

Socially Desirable Reporting in International Computer Based Data Collection: A Review and Research Agenda

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ABSTRACT

Traditionally, researchers have used paper-based surveys and interviews to collect data, however in the mid 1990's, internet based surveys have emerged as an alternative which reduce the time necessary to code data. One unexpected advantage of the shift toward online surveys is that it became easier to collect data at multiple sites, including in other countries. The resulting burst of cross-cultural research has lead to a number of new issues that researchers must overcome. In this study, we investigate one of these issues: socially desirable reporting. This study reviews the literature and develops several propositions regarding socially desirable reporting in computer mediated and cross-cultural contexts, then outlines an agenda for exploration.

INTRODUCTION

Since the emergence of Internet-based surveys in 1994 (Kehoe and Pitkow 1996), behavioral researchers have been using this method for data collection with increasing frequency (Sills and Song 2002). Traditional methods of data collection for behavioral researchers include paper based surveys and structured interviews. Often researchers assume that their subjects will behave in the same manner regardless of the mode of data collection (Denscombe 2006).

In order to glean meaningful insights from these data, researchers must assume that the subjects have answered the questions that they were presented with honestly. If the subjects do not answer the questions honestly, a multitude of internal validity concerns can result (King and Bruner 2000). Several theories have emerged with the goal of understanding why subjects do not respond to questions honestly. Among these is social desirability theory.

Social desirability is also a well established theory, one that has been relevant to behavioral researchers for more than 50 years. Social desirability (SD) *is the tendency of subjects to distort their responses to questions in order to appear to conform to the norms of some social group.* These distortions represent a threat to the internal validity of studies, specifically these distortions have been shown to lead to spurious correlations between variables, as well as suppression, confounding and exaggeration of relationships between constructs (Ganster et al. 1983). Indeed, SD is a problem that is thought to impact all forms of self-reported data collection (Fisher 1993) and a number of researchers cite SD as the most persuasive source of validity concerns in self reported social science research (e.g. (Paulhus and Reid 1991)).

Crowne & Marlowe (1964) postulate that individuals engage in SD distortion to satisfy their needs for social approval, social conformity and for self-protection. In addition, several researchers cite embarrassment as a stressor that people try to avoid by engaging in SD distortion (Modigliani 1968; Fisher 1993). Martin & Nago (1989) add that individuals will be particularly apt to engage in SD distortion as a form of self-protection when being questioned about their ability to perform a job during an interview due to the financial implications for the interviewee of not appearing to conform. This study hypothesizes that substantial contextual differences exist in the experiences of subjects taking face-to-face interviews, paper-based surveys and Internet-based surveys, and that these differences in the experience impact the subjects' responses to the survey.

Confidentiality concerns play an important role in how individuals respond to surveys. This study proposes that confidentiality concerns are particularly strong in the case of Internet surveys, as subjects are unable to verify how their responses are connected to information that the researchers may have related to the subject, and because of recent news stories regarding information theft and misuse (Bergstein 2006). Specifically, I propose that the uncertainty associated with these concerns will lead respondents to avoid revealing information that they perceive could be used against them,

thus threatening the validity of the results. Further I propose that social desirability related problems will be reduced in Internet-based survey contexts, because the immediacy of the embarrassment associated with making a truthful response that does not conform to socially accepted norms will be reduced.

With the increased use of online data collection methods, we have seen an increase in the number of international data collection (e.g. (Furner et al. 2009; Chang et al. 2010). This study further suggests that culture has both a direct relationship on Confidentiality Concerns and SD as well as a moderating effect on the relationships between the format of data collection and Confidentiality Concerns and SD. Cultural dimensions such as uncertainty avoidance and power distance should have a positive effect on confidentiality concerns, while masculinity, power distance and collectivism should moderate an individual's social desirability.

Behavioral researchers are not the only group that has been increasingly using computer mediated means to collect data. Human resource personnel also use computer based systems to gather data about potential and incoming employees (Haines and Petit 1998), and (Rosse et al. 1998) show individuals who take pre-employment personality tests tend to engage in response distortion with the goal of increasing their perceived qualifications for employment. While confidentiality concerns are much less of an issue in these circumstances because there is no expectation of confidentiality while securing employment, preventing SD related deception is of substantial importance to human resource personnel. This study argues that users will be more likely to engage in SD distortion in paper-based situations because they will experience pressure to appear to conform to socially accepted norms, and implies that human resource personnel can best prevent such behaviors by utilizing a computer based environment.

The current research question is: To what extent does mode of data collection influence socially desirable reporting in a cross cultural context. To address this research question, I will outline eight propositions which explore the role of confidentiality concerns and culture in socially desirable reporting.

LITERATURE REVIEW

In order to address our research question, a strong understanding of previous literature on the following topics is necessary: data collection, confidentiality concerns, socially desirable reporting and espoused national culture.

Data Collection

The choice of data collection mode-mail, Internet, telephone, personal interview, or group administration-is related directly to the sample frame, research topic, characteristics of the sample, and available staff and facilities; it has implications for response rates, question form, and survey costs. Computers can be used in the data collection process via all of these modes. (Fowler, 2002, p. 49)

Social scientists endeavor to explain human behavior. Weber (1949, p.164) states that social scientists seek to identify "...adequate causation in historical explanation..." Weber cites Von Kries's (1886) "Calculus of Probability" as a means of understanding causation in historical events, and notes that in order to calculate probabilities, events must be observed and assigned quantities (Von Kries 1886) via (Weber 1949).

This assignment of quantities to behaviors is called measurement (Caws 1959), which, according to Dubin (1978, p. 181) "...is concerned with finding the empirical indicators that produce the values on the units employed in a model." Pap (1959) indicates that while scientists once believed that only observable phenomena can be measured, scientists are beginning to measure "...any descriptive term... which is cognitively significant." In addition to direct observation and accounts of behavior, "dispositional explanations of behavior" include attitudes and personality characteristics that influence behavior (Ajzen 1988).

Social scientists, in their attempts to understand human behavior, measure attitudes using self reports obtained by asking subjects questions. They use the data derived from these questions to test theories regarding human behavior. In this study, the term *data collection mode* or simply *mode* is used to describe formats for asking these questions. In this study, three data collection modes are compared; face to face surveys, paper based surveys, and internet based surveys. The following three subsections describe each data collection mode.

Face-to-Face Surveys

Face-to-face surveys or survey interviewing involves an interviewer, who personally interacts with subjects, asking them a set of predetermined questions and recording their answers (Fowler 2002). This data collection mode has several advantages over self administered surveys (such as paper and internet based). The interviewer has the opportunity to motivate the subjects to avoid loafing, ask probing questions, as well as clarify any ambiguity that the instrument may create for the subject (Fowler 2002). In addition, Fowler suggests that a persistent interviewer can increase response rates among hard to reach subjects, as it is more difficult to turn away a person than throw out a letter or delete an e-mail. In situations where the subjects' literacy is an area of concern, face-to-face surveys may be the only feasible data collection mode.

Face to face surveys also suffer important disadvantages compared to the other data collection modes mentioned in this study. The interviewer must be careful not to alter the meaning of the questions, either by changing the wording or providing nonverbal cues, and must be consistent in how questions are asked across subjects to avoid threats to internal validity (Fowler 2002). If the survey is long, the interviewer must avoid showing the effects of tedium, in order to prevent loafing by the subjects. One can understand how this problem would be magnified in situations involving multiple subjects. Finally, this data collection mode is the most costly in terms of time, money and effort.

Paper Based Surveys

Traditionally self administered paper based surveys have been the survey delivery mode of choice among social science researchers (Suchman and Jordan 1990). As the name implies, subjects are given a pen, and asked to respond to questions written on a piece of paper. A researcher must collect these answers, and if he/she intends to analyze the data from these surveys statistically, enter the responses into a computer.

Paper based surveys have several advantages over other data collection modes. They are cheaper, less time consuming and more standardized across subjects than face-to-face surveys, and currently require less effort to create the instrument than internet based surveys (the instrument can be developed in a word processor, which does not require the added efforts of coding).

However, paper based surveys also suffer several disadvantages compared to the other two data collection modes. If the subject is unable to understand a question, it is more difficult for them to seek clarification. also, loafing is more of a concern in paper based surveys than face to face surveys, as it is easier for subjects to skip questions or provide responses without reading the questions when no human interaction is present.

Internet Based Surveys

Internet based surveys are an increasingly popular data collection mode (Dwight and Feigelson 2000). The idea of using a computer to administer a survey was originally suggested by Smith (1963). Computers have been used in research to conduct simulations (e.g. (Gallupe et al. 1988) and questionnaires (e.g. (Turner et al. 1998) in the past. With the widespread adoption of the internet, researchers found that they could overcome geographical distances that had limited sampling in the past.

Internet based surveys have many of the same advantages over face-to-face surveys as paper based surveys do, they are cheaper, less time consuming and more standardized across subjects than face-to-face surveys (Tingling et al. 2003). In addition, the software can handle complex skip patterns that may confuse paper-based users. Software can identify inconsistencies in the data, and if programmed properly, can encourage the user to address these inconsistencies at the point of data entry (Fowler 2002). Compared to paper based surveys, internet based surveys require more time to set up, but have much smaller per-subject costs, as the software can be set to code responses automatically (Sills and Song 2002).

Stanton (1998) identifies three problems associated with data collection over the internet: sampling problems, response consistency problems, and participant motivation problems. To use internet based surveys, the sample can only include people who have access to a computer and the internet, or the researcher must provide subjects with a computer and internet access (Stanton 1998). In addition, the sample must be literate, and able to use a computer. Also, soliciting responses via email can be less effective than telephone, postal mail or in person (Stanton 1998), however participation in internet based surveys can be solicited by ways other than email. Finally, internet based surveys suffer the same loafing problems as paper-based surveys.

Having described and discussed the three data collection modes used in this study, the next subsection will review literature that compares the reliability between different data collection modes.

Comparative Studies

A number of studies have identified mean score differences between paper-based and computer based studies (e.g. (Evan and Miller 1969; Finegan and Allen 1994). The first was conducted by Evan and Miller (1969) at the Massachusetts Institute of Technology, where 60 undergraduate students were given a set of questions, some described as “mundane” and others as “socially sensitive.” The subjects were divided into two groups, one group answered the questions on paper, and the other group answered the same questions in a computer lab using a “teletype” consol. Evan & Miller (1969) found no significant differences in subjects’ responses to the mundane questions, however those using the computer answered the questions in a way that was significantly less congruent with socially acceptable behavior than those using paper and pencil.

(Martin and Nago 1989) provide perhaps the most complete comparison of data collection modes to date. 103 undergraduate students were given a simulated employment questionnaire and assigned to one of four groups: 1) paper and pencil, 2) computerized, 3) interview with a “warm” interviewer, and 4) interview with a “cold” interviewer. Similarly to the current study, Martin and Nago used the Marlowe-Crowne measure of socially desirable reporting as their core instrument, and found that individuals who engaged in face to face interviews exhibited more socially desirable distortion, and inflated their GPAs more than those who used paper and pencil or a computer.

Taken together, these comparative studies suggest that even when subjects are given the same questions via different data collection modes, calculated mean scores differ, particularly when the topic of the questionnaire is sensitive in nature. The following two sections review the relevant literature on two potential explanations for these mean score differences: Confidentiality Concerns and Social Desirability.

Confidentiality Concerns

Individuals have been shown to exhibit apprehension about potential secondary use of personal information that they provide (Culnan 1993). Secondary use of information refers to any use of information provided by an individual to an organization for purposes other than for the purposes identified in the initial transaction. (Singer et al. 1993; Cho and LaRose 1999) demonstrate that concerns about confidentiality can lead to lower response rates, while several authors have demonstrated that confidentiality concerns impact result validity (Kerin et al. 1977; Fitzgerald and Hamilton 1997; Olson et al. 2004). Cho & LaRose (1999) even argue that subjects will sometimes intentionally misreport data in order to frustrate the researcher, in retaliation for a perceived failure to protect their information, or in retaliation for a perceived invasion of privacy, if the researcher solicited participation by email or on a discussion board.

Authors have been able to demonstrate that confidentiality concerns impact how individuals respond to surveys, jeopardizing internal validity. Kerin et al (1977) conducted an experiment in which 276 married women were given a credit card application, and assigned to one of four conditions (the factors were level of advanced notice, which was manipulated by either giving them a telephone call or sending a form letter) and the level of customization in the cover letter.). They were surprised to find that even though they guaranteed anonymity via the cover letter, the subjects still misreported on several questions in the personalized conditions. The authors believe that the subjects misreported because the highly personalized cover letters indicated that the researchers already had some data on the subjects, and that they were not afraid to use this data, and presumably any further data that the subject may provide, beyond the scope of the original transaction.

Social Desirability Distortion

Social Desirability (SD) distortion refers to *the tendency of subjects to distort their responses to questions in order to appear to conform to the norms of some social group*. In this study, consistent with Richman et al (1999), the term SD distortion is used to refer to the same phenomenon described in previous literature as response bias (Rezmovic 1977), socially desirable responding (Zerbe and Paulhus 1987), response distortion (Potosky and Bobko 1997) and overreporting (Turner et al. 1998).

While researchers generally agree that SD distortion is a means to present oneself in a favorable light (Richman et al. 1999), Paulhus (1984) points out that some individuals engage in intentional SD distortion that portrays themselves in a negative light, if they believe that doing so would assist them in acquiring some resource. For example, an individual may lie to his/her doctor about symptoms in order to receive a prescription for a controlled substance, or an individual may understate his/her income with the hope of qualifying for some social assistance program. In the present study we focus on SD distortion that portrays the subject in a positive light, because our population of interest is research survey participants, who's responses to questions will not aid them in securing any resource. This focus on SD distortion to adhere to social norms is consistent with the focus used by Richman et al. (1999).

(Paulhus 1984) divided SD Distortion into two categories, impression management and Self Deceptive Enhancement. Impression management is an intentional deception by the subject, while self deceptive enhancement is an unconscious distortion, where the subject provides an honest but overly positive impression of himself/herself. This two factor model of SD has been demonstrated by a number of factor-analysis studies (e.g. (Paulhus 1984; Paulhus 1986; Zerbe and Paulhus 1987; Paulhus 1991; Paulhus and Reid 1991) and widely accepted by psychology and organizational researchers (Dwight and Feigelson 2000).

Researchers have shown that SD distortion degrades the usefulness of non-cognitive measures. Sechrest (1968, p. 561) argues that "measures may be invalidated not only by showing that they correlate poorly with some criterion, but also by showing that they correlate highly with some conceptually simpler variable, such as the tendency to respond true, or in a socially desirable manner to all items." (Ganster et al. 1983) indicate that SD distortion has led to a variety of internal validity failures, including spurious correlations between variables, as well as suppression, confounding and exaggeration of relationships between constructs.

Several researchers have found that computerized studies reduce SD distortion. Before computers had ever been used to administer a survey, (Smith 1963) had suggested that subjects will experience less "resentment" of the researcher and be more open in answering "confession-type" questions when "confessing to a machine" than when being interviewed by a human. Smith's postulate was supported by several studies. (Richman et al. 1999) conducted a meta-analysis of 61 studies that compared SD distortions in different data collection modes. They found less SD distortion in computer administered studies than paper-based studies, particularly when subjects were alone when they took the questionnaire and could backtrack.

Edwards (1957) developed a scale to measure social desirability, so that its effects can be controlled for. He took items from (Taylor 1953)'s Manifest Anxiety Scale, and asked 10 judges to categorize each question as either socially desirable or socially undesirable. Only questions where all 10 judges agreed were included in Edwards's scale, which resulted in a scale that only measured extreme social desirability, limiting its usefulness to researchers (Crowne and Marlowe 1960).

Crowne & Marlowe (1960), building off of a variety of existing personality inventories, developed a long-standing and frequently used SD distortion scale. 50 items were derived, which were categorized as socially desirable or socially undesirable by 10 researchers. 47 items, which were congruently classified by 9 of the 10 researchers, comprised the preliminary instrument (36 of the items had 100% agreement). These items were administered to 76 students, and 33 items that discriminated at the 0.05 level comprised the final version of this scale. The correlation between the Edwards (1957) and the Crowne & Marlowe (1960) scale was 0.36 and significant. As such, the complete 33 item Crowne & Marlowe scale will be employed.

Having discussed the theoretical underpinnings of the constructs that are predicted to impact mean score differences across data collection modes, this paper now moves to a review of the literature related to a construct that will serve as an independent and as a moderating variable: national culture.

Espoused National Culture

For some time researchers have been aware that individuals in various civilizations share common values, beliefs, norms, and customs. Researchers have labeled the socially constructed force that embodies these factors as culture (Furner and George 2009). Owing to a trend toward globalization (Grimm and Smith 1997), sampling pools for

data collection include more individuals from different national backgrounds (Sivakumar and Nakata 2001), making national culture the most relevant conceptualization of culture for this study.

A number of topologies for classifying national culture exist, the most frequently cited is Hofstede's (2001) four dimensions of culture (Furner et al. 2009). This topology has been sharply criticized for generalizing individuals based on their nation of residence. Furner & George (2009) point out that Hofstede's dimensions were never intended to be applied at the individual level to predict individual behavior. Srite & Karahanna (2006) base their concept of Espoused National Culture on Hofstede's original four dimensions in an attempt to identify culture constructs that can be used at the individual level to predict individual behavior. Espoused national culture has been effectively used in a number of studies to predict individual behavior (e.g. (Furner and George 2009; Furner et al. 2009; Racherla and Furner 2009)) Espoused National Culture consists of four constructs: Espoused collectivism, or the extent to which an individual values relationships with their in-group, espoused power distance, or the extent to which an individual perceives a power differences between themselves and their superiors and subordinates, espoused uncertainty avoidance, or the extent to which the individuals fears risk and espoused masculinity, or the extent to which the individual views the world as competitive rather than nurturing.

Having outlined relevant literature related to data collection, confidentiality, social desirability distortion and culture, the following section outlines eight propositions and a research architecture.

PROPOSITIONS AND RESEARCH AGENDA

As noted above, socially desirable distortion is likely to be less of a concern when internet based surveys are used rather than face to face interviews or paper based surveys. However, culture is also likely to influence these dynamics. The following eight propositions outline these relationships. Figure 1 illustrates these propositions.

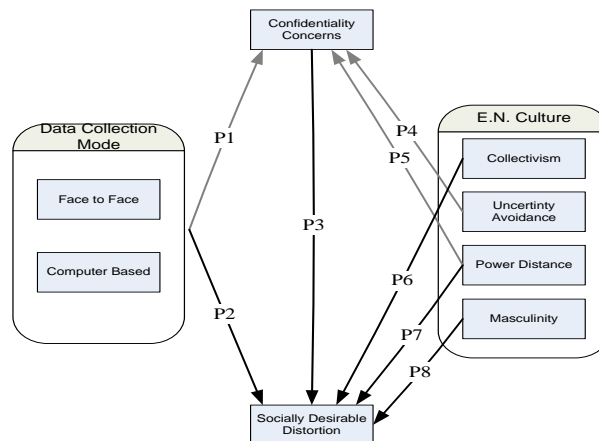


Figure 1: Propositions

Furner & George (2009) point out that media differ in their ability to transmit cues, face to face media transmit more, richer cues while computer based media transmit fewer and less rich cues. Individuals use cues to assess the veracity of messages being sent. If an individual is in a position where they need to provide information to a person face to face, that person is automatically going to know certain things about them: their race, gender, approximate age, etc. All of this information is identifiable, meaning that it can be used to tie the individual to their responses, which should cause the subject to experience stronger concerns about their confidentiality. While this identifiable information can be obtained in online interactions, it cannot be recorded in the same degree of detail as it can in a face to face interaction, which should make the subject less concerned about confidentiality.

P1: Individuals who take online surveys are expected to report weaker confidentiality concerns than individuals who take face to face surveys.

Individuals in face to face situations are more likely to perceive a pressure to adhere to norms in a face to face communication event than in a computer mediated one (Stanton, 1998). It is the pressure to adhere to these norms that creates pressure for the individual to present him/herself in socially acceptable light. In online environments, there is less pressure to adhere to the norms, indeed it is much harder to establish norms in an online environment (Richman et al., 1999). Because the social norms are not outlined, and because the subject is expected to experience less pressure to conform:

P2: Individuals who take online surveys are expected to report less socially desirable distortion than individuals who take face to face surveys.

When an individual is highly concerned about their confidentiality, they are likely worried that they can be identified. When an individual believes that they may potentially be identified, they are likely to engage in more norm adherence because they may experience a fear that they might face consequences for not adhering to social norms. As such, individuals who believe that their confidentiality will not be respected are more likely to distort their responses to adhere to social expectations.

P3: Individuals who experience stronger confidentiality concerns are expected to report more socially desirable distortion than individuals who experience weaker confidentiality concerns.

Individuals who score high on uncertainty avoidance are less comfortable acting in the absence of complete information (Hofstede 2001). Without knowing for sure what the effect of their actions will be, they experience stress when faced with decision. This stress is expected to be stronger when there is a risk that the individual can be identified, as unknown consequences are potentially greater the closer they hit to home. This high degree of stress is expected to cause those who are high in uncertainty avoidance to experience stronger confidentiality concerns.

P4: Individuals who score high on uncertainty avoidance are expected to experience stronger confidentiality concerns.

Individuals who score high on power distance typically perceive their superiors as having a great deal of control over them, and experience substantial stress when they interact with their boss (Furner and George 2009). These individuals are likely to try to control the impression that they present to the boss. If these individuals are asked to answer questions about their work, they are likely to be mindful of what the boss would think of their answer, and be even more mindful of whether their responses are identifiable. As such:

P5: Individuals who score high on power distance are expected to experience stronger confidentiality concerns.

Individuals who score high on collectivism value group membership, and as such strive to adhere to and preserve group norms. Collectivists often sacrifice their own personal interests to adhere to group norms (Triandis 1995). It is this reverence for group norms that will create pressure for collectivists to present themselves in the most positive light possible, by engaging in socially desirable distortion.

P6: Individuals who score high on collectivism are expected to report more socially desirable distortion.

As noted in P5, individuals who score high on power distance typically perceive their superiors as having a great deal of control over them, and experience substantial stress when they interact with their boss (Furner and George 2009). These individuals perceive substantial pressure to satisfy their superiors, and endeavor to avoid negative attention by not deviating from established norms. This pressure is likely to cause these individuals to engage in impression management behaviors such as socially desirable distortion.

P7: Individuals who score high on power distance are expected to report more socially desirable distortion.

When an individual is high in masculinity, s/he values a sense of achievement and superiority over her/his peers (Srite and Karahanna 2006). These individuals seek to differentiate themselves by standing out and building a reputation. The easiest way to build a reputation is by deviating from established norms (Zinko et al. 2010). These deviations can be positive or negative, but to the individual who is high in masculinity, positive deviations are more likely to result in a positive reputation which can foster a sense of positive differentiation. As such, we expect individuals who are high in masculinity to engage in substantial impression management activities with the aim of impressing others.

P8: Individuals who score high on masculinity are expected to report more socially desirable distortion.

To determine the influence of these propositions, researchers should attempt to build hypotheses based on them, and test these hypotheses. One approach that would be effective: administer a questionnaire, which includes Furner et

al.'s (2009) espoused national culture questionnaire as well as a social desirability scale and a confidentiality concerns scale to subjects in multiple countries, and administer it both face to face and online.

CONCLUSION

Given the recent trend toward globalization (Furner et al. 2009) the emerging trend toward international research is relevant and promises to yield considerable insight. With international research, several research dynamics change. We argue that when we look outside western nations for subjects, we can expect to see differences in socially desirable distortion, however, this will be mitigated by the use of online surveys. While further evaluation of these dynamics is needed, implications of these propositions include controlling for SD in future studies involving international subjects.

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