An Analysis Of Structural Social Capital And The Individual's Intention To Share Tacit Knowledge Using Reasoned Action Theory

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ABSTRACT

The sharing of tacit knowledge is important and its relationship with the development of social capital in a University of Technology is critical in the construction of a model to support and promote appropriate tacit knowledge sharing behavior.

The aim of the study was to examine the relationship between structural social capital and reasoned action theory and the individual's intention to share tacit knowledge. Structural social capital incorporates strong network ties and a high level of network resources. Specifically, the study examined the relationship strong network ties and a high level of network resources and the individual's attitude towards sharing tacit knowledge. It further examined the relationship between the individual's attitude towards tacit knowledge sharing, their perceived norms about tacit knowledge sharing and their intention to share tacit knowledge.

The research design was a case study incorporating quantitative research (five hundred and ninety questionnaires). A model of the individual's intention to share tacit knowledge was developed and evaluated using structural equation modeling.

The results indicated that structural social capital positively affects an individual's attitude towards tacit knowledge sharing and that the individual's attitude towards tacit knowledge sharing positively affects their intention to share tacit knowledge.

Keywords: Social Capital; Theory of Reasoned Action; Tacit Knowledge Sharing, Network Ties; Network Resources

INTRODUCTION

The formulation of strategy is one of the main tasks of university management (Spender and Grant, 1996). The sharing of tacit knowledge is essential to this task, but as we look at management's approach to knowledge, we see that the focus is on content, on what should be known rather than on how tacit knowledge is shared.

Many studies have suggested that structural social capital in the form of strong network ties is important for tacit knowledge sharing (Carley, 1991; Coleman, 1990; Davenport and Prusak, 1998; Kraimer, Seibert and Liden, 1999; Lin, Ensel and Vaughn, 1981) and assists in the transfer of tacit knowledge by promoting the exchange of information (Kramer, 1999; Nelson and Cooprider, 1996). According to Burt (1992) close relationships in social network interactions provide individual's with the opportunity to bargain thus providing more control over resources. They enable the utilization of resources available as a result of people bonding and moving across external networks in order to increase their resource base (Adler and Kwon, 2002; Putnam, 2000).

Through strong network ties or close relationships an individual may achieve access to another person's resources. Such resources include status, position, wealth or reputation. These resources can then provide various benefits for

the individual. For example, social interaction networks can provide access to information regarding work opportunities and consequently to better career outcomes. This exchange of resources fosters human capital in universities.

The aim of this study was to examine and understand the relationship between structural social capital (in the form of strong network ties and a high level of network resources), and the individual's intention to share tacit knowledge in a University of Technology using reasoned action theory (Fishbein and Ajzen, 2010). The primary research question that was explored was "how does structural social capital influence an individual's intention to share tacit knowledge?" The literature review is presented in the next section. The following sections will present the research model, methodology and analysis followed by the discussion and conclusion.

LITERATURE REVIEW

Structural Social Capital

Tacit knowledge sharing was examined in terms of the individual's work experience. It related to their ability to know what to perform and how to perform on the basis of their educational training. This study utilized Nahapiet and Ghoshal's (1998) definition and conceptualization of social capital as its point of departure. They define social capital as "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit" (Nahapiet and Ghoshal, 1998: 243). Nahapiet and Ghoshal's (1998) perspective lines up well with Bourdieu and Wacquant's (1992) approach who focus on the advantages and benefits that individuals derive as a result of individual relationships of mutual acquaintances and on the creation of social networks which assist in the creation of resources.

This paper adopts the view that social capital exists within the benefits that may be achieved through the individual's social interaction networks as well as the individual's relationships and the resources that are embedded within networks of social relationships. Jacobs (1965) found that these networks form the basis for trust, mutual co-operation and collective action. According to Nahapiet and Ghoshal (1998) social capital constitutes a form of accumulated history, reflecting investments in social relations and social organization through time. Time is important for the development of social capital, since all forms of social capital depend on stability and continuity of the social structure. They also believe that social interaction is important for the development of social relationships. (Nahapiet and Ghoshal, 1998). As social interactions occur social capital increases. In conjunction with Bourdieu (1986), they believe that social interaction is critical for the development of structural social capital.

This study examined only one aspect of social capital, i.e., structural social capital. Structural social capital can be conceptualized as "the overall pattern of relationships among social actors - that is, who you reach and how you reach them" (Nahapiet and Ghoshal, 1998: 236). Nahapiet and Ghoshal's (1998) work on structural social capital was informed by Granovetter's (1992) work on structural embeddedness. Nahapiet and Ghoshal (1998: 236) refer to the concept of embeddedness as "the binding of social relations in contexts of time and space… structural embeddedness concerns the properties of the social system and of the network of relations as a whole." Thus, structural social capital includes the networks of configurations between individuals and the network ties.

In terms of structural embeddedness, social capital consists of structural resources and the exchange of resources within these structures. For example, through "weak ties" (Granovetter, 1973) and "friends of friends" (Boissevain, 1974), members within the network obtain tacit knowledge and information. Granovetter (1985) found that social capital assists individual's to receive resources by participating in network activities. He maintains that social interaction within systems of social relationships occur within business networks and network ties.

Lin (2005) in contrast believes that you cannot simply assume that social networks are equivalent to social capital. She contends that specific types of networks produce more or less resources. She makes the point that:

> *It must be noted that while social capital is contingent on social networks, they are not equivalent or interchangeable terms. Networks provide the necessary condition for access to and use of embedded resources. Without networks, it would be impossible to capture the embedded resources. Yet networks and*

> *network features by themselves are not identical with resources. Rather, variations in networks or network features may increase or decrease the likelihood of having a certain quantity or quality of resources embedded. Thus, network ties should be seen as important and necessary antecedents exogenous to social capital (Lin, 2005:11).*

This study adopted Lin's (2005) approach and only one type of network structure, i.e., a strong bonding network structure which is characterized by close individual relationships (i.e., strong network ties) was studied. This is in line with Inkpen and Tsang's (2005) opinion that a more detailed look needs to be taken when examining networks. They also believe that the dynamics of the sharing of tacit knowledge vary across different networks and they demonstrate that network structures differ in terms of their effects on the sharing of knowledge.

Davidsson and Honig (2003) concur with Inkpen and Tsang (2005) and make the point that network ties that result in social capital may be different in terms of strong network ties and weak network ties and are contingent upon the type of network being analyzed.

In Inkpen and Tsang's (2005) opinion, social network theories that do not examine the type of network will not pick up the complexities that exist in the knowledge sharing process. Their research indicated that social network research should be expanded to examine in detail the characteristics of different network types.

As Seibert, Kraimer and Liden (2001:7) state "the key empirical question then becomes what network structures leads ego to have more (or less) access to important social resources?" In terms of this study which network structure provides more or less access to tacit knowledge? Thus, this study's measurement constructs concentrated on strong network ties and the network resources that are embedded within that structure. This study views 'network resources' as referring to an individual's access to network resources located within the individual's network ties, for example, information, ideas, tacit knowledge and support that individuals obtain as a result of being in a close relationship with another person.

The Reasoned Action Approach

This study utilized the reasoned action approach. The key application of the theory of reasoned action (Fishbein and Ajzen, 1975) is the prediction of behavioral intention. Research on the theory of reasoned action (Fishbein and Ajzen, 2010) has repeatedly shown that this theory is able to explain human behavior (Chang, 1998; Fishbein and Ajzen, 1981; Kurland, 1995; Mathieson, 1991). For a detailed explanation of the application of the theory of reasoned action (Fishbein and Ajzen, 2010) to tacit knowledge sharing please see Smith's (2015) paper on relational social capital.

RESEARCH MODEL AND HYPOTHESES

Research Aim and Objectives

The main aim of this research was to develop a set of hypotheses in a model, which explain the dynamic interactions between structural social capital and 'reasoned action' constructs and the individual's intention to share tacit knowledge, by clarifying the relationships between these constructs.

The objectives were:

- to investigate the relationship between the structural social capital constructs of:
  - strong network ties,
  - network resources

and the 'reasoned action' construct of the individual's attitude towards tacit knowledge sharing and

- to investigate the relationship between the 'reasoned action' constructs of:
  - attitude towards tacit knowledge sharing,
  - perceived norms about tacit knowledge sharing and the individual's intention to share tacit knowledge.

Model Development

A model was developed to test the relationship between the structural social capital constructs (i.e., strong network ties and network resources) and the mediating factors (i.e., reasoned action constructs - attitude towards tacit knowledge sharing and perceived norms about tacit knowledge sharing) and the individual's intention to share tacit knowledge. In order to determine how well the proposed model, explained the individual's intention to share tacit knowledge, the following questions were posed:

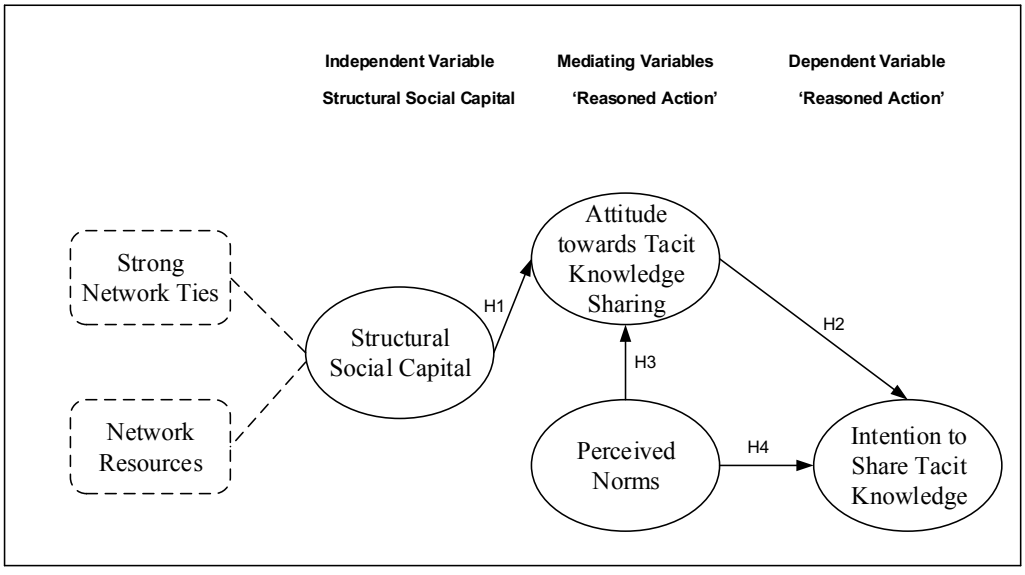
- Is the theoretical model a good fit to the data?
- Is there a relationship between structural social capital (strong network ties and network resources) and the individual's 'attitude towards tacit knowledge sharing'?
- What are the direct, indirect and total effects of the structural social capital and reasoned action variables on the individual's intention to share tacit knowledge?
- Are the identified two 'reasoned action' variables (attitude towards tacit knowledge sharing, perceived norms about tacit knowledge sharing) significant for predicting the criterion variable 'intention to share tacit knowledge'?

Because social capital exists in the structure and content of social networks and relationships (Granovetter, 1973) and may be analyzed from different perspectives, the focus in conducting this research was on the individual and the dyadic strong social network interactions, between an individual and their co-workers. It was thus at the individual level that all of the hypotheses were formulated. Social capital as an individual attribute refers to "a person's potential to activate and effectively mobilize a network of social connections based on mutual recognition and maintained by symbolic and material exchanges" (Bourdieu, 1986: 48). Bourdieu (1986: 249) believes that "social capital resides in relationships between individuals and that the pattern of ties and the relationships built through them are the foundation for social capital." Much of a university's knowledge is located within individuals (Jarvenpaa and Staples, 2001).

The study's core hypothesis was the following: Structural social capital (in the form of strong network ties and network resources) act as determinants for the "individual's attitude towards tacit knowledge sharing" and that the "individual's attitude towards tacit knowledge sharing" and their "perceived norms about knowledge sharing" act as determinants for the "individual's intention to share tacit knowledge." This is diagrammatically illustrated in Figure 1.

Four hypotheses were formulated in order to test the relationship between structural social capital and the individual's intention to share tacit knowledge. These are outlined in the next section.

Figure 1. Structural Social Capital Model



Network Ties and Resources

Many researchers believe that social capital may best be seen as a structural asset which occurs in the network ties and social relationships between individuals (Davenport, 2005; Woolcock and Narayan, 2000). In addition, research has consistently illustrated that social interaction in the context of strong network ties is important for the transferring of knowledge (Hansen, 1999; Seibert, Kraimer and Liden, 2001; Szulanski, 1996; Uzzi, 1997). Yang and Farn's (2009) study found that the stronger the social capital, through the reciprocal relationship, with their co-workers, the more willing the individual would be to share his/her tacit knowledge. People have a more positive attitude towards sharing knowledge and resources with others with whom they have a close relationship (Chow and Chan, 2008).

In the University of Technology there is a continual dialogue between explicit and tacit knowledge through social interaction networks which draws the creation of new ideas and concepts (Wilson, 2000). According to Nonaka (1994) network ties assist in the development of ideas. Networks ties promote a shared understanding among employees, which increases the likelihood of understanding between them because it allows them to formulate their knowledge as a result of knowing what the receiver knows and does not know (Cramton, 2001). As a new idea resonates around networks of individuals, it is developed and clarified. Thus network ties give rise to new knowledge (Nonaka, 1994). They provide a context for creative individuals to create knowledge (Tindale and Kameda, 2000). Problem solving occurs within networks of interaction which leads to new knowledge. An innovative idea created by one individual produces information and knowledge which changes the knowledge base of other individuals.

According to Pettigrew, Fidel and Bruce (2001) the most valuable employee in a university is the one who is capable of performing at an expert level within networks of social interaction and is able to transfer that expertise to appropriate colleagues. Davenport (2005) believes that top performing employees obtain critical information and knowledge from other employees in their social interaction networks.

One of the central themes in the literature is that network ties are channels for resource flows (Davidsson and Honig, 2003), for the exchange of resources and for access to resources, i.e., beneficial tacit knowledge (Adler and Kwon, 2002). Burt (2000) is of the opinion that the type of network structure - which employee interacts with another and how often and on what basis is responsible for the transfer of resources within that network. Employees in key strategic network positions have better access to resources than employees in lesser positions. They have more social capital especially when their network position is related to important networks.

This study proposes that strong network ties, (i.e., close relationships) in contrast to weak network ties lead to a more positive attitude towards the sharing of tacit knowledge, due to the benefits that arise as a result of these strong network ties. Close relationships facilitate exchange which result in co-operation, team work, improved decision making and problem solving which further bonds employees together (Bonache and Zarraga-Oberty, 2008; Hazleton and Kennan, 2000). This is in line with Darvish and Nikbakhsh (2010) finding that strong network ties have a direct effect on attitude and expectations about knowledge sharing. These strong network ties constitute a valuable source of information, tacit knowledge and resources that facilitate a positive attitude toward tacit knowledge sharing. This leads to the first hypothesis:

Hypothesis 1: Individuals who report a high level of structural social capital (strong network ties and a high level of network resources) will display a positive attitude towards tacit knowledge sharing.

In addition, people who have a positive attitude towards tacit knowledge sharing are more likely to share their tacit knowledge (Allport, 1935). Ajzen and Fishbein's (1980) finding that a positive attitude with regard to performing a behavior increases the person's intention to perform the behavior has been confirmed by many researchers (Armistead & Meakins, 2002; Baum & Ingram, 1998; Hislop, 2003; Lin & Lee, 2004; Ryu, Ho & Han, 2003). Therefore:

Hypothesis 2: An individual's positive attitude towards tacit knowledge sharing positively influences their intention to share tacit knowledge.

When people believe that other people will approve or disapprove if they shared their tacit knowledge with others a perceived norm about tacit knowledge sharing develops (Ajzen, 1991). Several studies have shown that the person's

perceived norms have a positive influence on their attitude towards sharing their tacit knowledge (Shepherd & O'Keefe, 1984; Shimp & Kavas, 1984). Therefore:

Hypothesis 3: An individual's perceived norms about tacit knowledge sharing positively influence their attitude towards tacit knowledge sharing.

Furthermore, a person's perceived norm about tacit knowledge sharing influences their intention to share tacit knowledge (Bock, Zmud, Kim and Lee, 2005; Venkatesh and Davis, 2000). Cialdini's (2007) research discusses how perceived norms suggest the most appropriate action to follow. If others are performing that action, individuals may assume that it is the correct action to follow. People often imitate the actions of others when choosing an appropriate course of action. Other things being equal, the stronger the perceived social pressure, the more likely it is that an intention to share tacit knowledge will be formed.

In conjunction with Fishbein and Ajzen (2010), similar arguments have been made by the following authors: Chang, 1998; Fulk, 1993; Kurland, 1995 and Mathieson, 1991. Hence,

Hypothesis 4: An individual's perceived norms about tacit knowledge sharing positively influences their intention to share tacit knowledge.

RESEARCH METHODOLOGY AND ANALYSIS

Research Design

This study reports on one of the models (i.e., the structural model) of Smiths (2015) of a research study which studied structural, relational and cognitive social capital. The research design, analysis and demographic profile was the same for each model. The research design was a case study which incorporated quantitative research (five hundred and fifty nine questionnaires). The target population for the study was all salaried staff (academic and administrative) at a University of Technology in Durban, Kwa-Zulu Natal, South Africa (Table 1). Please see Smith (2015) for the results of the relational model.

Measurement and Data Collection

The following structural social capital measurement constructs and questions were developed:

- Strong network ties - (Table 3 – Question 11 and 12) and
- Network resources - (Table 3 – Question 7, 14 and 33).

The following 'reasoned action' (Fishbein and Ajzen, 2010) measurement constructs and questions were developed:

- Attitude towards tacit knowledge sharing - (Table 3 - Question 19, 25 and 28).
- Perceived norms about tacit knowledge sharing - (Table 3 - Question 3 and 15).
- Intention to share tacit knowledge - (Table 3 - Question 18 and 26).

Analysis

Descriptive and inferential statistics were performed in the analysis using the statistical programs SPSS 19 and Amos, Version 16. In order to test the consistency of the data, the Cronbach (1951) Alpha Coefficient test, the One-Sample t-test, the Sign test, the Wilcoxon Signed Ranks test and the Spearman Rank-Order Correlation Coefficient test were applied to the data. In addition, Structural Equation Modeling (SEM) including confirmatory factor analysis was performed in order to test and interpret the hypothesized model.

Results

Demographic Profile

Table 1 presents a demographic profile of the respondents.

Table 1. Demographic Profile of Respondents

Measure	Items	Frequency	Percentage
Faculty	Executive Management	7	1.3
	Accounting and Informatics	33	6.0
	Applied Science	41	7.4
	Arts and Design	47	8.5
	Engineering and the Built Environment	48	8.7
	Health Sciences	68	12.3
	Management Sciences	66	11.9
	Support - Academic	83	15.0
	Support - Financial	47	8.5
	Support - General	29	5.2
	Unspecified	85	15.3
Age	18 - 29	88	15.9
	30 - 39	144	26.0
	40 - 49	145	26.2
	50 - 59	126	22.7
	60 - 69	44	7.9
	70+	4	.7
	Unspecified	3	.5
Race	White	134	24.2
	Black	193	34.8
	Asian	206	37.2
	Colored	19	3.4
	Unspecified	2	.4
Job Position	Senior Management	9	1.6
	Middle Management	12	2.2
	Junior Management	15	2.7
	Professor	14	2.5
	Senior Lecturer	58	10.5
	Lecturer	180	32.5
	Junior Lecturer	36	6.5
	Administrative	183	33.0
	Technician	45	8.1
	Unspecified	2	.4
Education	High school	32	5.8
	College	12	2.2
	Diploma	81	14.6
	Degree	118	21.3
	Honors'	81	14.6
	Masters	187	33.8
	Doctorate	42	7.6
	Unspecified	1	.2
Gender	Male	247	44.6
	Female	305	55.1
	Unspecified	2	.4

Cronbach (1951) Alpha Coefficient Test Results

In order to test reliability the Cronbach (1951) Alpha Coefficient test was applied. Table 2 provides the test results. All of the measurement constructs depicted an acceptable Alpha value.

Table 2. Cronbach Alpha Coefficient Test Results

Measurement Construct	Questions	Cronbach Alpha
Strong Network Ties	11, 12	0.734
Network Resources	7, 14, 33	0.743
Attitude towards Tacit Knowledge Sharing	19, 25, 28	0.763
Perceived Norms about Tacit Knowledge Sharing	3, 15	0.603
Intention to Share Tacit Knowledge	18, 26	0.839

One-Sample t-test Results

Table 3 provides the questions and One-Sample t-test results.

Table 3. One-Sample t-test Results

No.	Questions	Mean	Std Dev.	Sig. (2-tailed) **	Interpretation Significant
	Strong Network Ties				
11	I have a network of close co-workers from similar social and work groups with whom I can share my work experience and 'know-how'.	3.33	1.035	<0.0005	Agreement
12	Many of my co-workers are close friends, i.e., people that I feel at ease with or can talk to about private matters.	3.01	1.126	.792	-
	Network Resources				
7	I have gained resources through my social relationships at work.	3.42	1.078	<0.0005	Agreement
14	I have gained information and knowledge through my work social network.	3.61	.988	<0.0005	Agreement
33	My social relationships at work provide me with access to my co-workers work experience and 'know-how'.	3.44	.924	<0.0005	Agreement
	Attitude towards Tacit Knowledge Sharing				
19	Sharing my work experience and know-how with my co-workers is an enjoyable experience.	3.83	.880	<0.0005	Agreement
25	Sharing my work experience and 'know-how' with my co-workers is valuable to me.	3.97	.794	<0.0005	Agreement
28	Sharing my work experience and 'know-how' with my co-workers is good.	4.14	.712	<0.0005	Agreement
	Perceived Norms about Tacit Knowledge Sharing				
3	My boss thinks that I should share my work experience and 'know-how' with my co-workers.	3.70	.961	<0.0005	Agreement
15	My co-workers think that I should share my work experience and 'know-how' with other staff members.	3.47	.874	<0.0005	Agreement
	Intention to Share Tacit Knowledge				
18	I intend to share my work experience and 'know-how' with my co-workers more frequently in the future.	3.75	.852	<0.0005	Agreement
26	I intend to share expertise from my education and training with my co-workers more frequently in the future.	3.86	.798	<0.0005	Agreement

Structural Equation Modeling Results

'Goodness of Fit' Indices

Boomsma (2000) and Garver and Mentzer (1999) have recommended the following indices to assess whether the model is a good fit to the data: the Chi square (CMIN/DF) index, (Bentler, 1990), the Comparative Fit Index (CFI) and the Root Mean Square Error of Approximation (RMSEA) index (Steiger, 1989; Steiger, 1990; Steiger and Lind, 1980). Steiger (1990) was responsible for developing the RMSEA index and his indices were used to assess the model fit. Table 4 reflects the "Goodness of Fit" indices.

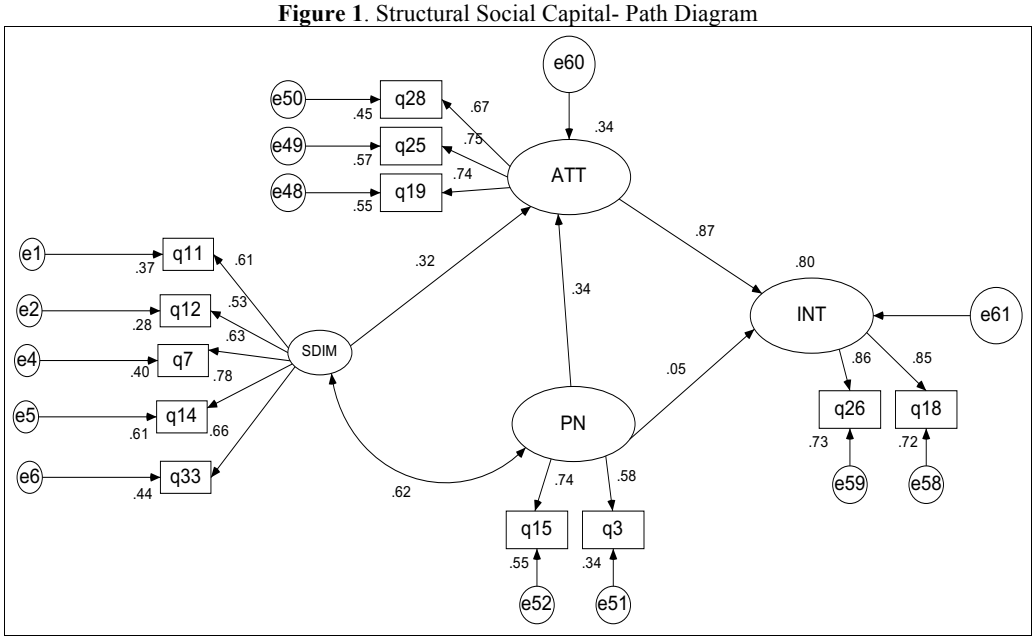
Table 4. "Goodness of Fit" Indices

'Goodness of Fit' Indices	Values (Recommended)
Chi Square	(2-3) - for an acceptable fit, <2 for a good fit.
Comparative Fit Index	>.9 for an acceptable fit, >.95 for a good fit.
Root Mean Square Error of Approximation	<.10 for a good fit, <.05 for a very good fit, <.01 for an outstanding fit.

Structural Social Capital - Path Diagram

The measurement model indicated that the data was a good fit. The reliability of the measurement indicators ranged from .28 to .73. Internal consistency was high and the measurement constructs showed discriminant validity.
The path diagram for structural social capital is illustrated in Figure 1.

Figure 1. Structural Social Capital- Path Diagram



Model Fit Indices

The ratio of χ^2 (170.2) to the degrees of freedom (49) was 3.475 (value >3) indicating that the variables do not fit the model globally. However, this statistic does suffer from limitations and a non-significant value may be unlikely even though the model may be a close fit to the data (Weston and Gore, 2006).

The CFI was 0.95 and the RMSEA was .067 (.056; .078. p = .005). This indicates that the model is a good fit to the data. Thus, this finding confirmed that structural social capital develops from the strong network ties which promote

or restrict the individual's access to social resources and the beneficial social resources that exist in the network. It further indicates that this structural social capital contributes towards the individual's intention to share tacit knowledge.

Factor Correlations

Table 5 presents the factor correlations. All of the measurement constructs significantly correlated with the highest correlation being between the individual's attitude towards tacit knowledge sharing and their intention to share tacit knowledge (.893).

Table 5. Structural Social Capital - Factor Correlations

Construct	Structural Social Capital	Perceived Norms	Attitude	Intention
Structural Social Capital	1.000			
Perceived Norms	.621	1.000		
Attitude	.525	.532	1.000	
Intention	.486	.512	.893	1.000

Structural Social Capital - Hypotheses and Causal Effects

Table 6 indicates that hypothesis one, two and three were accepted in the Structural Equation Modeling analysis. This finding confirmed that structural social capital positively influences the individual's attitude towards tacit knowledge sharing. In addition, the person's tacit knowledge sharing attitude positively influences the person's tacit knowledge sharing intentions.

Furthermore, the individual's perceived norms about tacit knowledge sharing positively influenced the individual's attitude toward tacit knowledge sharing but did not influence the individual's intention to share tacit knowledge. Thus, hypothesis four was rejected.

Table 6. Structural Social Capital - Hypotheses and Causal Effects

Outcome	Determinant	Hypotheses	Causal Effects		
			Direct	Indirect	Total
Attitude	Structural Social Capital	Ho 1 - Individuals who report a high level of structural social capital (strong network ties and a high level of network resources), will display a positive attitude towards tacit knowledge sharing.	.316*	.000	.316*
	Perceived Norms	Ho 3 - An individual's perceived norms about tacit knowledge sharing positively influences their attitude towards tacit knowledge sharing.	.336*	.000	.336*
Intention	Attitude	Ho 2 - An individual's positive attitude towards tacit knowledge sharing positively influences their intention to share tacit knowledge.	.866*	.000	.866*
	Perceived Norms	Ho 4 - An individual's perceived norms about tacit knowledge sharing positively influences their intention to share tacit knowledge.	.051	.291*	.342*

* Statistically significant at $\alpha = 0.01$

DISCUSSION AND RECOMMENDATIONS

Discussion

The results indicated that structural social capital positively correlated with an individual's attitude towards the sharing of tacit knowledge. There was a direct causal effect between structural social capital and the individual's attitude towards the sharing of tacit knowledge (Table 6 - .316). In addition, perceived norms did not have a significant direct

causal effect on the individual's intention to share tacit knowledge (Table 6 - .051). Furthermore, there was a direct causal effect between perceived norms and the individual's attitude towards the sharing of tacit knowledge (Table 6 - .336). Statistical analysis confirmed a mediating effect between perceived norms and the person's attitude towards the sharing of tacit knowledge. It was also shown that the individual's attitude towards the sharing of tacit knowledge had a strong, significant direct effect on the individual's intention to share tacit knowledge (Table 6 - .866). Furthermore, the person's intention to share tacit knowledge was mediated by their attitude towards the sharing of tacit knowledge.

These findings confirm that structural social capital is derived from both the network structure which facilitates or impedes access to social resources and the nature of the social resources embedded in the network and this contributes towards tacit knowledge sharing behavior.

Recommendations

This study indicates that in order to establish a university knowledge-based culture that constantly generates new knowledge, it is important to:

- Uncover and understand the beliefs, motivations and attitudes of individual staff members towards tacit knowledge sharing.
- Understand the relationships and processes involved in individual tacit knowledge sharing behavior and
- Group persons who have similar professional similarities such as work interests and similar norms and values.

In addition, this study revealed that the sharing of tacit knowledge requires individual behavior that encourages the exchange of personal acquired knowledge between individuals. It requires an awareness of the information and knowledge needs of others and the ability to share this with others. It also requires that staff engage in close interactions that allow them to observe and learn from each other. Management must consciously cultivate social relationships and interpersonal interactions of employees, rather than expecting them to arise organically from day-to-day work activities.

Technical and systematic infrastructure is needed in a university to facilitate effective knowledge sharing with other staff members. Management must build a knowledge infrastructure - not only a technical system, but a web of connections among people which includes space, time, tools, and encouragement to interact and collaborate. The organizational design should facilitate tacit knowledge sharing and individual knowledge sharing should be supported and rewarded.

Knowledge is a result of social interaction in a given context in a value creation process (Bratianu, 2016). Thus, knowledge processes need to be built into daily work processes, and well-defined knowledge capture processes should exist. While technology can assist knowledge sharing, knowledge management decisions should be based primarily on who (people), what (knowledge), and why (business objective and process). The "how" should be considered last (Geisler and Wickramasinghe, 2015).

In addition, more empirical work is required into the analysis of specific networks and knowledge sharing. Researchers need to examine the nature of the network type and how it differs from other network types and then examine social capital in terms of specific network types. We currently do not know whether study results can be generalized from one network to another.

CONCLUSION

This study brings fresh evidence for the theory of tacit knowledge sharing behavior in a University of Technology by expanding it in new directions. It demonstrates the value of using structural social capital and its usefulness for furthering understanding of tacit knowledge sharing behavior in the university.

Promoting a culture of tacit knowledge sharing in universities will lead to the development of intellectual capital within a university which will facilitate technological innovation and improve the long term prosperity and

sustainability of the university. In the end, the location of the new knowledge-based economy resides in the social and intellectual capital that exists in the university. It is in the human mind and the individual sharing of tacit knowledge within social interaction networks.

AUTHOR BIOGRAPHY

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REFERENCES

Adler, P. S., & Kwon, S.W. (2002). Social capital: prospects for a new concept. *Academy of Management Review, 27*(1), 17-40.

Ajzen, I., (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes,* 50, 179-211.

Allport, G. W., (1935). *A handbook of social psychology.* Worcester, MA, US: Clark University Press.

Armistead, C., & Meakins, M., (2002). A Framework for practicing knowledge management. *Long Range Planning*, 35(1), 47-71.

Baum, J.A., & Ingram, P. (1998). Survival-enhancing learning in the Manhattan hotel industry, 1898-1980. *Management Science*, 44, 996-1016.

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin, 107*(2), 238.

Bock, G. W., Zmud, R. W., Kim, Y. G., & Lee, J. N. (2005). Behavioral intention formation in knowledge sharing: Examining the roles of extrinsic motivators, social-psychological forces, and organizational climate. *MIS Quarterly*, 87-111.

Boissevain, J. (1974). *Friends of friends*. Oxford: Basil Blackwell.

Bonache, J., & Zárraga-Oberty, C. (2008). Determinants of the success of international assignees as knowledge transferors: a theoretical framework. *The International Journal of Human Resource Management, 19*(1), 1-18.

Boomsma, A. (2000). Reporting analyses of covariance structures. *Structural Equation Modeling, 7*(3), 461-483.

Bourdieu, P. (1986). The forms of capital. *In J.G. Richardson (Ed.). Handbook of theory and research for the sociology of education.* New York: Greenwood.

Bourdieu, P., & Wacquant, L. J. D. (1992). *An invitation to reflexive sociology*: University of Chicago Press.

Bratianu, C. (2016). Management dynamics in the knowledge economy. *Knowledge Dynamics,* 4(3), 323-339.

Burt, R. S. (1992). *Structural holes. The social structure of competition.* Cambridge MA: Harvard University Press.

Burt, R. S., (2000). The network structure of social capital. *Research in Organizational Behavior*, 22, 345-423.

Carley, K. (1991). A theory of group stability. *American Sociological Review, 56*, 331-354.

Chang, M. K. (1998). Predicting unethical behavior: A comparison of the theory of reasoned action and the theory of planned behavior. *Journal of Business Ethics, 17*(16), 1825-1834.

Chow, W. S., & Chan, L. S. (2008). Social network, social trust and shared goals in organizational knowledge sharing. *Information & Management, 45*(7), 458-465. doi: DOI: 10.1016/j.im.2008.06.007

Cialdini, R. B. (2007). Descriptive social norms as underappreciated sources of social control. *Psychometrika, 72*(2), 263-268.

Coleman, J. S. (1990). *Foundations of social theory*. Cambridge MA: Belknap Press of Howard University Press.

Cramton, C. D. (2001). The mutual knowledge problem and its consequences for dispersed collaboration. *Organization Science*, 346-371.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16*(3), 297-334.

Darvish, H., & Nikbakhsh, R. (2010). Studying the relations of social capital factors with knowledge sharing: A case study at research department of IRIB. *Transylvanian Review of Administrative sciences, 31*, 28-47.

Davenport, T. H. (2005). *Thinking for a living: how to get better performances and results from knowledge workers*. Harvard Business Press.

Davenport, T. H., & Prusak, L. (1998). Working knowledge: Managing what your organization knows. *Harvard Business School Press, Boston, MA*.

Davidsson, P., & Honig, B. (2003). The role of social and human capital among nascent entrepreneurs. *Journal of Business Venturing, 18*(3), 301-331.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research.* Addison-Wesley.

Fishbein, M., & Ajzen, I. (1981). On construct validity: A critique of Miniard and Cohen's paper. *Journal of Experimental Social Psychology, 17*(3), 340-350.

Fishbein, M., & Ajzen, I. (2010). *Predicting and changing behavior. The reasoned action approach*. New York: Psychology Press.

Fulk, J. (1993). Social construction of communication technology. *Academy of Management Journal,* 921-950.

Garver, M. S., & Mentzer, J. T. (1999). Logistics research methods: employing structural equation modeling to test for construct validity. *Journal of Business Logistics, 20*, 33-58.
Geisler, E., & Wickramasinghe, N. (2015). *Principles of knowledge management theory, practice and cases.* Routledge. New York, U.S.A.
Granovetter, M. (1985). Economic action and social structure: the problem of embeddedness. *American Journal of Sociology*, 481-510.
Granovetter, M. (1992). Economic institutions as social constructions: a framework for analysis. *Acta Sociologica, 35*(1), 3-11.
Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology*, 1360-1380.
Hansen, M. T. (1999). The search-transfer problem: The role of weak ties in sharing knowledge across organization subunits. *Administrative Science Quarterly, 44*(1), 82-111.
Hazleton, V., & Kennan, W. (2000). Social capital: reconceptualizing the bottom line. *Corporate Communications: An International Journal, 5*(2), 81-87.
Hislop, D. (2003). Linking human resource management and knowledge management via commitment: A review and research agenda. *Employee Relations*, 25,182-202.
Inkpen, A. C., & Tsang, E. W. (2005). Social capital, networks, and knowledge transfer. *Academy of Management Review, 30*(1), 146-165.
Jacobs, J. (1965). *The death and life of great American cities*. London: Penguin Books.
Jarvenpaa, S. L., & Staples, D. S. (2001). Exploring perceptions of organizational ownership of information and expertise. *Journal of Management Information Systems, 18*(1), 151-184.
Kraimer, M. L., Seibert, S., & Liden, R. C. (1999). Psychological empowerment as a multidimensional construct: A test of construct validity. *Educational and Psychological Measurement, 59*, 127-142.
Kramer, R. M. (1999). Trust and distrust in organizations: Emerging perspectives, enduring questions. *Annual Review of Psychology, 50*(1), 569-598.
Kurland, N. B. (1995). Ethical intentions and the theories of reasoned action and planned behavior. *Journal of Applied Social Psychology, 25*(4), 297-313.
Lin, H. F. (2005). Social capital in J. Beckert and M. Zagiroski. Eds. *Encyclopedia of Economic Sociology.* London. Routledge.
Lin, H. F., & Lee, G. G. (2004). Perceptions of senior managers toward knowledge sharing behavior. *Management Decision,* 42, 108-125.
Lin, N., Ensel, W. M., & Vaughn, J. C. (1981). Social resources and strength of ties: Structural factors in occupational status attainment. *American Sociological Review*, 393-405.
Mathieson, K. (1991). Predicting user intentions: comparing the technology acceptance model with the theory of planned behavior. *Information Systems Research, 2*(3), 173-191.
Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital and the organizational advantage. *Academy of Management Review, 23*(2), 242-266.
Nelson, K. M., & Cooprider, J. G. (1996). The contribution of shared knowledge to IS group performance. *MIS Quarterly*, 409-432.
Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, 14-37.
Pettigrew, K. E., Fidel, R., & Bruce, H. (2001). Conceptual frameworks in information behavior. *Annual Review of Information Science and Technology (ARIST), 35*, 43-78.
Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American democracy.* New York, Simon and Schuster Paperbacks.
Ryu, S. Ho, S.H., & Han, I (2003). Knowledge sharing behavior of physicians in hospitals. *Expert Systems with Applications,* 25, 113-122.
Seibert, S. E., Kraimer, M. L., & Liden, R. C. (2001). A social capital theory of career success. *The Academy of Management Journal*. 44(2), 219-237.
Shepherd, G. J., & O'Keefe, D. J. (1984). Separability of attitudinal and normative influences on behavioral intentions in the Fishbein - Ajzen model. *The Journal of Social Psychology, 122*(2), 287-288.
Shimp, T. A., & Kavas, A. (1984). The theory of reasoned action applied to coupon usage. *Journal of Consumer Research*, 795-809.
Smith, C. (2015). Tacit knowledge sharing behavior, within a relational social capital framework, in a South African University of Technology. *Journal of Applied Business Research.* 31(6), 2091-2106.
Steiger, J. H. (1989). *EzPATH: Causal Modeling: a Supplementary Module for SYSTAT and SYGRAPH: PC-MS-DOS, Version 1.0*: Systat.
Steiger, J. H. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research, 25*(2), 173-180.
Steiger, J. H., & Lind, J. C. (1980). *Statistically based tests for the number of common factors.* Paper presented at the annual meeting of the Psychometric Society, Iowa City, IA.
Szulanski, G. (1996). Exploring internal stickiness: Impediments to the transfer of best practice within the firm. *Strategic Management Journal.* 17, 27-43.
Tindale, R. S., & Kameda, T. (2000). 'Social sharedness' as a unifying theme for information processing in groups. *Group*

Processes & Intergroup Relations, 3(2), 123-140.
Uzzi, B. (1997). Social structure and competition in interfirm networks: The paradox of embeddedness. *Administrative Science Quarterly, 42*(1), 35-67.
Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 186-204.
Weston, R., & Gore, P. A. (2006). A brief guide to structural equation modeling. *The Counseling Psychologist, 34*(5), 719-751.
Wilson, T. D. (2000). Human information behavior. *Information Science Research, 3*(2), 49-55.
Woolcock, M. & Narayan, D. (2000). Social capital: Implications for development theory, research, and policy. *The World Bank Research Observer,* 15, 225-249
Yang, S. C., & Farn, C. K. (2009). Social capital, behavioral control, and tacit knowledge sharing-A multi-informant design. *International Journal of Information Management, 29*(3), 210-218.