

SHARING KNOWLEDGE IN VOLUNTARY SERVICE NOT-FOR-PROFIT ORGANIZATIONS¹

Knowledge sharing has shown itself to be a phenomenon of great interest to both academics and practitioners. However, literature from both communities seems to have neglected a crucial part of our society: the non-profit sector. This study examines the factors that potentially influence knowledge sharing in voluntary service not-for-profit organizations (VSNFPs). Its examination of survey responses from members of Canadian VSNFPs reveals that, although there are many similarities, there are important differences between the two archetypes such as the impact of self-perceived expertise.

Introduction

Over the last several years, recognition about the importance of knowledge management in organizations has grown, and this interest has created a research field of its own with literature outlets specifically targeted to findings and news in this area. If knowledge is managed properly, it can improve sales, customer relations and employee development (Buckman, 1998). Knowledge sharing can also improve an organization's ability to react to environmental uncertainty and complexity (Pardo *et al.*, 2006). Thus, knowledge management (KM) and knowledge sharing are important elements to consider in today's world. KM has been described as "*organizational practices that facilitate and structure knowledge sharing among knowledge workers*" (Huysman & de Wit, 2004, pp.81-2). Knowledge sharing is conceptualized in this paper as it has been previously by Lee: "*activities of transferring or disseminating knowledge from one person, group or organization to another*" (2000, p.324).

Like many other forms of business research, knowledge management research has primarily been conducted in the for-profit (FP) sector. The primary contribution of the current study is its expansion of the KM literature into the not-for-profit (NFP) context. NFPs are distinct from FPs in that their mandate intrinsically prevents the distribution of profits to the owners of the company (Gardner, 1987). Similar to that of governments, their mission is to provide social value (Quarter & Richmond, 2001). However, unlike governments, their source of revenue can differ. Where governments rely primarily on taxes as revenue, some NFPs depend on donations. Thus, the strategies of nonprofits need to be different from those of governments and for-profits (Moore, 2000). In fact, quite opposite to FP organizations, some NFPs are attempting to create a world that does not require their services (Dartington, 1998). For example, the purpose of the American Society for the Prevention of Cruelty to Animals (ASPCA) is "[to] work toward the day in which no animal will live in pain or fear" (ASPCA, 2007). Should this become a reality, the ASPCA will no longer have a reason to exist. This fundamental difference between nonprofit and for-profit organizations is what drives the criticality of nonprofit research vis-à-vis for-profit research.

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The not-for-profit sector covers a large breadth of organizations. Kilbourne and Marshall's (2005) taxonomy classifies NFPs on two dimensions: revenue (donative vs. fee-based), and labor (volunteer vs. professional). A "volunteer" organization is one in which a sizable portion of the staff are not remunerated for their time whereas a "professional" one would. A donative organization would largely provide its services free of charge. These services would be funded primarily by revenue from donations (money, labor, etc.). This study is interested in the types of organizations that belong in the donative and volunteer category. Some may simply refer to these organizations as "charities". However, there may be confusion about this since an organization that is not a VSNFP (e.g. a university) can be registered as a "charitable organization". As such, it is important to be clear about the nature of these organizations by referring to them as voluntary-service-not-for-profit organizations (VSNFPs). VSNFPs are a subset of NFPs and have been characterized as the absolute opposite to traditional for-profit organizations (Kilbourne & Marshall, 2005) and are the focus of this research.

Dreessen (2000) emphasizes the need for VSNFP research when he asserts that "*there are huge uncertainties and gaps in our current knowledge of the [charitable] sector*" (p. 25). Indeed, effective knowledge management has been shown to provide great benefits for voluntary-service-not-for-profit organizations (Coakes *et al.*, 1994). The fundamental differences between VSNFPs and for-profits can create differences in research findings. Kohli and Deveraj (2003) examined 66 studies on IT payoff and found that NFPs actually demonstrate better outcomes than FPs, and Niederman *et al.* (1991) found that NFPs had considerable differences in their priorities from their FP counterparts. Rojas (2000) also noted the dangers of haphazardly applying FP models in NFP settings. Kilbourne and Marshall (2005) provide several examples of this in their account of marketing technologies that, although successful in a for-profit context, failed to find similar success when transferred to VSNFPs. They associate this with "*distinctly different institutional structures*" (p. 19) between VSNFPs and for-profits. Borzaga and Tortia (2006) suggest that nonprofit workers derive more satisfaction from intrinsic incentives such as interaction with the client more than extrinsic incentives like remuneration. This is of particular relevance since it may influence knowledge sharing activities. Similarly, Reed and Selbee (2000) note that active volunteers tend to contribute and participate more than those who do not actively volunteer.

While research has generally found differences between NFPs and FPs, the research on knowledge sharing in NFPs is very limited. The only study we are aware of is Lettieri *et al.*'s (2004) case studies of KM in NFPs. They found the maturity, degree of donative funding and volunteerism, organizational values, and hierarchy were important contingencies that affect knowledge management in NFPs. More generally, Ackerman *et al.* (2003) argue that knowledge management (KM) is as important an issue for NFPs as it is for FPs since they both rely on "*deploying nontangible assets, such as know-how and tactical problem solving, in shorter time frames*" (p. xii). Ford and Staples (2006) also emphasize the importance of context sensitivity in knowledge sharing research.

Given the lack of KM research on VSNFP's and the potential differences between these organizations and FPs, research is needed and has the potential to make an important contribution. Thus, the purpose of this study is to examine the factors affecting knowledge sharing in VSNFPs to further develop our understanding of these factors and how the relevant dynamics may differ from what is known in the literature about FPs. The next section is a brief overview of the current understanding of knowledge sharing effectors. This is followed by the research model and associated hypotheses are described. After this, the methodology used to test the model and the findings are described. The final section discusses the results and offers suggestions for future research.

Theoretical Framing

Knowledge sharing has generally been examined at the individual level where researchers build models around an individual's intention to share (e.g. Bock *et al.*, 2005; Constant *et al.*, 1994; Ford &

Staples, 2006). The adequacy of intention to share as a proxy for actual sharing is supported by the theory of reasoned action (TRA) which was originally developed by Ajzen and Fishbein in 1975. When Bock *et al.* (2005) used TRA to explain the role of intention in knowledge sharing behaviors, they found that attitudes and norms about knowledge sharing form intentions to share knowledge. However, they found that extrinsic reward systems had a negative impact on knowledge sharing intents. The published literature on the use of extrinsic incentives in corporations to evoke a behavior desired by management seems to be mixed. While some studies have found them to be successful (*e.g.* Borzaga & Tortia, 2006; Kim & Lee, 2006), there exists substantial literature citing the ineffectiveness of extrinsic rewards and emphasizing the importance of intrinsic incentives in inducing knowledge sharing behaviors (*e.g.* Bock & Kim, 2002; Eisenberger & Cameron, 1996) or other desirable behaviors (*e.g.* Huber, 2001; Kohn, 1993). In 2005, Wasko and Faraj examined intrinsic and extrinsic incentives side-by-side and found only weak support for intrinsic incentives while extrinsic incentives were strongly supported. It can be seen that not only is knowledge sharing a voluntary behavior but it is also complex.

There have been mixed results about the affect of the perception of one's own expertise. For example, although Thomas-Hunt *et al.* (2003) found that an individual self-perceived as an expert more likely contributes knowledge and van den Hooff and de Ridder (2004) found that the more knowledge one has, the more likely one is to share knowledge, Wasko and Faraj (2005) were unable to find a significant link. However, Wasko and Faraj speculate that this may be an artifact of measurement error. Indeed, several other studies support expertise as a motivator for knowledge sharing (*e.g.* Bock *et al.*, 2005; Constant *et al.*, 1994).

The environment at an organization is often characterized as a determinant of certain employee behaviors (*e.g.* Sheridan, 1992; Wimbush & Shepard, 1994; Shadur *et al.*, 1999; Rogg *et al.*, 2001). Studies about knowledge sharing behaviors also support this contention. Factors such as a formal hierarchy (Tsai, 2002), conduciveness for social interaction (Connelly & Kelloway, 2003), and organizational culture (Ford & Chan, 2003) have been shown to influence knowledge sharing in an organization.

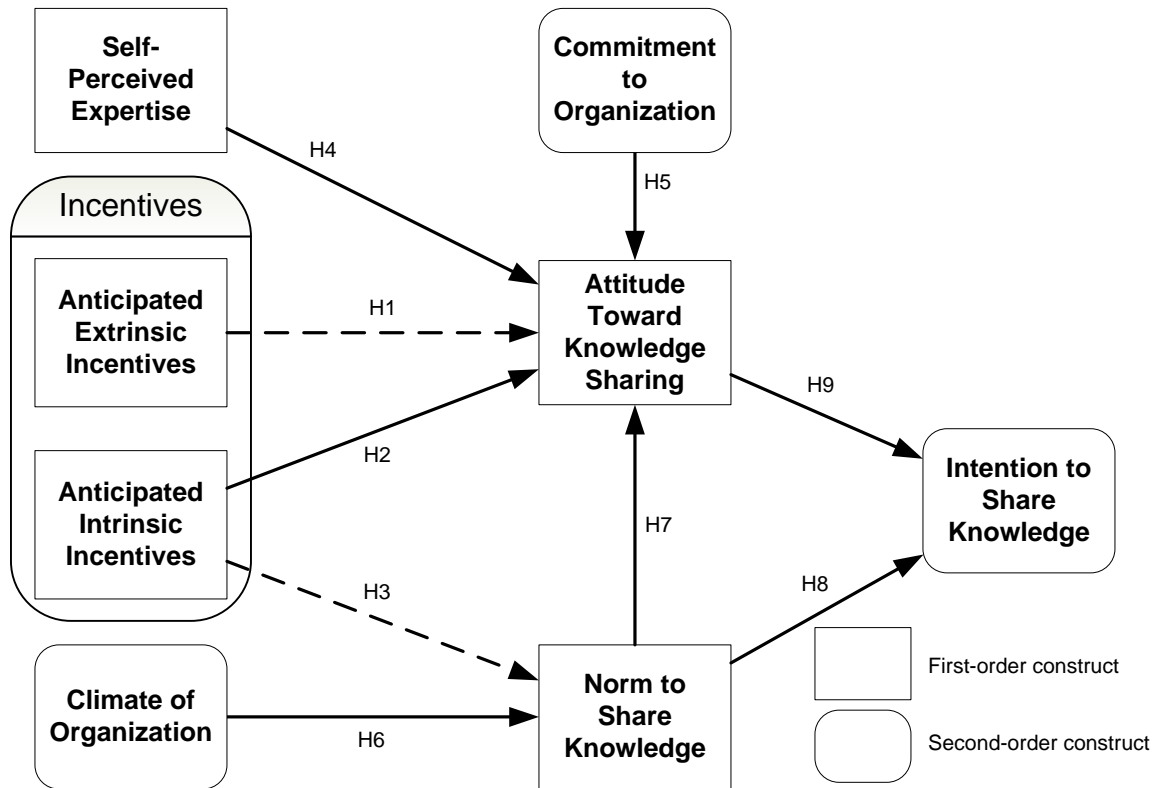
Transmission channels also comprise the organizational environment; most KM research in the Management Information Systems (MIS) literature has revolved around this (Alavi & Leidner, 2001). Technologies such as knowledge-based systems (*e.g.* Arnold *et al.*, 2006), groupware (*e.g.* Ruggles, 1998), and other communication media (*e.g.* Miranda & Saunders, 2003) are examples of media that facilitate the knowledge sharing in an organization. Transmission channels can be categorized as formal or informal mechanisms (Alavi & Leidner, 2001). Examples of formal mechanisms include training sessions and company tours and are characterized by their structure. Informal mechanisms, such as communities of practice, often use socialization as a way to promote the transfer of knowledge. Gupta and Govindarajan (2000) find evidence that the richness of the channel is positively associated with the amount of knowledge flow. This is consistent with Daft and Lengel's (1986) Media Richness Theory which posits that the degree of ambiguity and uncertainty associated with a task is positively associated with the richness of a suitable medium. Knowledge sharing media, while important, are out of scope for this study since the research model is primarily concerned with formation of intent within the individual.

Research Model and Hypotheses

Since it is ultimately up to the individual to decide whether to share and how much to share, knowledge sharing is a voluntary behavior (Bock *et al.*, 2005). Because of this, this paper is primarily concerned with individual-level predictors of knowledge sharing. Specifically, this paper tests a model based on TRA: the theory of reasoned action (Ajzen & Fishbein, 1975, 1980). The theory is appropriate for studying knowledge sharing because it seeks to explain behaviors that are voluntary. TRA posits that voluntary behavior is best predicted by the intention to perform that behavior. One's attitude (an affective

response toward performing the behavior) and the subjective norm (the belief about whether others feel that he/she should behave that way) toward a behavior is believed to form one’s intention to behave a certain way. This study is interested in determining whether the findings of existing literature hold in a VSNEP setting and draws on Bock *et al.*’s (2005) study of knowledge sharing in FP organizations. Therefore, the constructs were selected largely on what is most prevalent in the literature and what can form comparable results with the extant empirical findings. Figure 1 illustrates the proposed model.

Figure 1 – Research Model



The ineffectiveness of management’s use of extrinsic incentives as asserted by Kohn (1993) is summarized in the following six points:

- While cutting pay may result in poorer performance, no basis exists to justify conclusions that increasing pay results in better or more work.
- Extrinsic incentives are manipulative – missing out on a reward is similar to receiving punishment.
- Relationships among employees suffer as a result of the competition for the extrinsic incentive.
- The use of extrinsic incentives reduces the need for “good management” (*i.e.* generally treating employees well).
- Extrinsic incentives motivate individuals to obtain the incentive rather than to accomplish the task.
- Extrinsic incentives undermine intrinsic incentives to accomplish complex tasks.

All but the fourth point imply concerns about the impact of extrinsic incentives on attitudes, norms, and behavioral intentions: the three main constructs of the theory of reasoned action (TRA) on which this study is based. All of these assertions support the argument that a greater presence of extrinsic incentives may harm knowledge sharing. Since extrinsic incentives have been shown to have an adverse effect in for-profit organizations (*e.g.* Bock *et al.*, 2005), they will likely be as inappropriate in VSNFPs.

Hypothesis 1: Extrinsic incentives are negatively associated with positive attitudes toward knowledge sharing.

Wasko and Faraj (2000) show empirical evidence of the positive impact of intrinsic incentives (*e.g.* task enjoyment and satisfaction) on knowledge sharing. In their interviews, participants generally cited participating in a community of practice as being “*fun in general ... because they enjoy learning and sharing with others*” (p. 166). The motivation of enjoyment on the formation of attitudes about behaviors was also noted by Venkatesh (2000) who found a significant positive impact of the perceived enjoyment on the perceived ease of use of a new system environment. This relationship between intrinsic incentives and attitudes should also hold for VSNFPs.

Hypothesis 2: Intrinsic incentives are positively associated with positive attitudes toward knowledge sharing.

While intrinsic incentives may influence individual perceptions of whether or not one should share, there is no reason why intrinsic incentives should directly impact the norms. Intrinsic incentives are often only hypothesized to impact attitudes (*e.g.* Leonard-Barton & Deschamps, 1988; Davis *et al.*, 1992; Osterloh & Frey, 2000; Venkatesh, 1999, 2000). Therefore:

Hypothesis 3: Intrinsic incentives are not associated with levels of knowledge sharing norms.

Self-perceived expertise as a socio-psychological factor is theoretically supported by self-consistency theory (Korman, 1970). This theory states that individuals will behave in a manner consistent with beliefs about themselves. Self-perceived expertise has been empirically shown to have a positive influence on knowledge sharing (*e.g.* Thomas-Hunt *et al.*, 2003; Wasko & Faraj, 2005). Therefore, this is hypothesized to directly influence one’s attitude toward knowledge sharing.

Hypothesis 4: Self-perceived expertise is positively associated with a positive attitude toward knowledge sharing.

From what has been discussed so far, the role of internal psychological motivators is apparent. Knowledge sharing can be seen as a pro-social behavior because it is intended to mostly benefit others (Brief & Motowidlo, 1986). Although there have been some studies on the contrary (*e.g.* Ackfeldt & Wong, 2006; Williams & Anderson, 1991), organizational commitment has been empirically supported (*e.g.* O’Reilly & Chatman, 1986; Becker *et al.*, 1995; MacKenzie *et al.*, 1998; Schappe, 1998; Randall *et al.*, 1999) as a predictor of pro-social behavior (cf. organizational citizenship behavior). As Becker *et al.* (1995) explain, “*this line of reasoning is supported by the principle of compatibility, which suggests that a given attitude should be related to other attitudes and behaviors only to the extent that the targets (foci) of the attitudes and behaviors are similar*” (p. 620). Three components are believed to form organizational commitment: affective commitment, continuance commitment, and normative commitment (Allen & Meyer, 1990). *Affective commitment* occurs when an individual identifies with or otherwise enjoys membership in the organization, *continuance commitment* is created by costs associated with leaving the organization, and *normative commitment* arises from a sense of moral responsibility or obligation to the organization. It can be seen that a greater degree of organizational commitment should manifest itself as an increased number of pro-social behaviors such as knowledge sharing. The impact of

organizational commitment on knowledge sharing has been empirically examined by van den Hooff and de Ridder in their 2004 study. This study seeks to further test this relationship in a setting distinct from the study ran by van den Hooff and de Ridder. Thus, based on the previously discussed studies, it is hypothesized that the level of commitment that one has to an organization may determine their willingness to share knowledge as a part of their organizational citizenship behavior.

Hypothesis 5: An increased level of commitment to the organization is positively associated with positive attitudes towards knowledge sharing.

To address the “environmental” category of knowledge sharing effectors, organizational climate is examined. The organizational climate is defined as “*a belief and value structure that members employ as they act in the organization*” (Denison, 1996, p. 633). Bock *et al.* (2005) demonstrate that organizational climate is comprised of the following factors: how accepting the organization is of new ideas (innovativeness), how fair employees are evaluated (fairness), and how cohesive and caring the social circles are (affiliation). Additionally, they show that this is associated with norms that support knowledge sharing. Fairness is believed to build trust among co-workers which could lead to pro-social behaviors such as knowledge sharing; Kim and Mauborgne (1997) argue that it is critical for knowledge work. As Bock *et al.* (2005) describe, a climate high in innovativeness is one with the potential for information to freely flow which could lead to the sharing of new and creative ideas whereas one high in affiliation is “*characterized by pro-social norms*” (p. 91) where individuals help each other and thus one may share one’s expertise with another to help them out. Therefore:

Hypothesis 6: The greater one believes the organization is fair, innovative, and possesses great affiliation the more likely it is for one to sense a norm to share knowledge.

Venkatesh and Davis (2000) found evidence to support the hypothesis that norms can influence attitudes. This phenomenon is referred to by Warshaw (1980) as “internalization”. This occurs when an individual perceives the influence of a norm as originating within him/herself. Kelman (1958) describes it as “[*adopting*] the induced behavior because it is congruent with [one’s] value system” (p. 53). Warshaw (1980) warns that “*to the degree that ... norms are internalized, [attitudes and subjective norms] double-count the same influence on intent*” (p. 156). Indeed, Vallerand *et al.* (1992) find empirical evidence that normative beliefs influence attitudes. Therefore, it is hypothesized that a norm to share knowledge will have a direct effect one’s attitude to share knowledge.

Hypothesis 7: The degree to which a norm promotes sharing knowledge is positively associated with a positive attitude to share knowledge.

The following two hypotheses are rooted in the theory of reasoned action (Ajzen & Fishbein, 1975, 1980) and have been previously shown as significant relationships in knowledge sharing contexts by Bock *et al.* (2005). The direct relationships of norms and attitudes on intentions have been strongly supported with empirical evidence (*e.g.* Sheppard *et al.*, 1988; Sheeran & Taylor, 1999).

Hypothesis 8: The degree to which a norm promotes sharing knowledge is positively associated with positive intentions to share knowledge.

Hypothesis 9: A positive attitude towards knowledge sharing is positively associated with positive intentions to share knowledge.

Methodology

This study examined the intentions of a staff member (paid or volunteer) at a VSNFP to share his/her knowledge with another individual in the organization, via a cross-sectional survey.

Sampling

The target population of this study was members (volunteers and staff) of the charities of Canada. Participation was sought by direct e-mailing to a random sample of the membership of Imagine Canada, and by soliciting participation in a weekly newsletter sent out by CharityVillage. Incentives for individuals to participate included a two dollar donation per participant to their charity and the option to receive a summary report of the findings.

Direct mailing. A random sample of 400 organizations was taken from Imagine Canada's membership list on the web of over 1200 organizations. Imagine Canada is a non-profit organization that shares information about and acts as a voice for the charitable and nonprofit sector. This sample was scrubbed for organizations that met criteria based on the definitions previously discussed. Due to limited resources, only English-speaking organizations in Canada with immediately listed websites were assessed against the criteria. Qualifying organizations were registered by the Canada Revenue Agency as a charitable organization, allowed community members to volunteer year-round, were not majority funded by government agencies, and provided some form of direct and free service to the community. The resulting sample consisted of 131 organizations. Each organization was contacted via e-mail using a mail merged letter with the contact's name, title, and contact information. Attached in this e-mail were details about the goals of the study, incentives to participate, and the URL of the survey. For a large majority of the organizations, the executive director was the point of contact. Follow-up calls were placed a few business days after the initial e-mail to ensure that outstanding questions and concerns were addressed which could improve response rates (Dillman, 2000).

Soliciting participation. A general call for participation in the research study was placed in the weekly newsletter sent out by CharityVillage. On its website, CharityVillage describes itself as "*the leading online source of information ... for the Canadian nonprofit community*" (Charity Village, 2007). Interested organizations were checked against the criteria listed in the previous section. Those who met all of the criteria were sent a formal invitation identical to that in the direct e-mailing.

Construct Operationalization

In order to ensure that the findings of this study could be compared to literature on the same phenomenon, the measures used were deliberately adapted from previous studies. Construct operationalizations were based on Bock *et al.* (2005) since this study is largely based on their work. Operationalization of self-perceived expertise as a one-item measure emulates what was done by Wasko and Faraj (2005). Constant *et al.* (1996) similarly used a single-item self-rated measure. Lastly, the items used to measure organizational commitment are adapted from Meyer and Allen (1997) who, based on empirical evidence, refined the original items used in Allen and Meyer (1990). Their work on organizational commitment has been thoroughly examined and garnered a great deal of support (Meyer *et al.*, 2004). All questions used a five-point scale ranging from "Strongly Disagree" to "Strongly Agree".

All but one of the constructs (anticipated intrinsic incentives) employed previously used items. Wording for most of the items, however, had to be changed in order to be applicable or appropriate to a VSNFP context. The items for anticipated intrinsic incentives were based on Kunz and Pfaff's (2002) review the literature on intrinsic motivation and drew from uses of the construct in the previous studies of Falk *et al.* (1999), Davis *et al.* (1992), and Osterloh & Frey (2000).

Analysis Method

Partial least squares (PLS), a structural equation modeling (SEM) technique, was used since it provides support for simultaneous assessment of the reliability and validity of the measures of formative and reflective constructs and the relationships among them (Chin, 1998; Wold, 1982). This fits the research model tested in this study because there are numerous formative latent constructs as well as reflective constructs in a complex relationship. Organizational climate was modeled as being formed by affiliation, fairness, and innovation (Bock *et al.*, 2005), and organizational commitment was modeled as being formed by affective, normative, and continuance commitment (Allen & Meyer, 1990). PLS has been widely used in MIS research (*e.g.* Chan, 1992; Chin & Gopal, 1993; Chwelos *et al.*, 2001; Grant & Higgins, 1991; Jarvenpaa & Staples, 2000; Keil *et al.*, 2000; Ravichandran & Rai, 2000; Sambamurthy & Chin, 1994) and it has been used in studies based on the theory of reasoned action (*e.g.* Bock *et al.*, 2005; Venkatesh & Morris, 2000) as well as studies on knowledge sharing (*e.g.* Bock *et al.*, 2005; Wasko & Faraj, 2005). Lastly, PLS was selected because of its strength for predictive models in highly complex settings (Barclay *et al.*, 1995). PLS Graph Version 3.00 Build 1126 was used for the analysis.

Results

Sample and Response Data

Data was collected from June 8, 2007 to July 29, 2007. A total of 261 individuals participated (logged in, accepted the terms, and viewed the first page) in the survey. Keeping in mind that 19 (7.3%) opted not to disclose the VSNFP they represented, participants per charity ranged from 1 to 38 (mean = 6.18; median = 4.00; standard deviation = 6.89). Although 58 responses (22 %) were incomplete, the attrition did not seem to demonstrate any pattern that would suggest it had an impact on the findings (Shadish *et al.*, 2002). During the follow-up phone calls, it was apparent that many organizations wished to pre-examine the questions of the survey prior to deciding whether or not to participate. Although there were a few outliers, the mean duration to complete the survey was just over 10 minutes. Hence, a portion of the 58 incomplete responses is believed to be cases where the individual was merely assessing the survey for appropriateness and had no intention of completing it. Lastly, two respondents indicated that their organization was completely comprised of paid staff. It is not possible to determine whether this was done so in error. To err on the side of caution, these responses were removed. The resulting usable sample had a size of 201. No question had more than five responses (2.49%) missing. Therefore, missing values were replaced with the mean value for that question to allow for inclusion of other completed answers without affecting the results. Volunteers and paid staff were equally represented (98 responses self-identified as volunteer staff and 97 self-identified as paid staff).

Measurement Model

Initial analyses found the composite reliabilities for all but one of the constructs to be above the “modest” 0.7 threshold recommended by Nunnally and Bernstein (1994) who assert that “*increasing reliabilities much beyond 0.80 in basic research is often wasteful of time and money*” (p. 265). The only exception was the continuance dimension of organizational commitment. Item loadings also indicated that the items did not appear to consistently capture the same construct. Due to its poor reliability and item loadings, this construct was consequently dropped from further analysis. This did not change any of the hypotheses. Three other items (reflecting two constructs) were also dropped due to poor loadings or high cross-loadings. These changes to the measurement model improved the reliability and average variance extracted (AVE) to acceptable levels (see Table 1).

Table 1 - Construct Descriptives and Reliabilities

	Items	Mean	Standard Deviation	Composite Reliability	AVE
Anticipated Extrinsic Incentives (AEI)	2	3.90	0.669	0.807	0.677
Anticipated Intrinsic Incentives (AII)	3	4.30	0.555	0.862	0.677
Attitude Toward Knowledge Sharing (ATKS)	3	4.37	0.523	0.812	0.590
Intention To Share Knowledge (ITSK)	5	4.11	0.463	0.782	0.421
Norm for Sharing Knowledge (NSK)	5	4.20	0.462	0.812	0.472
Organizational Commitment - Affective (OCA)	5	4.01	0.698	0.875	0.587
Organizational Commitment - Normative (OCN)	4	3.62	0.632	0.741	0.587
Organizational Climate - Affiliation (OLA)	4	3.82	0.674	0.871	0.630
Organizational Climate - Fairness (OLF)	3	3.83	0.637	0.802	0.576
Organizational Climate - Innovation (OLI)	3	3.68	0.649	0.812	0.605
Self-Perceived Expertise (SPE)	1	3.63	0.919	1.000	1.000

Fornell and Larcker (1981) posit that if the average variance extracted (AVE) is less than 0.50, “the variance due to measurement error is larger than the variance captured by the construct” (p. 46). All but two constructs (ATSK and NSK) meet this criterion. This does not, however, necessarily threaten the discriminant validity of those two constructs. They suggest that discriminant validity can be established if the square of the correlations among constructs are less than the average variances extracted for those constructs. In Table 2, an equivalent comparison is made with the square root of the AVE and all the bivariate correlations among the constructs. The figures from this table support the conclusion that discriminant validity can be established among these constructs. Chin (1998) adds that discriminant validity can also be established by ensuring that items load higher on the intended construct than they do on other constructs. Individual item loadings and cross loadings confirmed the data met this guideline (a cross-loading matrix is available from the first author upon request). Therefore, it was concluded that the measurement model was acceptable and it was valid to proceed with examining the structural model.

Table 2 – Construct Correlations and Discriminant Validity Analyses*

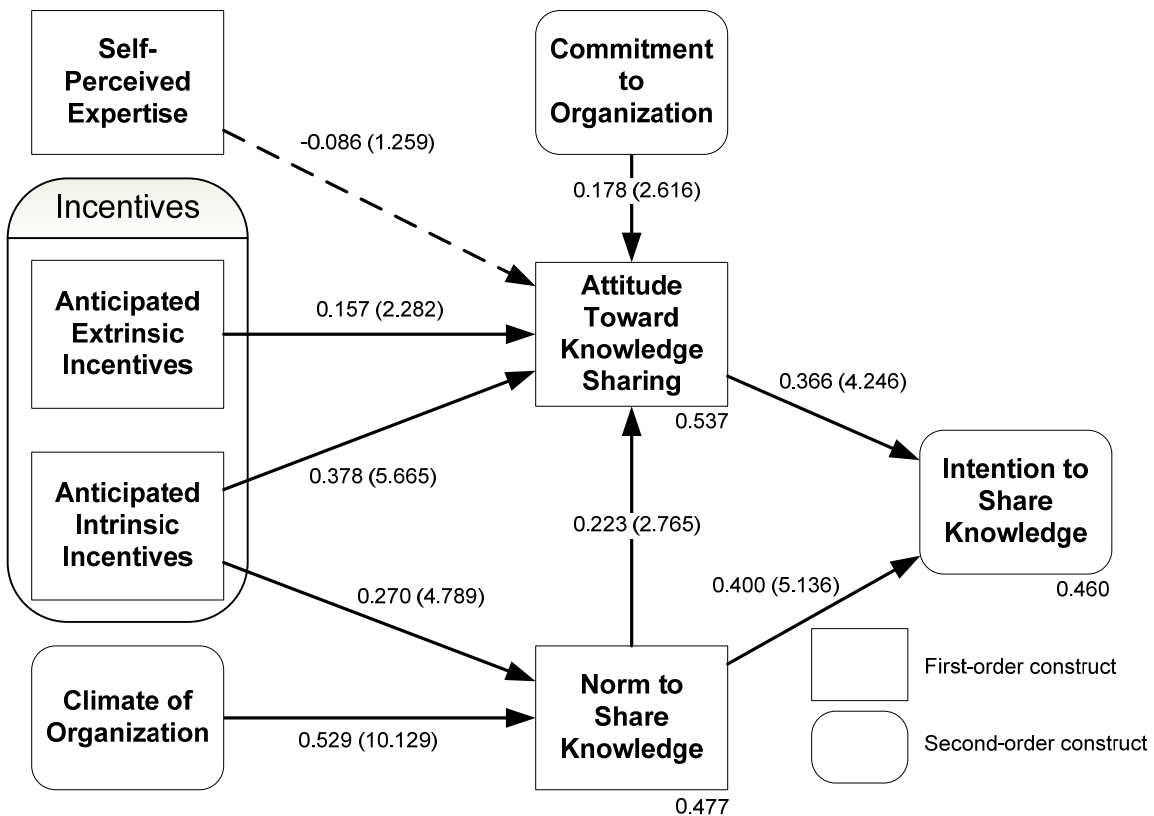
	AEI	AII	ATSK	ITSK	NSK	OCA	OCN	OLA	OLF	OLI	SPE
AEI	<u>0.823</u>										
AII	0.464	<u>0.823</u>									
ATKS	0.538	0.631	<u>0.768</u>								
ITSK	0.485	0.573	0.592	<u>0.649</u>							
NSK	0.570	0.499	0.564	0.607	<u>0.687</u>						
OCA	0.481	0.439	0.492	0.381	0.436	<u>0.766</u>					
OCN	0.404	0.306	0.314	0.365	0.407	0.598	<u>0.766</u>				
OLA	0.595	0.426	0.583	0.372	0.579	0.619	0.387	<u>0.794</u>			
OLF	0.504	0.350	0.460	0.419	0.517	0.558	0.400	0.653	<u>0.759</u>		
OLI	0.548	0.310	0.498	0.357	0.536	0.516	0.478	0.600	0.620	<u>0.778</u>	
SPE	0.141	0.136	0.063	0.243	0.246	0.114	0.077	0.106	0.031	0.104	<u>1.000</u>

* - Diagonal values are the square root of the average variance extracted

Structural Model

Figure 2 illustrates the resultant structural model based on the data collected. Hypothesis 1 predicted a non-significant path from anticipated extrinsic incentives to attitude toward knowledge sharing. However, the data supports a significant ($p < 0.05$) and positive path (0.157) in this direction. Similarly, hypothesis 3 predicted a non-significant path from anticipated intrinsic incentives to norm to share knowledge but found no support when the data demonstrated a significant ($p < 0.01$) and positive one (0.270). Hypotheses 2 and 5 through 9 all posited positive paths and found strong support ($p < 0.01$). Hypothesis 4, which predicted a positive path from self-perceived expertise to attitude toward knowledge sharing, was not supported since the path was weak (-0.086) and not significant ($p > 0.05$). The resultant model captured 46% of the variance in intentions to share knowledge.

Figure 2 – Resultant Model*



* - Numbers in parentheses indicate t-values

Discussion

Examination of Non-Support of Hypotheses

In examining the results from hypothesis 1, which posited that anticipated extrinsic incentives will be associated with attitudes toward sharing knowledge, it is important to remember that the literature remains mixed about the effects of extrinsic incentives. The positive association of extrinsic incentives with attitudes toward knowledge sharing is contrary to the assertions (*e.g.* Kohn, 1993) and findings (*e.g.*

Bock *et al.*, 2005) of some of the extant literature. However, it has also been found that extrinsic incentives do not necessarily have a negative impact on behavior (e.g. Eisenberger & Cameron, 1996). As Harter and Jackson (1992) articulate, intrinsic and extrinsic incentives have historically been dichotomized somewhat as opposites. However, Rigby *et al.* (1992) challenge this dichotomy when they argue that internalization (adopting a behavior because it is congruent with one's values or because it is endorsed by a person with whom one has an important connection) and integration "*are the means through which extrinsic motivation can become self-determined² and thus, like intrinsic motivation, can promote high-quality [performance]*" (p. 169). They explain that extrinsic incentives behave like intrinsic incentives if they are "*fully endorsed by and congruent with one's sense of self – in other words, to the extent that they have an internal perceived locus of causality*" (p. 168). Harter and Jackson find in their 1992 paper that some elementary school students are entirely motivated by extrinsic incentives and some are motivated by both intrinsic and extrinsic incentives. These findings seem to support an argument against the detrimental effects of extrinsic incentives. Kunz and Pfaff (2002) arrive at this conclusion, stating that extrinsic incentives "*represent opportunities to enhance intrinsic motivation, when administered correctly*" (p. 281). This study may have reflected this. Therefore, the positive impact of extrinsic incentives suggests three possibilities: 1) those who work at VSNFPs react differently to extrinsic incentives than those who work at for-profit corporations, 2) the extrinsic incentives provided at VSNFPs are more congruent with the intrinsic incentives than those found at for-profit corporations, and/or 3) extrinsic incentives have the potential to motivate behaviors regardless of setting.

The fact that the association of anticipated intrinsic incentives (AII) with attitudes toward sharing knowledge (ATSK) nearly doubled (0.378 vs. 0.157) that of anticipated extrinsic incentives (AEI) with ATSK is further evidence that it is more important to emphasize intrinsic rather than extrinsic incentives when it comes to knowledge sharing. In fact, the AEI-ATSK path is the weakest of all the statistically significant ones. In other words, organizations may be better off introducing programs that build organizational image to persuade staff to share knowledge rather than programs of remuneration or promotion based on knowledge sharing.

The lack of support for hypothesis 3 is not terribly surprising seeing as how there is no literature that explicitly states that anticipated intrinsic incentives (AII) are not associated with subjective norms (NSK, in this case). The importance of this hypothesis is to determine whether or not the extant literature is justified in excluding a relationship between AII and NSK. The conclusion can be made from the data that this relationship should, indeed, be included in future models. Although they do not explain the mechanism behind the phenomenon, Hagger *et al.* (2002) note as an aside that they also find a significant relationship between intrinsic incentives and subjective norms. One possible explanation for this involves an investigation into how norms influence attitudes. Given the results for hypothesis 7, the data strongly supports ($p < 0.01$) this relationship. However, the mechanism may not be the hypothesized direct one. As Kelman (1958) explains, there are three possible processes of attitude change: compliance, identification, and internalization. All three processes involve conforming to norms which, in turn, shapes attitudes. A critical feature of Kelman's description of these processes is the derivation of satisfaction from the act of conforming. Satisfaction is crucial to the investigation of the AII-NSK relationship because this emotion is central to intrinsic incentives. Thus, Kelman's (1958) description of how norms shape attitudes suggests that each of the three processes shape attitudes via intrinsic incentives. In other words, AII mediates the relationship between NSK and ATSK. An investigation reveals that this is partially true. A direct model with NSK directly predicting ATSK results in a significant path estimate of 0.568 ($p < 0.01$) but this path estimate is reduced to 0.334 ($p < 0.01$) when a mediating path with AII is introduced. In fact, the strength of the mediating path is stronger than the direct path (NSK-AII: 0.503; AII-ATSK: 0.468; both with $p < 0.01$). The coefficient of determination

² Self-determined (autonomous) behaviors are characteristic of those typically described as being intrinsically motivated. That is, the locus of causation is within the individual.

(R2) for ATSK also increases from 0.323 to 0.488. Therefore, evidence exists to suggest that AII acts as a mediator between NSK and ATSK. However, since the direct path remains significant with the inclusion of the indirect path, this relationship only appears to be partially (41%) mediated (Baron & Kenny, 1986; Shrout & Bolger, 2002; cf. Stewart & Barrick, 2000).

The non-effect of self-perceived expertise on attitudes toward sharing knowledge can be explained by examining the idea of social capital. Nahapiet and Ghoshal (1998) describe social capital as “*the basis for trust, cooperation, and collaborative action ... embedded within networks of mutual acquaintance and recognition [where] durable obligations [arise] from feelings of gratitude, respect, and friendship or from the institutionally guaranteed rights derived from membership in a family, a class, or a school*” (p.243). Saxton and Benson (2005) argue that “*individuals in high-social-capital communities are most likely to come together to found charitable nonprofit organizations*” (p. 19) since social capital focuses on “civic engagement”. This assertion is supported by Putnam (1995) who, based on findings associating civic engagement and social connectedness with better living conditions, posits that these types of networks “*foster sturdy norms of generalized reciprocity*” (p. 67). Generalized reciprocity is when one’s giving is reciprocated not by the recipient but by some third party (Ekeh, 1974). From the above, it seems that VSNFPs are more likely to demonstrate norms of generalized reciprocity. The degree of generalized reciprocity is important to understanding the dynamics of forming intentions to share knowledge. In their 2000 study, Wasko and Faraj find that members of a community share knowledge more often than not share knowledge because they wish to “*advance the community as a whole [and give] back to the community for help*” (p. 169). In other words, generalized reciprocity was the reason most cited for members sharing knowledge with their community. Constant *et al.* (1996) also note that norms of generalized reciprocity “*lead people who can provide useful help to do so*” (p. 131) but add that “*many providers, including experts, replied in spite of their apparent inconsequentiality*” (p. 131). Thus, such an environment may foster the attitude that one should help regardless of one’s expertise. Volunteers are described by Macy (1990) as “*typically [ignoring] the real marginal impact of their individual effort and instead act as they would have others act*” (p. 812). These assertions are supported by the findings of Wasko and Faraj (2005) who find no significant link between self-rated expertise and the helpfulness or volume of knowledge shared. Their data were gathered from members of a national legal professional association in the United States. It is possible to argue that norms of generalized reciprocity may have existed in this association since it is a social network of individuals who coordinate and cooperate for mutual benefit (manifestations of social capital). Indeed, they suggest that generalized reciprocity may promote knowledge sharing in light of the non-significance of direct reciprocity. It is, therefore, conceivable that the non-significance of the relationship between self-perceived expertise and attitudes toward sharing knowledge was due to individuals at VSNFPs sharing what they knew due to norms of generalized reciprocity created by large social capital stocks.

It has often been concluded in psychology literature that organizational commitment is positively associated with organizational citizenship behaviors (*e.g.* Schappe, 1998; Organ & Ryan, 1995). The significant positive path of organizational commitment to attitudes to share knowledge supports the assertion that knowledge sharing is an organizational citizenship behavior (OCB). This is, however, somewhat contradictory to what Wasko and Faraj (2005) find. Although they initially find that commitment is not significantly associated with knowledge sharing, they comment later that they are actually semi-partially correlated if other variables are taken into consideration. However, a study by Williams and Anderson (1991) found that organizational commitment does not appear to predict organizational citizenship behavior. They explain that other studies may suffer from common method variance and/or the use of non-representative samples due to tenure. With nine factors being extracted in an exploratory factor analysis³ of all the items, it can be concluded that common method variance insufficiently explains this relationship. Although tenure was found to significantly ($p < 0.01$) correlate

³ Using Principal Axis Factoring; 12 iterations required given eigenvalues > 1

with commitment ($r = 0.303$), respondents covered a wide range on this variable. The median tenure in the data was just over 3 years with 90% of the data between half a year and 16 years. Since the responses reflected a sample that covered a wide range of individuals in terms of their tenure, the latter issue is also unlikely to have impacted the findings. The findings, therefore, support the conclusion that the greater degree to which an individual identifies with or believes in loyalty to the organization the more likely they are to demonstrate an attitude that promotes knowledge sharing.

Organizational Commitment – Continuance

Although Meyer and Allen (1997) find that many previous studies have reported a high degree of reliability for the continuance dimension of the organizational commitment construct, they also report that there have been some studies that find two subcomponents of continuance commitment (CC). McGee and Ford (1987) find that responses about CC load on more than one factor. They label the two interpretable ones as “low alternatives” (CC:LoAlt) and “high personal sacrifice” (CC:HiSac). 15 years later, Meyer *et al.* (2002) conduct a meta-analysis of the findings concerning the dimensionality of CC and find similar support for the two dimensions posited by McGee and Ford (1987). The importance of distinguishing CC:LoAlt from CC:HiSac is evident when Meyer *et al.* (2002) find in their meta-analysis that CC:LoAlt is usually negatively associated with both affective and normative commitment while CC:HiSac is usually positively associated.

In this study, there were issues with items loading properly on the CC construct. This is likely due to the fact that its items were set to be reflective of the construct rather than formative as the some of the literature suggests. Hence, this section describes an exploration of the continuance commitment construct. The attempt was made to group the items into the two subcomponents described above using the item groupings outlined by McGee and Ford (1987). There were, however, some interesting issues encountered during this process. First of all, when specifying eigenvalues above 1.0 as a criterion for an exploratory factor analysis, only one factor was extracted. Although previous studies have also found that that continuance commitment appears to be unidimensional (*e.g.* Ko *et al.*, 1997; Shore & Tetrick, 1991), the numerous negative item loadings the collected data suggested otherwise. Further investigation revealed that the responses for continuance commitment from paid staff differed from responses from volunteer staff. While responses from paid staff provided results that mirrored what was anticipated based on the literature, responses from volunteers did not (even when the extraction of two factors are forced). The position of two continuance commitment items swapped places between the subcomponents when comparing volunteer data with paid staff data. It is possible that the idea of continuance commitment creates different responses from volunteers. After all, it is much less likely for there to exist perceived personal costs associated with a volunteer leaving an organization. Since a study on continuance commitment in a volunteer setting was not found, it may also be possible that this discrepancy emerged from measurement error created by rewording the items that measure continuance commitment in order to suit the setting this study was interested in. Erring on the side of caution, the items were grouped according to what was found by McGee and Ford (1987) which seems to be what the standard is for separating these subcomponents (Meyer *et al.*, 2002). Reconceptualizing commitment as being formed by perceived high personal sacrifice and low alternatives resulted in a large increase in the composite reliability of the continuance construct.

Conclusions About the Research Question

It appears that staff intentions to share knowledge in VSNFPs are largely formed by how they feel when they share knowledge. Feelings that they are helping a worthy cause, building a supportive community, or simply enjoying themselves are key to forming intentions to share knowledge. Rewards such as remuneration or promotion may work in promoting this behavior, but there are more effective approaches. In VSNFPs, it seems that individuals are willing to help out with what they know regardless

of how marginal their impact may be. This is possibly due to the norms of generalized reciprocity within VSNFPs for everybody to help everybody else.

Although most of the preceding discussion suggests the existence of statistically significant differences between VSNFPs and FPs, the remaining hypotheses were supported as expected and show that there are aspects of the two archetypes that do not differ as much. In fact, Reeves and Ford (2004) argue that there exists no difference between non-profit and for-profit organization, suggesting that it is appropriate for them to be studied together. However, their study consisted of examining health services organizations which are not VSNFPs. Nevertheless, the conclusion can be made that future research should acknowledge the potential differences between VSNFPs and FPs. The differences found seem to suggest differences both at the individual-level and organizational- (or at least group-) level. While these differences do not seem to be numerous, they certainly warrant an area of caution for authors of future research when examining the external validity of their studies.

Limitations and Future Research

Theory of Reasoned Action vs. Theory of Planned Behavior

This study uses an adaptation of Ajzen and Fishbein's (1975, 1980) theory of reasoned action (TRA) attempts to predict the knowledge sharing behaviors of individuals in VSNFPs. Although various meta-analyses have shown that this theory indeed helps predict behaviors such as knowledge sharing (*e.g.* Sheppard *et al.*, 1988; Sheeran & Taylor, 1999), it assumes that the behavior is completely volitional. This can be problematic with knowledge sharing because the act of sharing knowledge is also based on factors that are out of the individual's control (*e.g.* time, skills, and/or cooperation). As Bandura (1982) explains, "*a capability is only as good as its execution*" (p. 122). Indeed, Ajzen (1991) reviews several papers that use TRA and find the weakest predictions occurred with losing weight and getting good grades both of which "*seem to be the most problematic in terms of volitional control*" (p. 187). Ajzen (1985) notes that "*even very mundane activities, which can usually be performed (or not performed) at will, are sometimes subject to the influence of factors beyond one's control*" (p. 24) and introduces his extension to TRA: the theory of planned behavior (TPB). As explained by Ajzen (1991), this theory adds the "perceived behavioral control" construct (as a proxy for actual behavioral control) which is postulated to directly affect behavioral intentions and behaviors. Similar to self-efficacy, defined by Bandura (1982) as "*judgments of how well one can execute courses of action*" (p. 122), perceived behavioral control (PBC) is "*one's perception of how easy or difficult it is to perform the behavior*" (Eagly & Chaiken, 1993, p. 185). An example of how this could impact knowledge sharing behaviors could be a knowledgeable manager who has every intention to share but is simply too busy with other tasks to spend time on it. Ajzen (1991) confirms the benefit of including PBC when he compares the mean multiple correlation of 17 TRA studies with 17 TPB studies to find that it increased from 0.53 to 0.71 with the addition of TPB. Godin and Kok (1996) similarly found an increase from 0.35 to 0.64 in their meta-analysis and notes that PBC significantly contributed to the prediction of behavior in half of the studies reviewed. The inclusion of PBC could have similarly increased the predictive efficacy of the model. Therefore, this study is limited by its exclusion of PBC. Future studies should examine whether basing the research model on TPB instead of TRA creates a better model of knowledge sharing behaviors.

Other Extensions of the Structural Model

The focus of this study was primarily on the predictive power of the posited antecedents to the intention to share knowledge. However, the literature suggests that additional relationships among the antecedents may exist. For example, group norms have been shown to correlate with organizational commitment (Reichers, 1985). Future research should investigate whether these relationships hold in a VSNFP setting and how it affects the posited model.

As discussed earlier and shown with the results of this study, it is evident that extrinsic incentives do not necessarily have a negative impact. In their meta-analysis of experiments that examine the effects of extrinsic incentives, Deci *et al.* (1999) empirically support this when they find that “*there are conditions under which tangible rewards do not necessarily undermine intrinsic motivation*” (p. 659). Therefore, future studies may wish to control for differences in participants that may cause them to be more strongly influenced by one type of incentive versus another. Alternatively, future studies of the impact of incentives on knowledge sharing should examine how different types of extrinsic incentives interact with different characteristics of individuals. The findings of this study seem to suggest that paid staff and volunteers differ in how they perceive or respond to questions about continuance commitment. Specifically, the subcomponents of this dimension (high personal sacrifice and low alternatives) are areas that could benefit from further investigation in terms of how volunteers versus paid employees respond differently. Similarly, the non-significance of the relationship between self-perceived expertise and attitudes toward sharing knowledge calls for further examination or control for norms of generalized reciprocity.

Research Methodology

As Yin (1994) explained, surveys can only capture the “who”, “what”, “where”, and quantities of a phenomenon; they are unable to explain “how” or “why” and resort to inference to satisfy these curiosities. Using a cross-sectional survey, this study is not only forced to infer about “how” and “why” individuals in charities share their knowledge, but it is also unable to verify whether or not the intentions become behaviors or check to see whether or not the pertinent attitudes and norms change. Intentions, however, are posited to be a sufficient proxy for actual behavior. As shown in Kim and Hunter’s (1993) meta-analysis of 47 correlations between behaviors and intentions ($n = 10,203$), the mean correlation between them, after correcting for measurement error, is very strong ($r = 0.82$). However, future studies should investigate several factors that this study could not due to its sampling methodology:

1. factors that could change attitudes and norms about knowledge sharing,
2. factors that could impact whether knowledge sharing intentions are realized, and
3. factors that could affect how quickly or often the preceding occur.

Sampling Methodology

Conducting surveys online is a recent phenomenon that has grown significantly alongside the Internet (Solomon, 2001). However, if not supplemented, this method suffers from potential coverage error. Couper (2000) points out that this “*is presently the biggest threat to inference from Web Surveys, at least to groups beyond those defined by access to or use of the Web*” (p. 467). Indeed, one limitation that this study suffers from is the exclusion of charities without a website and individuals without Internet access. Future studies should aim to include mailed surveys or other forms of non-computer based methods in their data collection. Also, this study strived for simple random sampling to build its sample. A key issue with this method is the potential to exclude members of a subgroup who may be of interest to the study (Fink, 1995). As Dartington (1998) notes, “*there is no common type of voluntary organization – as there is no one type of business*” (p. 1485). Although no prior literature seems to suggest any significant difference among the different types of VSNFPs, future studies should further examine this possibility. Cook *et al.* (2000) conduct a meta-analysis of web survey studies and find that the number of contacts, personalized contacts, and pre-contacts were factors strongly associated with higher response rates. As described in the methodology section, this study aimed to maximize the response rate by including the first two factors in its methodology; multiple contacts consisted of a phone call and e-mail, and the e-mails contained names, titles, and contact information specific to the charity. By maximizing the sample size, this study hopes to include a sufficient number of VSNFPs of interest.

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