each criterion has a seven-point response scale. There is no survey instrument that establishes this measure; however, studies on behavioral intention, behavioral expectation, and perceived productivity (Passy & Giugni, 2001) suggest the current approach. Composite reliability for the scale in this study was 0.628. The reliability of this scale is consistent with Hair et al (2006) who found that an alpha score greater than 0.60 is acceptable for exploratory research. The descriptive data are in the Table 8.

Table 8: Perceived Improvement Potential (PIP)

Latent Variable	Q#	Question	VALID N	%	MEAN	MEDIAN
Perceived Improvement Potential	27.	Thinking about your participation in social networking services in general, please indicate the order of importance of each item.				
	a.	Personal quality of output	151		3.9801	4.0000
		1. Least Important		6.3		
		2		6.3		
		3		15.2		
		4		17.3		
		5		23.0		
		6. Most Important		11.0		
	b.	Work group quality of output	150		3.8133	4.0000
		1. Least Important		6.8		
		2		4.7		
		3		21.5		
		4		17.8		
		5		18.8		
		6. Most Important		8.9		
	c.	Performance in comparison to others	149		3.1007	3.0000
		1. Least Important		15.2		
		2		14.7		
		3		15.2		
		4		17.3		
		5		11.5		
		6. Most Important		4.2		
	d.	Assistance with high priority tasks	151		3.9934	4.0000
		1. Least Important		6.8		
		2		5.8		
		3		12.0		
		4		18.8		
		5		27.7		
		6. Most Important		7.9		
	e.	Identification of available resources (e.g., personnel and materials)	153		4.6275	5.0000
		1. Least Important		4.2		
	2		5.8			
	3		8.9			
	4		9.9			
	5		19.4			
	6. Most Important		31.9			

Intra-organizational trust. Trust is crucial to any social networking activity. Intra-organizational trust is the trust people in an organization have in one another that creates and nurtures social bonds and collaboration in social networking activities. Intra-organizational trust is a vital part of achieving collective receptivity to and exploitation of computer technologies (Barney, 1991; Dedrick et al., 2003; Kramer, 1996; Nakata et al., 2008). It consists of cognitive, affective, and moral dimensions and describes the perceived intent and behaviors of organizational members (Chowdhury, 2005; Hosmer, 1995; McAllister, 1995; Nakata et al., 2008). Intra-organizational trust was measured using 13 questions, each with a seven-point scale. Nakata et al (2008) report a Cronbach alpha reliability of 0.87. The composite reliability for the scale in this study is 0.923. Descriptive data are in Table 9.

Table 9: Intra-Organizational Trust

Latent Variable	Q#	Question	VALID N	%	MEAN	MEDIAN
Intra-organizational trust	10.	Members of my social networking services are competent at their jobs.	191		5.1571	5.0000
		Strongly Disagree		0		
		Disagree		0		
		Slightly Disagree		0		
		Neutral		43.5		
		Slightly Agree		7.9		
		Agree		38.2		
	Strongly Agree		10.5			

Table 9: Intra-Organizational Trust (Continued)

Latent Variable	Q#	Question	VALID N	%	MEAN	MEDIAN
Intra-Organizational Trust	11.	Members of my social networking services uphold professional work values.	191		5.4084	6.0000
		Strongly Disagree		0		
		Disagree		0		
		Slightly Disagree		1.0		
		Neutral		29.3		
		Slightly Agree		9.9		
		Agree		47.1		
		Strongly Agree		12.6		
	12.	Members of my social networking services are skilled and knowledgeable to do their work.	191		5.3717	6.0000
		Strongly Disagree		0		
		Disagree		0		
		Slightly Disagree		1.0		
		Neutral		31.4		
		Slightly Agree		10.5		
		Agree		43.5		
		Strongly Agree		13.6		
	13.	Members of social networking services really care and are concerned for each other.	191		5.1099	5.0000
		Strongly Disagree		0		
		Disagree		1.0		
		Slightly Disagree		1.6		
		Neutral		37.2		
		Slightly Agree		17.3		
		Agree		31.4		
		Strongly Agree		11.5		
	14.	Members of my social networking services are close enough to freely share ideas, thoughts and feelings.	191		5.6335	6.0000
		Strongly Disagree		0		
		Disagree		.5		
		Slightly Disagree		2.6		
		Neutral		13.1		
		Slightly Agree		17.8		
		Agree		48.7		
		Strongly Agree		17.3		

Table 9: Intra-Organizational Trust (Continued)

Latent Variable	Q#	Question	VALID N	%	MEAN	MEDIAN
Intra-Organizational Trust	15.	Members of my social networking services invest emotionally in their work relationships.	191		4.8220	4.0000
		Strongly Disagree		0		
		Disagree		.5		
		Slightly Disagree		4.2		
		Neutral		48.7		
		Slightly Agree		14.1		
		Agree		24.1		
		Strongly Agree		8.4		
	16.	Members of my social networking services enjoy and like one another.	191		5.0000	5.0000
		Strongly Disagree		0		
		Disagree		0		
		Slightly Disagree		0		
		Neutral		45.5		
		Slightly Agree		14.1		
		Agree		35.1		
		Strongly Agree		5.2		
	17.	Members of my social networking services do what is right rather than what is expedient.	191		4.6492	4.0000
		Strongly Disagree		0		
		Disagree		1.0		
		Slightly Disagree		3.1		
		Neutral		57.6		
		Slightly Agree		10.5		
		Agree		23.6		
		Strongly Agree		4.2		
	18.	Members of my social networking services deal with each other fairly and justly.	191		5.1780	5.0000
	Strongly Disagree		0			
	Disagree		0			
	Slightly Disagree		1.0			
	Neutral		37.2			
	Slightly Agree		15.2			
	Agree		36.1			
	Strongly Agree		10.5			

Table 9: Intra-Organizational Trust (Continued)

Latent Variable	Q#	Question	VALID N	%	MEAN	MEDIAN
Intra-Organizational Trust	19.	Members of my social networking services treat one another with dignity and respect.	191		5.4660	6.0000
		Strongly Disagree		0		
		Disagree		0		
		Slightly Disagree		2.1		
		Neutral		23.0		
		Slightly Agree		15.2		
		Agree		45.5		
		Strongly Agree		14.1		
	20.	My social networks are trustworthy.	191		5.4031	6.0000
		Strongly Disagree		.5		
		Disagree		2.6		
		Slightly Disagree		2.6		
		Neutral		19.9		
		Slightly Agree		16.8		
		Agree		39.8		
		Strongly Agree		17.8		
	21.	I can count on my social networking services to protect my privacy.	191		4.6545	5.0000
		Strongly Disagree		2.6		
		Disagree		5.2		
		Slightly Disagree		8.4		
		Neutral		32.5		
		Slightly Agree		17.8		
		Agree		26.2		
		Strongly Agree		7.3		
22.	My social networking services can be counted on to pursue its stated goals of collecting, sharing and archiving best practices among its members.	191		5.2670	6.0000	
	Strongly Disagree		1.0			
	Disagree		3.1			
	Slightly Disagree		4.2			
	Neutral		18.3			
	Slightly Agree		18.8			
	Agree		41.9			
	Strongly Agree		12.6			

Type of use. Questions on type of use were developed for this study based on the kind of goals and objectives that are typical in social networking activities. Type of use is measured using one question with five criteria. Each criterion has a seven-point response scale. There is no survey instrument that establishes this measure; however, questions were developed based on the kind of goals and objectives that are typical in social networking activities. The composite reliability for the scale in this study is 0.905, and descriptive data are provided in Table 10.

Table 10: Type of Use

Latent Variable	Q#	Question	VALID N	%	MEAN	MEDIAN
Type of Use	30	Thinking about your use of social networking services in general, how effective were you in achieving the stated goals of the social networking site?				
		COLLECTBP	162		3.8889	4.0000
		Highly ineffective		1.6		
		Ineffective		4.2		
		Neutral		23.6		
		Effective		35.1		
		Highly effective		13.6		
		Don't know		6.8		
		ARCHIVEBP	162		3.6543	3.0000
		Highly ineffective		2.1		
		Ineffective		6.8		
		Neutral		35.1		
		Effective		23.6		
		Highly effective		8.9		
		Don't know		8.4		
		SHAREBP	162		3.9506	4.0000
		Highly ineffective		1.0		
		Ineffective		4.2		
		Neutral		25.7		
		Effective		28.3		
		Highly effective		18.3		
		Don't know		7.3		
		CITTECH	162		3.7346	4.0000
		Highly ineffective		1.0		
		Ineffective		6.3		
		Neutral		34.0		
		Effective		26.7		
		Highly effective		6.3		
		Don't know		10.5		
		COMMTECH	162		4.1420	4.0000
Highly ineffective		.5				
Ineffective		2.6				
Neutral		17.8				
Effective		33.0				
Highly effective		25.1				
Don't know		5.8				

Participation. Participation is about a characterization of a person's use. It was measured by asking respondents about the number of hours they have participated in the past seven days, and then by questions about how they use social networking to stay in touch personally or professionally. Participation is measured using one question addressing gratification benefits resulting from online activities. The question asks respondents to rank how they stay in touch with social networking based on three criteria: personally with family and friends, professionally within their organization, and professionally outside of their organization. Each of the criteria uses a seven-point response scale. There is no survey instrument that establishes this measure; however, the scale is based on the research of Anderson and Harris (1997). The researchers employed a uses and gratifications approach to focus on possibilities in terms of cognitive, interpersonal, utility and diversion. Composite reliability for the scale in this study was 0.68. The reliability of this scale is consistent with Hair et al (2006) who found that an alpha score greater than 0.60 is acceptable for exploratory research. Descriptive data are provided in Table 11.

Table 11: Participation

Latent Variable	Q#	Question	VALID N	%	MEAN	MEDIAN
Participation	23.	Participation in social networking services has a positive effect on my performance	187		5.0321	5.0000
		Strongly Disagree		2.1		
		Disagree		1.6		
		Slightly Disagree		4.2		
		Neutral		27.7		
		Slightly Agree		20.9		
		Agree		30.4		
		Strongly Agree		11.0		
	24.	During the past 7 days, how many hours have you spent participating in social networking services activities?	191		5.05	2.00
	a.	0		6.3		
	b.	0.1 to 4		63.9		
	c.	4.1 to 8		9.9		
	d.	8.1 or more		19.9		
	28.	I use social networking sites to stay in touch...				
	a.	Personally with family and friends.	160		5.1813	6.0000
		1. Never		7.3		
		2		6.3		
		3		4.2		
		4		6.8		
		5		8.4		
		6		23.0		
		7. Always		27.7		
	b.	Professionally within my organization.	159		3.7862	4.0000
		1. Never		13.1		
		2		13.6		
		3		11.0		
		4		11.5		
		5		15.2		
	6		12.0			
	7. Always		6.8			
c.	Professionally outside of my organization.	161		4.8758	5.0000	
	1. Never		4.7			
	2		7.9			
	3		5.8			
	4		11.5			
	5		15.7			
	6		22.5			
	7. Always		16.2			

Summed scales were created to examine the means of each of these scores (Table 12). Details of the summed scores for perceived usefulness (PU), perceived ease of use (PEOU), perceived improvement potential (PIP), intra-organizational trust (IOT), type of use (TOU) and participation (PART) are in the table below. There is no summed score for perceived encouragement (PE) due to its unacceptable alpha (0.544).

Table 12: Summed Scores

		PU SCORE	PEOU SCORE	PIP SCORE	IOT SCORE	TOU SCORE	PART SCORE
	Range	21	15	25	48	25	18
GovLoop	Mean	21.71	16.36	14.52	67.27	19.25	13.89
	SD	4.47	3.37	4.17	10.75	4.72	4.62
MuniGov 2.0	Mean	22.78	15.66	15.36	70.37	21.18	12.85
	SD	3.47	3.41	3.86	9.32	4.42	4.61
LinkedIn	Mean	22.95	16.48	15.27	63.93	18.08	14.45
	SD	3.56	3.60	3.97	10.60	4.17	3.92

Group differences. The three groups were treated as one for the data collection and analysis effort. That required analyzing between-group differences in the sample by comparing means using analysis of variance (ANOVA). ANOVA testing examines associations between variables to determine whether or not differences in means between groups are statistically significant or, in other words, are they due to more than chance. This provides a measure of the statistical significance of associations between variables; however, it does not indicate direction or strength.

The ANOVA showed statistically significant differences between MuniGov 2.0 and LinkedIn respondents, but only for the latent variables intra-organizational trust and type of use. However, the mean differences in each case are less than one standard deviation from the mean for all three samples treated as one group. The mean differences in each case are also less than one standard deviation from means based on origin, which is a variable that specifies which website the respondent belongs to.

The study used three different groups due to the difficulty of adequate responses to arrive at an acceptable sample size, details of which were explained earlier in this chapter. The mean for MuniGov 2.0 was 70.30, which was statistically significant for both intra-organizational trust and for type of use in the ANOVA results. The standard deviation for intra-organizational trust is 10.60, so the mean difference is only 6.38. Thus, the mean differences (which were calculated through a post-hoc Bonferroni statistic) are statistically significant but rather small. The mean for LinkedIn was 63.93, and the standard deviation was 4.62, and the mean difference was 3.10. Therefore, while MuniGov 2.0 and LinkedIn both showed statistically significant differences, those differences are less than one standard deviation from the mean of GovLoop and from the mean of the three groups examined as one. Given the small mean differences across the three groups, and the fact that all group differences were within one standard deviation of the population mean, these three groups are treated as one sample in this study. Table 13 displays mean difference

information for the three groups with respect to the latent variables that showed statistically significant mean differences in the ANOVA.

Table 13: Intra-Organizational Trust & Type of Use Mean Difference

Variable	(I) Website Origin	(J) Website Origin	Mean Difference (I-J)	Std. Error	Sig.
IOTSCORE	Linked-In	GovLoop	-3.33670	1.86770	.227
		MuniGov2.0	-6.37587*	2.29669	.018
	GovLoop	Linked-In	3.33670	1.86770	.227
		MuniGov2.0	-3.03917	1.95091	.363
	MuniGov2.0	Linked-In	6.37587*	2.29669	.018
		GovLoop	3.03917	1.95091	.363
ToUSCORE	Linked-In	GovLoop	-1.17380	.87575	.546
		MuniGov2.0	-3.10287*	1.07890	.014
	GovLoop	Linked-In	1.17380	.87575	.546
		MuniGov2.0	-1.92907	.92137	.114
	MuniGov2.0	Linked-In	3.10287*	1.07890	.014
		GovLoop	1.92907	.92137	.114

*. The mean difference is significant at the 0.05 level.

DATA ANALYSIS OVERVIEW

This study used a measurement model, structural model, and resulting fit indices to examine the hypothesized model and relationships. Each facet of this analytic procedure is described below.

Reliability. Composite reliability is often preferred over Cronbach's alpha, the traditional way of calculating reliability. Composite reliability gives a better indication of internal consistency by taking into account the possibility that indicators may have different factor loadings and error variances (Devellis, 1991; T. Raykov, 1997; Wert et al., 1974).

The SEM program used for this research is AMOS, which allows the entry of raw data directly into the system. SEM is based on covariance matrices, so correlation matrices are only used in conjunction with standard deviations. This study used the correlation matrix.

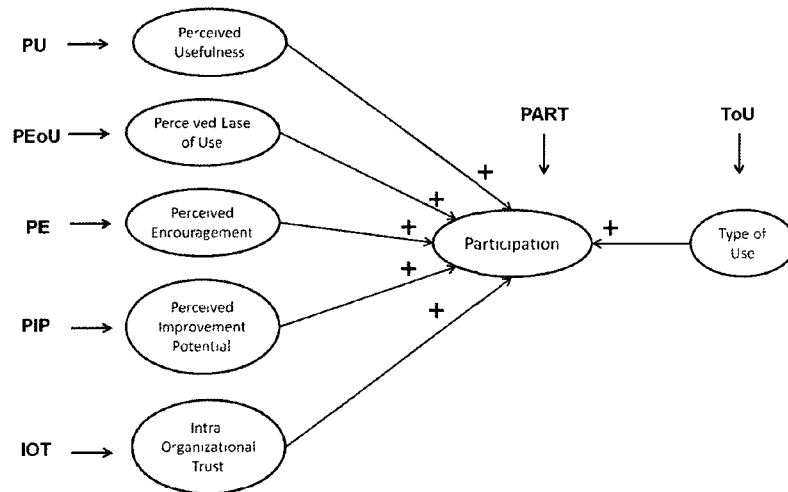
Measurement model. AMOS testing of the hypotheses allows for simultaneous identification of latent variables and structural equation coefficients. This method is recommended because the measurement model serves as a foundation for subsequent testing of the structural model.

The maximum likelihood estimation method, the most robust approach to the violation of normality assumptions (Alkadry, 2000), is used in this study. While there is a risk of inadequate model specification, the method is most appropriate in this instance. The key is model fit, which is related to data, model, and estimation methodology. After model convergence, it is recommended to use the goodness of fit index to assess the model. A model achieves fit when the predicted values for the covariance matrix of the observed data do not diverge much from the observed values.

Structural model. AMOS was used to test the proposed model (Figure 6) to allow the simultaneous evaluation of the relationship among independent and dependent latent variables. AMOS then allows estimation of the goodness of fit of the structural model. Regression coefficients for each hypothesized relationship among latent variables are also possible in AMOS. Significance levels of individual parameter estimates for paths in the model were determined using the

r distribution. A path with a t-value greater than 2.00 is considered significant at $p < .05$. Several goodness of fit indices were used to assess model fit.

Figure 6: Measurement Variables



Fit indices. Given the relatively small sample size in this study ($N = 191$), it is most appropriate to use fit indices that are independent of sample size. The chi-square statistic measures the distance between the covariance matrix generated from sample data and the covariance matrix created based on the specified theoretical model. A non-significant chi-square indicates a good fit, thus indicating little difference between the sample variance-covariance matrix and the reproduced covariance matrix implied by the specified theoretical model. Four other fit indices were also used to assess model fit: normed index of fit, incremental fit index, comparable fit index, and root mean square error of

approximation. Six types of fit indices were evaluated by Hu, Bentler and Kano (1992). Marsh (1990) and Hu and Bentler (1995) also summarize the results of their assessment of the different fit indexes. Consistent with the recommendations of these authors, four goodness-of-fit indexes are used in this dissertation.

The Bentler-Bonett Normed Fit Index (NFI) indicates the proportion in the improvement of the overall fit of the model relative to a null model, which is typically the independence model. The independence model is one in which all variables are assumed to be uncorrelated. An NFI of .80 means that based on the sample data, the overall fit of the tested model is 80 percent better than that of an independence model. The incremental fit index, also known as Bollen's IFI, is relatively insensitive to sample size. Values that exceed .90 are regarded as acceptable, although this index can exceed 1. The Bentler Comparative Fit Index (CFI) can be interpreted in the same way, but is less affected by sample size. For the NFI and CFI, values greater than 0.9 are considered well-fitting.

Root Mean Square Error of Approximation (RMS or RMSEA) is a standardized summary of the average covariance residuals. Covariance residuals are the differences between the observed and model-implied covariances. The standardized root mean square residual (SRMR) equals zero when the model is perfect. Instead of SRMR, SPSS Amos reports p of Close Fit (PCLOSE). The null hypothesis is that the RMSEA is .05, a close-fitting model. The p value examines the alternative hypothesis that the RMSEA is greater than .05. So if the p is greater than .05, then it is concluded that the fit of the model is "close." The value

of the RMSEA increases as the average discrepancy between the observed and predicted covariances increases. A RMSEA value of .05 or less would normally indicate a close fit of the model in relation to the degrees of freedom.

RESULTS

DESCRIPTIVE ANALYSES

Descriptive data for latent variables and demographics were provided earlier in this chapter. In addition, kurtosis and skewness data are presented in Appendix E as a way to further understand the univariate and multivariate distribution of data. All kurtosis and skewness figures are significant at the $p < .05$ level or better. A skewness value of ± 2.0 is considered to be acceptable, while positive kurtosis requires a value greater than 3.0 (Kline, 2005). All assumptions of normality are met. There are no indications of multicollinearity problems as illustrated in Appendix C.

TEST OF THE HYPOTHESIZED MODEL

A two-stage strategy was used for data analysis in this dissertation. Confirmatory factor analysis was first used to assess fit of the measurement model and then was used to assess fit of the structural model.

Analysis of fit of the measurement model. Maximum likelihood confirmatory factor analysis was conducted prior to analysis of the structural model. Results of the confirmatory factor analyses are shown in Figure 7.

Figure 7: Measurement Model - PU, PEoU, PIP, IOT, PE

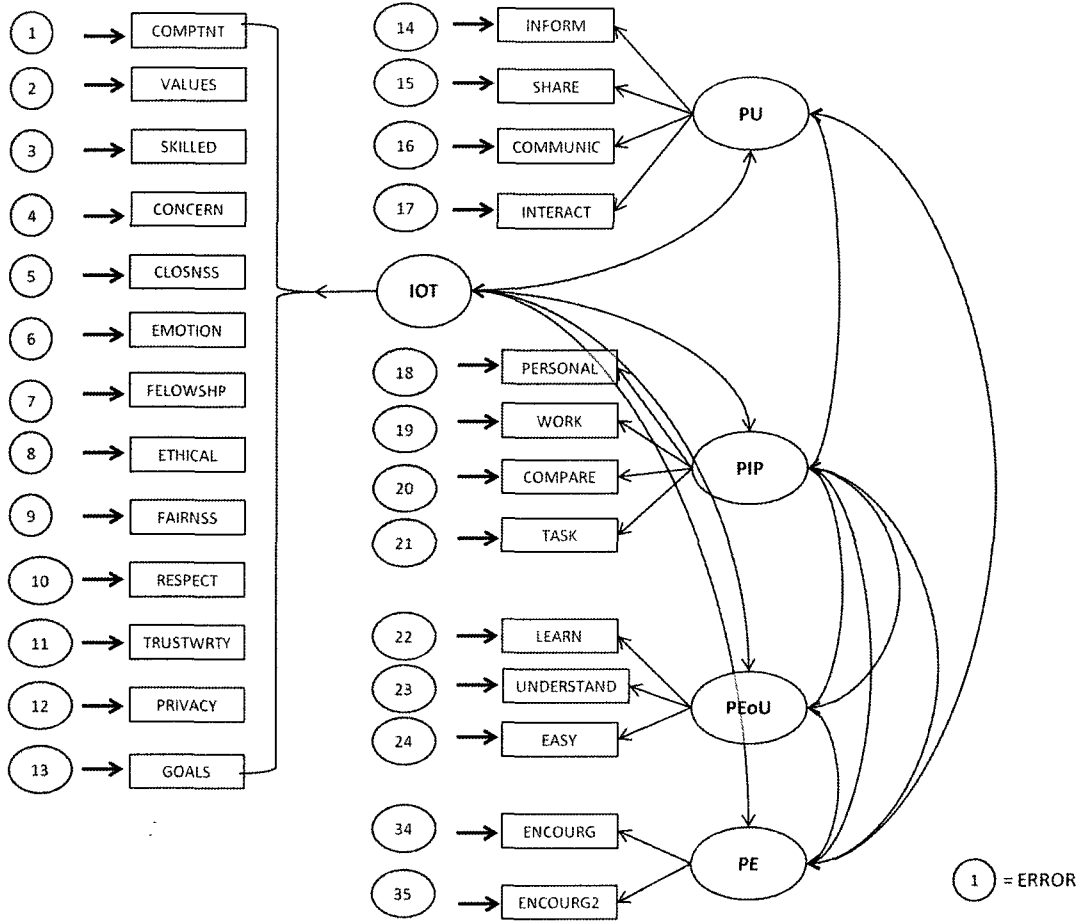


Table 14: Model Fit - PU, PEoU, PIP, IOT, PE

	NFI	IFI	CFI	RMSEA
Fit	0.841	0.919	0.916	0.068

Table 15: Measurement Model Data

Regression Weights							
			Estimate	S.E.	C.R.	P	Label
COMPTNT	<---	IOT	.830	.070	11.794	***	par_1
VALUES	<---	IOT	.795	.068	11.748	***	par_2
SKILLED	<---	IOT	.882	.067	13.086	***	par_3
CONCERN	<---	IOT	.803	.074	10.812	***	par_4
CLOSNESS	<---	IOT	.597	.071	8.429	***	par_5
EMOTION	<---	IOT	.682	.076	8.997	***	par_6
FELOWSHP	<---	IOT	.630	.068	9.283	***	par_7
ETHICAL	<---	IOT	.683	.069	9.895	***	par_8
FAIRNESS	<---	IOT	.834	.067	12.353	***	par_9
RESPECT	<---	IOT	.801	.067	11.975	***	par_10
TRUSTWRTY	<---	IOT	.893	.081	11.023	***	par_11
PRIVACY	<---	IOT	.761	.097	7.811	***	par_12
GOALS	<---	IOT	.792	.087	9.106	***	par_13
INFORM	<---	PU	.836	.082	10.198	***	par_14
SHARE	<---	PU	1.007	.088	11.439	***	par_15
COMMUNIC	<---	PU	.842	.088	9.565	***	par_16
INTERACT	<---	PU	.943	.084	11.222	***	par_17
PERSONAL	<---	PIP	.820	.152	5.394	***	par_18
WORK	<---	PIP	.660	.151	4.368	***	par_19
COMPARE	<---	PIP	.860	.164	5.229	***	par_20
TASK	<---	PIP	.744	.165	4.500	***	par_21
LEARN	<---	PEoU	.646	.100	6.432	***	par_22
UNDERSTAND	<---	PEoU	.723	.104	6.976	***	par_23
EASY	<---	PEoU	.722	.104	6.958	***	par_24
ENCOURG	<---	PE	1.482	.111	13.303	***	par_55
ENCOURG2	<---	PE	1.612	.115	14.055	***	par_56

Table15: Measurement Model Data (Continued)

Standardized Regression Weights			
			Estimate
COMPTNT	<---	IOT	.752
VALUES	<---	IOT	.752
SKILLED	<---	IOT	.806
CONCERN	<---	IOT	.707
CLOSNESS	<---	IOT	.581
EMOTION	<---	IOT	.611
FELOWSHIP	<---	IOT	.627
ETHICAL	<---	IOT	.659
FAIRNESS	<---	IOT	.775
RESPECT	<---	IOT	.759
TRUSTWORTHY	<---	IOT	.714
PRIVACY	<---	IOT	.546
GOALS	<---	IOT	.620
INFORM	<---	PU	.746
SHARE	<---	PU	.795
COMMUNIC	<---	PU	.707
INTERACT	<---	PU	.775
PERSONAL	<---	PIP	.565
WORK	<---	PIP	.470
COMPARE	<---	PIP	.569
TASK	<---	PIP	.528
LEARN	<---	PEoU	.542
UNDERSTAND	<---	PEoU	.586
EASY	<---	PEoU	.585
ENCOURG	<---	PE	.829
ENCOURG2	<---	PE	.850

Table15: Measurement Model Data (Continued)

Intercepts					
	Estimate	S.E.	C.R.	P	Label
INFORM	5.749	.081	70.752	***	par_62
SHARE	5.429	.092	59.086	***	par_63
COMMUNIC	5.678	.087	65.423	***	par_64
INTERACT	5.442	.088	61.504	***	par_65
LEARN	5.471	.086	63.360	***	par_66
UNDERSTAND	5.372	.090	59.990	***	par_67
EASY	5.410	.090	60.391	***	par_68
COMPTNT	5.157	.080	64.483	***	par_69
VALUES	5.408	.077	70.549	***	par_70
SKILLED	5.372	.079	67.682	***	par_71
CONCERN	5.110	.082	61.978	***	par_72
CLOSNS	5.634	.075	75.542	***	par_73
EMOTION	4.822	.081	59.581	***	par_74
FELOWSHP	5.000	.073	68.579	***	par_75
ETHICAL	4.649	.075	61.849	***	par_76
FAIRNSS	5.178	.078	66.316	***	par_77
RESPECT	5.466	.077	71.344	***	par_78
TRUSTWRTY	5.403	.091	59.544	***	par_79
PRIVACY	4.654	.101	46.023	***	par_80
GOALS	5.267	.093	56.768	***	par_81
PERSONAL	4.006	.117	34.299	***	par_82
WORK	3.811	.114	33.558	***	par_83
COMPARE	3.130	.122	25.576	***	par_84
TASK	4.004	.114	35.219	***	par_85
ENCOURG	4.631	.130	35.551	***	par_86
ENCOURG2	4.783	.138	34.713	***	par_87

Table 15: Measurement Model Data (Continued)

Covariances							
			Estimate	S.E.	C.R.	P	Label
PU	<-->	PIP	.631	.099	6.341	***	par_25
PU	<-->	PEoU	.809	.107	7.536	***	par_26
IOT	<-->	PIP	.470	.098	4.790	***	par_27
IOT	<-->	PEoU	.743	.100	7.390	***	par_28
IOT	<-->	PU	.665	.055	12.127	***	par_29
PIP	<-->	PEoU	.240	.167	1.439	.150	par_30
PE	<-->	PEoU	.172	.131	1.312	.190	par_57
PE	<-->	PIP	.138	.115	1.200	.230	par_58
PE	<-->	IOT	.144	.083	1.724	.085	par_59
PE	<-->	PU	.157	.089	1.754	.079	par_60
E5	<-->	E6	.116	.056	2.075	.038	par_31
E6	<-->	E7	.128	.052	2.446	.014	par_32
E7	<-->	E8	.102	.047	2.185	.029	par_33
E8	<-->	E9	.057	.037	1.541	.123	par_34
E9	<-->	E10	.200	.043	4.639	***	par_35
E10	<-->	E11	.028	.039	.726	.468	par_36
E11	<-->	E12	.427	.085	5.025	***	par_37
E12	<-->	E13	.167	.079	2.103	.035	par_38
E15	<-->	E14	.176	.080	2.205	.027	par_39
E15	<-->	E16	-.052	.054	-.969	.333	par_40
E16	<-->	E17	.376	.085	4.445	***	par_41
E20	<-->	E22	-.114	.191	-.600	.548	par_42
E19	<-->	E20	.157	.151	1.045	.296	par_43
E18	<-->	E19	.694	.182	3.812	***	par_44
E17	<-->	E14	.066	.049	1.346	.178	par_45
E18	<-->	E22	-.028	.152	-.184	.854	par_46
E23	<-->	E24	.675	.033	20.553	***	par_47
E24	<-->	E25	.773	.023	33.100	***	par_48
E23	<-->	E25	.713	.029	24.339	***	par_49
E4	<-->	E5	.043	.052	.816	.414	par_50
E3	<-->	E4	-.005	.041	-.114	.910	par_51
E2	<-->	E3	.125	.039	3.220	.001	par_52
E2	<-->	E1	.119	.041	2.871	.004	par_53
E13	<-->	E1	-.260	.057	-4.545	***	par_54
E35	<-->	E36	.196	.084	2.334	.020	par_61

Table 15: Measurement Model Data (Continued)

Correlations			
			Estimate
PU	<-->	PIP	.631
PU	<-->	PEoU	.809
IOT	<-->	PIP	.470
IOT	<-->	PEoU	.743
IOT	<-->	PU	.665
PIP	<-->	PEoU	.240
PE	<-->	PEoU	.172
PE	<-->	PIP	.138
PE	<-->	IOT	.144
PE	<-->	PU	.157
E5	<-->	E6	.157
E6	<-->	E7	.185
E7	<-->	E8	.167
E8	<-->	E9	.108
E9	<-->	E10	.426
E10	<-->	E11	.047
E11	<-->	E12	.418
E12	<-->	E13	.143
E15	<-->	E14	.308
E15	<-->	E16	-.081
E16	<-->	E17	.583
E20	<-->	E22	-.077
E19	<-->	E20	.102
E18	<-->	E19	.468
E17	<-->	E14	.116
E18	<-->	E22	-.020
E23	<-->	E24	.675
E24	<-->	E25	.773
E23	<-->	E25	.713
E4	<-->	E5	.063
E3	<-->	E4	-.009
E2	<-->	E3	.278
E2	<-->	E1	.235
E13	<-->	E1	-.356
E35	<-->	E36	.196

Table 15: Measurement Model Data (Continued)

Variances					
	Estimate	S.E.	C.R.	P	Label
IOT	1.000				
PU	1.000				
PIP	1.000				
PEoU	1.000				
PE	1.000				
E23	1.000				
E24	1.000				
E25	1.000				
E35	1.000				
E36	1.000				
E2	.485	.057	8.437	***	par_88
E3	.419	.052	7.979	***	par_89
E4	.646	.074	8.736	***	par_90
E5	.701	.076	9.266	***	par_91
E6	.780	.085	9.228	***	par_92
E7	.613	.067	9.178	***	par_93
E8	.607	.067	9.051	***	par_94
E9	.463	.055	8.419	***	par_95
E10	.473	.056	8.480	***	par_96
E11	.767	.087	8.839	***	par_97
E12	1.364	.145	9.398	***	par_98
E13	1.008	.110	9.127	***	par_99
E15	.590	.108	5.459	***	par_100
E16	.707	.107	6.637	***	par_101
E17	.590	.096	6.167	***	par_102
E18	1.433	.241	5.941	***	par_103
E19	1.532	.224	6.840	***	par_104
E20	1.544	.272	5.669	***	par_105
E22	1.431	.250	5.716	***	par_106
E1	.527	.062	8.457	***	par_107
E14	.556	.093	5.977	***	par_108

Figure 8: Measurement Model – ToU Only

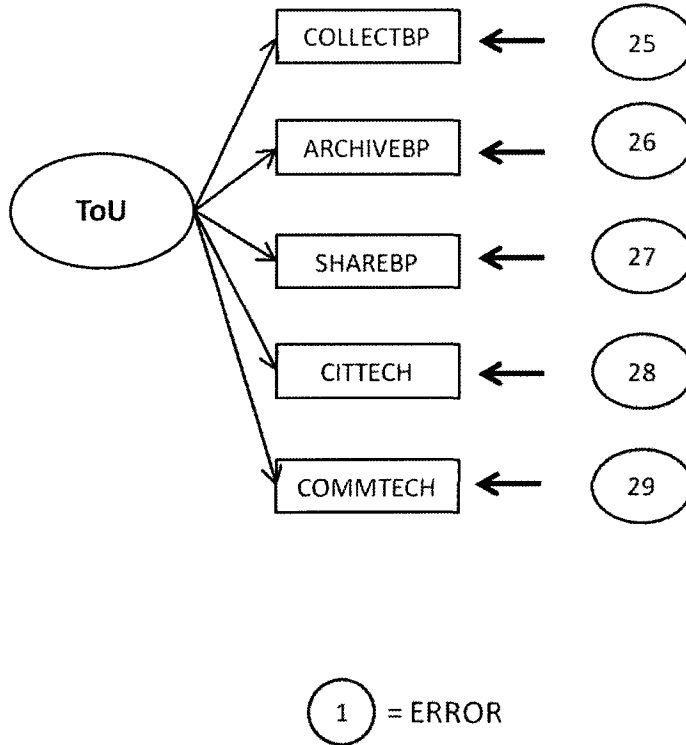


Table 16: Model Fit – ToU

	NFI	IFI	CFI	RMSEA
Fit	0.965	0.974	0.974	0.120

Table 17: Measurement Model (ToU Only) Data

Regression Weights							
			Estimate	S.E.	C.R.	P	Label
SHAREBP	<---	ToU	.965	.068	14.167	***	par_1
COLLECTBP	<---	ToU	.915	.067	13.571	***	par_2
ARCHIVEBP	<---	ToU	.969	.076	12.823	***	par_3
CITTECH	<---	ToU	.881	.078	11.327	***	par_4
COMMTECH	<---	ToU	.659	.069	9.536	***	par_5

Table 18: Measurement Model (ToU Only) Data (Continued)

Standardized Regression Weights			
			Estimate
SHAREBP	<---	ToU	.892
COLLECTBP	<---	ToU	.868
ARCHIVEBP	<---	ToU	.838
CITTECH	<---	ToU	.771
COMMTECH	<---	ToU	.681

Table 19: Measurement Model (ToU Only) Data (Continued)

Intercepts					
	Estimate	S.E.	C.R.	P	Label
COLLECTBP	3.889	.083	46.834	***	par_6
ARCHIVEBP	3.654	.091	40.115	***	par_7
SHAREBP	3.951	.085	46.357	***	par_8
CITTECH	3.735	.090	41.483	***	par_9
COMMTECH	4.142	.076	54.330	***	par_10

Table 20: Measurement Model (ToU Only) Data (Continued)

Variances					
	Estimate	S.E.	C.R.	P	Label
ToU	1.000				
E26	.273	.042	6.481	***	par_11
E27	.399	.056	7.083	***	par_12
E28	.240	.041	5.830	***	par_13
E29	.530	.068	7.815	***	par_14
E30	.503	.061	8.300	***	par_15

Some of the error terms in the model have been correlated. The correlation structure between error terms of the confirmatory factor analysis are suggested by SPSS AMOS after the initial model fit without any correlated error terms. This helps improve the overall model fit. Correlated error terms in measurement models represent the hypothesis that the unique variances of the associated indicators overlap; that is, they measure something in common other than the latent constructs that are represented in the model. Hox and Bechger (1998) also support this method of model modification.

There are positive correlation coefficients between measures of participation and measures of PIP. Several of these are described in Table 21.

Participation is measured through an understanding of how people use social networking sites to stay in touch personally (GRATIFY), professionally within their organization (PROFin), and professionally outside of their organization (PROFout). PIP-related variables that address the importance of personal quality of output (PERSONAL), work group quality of output (WORK) and that compare performance in relation to others (COMPARE) are significantly correlated to measures of participation.

Measures of how people use social networking sites to inform each other (INFORM), share information (SHARE), and interact in activities (INTERACT) address perceived usefulness. These measures are significantly correlated to the participation variables.

Table 21: Correlations

	GRATIFY	PROFin	PROFout
PERSONAL	0.360**	0.287*	0.269*
WORK	0.224**	0.294*	0.91
COMPARE	0.212**	0.323**	0.225*
INFORM	0.321**	0.384*	0.308*
SHARE	0.260**	0.385*	0.331*
INTERACT	0.202**	0.210*	0.210*

**p < .01 (one-tailed test)

*p < .05 (one-tailed test)

A full list of correlations appears at Appendix E.

The measurement model fit reasonably well. Using the indices selected, the correlated latent variables of perceived usefulness, perceived ease of use, PIP, intra-organizational trust, and perceived encouragement converge after 10 iterations. The chi-square is 506.395 with 269 degrees of freedom, significant at less than the 0.001 level. Fit indices indicate the measurement model is a moderately good fit: NFI = 0.841, IFI = 0.919, CFI = 0.916, and RMSEA = 0.068. A moderately good fit is also indicated by type of use statistics: chi-square=18.639, df=5, p-value=.002, NFI=0.965, IFI=0.974, CFI=0.974, and RMSEA=0.120. The value for RMSEA is not in the acceptable range, however, it will be shown later in this paper that the problem is not evident in the full structural model.

ASSESSING MODEL IDENTIFICATION

Degrees of freedom is calculated with this formula: $Df = (P*(P+1)/2) - N$, where P is the number of observed variables and N is the number of parameters to be estimated or the free parameters. In this model, there are 32 observed

variables and 135 free parameters. This means that the number of degrees of freedom would be equal to 393 $((32(33)/2) - 135)$. This makes the current model over-identified, so it is assumed there are no identification problems in this model.

The SEM analysis indicates a high effect size of perceived usefulness, perceived ease of use, PIP, intra-organizational trust, and type of use on the latent variable participation. The model fit is appropriate according to any of the four indices used. Analysis of error estimates also shows no problems. There are latent variables in the model that have not been previously validated for use in the way described in this study: PIP, intra-organizational trust, type of use, and participation. For that reason it is important to examine the construct validity of each of these measurement models on its own. Table 22 contains the relevant Cronbach Alpha scores for each of the constructs to enable a study of each of the measurement models' validity on its own outside the structural model.

Table 22: Cronbach Alpha Scores

Cronbach Alpha	
Perceived Usefulness (PU)	0.874
Perceived Ease of Use (PEoU)	0.930
Perceived Encouragement (PE) *	0.544
Perceived Improvement Potential (PIP)	0.666
Intra-Organizational Trust (IOT)	0.923
Participation (PART)	0.680
Type of Use (ToU)	0.905

*NOTE: PE removed from the final model to improve fit.

OVERALL MODEL FIT

The AMOS analysis that follows discusses two models. Structural model 1 matches the conceptual model that was hypothesized at the beginning of this dissertation. AMOS allows a view of ways to improve fit statistics, so perceived encouragement was removed to arrive at structural model 2, which has a better fit. Explanations of each model appear below.

STRUCTURAL MODEL 1

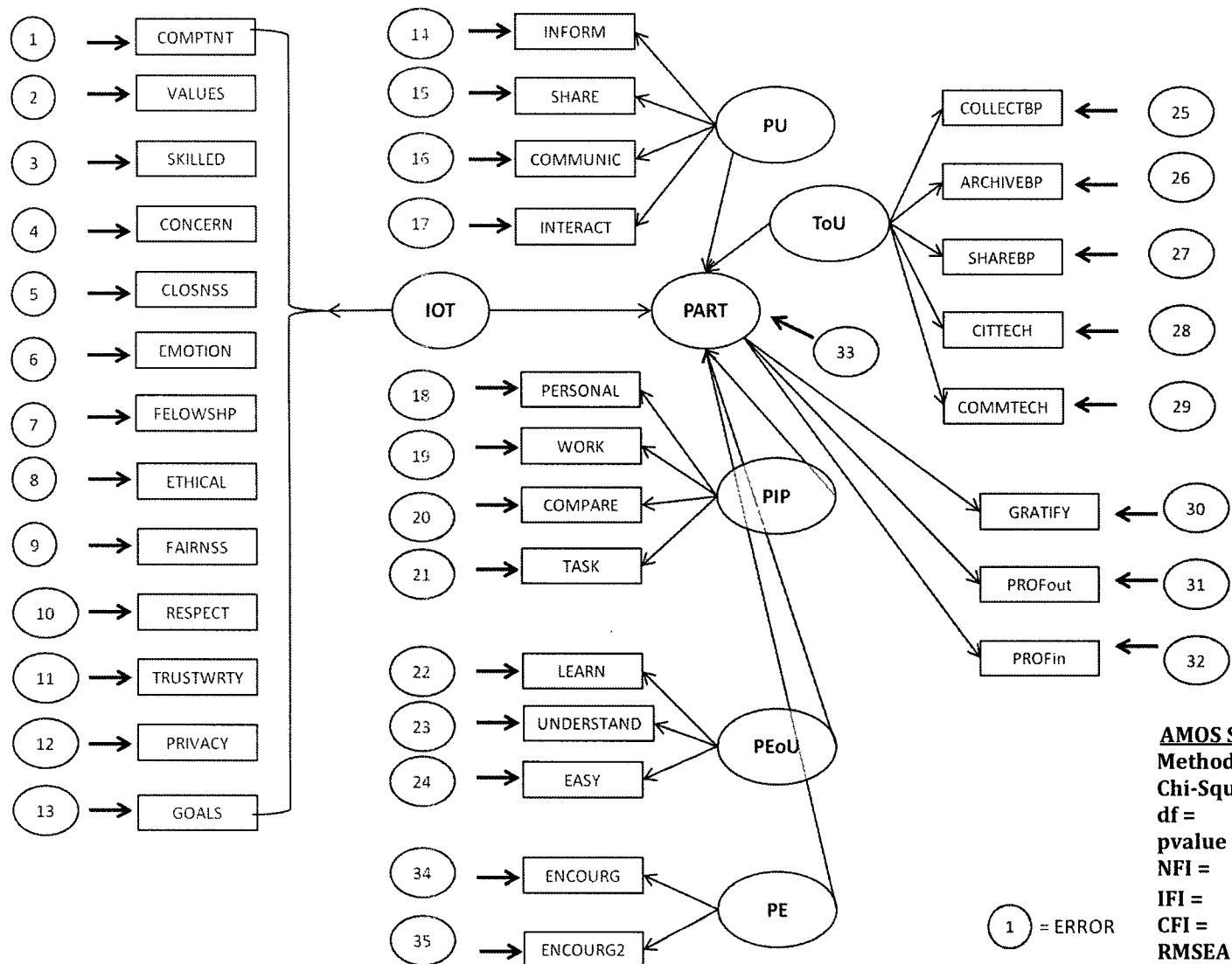
This model converged after 19 iterations (Figure 9). The overall model has a chi-square of 842.043 based on 482 degrees of freedom. Significant chi-square at less than the 0.000 level indicates that the model does not have acceptable fit. The null model has a chi-square of 4217.345 based on 595 degrees of freedom. Since the chi-square indicates there is no acceptable fit, SEM uses adjunct fit indices to test the model.

There are four adjunct fit indexes selected to evaluate the model in this study, NFI, IFI, CFI and RMSEA, all of which were explained earlier. The comparative fit indices are significant and reflect an acceptable model fit, as shown in Table 23.

Table 23: Structural Model 1

	NFI	IFI	CFI	RMSEA
Fit	0.800	0.904	0.901	0.063

Figure 9: Structural Model 1



AMOS Summary Statistics

Method:	ML
Chi-Square:	831.156
df =	482
pvalue =	0.000
NFI =	0.803
IFI =	0.907
CFI =	0.904
RMSEA =	0.062

1 = ERROR

Table 24: Structural Model 1 Data

Regression Weights							
			Estimate	S.E.	C.R.	P	Label
PART	<---	ToU	1.000				
PART	<---	PU	1.000				
PART	<---	PIP	1.000				
PART	<---	IOT	1.000				
PART	<---	PEoU	1.000				
PART	<---	PE	1.000				
INFORM	<---	PU	-.874	.080	-10.929	***	par_1
SHARE	<---	PU	-1.015	.087	-11.667	***	par_2
COMMUNIC	<---	PU	-.805	.087	-9.263	***	par_3
INTERACT	<---	PU	-.921	.083	-11.053	***	par_4
SHAREBP	<---	ToU	-1.053	.073	-14.465	***	par_5
PERSONAL	<---	PIP	-.891	.149	-5.987	***	par_6
WORK	<---	PIP	-.673	.153	-4.407	***	par_7
COMPARE	<---	PIP	-.883	.157	-5.626	***	par_8
TASK	<---	PIP	-.699	.163	-4.289	***	par_9
LEARN	<---	PEoU	-.652	.098	-6.633	***	par_10
UNDERSTAND	<---	PEoU	-.740	.102	-7.278	***	par_11
EASY	<---	PEoU	-.727	.101	-7.182	***	par_12
ENCOURG	<---	PE	-2.749	.730	-3.767	***	par_13
ENCOURG2	<---	PE	-2.660	.744	-3.578	***	par_14
ARCHIVEBP	<---	ToU	-.942	.085	-11.095	***	par_15
COLLECTBP	<---	ToU	-.865	.073	-11.803	***	par_16
CITTECH	<---	ToU	-.936	.084	-11.118	***	par_17
COMMTECH	<---	ToU	-.654	.071	-9.216	***	par_18
COMPTNT	<---	IOT	.829	.070	11.784	***	par_19
VALUES	<---	IOT	.795	.068	11.760	***	par_20
SKILLED	<---	IOT	.883	.067	13.118	***	par_21
CONCERN	<---	IOT	.803	.074	10.808	***	par_22
CLOSNSS	<---	IOT	.595	.071	8.406	***	par_23
EMOTION	<---	IOT	.682	.076	9.012	***	par_24
FELOWSHP	<---	IOT	.628	.068	9.251	***	par_25
ETHICAL	<---	IOT	.683	.069	9.913	***	par_26
FAIRNSS	<---	IOT	.833	.068	12.340	***	par_27
RESPECT	<---	IOT	.803	.067	12.007	***	par_28
GOALS	<---	IOT	.797	.087	9.178	***	par_29
PRIVACY	<---	IOT	.764	.097	7.844	***	par_30
TRUSTWRTY	<---	IOT	.894	.081	11.049	***	par_31
GRATIFY	<---	E30	1.879	.107	17.536	***	par_32
PROFout	<---	E31	-1.654	.095	-17.360	***	par_33
PROFIN	<---	E32	1.554	.109	14.298	***	par_34
GRATIFY	<---	PART	-.215	.055	-3.871	***	par_72
PROFout	<---	PART	-.223	.050	-4.476	***	par_73
PROFIN	<---	PART	-.378	.055	-6.907	***	par_74

Table 24: Structural Model 1 (Continued)

Standardized Regression Weights			
			Estimate
PART	<---	ToU	.342
PART	<---	PU	.342
PART	<---	PIP	.342
PART	<---	IOT	.342
PART	<---	PEoU	.342
PART	<---	PE	.342
INFORM	<---	PU	-.781
SHARE	<---	PU	-.802
COMMUNIC	<---	PU	-.677
INTERACT	<---	PU	-.758
SHAREBP	<---	ToU	-.962
PERSONAL	<---	PIP	-.616
WORK	<---	PIP	-.479
COMPARE	<---	PIP	-.586
TASK	<---	PIP	-.497
LEARN	<---	PEoU	-.546
UNDERSTAND	<---	PEoU	-.595
EASY	<---	PEoU	-.588
ENCOURG	<---	PE	-1.539
ENCOURG2	<---	PE	-1.397
ARCHIVEBP	<---	ToU	-.807
COLLECTBP	<---	ToU	-.813
CITTECH	<---	ToU	-.811
COMMTECH	<---	ToU	-.671
COMPTNT	<---	IOT	.752
VALUES	<---	IOT	.752
SKILLED	<---	IOT	.807
CONCERN	<---	IOT	.706
CLOSNESS	<---	IOT	.579
EMOTION	<---	IOT	.611
FELOWSHIP	<---	IOT	.625
ETHICAL	<---	IOT	.659
FAIRNESS	<---	IOT	.774
RESPECT	<---	IOT	.760
GOALS	<---	IOT	.623
PRIVACY	<---	IOT	.548
TRUSTWORTHY	<---	IOT	.715
GRATIFY	<---	E30	.948
PROFout	<---	E31	-.930
PROFIN	<---	E32	.815
GRATIFY	<---	PART	-.317
PROFout	<---	PART	-.367
PROFIN	<---	PART	-.580

Table 24: Structural Model 1 (Continued)

Intercepts					
	Estimate	S.E.	C.R.	P	Label
COMPTNT	5.157	.080	64.462	***	par_86
VALUES	5.408	.077	70.521	***	par_87
SKILLED	5.372	.079	67.652	***	par_88
CONCERN	5.110	.082	61.957	***	par_89
CLOSNSS	5.634	.075	75.529	***	par_90
EMOTION	4.822	.081	59.569	***	par_91
FELOWSHP	5.000	.073	68.563	***	par_92
ETHICAL	4.649	.075	61.835	***	par_93
FAIRNSS	5.178	.078	66.288	***	par_94
RESPECT	5.466	.077	71.313	***	par_95
TRUSTWRTY	5.403	.091	59.519	***	par_96
PRIVACY	4.654	.101	45.997	***	par_97
GOALS	5.267	.093	56.752	***	par_98
INFORM	5.749	.081	70.823	***	par_99
SHARE	5.429	.092	59.145	***	par_100
COMMUNIC	5.678	.087	65.457	***	par_101
INTERACT	5.442	.088	61.572	***	par_102
LEARN	5.471	.087	63.175	***	par_103
UNDERSTAND	5.372	.090	59.521	***	par_104
EASY	5.410	.090	60.230	***	par_105
PERSONAL	3.986	.116	34.247	***	par_106
WORK	3.796	.114	33.390	***	par_107
COMPARE	3.107	.122	25.460	***	par_108
TASK	3.987	.114	35.071	***	par_109
COLLECTBP	3.893	.083	46.810	***	par_110
ARCHIVEBP	3.659	.091	40.111	***	par_111
SHAREBP	3.955	.085	46.362	***	par_112
CITTECH	3.739	.090	41.474	***	par_113
COMMTECH	4.145	.076	54.317	***	par_114
GRATIFY	5.179	.156	33.219	***	par_115
PROFIN	3.777	.148	25.514	***	par_116
PROFout	4.866	.139	34.931	***	par_117
ENCOURG	4.633	.130	35.581	***	par_118
ENCOURG2	4.783	.138	34.577	***	par_119

Table 24: Structural Model 1 (Continued)

Covariances							
			Estimate	S.E.	C.R.	P	Label
E32	<-->	E30	.199	.082	2.422	.015	par_35
E30	<-->	E31	-.362	.070	-5.137	***	par_36
E32	<-->	E31	-.397	.072	-5.535	***	par_37
PU	<-->	PE	.103	.060	1.717	.086	par_59
ToU	<-->	PU	.378	.078	4.817	***	par_60
PU	<-->	PIP	.612	.095	6.438	***	par_61
PEoU	<-->	PE	.121	.085	1.428	.153	par_62
PIP	<-->	PEoU	.359	.158	2.270	.023	par_63
PIP	<-->	PE	.045	.066	.680	.497	par_64
ToU	<-->	PE	.071	.054	1.313	.189	par_65
ToU	<-->	PIP	.103	.103	1.001	.317	par_66
ToU	<-->	PEoU	.458	.115	3.992	***	par_67
PU	<-->	IOT	-.657	.055	-11.908	***	par_68
PIP	<-->	IOT	-.444	.094	-4.708	***	par_69
IOT	<-->	PEoU	-.745	.093	-8.031	***	par_70
IOT	<-->	PE	-.097	.054	-1.782	.075	par_71
ToU	<-->	IOT	-.331	.075	-4.435	***	par_82
PU	<-->	PEoU	.806	.102	7.870	***	par_83
E25	<-->	E26	.127	.060	2.107	.035	par_38
E26	<-->	E27	-.037	.056	-.663	.507	par_39
E27	<-->	E28	-.131	.063	-2.084	.037	par_40
E28	<-->	E29	.086	.056	1.537	.124	par_41
E17	<-->	E14	.049	.047	1.026	.305	par_42
E17	<-->	E16	.426	.083	5.146	***	par_43
E16	<-->	E15	-.034	.052	-.658	.511	par_44
E15	<-->	E14	.129	.078	1.659	.097	par_45
E18	<-->	E21	-.065	.151	-.431	.667	par_46
E20	<-->	E21	-.108	.182	-.594	.552	par_47
E19	<-->	E20	.167	.151	1.107	.268	par_48
E18	<-->	E19	.634	.183	3.464	***	par_49
E22	<-->	E24	.714	.029	24.388	***	par_50
E23	<-->	E24	.772	.023	33.059	***	par_51
E22	<-->	E23	.674	.033	20.506	***	par_52
E34	<-->	E35	-4.714	3.758	-1.255	.210	par_53
E12	<-->	E13	.163	.079	2.066	.039	par_54
E11	<-->	E12	.426	.085	5.017	***	par_55
E10	<-->	E11	.027	.039	.701	.484	par_56
E9	<-->	E10	.200	.043	4.650	***	par_57
E8	<-->	E9	.058	.037	1.554	.120	par_58
E7	<-->	E8	.103	.047	2.204	.028	par_75
E6	<-->	E7	.129	.052	2.462	.014	par_76
E5	<-->	E6	.116	.056	2.078	.038	par_77
E4	<-->	E5	.045	.052	.855	.393	par_78

Table 24: Structural Model 1 (Continued)

Covariances							
E3	<-->	E4	-.004	.041	-.107	.915	par_79
E2	<-->	E3	.125	.039	3.221	.001	par_80
E1	<-->	E2	.119	.041	2.881	.004	par_81
E1	<-->	E13	-.262	.057	-4.585	***	par_84
E25	<-->	E29	.019	.042	.465	.642	par_85

Table 24: Structural Model 1 (Continued)

Correlations			
			Estimate
E32	<-->	E30	.199
E30	<-->	E31	-.362
E32	<-->	E31	-.397
PU	<-->	PE	.103
ToU	<-->	PU	.378
PU	<-->	PIP	.612
PEoU	<-->	PE	.121
PIP	<-->	PEoU	.359
PIP	<-->	PE	.045
ToU	<-->	PE	.071
ToU	<-->	PIP	.103
ToU	<-->	PEoU	.458
PU	<-->	IOT	-.657
PIP	<-->	IOT	-.444
IOT	<-->	PEoU	-.745
IOT	<-->	PE	-.097
ToU	<-->	IOT	-.331
PU	<-->	PEoU	.806
E25	<-->	E26	.298
E26	<-->	E27	-.182
E27	<-->	E28	-.649
E28	<-->	E29	.178
E17	<-->	E14	.088
E17	<-->	E16	.614
E16	<-->	E15	-.052
E15	<-->	E14	.244
E18	<-->	E21	-.047
E20	<-->	E21	-.073
E19	<-->	E20	.111
E18	<-->	E19	.451
E22	<-->	E24	.714
E23	<-->	E24	.772

Table 24: Structural Model 1 (Continued)

Correlations			
E22	<-->	E23	.674
E12	<-->	E13	.140
E11	<-->	E12	.417
E10	<-->	E11	.045
E9	<-->	E10	.427
E8	<-->	E9	.109
E7	<-->	E8	.168
E6	<-->	E7	.186
E5	<-->	E6	.157
E4	<-->	E5	.066
E3	<-->	E4	-.009
E2	<-->	E3	.278
E1	<-->	E2	.236
E1	<-->	E13	-.360
E25	<-->	E29	.043

Table 24: Structural Model 1 (Continued)

Variances					
	Estimate	S.E.	C.R.	P	Label
IOT	1.000				
PU	1.000				
ToU	1.000				
PEoU	1.000				
PIP	1.000				
PE	1.000				
E30	1.000				
E31	1.000				
E32	1.000				
E33	1.000				
E22	1.000				
E23	1.000				
E24	1.000				
E1	.529	.062	8.467	***	par_120
E2	.485	.058	8.441	***	par_121
E3	.418	.052	7.979	***	par_122
E4	.648	.074	8.743	***	par_123
E5	.703	.076	9.272	***	par_124
E6	.780	.084	9.229	***	par_125
E7	.616	.067	9.187	***	par_126
E8	.607	.067	9.053	***	par_127
E9	.466	.055	8.434	***	par_128
E10	.472	.056	8.478	***	par_129
E11	.766	.087	8.837	***	par_130
E12	1.362	.145	9.393	***	par_131
E13	1.001	.110	9.117	***	par_132
E17	.627	.093	6.710	***	par_133
E16	.767	.104	7.351	***	par_134
E15	.570	.105	5.416	***	par_135
E14	.488	.089	5.461	***	par_136
E18	1.301	.240	5.424	***	par_137
E19	1.517	.226	6.698	***	par_138
E20	1.491	.259	5.747	***	par_139
E21	1.488	.242	6.137	***	par_140
E34	-4.366	3.915	-1.115	.265	par_141
E35	-3.448	3.850	-.895	.371	par_142
E25	.383	.063	6.092	***	par_143
E26	.474	.092	5.159	***	par_144
E27	.089	.077	1.167	.243	par_145
E28	.455	.091	4.994	***	par_146
E29	.521	.065	8.027	***	par_147

The model fit for Structural Model 1 is acceptable, however, there is a way to improve the fit based on the AMOS evaluation. The confirmatory factor analysis indicated less than optimal fit for structural model 1. This problem with fit can be addressed by examining Anderson and Gerbing (1988), which evaluated a single measure confirmatory factor analysis. The researchers examined ill-conditioned input data by estimating each latent variable in its own measurement model. Wothke (1993) also suggested that too many parameters could be problematic in model fit. Overall fit may be affected because perceived encouragement has an unacceptable Cronbach Alpha score of 0.544 in this study.

To address this issue, perceived encouragement was removed from structural model 1. The resulting structural model 2 did not produce the “not positive definite” error and had better fit scores than structural model 1. Because deleting an item may change the content or face validity of its measure, deleting perceived encouragement was done with great care. Once perceived encouragement was removed and the fit improved, it was added back to verify that the change was proper.

Deletion of perceived encouragement was thus verified, demonstrating that the best model fit that can be achieved with the data is in structural model 2, which is explained next.

STRUCTURAL MODEL 2

This model converged after 16 iterations (Figure 10). The overall model has a chi-square of 724.815 based on 425 degrees of freedom. Significant chi-square at less than the 0.001 level indicates that the model does not have acceptable fit. The null model has a chi-square of 3921.589 based on 528 degrees of freedom. The fit indices are significant and provide an improved fit over Structural Model 1, as shown in Table 25.

Table 25: Structural model 2

	NFI	IFI	CFI	RMSEA
Fit	0.815	0.914	0.912	0.061

An assessment of the residuals reveals no significant problems. The highest residual was 0.185, which is lower than the suggested critical residual value of 2.00. In fact, only four of the values were above 0.087. All test statistics of the variances are significant at the 0.05 or better levels.

Figure 10: Structural Model 2

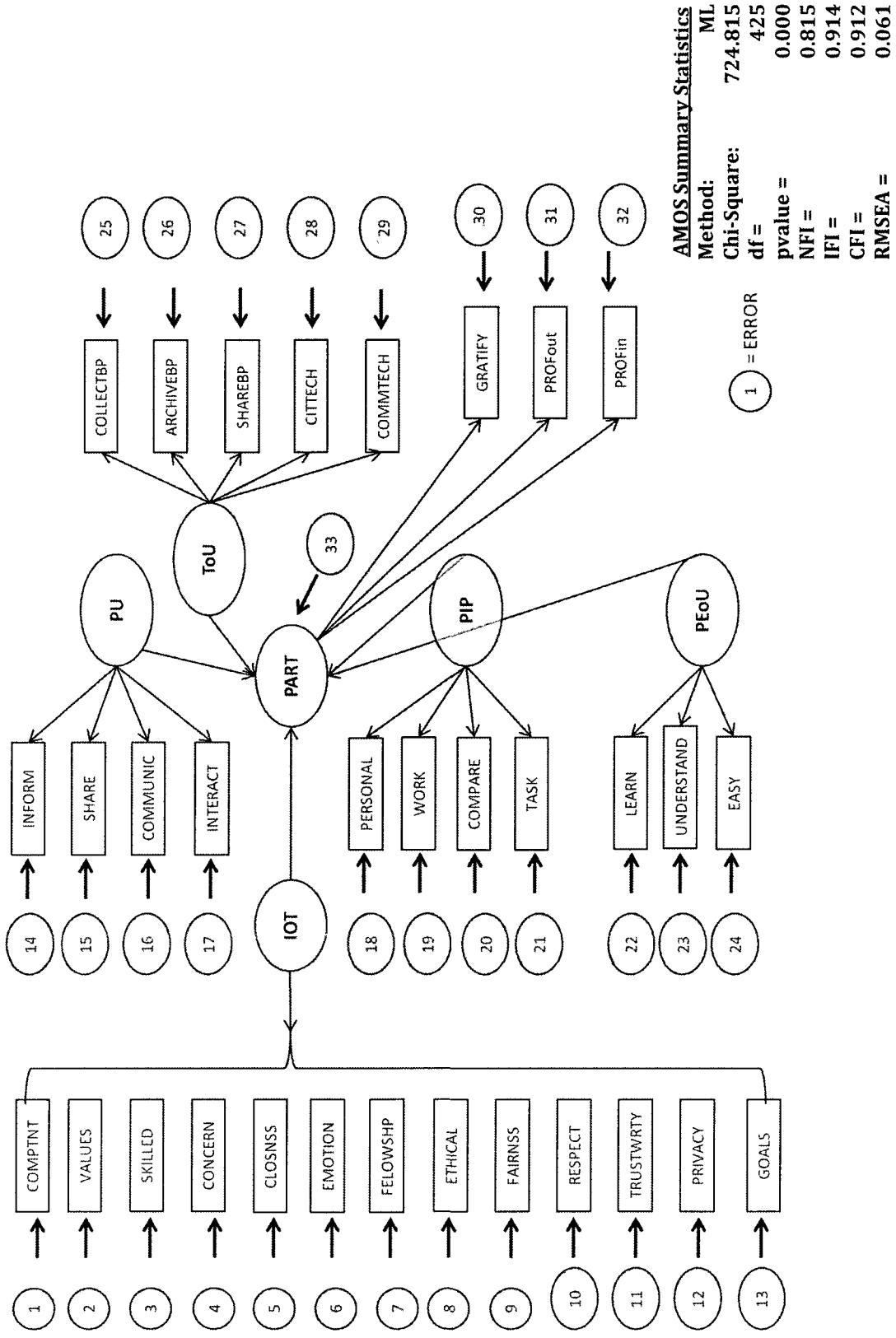


Table 26: Structural Model 2 Data

Regression Weights							
			Estimate	S.E.	C.R.	P	Label
PART	<---	ToU	1.000				
PART	<---	PU	1.000				
PART	<---	PIP	1.000				
PART	<---	IOT	1.000				
PART	<---	PEoU	1.000				
INFORM	<---	PU	-.874	.080	-10.962	***	par_1
SHARE	<---	PU	-1.014	.087	-11.679	***	par_2
COMMUNIC	<---	PU	-.800	.087	-9.214	***	par_3
INTERACT	<---	PU	-.919	.083	-11.045	***	par_4
SHAREBP	<---	ToU	-1.053	.073	-14.454	***	par_5
PERSONAL	<---	PIP	-.920	.150	-6.148	***	par_6
WORK	<---	PIP	-.685	.153	-4.488	***	par_7
COMPARE	<---	PIP	-.848	.155	-5.480	***	par_8
TASK	<---	PIP	-.682	.161	-4.232	***	par_9
LEARN	<---	PEoU	-.651	.098	-6.638	***	par_10
UNDERSTAND	<---	PEoU	-.739	.101	-7.294	***	par_11
EASY	<---	PEoU	-.728	.101	-7.205	***	par_12
ARCHIVEBP	<---	ToU	-.951	.085	-11.211	***	par_13
COLLECTBP	<---	ToU	-.874	.073	-11.932	***	par_14
CITTECH	<---	ToU	-.935	.084	-11.122	***	par_15
COMMTECH	<---	ToU	-.658	.071	-9.280	***	par_16
COMPTNT	<---	IOT	.831	.070	11.816	***	par_17
VALUES	<---	IOT	.798	.068	11.797	***	par_18
SKILLED	<---	IOT	.885	.067	13.140	***	par_19
CONCERN	<---	IOT	.803	.074	10.814	***	par_20
CLOSNESS	<---	IOT	.595	.071	8.397	***	par_21
EMOTION	<---	IOT	.682	.076	9.011	***	par_22
FELOWSHIP	<---	IOT	.629	.068	9.267	***	par_23
ETHICAL	<---	IOT	.684	.069	9.917	***	par_24
FAIRNESS	<---	IOT	.833	.068	12.321	***	par_25
RESPECT	<---	IOT	.805	.067	12.044	***	par_26
GOALS	<---	IOT	.798	.087	9.191	***	par_27
PRIVACY	<---	IOT	.764	.097	7.848	***	par_28
TRUSTWORTHY	<---	IOT	.895	.081	11.052	***	par_29
GRATIFY	<---	E30	1.841	.110	16.721	***	par_30
PROFout	<---	E31	-1.634	.098	-16.606	***	par_31
PROFIN	<---	E32	1.580	.107	14.823	***	par_32
GRATIFY	<---	PART	-.282	.068	-4.149	***	par_64
PROFout	<---	PART	-.269	.061	-4.442	***	par_65
PROFIN	<---	PART	-.414	.063	-6.541	***	par_66

Table 26: Structural Model 2 Data (Continued)

Standardized Regression Weights			
			Estimate
PART	<---	ToU	.376
PART	<---	PU	.376
PART	<---	PIP	.376
PART	<---	IOT	.376
PART	<---	PEoU	.376
INFORM	<---	PU	-.782
SHARE	<---	PU	-.802
COMMUNIC	<---	PU	-.673
INTERACT	<---	PU	-.757
SHAREBP	<---	ToU	-.958
PERSONAL	<---	PIP	-.636
WORK	<---	PIP	-.488
COMPARE	<---	PIP	-.563
TASK	<---	PIP	-.485
LEARN	<---	PEoU	-.545
UNDERSTAND	<---	PEoU	-.594
EASY	<---	PEoU	-.588
ARCHIVEBP	<---	ToU	-.813
COLLECTBP	<---	ToU	-.819
CITTECH	<---	ToU	-.808
COMMTECH	<---	ToU	-.675
COMPTNT	<---	IOT	.753
VALUES	<---	IOT	.754
SKILLED	<---	IOT	.808
CONCERN	<---	IOT	.706
CLOSNESS	<---	IOT	.578
EMOTION	<---	IOT	.611
FELOWSHIP	<---	IOT	.625
ETHICAL	<---	IOT	.660
FAIRNESS	<---	IOT	.773
RESPECT	<---	IOT	.761
GOALS	<---	IOT	.624
PRIVACY	<---	IOT	.548
TRUSTWORTHY	<---	IOT	.715
GRATIFY	<---	E30	.926
PROFout	<---	E31	-.916
PROFIN	<---	E32	.821
GRATIFY	<---	PART	-.377
PROFout	<---	PART	-.401
PROFIN	<---	PART	-.571

Table 26: Structural Model 2 Data (Continued)

Intercepts					
	Estimate	S.E.	C.R.	P	Label
COMPTNT	5.157	.080	64.409	***	par_78
VALUES	5.408	.077	70.441	***	par_79
SKILLED	5.372	.079	67.581	***	par_80
CONCERN	5.110	.083	61.908	***	par_81
CLOSNESS	5.634	.075	75.493	***	par_82
EMOTION	4.822	.081	59.535	***	par_83
FELOWSHP	5.000	.073	68.521	***	par_84
ETHICAL	4.649	.075	61.795	***	par_85
FAIRNESS	5.178	.078	66.228	***	par_86
RESPECT	5.466	.077	71.245	***	par_87
TRUSTWRTY	5.403	.091	59.466	***	par_88
PRIVACY	4.654	.101	45.977	***	par_89
GOALS	5.267	.093	56.717	***	par_90
INFORM	5.749	.081	70.893	***	par_91
SHARE	5.429	.092	59.205	***	par_92
COMMUNIC	5.678	.087	65.504	***	par_93
INTERACT	5.441	.088	61.635	***	par_94
LEARN	5.471	.087	63.211	***	par_95
UNDERSTAND	5.372	.090	59.539	***	par_96
EASY	5.410	.090	60.217	***	par_97
PERSONAL	3.983	.116	34.281	***	par_98
WORK	3.794	.114	33.396	***	par_99
COMPARE	3.104	.122	25.431	***	par_100
TASK	3.985	.114	35.060	***	par_101
COLLECTBP	3.894	.083	46.687	***	par_102
ARCHIVEBP	3.660	.091	40.008	***	par_103
SHAREBP	3.957	.086	46.188	***	par_104
CITTECH	3.740	.090	41.360	***	par_105
COMMTECH	4.146	.076	54.221	***	par_106
GRATIFY	5.191	.156	33.177	***	par_107
PROFIN	3.793	.151	25.190	***	par_108
PROFout	4.877	.140	34.835	***	par_109

Table 26: Structural Model 2 Data (Continued)

Covariances							
			Estimate	S.E.	C.R.	P	Label
E32	<-->	E30	.166	.087	1.919	.055	par_33
E30	<-->	E31	-.340	.074	-4.595	***	par_34
E32	<-->	E31	-.381	.075	-5.066	***	par_35
ToU	<-->	PU	.382	.078	4.862	***	par_56
PU	<-->	PIP	.613	.095	6.437	***	par_57
PIP	<-->	PEoU	.379	.158	2.399	.016	par_58
ToU	<-->	PIP	.094	.104	.905	.365	par_59
ToU	<-->	PEoU	.448	.115	3.887	***	par_60
PU	<-->	IOT	-.658	.055	-11.957	***	par_61
PIP	<-->	IOT	-.443	.094	-4.696	***	par_62
IOT	<-->	PEoU	-.752	.092	-8.212	***	par_63
ToU	<-->	IOT	-.338	.074	-4.540	***	par_74
PU	<-->	PEoU	.804	.102	7.859	***	par_75
E25	<-->	E26	.119	.060	1.977	.048	par_36
E26	<-->	E27	-.037	.056	-.668	.504	par_37
E27	<-->	E28	-.121	.062	-1.964	.050	par_38
E28	<-->	E29	.090	.056	1.596	.111	par_39
E17	<-->	E14	.047	.047	.992	.321	par_40
E17	<-->	E16	.430	.083	5.205	***	par_41
E16	<-->	E15	-.032	.052	-.610	.542	par_42
E15	<-->	E14	.127	.077	1.646	.100	par_43
E18	<-->	E21	-.074	.150	-.489	.625	par_44
E20	<-->	E21	-.073	.178	-.410	.682	par_45
E19	<-->	E20	.179	.149	1.197	.231	par_46
E18	<-->	E19	.600	.185	3.250	.001	par_47
E22	<-->	E24	.714	.029	24.391	***	par_48
E23	<-->	E24	.772	.023	33.050	***	par_49
E22	<-->	E23	.675	.033	20.521	***	par_50
E12	<-->	E13	.163	.079	2.065	.039	par_51
E11	<-->	E12	.428	.085	5.026	***	par_52
E10	<-->	E11	.026	.039	.673	.501	par_53
E9	<-->	E10	.201	.043	4.655	***	par_54
E8	<-->	E9	.059	.037	1.588	.112	par_55
E7	<-->	E8	.103	.047	2.200	.028	par_67
E6	<-->	E7	.129	.052	2.466	.014	par_68
E5	<-->	E6	.117	.056	2.093	.036	par_69
E4	<-->	E5	.046	.052	.874	.382	par_70
E3	<-->	E4	-.004	.041	-.100	.920	par_71
E2	<-->	E3	.124	.039	3.204	.001	par_72
E1	<-->	E2	.118	.041	2.852	.004	par_73
E1	<-->	E13	-.262	.057	-4.593	***	par_76
E25	<-->	E29	.016	.041	.377	.706	par_77

Table 26: Structural Model 2 Data (Continued)

Correlations			
			Estimate
E32	<-->	E30	.166
E30	<-->	E31	-.340
E32	<-->	E31	-.381
ToU	<-->	PU	.382
PU	<-->	PIP	.613
PIP	<-->	PEoU	.379
ToU	<-->	PIP	.094
ToU	<-->	PEoU	.448
PU	<-->	IOT	-.658
PIP	<-->	IOT	-.443
IOT	<-->	PEoU	-.752
ToU	<-->	IOT	-.338
PU	<-->	PEoU	.804
E25	<-->	E26	.284
E26	<-->	E27	-.173
E27	<-->	E28	-.560
E28	<-->	E29	.182
E17	<-->	E14	.085
E17	<-->	E16	.617
E16	<-->	E15	-.048
E15	<-->	E14	.241
E18	<-->	E21	-.054
E20	<-->	E21	-.048
E19	<-->	E20	.117
E18	<-->	E19	.439
E22	<-->	E24	.714
E23	<-->	E24	.772
E22	<-->	E23	.675
E12	<-->	E13	.140
E11	<-->	E12	.418
E10	<-->	E11	.043
E9	<-->	E10	.428
E8	<-->	E9	.111
E7	<-->	E8	.168
E6	<-->	E7	.187
E5	<-->	E6	.158
E4	<-->	E5	.068
E3	<-->	E4	-.008
E2	<-->	E3	.277
E1	<-->	E2	.233
E1	<-->	E13	-.361
E25	<-->	E29	.035

Table 26: Structural Model 2 Data (Continued)

Variances					
	Estimate	S.E.	C.R.	P	Label
IOT	1.000				
PU	1.000				
ToU	1.000				
PEoU	1.000				
PIP	1.000				
E30	1.000				
E31	1.000				
E32	1.000				
E33	1.000				
E22	1.000				
E23	1.000				
E24	1.000				
E1	.528	.062	8.459	***	par_110
E2	.484	.057	8.428	***	par_111
E3	.417	.052	7.975	***	par_112
E4	.649	.074	8.747	***	par_113
E5	.704	.076	9.276	***	par_114
E6	.781	.085	9.232	***	par_115
E7	.616	.067	9.187	***	par_116
E8	.608	.067	9.056	***	par_117
E9	.468	.055	8.448	***	par_118
E10	.470	.056	8.470	***	par_119
E11	.767	.087	8.838	***	par_120
E12	1.363	.145	9.394	***	par_121
E13	1.001	.110	9.116	***	par_122
E17	.628	.093	6.754	***	par_123
E16	.773	.104	7.419	***	par_124
E15	.570	.105	5.443	***	par_125
E14	.485	.089	5.455	***	par_126
E18	1.245	.244	5.108	***	par_127
E19	1.499	.227	6.611	***	par_128
E20	1.547	.254	6.102	***	par_129
E21	1.509	.239	6.321	***	par_130
E25	.376	.063	5.990	***	par_131
E26	.465	.092	5.076	***	par_132
E27	.100	.075	1.334	.182	par_133
E28	.464	.090	5.152	***	par_134
E29	.519	.065	8.008	***	par_135

SUMMARY OF RESULTS

This exploratory study mixed previously validated constructs with some that have not been validated in previous quantitative research. The initial decision on validity of measures was made based on the Cronbach Alpha score. Then, results for each of the constructs were evaluated as part of the full structural model. Next, each of these constructs was evaluated separately against the dependent variable participation.

The final structural model met all the assumptions of normality and independence, as did all of the latent constructs except perceived encouragement. Perceived encouragement was therefore dropped from the full structural model. The more robust Maximum Likelihood estimation method was used in the model. The overall structural model converged after 16 iterations with only minor improvements after the 10th iteration. The model is over-identified.

The Social Networking and Individual Performance (SNIP) structural equation model has an acceptable fit according to the four fit indexes used to assess overall model fit. All fit indexes were at or above the acceptable range. As far as effect sizes are concerned, the standardized estimates reflect a 1.000 effect size of perceived usefulness, perceived ease of use, PIP, intra-organizational trust, and type of use on participation. The effect sizes estimate the strength of the relationship by presenting substantive significance between variables in the statistical population. Therefore, the effect size confirms the hypothesis that the data will fit the model.

The hypothesis that the model will fit the data is supported. Also, there are favorable results indicate positive relationships between the latent variables and participation. There is not sufficient data to support a positive relationship between perceived encouragement and participation. Therefore, the results confirm perceived usefulness, perceived ease of use, PIP, intra-organizational trust, and type of use as predictors of participation. The results also suggest that the latent variables can be used to build an adoption and participation model that provides organizations with knowledge that both predicts and promotes social networking activities. The relationships verified here suggests that organizations can use the predictor variables to understand and communicate a value proposition that affects social networking adoption and participation and, in turn, individual perceptions of performance.

There may be two explanations for the inability to find a significant relationship between perceived encouragement and participation. The first is that perceived encouragement was not well constructed for this study. There were only two reliable measures because two of the four questions were deleted; these had dichotomous answers that were not appropriate for the SEM analysis.

The second explanation is that there was a problem with wording of the two remaining questions. The questions were: (1) My organization encourages the use of social networking; and (2) My organization does not support the use of social networking. These questions are reverse versions of each other and would have to be recoded to be effective in this analysis. This construct could be

improved by using the actual questions from Kwon and Wen (2010). That scale used four questions that asked for levels of agreement with feedback from social networking acquaintances: affirmative evaluation, satisfaction with the interaction, encouragement for the interaction, and awareness of a person's existence.

A thorough literature review found no validated survey instrument that could be used to complete the analysis proposed for this study. As the survey was designed from several sources mentioned earlier (S. E. Anderson & Harris, 1997; Kwon & Wen, 2010; Nakata et al., 2008; Passy & Giugni, 2001; Shin, 2010), there was concern that the measures would not be reliable once they were applied to the model. Perceived usefulness, perceived ease of use and intra-organizational trust are from validated instruments; however, they have not been used together as this study does. The high reliability scores for those constructs are encouraging because they support the decision to use them in this study.

PIP showed an acceptable fit in the model, providing support of the H2, that it is positively correlated with participation. PIP, however, has a problematic Cronbach alpha score of 0.666. It is argued that this score is acceptable for exploratory studies, but future attempts to use this construct will surely require higher validity scores. Regardless of that need, the positive results for PIP and the other constructs suggest perfecting the model and using it to create an assessment tool to allow organizations to take full advantage of the relationship between social networking and individual performance.

Addressing the challenges of predicting the relationship between social networking and performance provides insight into the value proposition that can lead to enhanced participation. Replicating the success of this study in the future would provide organizations with a clear view of the dynamics of change processes. Further, by affecting an individual's view of the performance implications of social networking activities, organizations can start to have an influence on behaviors that enhance participation.

Creation of an assessment tool with automated scoring is a recommended next step to provide organizations with empirical evidence of important relationships and to add measurement and feedback to these important activities.

CHAPTER 5

FINDINGS AND CONCLUSION

FINDINGS

The results of this study are inspiring and challenging at the same time. The research idea started with a suggestion by Igarria and Tan (1997) that future investigation into information technology applications should focus on the impacts of accepting or rejecting such tools and capabilities. Social networking, the use of social media, and curiosity about the role of perceived performance improvement formed the basis for this examination. There is an explosion of new online communications that affect the workplace and that suggest the need to explore ways to help organizations affect and improve performance and productivity.

This dissertation makes a theoretical examination of the relationship between social networking and individual participation, and measured predictors of participation with a structural equation model. Thus, it is important that the outcomes of this study promote better understanding of social networking activities and provide insight into ways that workers can get better help in their social networking endeavors. The relevant and compelling hypothesis that the model will fit the data is supported. Research findings of the structural equation modeling support theoretical assumptions regarding predictors of participation.

Favorable model fit statistics support positive correlations between the latent variables examined and the dependent variable, participation. Results of

the research demonstrate the potential of the survey instrument to serve as an adoption and participation methodology that can provide organizations with knowledge that predicts and promotes social networking activities. This approach arms organizations and leaders with a new lens with which to focus on the value proposition regarding perceived improvement potential based on social networking participation.

This exploratory study is one of the first attempts to view relationships between the act of social networking and how it is affected by performance. Identifying predictors of social networking and individual performance provides valuable information on how the constructs of interest relate to adoption, diffusion and acceptance of innovation. Based on these results, organizations can now be presented with opportunities to focus on internal decision processes that occur at the individual level, and to examine processes for innovation, how users are attracted to a system, and how users' behavior is affected.

This dissertation examines the "act" of social networking as a process and practice by which individuals, businesses and other types of organizations are drawn together to communicate and interact. The intent is to provide evidence of useful processes, regardless of the common websites and specialized areas people employ to share, access, download, provide and discuss a variety of types of information. These findings are the start of a journey to find tools and tactics that can affect creativity, idea exchange and communication effectiveness.

Given the current social networking environment, organizations increasingly provide “social media time” as part of processes to create new business, enhance innovation, and improve the work and personal lives of employees. Those processes require that organizations seek interactions that are administratively effective and professionally accountable. Therefore, social networking is a two-step, voluntary process where people accept or reject participation, and then determine levels of activity that suit their needs and/or lifestyles.

Organizations can easily begin, continue or increase social networking participation with little or no cost. However, at some point leaders may want to know three things:

1. Why do some people reject participation?
2. What do our participation behaviors look like?
3. Do employees perform any better based on their social networking activity?

The predictors of participation identified and examined in this study provide some assistance and information for organizations. Further, perceived improvement potential (PIP), a new construct created for this research effort, provides a first attempt at a metric that suggests a perception of performance improvement. The metric for perception of performance improvement is important; if employees perceive that there is a benefit, they may be more inclined to participate in the organization’s social media tool of choice. That benefit could be some return on the investment of their time or attention that

leads to improved skills. The benefit could also be the availability of new challenges or increased standing in the firm.

Predicting the value of social networking participation and its relationship to perceptions of performance impact has major implications for organizations in guiding additional research concerning acceptance levels. The literature explored in this dissertation suggests gaps in relevant research that can be addressed going forward.

LIMITATIONS

Examining the relationship between social networking and individual performance presents several limitations. The first is that the focus of this research is on *non-traditional organizations (communities of practice)* that rely on members of various organizations, using social media applications to communicate. The variety of people and viewpoints and their communication efforts present challenges for the social networking and individual performance context.

There is also a limitation because the three groups of the population were surveyed separately. There is no way to know how many of the estimated 37,000 people actually viewed the invitation to respond or any of the updates. That resulted in no way to track response rate, causing concerns about error in research. However, SEM actually helps in this case because it can account for random measurement error (Fabrigar et al., 2010). The limitation of random

measurement error is reduced in importance by the very nature of this social networking research. The notion that social networking is so dynamic, and the fact that there is currently no examination of the construct as it relates to performance, warrants exploration of what form it takes, what form it requires and what end states are possible.

Surveying the groups separately leads to another limitation. This study treated the three groups as one, which led to concerns in mean differences. A comparison of groups showed statistically significant differences in the means of MuniGov 2.0 and LinkedIn in terms of the latent variables intra-organizational trust and type of use. The differences are less than one standard deviation from the mean of GovLoop and from the mean of the three groups examined as one; however, differences in groups are to be expected in an exploratory study of this type. The very nature of the goals and objectives of MuniGov 2.0 and LinkedIn is an indication that there might be differences. For instance, MuniGov 2.0 is a group that is brought together to conduct unfettered social networking to improve community and work life concerns of its members. LinkedIn members, on the other, are drawn in primarily due to the website's ability to help people find jobs. Clearly, someone who is trying to conduct free and open communication is very different in approach and information sharing than someone who is trying to find or impress potential employers. This area needs to be addressed in future research by studying one population to guard against mean differences.

The new and dynamic nature of social networking creates interactions among members from several organizations, but this study is limited in scope because it attempts to view them as one community of practice or organization that governs itself by the will of its members. For that reason, it is possible that these findings cannot be generalized to other people and organizations involved in social networking in various states or regions of the country. Also, the convenience sample was not completely randomly selected. Participants are members of the relevant communities of practice who self-selected to respond to the survey. Also, the convenience sample presents problems of generalizability. There is limited ability to probe answers in this method, and people who are willing to respond may share characteristics that don't apply to the audience as a whole, creating potential bias in the study.

Despite these limitations, this method is useful for several reasons. Data collected can be analyzed fairly quickly and the results from the sample can be generalized to the entire population if the response rate is high enough. This survey can lead to an instrument that presents a reliable direction for planning programs and findings may, in some cases, be generalizable beyond the participant group. Finally, the discovery contained in this research can set the stage for longitudinal studies that could help identify a range of best practices for organizations.

The study has a coverage error because the population is over-represented by a group of people who have a higher propensity to participate in social networking than some other groups. This is evident by the very fact that

members of the group participate in an online method of communication. This limitation should not be a major problem, however, because the study does not make a judgment about how many people or organizations are participating. The research is focused on trying to evaluate the nature of participation in the subject organizations.

Other limitations relate to the materials and procedures employed by this researcher. The overall survey primarily employs validated measures; however, this instrument has not been validated for this particular purpose. Survey questions were developed from several sources. Perceived usefulness, perceived ease of use and perceived encouragement are from a Kwon & Wen (2010) scale that was developed from the Technology Acceptance Model for an empirical study of the factors affecting social network service use.

Since PIP is a new construct, there is a limitation in the knowledge of how this notion will fit the data and the research inquiry. PIP was developed from the use of a factor analysis based on the work of Passy and Giugni (2001), which focuses on a set of 5 items regarding the survey respondents' personal intentions and attitudes toward social networking; (1) personal quality of output, (2) work group quality of output, (3) performance in comparison to others, (4) assistance with high priority tasks, and (5) identification of available resources (e.g. personnel and materials).

Passy and Giugni (2001) stated that when they controlled for the effect of social networks and individual perceptions, all statistically significant relationships disappear. Social and cultural characteristics were a very small

part of the variance. This led the researchers (Passy & Giugni, 2001) to conclude that while social and cultural characteristics might be crucial to bring individuals to collective action, they do not determine the intensity with which people will participate. Instead, networks and perceptions have a significant impact on differential participation. The notion of perception is a valuable part of this research effort. It points to the value of understanding why people accept or reject participation in social networking activities, and suggests a model to build an evaluation system to address these issues.

In addition, some of the questions from the aforementioned survey were reworded for purposes of this study, suggesting possible issues of validity and reliability. Again, SEM overcomes many limitations like validity and reliability when assessing psychometric properties of measures (Rubio et al., 1999). The capacity to estimate a model's measurement error makes SEM an alternative for this assessment because it can model different dimensions of the constructs simultaneously.

Further, since relatively little incentive was given for respondents to participate and to give careful consideration to their answers, there may be issues in terms of the level of effort and attention each respondent gave to filling out the instrument. This examination, however, is important to the discussion of how to view social networking interactions. What was learned from this research effort will be instrumental in future examinations of the constructs of interest.

IMPLICATIONS FOR FUTURE RESEARCH

There are important implications for the results of this study in the field of public administration. As many organizations work to create social media policies that improve online interactions and provide security protections, performance is neglected. Organizations do not tend to inquire about return on investment or performance implications until they are well into social networking activities. This study offers ways to include performance, or perceived improvement potential, in the beginning stages of social networking activities and policy decisions. This study then, is important in giving organizations tools with which to impact online interactions as they happen, and to affect behaviors that support the organization's goals and objectives.

So what does the future hold? Four possibilities are recommended: study one organization that is fully engaged in social networking, replicate the survey with a larger sample, improve the survey instrument, or compare public and private organizations.

The first recommendation is to study one organization to get a more robust view of a population of interest. This examination is somewhat limited by its focus on inherently governmental, non-traditional organizations. That limitation, however, is necessary in this exploratory effort because many organizations are not mature enough in their social networking activities to be able to focus on performance and other future considerations.

Maturity of social networking in organizations leads to problems of generalizability to other populations, so focusing on one organization makes sense. In viewing a larger population, the use of a longitudinal study may be warranted. The small convenience sample does not normally provide an accurate representation of the entire population, possibly leading to increased sampling error, but this dissertation takes an exploratory view to allow introduction of a new set of constructs and relationships. The small sample is appropriate and necessary in some experimental comparisons according to Hoyle (1995). However, replicating this research with a larger sample is still recommended.

The new construct developed here, PIP, has minuses and pluses, and for that reason the survey instrument must be improved. There is always a measure of risk associated with using constructs that have not been validated but, again, new research must begin somewhere. In this case, there was simply no instrument available with which to conduct this study. A positive indication that this is the right approach is suggested by previous studies of behavioral intention, behavioral expectation, and perceived productivity. Taking the entire process into account, PIP seems to be an important construct that needs more study, but that also may be used in other public administration studies.

Another important consideration for this study is that while the model fits the data and the predictive value of the constructs is supported, there is more work to be done. This study must be replicated on other audiences and the survey instrument must be transformed into a tool that organizations can use on

demand. That tool needs to deliver validated results that lead to formal methods for affecting acceptance and rejection of social networking participation. The value proposition that addresses individual performance and desired behaviors must be made clearly and consistently, and this research should contribute to that requirement.

Finally, this research should be continued to compare similar-sized public and private organizations to show its true value to public administration and urban policy in evaluating social networking and individual performance differences in participation, behavior, technology acceptance, and trust. A formal evaluation of a person's "SNIP Score" could be instrumental in measuring acceptance and rejection. This work does not include that kind of evaluation, but its value seems obvious to this researcher.

Today, it is almost effortless for organizations to get involved in social networking activities. The questions about performance are inevitable based on the amount of time employees spend online. This dissertation, and the evidence it provides, urges organizations to ask questions about relationships between social networking and individual performance much earlier in the process. If that doesn't happen as part of the goal-setting that should precede social networking start-up, it should happen as early in the process as possible.

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APPENDIX A

SOCIAL NETWORKING AND INDIVIDUAL PERFORMANCE (SNIP): EXAMINING PREDICTORS OF PARTICIPATION

Social networking is defined as sharing and discussing information using social media tools or applications. The primary consideration for the study is to explore the "act" of social networking as a process and practice by which individuals and organizations are drawn together by family, work or hobby to interact through common websites and specialized areas within those websites.

The survey should take less than 10 minutes to complete. When completing the survey, please answer based on your social networking participation in general, regardless of which service you use (Facebook, LinkedIn, Twitter, etc.)

Your input in this study will benefit organizations interested in social networking improvements because it will allow prediction and promotion of levels of participation in social networking.

Your responses are anonymous with no way of identifying any participants. Once you have started the survey, you may end participation at any time. To get to the survey, simply click on this link http://www.surveymonkey.com/s/SNIP_Survey_3, or paste it into your browser.

If you have any questions or comments about the survey, please contact Michael Brown at mbrow056@odu.edu or by phone at 757-876-6589.

Any feedback you provide is greatly appreciated. Again, thank you for your time and willingness to participate.

Questions 1-23 use the following scale:

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

1. Participating in social networking services enables me to acquire more information or meet more people.
2. Participating in social networking services improves my efficiency in sharing information and connecting with others.
3. Social networking services are useful for communication with colleagues from other organizations who might face similar issues and challenges.
4. Social networking services are useful for interaction with colleagues from other organizations who might face similar issues and challenges.
5. Learning to use social networking services is easy for me.
6. The process of participating in social networking services is clear and understandable to me.
7. Social networking services easy to use.
8. My organization encourages the use of social networking.
9. My organization does not support the use of social networking.
10. Members of my social networking services are competent at their jobs.

11. Members of my social networking services uphold professional work values.
12. Members of my social networking services are skilled and knowledgeable to do their work.
13. Members of social networking services really care and are concerned for each other.
14. Members of my social networking services are close enough to freely share ideas, thoughts and feelings.
15. Members of my social networking services invest emotionally in their work relationships.
16. Members of my social networking services enjoy and like one another.
17. Members of my social networking services do what is right rather than what is expedient.
18. Members of my social networking services deal with each other fairly and justly.
19. Members of my social networking services treat one another with dignity and respect.
20. My social networks are trustworthy.
21. I can count on my social networking services to protect my privacy.
22. My social networking services can be counted on to pursue its stated goals of collecting, sharing and archiving best practices among its members.
23. Participation in social networking services has a positive effect on my performance

Question 24 uses the following scale:

1	2	3	4
0	0.1 to 4	4.1 to 8	8.1 or more

24. During the past 7 days, how many hours have you spent participating in social networking services activities?
25. Does your organization have an in-house social networking site? (Yes/No)
26. Do you participate in your organization's in-house social networking site? (Yes/No)
27. Thinking about your participation in social networking services in general, please indicate the order of importance of each item.
 - a. Personal quality of output
 - b. Work group quality of output
 - c. Performance in comparison to others
 - d. Assistance with high priority tasks
 - e. Identification of available resources (e.g., personnel and materials)
28. I use social networking sites to stay in touch...
 - a. Personally with family and friends.
 - b. Professionally within my organization.
 - c. Professionally outside of my organization.
29. What would make social networking more effective for achieving your personal and/or professional goals? (Free text)

APPENDIX B

MUNIGOV 2.0 SURVEY E-MAIL NOTE

Greetings all and Happy Friday! One of our members, and a fellow Old Dominion University alum, is conducting a survey as part of his dissertation. His info would be greatly improved by our participation in a brief survey. When completed, the study may also benefit the MuniGov 2.0 membership greatly because it will allow prediction and promotion of levels of participation in social networking.

Your responses are completely anonymous with absolutely no way of identifying any participants. Once you have started the survey, you may end participation at any time. To get to the survey, simply click on this link http://www.surveymonkey.com/s/SNIP_Survey-ODU; or paste it into your browser.

If you have any questions or comments about the survey, please contact Michael Brown at mbrow056@odu.edu or by phone at 757-876-6589.

Any feedback you provide is greatly appreciated. Again, thank you for your time and willingness to participate.

APPENDIX C

LINKEDIN SURVEY E-MAIL NOTE

Your opinions, ideas and thoughts matter.

I am working to finalize data collection for my PhD dissertation at Old Dominion University in Norfolk, Virginia. My research addresses the development of the many uses of social media in the workplace by individuals like you – dedicated government decision makers.

Your participation will define the understanding of relationships between social networking and predictors of individual performance and participation in government organizations.

This survey is short – less than 10 minutes to complete. I am able to offer, to ALL PARTICIPANTS, a drawing for a \$100, \$50 and multiple \$10 Amazon gift cards!! Please know that your efforts will provide the foundation for measurement of social networking concepts as they relate to individual perceptions of performance.

Your response is completely anonymous, with no way of identifying any participants. To get to the survey, click this link http://www.surveymonkey.com/s/SNIP_Survey_2; or paste it into your browser.

Concerns, comments or questions? I am available confidentially at mbrow056@odu.edu or at 757-876-6589.

Thank you for your time and effort.

APPENDIX D

SKEWNESS AND KURTOSIS

CONSTRUCT, SOURCE AND CRONBACH ALPHA	VARIABLE	KURTOSIS	Z- KURTOSIS	SKEWNESS	Z- SKEWNESS
Perceived Usefulness	INFORM	5.7487	6.0000	2.00	7.00
	SHARE	5.4293	6.0000	1.00	7.00
Kwon & Wen 2009 Cronbach Alpha 0.874	COMMUNIC	5.6613	6.0000	2.00	7.00
	INTERACT	5.4362	6.0000	1.00	7.00
Perceived Ease of Use	LEARN	5.4712	6.0000	2.00	7.00
	UNDERSTAND	5.3717	6.0000	2.00	7.00
Kwon & Wen 2009 Cronbach Alpha 0.930	EASY	5.4074	6.0000	2.00	7.00
Perceived Encouragement	ENCOURG	4.6364	5.0000	1.00	7.00
	ENCOURG2	3.2263	5.0000	1.00	7.00
Kwon & Wen 2009; Baltatzis, Ormrod & Grainger; Lurey and Raisinghani (2001) Cronbach Alpha 0.544	IN-HOUSE	1.5707	2.0000	1.00	2.00
	PARTICIPATE	1.0857	1.0000	1.00	2.00
Perceived Improvement Potential	PERSONAL	3.9801	4.0000	1.00	6.00
	WORK	3.8133	4.0000	1.00	6.00
Passy & Giugni 2001 Cronbach Alpha 0.666 with RESOURCES deleted	COMPARE	3.1007	3.0000	1.00	6.00
	TASK	3.9934	4.0000	1.00	6.00
	RESOURCES (SPSS reported improved alpha if deleted)	4.6275	5.0000	1.00	6.00
Intra-organizational trust Nakata 2008 Cronbach Alpha 0.923	COMPTNT	5.1571	5.0000	4.00	7.00
	VALUES	5.4084	6.0000	3.00	7.00
	SKILLED	5.3717	6.0000	3.00	7.00
	CONCERN	5.1099	5.0000	2.00	7.00
	CLOSNS	5.6335	6.0000	2.00	7.00
	EMOTION	4.8220	4.0000	2.00	7.00
	FELOWSHP	5.0000	5.0000	4.00	7.00
	ETHICAL	4.6492	4.0000	2.00	7.00
Intra-organizational trust Shin 2010	FAIRNESS	5.1780	5.0000	3.00	7.00
	RESPECT	5.4660	6.0000	3.00	7.00
Intra-organizational trust Shin 2010	TRUSTWRTY	5.4031	6.0000	1.00	7.00
	PRIVACY	4.6545	5.0000	1.00	7.00
	GOALS	5.2670	6.0000	1.00	7.00

SKEWNESS AND KURTOSIS (CONTINUED)

CONSTRUCT, SOURCE AND CRONBACH ALPHA	VARIABLE	KURTOSIS	Z-KURTOSIS	SKEWNESS	Z-SKEWNESS
Participation Anderson & Harris 1997; Beresford White Paper Cronbach Alpha 0.68 excluding USAGE WITH USAGE 0.66	USAGE (SPSS reported improved alpha if deleted)	5.05	2.00	0	50
	GRATIFY	5.1813	6.0000	1.00	7.00
	PROFIN	3.7862	4.0000	1.00	7.00
	PROFout	4.8758	5.0000	1.00	7.00
	PERFORM	N/A	N/A	N/A	N/A
	EFFECT1	N/A	N/A	N/A	N/A
Type of Use Typical social networking services goals Cronbach Alpha 0.905	COLLECTBP	3.8889	4.0000	1.00	6.00
	ARCHIVEBP	3.6543	3.0000	1.00	6.00
	SHAREBP	3.9506	4.0000	1.00	6.00
	CITTECH	3.7346	4.0000	1.00	6.00
	COMMTECH	4.1420	4.0000	1.00	6.00
Demographics	POSITION	1.9136	2.0000	1.00	4.00
	ORGTYPE	3.5250	3.0000	1.00	8.00
	SEX	1.5563	2.0000	1.00	2.00
	BIRTHYEAR	1964.58	1964.00	1938	1989
	RACE_ETHNIC	1.2129	1.0000	1.00	5.00
	COUNTRY	3.9506	4.0000	1.00	4.00
	EDUCATION	6.5280	7.0000	3.00	8.00

APPENDIX E

SNIP CORRELATIONS (1-TAILED)

	COMPARE	TASK	RESRCE	GRATIFY	PROFIN	PROFout	COLLECTBP	ARCHIVEBP	SHAREBP	CITTECH	COMMTECH	POSITION	ORGTPE	SEX	BIRTHYEAR	RACE_ETHNIC	COUNTRY	EDUCATION
INFORM	200 [*]	262 ^{**}	211 ^{**}	321 ^{**}	384 [*]	308 [*]	296 [*]	237 [*]	322 [*]	229 [*]	341 [*]	-073	001	-044	095	021	040	-133 [*]
SHARE	240 [*]	263 ^{**}	208 ^{**}	260 ^{**}	385 [*]	331 [*]	213 [*]	158 [*]	265 [*]	152 [*]	304 [*]	019	038	-053	-039	-001	098	-070
COMMUNIC	174 [*]	256 ^{**}	231 ^{**}	120	192 [*]	226 [*]	211 [*]	161 [*]	263 [*]	298 [*]	361 [*]	017	134 [*]	036	-105	-026	-004	-024
INTERACT	210 [*]	263 ^{**}	195 ^{**}	202 ^{**}	210 [*]	249 [*]	171 [*]	174 [*]	282 [*]	252 [*]	323 [*]	-028	063	-018	-085	-019	103	-073
LEARN	066	-033	105	268 ^{**}	174 [*]	227 [*]	304 [*]	237 [*]	292 [*]	179 [*]	264 [*]	011	-067	-086	106	092	-019	-090
UNDERSTAND	109	-002	084	289 ^{**}	189 [*]	277 [*]	298 [*]	214 [*]	313 [*]	197 [*]	326 [*]	004	017	-097	081	124	064	-066
EASY	112	064	132	249 ^{**}	200 [*]	274 [*]	252 [*]	191 [*]	285 [*]	187 [*]	260 [*]	-061	-039	-092	129	099	051	-091

APPENDIX E (Continued)

ENCOURG	081	089	182*	177*	395*	257*	140*	153*	065	070	137*	-020	210*	015	053	-035	139*	072
ENCOURG2	050	-116	-174*	-129	-403*	-130	-190*	-245*	-093	-	-171*	-228*	-091	-260*	-100	-048	-205*	-012
COMPTNT	250*	074	082	192**	202*	192*	202*	140*	188*	162*	154*	029	062	019	-007	012	080	-033
VALUES	187*	131	105	197**	131	226*	208*	195*	238*	215*	122	035	019	053	-063	031	121	-045
SKILLED	268*	089	160*	189**	169*	217*	288*	228*	279*	208*	226*	034	077	116	070	038	082	-046
CONCERN	129	021	159*	166*	040	200*	074	102	105	124	039	-105	049	204*	-080	-056	075	005
CLOSNESS	125	167*	268**	194**	210*	301*	149*	127	128	182*	225*	-055	-039	116	015	-025	-002	028
EMOTION	273*	214**	159*	125	177*	222*	128	138*	189*	263*	206*	-043	029	074	057	022	106	-067
FELOWSHIP	211*	154*	063	288**	211*	192*	076	076	102	205*	070	000	086	-095	-031	025	066	-124

APPENDIX E (Continued)

ETHICAL	245	248	166	139	215	209	250	150	247	247	219	084	042	016	-080	043	021	-006
FAIRNESS	247	199	198	201	219	173	190	130	167	143	238	-007	061	002	018	-049	055	-141
RESPECT	299	146	151	087	156	148	227	195	236	261	284	-042	-020	-018	003	-057	045	-082
TRUSTWORTHY	295	205	271	141	197	240	329	227	227	205	262	-018	066	-024	011	018	-016	-070
PRIVACY	269	145	294	019	175	145	271	209	215	234	198	-033	-048	069	035	007	-065	-069
GOALS	145	136	151	025	096	036	305	292	254	259	247	010	-082	056	071	007	017	-035
PERFORM	265	297	191	130	364	256	389	307	336	313	320	011	069	053	079	009	023	-133
USAGE	077	115	-133	155	237	110	-049	020	044	-054	088	089	095	-228	000	156	049	-044

APPENDIX E (Continued)

INHOUSE	- 012	- 099	- 055	018	- 345 [*]	- 062	- 022	- 070	- 075	- 107	- 076	151 [*]	001	063	026	015	- 132 [*]	- 081
PARTICIPATE	- 013	- 131	- 168	- 148	- 241 [*]	- 218 [*]	- 035	- 029	- 073	- 015	- 147	100	- 271 [*]	298 [*]	156	157	^a	- 137
PERSONAL	342 [*]	248 ^{**}	- 001	360 ^{**}	287 [*]	269 [*]	091	085	003	041	103	152 [*]	171 [*]	- 062	104	- 082	- 083	- 120
WORK	343 [*]	210 ^{**}	047	224 ^{**}	294 [*]	169 [*]	126	113	091	093	017	165 [*]	114	136	147 [*]	- 139 [*]	- 021	- 011
COMPARE	1	227 ^{**}	077	212 ^{**}	323 [*]	225 [*]	212 [*]	145 [*]	117	115	172 [*]	003	114	- 009	125	- 081	037	016
TASK	227 [*]	1	397 ^{**}	071	207 [*]	187 [*]	045	077	101	125	159 [*]	104	115	- 020	059	- 042	- 001	- 073
RESRCES	077	397 ^{**}	1	132	065	212 [*]	153 [*]	104	108	052	043	086	001	201 [*]	117	- 078	089	079
GRATIFY	212 [*]	071	132	1	340 [*]	435 [*]	059	100	099	003	055	018	029	- 111	272 [*]	- 014	090	- 123
PROFIN	323 [*]	207 ^{**}	065	340 ^{**}	1	517 [*]	265 [*]	272 [*]	267 [*]	225 [*]	270 [*]	040	152 [*]	- 034	098	036	062	134 [*]

APPENDIX E (Continued)

RACE_ETHNIC	- 081	- 042	- 078	- 014	036	- 037	079	074	049	- 032	- 081	146*	- 001	027	127	1	047	- 033
COUNTRY	037	- 001	089	090	062	- 137*	- 069	133*	114	064	041	007	- 006	055	040	047	1	- 116
EDUCATION	016	- 073	079	- 123	134*	144*	063	075	072	039	- 049	138*	063	087	- 138*	- 033	- 116	1

VITA

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