

2019

The Examination of the Effect of Various Social Constructs on Activities at Social Network Sites

Stephen Musembwa

Nova Southeastern University, sm1447@mynsu.nova.edu

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The Examination of the Effect of Various Social Constructs on Activities at
Social Network Sites

by

Stephen Katumba Musembwa

A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy
in
Information Systems

College of Computing and Engineering
Nova Southeastern University

2019

We hereby certify that this dissertation, submitted by Stephen Musembwa conforms to acceptable standards and is fully adequate in scope and quality to fulfill the dissertation requirements for the degree of Doctor of Philosophy.



Souren Paul, Ph.D.
Chairperson of Dissertation Committee

12/4/19
Date



Ling Wang, Ph.D.
Dissertation Committee Member

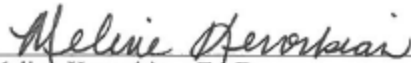
12/4/19
Date



Sanjoy Ghose, Ph.D.
Dissertation Committee Member

12/4/19
Date

Approved:



Meline Kevorkian, Ed.D.
Interim Dean, College of Computing and Engineering

12/4/19
Date

College of Computing and Engineering
Nova Southeastern University

2019

An Abstract of a Dissertation Submitted to Nova Southeastern University
in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

The Examination of the Effect of Various Social Constructs on Activities at Social Network Sites

by
Stephen Katumba Musembwa
December 2019

The rapid growth of the Internet has led to the proliferation of technology, including use of social network sites (SNS). Social network sites facilitate communications between online users with shared interests and enable users to share content seamlessly. Participation in SNS is increasingly global in nature by individuals from diverse social and cultural backgrounds. Accordingly, the rapid growth of social network site usage necessitates analysis of factors affecting usage of SNS and creation of social networks on the social network sites.

There are numerous drawbacks related to SNS usage. Inherent drawbacks of SNS include naivety of social network users freely divulging personal information, potential of exploitation by devious members and loss of privacy. These drawbacks could negatively affect trust and reciprocity in social network site transactions.

A research model that focuses on measurement of cultural diversity, native language diversity, identification needs, trust in SNS interactions, reciprocity in SNS interactions, configuration of SNS, sense of community and effective communication on the activities of social network sites. The model suggests how the configuration of SNS and the diversity of SNS users influence different relational facets of social capital such as trust, reciprocity and identification needs in SNS and the sense of community in SNS. We conducted a web-based survey to collect the data to test our hypotheses. We find that SNS users' identification needs and trust in interaction have positive relationships with reciprocity in SNS interactions. We also find that the development of the sense of community promotes effective communication in SNS.

Acknowledgements

I want to thank God for life and the opportunity to accomplish this great achievement. This dissertation is dedicated to my family Mildred, Ethan, Lauren, Avery and my siblings Dan, Paul and Miriam. Special thanks to Mildred, my significant other and confidante. You made this achievement possible with your patience, constant support and encouragement.

I would also like to thank my parents, Mr. Edward Sentongo Musembwa (RIP) and Mrs. Margaret Nasuna Musembwa for their love, support and the values they instilled in me. My parents sacrificed tremendously to ensure that I had an extraordinary education. Without the support and inspiration of my parents and family, I would not have reached this milestone. I am forever grateful to my parents.

Additionally, I would like to express gratitude to my dissertation advisor, Dr. Souren Paul, for his guidance and direction throughout the dissertation process. Finally, I would like to thank my dissertation committee members, Dr. Ling Wang and Dr. Sanjoy Ghose, for their help and insightful feedback. Thank you all for challenging me and guiding me through this process. May God bless you all.

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Chapter 1

Introduction

Background

Social network sites (SNS) use is prevalent on all modes of computing, including wireless and wired mediums. SNS are becoming popular and we find the development of groups and communities in these sites. These groups or communities have common interests and/or common sources of relationships. While some of these groups/communities do not grow over time, many groups / communities become popular and grow very rapidly. Some common examples are book clubs, academic researchers, software developers, cultural groups, business executives and more. Given that SNS in general and SNS communities are becoming very popular and not many studies have addressed the issue of community in SNS, we feel motivated to conduct a study to understand the factors that foster a continuing sense of communities in SNS. In addition, we want to examine if the development of the sense of community facilitates the effectiveness of communication in SNS.

Social network sites offer a setting where users can share ideas, texts, photographs, videos and more with individuals of the same backgrounds and interests. Typically, social network sites avail privacy settings to allow users to choose ‘friends’ that can view or add content to their personal pages on the networks (Sledgianowski & Kulviwat, 2009). Accordingly, privacy control settings are crucial, because, if left un-activated, a user’s personal web page is available to the online universe to make changes (Sledgianowski & Kulviwat, 2009).

Additionally, the pervasiveness of mobile devices has led to the proliferation of mobile apps including applications related to social media (Manvi & Birje, 2010). This unprecedented growth of wireless mobile telephony will most likely lead to increased usage of social networks. Online users from different regions and countries are increasingly forging relationships in internet-related social networks and communities. Participation in social network sites is regional, global and can be between individuals from diverse social and cultural backgrounds. Consequently, an important aspect of SNS interaction is trust. Analysis of trust in online virtual group interactions as well as face-to-face interactions is imperative, because technology may increase risk of interaction and make it harder to develop trust (Jarvenpaa & Leidner, 1998). Ethnic and social similarities between individuals help nurture trust, while diversity and social differences lessen trust (McAllister, 1995). Accordingly, cultural diversity among users may affect aspects of group interaction including trust and reciprocity (Lowry, Zhang, Zhou, & Xiaolan, 2007).

Trust, social interaction and reciprocity are mutually reinforcing constructs, because trust facilitates knowledge sharing and fosters reciprocal actions. Due to the global nature of social network sites, the ability to achieve reciprocity is crucial to building social networks in SNS. Essentially, members of social networks respond to actions of others with comparable positive or negative actions (Lee et al., 2010). Whereas researchers typically study reciprocity at the contact level, which entails analyzing the extent to which users reciprocate in the creation of following or contact links in popular SNS. Research on reciprocity can be extended to include analysis of content rating (faving) and by comparing the reciprocity behavior observed in SNS (Lee et al., 2010).

Although, social network sites attract new entrants at a rapid rate, there are numerous drawbacks related to SNS usage. Occasionally social network users freely divulge personal information leading to the potential of exploitation of personal information by devious SNS users (Sledgianowski & Kulviwat, 2009). Thus, the development of the sense of community is challenging in SNS.

Prior studies on SNS have examined the relationships between self-esteem and social capital (Steinfeld, Ellison, & Lampe, 2008); between cultural differences and the motivations for using SNS (Kim, Sohn, & Choi, 2011); between certain kinds of Facebook use and formation of social capital (Ellison, Steinfeld, & Lampe, 2011); asymmetric communication in Facebook and bridging social capital i.e. access to new information through a diverse set of acquaintances (Burke, Kraut, & Marlow, 2011); directed communication and the feelings of bonding social capital i.e. emotional support from close friends (Burke & Lento, 2010). In this paper, we discuss the effects of cultural diversity, native language diversity, trust in SNS interactions, reciprocity in SNS interactions and development of the sense of community in SNS.

This study entails a problem statement section that includes a statement of the problem, discussion of the scope and nature of the research as well as references to supporting literature. The next section describes the dissertation goal and potential accomplishments of the research. Thereafter, the research questions section lists research questions that the author developed. The relevance and significance section that follows links the supporting literature with the problem statement and goal of the dissertation research study. In this section, the author expounds on how the goal of the study addresses the research problem and how the proposed research could contribute to potentially resolving the problem and adding to the knowledge base. The next section constitutes a review of literature that categorizes the key areas of the research by

referencing existing literature. The barriers and issues section that follows presents potential challenges in conducting the research. Consequently, the approach section explains how the author proposed to address the research problem and achieve the stated goals. Thereafter, the milestones section that follows pinpoints the major steps in the progress of the dissertation, specifically, the steps necessary and the timeframe required to complete the dissertation. The resource section lists all resources that the author needed to complete the dissertation, such as hardware, software, access to subjects and instruments used to gather statistical evidence, such as surveys. Finally, the reference section lists references literature reviewed and cited in the study.

Problem Statement

Participation in SNS is typically global in nature and by individuals from diverse social and cultural backgrounds. Due to the rapid growth of social media, social network sites (SNS) attract new entrants at a rapid rate, however, there are numerous drawbacks related to SNS usage. Inherent drawbacks of SNS include naivety of social network users freely divulging personal information, potential of exploitation by devious members and loss of privacy (Sledgianowski & Kulviwat, 2009). These drawbacks could negatively affect trust and reciprocity in social network site transactions.

The Internet has transformed social network sites, shifting cliques from lunchrooms to chat rooms and expanding their reach and influence. Because of collaboration between SNS users, members of SNS could potentially use their expertise with interactive technologies to exploit their intrinsic social capital and the trust of their social network site peers to perform dubious acts. The potential solution to this problem entails implementation of mechanisms that

empower SNS users to protect their personal information although they have developed trust, reciprocity and social capital with potential perpetrators of security or privacy violations.

Additionally, Internet growth and use of social media is prevalent in developed and developing countries, however, study of social constructs on use of social network sites is still limited. For example, Africa has the highest economic growth of all regions of the world and this has translated into growth of SNS use (Kim, 2012).

Consequently, in order to understand the complexities of use of social network sites, it was beneficial to conduct research on effects of cultural diversity, native language diversity, identification needs, trust in SNS interactions, reciprocity in SNS interactions, configuration of SNS, sense of community and effective communication on the activities of social network sites.

Dissertation Goal

This dissertation aimed to present an analysis of the effects of cultural diversity, native language diversity, identification needs, trust in SNS interactions, reciprocity in SNS interactions, configuration of SNS, sense of community and effective communication. The ultimate goal of this study was to develop and test the validity of a theoretical model that measures and demonstrates the effects of these social constructs on the activities of social network sites.

Research Questions

In this research, we aimed to focus on the following research questions:

RQ1: Does cultural diversity affect trust in SNS interactions?

RQ2: Does native language diversity affect reciprocity in SNS interactions?

RQ3: Does the configuration of social networks affect trust and reciprocity in SNS interactions?

RQ4: Do identification needs affect reciprocity in SNS interactions?

RQ5: Does trust in SNS interactions affect sense of community in SNS?

RQ6: Does reciprocity affect trust in SNS interactions?

RQ7: Does the sense of community affect effective communication in SNS?

Relevance and Significance

Social network site (SNS) usage continues to grow rapidly and this growth has created an online landscape where users share and exchange knowledge and ideas on a global basis (Trier & Bobrik, 2009). Social network sites facilitate exchange of digital information such as text, data, pictures, and videos, in social networks or groups created on these sites (Sledgianowski & Kulviwat, 2009). Membership in social network sites is open to all interested parties and users of SNS have the option of joining various sites simultaneously. Accordingly, as the internet transforms social network sites, and the popularity of SNS increases, research on SNS is necessary.

To date there has been little formal evaluation worldwide on the effect of social constructs of effects of cultural diversity, trust in SNS interactions, reciprocity in SNS interactions, sense of community and effective communication on the activities of social network sites. Accordingly, it is important to analyze the effects of these social constructs on use of social network sites from an original standpoint. This study aimed to explore the potential safeguards available to users against exploitation of the social of trust, reciprocity and social capital by peers on social network sites.

Barriers and Issues

Limited research in exploring the propensity of users to divulge personal information to other members of SNS is challenging but beneficial. The challenge was to obtain the relevant data physically from the selected subjects. However, that issue was resolved using technology.

In addition, the constructs of native language diversity and configuration of SNS may have been difficult to measure. However, where applicable, the researcher leveraged the instruments used to measure other constructs.

Assumptions, Limitations and Delimitations

Assumptions

The researcher made assumptions regarding use of SNS, truthfulness in disclosure and the applicability of the findings. The assumption made that participants would be selected from a population of users of SNS via an online survey tool. The researcher also assumed that the selected participants would provide enough responses to the research questions. In case the responses provided by the participants are not enough, the researcher selected more participants through the online selection process of participants. Subsequently, truthful responses are necessary for the researcher to garner a thorough understanding of the user experience and accuracy of the research findings. Accordingly, the researcher assumed that the participants would provide honest responses to the questions.

Limitations

Automated responses on SNS use that are self-reporting in nature may present certain limitations, as participants are susceptible to the inclination to provide socially acceptable answers. The researcher used a consent form with the participants, assuring the participants that

their participation is voluntary and confidential. Thus, the researcher expected that the participants would be candid and have no concerns of any consequences of taking the survey.

Delimitations

The study was limited to survey participants that are adult males and females that use SNS, because this demographic was likely to provide enough coverage on SNS usage. A constraint that made the study practicable was the focus on SNS users that consistently use a renowned SNS.

Definition of Terms

Cultural Diversity - Cultural diversity is the diversity among people from different cultural backgrounds as result of the multiplicity of ethnic origins, religions and language (Mishra, 2012).

Native Language Diversity - Native language diversity refers to the differences in linguistic influences mainly tied to ethnicity. Language diversity entails the different languages spoken and the various people who speak the languages (Rumbaut & Massey, 2013).

Configuration of SNS - Configuration of SNS refers to the architectural and technical design of the SNS that typically, entails availing privacy settings to allow users to choose 'friends' that can view or add content to their personal pages on the networks (Sledgianowski & Kulviwat, 2009).

Identification - Identification is as a mode of social influence that refers to the self-consciousness of one's affiliation to a group, as well as the emotional importance of this affiliation (Tajfel, 1978). Identification occurs when a person consents to influence of a group because they want to ascertain a relationship with that group.

Trust - Trust is the inclination of a person to be receptive to and expect certain actions of another person, regardless of the ability of the trustor to monitor the actions other party (Grabner-Kräuter & Bitte, 2013).

Reciprocity - Reciprocity is defined as a user's strategy to return favors received from others, in a manner comparable to the receiving method (Lee et al., 2010).

Sense of community - Sense of community entails four separate dimensions: membership, influence, integration and shared emotional connection (McMillan & Chavis, 1986).

Effective Communication - Effective communication refers to articulateness or the ability of individuals to express popular and or unpopular dissenting opinions (Lochner, Kawachi, & Kennedy, 1999).

Social Capital - Social capital is defined as the resources engrained in a person's social network; these resources can be accessed and or activated through ties in the networks (Lin, Social capital: A theory of social structure and action, 2002).

Summary

Ultimately, analysis of the underlying effects of cultural diversity, native language diversity, trust in SNS interactions, reciprocity in SNS interactions, sense of community and effective communication on the activities of social network sites was the goal of this research.

Chapter 2

Review of the Literature

Introduction

The purpose of this study was to examine the relationship between configuration of SNS and various sources of diversity of SNS users with different relational facets of social capital (i.e. trust, reciprocity, and identification needs) in SNS and the sense of community in SNS. In an attempt to find the theoretical justifications for the research questions, the author built a theoretical model in this paper. The theoretical model that the author proposed in this research is presented in Figure 1 below. The theoretical model links the configuration of SNS to the various relational facets of social capital (i.e. trust, reciprocity, and identification needs) in SNS and the sense of community in SNS.

Chapter 2 covered current and original literature that supported the research study. The first section provided the framework explaining the theory behind the research study. The next two sections reviewed cultural diversity and native language diversity while the fourth section examines configuration of SNS. The fifth section reviewed of identification needs in correlation to reciprocity in SNS interactions. The next two sections analyzed trust in SNS interactions and reciprocity in SNS interactions their relationship to sense of community while the next section analyzes sense of community and effective communication. The next section presented hypotheses developed by the as well as theoretical model. Finally, the last section contained a summary of the chapter and the literature reviewed.

Theoretical Foundation of Research

The author discussed the underlying theory used to build their theoretical model. In addition, the author developed a theoretical model in conjunction with a firm problem statement and use distinct selection criteria to validate the model (Weick, 1989).

The author built a model based on the theory of explaining and predicting (EP theory). EP theory entails defining and describing constructs and the relationships among the constructs in a theoretical model, as well as gaining insight on the underlying causes and predictions of the relationships (Gregor, 2006). The theory entailed key components including a description of the primary constructs, means of representations such as words and diagrams, relationships between constructs and specification of the scope of the theory. In addition, the author used casual explanations to draft hypotheses that are testable using statistical methods.

The rationale for the author selecting EP theory was because the theory type could be tested. In addition, in a study performed to analyze selection theoretical model types by researches in 50 research articles of two leading Information Systems journals, the authors of the study noted overwhelmingly that EP theory was the preferred classification of theoretical model type by IS researchers (Gregor, 2006).

Consequently, the author used an approach for theory development that entails documenting the research problem and research questions and then selecting the most applicable type of theory for the problem, based on the most current affairs in the Information Systems research area (Gregor, 2006). Further, when building the theoretical model and conducting research, the author considered three dimensions of relevance: importance, accessibility, and applicability (Rosemann & Vessey, 2008). Importance, in that the research deals with an everyday problem. Accessibility in that the research is logical, comprehensible and results

oriented (Klein, Jiang, & Saunders, 2006). Applicability in that the research provides guidance and plausible solutions to the problem statement (Klein et al. 2006).

The study examined the different relational facets of social capital including trust, reciprocity, identification needs in SNS and their effects on sense of community and effective communication in SNS. Social capital is defined as the resources engrained in a person's social network; these resources can be accessed and or activated through ties in the networks (Lin, Social capital: A theory of social structure and action, 2002). Essentially, social resources that result in social capital can produce a return for the owner of the social capital. Accordingly, people can leverage other people's resources such as their wealth, power or reputation, through such social relations or social networks.

The network-based theory of social capital identifies key aspects of patterns of social relations, where people with social ties participate in reciprocal interactions. Sharing of interests and characteristics maintains the links in a social network, characterized by shared membership and identity. These relations, mediated through collectivity, provide members a sense of belonging to social network (Lin, 2008). Social capital is contingent on social networks, because social networks provide the necessary conditions that are essential to access engrained resources. Accordingly, the features of a social network are significant and essential antecedents external to social capital (Lin, 2008).

In addition, the theory of social capital describes how people collaborate with each other within their communities to overcome the predicaments of collective action (Lochner et al., 1999). Social capital entails attributes of social organization such as networks of secondary alliances, levels of interpersonal trust and norms of mutual support and reciprocity. These attributes act as social resources for individuals and facilitate collective action (Putnam, 1993).

Consequently, the author examined how the constructs of cultural diversity, trust, reciprocity, identification needs, sense of community and effective communication in social networks that make up SNS.

Cultural Diversity

Cultural diversity is the diversity among people from different cultural backgrounds as result of the multiplicity of ethnic origins, religions and language (Mishra, 2012). Cultural identity of specific communities and regions is a key ingredient of this cultural diversity (Mishra, 2012). According to Aggarwal (2010), culture is shared social norms and values in a collective society such as a nation or an organization. On the other hand, diversity represents aspects such as ethnicity, gender, culture, and sexuality, which differentiate individuals. Hofstede's model of culture outlined five cultural dimensions, individualism-collectivism (I-C), masculinity-femininity, uncertainty avoidance and Confucian dynamism or long-term / short-term orientation (Hofstede, 1980). According to Hofstede's model, social ties among persons in individualistic cultures are loose, while ties in collectivist cultures are strong (Hofstede, 1980).

A more recent research program centering on culture and leadership in more than sixty nations is GLOBE (Global Leadership and Organizational Behavior Effectiveness) (House, Javidan, Hanges, & Dorfman, 2002). The GLOBE model is an alternative cultural framework that specifies current cultural dimensions (Tang & Koveos, 2008). The GLOBE model defines culture as shared values, beliefs and explanations of key events that result in common experiences, that are transferred from generation to generation (House et al., 2002). GLOBE categorizes national cultures based on nine dimensions: performance orientation, future orientation, assertiveness, power distance, humane orientation, institutional collectivism, in-group collectivism, uncertainty avoidance, and gender egalitarianism (House et al., 2002).

The six initial culture dimensions of the GLOBE program originated from Hofstede's cultural model (Hofstede, 1980). GLOBE and other frameworks updated Hofstede's cultural dimensions based on the evolving global cultures and economic environments. (Tang & Koveos, 2008) GLOBE underscores culture as shared values amongst individuals with common experiences (House et al., 2002). Users that join social network sites initially seek out SNS familiar members with similar cultures or values (Gefen, et al., 2006). New members of SNS may not initially 'friend' individuals with dissimilar cultures or values as initial trust maybe non-existent. Accordingly, the author proposed that cultural diversity has an adverse effect on trust, because, trust is most likely higher in social networks where members are culturally similar and less where members are culturally diverse (Musembwa & Paul, 2012).

Alternatively, there are new studies about the effect of motivation of SNS usage based on cultural difference (Ji, et al., 2010). Researchers posit that it is difficult to utilize Hofstede's theory into current studies, because of the perpetual dynamic change in cultural dimension, in that past culture was characterized as immobile and this does not reflect the current phenomenon of rapid cultural change (Kirkman, Lowe, & Gibson, 2006). In addition, the expansion of the Internet provides opportunities for users to transact on a global scale, whereby the influences of the Internet are affecting the homogenization of cultural components in online environments such as SNS (Robbins & Stylianous, 2010). Because of the continuous changes of cultural dimension on online usage, it is challenging solely rely on Hofstede's cultural categorizations when performing online research. Accordingly, due these challenges it was prudent to not only explain the differences in SNS usage by cultural differences, but also additional constructs described in this research,

Nonetheless, it is quite possible that members from divergent backgrounds in a group of a social network site can eventually develop trust relationships with existing members of a group, once all parties become familiar with one another to form social networks in SNS. Consequently, once these members become familiar with one another, they could develop relationships that may translate to a similar culture.

Table 1

Cultural Diversity

Concept	Source
Hofstede's model of five cultural dimensions.	Hofstede, G. (1980). <i>Culture's Consequences: International Differences in Work-Related Values</i> . Newbury Park, CA: Sage.
Cultural identity - a key ingredient of cultural diversity.	Mishra, N. (2012). The Mainstreamisation of Cultural Diversity: The Corporates, Media and Similarisation of Publics in India.
Culture is shared social norms and values in a collective societal unit such as a nation or an organization.	Aggarwal, A. (2010, January). Diversity in Distributed Decision Making: An Exploratory Study. In <i>43rd Hawaii International Conference on System Sciences, 2010. HICSS 2010</i> . (pp. 1- 11). IEEE.
The effect of motivation of SNS usage based on cultural difference can be measured acknowledging the perpetual dynamic change in cultural dimension	Ji, Y. G., Hwangbo, H., Yi, J. S., Rau, P. P., Fang, X., & Ling, C. (2010). The influence of cultural differences on the use of social network services and the formation of social capital. <i>Intl. Journal of Human-Computer Interaction</i> , 26(11-12), 1100-1121.
Expansion of the Internet provides opportunities for users to transact globally, however, influences of the Internet affect the homogenization of cultural components in online interactions such as SNS.	Robbins, Stephanie S., and Antonis C. Stylianou. "A longitudinal study of cultural differences in global corporate web sites." <i>Journal of International Business and Cultural Studies</i> 3 (2010): 77-96.

Native Language Diversity

Native language diversity refers to the differences in linguistic influences mainly tied to ethnicity. Language diversity entails the different languages spoken and the various people who speak the languages (Rumbaut & Massey, 2013). Native language diversity can be determined by ascertaining if a person speaks a language other than English at home and if the person's speaks English fluently, keeping in mind that speaking a foreign language at home does not necessarily imply a lack of fluency in English.

Language has a critical purpose in social relations, because it is the channel used by people to confer and share information, shared language facilitates interaction between people as they that interrelate. When people share a common language, it increases their ability to gain access to people that speak that language (Nahapiet & Ghoshal, 1998). On the other hand, when language and social codes differ, people could stay apart, and this could restrict their access to each other's information (Nahapiet & Ghoshal, 1998). Further, Nahapiet & Ghosal, 1998, posit that sharing of information may come about through the existence of shared language and through the sharing of mutual narratives. In addition, Nahapiet & Ghosal, 1998, argue that these two elements constitute facets of shared awareness that facilitates the creation of intellectual capital, by acting as both a medium and a product of social interaction.

In addition to shared language and codes, researchers have proposed that shared traditions, myths and stories, provide means for creating and exchanging of ideas and information in communities (Clark, 1972).. The United States has traditionally been portrayed as a nation of great linguistic diversity principally driven by immigration (Rumbaut & Massey, 2013). However, due to social, cultural, economic, and demographic changes within these linguistic communities, these diverse linguist ethnic identities may endure third and fourth generations, and sometimes more (Rumbault, 2013).

Melitz and Touba (2012) found that linguistic factors have an impact on social interactions in that individuals communicating in a common language gravitate towards each other. Interestingly, the researchers in the same study found that ease of communication is more significant than ethnicity and trust in social interactions (Melitz & Toubal, 2012). Individuals that speak the same language are more apt to easily communicate, form societal bonds and reciprocate each other's actions. Reciprocity refers to a person's strategy to return favors received from others, in a manner comparable to the receiving method (Lee et al., 2010). Because users that speak a similar language gravitate toward each other and reciprocate each other's actions, diversity in native language may have a negative effect on reciprocity.

In another study on social interaction, researchers found that ethno-racial students, including Asian, Black, Latino, compared to white students, had increasingly diverse social networks in Facebook (Lewis, Kaufman, Gonzalez, Wimmer, & Christakis, 2008). Lewis et al., 2008, deduced that users who belonged to ethnically homogeneous social networks displayed more distinct behavioral patterns compared to users of diverse networks.

People that communicate in the same native language tend to gravitate towards each other. In other words, individuals with the same native language background will understand each other's messages easily and will feel comfortable responding to these messages. On the contrary, parties in a SNS that have different backgrounds in terms of native language may interpret messages from other SNS users differently and the exchange of messages between these divergent users may not be very smooth.

Table 2

Native Language Diversity

Concept	Source
Native language diversity refers to the differences in linguistic influences mainly tied to ethnicity, while language diversity refers to the different languages spoken and the various people who speak the languages	Rumbaut, R. G., & Massey, D. S. (2013). Immigration & Language Diversity in the United States. <i>Daedalus</i> , 142(3), 141-154.
People that share a common language increase their ability to gain access to people that speak the same language.	Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. <i>Academy of Management Review</i> , 23 (2), 242-266
Sharing of information may come about through the existence of shared language and through the sharing of mutual narratives - creation of intellectual capital, by acting as both a medium and a product of social interaction.	Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. <i>Academy of Management Review</i> , 23 (2), 242-266
Linguistic factors have an impact on social interactions in that individuals communicating in a common language gravitate towards each other.	Melitz, J., & Toubal, F. (2012). Native language, spoken language, translation and trade. <i>CEPR Discussion Paper</i> 8994.
Users who belonged to ethnically homogeneous social networks will most probably display distinct behavioral patterns, compared to users of diverse networks.	Lewis, K., Kaufman, J., Gonzalez, M., Wimmer, A., & Christakis, N. (2008). Tastes, ties and time: a new social network dataset using Facebook.com. <i>Social Networks</i> , 30, 330-34.

Configuration of SNS

Configuration of SNS refers to the architectural and technical design of the SNS that typically, entails availing privacy settings to allow users to choose ‘friends’ that can view or add content to their personal pages on the networks (Sledgianowski & Kulviwat, 2009). Typically, SNS users set their privacy settings prudently, favoring users that they trust or have reciprocal relationships with. Social network sites as online forums enable users to create profiles, connect and share information with other users that have similar interests (Boyd & Ellison, 2007). Accordingly, configuration of the SNS is a key component of the SNS experience.

Social network sites are distinctive in that they facilitate members to make their entire network of connections visible to other members of their choice (Boyd & Ellison, 2007). In addition, social network sites are virtual communities that have multiplied with the advent of the internet (Dwyer, Hiltz, & Passerini, 2007). Accordingly, the key motivation of users joining SNS is communication and maintaining relationships.

Consequently, groups and networks created in SNS strengthen existing social ties by updating members on the undertakings of their peers. Users of SNS establish virtual networks online by obtaining followers, contacts or friends (Lee, Antoniadis, & Salamatian, 2010). Social network sites enable members to create and join groups based on common interests by integrating their profiles into “Groups” application, such as the “Facebook Groups” application (Boyd & Ellison, 2007). The “Groups” application in Facebook shows the groups each member belongs to and the groups of each of this member’s “friends” (Boyd & Ellison, 2007). Accordingly, the compounding effect of the web of connections leads to the evolution and proliferation of social networks in SNS.

Once users create the networks, other users in their online cliques can show approval by ‘faving’ or ‘liking’ uploaded content. In addition, users can expand lists of their ‘favorites’

contacts via inter-connections between the web of online social networks (Lee et al., 2010). The ‘faving’ element is a key component of content sharing as it propagates content and facilitates user participation (Lee et al., 2010). Favoring or “faving” facilitates approval by content consumers who are typically users in a given network. In order to show their gratitude and stimulate further communications, at times users reciprocate by sharing their own content, as a token of their appreciation (Lee et al., 2010).

According to Lee et al., 2000, there are two central components in the design and implementation of the faving functionality: 1) Visibility and privacy 2) Effect on content popularity. On the Flickr SNS, the favorites feature is a critical component of a user’s home page. Users whose photos are ‘faved’ more frequently are more apt to be categorized as more interesting and appear higher in results of searches (Lee et al., 2010). Accordingly, the most interesting users are listed on Flickr’s home page ‘explore’, which enhances the users’ visibility and popularity (Lee et al., 2010).

On Twitter, favorites are not as crucial, in that a user’s favorite item is only visible in their profile page and the item’s owner is not notified about this action. Retweeting is a concept on Twitter that is the equivalent of faving, whereby a Twitter user “retweets” items that they like, and these retweets automatically become part of their own stream, providing the user with the ability to retain a list of retweets or classify tweets based on the frequency of retweets (Lee et al., 2010).

Likewise, a LinkedIn user can create connections with other LinkedIn users, register in user groups of common interest and label his connections in groups of interest (Cameron, Leung, & Tanbeer, 2011). Correspondingly, Twitter is a SNS that enables users to send and read “tweets”. Twitter users can endorse to other users’ tweets by “following” the other users

(Cameron, Leung, & Tanbeer, 2011). Accordingly, a Twitter user can identify their strong followers by the followers' activity.

Social networks on SNS are self-forming and self-maintaining. Members of social networks in SNS typically have similar characteristics and beliefs (Rodic´ & Engelbrecht, 2008). Social networks in SNS emerge based on the evolution of social constructs amongst individuals with associated interests. Culture is an attribute that can shape the collective belief of individuals in a nation, society, and organizations. Although, social networks entail individuals of diverse cultures, culture can play an integral role in the creation of networks in SNS.

As stated above, social network sites avail favoring and privacy settings to allow users to choose 'friends' that can view or add content to their personal pages on the networks (Sledgianowski & Kulviwat, 2009). Privacy control settings when activated, make a user's personal web page available to the online universe (Sledgianowski & Kulviwat, 2009). Because this unmitigated access can lead to security and privacy violations, SNS users typically set their privacy settings prudently, favoring users that they trust or have reciprocal relationships with. Accordingly, the configuration of SNS could have an influence on trust and reciprocity among SNS users.

Table 3

Configuration of SNS

Concept	Source
Configuration of the SNS is a key component of the SNS experience. SNS users typically set their privacy settings favoring users that they trust or have reciprocal relationships with; SNS enable users to create profiles, connect and share information with other users that have similar interests.	Boyd, D., & Ellison, N. (2007). Social Network Sites: Definition, history, and scholarship. <i>Journal of Computer Mediated Communication</i> , 13(1), 210-230
Two central components in the design and implementation of the favoring functionality are visibility and privacy as well effect on content popularity.	Lee, J. G., Antoniadis, P., & Salamatian, K. (2010, August). Favoring reciprocity in content sharing communities: A comparative analysis of Flickr and Twitter. In <i>Proceedings of the International Conference on Advances in Social Networks Analysis and Mining (ASONAM)</i> . (pp. 136-143). IEEE.
LinkedIn users create links or connections with other LinkedIn users, register in user groups of common interest while Twitter users send and read "tweets". endorse to other users' tweets by "following" the other users	Cameron, J. J., Leung, C. S., & Tanbeer, S. K. (2011, December). Finding strong groups of friends among friends in social networks. In <i>2011 IEEE Ninth International Conference on Dependable, Autonomic and Secure Computing (DASC)</i> , (pp. 824-831). IEEE.
SNS avail favoring and privacy settings to enable users to choose 'friends' that can view or add content to their personal pages on SNS.	Sledgianowski, D., & Kulviwat, S. (2009). Using social network sites the effect of playfulness critical mass and trust in a hedonic context. <i>The Journal of Computer Information Systems</i> , 49(4), 74-83.

Identification Needs

Identification is as a mode of social influence that refers to the self-consciousness of one's affiliation to a group, as well as the emotional importance of this affiliation (Tajfel, 1978).

Identification occurs when a person consents to influence of a group because they want to ascertain a relationship with that group. Identification is also defined as a process where people perceive themselves as one with another person or group of people, because of their membership in the group or as a reference to the group, through the group's operations (Nahapiet & Ghoshal, 1998). Group identification can increase the perceived opportunities for exchange and enhance the actual frequency of collaboration between interacting parties (Lewicki & Bunker, 1996). Accordingly, identification acts as a resource influencing both the anticipation of value to be attained through interaction and the motivation to exchange information by individuals and groups (Nahapiet & Ghoshal, 1998).

Consequently, the psychological status belonging to a community in an online social network can be stem from affective social identity, evaluative social identity and cognitive social identity (Cheung, Chiu, & Lee, 2011). Affective social identity is a sense of emotional connection with the community, evaluative social is an assessment of self-worth based on one's belonging to a specific group and cognitive social identity is a sense of awareness of an individual being part of a community (Cheung, Chiu, & Lee, 2011). Each of the above three components of social identity most probably would influence a person's likelihood of use a social networking site. Essentially, if a user holds strong social identity toward an SNS their intention to use the SNS should increase.

Social network sites define user profiles with some type of visible identifier for searching and identification. The identifier is typically a user name and or an affiliation like a photograph (Felt & Evans, 2008). Privacy implications associated with online social networking depend on the level of identification in user information that is available, its potential recipients, and its potential uses. Information revelation enables users of a social network sites to identify profiles

of other users (Gross & Acquisti, 2005). In addition, the groups in SNS provide users with a sense of belonging, which enhances their identification needs with the social network in the SNS.

A stronger social identity leads to a stronger sense of belonging and higher likelihood of participating in an online SNS. Consequently, the sense of belonging could potentially facilitate reciprocity in SNS interactions, as users in the same group would most like perform reciprocal actions.

Table 4

Identification Needs

Concept	Source
Identification acts as a resource influencing both the anticipation of value to be attained through interaction and the motivation to exchange information by individuals and groups.	Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. <i>Academy of Management Review</i> , 23 (2), 242-266.
Group identification can increase the perceived opportunities for exchange and enhance the actual frequency of collaboration between interacting parties	Lewick, R., & Bunker, B. B. (1996). Developing and maintaining trust in work relationships. <i>Trust in Organizations: Frontiers of Theory and Reach</i> , 114-139.
The psychological status of belonging to a community in an online social network can be stem from affective social identity, evaluative social identity and cognitive social identity, as well as sense of awareness of an individual being part of a community	Cheung, C. M., Chiu, P. Y., & Lee, M. K. (2011). Online social networks: Why do students use facebook?. <i>Computers in Human Behavior</i> , 27(4), 1337-1343.

Trust in SNS Interactions

Trust is the inclination of a person to be receptive to and expect certain actions of another person, regardless of the ability of the trustor to monitor the actions other party (Grabner-Kräuter & Bitte, 2013). Social network sites' members characteristically join sites if they are interested in the social online events or obtain a level of trustworthiness in the SNS. Trustworthiness in SNS depends on various factors, such as privacy and perceptions of trust of the SNS (Dwyer et al., 2007). Accordingly, trust eventually grows in social network sites, if group members and users believe in the safety and privacy procedures implemented on the social network site (Gefen et al., 2006). Gefen et al. (2006) reasoned that the greater the trust levels in a social network site, the higher the likelihood of new users joining the site.

SNS users' willingness to disclose personal information and nurture new online relationships is influenced by perceptions of trust and privacy affect (Dwyer et al., 2007). When users join SNS, users create a profile and make connections with existing contacts and with new friends based on similar interests (Dwyer et al., 2007). Thereafter, users connect to their desired contacts by dispatching "friend" messages, which must be acknowledged by the recipients to create a 'friend' link (Dwyer et al., 2007). The "Friending" link avails the recipient right of access to the sender's profile, adds the recipient to the sender's network and adds the sender to the recipient's network.

Because millions of users join social networking sites on constant basis, divulging personal information, each user connection has a compounding effect on social network expansion. Essentially, once a user joins a SNS and interacts with their friends, who in turn connect with other new friends, a rapport is created and eventually a level of trust is created in a network circle of online friends (Valenzuela, Park, & Kee, 2009). Additionally, social network sites offer a variety of capabilities including an option where a member can permit or preclude

other members from accessing their personal site (Musembwa & Paul, 2012). A feature called the Circle of Trust enables SNS users to assess the credibility of other users and post their perceptions on their web page (Sledgianowski & Kulviwat, 2009). In this research model, the author focused on trust in SNS interactions among individuals and not trust in social network sites. Fundamentally, it is possible for a user of a social network site to trust an individual yet not have trust in the social network site (Musembwa & Paul, 2020). Accordingly, trust among members of social networks increases the eagerness of members to rely on information, data and knowledge presented by other members (Lowry & Zhang, 2007).

Collaborating parties that have gathered information and attained knowledge about each other's capabilities may potentially generate trust; therefore, trust is both a precursor and result of effective collaboration (Newell, David, & Chand, 2007). Consequently, users of SNS develop trust relationships that lead social network site interactions based on inter-personal relationships developed over time within the communities on social networks. As the users develop the sense of community in SNS, they tend to have higher trust for each other.

Trust is an essential component in the facilitation of information exchange and provision of valuable information in SNS. Existence of high levels of trust, typically translates to people being more willing to provide support and take risks in information exchanges (Krasnova, Spiekermann, Koroleva, & Hildebrand, 2010). In addition, membership on social network sites is influenced by the relevance of the site to user interests, topical significance and the strength and nature of the potential user's relationship with other members on the site (Gangadharbatla, 2008). Accordingly, trust will most probably have an effect on the social capital accrued from the social network. Alternatively, trust as a consequence of social capital is also possible, since social ties on a SNS can develop based on various reasons, where the exchange of information lead to

development of social capital followed by the creation of trust links (Grabner-Kräuter & Bitte, 2013).

Consequently, trust is an essential component in the facilitation of information exchange and provision of valuable information in SNS. Existence of high levels of trust, typically translates to people being more willing to provide support to other SNS members. (Krasnova, Spiekermann, Koroleva, & Hildebrand, 2010). Membership on social network sites is influenced by the relevance of the site to user interests, topical significance and the strength and nature of the potential user's relationship with other members on the site (Gangadharbatla, 2008). Once these relationships are developed between users of SNS, a sense of community will most likely grow.

Table 5

Trust in SNS Interactions

Concept	Source
Trust is defined as the inclination of a person to be receptive to and expect certain actions of another person, regardless of the ability of the trustor to monitor the actions other party.	Grabner-Kräuter, S., & Bitter, S. (2013, Se). Trust in online social networks: A multifaceted perspective. In <i>Forum for Social Economics</i> . (pp. 1-21).
Trustworthiness in SNS depends on factors such as privacy and perceptions of trust of the SNS.	Dwyer, C., Hiltz, S. R., & Passerini, K. (2007). Trust and privacy concern within social networking sites: A comparison of Facebook and MySpace. In <i>AMCIS</i> (pp. 339).
The greater the trust levels in a social network site, the higher the likelihood of new users joining the site.	Gefen, D., Pavlou, P., Benbasat, I., McKnight, H., Stewart, K., & Straub, D. (2006). ICIS panel summary: Should institutional trust matter in information systems research?". <i>Communications of the Association for Information Systems</i> , 17, 205-222.
Trust is both a precursor and result of effective collaboration.	Newell, S., David, G., & Chand, D. (2007, January). Exploring trust among globally distributed work teams. In <i>40th Annual Hawaii International Conference on System Sciences, 2007. HICSS 2007</i> . (pp. 246c- 246c). IEEE.
Existence of high levels of trust, typically translates to people being more willing to provide support to other SNS members.	Krasnova, H., Spiekermann, S., Koroleva, K., & Hildebrand, T. (2010). Online social networks: Why we disclose. <i>Journal of Information Technology</i> , 25(2), 109–125.

Reciprocity in SNS Interactions

Reciprocity is defined as a user's strategy to return favors received from others, in a manner comparable to the receiving method (Lee et al., 2010). Reciprocity is a notion where people help others, because others have assisted them in the past and they expect the same treatment in the future (Lauterbach, Truong, Shah, & Adamic, 2009). Researchers have found

that reciprocity can lead to more trust, connectivity and cohesion within a group (Baker & Dutton, 2007).

Generalized reciprocity occurs when people offer help to others because these people have helped them in the past and their expectation is that these people will help them again in the future (Lauterbach, Truong, Shah, & Adamic, 2009). Interestingly, a great degree of reciprocity could indicate mutual trust, or could reflect the expectation to reciprocate (Lauterbach et al., 2009). Accordingly, trust and reciprocity have a synergetic relationship. Reciprocity entails two users trusting each other, where a two-way trust relationship typically signifies a stronger relationship between the parties than a one-way trust relationship (Nguyen, Lim, Tan, Jiang, & Suny, 2010). Accordingly, a network with numerous reciprocal linkages is likely to be more robust than one with fewer links of this nature (Nguyen, et al., 2010). Nguyen et al. (2010) argued that researchers could use reciprocity-related behavior to predict if a trustee will return trust to their trustor.

Reciprocal trust prediction requires a person to initiate a trust link to another person, while general trust prediction envisages trust between two users without an initiating link. Researchers use reciprocal trust prediction to determine the likelihood of a trustee returning trust to his trustor (Nguyen, et al., 2010). These measures can be used to predict if a trustee will return trust to their trustor given that the latter initiated the trust link previously (Nguyen, et al., 2010). Consequently, deciphering reciprocal trust prediction could also potentially improve the accuracy of general trust prediction (Nguyen et al., 2010).

Essentially, members of social networks respond to actions of others with comparable positive or negative actions (Lee et al., 2010). Reciprocity can be used to characterize the behavior of online users in SNS, by analyzing reciprocated behavior in terms of social link

creation (Lee et al., 2010). Typically, researchers study reciprocity at the contact level, which entails analyzing the extent to which users reciprocate in the creation of following or contact links in popular SNS. Research on reciprocity can be extended to include analysis of content rating (faving) and by comparing the reciprocity behavior observed in SNS (Lee et al., 2010).

The concept of reciprocity includes content rating or faving and reciprocity actions discerned in Flickr and Twitter and more. Lee et al., 2000 found that reciprocity is a fundamental aspect of the human psychology and online behavior. Lee et al., 2000 also argued that two SNS users could favor each other's photos because they like them. Alternatively, the faving deed could generate gratification for the receiver, who in turn could feel obligated to reciprocate. Additionally, Lee et al., 2000, found in their research that faving reciprocity plays a significant role in social networks in that the more the outgoing favorites of a user, the more chances that the user will obtain favorites on their content.

Trust, social interaction and reciprocity are mutually reinforcing constructs, because trust facilitates knowledge sharing and fosters reciprocal actions. Accordingly, the ability to achieve reciprocity is crucial to building social networks in SNS.

Table 6

Reciprocity in SNS Interactions

Concept	Source
Reciprocity defined as a user's strategy to return favors received from others, in a manner comparable to the receiving method.	Lee, J. G., Antoniadis, P., & Salamatian, K. (2010, August). Faving reciprocity in content sharing communities: A comparative analysis of Flickr and Twitter. In <i>Proceedings of the International Conference on Advances in Social Networks Analysis and Mining (ASONAM)</i> . (pp. 136-143). IEEE.
Reciprocity is a notion where people help others, because others have assisted them in the past and they expect the same treatment in the future	Lauterbach, D., Truong, H., Shah, T., & Adamic, L. (2009, August). Surfing a web of trust: Reputation and reciprocity on couchsurfing.com. In <i>International Conference on Computational Science and Engineering, 2009. CSE'09</i> . (Vol. 4, pp. 346-353). IEEE.
Reciprocity can lead to more trust, connectivity and cohesion within a group	Baker, W., & Dutton, J. E. (2007). Enabling positive social capital in organizations. <i>Exploring positive relationships at work</i> , 325-346.
A network with numerous reciprocal linkages is likely to be more robust than one with fewer links of this nature.	Nguyen, V. A., Lim, E. P., Tan, H. H., Jiang, J., & Sun, A. (2010, April). Do You Trust to Get Trust? A Study of Trust Reciprocity Behaviors and Reciprocal Trust Prediction. In <i>SDM</i> (pp. 72-83).
Faving reciprocity plays a significant role in social networks in that the more the outgoing favorites of a user, the more chances that the user will obtain favorites on their content.	Lee, J. G., Antoniadis, P., & Salamatian, K. (2010, August). Faving reciprocity in content sharing communities: A comparative analysis of Flickr and Twitter. In <i>Proceedings of the International Conference on Advances in Social Networks Analysis and Mining (ASONAM)</i> . (pp. 136-143). IEEE.

Sense of Community and Effective Communication

Sense of community entails four separate dimensions: membership, influence, integration and shared emotional connection (McMillan & Chavis, 1986). Membership refers to the consciousness of being part of a group; influence refers to the feeling that an individual is relevant to the group, and the group can influence its members; integration indicates that the

wishes of members are met by the resources received through their affiliation to the group and shared emotional connection refers to the sense of shared history of a community (McMillan & Chavis, 1986).

The emergence of shared narratives within a community facilitates the creation and transfer of knowledge and interaction among community members (Nahapiet & Ghoshal, 1998). Sense of community relates to communities in both the geographic and relational aspects, in that a person could be mistrustful of others thus scoring high on a personality scale such as the Cook-Medley Hostility inventory tool, while their experience of community is likely to depend on the degree of trust among other people around them. In essence, the social cohesiveness of the community that an individual belongs depends to a large extent on the behaviors of other community members (Boisot, 1995).

Effective communication refers to articulateness or the ability of individuals to express popular and or unpopular dissenting opinions (Lochner, Kawachi, & Kennedy, 1999). Effective communication within a SNS entails the fluency, eloquence and nature of expression between the members of the SNS. Effective communicators should be able to express popular and dissenting views coherently, without being offensive to other members of a SNS. Researchers acknowledge that effective communication is an essential part of social exchange (Nahapiet & Ghoshal, 1998). Combining the experience, opinions and knowledge of diverse individuals is an approach to increasing knowledge and facilitating communication in social network sites. Consequently, meaningful communication is an essential component of social interaction and some sharing of context between the parties to such interactions (Nahapiet & Ghoshal, 1998).

Measures of sense of community entail various attributes similar to indicators used to measure communities' social capital. These measures include community involvement of

residents in neighborhood activities and associations, integrity of community leaders, sociability and dependability of community members (Lochner, Kawachi, & Kennedy, 1999). Shared narratives emerge within communities by facilitating a sharing of different forms of values and knowledge (Nahapiet & Ghoshal, 1998).

Consequently, community activities and their development require entities around which joint interests can be organized, which leads to sense of community (Nahapiet & Ghoshal, 1998). A great deal of social capital is entrenched within networks of shared acquaintance and recognition, where users feel a sense of community (Nahapiet & Ghoshal, 1998). Accordingly, since meaningful communication is an essential component of social interaction, development of sense of community facilitates effective communication in a SNS.

Table 7

Sense of Community and Effective Communication

Concept	Source
Sense of community entails four separate dimensions: membership, influence, integration and shared emotional connection.	McMillan, D. W., & Chavis, D. M. (1986). Sense of community: A definition and theory. <i>Journal of community psychology</i> , 14(1), 6-23.
The emergence of shared narratives within a community facilitates the creation and transfer of knowledge and interaction among community members.	Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. <i>Academy of Management Review</i> , 23 (2), 242-266.
Effective communication refers to articulateness or the ability of individuals to express popular and or unpopular dissenting opinions.	Lochner, K., Kawachi, I., & Kennedy, B. (1999). Social capital: a guide to its measurement. <i>Health & Place</i> , 5(4), 259-270.
Effective communication is an essential part of social exchange and meaningful communication is an essential component of social interaction.	Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. <i>Academy of Management Review</i> , 23 (2), 242-266.
Social capital is entrenched within networks of shared acquaintance and recognition, where users feel a sense of community.	Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. <i>Academy of Management Review</i> , 23 (2), 242-266.

Hypotheses

Based on the analysis above, we present the hypotheses in this section.

Although new members of SNS may eventually “friend” individuals with dissimilar cultures or values as initial trust maybe non-existent, users that join social network sites, typically seek out SNS familiar members with similar cultures or values (Gefen, et al., 2006).

Generally, cultural diversity has an adverse effect on trust, because, trust is most likely higher in

social networks where members are culturally similar and less where members are culturally diverse. Accordingly, we hypothesized that:

H₁: Cultural diversity has a negative effect on trust in SNS interactions.

People with the same native language background will understand each other's messages easily and will feel comfortable responding to these messages. Accordingly, people that communicate in the same native language tend to gravitate towards each other. Conversely, users of a SNS that have different backgrounds in terms of native language may decipher messages from other SNS users differently and the exchange of messages between these divergent users may not be very smooth. Therefore, we hypothesized that:

H₂: Native language diversity has a negative effect on reciprocity in SNS interactions.

SNS users set their privacy settings favoring users that they trust or have reciprocal relationships with; SNS enable users to create profiles, connect and share information with other users that have similar interests. In addition, social network sites avail favoring and privacy settings to allow users to choose 'friends' that can view or add content to their personal pages on the networks (Sledgianowski & Kulviwat, 2009). Because unmitigated access can lead to security and privacy violations, SNS users typically set their privacy settings favoring users that they trust or have reciprocal relationships with. Accordingly, the configuration of SNS could have an influence on trust and reciprocity among SNS users. Therefore, we hypothesized that:

H_{3a}: Configuration of SNS has a positive effect on trust in SNS interactions.

H_{3b}: Configuration of SNS has a positive effect on reciprocity in SNS interactions.

Groups in SNS provide users with a sense of belonging, which enhances their identification needs with the social network in the SNS. A stronger social identity leads to a stronger sense of belonging and higher likelihood of participating in an online SNS.

Accordingly, sense of belonging could potentially facilitate reciprocal actions in SNS interactions, as users in the same group would most like perform reciprocal actions. Therefore, we hypothesized that:

H4: Identification needs have a positive effect on reciprocity in SNS interactions.

Trust is a key component in the facilitation of information exchange in SNS. In addition, trust is both a precursor and result of effective collaboration. High levels of trust typically translate to people being more willing to provide support to other SNS members. (Krasnova, Spiekermann, Koroleva, & Hildebrand, 2010). Accordingly, the greater the trust levels in a social network site, the higher the likelihood of new users joining the site. Therefore, we hypothesized that:

H5: Trust in SNS interactions has a positive effect on sense of community.

The ability to achieve reciprocity is crucial to building social networks in SNS. A network with numerous reciprocal linkages is likely to be more robust than one with fewer links of this nature. Accordingly, trust, social interaction and reciprocity are mutually reinforcing constructs, because trust facilitates knowledge sharing and fosters reciprocal actions. Therefore, we hypothesized that:

H6: Trust in SNS interactions increases with increased reciprocity in SNS interactions.

Effective communication is an essential part of social exchange and meaningful communication is an essential component of social interaction. A great deal of social capital is entrenched within networks of shared acquaintance and recognition, where users feel a sense of community (Nahapiet & Ghoshal, 1998). Accordingly, since meaningful communication is an essential component of social interaction, development of sense of community facilitates effective communication in a SNS. Therefore, we hypothesized that:

H7: Sense of community has a positive effect on effective communication in SNS.

Table 8

Hypotheses

Hypothesis	Description
Hypothesis 1	Cultural diversity has a negative effect on trust in SNS interactions
Hypothesis 2	Native language diversity has a negative effect on reciprocity in SNS interactions
Hypothesis 3a	Configuration of SNS has a positive effect on trust in SNS interactions
Hypothesis 3b	Configuration of SNS has a positive effect on reciprocity in SNS interactions
Hypothesis 4	Identification needs have a positive effect on reciprocity in SNS interactions.
Hypothesis 5	Trust in SNS interactions has a positive effect on sense of community.
Hypothesis 6	Trust in SNS interactions increases with increased reciprocity in SNS interactions.
Hypothesis 7	Sense of community has a positive effect on effective communication in SNS

Accordingly, based on the discussion of the constructs above the author created a theoretical model. The theoretical model in Figure 1 portrays of the effects of cultural diversity, native language diversity, trust in SNS interactions, and reciprocity in SNS interactions on the sense of community and effective communication on the activities of social network sites. As indicated below, the model is adapted from work performed by Dr. Souren Paul, Professor at Nova Southeastern University, College of Computing and Engineering.

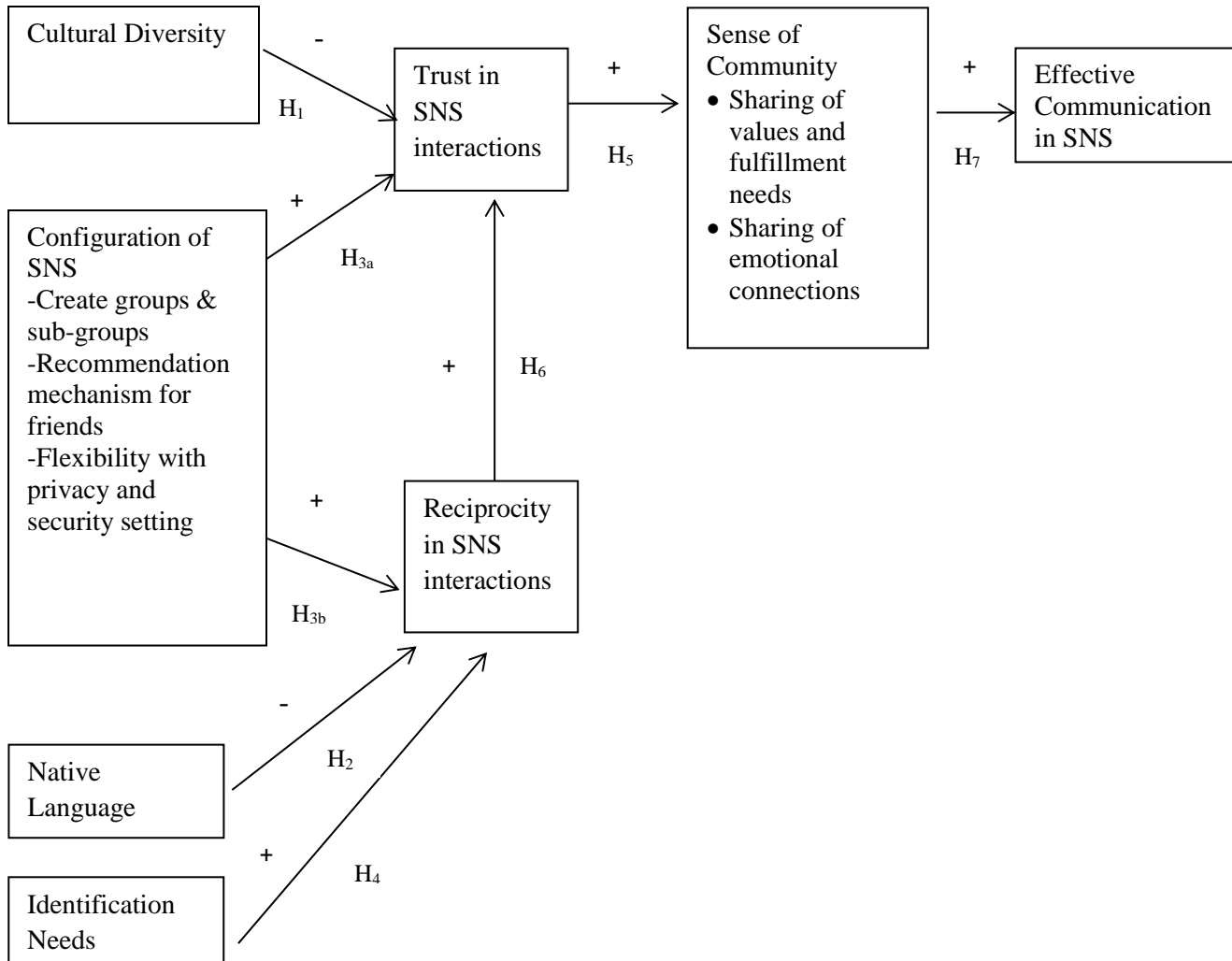


Figure 1. Theoretical Model

This model is based on initial work performed in 2013 by Dr. Souren Paul, Professor at Nova Southeastern University, College of Computing and Engineering.

Summary

The researcher performed a literature review to highlight the contribution of prior studies.

Social networks have introduced a sense of community that can link hundreds of individuals around the globe. Diverse communities have distinctive features such as native language and

cultural values. The literature review illustrated modes of effective communication using social networking sites and resulted in to the establishment of the research hypotheses and a theoretical model. The chapter presented seven hypotheses related to the cultural diversity, native language, identification of needs, the(increasing and positive effect of trust in SNS, the effect of configuration of SNS on reciprocity and trust in SNS and the effect of the effect of sense of community on effective communication when using SNS. All these factors are interrelated and their inter-relationship is depicted in the form of a model diagram. The chapter formed the basis of the methodology chapter.

Chapter 3

Methodology

The purpose of this chapter was to provide an overview of the research study's methodology that includes the approach, research setting, sample size, sample characteristics, instrumentation, operationalization of variables, validity and reliability, data collection, data analysis and ethical considerations. In order to explore the stated purpose, in the research setting sections, the researcher divulged the foundation on which the study's research methodology is based. In this section, the researcher discussed the rationale associated with the study's research methodology. Following that section, a section outlining the study's sample strategy described the target population, sampling approach, sampling methods and sample size. The instrumentation section defined the instruments the researcher used to collect the data and the available data pertaining to that instrument, followed by a section confirming the validity and reliability of the instruments. Finally, the data collection and data analysis sections described procedures followed to collect and analyze data.

Approach

The researcher chose the survey approach and methodological model for the research study because survey research is one method of inquiry used in quantitative research (Creswell, 2009). In addition, the researcher chose the online survey method of research design because Internet-based surveys yield higher response times and rates than conventional survey methods, such as mail or phone calls. Correspondingly, non-experimental research is suitable for survey designs, as online surveys are useful instruments for gaining and making inferences about

defined populations (Trochim, 2006). Further, quantitative research is used to study test theories and quantitative research methods focus on objective results using statistical analysis. Because the purpose of this research study was to compare relationships between variables, it is consistent with Trochim's (2006) assertion that non-experimental research design is best suited for this type of research. Accordingly, the researcher used a non-experimental research design, which is consistent with research studies that test and verify existing theory and statistically relate linear relationships in hypotheses (Sekaran & Bougie, 2016).

A challenge with web-based surveys is that the corresponding statistical calculations are based on self-reported data from participants that respond to the survey. Accordingly, the researcher had no foolproof method to verify the accuracy of the self-reported data. Secondly, the results of the study were generalizable to the specific nature of the population being studied. In this case, current SNS users were targeted by the online resource used to obtain the sample.

Consequently, the researcher used a consent form with the participants, assuring the participants that their participation is voluntary and confidential. Accordingly, the researcher expected that the participants would be candid and have no concerns about any consequences of taking the survey. Therefore, the researcher expected that the participants would provide accurate information.

Research Setting

The researcher conducted the study using SurveyMonkey, the online survey web site. The researcher investigated the problem using a quantitative survey methodology to gather information. The survey methodology entailed collection of data through a Web-enabled survey instrument.

SurveyMonkey offers a survey service called Target Audience that facilitates recruitments of appropriate survey participants. For the purposes of this study, the researcher was most interested in participants that have used SNS. Using a survey service should ensure that appropriate responses are provided by the targeted audience. The researcher ensured that participants represent a true cross section of the population and to provide a generalizable sample. Accordingly, the participants portrayed the participant's attitudes towards the various constructs of SNS under review in their responses.

The researcher identified and targeted potential participants via the researcher's survey link containing the study's purpose. In addition, participants will access the consent form by clicking on the survey link. Consent was confirmed if the potential participants agreed to continue with the survey. Thereafter, the researcher selected the final participants using inclusion and exclusion criteria used to specifically target the individuals that regular use SNS and that meet other specified criteria related to key components of the variables under review. Based on the responses in the survey, the researcher performed analysis using analytical methodologies described in the sections below.

Typically, researchers use online surveys to gather information about samples of populations in order to make inferences about the larger population. Accordingly, the researcher used probability sampling, which reduces bias error and increases independence (Vogt, 2007). The survey entailed survey questions, with responses to the survey questions using a 5- or 7-point Likert type scale.

Sample Characteristics

The researcher selected a sample from a population of social network site users. In order to retrieve a diversified sample, the researcher made sample selection(s) from an appropriate user

group. The sample comprised of adult males and females who use SNS to define the full population for the study. In order to identify research participants, the researcher used random sampling followed by the survey methodology for data collection.

The researcher utilized SurveyMonkey to select a sample of the participants from a population of adult SNS users. The goal was to ensure that the participants are relevant to the purpose of the research, in that they had had true life experiences related to the areas under study (Moustakas, 1994). Accordingly, it was beneficial if participants were active SNS users, that regularly use SNS and that use features of SNS that are relevant to the study. The researcher was targeting participants that are adult males and females who use SNS. Accordingly, respondents to the survey at a minimum met the following criteria:

- use commonly available social media platforms on a consistent basis
- be an adult male or female

Sample Size

In order to estimate the appropriate sample size needed for the study, the researcher utilized statistical power analysis methodology (Cohen, 1992). The analysis entailed review of four variables of sample size (N), significance criterion (α), population effective size (ES) and statistical power ($1-\beta$). These variables have inter-dependent relationships in statistical models. According to Cohen (1992), it imperative during research development to establish the sample size (N) required to derive the statistical power for a given significance criterion and population effect size.

The researcher determined the appropriate sample size using power analysis, to determine the desired statistical power ($1-\beta$), based on the stated significance (α), and effective size (ES) that is hypothesized (Cohen, 1992). The researcher chose this method because high statistical

power values correspond with a high probability that a hypothesis test accurately rejects a null hypothesis (Cohen, 1992). Essentially, a power of .8 would mean that the effect would be statistically significant 80% of the time.

Alternatively, in order to determine the minimum sample of participants necessary to establish statistical significance, the researcher had the option to perform power analysis utilizing the G*Power software. In the calculation, the preliminary goal was to use a significance level 0.05, correlation in the range of 0.3 and a high statistical power in the range of 0.95 (Faul, Erdfelder, Buchner, & Lang, 2009).

Significance Criterion

Significance refers to the risk or probability of falsely rejecting the null hypothesis even if it is true and this is referred to as a type I error (Cohen, 1992). Essentially, this is the maximum experimental risk of rejecting the null hypothesis that the researcher is willing to accept. The researcher plans to use a significance (α) value at 0.05 (5%), using a two-sided significance test, as the parameters may be positive or negative based on the analysis.

Statistical Power

Statistical power is the probability that a hypothesis test accurately rejects a null hypothesis (H_0) when the alternate hypothesis (H_1) is true or correctly accepts the alternative hypothesis (H_1), if this alternative is actually true (Cohen, 1992). Failure to reject a null hypothesis is a type II error and the probability of this occurrence is (β). Power ($1-\beta$), the opposite, is the probability of rejecting a false null hypothesis, therefore, as power increases, the chances of a Type II error decrease. The researcher leveraged power analysis to calculate the minimum sample size based higher power values.

Effect Size

Essentially, effective size (ES) is the population (Cohen, 1992). ES is also referred to as the degree to which (H_0) is false and is indexed by difference between (H_0) and (H_1) (Cohen, 1992). According to the Neyman-Pearson method of statistical inference, the measure by which H_0 is false is indexed by the difference between H_0 and H_1 , also referred to as ES (Cohen, 1992). Ultimately, each statistical test used to determine sample size has its own ES index. It is imperative that researchers have awareness of scale when interpreting results of statistical tests. Cohen (1992) recommended categories of small, medium and large, with medium as the most recommended because, medium ES represents an effect likely to be noticeable to a prudent but normal researcher (Cohen, 1992).

Size of Sample

The researcher determined the appropriate sample size using power analysis, to determine the desired statistical power ($1-\beta$), based on the stated significance (α), and effective size (ES) that is hypothesized (Cohen, 1992). The researcher determined the sample size based on a statistical power that was high enough and that the probability that hypothesis test accurately rejects a null hypothesis is appropriate (Cohen, 1992). Cohen (1992) indicated that a researcher could determine sample sizes needed for a requisite statistical power, such as 0.8, by performing eight key statistical tests related to the required statistical power.

The statistical tests are the difference between independent means, the significance of a product moment correlation, the difference between independent r_s , the sign test, the difference between independent proportions, chi tests for goodness fit, one-way analysis of variances and the significance of a multiple or multiple partial correlation (Cohen, 1992). Each statistical test

has its own ES index used to determine the appropriate sample size using a statistical table showing the sample size for each of the statistical tests mentioned above.

The researcher leveraged SurveyMonkey's research panel tools to collect the sample size needed for the study. According to (SurveyMonkey, 2012) response rate of 20% – 30% are considered a success for their online studies. Consequently, based on a normal distribution and a 20% - 30% response rate, the researcher distributed three times as many surveys as the required response rate, to obtain the target sample size.

Consequently, based on the values used, the researcher determined the effect size and sample size required for the study (Soper, 2012). The researcher paid consideration to the sample size to ensure the sample was adequate to test the hypotheses (Polit & Beck, 2004). In addition, the researcher ensured that the sample size was sufficient to study the outcome of the variables and was appropriate based on the research questions and use of the quantitative methodology.

Instrumentation

The researcher used online surveys containing closed-ended questions to collect data from the sampled users. Pre-existing instruments simplified the translation of the answers into numeric data that can be easily analyzed and facilitate testing of the stated hypotheses. The researcher adapted components of instruments used to measure key constructs from prior research and modify them to fit this study. The instruments were the knowledge sharing survey Instrument (Chiu, Hsu, & Wang, 2006) and Cultural dimensions (Wu, 2006), which the researcher leveraged to collect data for this study. The scales entailed a list of research questions presented to research participant's responses to users in form of a survey. Comparable research studies of social networks and virtual communities have corroborated the validity and reliability of the survey instruments on trust, reciprocity, identification needs, sense of community and

cultural diversity. In addition, in order to assess the logical consistencies and contextual relevance, the knowledge sharing survey instrument was pre-tested using 6 experts in the IS area, another two professors, three Ph. D. students and 20 master students that had been members of various professional virtual communities (Chiu, et al., 2006).

The Knowledge Sharing Scale was used to measure trust, reciprocity, identification needs, sense of community and cultural diversity., based on a 7-point Likert scale ranging from strongly disagree (1) to strongly agree (7).Cronbach's alpha measurements that range from 0 to 1, will be used to measure reliability of instruments, An Alpha reliability score of .60 is considered as the lowest acceptable to establish reliability (Gefen, Straub, & Boudreau, 2000). The researcher adapted the 7- point Likert scale and to use Cronbach's alpha to test the reliability or internal consistency of the modified survey instrument.

Consequently, the researcher developed an instrument that measures the effects of cultural diversity, native language diversity, trust in SNS interactions, sense of community and effective communication on the activities of social network sites.

Table 9

Instrumentation Sources for Constructs

Construct	Instrument	Instrumentation Source
Trust in SNS interactions	Survey instrument measuring knowledge sharing in virtual communities	Chiu, C. M., Hsu, M. H., & Wang, E. T. (2006). Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive theories. <i>Decision support systems</i> , 42(3), 1872-1888.
Reciprocity in SNS interactions	Survey instrument measuring knowledge sharing in virtual communities	Chiu, C. M., Hsu, M. H., & Wang, E. T. (2006). Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive

		theories. <i>Decision support systems</i> , 42(3), 1872-1888.
Sense of community.	Survey instrument measuring knowledge sharing in virtual communities	Chiu, C. M., Hsu, M. H., & Wang, E. T. (2006). Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive theories. <i>Decision support systems</i> , 42(3), 1872-1888.
Effective communication in SNS	Survey instrument measuring knowledge sharing in virtual communities	Chiu, C. M., Hsu, M. H., & Wang, E. T. (2006). Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive theories. <i>Decision support systems</i> , 42(3), 1872-1888.
Cultural Diversity	Research instrument measuring Hofstede's five cultural dimensions.	Wu, M. (2006). Hofstede's cultural dimensions 30 years later: A study of Taiwan and the United States. <i>Intercultural Communication Studies</i> , 15, 1.
Identification Needs	Survey instrument measuring knowledge sharing in virtual communities	Chiu, C. M., Hsu, M. H., & Wang, E. T. (2006). Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive theories. <i>Decision support systems</i> , 42(3), 1872-1888.
Native Language Diversity	Survey instrument measuring knowledge sharing in virtual communities.	Chiu, C. M., Hsu, M. H., & Wang, E. T. (2006). Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive theories. <i>Decision support systems</i> , 42(3), 1872-1888.

Operationalization of Variables

Cultural diversity refers to diversity among people from different cultural backgrounds as result of the multiplicity of ethnic origins, religions and language (Mishra, 2012). The researcher used the Wu's research instrument measuring Hofstede's five cultural dimensions (Wu, 2006). The researcher chose this instrument because it measured common dimension of cultural diversity.

Native language diversity refers to the differences in linguistic influences mainly tied to ethnicity. Language diversity entails the different languages spoken and the various people who speak the languages (Rumbaut & Massey, 2013). The researcher adapted and leveraged components of Wu's research instrument to measure language diversity (Wu, 2006).

Identification is a mode of social influence that refers to the self-consciousness of one's affiliation to a group, as well as the emotional importance of this affiliation (Tajfel, 1978). Identification occurs when a person consents to influence of a group because they want to ascertain a relationship with that group. The researcher used the Knowledge sharing survey instrument to measure identifications needs (Chiu et al., 2006). The researcher chose this instrument because the instrument questions are relatable to social identification needs.

Trust is the inclination of a person to be receptive to and expect certain actions of another person, regardless of the ability of the trustor to monitor the actions other party (Grabner-Kräuter & Bitte, 2013). The researcher used the Knowledge sharing survey instrument to measure trust and expand on it to capture additional aspects of trust in SNS (Chiu et al., 2006). The researcher chose this instrument because the reliability of the instrument was examined using and the relevance of the questionnaire to our research model.

Reciprocity is defined as a user's strategy to return favors received from others, in a manner comparable to the receiving method (Lee et al., 2010). The researcher used the

Knowledge sharing survey instrument to measure reciprocity (Chiu et al., 2006). The researcher chose this instrument because the questions are relatable to reciprocity.

Sense of community entails four separate dimensions: membership, influence, integration and shared emotional connection (McMillan & Chavis, 1986). The researcher used the Knowledge sharing survey instrument to measure sense of community (Chiu et al., 2006). The researcher chose this instrument because the measurement scale items using in the questionnaire were relevant to sense of community. In addition, the validity and reliability of the instrument was verified using confirmatory factor analysis.

Effective communication refers to articulateness or the ability of individuals to express popular and or unpopular dissenting opinions (Lochner, Kawachi, & Kennedy, 1999). The researcher plans to adapt and utilize the knowledge sharing survey instrument to measure communication in online environments (Chiu et al., 2006). The researcher chose this instrument because of the relevant questions related to social interactions.

Validity and Reliability Assessment

The researcher confirmed validity on this study's data using confirmatory factor analysis and test reliability using Cronbach's Alpha. Both statistical tests will be performed using SPSS. Reliability can be defined as the degree to which a variable or set of variables is harmonious with what the variable is intended to measure (Straub, Rai, & Klein, 2004).

Sekaran & Bougie (2016) described determining reliability within research as the process of documenting internal consistency. The researcher used Cronbach's Alpha, because the test is the most prevalent statistical measure used to establish the reliability of instruments (Sekaran & Bougie, 2016). Cronbach's Alpha uses a scale of 0 to 1.0. Scholars have suggested that an alpha

reliability score of .70 should be the lowest acceptable measure to establish reliability (Gefen, Straub, & Boudreau, 2000) Accordingly the researcher used Cronbach's Alpha to determine the reliability for each of the constructs in the study.

Instrument validation is an important requisite of IS research, because validity measures the extent to which an instrument accurately measures the components it is intended to measure. The researcher used the different types of validity listed below and the recommended thresholds, to determine the validity of the instruments used in the study.

Convergent Validity

Convergent validity, a subtype of construct validity is the extent to which two measures correlate, if the measures are both theoretically related. Convergent validity assesses the extent to which different indicators for a measure refer to the same conceptual construct (Kopcha, Ottenbreit-Leftwich, Jung, & Baser, 2014). Convergent validity indicates the extent to which two measures of constructs that hypothetically should be related are indeed related. In confirmatory factor analysis, researchers expect measures to load significantly on their corresponding constructs and load above 0.50 (Gefen et al., 2000). Indicator loadings should be significant and exceed 0.7, construct reliabilities should exceed 0.8 and average variance extracted (AVE) by each construct should exceed the variance due to measurement error for that construct, meaning AVE should exceed 0.50.

Divergent Validity

Divergent validity or discriminant validity, also a subtype of construct validity, measures the extent to which measures of constructs that hypothetically should not be related are unrelated. In confirmatory factor analysis, researchers expect measures to load significantly on their related constructs in the model. In addition, the square root of the average variance

extracted (AVE) is expected to be greater than the correlation shared between the construct and other constructs in the model. (Gefen et al., 2000). If the above requirements for testing convergent and divergent discriminant validity were acceptable, the researcher concluded that the scales have sufficient construct validity.

Internal Validity

Internal validity is the degree of confidence the researcher has in an instrument (Sekaran & Bougie, 2016). Alternatively, internal validity is the measure of the extent to which an instrument measures the construct it was intended to measure (Straub et al., 2004).

External Validity

External validity enables researchers to generalize findings of surveys to other environments (Straub et al., 2004; Sekaran & Bougie, 2016). Accordingly, valid measures are measurements that represent the essence upon which a construct is centered (Straub et al., 2004).

Threats to Validity and Reliability

The researcher reduced the threat to validity and reliability by leveraging instruments that have been validated in prior research by experts. Experts give additional validity and credence to instruments used in research. Instrument validity can be established using confirmatory factor analysis on each of the constructs (Sledgianowski, Luftman, & Reilly, 2006)

Although this study was limited to a targeted audience of SNS users relevant to the research, in order to provide a statistically generalizable sample, respondents to the survey will still represent a true cross section of the population of SNS.

Literature reviews and instrument validation by expert panels ascertain content validity (Straub D. W., 1989). Accordingly, the researcher used an expert panel, to ensure the content validity of the survey items in the surveys used in the study. The expert panel consisted of the

dissertation committee members. Thereafter, once the panel submitted their recommendations, the changes were incorporated into the final instrument.

Data Collection

Data collection via surveys is a recognized method collecting data (Yin, 2009). Accordingly, the researcher plans to use validated survey instruments for data collection, using SurveyMonkey, an online survey-based company. The knowledge sharing survey instrument and Wu's research instrument on culture and will be leveraged to measure and collect research participant's responses to research questions. The researcher may make minor modifications to the wording in the survey questions without altering the reliability and validity of the surveys. The researcher used a 7-point scale Likert-type survey to collect responses from the study's subjects regarding their use of social network sites. The process entailed collection of empirical data using survey questions to draw objective responses from respondents (Sekaran & Bougie, 2016).

The researcher performed collection procedures in a sequential manner in the initial and later phases. Firstly, set up an account with SurveyMonkey. Secondly, the researcher conferred with a SurveyMonkey expert on the survey criteria and cost of completing each survey. Thirdly, the researcher entered the survey questions from the selected instruments into SurveyMonkey's survey builder.

In the next phase, the researcher initiated the survey where prospective survey participants will receive an email containing a link to take the survey. The researcher ensured that the participants were informed about the nature of the study on the first page. In addition, a section of the survey contained an Informed Consent page, which had an explanation on how

participants are protected and expectations of the survey. The participants had the opportunity of opting in or out of the survey. The researcher did not collect any personal identifying information from the participants.

Consequently, the researcher used SurveyMonkey to send out email invitations to identify and engage potential respondents based on inclusion criteria accorded for the sample frame. This method of obtaining participants for the research studies is known as simple random sampling. Random sampling gives each person of the population an equal chance of being selected (Black, 2009).

In the final phase, the researcher will gather all completed surveys. In order to perform descriptive analysis and hypothesis testing, the researcher will download the data from SurveyMonkey into CSV and SPV format and import the data into the latest version of the SPSS 20.0 software program.

Data Analysis

The researcher used a multi-step methodology to analyze the constructs in the research model. This process entailed development and analysis of the survey instrument, tests of the relationships between the constructs using multiple regression analysis and factor analysis using SPSS statistical software. The purpose of the multi-step approach was to evaluate the reliability and validity of the measures before their use in the research model.

Once the researcher collected all the data from the participants, the researcher tabulated and analyzed the answers using SPSS (Green & Salkind, 2008).

The researcher performed data analysis in SPSS as follows:

- Used descriptive statistics to identify outliers that could result from possible data entry errors.
- Divided the remaining survey data into two parts.
- Ran an exploratory factor analysis on first dataset to determine the underlying factor structures.
- Using the results of the exploratory factor analysis run a confirmatory factor analysis, on the second dataset to examine the reliability and validity of the measurement mode.
- Examined the underlying directional relationships among key constructs.

The researcher performed confirmatory factor analysis to verify the effect that the factors have on the constructs under observation. The analysis was performed on the values of in the responses in the data collected from the survey participants. The researcher uploaded the survey responses into SPSS then run a confirmatory factor analysis. Thereafter, the researcher determined the number of factors to retain by examining the eigenvalues and the scree plot. The researcher then retained factors with eigenvalues greater than one and factors that cause the highest percentage of variance explained (Gefen et al., 2000). The resulting reduced data was used to illustrate the factors that account for the highest percentage of the variances explained.

The researcher used multiple regression analysis to establish the level of correlation between variables. Regression analysis enables researchers to predict or estimate values of a dependent variables from values of the corresponding independent variables (Sekaran & Bougie, 2016). The researcher performed the following steps:

- Assessed each variable separately to determine if the variable is normally distributed.

- Assessed the relationship of each independent variable with the dependent variable by calculating the correlation coefficient and scatter plot, to determine if the two variables are related linearly.
- Assessed the relationships between all the independent variables with each other by obtaining a correlation coefficient matrix for all independent variables.
- Determined the regression equation from the data
- Calculated and assessed tests of statistical significance for each coefficient in the regression equation
- Accepted or rejected the null hypothesis
- Rejected or accepted the research hypothesis
- Summarized and described the inferences of the results

This analysis entailed testing of four regressions specified in the research model in Figure 1. The first regression entailed configuration of SNS and reciprocity in SNS interactions as independent variables and trust in SNS interactions as the dependent variable. The second regression entailed configuration of SNS, native language diversity and identification needs as independent variables and reciprocity in SNS interactions as the dependent variable. The third regression entailed trust in SNS interactions and sense of community in SNS as independent variables and as the dependent variable.

The researcher chose multiple regression, because this type of analysis assesses simultaneous effects of several independent variables on a dependent variable (Sekaran & Bougie, 2016). In addition, regression analysis helps researchers determine the degree to which the variance in the dependent variable is explainable by a set of predictors (Sekaran & Bougie,

2016). Further, researchers also use hierarchical multiple regression analysis to determine the most important set of predictors explaining the variance in order of significance or hierarchy. Consequently, the researcher analyzed the demographic data provided by the participants using descriptive statistics. This testing entailed statistical analyses, such as analysis of variance and multiple regression analysis (Sekaran & Bougie, 2016). The data analysis effort entailed analysis of demographic findings, where demographic data was analyzed using descriptive statistics.

The researcher leveraged hypothesis testing using various techniques including analysis of Pearson's r to demonstrate if a relationship exists between the selected variables. Thereafter, the researcher used correlational analysis and regression analysis to test the relationship between the key variables. The researcher utilized null hypothesis on Pearson's correlation coefficient to determine if the null hypothesis should be rejected (Sekaran & Bougie, 2016). Each hypothesis was tested with two-tailed tests. Accordingly, a correlation coefficient p value of 0.05 was used to not reject or reject the null hypothesis. If the p -value was less than or equal to the alpha ($p < .05$), then we rejected the null hypothesis, and concluded that the result was statistically significant. If the p -value was greater than alpha ($p > .05$), then we failed to reject the null hypothesis, and concluded that the result was statistically nonsignificant (n.s.). When performing data analysis, the researcher assumed that the data was normally distributed, and relationships were linear. The researcher then performed Analysis of Variance (ANOVA) to analyze each of the null hypotheses using the .05 significance level (Orcher, 2005). For each rejected null hypothesis, the statistical significance for each alternative hypothesis was tested using a t-test and the relationship analyzed using the correlation coefficient. The researcher chose ANOVA because it can handle multiple variables and this study has statistical requirements of

measurement levels of the variables (Vogt, 2007). Multiple regression is appropriate because of the multiple variables in the model formulated in the research study.

In addition, the researcher used multiple regression to determine the overall fit (variance explained) of the model and the relative contribution of each of the predictors to the total variance explained. The researcher analyzed various statistical values such as F-Value to determine significance, as well as the model effect size by assessing the value of R^2 to determine the explained variance and more (Sekaran & Bougie, 2016). The researcher also confirmed the validity and reliability of the constructs via measurement instruments then assessed the nature of the relationships and strength of the relationships between the constructs. The nature of relationships in the hypotheses was assessed using path analysis to analyze the significance of paths coefficients (Sekaran & Bougie, 2016).

Mediation Effects

In lieu of the typical direct relationship between the independent variable and the dependent variable, the researcher explored a notion where the independent variable affects the mediator variable, which then affects the dependent variable. The mediator variable would explain the type of the relationship between the independent and dependent variables. Accordingly, the researcher performed additional statistical tests for the potential mediation effect of sense of community as a mediating variable, between trust and effective communication. These tests were performed when testing hypotheses H₅ and H₇, where a potential merger of the two hypotheses to merge into one hypothesis. The merged hypothesis would state that: Trust has a positive effect on effective communication in SNS. In this case sense of community would be the mediator variable.

The most prevalent method used in testing mediating effects is to show that a significant relationship exists between the independent variable and the dependent variable, this is consistent with the Baron and Kenny approach (Baron & Kenny, 1986). The researcher examined if the independent (predictor) variable is significantly related to the dependent (outcome) variable. Subsequently, the researcher examined if there was a significant relationship between the independent (predictor) variable and the mediator and that the mediator has a significant relationship with dependent (outcome) variable. Alternatively, the researcher examined the possibility of the existence of a mediating effect even if no significant relationship existed between the independent variable and the dependent variable. This would indicate an indirect effect between the independent variable and the dependent variable via the mediating effect (Preacher & Hayes, 2008).

Ethical Considerations

The researcher applied to the Institutional Review Board (IRB) of Nova Southeastern University and received an approval letter from the authorized IRB representative of the College of Engineering and Computing. At the beginning of the survey, each participant received an informed consent notification describing the nature of the study and emphasizing that participation in the survey is voluntary. At that point, participants had the option to discontinue the survey at any time.

The researcher guaranteed confidentiality and privacy, by ensuring that the survey was anonymous and demographic information requested in the survey is general. Each email contained a link to the survey questionnaire and contain a unique identifier to protect the participants' identity and ensured that each participant only responds once. No personal,

confidential, or sensitive data was collected. Informed consent and voluntariness are ethical concerns related to this study, that way individuals cannot be identified.

Summary

The chapter presented the research methodology. The research was build based on the primary and secondary research data. Primary research data was collected by using survey questionnaire and secondary research was conducted through literature review. In order to provide details about data collection and number of participants, the chapter presented the sample size and significance of the sample. The researcher ensured that survey was comprised of relevant research subjects, by assessing of validity and reliability. In addition, data analysis techniques are highlighted in this chapter. Further, it was necessary to consider the ethical implications before conducting a research; therefore, the chapter highlighted the ethical considerations for this research study.

Chapter 4

Results

This chapter presents a description and analysis of the results of this study. The chapter describes the data collection process and the statistical methods used to analyze the data. Next, the author presents sample demographics, a summary of the responses to the social networking site questions and the results of the reliability analysis. The chapter concludes with a summary of the procedures used during the analysis and the results of the analysis.

The survey instrument was created using a Web-based survey format and is shown in Appendix B. The survey was sent to 467 adults and there were 259 complete responses to the survey. Overall, the response rate was 55%. The data was collected in the month of November of 2018. Of the respondents with complete responses, 124, or 47.9%, were male, while 135, or 52.1%, were female. Over 70% of the respondents had been member of a SNS for over 3years. The age groups varied with most respondents falling between 30-44.

Surveys enable researchers to collect information from a representative sample and generalize the outcomes to a population (Sekaran & Bougie, 2016). Accordingly, a web-based survey was deemed as suitable method for this study as the target participants were scattered in various geographical locations. In addition, survey participants were diverse based on elements such as gender, age and educational level.

Sample Size

In order to estimate the appropriate sample size needed for the study, the researcher utilized statistical power analysis methodology (Cohen, 1992). The analysis entailed evaluation of significance criterion (α), population effective size (ES) and statistical power ($1-\beta$).

Test	α								
	.01			.05			.10		
	Sm	Med	Lg	Sm	Med	Lg	Sm	Med	Lg
1. Mean dif	586	95	38	393	64	26	310	50	20
2. Sig r	1,163	125	41	783	85	28	617	68	22
3. r dif	2,339	263	96	1,573	177	66	1,240	140	52
4. $P = .5$	1,165	127	44	783	85	30	616	67	23
5. P dif	584	93	36	392	63	25	309	49	19
6. χ^2									
1df	1,168	130	38	785	87	26	618	69	25
2df	1,388	154	56	964	107	39	771	86	31
3df	1,546	172	62	1,090	121	44	880	98	35
4df	1,675	186	67	1,194	133	48	968	108	39
5df	1,787	199	71	1,293	143	51	1,045	116	42
6df	1,887	210	75	1,362	151	54	1,113	124	45
7. ANOVA									
2g ^a	586	95	38	393	64	26	310	50	20
3g ^a	464	76	30	322	52	21	258	41	17
4g ^a	388	63	25	274	45	18	221	36	15
5g ^a	336	55	22	240	39	16	193	32	13
6g ^a	299	49	20	215	35	14	174	28	12
7g ^a	271	44	18	195	32	13	159	26	11
8. Mult R									
2k ^b	698	97	45	481	67	30			
3k ^b	780	108	50	547	76	34			
4k ^b	841	118	55	599	84	38			
5k ^b	901	126	59	645	91	42			
6k ^b	953	134	63	686	97	45			
7k ^b	998	141	66	726	102	48			
8k ^b	1,039	147	69	757	107	50			

Note: N for small, medium and Large ES at Power = .08 for $\alpha = .01, .05, .10$. ES = Population Effective Size, Sm = Small, Med = Medium, Lg = Large, dif = Difference, ANOVA = analysis of variance, a= number of groups, b= number of independent variables

Figure 2. Calculations for sample size based on different number of variables and groups (by Cohen, (1992))

Because multiple regression was performed in this study, sample size was determined based on the maximum number of independent variables in a regression, the stated significance

(α) of .05 and medium population effect size. The researcher performed multiple regression analysis and performed all significance test at $\alpha = .05$. For the F test of multiple regression, he expected a medium ES, that is $f^2 = .15$. Cohen (1992) indicates in Figure 2 that for a set of seven independent variables, the required sample size of 102. From the research area information in the six variables and four regressions, can be effectively measured with a sample size of $(102 * 2.5) = 255$.

Data Collection and Analysis

Pre-Analysis Data Screening

The researcher performed pre-analysis data screening to ensure consistency and accuracy of data. Data was checked for accuracy and consistency to ensure the validity of the results.

There are four primary reasons to conduct pre-analysis data screening: 1) to ensure accuracy of the data collected; 2) to deal with the issue of response-set; 3) to deal with missing data; and 4) to deal with extreme cases, or outliers (Mertler & Vanatta, 2010). The survey was designed to provide automated answers, hence, data accuracy was not determined to be a problem.

Additionally, survey participants could only select one answer per question, the data were collected and stored by the software, thus manual manipulation or transposition of the data was not feasible. This eliminated the need for a manual inspection of data for human data entry errors.

To ensure that no respondent selected the same response for every item, the researcher inspected the data for response sets, and no response set issues were identified. Because Web based survey software was used to collect the data, the quality of collected data was greatly enhanced and data inaccuracy was minimized, by automating the data handling process,

eliminating transcription errors and minimizing data entry irregularities issues. Additionally, Web-based survey format reduced the potential of inaccuracy of data by limiting item responses to only those that are valid. This eliminated common errors associated with collecting and recording responses using paper-based surveys (Cooper & Schindler, 2006). Response bias is the inclination of respondents to concur with questionnaire statements regardless of the content and is a potential threat to validity. Extreme cases or outliers can result in serious distortion of results and should be examined before final analysis of data. Accordingly, the researcher inspected all responses for outliers before final analysis.

Subsequently, Mahalanobis Distance was used to examine and determine if anomalous data should be retained or removed from the final analysis. An analysis of the data was conducted to check for outliers. Outliers are responses with extreme values that could potentially disproportionately skew the results of a model (Mertler & Vanatta, 2010). Outliers were reviewed and analyzed by conducting a Mahalanobis Distance analysis. No extreme outliers were found.

Normality Tests

Prior to conducting the statistical tests and factor analysis, the researcher checked the data for normality. Normality tests were conducted to demonstrate the characteristics of data and justify the appropriateness of the method of analysis. The researcher performed normality tests of skewness and kurtosis test.

The researcher performed the test by calculating the skewness and kurtosis z-score values of the data (Tabachnick & Fidell, 2013). Table 10 illustrates the results from the normality test. These results indicate that the data are normally distributed, as z-score values of normality of skewness or kurtosis for the constructs . This indicates that data normality distribution

assumption was met. The values for skewness and kurtosis between -2 and +2 are considered acceptable to demonstrate normal distribution (George & Mallery, 2010).

Table 10

Skewness and Kurtosis Test for Normality of Data

Variable	Mean	Std. Deviation	Skewness		Kurtosis	
			Statistic	Z- score	Statistic	Z- score
Configuration of SNS	3.4147	.97516	-.422	.151	-.179	.302
Identification Needs	4.4054	1.31690	-.252	.151	-.135	.302
Trust	3.7992	1.33568	-.042	.151	-.335	.302
Reciprocity	4.4768	1.37229	-.554	.151	.155	.302
Sense of Community	4.4681	1.34258	-.646	.151	.416	.302
Effective Communication	4.6515	1.43613	-.384	.151	-.455	.302

Reliability Analysis

To determine the reliability of the instrument, Cronbach's Alpha coefficient was calculated for each set of construct items in the study. Cronbach's Alpha utilizes a scale of zero to 1.0, with .70 being the lowest acceptable measure, and 1.0 indicating complete reliability (Cho & Kim, 2015). This analysis established that all the items were reliable. Table 11 displays the estimates for reliability for all constructs are above 0.8, which exceeded the recommended threshold.

In addition, the researcher performed Cronbach's Alpha 'if deleted' analysis for each set of construct items. The result of such analysis indicated which items would have provided for a reduction in the overall constructs' Cronbach's Alpha. None of the items required further review for possible removal from the construct item.

Table 11

Reliability Analysis

Variable	Cronbach's Alpha
Configuration of SNS	.831
Identification Needs	.897
Trust	.908
Reciprocity	.851
Sense of Community	.937
Effective Communication	.894

Exploratory Factor Analysis

Before proceeding with assessment of the research model, the researcher performed factor analysis with principal component analysis and varimax rotation. A Kaiser Meyer–Olkin test for all constructs was run and the results were above 0.70, signifying adequate sampling for factorability of the items (Watson, 2017).

Subsequently, the factor analysis demonstrates that the model has five constructs which are labeled as trust and reciprocity in SNS interactions, sense of community, configuration of SNS, effective communication and identification needs.

Convergent Validity

Convergent validity tests that constructs that are expected to be related are, in fact, related. The three underlying indicators are KMO Measure of Sampling Adequacy, Bartlett's test of Sphericity and respective constructs with loadings greater than 0.5. A KMO score greater than .7, indicates sufficient sampling of factors. Bartlett's test of Sphericity is significant, if the score is less than .05, indicating that a relationship exists between the variables.

The researcher noted that KMO Measure of Sampling Adequacy for all items were above .7 and Bartlett's test of Sphericity score were less than .05, except for reciprocity. In addition, the

researcher noted that the factors loadings for all items after rotation, loaded significantly on their respective constructs and items invariably loaded above 0.500 (Gefen, Straub, & Boudreau, 2000), This meets the convergent validity requirement, Tables 12 to 17 below illustrate the results of the convergent validity analysis.

Table 12

Convergent Validity – Configuration of SNS

Variable	KMO	Bartlett's test of Sphericity	Loading
CG2	.766	.0001	.821
CG3	.766	.0001	.754
CG4	.766	.0001	.843
CG5	.766	.0001	.783

Table 13

Convergent Validity – Identification Needs

Variable	KMO	Bartlett's test of Sphericity	Loading
ID1	.826	.0001	.878
ID2	.826	.0001	.912
ID3	.826	.0001	.888
ID4	.826	.0001	.821

Table 14

Convergent Validity – Trust

Variable	KMO	Bartlett's test of Sphericity	Loading
TR1	.877	.0001	.836
TR2	.877	.0001	.855
TR3	.877	.0001	.890
TR4	.877	.0001	.808
TR5	.877	.0001	.884

Table 15

Convergent Validity – Reciprocity

Variable	KMO	Bartlett's test of Sphericity	Loading
RP1	.500	.0001	.933
RP2	.500	.0001	.933

Table 16

Convergent Validity – Sense of Community

Variable	KMO	Bartlett's test of Sphericity	Loading
SC1	.854	.0001	.924
SC2	.854	.0001	.908
SC3	.854	.0001	.919
SC4	.854	.0001	.917

Table 17

Convergent Validity – Effective Communication

Variable	KMO	Bartlett's test of Sphericity	Loading
EC1	.752	.0001	.828
EC2	.752	.0001	.831
EC3	.752	.0001	.823

Discriminant Validity

Discriminant validity is extent to which a construct is truly distinct from other constructs. Discriminant validity (or divergent validity) tests that constructs that should have no relationship do, in fact, not have any relationship (Leedy & Ormrod, 2012). For discriminant validity to be established, two criteria need to be met. Firstly, values should load more on their corresponding construct than on other constructs. Secondly, the lowest reading in the intra-construct matchings should be larger than the inter-construct correlations (Leedy & Ormrod, 2012).

The researcher noted the distinguishable constructs had items that load effectively on their respective constructs for identification needs, configuration of SNS, sense of community and effective communication. In addition, the researcher noted cross loading between trust and reciprocity

Table 18 below demonstrates that loadings for all items representing each construct, were above 0.500, hence deemed as significant.

Table 18

Rotated Component Matrix^a

	Component				
	1	2	3	4	5
TR1 - Take advantage	.836				
TR3 - Knowingly disrupt	.826				
TR5 - Truthful dealing	.804				
TR4 - Behave consistently	.773				
TR2 - Keep promises	.765				
RP2 - Reciprocity Group	.577				
SC3 - Enrich knowledge		.864			
SC1 - Successful functioning		.836			
SC2 - Continue operation		.828			
SC4 - Community growth		.825			
RP1 - Reciprocity Myself	.542				
EC3 - Time interacting			.849		
EC1 - Frequent communication			.834		
EC2 - Close relationships			.809		
ID1 - Belonging				.779	
ID2 - Closeness				.755	
ID3 - Positive feeling				.706	
ID4 - Proud member				.629	
CG4 - Privacy settings					.847
CG2 - Create groups					.814
CG3 - Hide friends					.773
CG5 - Privacy controls					.760

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.^a

a. 5 components extracted and the rotation converged in 6 iterations.

In addition, all correlation items related to specific constructs items in the correlation matrix are greater the other correlated factors. The lowest value is greater than all others in the correlation pairs and vice versa, accordingly, discriminant validity is established, as

demonstrated in Table 19 below. Accordingly, the results indicate that all the constructs used in the study are distinct.

Table 19

Discriminant Validity Test

	Construct					
	CG	ID	TR	RP	SC	EC
CG2 - Create groups	1.000	0.259	0.074	0.188	0.167	0.314
CG3 - Hide friends	0.562	0.173	0.078	0.086	0.118	0.189
CG4 -Privacy settings	0.544	0.264	0.078	0.145	0.239	0.201
CG5 - Privacy controls	0.471	0.364	0.107	0.205	0.291	0.278
ID1 - Belonging	0.259	1.000	0.308	0.404	0.466	0.427
ID2 - Closeness	0.249	0.780	0.326	0.476	0.488	0.537
ID3 - Positive feeling	0.264	0.703	0.412	0.491	0.473	0.451
ID4 - Proud member	0.152	0.580	0.419	0.497	0.529	0.460
TR1 - Take advantage	0.074	0.308	1.000	0.447	0.299	0.203
TR2 - Keep promises	0.058	0.423	0.687	0.468	0.455	0.250
TR3 - Knowingly disrupt	0.064	0.383	0.694	0.546	0.474	0.192
TR4 - Behave consistently	0.136	0.359	0.557	0.568	0.446	0.255
TR5 -Truthful dealing	0.081	0.412	0.639	0.605	0.514	0.265
RP1 - Reciprocity Myself	0.188	0.404	0.447	1.000	0.657	0.410
RP2 - Reciprocity Group	0.226	0.467	0.492	0.742	0.599	0.448
SC1 - Successful functioning	0.167	0.466	0.299	0.657	1.000	0.407
SC2 - Continue operation	0.130	0.454	0.315	0.603	0.813	0.373
SC3 - Enrich knowledge	0.152	0.411	0.242	0.575	0.796	0.398
SC4 - Community growth	0.144	0.451	0.320	0.553	0.782	0.418
EC1 - Frequent communication	0.314	0.427	0.203	0.410	0.407	1.000
EC2 - Close relationships	0.222	0.449	0.217	0.374	0.401	0.747
EC3 - Time interacting	0.221	0.426	0.185	0.335	0.351	0.736

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.^a

a. 5 components extracted and the rotation converged in 6 iterations.

Subsequently, the researcher noted that the constructs displayed adequate reliability and validity.

Regression Analysis

The researcher used multiple regression analysis to analyze the relationship among the variables under review. Multiple regression is used to evaluate research models by exploring the relationships between a dependent variable and two or more independent variables (Sekaran & Bougie, 2016). For each regression, the researcher calculated aggregated values of the independent variables then regressed these values against the aggregate value of the dependent variable. In this study, the following hypotheses were tested:

H₁: Cultural diversity has a negative effect on trust in SNS interactions

H₂: Native language diversity has a negative effect on reciprocity in SNS interactions

H₃: Configuration of SNS has a positive effect on trust and reciprocity in SNS interaction

H₄: Identification needs have a positive effect on reciprocity in SNS interactions

H₅: Trust in SNS interactions has a positive effect on sense of community.

H₆: Trust in SNS interactions increases with increased reciprocity in SNS interactions.

H₇: Sense of community has a positive effect on effective communication in SNS

Table 20

Statistical Results Regression Analysis - Regression 1

Dependent Regressor	Trust		
Cultural Diversity	.139 (.178)		
Configuration of SNS		-.012 (.067)	
Reciprocity			.667**** (.046)
R ²	.460	.460	.460
F	72.334	72.334	72.334
N	259	259	259
Hypothesis Supported	H ₁ :No	H ₃ :No	H ₆ :Yes

* $p < 0.10$ ** $p < 0.05$ *** $p < 0.01$ **** $p < 0.001$ Standard errors in parentheses

Multiple regression analyses were conducted to examine the relationship between trust and the probable predictors configuration of SNS and reciprocity. Table 20 summarizes the analysis results. The results illustrate that cultural diversity and configuration of SNS had p values higher than .05, indicating that both constructs had no significant effect on trust in SNS interactions. On the other hand, the researcher noted that reciprocity had a significant effect on trust in SNS interactions indicating that as the scores on reciprocity increased, trust in SNS interactions was expected to increase as well.

Hypothesis 1: Cultural diversity has a negative effect on trust in SNS interactions. This hypothesis was rejected as analysis indicated that cultural diversity has no statistically significant effect on trust in SNS interactions. This relationship was not significant at the .05 level ($\beta = .139$; $p = .436$).

Hypothesis 3a: Configuration of SNS has a positive effect on trust in SNS interactions. This hypothesis was rejected as analysis indicated that configuration of SNS has no statistically

significant effect on trust in SNS interactions or reciprocity. This relationship was not significant at the .05 level ($\beta=-.012$; $p=.856$).

Hypothesis 6: Trust in SNS interactions increases with increased reciprocity in SNS interactions. This hypothesis was accepted as analysis indicated that reciprocity in SNS interactions has a statistically significant positive effect on Trust in SNS interactions. This relationship was significant at the .05 level ($\beta=.667$; $p<.001$).

Table 21

Statistical Results Regression Analysis - Regression 2

Dependent Regressor	Reciprocity		
Configuration of SNS	.026 (.075)		
Native Language Diversity		-.466* (.253)	
Identification Needs			.611**** (.055)
R ²	.375	.375	.375
F	50.911	50.911	50.911
N	259	259	259
Hypothesis Supported	H ₃ :No	H ₂ :No	H ₄ :Yes

* $p<0.10$ ** $p<0.05$ *** $p<0.01$ **** $p<0.001$ Standard errors in parentheses

Multiple regression analyses were conducted to examine the relationship between reciprocity and the probable predictors native language and identification needs. Table 21 summarizes the analysis results. The results illustrate that native language diversity and configuration of SNS had p values higher than .05, indicating that both constructs had no significant effect on reciprocity in SNS interactions. On the other hand, the researcher noted that identification needs had a significant effect on reciprocity in SNS interactions indicating that as

the scores on identification needs increased, reciprocity in SNS interactions was expected to increase as well.

Hypothesis 3b: Configuration of SNS has a positive effect on reciprocity in SNS interactions. This hypothesis was rejected as analysis indicated that configuration of SNS has no statistically significant effect on trust in SNS interactions. This relationship was not significant at the .05 level ($\beta=.026$; $p=.730$).

Hypothesis 2: Native language diversity has a negative effect on reciprocity in SNS interactions. This hypothesis was rejected as analysis indicated that native language does not have a significant negative effect on reciprocity. This relationship was not significant at the .05 level ($\beta=-.466$; $p=.067$).

Hypothesis 4: Identification needs have a positive effect on reciprocity in SNS interactions. This hypothesis was accepted as analysis indicated that identification needs has a statistically significant positive effect on reciprocity in SNS interactions. This relationship was significant at the .05 level ($\beta=.611$; $p<.001$).

Table 22

Statistical Results Regression Analysis - Regression 3

Dependent Regressor	Sense of Community
Trust	.525**** (.053)
R ²	.273
F	96.570
N	259
Hypothesis Supported	H ₅ : Yes

* $p<0.10$ ** $p<0.05$ *** $p<0.01$ **** $p<0.001$ Standard errors in parentheses

Multiple regression analysis was conducted to examine the relationship between trust and sense of community. Table 22 summarizes the descriptive statistics and analysis results. The researcher noted that trust had a significant effect on sense of community indicating that as the scores on identification needs increased, reciprocity in SNS interactions was expected to increase as well.

Hypothesis 5: Trust in SNS interactions has a positive effect on sense of community. This hypothesis was accepted as analysis indicated that Trust in SNS interactions has a significant effect on sense of community. This relationship was significant at the .05 level ($\beta=.525$; $p<.001$).

Table 23

Statistical Results Regression Analysis - Regression 4

Dependent Regressor	Effective Communication
Sense of community	.434*** (.061)
R ²	.165
F	50.669
N	259
Hypothesis	H7: Yes Supported

* $p<0.10$ ** $p<0.05$ *** $p<0.01$ **** $p<0.001$ Standard errors in parentheses

Multiple regression analyses were conducted to examine the relationship between sense of community and effective communication. Table 23 summarizes the analysis results. The researcher noted that sense of community had a significant effect on effective communication indicating that as the scores on identification needs increased, reciprocity in SNS interactions was expected to increase as well.

Hypothesis 7: Sense of community has a positive effect on effective communication in SNS. This hypothesis was accepted as analysis indicated that sense of community interactions

has a statistically significant positive effect on effective communication. This relationship was significant at the .05 level ($\beta=.434$; $p<.001$).

Subsequently, the purpose of this chapter was to provide results of the analysis performed and the results of the hypothesis statements. The results are as follows:

Table 24

Summary of Hypotheses

H ₁ : Cultural diversity has a negative effect on trust in SNS interactions.	Not Supported
H ₂ : Native language diversity has a negative effect on reciprocity in SNS interactions.	Not Supported
H ₃ : Configuration of SNS has a positive effect on trust and reciprocity in SNS interactions.	Not Supported
H ₄ : Identification needs have a positive effect on reciprocity in SNS interactions.	Supported
H ₅ : Trust in SNS interactions has a positive effect on sense of community.	Supported
H ₆ : Trust in SNS interactions increases with increased reciprocity in SNS interactions.	Supported
H ₇ : Trust in SNS interactions increases with increased reciprocity in SNS interactions.	Supported

This chapter presented the results of a study designed to describe the relationships between cultural diversity, native language diversity, trust in SNS interactions, reciprocity in

SNS interactions, sense of community and effective communication on the activities of social network sites

Cronbach's Alpha was performed on the variables under review to determine how well the items were correlated to one another. The results of the Cronbach's Alpha demonstrated high reliability for all variables. Demographic data were collected from the survey participants to ensure the sample was representative of the population. The distribution of the data appeared to be representative of the normal adult population. In addition, the data appeared to be consistent with a normal distribution.

Results of the hypotheses testing are presented in Table 25.

Summary

Chapter 4 reported results of the analysis performed to answer the hypothesis statements proposed in this study. Initially, a literature review was conducted to investigate relevant research regarding cultural diversity, native language diversity, trust in SNS interactions, reciprocity in SNS interactions, sense of community and effective communication on the activities of social network sites.

After completing pre-analysis screening, the data was examined for outliers, there were no extreme outliers, so no data was removed from the final data set, leaving 259 usable responses for further analysis. Subsequently, the researcher verified the reliability of the instrument through Cronbach's Alpha analysis. Analysis indicated that all variables were reliable. The Cronbach's Alpha coefficients were as follows: configuration of SNS, .831; identification needs, .897; trust in SNS interactions, .908; reciprocity in SNS interactions, .851; sense of community,.937 and effective communication, .894.

This research results supported hypothesis H₄ and suggested identification needs has a significant effect on reciprocity in SNS interactions. In addition, results supported hypothesis H₅ that stated that Trust in SNS interactions has no significant effect on sense of community. Results also supported hypothesis H₆ and suggested Trust in SNS interactions has a significant effect on reciprocity in SNS interactions. Finally, results also supported hypothesis H₇ and suggested that sense of community has a significant effect on effective communication. However, hypotheses H₁, H₂, H_{3a} and H_{3b}, were not supported, as the researcher determined that Cultural diversity has no significant effect on Trust in SNS interactions and that native language has no significant effect on reciprocity in SNS interactions. In addition, the researcher found that configuration of SNS has no significant effect on trust or reciprocity in SNS interactions.

Chapter 5

Conclusions, Implications, Recommendations, and Summary

Conclusions

This chapter presents the conclusions derived from the results of this study. The research questions and hypotheses were outlined and reviewed, and implications for the study and contributions to the body of research discussed. The chapter concludes with recommendations for future research and a summary of the study.

The main goal of this study was to determine the effects of cultural diversity, native language diversity, configuration of SNS, trust, reciprocity, sense of community and effective communication on the activities of social network sites. The study addressed the proposed hypothesis statements. The first hypothesis (H_1) stated that cultural diversity has a negative effect on trust in SNS interactions. The findings from the statistical analysis on H_1 indicated that this hypothesis was not supported, because, cultural diversity had no statistically significant effect on trust in SNS interactions. These findings were somewhat consistent with prior research suggesting that, although new members of SNS typically seek out SNS familiar members with similar cultures or values, they eventually “friend” individuals with dissimilar cultures or values (Gefen, et al., 2006). As SNS use proliferates globally, cultural diversity may no longer have an effect on trust in SNS interactions.

The second hypothesis (H_2) stated that native language diversity has a negative effect on reciprocity in SNS interactions. Findings from the analysis on H_2 indicated that this hypothesis was not supported, and this relationship was found not to be significant.

The third hypothesis (H_{3a} and H_{3b}) stated that configuration of SNS has a positive effect on trust and reciprocity in SNS interactions, respectively. These hypotheses were not supported as the analysis indicated that configuration of SNS has no statistically significant effect on trust in SNS interactions or reciprocity. This finding deviates somewhat from literature indicating that SNS users typically set their SNS privacy settings favoring users that they trust or have reciprocal relationships with (Sledgianowski & Kulviwat, 2009). Privacy settings are a subset of configuration of SNS, this could possibly explain the deviation, and as such as the area of security and privacy with the configuration of SNS needs further research.

The fourth hypothesis (H₄) stated that identification needs have a positive effect on reciprocity in SNS interactions. This hypothesis was supported, as analysis indicated that identification needs had a statistically significant positive effect on reciprocity in SNS interactions. This finding is consistent with literature, which suggested that psychological status of belonging to a community in an online social network can be stem from affective, evaluative and cognitive social identity (Cheung, Chiu, & Lee, 2011).

The fifth hypothesis (H₅) stated that trust in SNS interactions has a positive effect on sense of community. This hypothesis was supported as the analysis indicated that trust in SNS interactions has a statistically significant positive effect on sense of community. These findings are consistent with prior studies that suggest that high levels of trust typically translate to people being more willing to provide support to other members of the SNS community (Krasnova, et al., 2010).

The sixth hypotheses (H₆) stated that trust in SNS interactions increases with increased reciprocity in SNS interactions. This hypothesis was supported as the analysis indicated that this relationship was significant. This finding is consistent with literature that suggests that trust and

reciprocity have a synergetic relationship, where reciprocity entails two users trusting each other in a two-way trust relationship. A network with numerous reciprocal linkages is likely to be more robust than one with fewer links of this nature (Nguyen, et al., 2010).

The seventh hypotheses (H₇) stated that sense of community has a positive effect on effective communication in SNS. This hypothesis was supported as analysis indicated that sense of community interactions has a statistically significant positive effect on effective communication. These findings are consistent with prior research that suggest that where users feel a sense of community social interaction and effective communication is facilitated (Nahapiet & Ghoshal, 1998).

Implications

Implications for Practice

The research in this study has implications for the information systems practice. The results of this study expound on the perspectives of the effects of trust in SNS interactions, reciprocity in SNS interactions and sense of community and effective communication on the activities of social network sites. This will enable the information systems field to appreciate how SNS users can communicate more effectively, once a level of trust, reciprocal collaboration and a sense of community is established on an SNS. This is essential for information systems field to understand, especially for developers as the tenets of SNS mirror the behavior traits of people in real life networks.

Another implication for practice is related to how configuration of SNS, specifically configuration of security and privacy settings affect activities of social network sites. Security breaches and privacy violations of personal identifiable information (PII) are a current and

prevalent topic in information technology. Consideration of SNS users' perception of security risks of sharing private and personal information is key in improving SNS use. Accordingly, analyzing the mechanisms necessary to incorporate better personal information sharing practices into the options available in configuration settings of a SNS is imperative for SNS developers and the information systems practice.

Implications for Research

The research in this study has implications for research. The first implication of research is that the study adds to previous research and perspectives on the effects of trust in SNS interactions, reciprocity in SNS interactions and sense of community and effective communication on the activities of social network sites. This will help the information systems field to expound on previous research on SNS use and the implications and effects of the constructs of cultural diversity, native language diversity, configuration of SNS, trust, reciprocity, sense of community and effective communication affect the activities of social network sites.

Another implication for research concerns the identification of how configuration of SNS, specifically configuration of security and privacy settings could influence the activities of social network sites. Security breaches and privacy violations of personal identifiable information (PII) are prevalent, hence, this is a timely topic. While the results of this study did not support the hypothesis that stated that configuration of SNS has a positive effect on trust and reciprocity in SNS interactions, the finding deviates from literature indicating that SNS users typically set their SNS privacy settings favoring users that they trust or have reciprocal relationships with (Sledgianowski & Kulviwat, 2009). Further research will help the information system field to evaluate SNS users' perception of security risks of sharing their private and

personal information and the effect of those perceptions on configuration of SNS. Accordingly, this study provides a basis for additional research necessary on various facets that affect interactions in SNS.

Study Limitations

The study is limited to participants in the United States of America. Although the survey was only conducted in English language, approximately 10% of the participants had an alternative native language and culture. Accordingly, a global survey could lead to different results.

Secondly, online survey distribution can be subject to wrong data that can affect the overall results of the study. Furthermore, there were a total 259 respondents of the survey study considered for data collection and analysis. The results devised from limited population sampling are unable to fully generalize to the whole population set because of the relativity of varying opinions of every individual of a population set. Moreover, a closed-ended questionnaire is used for data collection that limits the response of the respondent. Additionally, the study was limited to the specific set of questions and responses that limits the opinion of the respondents. However, a closed-ended survey allows statistical data analysis and better evaluation of results.

Future Research

The study examined the factors that influence the development of the sense of community and effective communication in SNS interactions. This study expands upon prior studies on SNS interactions and recommends additional areas to consider in future research.

Considering the pervasive adoption and budding influence of SNS in the personal and professional lives of people globally, it is an emergent domain that has various opportunities for future studies. Research in the future ought to be conducted on a more global scale with participants drawn from a worldwide geographical area. In addition, future research could be conducted focusing on participants from specific age groups to determine the influence of SNS use at various life stages. Such research could provide insight into the user experience of SNS use and how to improve the ability to capture the diverse interests of all users from different age groups.

Future research could be conducted to explore the potential effects on how configuration of SNS on the emerging topics of security and privacy. Essentially, future research would be conducted to develop predictive models on how specific actions of SNS users could lead to security breaches of their personal information.

Summary

This dissertation investigated the effects of cultural diversity, native language diversity, configuration of SNS, trust in SNS interactions, reciprocity in SNS interactions on the sense of community and effective communication on the activities of social network sites.

Correspondingly, the factor analysis established that the model had five constructs, which were labeled as trust and reciprocity in SNS interactions, configuration of SNS, identification needs sense of community and effective communication. The researcher noted the distinguishable constructs had items that load effectively on their respective constructs.

Seven research questions were presented at the beginning of the study and included the following:

RQ1: Does cultural diversity affect trust in SNS interactions?

RQ2: Does native language diversity affect reciprocity in SNS interactions?

RQ3: Does the configuration of social networks affect trust and reciprocity in SNS interactions?

RQ4: Do identification needs affect reciprocity in SNS interactions?

RQ5: Does trust in SNS interactions affect sense of community in SNS?

RQ6: Does reciprocity affect trust in SNS interactions?

RQ7: Does the sense of community affect effective communication in SNS?

In addressing the research questions, this study developed a new instrument, primarily leveraged from previously validated research. Accordingly, to answer the research questions, this study addressed 7 hypothesis statements:

H₁: Cultural diversity has a negative effect on trust in SNS interactions.

Not Supported.

H₂: Native language diversity has a negative effect on reciprocity in SNS interactions.

Not Supported.

H₃: Configuration of SNS has a positive effect on trust and reciprocity in SNS interactions.

Not Supported.

H₄: Identification needs have a positive effect on reciprocity in SNS interactions.

Supported.

H₅: Trust in SNS interactions has a positive effect on sense of community.

Supported.

H₆: Trust in SNS interactions increases with increased reciprocity in SNS interactions.

Supported.

H₇: Sense of community has a positive effect on effective communication in SNS.

Supported.

Consequently, to address the hypothesis statements, the researcher developed a survey instrument leveraging and adopting questions from previously validated instruments (Wu, 2006) and (Chiu et al., 2006). The internal validity of these instruments had already been established. The survey was broken up to into five sections. The first section of the survey instrument addressed configuration of SNS sites, identification needs, trust in SNS interactions and reciprocity in SNS interactions and consisted of 16 items on a Likert scale. The second section of the survey instrument addressed sense of community and effective communication and consisted of 8 items on a seven-point Likert scale. The third section of the survey instrument addressed cultural diversity and native language diversity and consisted of 4 items on a yes/no scale. The final section consisted of variables related to the demographics, including gender, age, education level, country of residence, in country of residence and years of SNS use.

A total of 259 participants completed the survey. Overall, the response rate was 55%. Of the respondents with complete responses, 47.9% were male, while 52.1% were female. The researcher conducted pre-analysis data screening to identify cases of response set bias and outliers; no significant outliers were found. Cronbach's Alpha was run to determine reliability of the instrument. Correspondingly, the researcher performed Cronbach's Alpha 'if deleted' analysis for each set of construct items. The result of the analysis indicated which items would

have provided for a reduction in the overall constructs' Cronbach's Alpha. None of the items required further review for possible removal from the construct item. The resulting scores confirming reliability were as follows: CG .831; ID .897; TR .908, RP .851, SC .937 and EC .894.

The researcher identified limitations in the previous section and discussed the implications of this study for future use in the field of Information Systems. In addition, the researcher recommended additional areas to add this research and as well as areas to expound on the overall knowledge base on SNS use. Lastly, the researcher presented a summary of the findings.

The study examined the factors that influence the development of the sense of community and effective communication in SNS interactions. This study expands upon prior studies on SNS interactions and recommends additional areas to consider in future research. The study found that identification needs, trust, reciprocity, sense of community and effective communication all have an effect on SNS interactions. However, the study found that configuration of SNS did not have a significant effect on trust and reciprocity in SNS interactions, indicating that as the users' ability to configure SNS based on their preferences of security, privacy and other aspects evolving and need to be researched further. Accordingly, additional studies need to be performed to examine the effects of configuration of SNS on other constructs.

Appendix A

IRB Approval Letter – Nova Southeastern University



MEMORANDUM

To: **STEPHEN K MUSEMBWA, PhD**
College of Computing and Engineering

From: **Ling Wang, Ph.D.,**
Center Representative, Institutional Review Board

Date: **November 15, 2016**

Re: **IRB #: 2016-544; Title, "Testing a Theoretical Model That Relates the Effect of Various Social Constructs on Activities at Social Network Sites"**

I have reviewed the above-referenced research protocol at the center level. Based on the information provided, I have determined that this study is exempt from further IRB review under 45 CFR 46.101(b) (Exempt Category 2). You may proceed with your study as described to the IRB. As principal investigator, you must adhere to the following requirements:

- 1) **CONSENT:** If recruitment procedures include consent forms, they must be obtained in such a manner that they are clearly understood by the subjects and the process affords subjects the opportunity to ask questions, obtain detailed answers from those directly involved in the research, and have sufficient time to consider their participation after they have been provided this information. The subjects must be given a copy of the signed consent document, and a copy must be placed in a secure file separate from de-identified participant information. Record of informed consent must be retained for a minimum of three years from the conclusion of the study.
- 2) **ADVERSE EVENTS/UNANTICIPATED PROBLEMS:** The principal investigator is required to notify the IRB chair and me (954-262-5369 and Ling Wang, Ph.D., respectively) of any adverse reactions or unanticipated events that may develop as a result of this study. Reactions or events may include, but are not limited to, injury, depression as a result of participation in the study, life-threatening situation, death, or loss of confidentiality/anonymity of subject. Approval may be withdrawn if the problem is serious.
- 3) **AMENDMENTS:** Any changes in the study (e.g., procedures, number or types of subjects, consent forms, investigators, etc.) must be approved by the IRB prior to implementation. Please be advised that changes in a study may require further review depending on the nature of the change. Please contact me with any questions regarding amendments or changes to your study.

The NSU IRB is in compliance with the requirements for the protection of human subjects prescribed in Part 46 of Title 45 of the Code of Federal Regulations (45 CFR 46) revised June 18, 1991.

Cc: **Souren Paul**

Appendix B

Survey Instrument

Please respond to the following statements with a yes or no.

Item	Response (Yes/No)
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CD1 Do you interact with SNS members with same nationality as yours (Yes/No)?

CD2 For Social Network Sites (SNS) group members that do not have the same nationality as yours, please provide:

- name of their nationalities
- total number members for each different nationality
- total number of people in your SNS group.

Please respond to the following statements with a yes or no.

Item	Response (Yes/No)
------	-------------------

NL1 Do you interact with SNS members with same native language as yours (Yes/No)?

NL2 For Social Network Sites (SNS) group members that do not have the same native language as yours, please provide:

- name of their native language
- total number members for each different native language
- total number of people in your SNS group.

Please respond to the following statements from one to five, where one (1) indicates “Not at All” and five (5) indicates “To a Very Great Extent”.

Item	Not at all (1)	To some extent (2)	To a moderate extent (3)	To a great extent (4)	To a very great extent (5)
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CG1 To what extent does your SNS allow you to invite friends to join the SNS?

CG2 To what extent does your SNS allow you to create groups?

CG3 To what extent does your SNS allow you to hide friends, without informing them?

CG4 To what extent does your SNS limit other people's access to your SNS account using privacy settings?

CG5 To what extent do you feel in control of specifying and updating privacy controls of your SNS profile?

Please respond to the following statements from one to five, where one (1) indicates "Strongly Disagree" and seven (7) indicates "Strongly Agree".

Item	Strongly disagree (1)	Disagree (2)	Disagree somewhat (3)	Neither disagree nor agree (4)	Agree somewhat (5)	Agree (6)	Strongly Agree (7)
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ID1 I feel a sense of belonging towards the members of my SNS community

ID2 I have a feeling of closeness to members of my SNS community

ID3 I have a strong positive feeling towards members of my SNS community

ID4 I am proud to be a member of my SNS community

Please respond to the following statements from one to five, where one (1) indicates “Strongly Disagree” and seven (7) indicates “Strongly Agree”.

Item	Strongly disagree (1)	Disagree (2)	Disagree somewh at (3)	Neither disagree nor agree (4)	Agree somewhat (5)	Agree (6)	Strongly Agree (7)
TR1 Members in my SNS community will not take advantage of others even when the opportunity arises		-					
TR2 Members in my SNS community will always keep the promises they make to one another							
TR3 Members in my SNS community would not knowingly do anything to disrupt the conversation							
TR4 Members in my SNS community behave in a consistent manner							
TR5 Members in my SNS community are truthful in dealing with one another							

Please respond to the following statements from one to five, where one (1) indicates “Strongly Disagree” and seven (7) indicates “Strongly Agree”.

Item	Strongly disagree (1)	Disagree (2)	Disagree somewhat (3)	Neither disagree nor agree (4)	Agree somewhat (5)	Agree (6)	Strongly Agree (7)
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RP1 I know that other members in my SNS community will help me, so it's only fair to help other members

RP2 I believe that members in my SNS community would help me if I need it

Please respond to the following statements from one to five, where one (1) indicates “Strongly Disagree” and seven (7) indicates “Strongly Agree”.

Item	Strongly disagree (1)	Disagree (2)	Disagree somewhat (3)	Neither disagree nor agree (4)	Agree somewhat (5)	Agree (6)	Strongly Agree (7)
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SC1 Sharing my knowledge will be helpful to the successful functioning of my SNS community

SC2 Sharing my knowledge would help my SNS community continue its operation in the future

SC3 Sharing my knowledge would

help my SNS
community
accumulate or
enrich its
knowledge base

SC4 Sharing my
knowledge would
help my SNS
community grow

Please provide the following demographic information:

A. **DM1** What is your gender?

1. male
2. female

B. **DM2** What is your age group?

1. Under 21
2. 21-29
3. 30-39
4. 40-49
5. 50 and Over

C. **DM3** What is your education level?

1. High school or below
2. Some college
3. Bachelor's degree
4. Graduate school or above

D. **DM4** What is your Country of residence?

1. United States
2. Other

E. **DM5** How many years have you lived in that country?

1. More than 10 years
2. Less than 10 years

F. **DM6** If you have lived in that country for less than 10 years, which country did you live in before that?

1. United States
2. Other

G. **DM7** How long have you been a member of your SNS?

1. Less than 3 months

2. 3–5 months
3. 6–12 months
4. Over 1 year – 2 years
5. Over 2 years – 3 years
6. Over 3 years

H. **DM8** What types of SNS do you normally use?

1. Entertainment
2. Business
3. Technology
4. Personal
5. Politics
6. Health
7. Engineering
8. Science
9. Humanities
10. Other

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