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Response rate and response error in marketing research

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RESPONSE RATE AND RESPONSE ERROR

IN MARKETING RESEARCH

by

M. Yasemin Ocal Atinc, B.S., M.B.A.

A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Business Administration

COLLEGE OF BUSINESS
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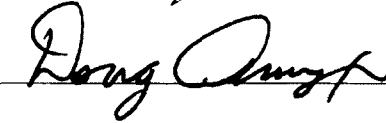
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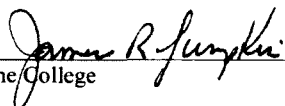Dean of the College

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ABSTRACT

In this study, I investigate the perspectives of marketing researchers views about the two important concepts of survey research, response rate and response bias. I specifically aimed to answer the following questions:

Research Question #1: Do marketing researchers separate the concepts of response rate from response bias?

Research Question#2: How exactly should data quality be measured? Is it about sample representativeness, minimizing non- response bias or just solely Increasing the response rate?

Research Question#3: What are researchers doing to assess and minimize response bias?

Research Question#4: Do additional efforts put forth by survey researchers, such as reminder letters and incentives, for the purpose of increasing survey response rate affect additional sampling bias?

Research Question#5: Are the common techniques used by survey researchers to increase response rate equally effective?

In an attempt to answer the research questions stated, I have collected both primary and secondary data. The primary data was collected from the Academy of Marketing Science active members. Eight versions of an excerpt was prepared that is taken from an actual article that was accepted for publication recently. The experimental design adopted was 2x2x2 with each treatment trying to answer one of the research questions stated in this study.

The first treatment was regarding the consideration of population. The subjects were manipulated with two versions of the excerpt of which one was with a Canadian sample and the second was with a so called North American sample.

The second treatment was about the manipulation of the initial number of surveys sent out which as a result would change the response rate percentage. The two different versions included 500 vs. 5000 initial surveys sent out varying the response rate from 5.1% to 50.2%.

The third treatment included the manipulation of Armstrong and Overton (1977) citation. The over use of this citation in the marketing literature has been noteworthy. In an attempt to investigate this matter further, this treatment was created. First version contained a sentence that stated that the early and the late respondents were compared and no significant differences were found as evidence of no response bias including the citation of Armstrong and Overton (1977). The second version of the excerpt included a table with the expected demographics regarding the population of interest.

In addition to these, the subjects were also assigned to two different conditions where they were asked to evaluate the excerpt as an author or as a reviewer. In the invitation email respondents were asked to toss a coin or to click on a web link that would toss the coin for them and select the appropriate link that corresponds with their choice.

In order to assess the popular techniques of enhancing response rate, I have divided the sample into several groups as the pre-notification, the reminder and the pre-notification and reminder groups and a control group that received neither the reminder

nor the pre-notification treatment. The results revealed that, according to my sample none of the techniques mentioned above, improve the response rate.

The secondary data was collected from major outlets of the marketing science (*Journal of Marketing-* JM, *Journal of Marketing Research-*JMR, and *Journal of the Academy of Marketing Science-*JAMS) during the periods of 2005-2010. The final sample consisted of 68 JM, 23 JMR and 84 JAMS articles. In addition to these, I also randomly selected 31 rejected articles from the *Journal of Business Research (JBR)* archives.

The results of the study revealed that, survey researchers do not clearly grasp the concepts of response rate and response bias. In addition, the results demonstrated that the data quality should be measured by the sample's representativeness of the population and the researcher's capability of decreasing the response and the non-response biases. Further, the techniques used to enhance response rate such as reminder and pre-notification letters as well as incentives are not as effective and are likely to introduce additional response bias to a study. The results also showed that the optimal data collection method researchers should consider adopting is the combination method. The study ends with the discussion of the implications of these results and possible future extensions of this study.

APPROVAL FOR SCHOLARLY DISSEMINATION

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

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My special thanks goes to my husband Dr. Guclu Atinc who has always been there and has given endless support and guidance through my doctoral program at Louisiana Tech University. I also would like to express my thanks to my late (maternal) grandfather and my grandmother who had an important role in my life and contributed to my success in many ways. Last but not least, many thanks go to my family, my mother, my father and my brother who have played an important role in finishing my degree.

CHAPTER 1

INTRODUCTION

Introduction

One of the fundamental tools used in social and behavioral sciences is survey research. This is probably due to the fact that people are fascinated by learning about real people and understanding real life phenomenon. As the name implies, primary data is gathered first-hand by the researcher using appropriate surveying techniques. Dillman (1978, 2000) proposes an optimal survey design outline. Dillman offers recommendations on survey design and increasing response rates through consecutive steps like pre-notification, incentive use, post-notification and thank you card and names this whole process as "Total Design Method" (1978).

During the initial years, Dillman concentrated on mail and telephone surveys. Recently he and his colleagues updated the original work to cover internet and mixed-mode survey methodologies (Dillman, Smyth and Christian, 2009). Recent research shows that, survey use is increasing in general (Van Horn, Green & Martinussen, 2009) and use of web-based and e-mail surveys are increasing in particular (Baruch, 1999; Porter & Umbach, 2006). However, a significant portion of researchers still rely on survey research via snail-mail. Academic researchers view its use as uncontroversial as

issues such as response rates and response error are better understood compared to Internet surveys (Ritter, Lorig, Laurent, & Matthews, 2004). In other words, the original recommendations made by Dillman (1978) are still valid and applicable today.

Raising the response rates remains a concern for researchers since reviewers are still very much interested in response rates (Van Horn et al., 2009). However, low response rates are pointed as a critical problem in survey research. Perhaps, academic researchers, including the field of marketing, pay too much attention to response rates and fail to recognize the importance of a related concept, response error. For instance, looking at the results of the pilot study I conducted, which will be explained in Chapter 2, I was able to observe almost all of the authors reporting of response rates but very few talk about the representativeness of the sample which is more critical for minimizing response error. In this work, my purpose is to highlight the differences between response rate, response error and response bias and report my findings about the extensive amount of emphasis put on the former rather than the latter two.

Motivation of the Study

For the purpose of explaining the motivations behind this study Figure 1.1 may be insightful. In a typical survey research study, everything starts (or should start) with understanding of the population (Zikmund et al., 2010). In the figure, think of the centroid as representing the true population parameters. The outer circle in the above model that contains everything else represents the population. For instance, if a researcher located in Louisiana is willing to understand the purchasing intentions of college students, what population should the research involve?

Population

Sampling Frame

Error

Better Sample
(Small)

Good Sample
(Large)
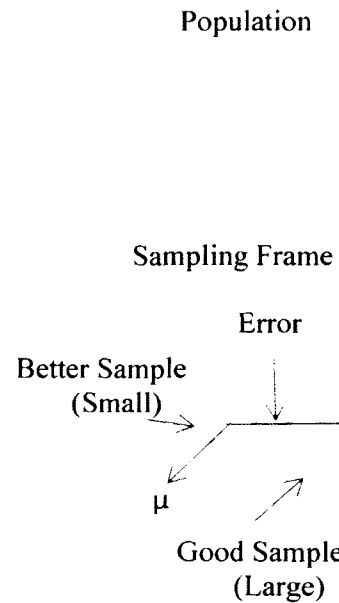
Figure 1.1 *Minimization of Bias with a Smaller Sample*

Is it all the college students, all U.S. college students, all college students of

Louisiana or in the southern part of the state or the northern part of the state? What about

the community colleges? Do the students of the community colleges represent the typical

college student in a traditional university? Are the minority colleges important for this

study? Should the researchers include them? Even further, is the Louisiana researcher

concerned about the college student purchase intentions in the entire United States or

even the whole world? In that case, is it enough for him or her to survey students in one

of the major Louisiana universities? In statistical analysis, our purpose is to investigate a

sample that is supposedly a representative of the population (Cohen and Cohen, 1984).

As depicted in Figure 1.1, understanding what the real population is helps us with

assessing the representativeness of the sample. Thus, no matter how big the sample is, if it is not representative of the correct population the statistical results are not meaningful (Zikmund et al., 2010).

The second largest circle in Figure 1.1 represents the sampling frame. According to Zikmund et al. (2011), a sampling frame (also called the working population) is determined by listing of elements from which a representative sample can be drawn. For example, a list obtained from a university registrar providing names and emails of all junior and senior business students would be a possible sampling frame? What about the students taking other majors though? What about the students taking the first-year freshman seminar? Should they also be included in the sampling frame? In other words, is that list inclusive of all the students we want to include in our sample? Determining the sampling frame is as important as determining the population, if not more. Sampling frame error occurs if certain elements in the population are not represented in the sample.

There are two inner circles in the above model. The larger one on the right is a good sample with a large sample size. Referring to the Zikmund et al. (2011) model about survey error, which will be explained further in Chapter 2, survey error is composed of random error and systematic error. The way to minimize random error is through increasing the response rate. However, as mentioned by Zikmund et al. (2011), that is just half of the problem. Although the larger circle in the above model represents a larger sample size, due to larger error, it is a less appropriate sample compared to the smaller circle on the left. This smaller circle is closer to the center and better represents the true population parameters although the sample size is smaller.

In short, the motivation of this study is to highlight the importance of minimizing response bias rather than solely concentrating on response rate. The following section of this chapter contains the proposed contributions of this study.

Proposed Contributions and Objectives of the Study

There are several potential contributions of this study to academic and professional side of marketing. These can be listed here:

- Describe and analyze the effectiveness of traditional approaches to dealing with sampling issues in survey research including average response rate,

- Show characteristics that relate to varying response rates reported in literature,

- The specification of the difference between response rate, response bias and response error,

- Explanation of the methods used to increase data quality rather than response rate,

- Understanding the marketing academicians point of view regarding data quality,

- Understanding the editors' and reviewers' point of view regarding data quality and concepts like response bias and response error,

- Understanding the important relationship between population, sampling frame and the sample,

- Explanation of the effective ways to determine the target population, the sampling frame and the sample,

- Analysis of the trends in marketing journals regarding response rate, response bias and response error,

- Developing a statistical model to explain the differences in response rates,

- Propose future research areas regarding survey research, primarily in marketing but also in other fields as well,

- Shedding light on many of the unknowns of survey research not only for academicians but also for practitioners of marketing,

- Making specific recommendations to the stakeholders of marketing regarding the methods to increase data quality and representativeness of the sample,

- Making theoretical contributions to literature regarding survey research, and

- Setting a direction for survey researchers and practitioners.

In summary, my purpose in this study is to challenge the status quo of the survey research. I believe that we need to reevaluate the traditional ways of survey research we are used to in marketing research and the emphasis we are used to put on response rate. For that purpose I will be conducting an experiment involving journal editor, reviewer and author opinions of issues related to respondent error, investigating the situation in marketing journals, coding marketing articles using several criterion which will be explained further in Chapter 3 of this study and making specific recommendations to the stakeholders of marketing research about increasing data quality.

Chapter 2 contains the detailed literature review on related concepts and research questions. The chapter after includes the discussion about the proposed methodologies.

CHAPTER 2

LITERATURE REVIEW

This chapter starts with reporting literature findings concerning different survey modes. Later, some related theories and effects of socio demographic variables on survey research are reported. The chapter ends with presentation of some related definitions and research questions.

Telephone Surveys

The first type of survey methodology I am going to cover in this section is "telephone survey." Over the 75 years, survey methodology has changed tremendously due to changes in human interaction, trust and privacy issues, time, respondent control over the survey instrument and technology (Dillman, 2009). In the 1960's it was only occasional to use either mail or telephone surveys because the most widely accepted method for conducting survey was personal interviews. As time progressed and survey researchers realized that they could interview people and ask them the same questions and collect the same information over the phone, telephone surveys have become more and more popular (De Leeuw et al., 2007). This became the case especially when the number of households owning landlines has started increasing which made high response rates achievable (Zikmund et al., 2011).

7

Telephone surveying is a market and marketing research tool that involves calling a preselected sample and interviewing this sample via a preselected questionnaire administered by an interviewer using a telephone (Groves, 1990). A study conducted back in the late 1980's shows that, 92 percent of the American population can be reached via telephone (Trewin and Lee, 1988). Although the reliability of land-line telephone surveys are questionable today due to the fact that people are switching more to cell phone use (Vicente and Reis, 2010), it is still one of the most important survey methodologies and many believe that it produces the most representative data (i.e data matched the population parameters). Saying that, cell phone samples are proven to be effective to capture certain demographics and also found to be feasible because of the sufficient participation. People's willingness to participate in a cell phone survey is comparable to their willingness to participate in a landline survey (Brick et al., 2006).

Looking at the literature, one of the oldest but most comprehensive reviews of telephone survey methodology is written by Tyebkee (1979). In that study, the author partitions the major issues of telephone research into five broad categories (Tyebkee, 1979: 68). The first one is research management. In order to evaluate research management, Tyebkee (1979) recommends the assessment of three criteria; cost, control and time. With regard to cost, back in those years, telephone surveys were considered to be cost efficient and less labor intensive. From a control perspective, telephone interviews are known to provide the survey administerer the opportunity to monitor the response process. Finally, while it takes several weeks to collect data by snail mail or personal interviews, the required time can be measured in terms of minutes for phone interviews.

The second type of issue is the validity of telephone surveys. As Tyebkee (1979) reviews extensively, the data collected by telephone surveys is very similar to the data collected by other means (Coombs and Freedman, 1964). Yet, some differences were identified. For instance, personal interviews can cause differences in the characteristics of the sample since the interviewer may not be able to reach potential respondents in controlled access buildings. In addition, people may be reluctant to provide information about their personal finances and income over the phone. The way the interviews are conducted in (i.e. private versus public setting, cold voice versus warm voice) may also bias the results. Last, but certainly not least, social desirability may be a big problem with any of the survey methodologies.

The third issue that Tyebjee (1979) looks at is the response rate in telephone surveys. Referring to a very comprehensive study conducted by Wiesman and McDonald (1978), the authors report that the median response rate of marketing research related telephone surveys is around thirty percent. The reasons cited for this lack of response back in those days were nonresponse due to refusals and nonresponse due to not-at-home. .

Another issue the author mentions is about the sampling in telephone surveys. The effect of excluding non-telephone households (very similar to the effect of excluding non-internet households in this day and age), the way the sampling is done from telephone directories and the problems with random digit dialing were all cited as things to consider with telephone surveys.

The final issue was the design of the questionnaire. Telephone survey and the questionnaires are constructed differently comparing to personal interviews and snail

mail surveys. For that reason researchers are urged to show the utmost care for the ways they construct the questionnaires as these designs may seriously impact the quality of the data.

Groves (1990) conducted an updated study about telephone surveys. This time, the author was more concerned about providing the readers with more theoretical background about telephone surveys. Particularly, theories relevant to coverage error were cited such that the authors highlighted the importance of social class when conducting telephone surveys, psychological theories of compliance and persuasion relevant to nonresponse error such as the theory of reciprocation (Cialdini, 1984), which proposes that people will tend to interact with parties that provided some kind of benefit in the past just like what social exchange theory (Blau, 1964) contends, authority of the survey agency, which significantly affects response rates and theory of attitude change (Petty and Cacioppo, 1986), that takes cognitive cues and peripheral cues into account for survey response. On top of these, Groves (1990) also discusses sociological theories relevant to telephone survey nonresponse errors such invasion of privacy. In addition, the restriction of channel capacity with telephone surveys, greater social distance between the parties (De Leeuw and Van der Zouwen, 1988), the importance of reduction in social desirability are all described as part of communication theories related to telephone survey methodology.

On top of these comprehensive reviews, literature provides more insights to the practice of using telephones as modes of data collection in marketing. Research suggests that, based on age, ethnicity, education, time in the community and gender, there are major differences among the members of the population which would hinder the validity

of the research conducted when only one mode of surveying method is used (Roster et al., 2004). Recently, like the other modes of survey research, telephone surveys also suffered from increasing nonresponse because of people getting harder to contact or not willing to answer (De Leeuw et al., 2007). Previous research was mainly concerned about the effects of the interviewer on nonresponse and response bias issues (Groves and Magilay, 1986). While open ended vs. closed ended questions or the Computer Assisted Telephone Interviewing (CATI) usage may reduce the interviewer effect or on nonresponse bias, the other issues still warrant attention. CATI was first used in the 1970s and its usage was mainly commercial. Later on, universities and other research institutions adapted the use of CATI and the first large scale survey was conducted in late 70s at UCLA and University of California, Berkley Research Centers. The biggest advantage it brought was that it reduced the time and effort necessary for post data cleaning up and checking for consistency throughout the interview process (Heerwegh, 2005).

Studies have shown that, advance letters and reminders helped increasing the response rate in other modes of survey (Heberlein and Baumgartner, 1978). Although, some researchers have drawn attention to the fact that advance letters may result in effecting the data quality or response negatively, the general understanding is that they are still very likely to produce positive results such as increasing the legitimacy of the survey and have a more satisfying effect due to the social exchange by receiving an advance letter ahead of the time (De Leeuw et al., 2007). In addition, sending an advance letter had more positive impact on the cooperation of the respondent more than the response rate since the response rate has dropped due to noncontact. The results of a

meta-analysis regarding the impact of advance letter on telephone surveys shows that advance letters increase cooperation by about eleven percent and increase the response rate subsequently (DeLeeuw et al., 2007). Based on social exchange theory, the explanations regarding the study, its importance and the benefits for the potential respondents tend to positively impact response rate (Dillman, 2009) while some other researchers refute those findings (Collins et al., 1988).

The other important issue with telephone surveys was to match up the phone with an address. This becomes a problem especially when random digit dialing (RDD) method is used. This problem varies based on the geographical location making it harder for certain areas (i.e. urban areas) and some countries because of underdeveloped infrastructures. In addition there is an unavoidable sampling coverage error in all RDD surveys and at least five percent of the population cannot be reached vie telephones due to lack of working telephone lines (Chang and Krosnick, 2009), not to mention that cell phone numbers cannot even be randomly dialed in United States.

In order to increase the response rate, there are two commonly used methods. One is reminders and advance letters and the other is payment of incentives. Especially in mail surveys both of these methods are found to significantly increase the response rate and therefore got studied by many researchers (Singer et al., 2000). Mostly, studies have investigated the commonly used incentive methods (i.e. prepayments, cash incentives, the payment method, etc.) that had significant effect on the response rate in mail surveys. Later on, the same examination was done on telephone surveys (Singer et al., 1999). Although some studies found that promised incentives, rather than up front ones, do not

have serious impact on response rate (Heberlein and Baumgarter, 1978; Yu and Cooper, 1983) others did not observe the consistent effect of incentives on survey response in telephone surveys (Singer et al., 2000).

The other issue that needs to be addressed is whether or not the interviewer is biased (in a positive way) towards the household that had received an incentive. The same logic also applies to the household being more cooperative since they had received an incentive. Due to these situations, there might have been a positive effect on response rate not directly because of the incentive itself (Singer et al., 2000). In addition, when respondents receive incentives, they tend to give more lenient responses which by itself is another source of bias. Some authors suggest that the respondent is more lenient because the incentive puts them into a more positive mood. Also, based on the theory of intrinsic and extrinsic motivation, incentives might have a negative impact on the intrinsic motivation and might affect the data quality negatively as well (Singer et al., 2000). Besides the impact on data quality, these methods might create further problems in the future. Some of these problems may be raising the expectations of potential respondents or as people are surveyed more the population in general might become good negotiators for responding to a survey which will add on the current response rate problem even more.

Although telephone surveys might affect data quality negatively, other survey methods evolved with technology and are used increasingly by researchers (such as web surveys), they remain a mainstay of marketing research. The literature reports findings of studies comparing web and telephone surveys regarding sample, response rates, cost, and response effects as well as data quality in order to determine the superiority of one

method to the other (Cobanoglu et al., 2001; Karin et al., 2007). The main objective of most of these studies is to compare the response rate and determine the superiority of each surveying mode based on response rate and only a few looks at the other issues such as data quality. Mixed mode surveying is therefore presented as the right method to produce higher response rate and the general assumption is that higher response rate will resolve most of the other issues mentioned regarding data quality (Roster et al., 2004). The main issue is that the studies give emphasis on different issue and value different characteristics on data quality and we still have yet to reach the consistency of what really constitutes data quality and what characteristics do we need to take into account when comparing different modes of survey (Roster et al., 2004).

Some other authors talk about telephone polling businesses (i.e.Harris Corporation). According to the literature these businesses switched to other modes of survey methods recently. For instance, their transition to web surveys have resulted in major cost savings and therefore bumped up their profits, although the cost related to data analysis is not calculated in these results (Heerwegh, 2005). Between the web and telephone survey comparison the biggest challenge is to reach the sample equivalence of the population characteristics in both modes in order to accurately compare both methods.

An interesting point that needs to be addressed here is that in a comparison study of web and telephone surveys the response rate is reported as 40.5 percent for telephone surveys and while this seems like a very high response rate for telephone surveys, when the response rate is calculated based on the total number of attempts, that rate goes down to 11.5 percent (Roster et al., 2004). That difference is one of the motivating factors of

this study. The question still remains; why do authors attempt to increase their response rates all the time and what is the most accurate way of calculating survey response rates? Unfortunately, like many other studies in the literature, no one seems to be concerned about the requirement of consistency in calculating the response rate; however, the results do indicate that telephone surveys produced better data quality compared to the web survey administered (Roster et al., 2004). Another study has addressed this similar concern regarding the data quality in telephone vs. web surveys. High telephone penetration rates obviously diminished the concern for representativeness of the population. On the other hand, the internet access and computer adaption rates together with differences in computer literacy and technology usage capacities among different groups have raised concerns about the population representativeness and data quality in web surveys. The results of this study revealed that, education and income are the two demographic factors that are significantly different for telephone and web surveys. This finding suggests that web respondents are not truly representative of the population (Datta et al., 2002).

At this point, it may be useful to discuss some of the advantages and disadvantages of telephone surveys. Datta et al. (2002) summarizes the literature about the advantages and disadvantages of telephone surveys. The main advantages of conducting telephone surveys can be listed as higher response rate and cooperation, especially when reminders (easier administration of telephone calls), advance letters or incentives are used. In addition, telephone surveys are also representative of the population more so than some other techniques (Datta et al., 2002). Since telephone

surveying is a type of interview based survey method, the misunderstandings or other issues such as unclear questions or resistance of the respondent can be resolved more easily (Nederhof, 1988).

There are also disadvantages of telephone surveys. Resistance may occur since the respondent may not be willing to answer sensitive questions, especially when the interviewer is present (De Heer and Israels, 1992; De Leeuw and De Heer, 1999). Certain people may be hard or impossible to reach because of the timing or because many households have quit using landlines (Groves and Cooper, 1998). The other issue that warrants attention here is never being forced to talk to a live person such as answering machines and caller IDs. In other words, consumers have more power nowadays to refuse or not to answer an unknown call (Oldendick and Link, 1994; Link, 1999). The cost of administering the survey might be higher due to interviewer hours and other administrative costs (Stevens, 2000). The last but not the least of these disadvantages is the fact that the more people among the population are surveyed, the more resistance towards any type of survey method will occur.

Nonresponse bias was a great concern during the 40s and 50s in marketing research, and several studies reported that respondents were found to be different than nonrespondents according to various demographics and psychological factors, until the beginning of 80s the issues have not been fully investigated (Wiseman and McDonald, 1979). At the beginning of 1970's, researchers and professionals started to worry about the decline in response rates in general and the National Science Foundation together with the American Statistical Association brought social scientists together to find the reasons for difficulties in conducting survey research. The results of this gathering

revealed that survey research was going through some difficult times but since they did not have hard data at the time the specifics and the depth of the problems could not be specified (Wiseman and Donald, 1979). One of the important issues addressed in this study, which still needs attention today (30 years later), is that the noncontact rate is an important indicator of data quality which is not reported in manuscripts most of the time. Probably the most important finding of this study is that the number of attempts made to a certain household or a respondent resulted in a decrease of non-contact rate. Although this effort is likely to have a positive impact on data quality, it may also increase survey costs. However, by adjusting the sample size, the surveyor may reduce the cost and still achieve better data quality. Although researchers work hard on lowering the nonresponse error in their survey research, it should be noted that, under certain circumstances reducing nonresponse error may yield to response error. The effort put forth, certain techniques administered in order to get certain individuals to respond may result in an increase of sampling and nonsampling error.

Today when we take a look at the situation in telephone surveying, the increased mobile phone usage especially among certain parts of the population and people getting rid of landline phones which results in a big challenge for surveyors in addition to the other issues mentioned above such as caller ids, or being fed up with telemarketers and not answering phones during certain times. The number of households that had caller id grew by 500 percent from 1995 to 2000 (Curtin et al., 2005). Although the number of interviews completed almost doubled between 1976 to 1996, it became much harder to have completed interviews in the later period after the late 90s (Curtin et al., 2005).

The other interesting finding by Survey of Consumer Attitudes regarding telephone surveying is to see how nonresponses have changed over the years. For example, the respondent incapacity due to a language or hearing barrier makes up a very little portion of nonresponse, while it used to make up for the one percent of the population in 2003, it still makes up only two percent of the nonresponse. From 1979 to 1985 noncontacts also did not make up for a large portion of nonresponse, afterwards, noncontact grew dramatically and since the later 90s noncontacts had almost an equal share with refusals in nonresponse rate. Obviously, caller id can be held accountable for the dramatic increase in noncontacts, especially in the last ten years (Curtin et al., 2005). The reason for the increase in nonresponse after 1996 was not noncontacts but refusals and studies have found evidence that refusal rate had an association with unemployment rate. In addition, the increase in nonresponse both from noncontacts and refusals are due to the dramatic increase in marketing related calls such as, sales, surveying and other tele-marketing related issues (Curtin et al., 2005). This fact also raises a red flag for the future of survey research since people are becoming more reluctant every day to respond to questionnaires because of low trust and lack of interest in the topic or results of the survey in question. Therefore, it is the responsibility of the surveyor to come up with new and better methods in order to be able to reach to the sample and convince individuals to participate in a study.

Researchers are very much concerned about the decline of response rate mainly because many believe that this is the major contributor of nonresponse bias (Dillman, 1978). Although recently several studies suggested that response rate is not the sole indicator of nonresponse bias, researchers seem to be still very much concerned about the

response rate and put in a lot of effort, both monetary and nonmonetary wise, in order to increase response rates. This is due to the generally accepted rule of reaching a certain level of response rate in order to prove the eligibility of the study at hand. As response rate continued to decline, academicians got worried about the nonresponse bias so much that there has not been enough emphasis on the contrary. High response rates might be introducing other types of response error that might hurt the validity of the findings just as much as the nonresponse bias. In this study, my aim is to shed some light on many of the unknowns of the survey research.

Web Surveys

Starting with early 2000, internet surveys, voice recognition systems and electronic fax surveys have opened a new era in the survey research methodology. This new era has started with the advancements in technology. When we look at the history of survey research methodologies, we can see the developments starting with the introduction of random sampling in 1940s to telephone interviews in the 1970s, and starting with early 2000, internet survey methodologies seems to open a new door for the researchers because of its many advantages (Cobanoglu et al., 2001). In the 1960s some researchers were successful in connecting several computers to one another which was called ARPANET (Hoonakker and Pascale Carayon, 2009). Despite the disadvantages that come with this fairly new survey technique, researchers seem to investigate it in order to develop methods to improve the use of the technique and the quality of the data gathered via this technique.

Morrel and Samuels (2003) posit that there are five main problems that hurt the validity and the reliability of web surveys especially within professional firms (opting

out, sugarcoating, skimming, clipping, and reshuffling). Employees tend to be reluctant in responding because of several reasons. Opting out is one of these reasons and it usually occurs because of the inconvenience of navigation and concerns for confidentiality. Sugarcoating is another one of these problems. Due to poor survey designs employees resist to respond or the responses come out to be overly positive. One of the main reasons for this is employees not being able to respond accurately because they are afraid that their identity will be revealed one way or another to the employer. Another issue in web surveying is skimming. When the company uses multiple modes such as print and web surveys, it produces inaccurate results or biased conclusions. The employees that receive print surveys are more different in pay, education, position and tenure in the company and they are more likely to have more negative views of the company than the ones that computer surveys are administered to which means the results were biased and skewed. Clipping is another problem identified in the above study and it happens because the respondents have a hard time distinguishing the differences in certain descriptions such as fabulous and pretty good. This results in unfair judgments of the material in hand. Another problem that firms encounter when administering web surveys is reshuffling. Reshuffling occurs when the average responses for each question is calculated and then ranked which is a procedure that disturbs the correlations among questions such as the connection between employee motivation and retention.

Web surveys have many drawbacks as mentioned above. However when the surveyor can design the survey in a way that would eliminate these drawbacks, web surveys can become very advantageous compared to other survey methods (Morrel-Samuels, 2003). In a meta-analysis of web surveys vs. other survey methods, it has been

reported that web surveys tend to produce an eleven percent lower response rate compared to other modes of survey research (Manfreda et al., 2006). Depending on the type of the survey, web surveys come in different forms and styles. The biggest challenge that researchers run into in web surveys is because most of the procedures and techniques used in other survey modes are either not developed for the web or may not be applicable enough to produce the same impact. One of the examples for this is the practice of using incentives, although the literature keeps suggesting the use of incentives in order to increase the response rate, transferring the incentives through the internet may not always be possible and even when it is, it may not make the same impact because the incentive is not tangible as it is in snail mail or fax surveys (Manfreda et al., 2006; Cobanoglu et al., 2001).

This discrepancy can also be supported by the reciprocity theory. Reciprocity evolved from human beings' demand to satisfy their needs by acquiring stuff through exchanges between individuals or groups (Gouldner, 1960). Based on reciprocity theory, when individuals are given an incentive in return for participating in a survey, they are more easily convinced because they are given a gift (might be in the form of a monetary token) in exchange for their effort which can be used to satisfy another need. This is simply an explanation of how the social system works. Therefore, beyond the obvious reasons of differences in computer capabilities or technology accessibilities or different software adoptions, there are other issues such as e-mail invitations that are easily overlooked, forgotten, or deleted compared to other traditional modes such as snail mail

surveys. The authenticity of the survey becomes obvious when it is received through the mail with a postage and envelope compared to the web surveys that are received through email and other forms.

Studies that assessed at the response rates in web surveys generally claim that the nonresponse bias is a bigger issue with web surveys compared to traditional modes. The interesting claim made by Manfreda et al. (2006) is that lower response rate such as 60 percent is more acceptable for web survey than a 75 percent response rates using another mode of surveying. The claim made here assumes that there are acceptable and unacceptable response rate however the reasons given for this argument are not clear. Why should a lower response rate be more acceptable in a web survey or why do we have to reach a higher response rate in using other modes of surveying? The answers to these questions certainly coincide with the motivation behind this study. Furthermore, the same study calls for the attention of survey researchers that the estimated parameters would be lower for web surveys and therefore web surveys have to request more subjects to respond initially in order to compensate for this issue and the further claim is that since the web surveys are cheaper, it is a no brainer to send out a few more requests through email.

On the other hand, the study does not mention one important fact here and that is the coverage error. Even though web survey approaches are likely to contact more people initially, how will that neutralize the coverage error that results from discrepancies mentioned previously such as computer literacy, income, education, and technology access or software incapability among the population that we are interested in surveying? One of the potential contributions of this study is to shed some light on that. The

nonresponse produced by the web mail surveys might not necessarily lead to nonresponse error and even if it does, increasing the sample will not make up for that problem. Thus, the answer to a question like; "what will be the correct mechanism that will produce an accurate sample and responses that is free from error?" is certainly worthy of interest to survey researchers.

In addition, we tend to overlook the fact that most web based surveys are the web translated versions of the traditional measures used in research and that by itself may create major bias for the study in hand (Cole et al., 2006). There is evidence in literature that when certain measures are administered online they will not be the equivalent of the traditional snail mail surveys and this is because the factorial validities of multidimensional measures are sensitive to slight changes or variations when given in web format (Cole et al., 2006).

Studies that reviewed issues related to web survey approaches claim that web surveys cause a coverage error because certain households with income levels lower than $75,000 and specific groups such as, Hispanics and African Americans are much less likely to have internet access. They also are lacking other technological equipment and devices that would enable them to respond to a web survey. This issue produces a problem for the measurement and results in coverage error (Couper, 2000).

Some researchers encourage developing and using web surveys more widely because of cost reasons, however they do not take into account the fact that, this supposedly less costly survey mode might end up being the most expensive method because of the effort and money that might be spent to clean and analyze the data. Further, a study notes that one of the reasons internet surveys present more coverage

error compared to snail mail and fax is because people tend to change their e-mail addresses more frequently than their home addresses (Cobanoglu et al., 2001). Once people move to a new location, there are ways to track them through post office if they leave a forwarding address; with e-mail it is usually not possible to track the individual anymore (Cobanoglu et al., 2001). However, the time spent in preparing the snail mail surveys vs. web surveys is much more labor intensive and it also requires more financial resources. Although web surveys can reach out to many respondents in a matter of minutes and responses may be collected immediately, there are still limitations to it as mentioned before. In comparing fax, snail mail and web surveys, as far as the response rate is concerned, the literature reported the findings as fax being the fastest method, second came the web surveys and not surprisingly the slowest method of all was the snail mail methodology. Comparing the cost structures of these three methods, web surveys cost the least followed by the fax method, which costs a little more than the web and the most expensive of all was the snail mail (Cobanoglu et al., 2001). When response rates are compared; the order was different, mail surveys took the lead for the highest response rate while the fax came second and web mail came third with the lowest response rate of all three.

The findings seem to be consistent in the literature (Kiesler and Sproull, 1986; Parker, 1992; Bachman et al., 1999; Cobanoglu et.al, 2001). In addition, when this comparison was made among different populations such as the educators, there was no significant difference between the response rates between the fax and the snail mail methods. When the population was business people, they seem to view fax to be an easier to respond methodology compared to mail surveys (Dickson and MacLachlan, 1996).

Saying, today fax is outdated and rarely used for survey research. Since the starting of the 2000s the mixed mode designs have become more popular because of researchers trying to find more cost and time efficient methods to conduct survey research (Heerwegh and Loosveldt, 2008). There is a rich literature of response rates regarding the differences between different survey modes such as; web mail to snail mail, web mail to telephone and face to face to web mail surveying. Although not so rich, some other studies have also investigated the data quality among these different methods (Bates, 2001; Kwak and Radler, 2002; Dillman et al., 2001; Fricker et al, 2005; Heerwegh and Loosveldt, 2008).

The effects of different modes in survey research can be based on several different theories. One of these theories is the satisificing theory (Krosnick, 1991). This theory contends that the satisfaction probability has a negative relationship with the effort put into responding either cognitively or otherwise and the motivation of the respondent. Usually the lower the ability and motivation, the higher the probability of satisficing. The more effort required, in other words the higher the level of difficulty, the lower the chances of the respondent's satisficing propensity (Krosnick, 1991). In addition, the ability of multitasking which can be easily done in telephone and web surveys also increase the probability of satisficing since the respondents may be engaged in different activities while responding (Hollbrook et al., 2003). Therefore, the probability of satisficing is higher in web and telephone surveys than it is in face-to-face surveys since the ability to multitasking is much lower, almost close to zero in face-to-face surveys.

The other reason why the probability of satisficing is higher for web surveying is the fact that cognitive demand wanted from the respondents is higher for web surveys compared to face to face surveys (Tourangeau et al., 2000). The "don't know" alternative

availability in web surveys also enhances the probability of satisficing in web surveys. On the other hand, face-face surveys might be more motivating for the respondents because of the presence of nonverbal communication in this mode (Hollbrook et al., 2003). An experiment that looked at the differences of data quality between the face-face and web surveys revealed that, web survey produced more "don't know" responses and higher item non response compared to face-face surveys (Heerwegh and Loosveldt, 2008).

Another comparison case study looked at the differences in response rates among the three survey modes; web, snail mail and in class survey administration. This case study looked at the tobacco related attitudes and behaviors of college students. As a result the web surveys had the lowest response rate (10 percent) followed by snail mail and based on this, it has been recommended to use in class survey administration with a random selection of class since this technique produced the highest response rate of 66 percent (Delores et al., 2005).

Generally, studies have been concerned about the lower response rates produced by web mail surveys compared to snail mail, and therefore recommend the use of incentives, early notifications and increased number of contacts to increase the response rate in general, but also when administering web surveys (Dillman, 2000). One of the major reasons behind this low response rate is the time and effort of research devoted to snail mail in order to develop better techniques is still waiting to be developed for web based surveys (Kaplowitz et al., 2004). On the other hand, reminder post cards, which is a technique developed to increase the response rate in snail mail surveys, also showed a significant effect on web mail (Kaplowitz et al., 2004). Another concern among the

scholars is that these techniques that are widely used to enhance the response rate in snail mail may not be directly transferable to web surveys (Couper, 2000). Some scholars do believe that web mail may be used as an alternative to telephone surveying especially with certain research projects since it has a potential of providing better data quality among certain members of a population (Braunsberger, 2007).

Another form of web surveying is banner ads. Banner ads are advertisements that invite visitors to click the ad so that they can be directed to the web site that contains the survey (Tuten et al., 2000). Some studies have investigated the attractiveness of banner ads and whether the intrinsic or extrinsic appeals would be more effective in getting respondents more motivated about the web survey. The response rate is typically calculated by counting the respondents clicks to the web advertisement and clicking to go to the advertiser's web page. The web page that contains the advertisement may be seen as the cover letter or advance letter that informed the visitor regarding the survey. Although, this method seems to be efficient, the challenge is to persuade the respondent to click on the banner of the targeted web page. This problem may be the cause of nonresponse in banner ad surveys. In order to attract the respondents, the incentives such as animations, cash and non-cash prizes offered seem to be insufficient in increasing the response rate.

Based on the Elaboration Likelihood Model (ELM) model (Petty, 1981), depending on the involvement level, individuals may process information through a central or a peripheral route. People, who are less motivated, will be processing the information through peripheral route and will value extrinsic appeals more than intrinsic ones. The results of an experimental study showed that people who are motivated through

the message content (intrinsic appeal) resulted in higher response rates than people who are motivated through extrinsic rewards such as; prizes, celebrity endorsers, animation and/or other incentives (Tuten et al., 2000).

Another worthy point is that besides all of these mentioned above, cultural and other characteristic differences may be influential in persuading people to respond as well. Other types of animations, such as lighting up or flashing the parts of the ad that the mouse cursor is touching may increase the interactivity and may have a positive impact on increasing the response rate.

Having mentioned the response rate concern among researchers regarding the web survey, there are studies that look at the quality of the responses produced by web surveys. Although web surveys are criticized commonly because of the concern on response rates, one of the advantages of this mode is that it can provide multiple item selection. Check all that apply option is usually available in web surveys and cannot be incorporated in telephone survey methods (Smyth et al., 2006) although forced answer format seems to work better in telephone surveys (Best and Krueger, 2004). When the check all and forced-choice question formats were assessed in an experimental study of web surveys, the results showed that, with forced answer choices respondents spent more time in responding and this option required the respondent to deeply process each question and this format also prevented acquiescence bias and item non response. As a result, the data provided contained less bias. Hence, when switching between self-administered and other survey modes, the researcher should take precaution in switching on the check all and forced answer format (Smyth et al., 2006).

The Human Subject Protection Committee requires that the researchers let subjects know that they can quit or opt out the survey any time at their own will. IRBs in or outside United States see the forced answer questions as the violation of human subject rights unless the "prefer not to answer" or some other option for refusal is provided to the respondent (Deutskens et al., 2004). In addition the literature shows evidence that data quality is affected negatively when there is no opt out option provided and the use of PNA option in forced answering does not change the response content (Deutskens et al., 2004). Even though certain advantages and disadvantages of internet surveys are reported through different studies, it has also been concluded that the effectiveness of each modes of survey depends on context and circumstances (Simsek and Veiga, 2001). The main concern of the researcher should lie behind these facts; reliability and validity of the data collected rather than the quantity of the data collected through the survey methodology.

There are several advantages of web surveys such as cost and media richness when it is administered to the people outside of the organizational boundaries, this method might still be representative of the population when it is done within the organization. However, when it is dealing with general population, the representativeness of the sample might become an issue depending on the demographic and psychographic differences among the members of the population. In this case, sampling frame might become a problem and sampling control becomes desirable for the data quality. Based on the information richness theory, the richer the medium, the richer the information carried through that medium becomes (Daft and Lengel, 1984). The medium that provides immediate feedback includes multiple cues such as; audio, visual and spatial as well as

natural language. According to information richness theory, internet surveys are considered to be richest which may result in impact on the data quality as well as quantity.

At this point, it may be logical to talk about email surveys. There are three different types of e-mail surveys based on the different levels of media richness. The first one of these is the e-mail survey that contains the questionnaire as part of the message and this method has the most issues with the sampling frame because there is no control over who has actually responded (Simsek and Veiga, 2001). The second one is when the survey is attached to an email message and this one might contain some additional information regarding the survey in the message. The third one is the URL embedded in the e-mail survey where the respondents are directed to a web page. This type may be helpful in reaching out to a lot more information through the web site than the traditional method. A series of theories such as; reference group theory, sociak exchange theory, socialization and balance theory, helping behavior theory and cognitive dissonance theory and the tendency to be consistent with prior decisions and behaviors have been used to understand the reasons and willingness of individuals to participate in mail surveys. In the meta-analysis study of Church (1993), the response rate of mail surveys were increased by 12 to 19 percent based on the size of the monetary incentive (Simsek and Veiga, 2001). Unfortunately, web mails have yet to complete the process of evolvement and therefore needs further investigation.

Based on a recent study, Canadian Bureau of Statistics sends out 768 different surveys on a yearly basis (Hoonakker and Carayon, 2009). The study further states the fact that there had been mainly two mediums of survey, either telephone interview or

snail mail surveys. This has continued until the late 1990s and today it is also possible to conduct surveys over the internet. The biggest breakthrough happened with the development of HTML, which enabled the internet to become an interactive channel (Hoonakker and Carayon, 2009). The major concern for researchers has been the representativeness of the data collected via internet. In 1994, the number of people that had internet access was only three million. This number reached to 605 million in 2002, 925 million in 2004 and the latest figures as of 2008, 1.4 billion people have access to the World Wide Web. Another finding that proves the amazing growth of the internet is the number of e-mails sent. While the number of e-mails sent annually had already reached to 100 billion, in 2002, the number had gone up to 5.5 trillion e-mails although spam mails were not included in these figures (Tschabitscher, 2006). As a result, these figures suggest that even a low response rate from internet survey might mean a very large number of individuals; however the sampling frame's accuracy would be doubtful. Other than the disadvantages mentioned previously, internet surveys also have been a problem with the e-mail addresses given by the potential respondents or collected by firms. The undeliverability, anonymity and confidentiality are some of the problems that hinder the reliability and validity of the data collected through internet surveys (Couper, 2000; Couper et al., 2001; Shannon and Bradshaw, 2002). Some studies have reported that one out of five e-mail addresses are either wrong or did not exist anymore (Bachmann et al. 1996; 2000). Some other estimated this figure to be more and reported that number to be one out of every four e-mail addresses were either incorrect or no longer existed (Weible

and Wallace, 1998). Still others reported undeliverability figures to be as high as one out of every two individuals was unreachable due to the problems with the e-mail addresses (Kim et al., 2001).

Although the literature needs further investigation on internet surveying techniques to understand whether or not the techniques developed for snail mail surveys would work on internet surveys, some studies reported these interesting findings. Evidence collected from various manuscripts suggested that some techniques that increase the response rate in mail surveys seem to increase the response rate on web surveys as well. Salience for example seemed to be the predictor of the response rate both in mail and internet surveys (Sheenan and McMillan, 1999).

Understanding the characteristics of the population, the design of the survey depending on the target population, sponsorship, pre-notification, the subject part of the e-mail survey, the time interval between reminder e-mails, behavioral predictors or psychometric variables were some factors that also had importance for web surveys as well as snail mail surveys (Buchanan and Smith, 1999; Couper et al, 2001; Tuten, 1997; Woodall, 1998; Lozar et al, 2002; Mehta and Sivadas, 1995; Vehovar et al., 2002; Cook et al, 2000; Coomber,1997). Pew Internet and American Life Project Study results reveal that the after effects of the CAN/SPAM act of January1, 2004, 60 percent of the employees receive ten or fewer e-mails daily, 23 percent receive more than 20, and only six percent receive more than 50 (Hoonakker and Carayon,2009). These figures show that many messages get lost among the amazing amount of information received daily, and

literature is in need of theoretical explanation. For instance, signal detection theory might be useful in explaining how survey messages can be made more appealing to people when they have many other messages waiting on their screen (Green and Swets, 1966).

In marketing literature, not many theories of survey research have been applied to web surveying (Hoonakker and Carayon, 2009). Looking at the few examples, one study has investigated the prediction and willingness to participate in a survey by applying the theory of planned behavior (Ajzen, 1991). Theory of planned behavior posits that, a behavior is performed or not performed based on the individual's intention to perform. This intention is impacted by three variables; individual's belief regarding the consequences of the action in question, the subjective form or the outside pressure to whether the action is going to be performed or not and third component is control beliefs which can be explained as the individuals perception of the task's easiness and whether the individual believes to have the ability required to perform the action in question. An addition to the theory of planned behavior is the theory of moral obligation. According to this theory, the level of moral obligation the individual feels would also influence the willingness to participate in a survey (Hoonakker and Carayon, 2009; Heerwegh and Loosveldt, 2009).

Some recent studies contend that web surveys are able to produce higher response rates than the traditional snail mail surveys. However, most fail to judge the quality of the data produced by the web surveys since the overall concentration of the researchers is on the response rate rather than the response quality. Some evidence suggested that electronic mail is also perceived as more urgent compared to postal mail and therefore may lead to faster response and higher response rate (Sheehan and McMillan, 1999;

Griffis et.al, 2003). Schaefer and Dillman (1998) have used three criteria in comparing the different e-mail survey treatments: response rate, data quality and data which is operationalized as the item nonresponse, length of response for open-ended questions and the speed of response. The results revealed that the overall response rate was 55.1 percent. The response rate for group (1) that received the standard e-mail approach produced 57.5 percent response rate, while group (2) that received all e-mail contacts when possible or paper when e-mail could not be sent, had a response rate of 58 percent. The group (3) that received the paper notice had a much lower response rate, 48.2 percent. The final group (4) that received a paper reminder had a response rate of 54.4 percent and although it was lower than the first group, it was not significantly different from groups one and two. The other group that received only paper survey at their request produced a response rate of 58.6 percent.

As far as the response quality, the e-mail version obtained more completed questionnaires. The further analysis revealed that 69.4 percent of the respondents answering to the e-mail version completed 95 percent of the questionnaires. Also, 56.6 percent of the respondents responding to the paper version completed the 95 percent of the questionnaires. The response time was calculated as the average time the respondent took to send a completed questionnaire back. The results showed that from the day the questionnaires were received, it took the e-mail group 9.16 days and the paper group 14.39 days to respond. However, the literature still lacks studies that investigate the quality of data in more depth rather than the response rate concerns. One of the few studies that looked at the data quality in electronic surveys had based the study on the G-theory framework (Deutskens et al., 2006). In this study, theory is used the compare the

online and offline surveys across countries using an adapted SERVQUAL scale. In total, 10,506 questionnaires were sent out and the usable questionnaires returned per country were as follows; US offline was 16.58 percent; online was 28.47 percent; U.K offline was 16.74 percent; online was 26.60 percent and the overall response rate out of the total number of completed returned questionnaires was 18.63 percent. One of the major findings of the study showed that as internet has become more popular, the problems such as the difference in perception of people between the online and paper surveys, computer anxiety or privacy concerns are reduced a great deal and therefore the results started showing no significance differences between the two methods (Cobanoglu et al., 2001; Knapp and Kirk, 2003; Deutskens et al., 2006). Therefore, the results of the study reported evidence of online surveys reliability and generalizability based on the generalizability theory (G-Theory) which states generalizing the observations of a given condition to a different set of conditions. Other studies claim that web surveys also reduce the acquiescence, social responsibility and extreme response biases (Miller, 2006).

Some other studies rely on common sense theory regarding the internet design choices in web survey (Albaum et al., 2010). While common sense theory is not a real theory, is used to explain situations where a previously established theory cannot be applied to explain it (Albaum et al., 2010). Another study regarding web mail has investigated the future willingness to respond to an electronic survey depends on the satisfaction level of the respondent with the current one (Thompson et al., 2003; Thompson and Surface, 2007). In recent years, data collection method through internet has become widely popular due to the obvious reasons. Several online sources have been popular in collecting experimental data. One of the most recent ones is Mechanical Turk,

which is a relatively new service that started in 2005 and happens to be the source of subjects for experimental research. Researchers have been debating on the quality of the data collected through such sources due to sample representativeness and the accuracy of respondents. Table 2.1 shows the tradeoffs of different recruiting methods of web surveys (Paolacci et al., 2010).

Table 2.1

Recruiting Methods of Web Surveys

	Laboratory	Traditional web study	Web study with purpose built website	Mechanical Turk
Susceptibility to coverage error	High	Moderate	Moderate	Low
Heterogeneity of samples across labs	Moderate	High	High	Low
Non-response error	Low	High	High	Moderate
Subject Motivation	Moderate/ High	Low	Low	Low
Risk of Multiple responses by one person	None	Moderate	Moderate	Low
Risk of contaminated subject pool	Moderate	High	Moderate	Low
Risk of dishonest responses	Moderate	Low	Low	Low
Risk of experimenter effects	Low	None	None	None

In this part of the literature review, the aim was to cover the literature about web surveys as thoroughly as possible.

Face to Face Surveying

Sample surveying has evolved from being a face to face conversation to a very impersonal experience with increasing frequency. Starting from the 1960s, a lot has changed as far as respondent involvement and control over the survey process. During this time period, there was basically one acceptable mode of surveying, which was in-person interviews, and telephone and mail modes were occasionally used. Towards 1980s it has become evident that responses similar to face to face interviews could be obtained via telephone conversations and a high response rate can be achieved with the other as well. Another breakthrough, during these time periods was the availability of electronic typewriters and better printing methods. This breakthrough allowed surveyors to send out multiple surveys at once. Therefore during those times, it has become possible for smaller organizations with limited resources to be able to conduct surveys in multiple locations. In the 1980s, the three modes of surveying have shared the responsibility of conducting sample surveys (Dillman, 2009). The first scientific face to face survey was conducted by Sir Arthur Bowles and took place in 1912 when he decided to analyze the working- class conditions in five British cities (De Leeuw, 2005). A sample was drawn among the citizens and a structured interview schedule was also used in the study.

Face to face survey can be considered as one of the oldest but the most expensive surveying methodologies. During the 50s and 60s, face to face interviewing has been pretty much the standard mode for survey research, however telephone came right after in the 70s and have become a more popular method (De Leeuw, 2005). Studies that compared telephone interviewing to face to face interviewing have found slight differences in data quality. In these comparison studies the results revealed that there

were no differences between these two modes regarding social desirability bias and response validity (De Leeuw 1992; De Leeuw and Van der Zouwen 1988). The interviewer effect in face to face surveying is inevitable and therefore this mode will be most useful for sensitive topics. Having said that, one other advantage of a face to face survey is more detailed answers to open questions can be achieved through face to face technique.

When the technology usage is introduced to survey research, CASI (Computer Assisted Self Interviewing) quickly became popular especially when sensitive questions were part of the survey design. The interviewer handed over the computer to the respondent when a sensitive question was asked and stood a fair distance away so that the respondent would feel comfortable enough to answer.

As far as the data collection performance among different modes of survey modes with sensitive questions, self-administered surveys would almost always perform better than the face to face interviews (De Leeuw, 1992). However, face to face surveys will always be used in survey research as one of the oldest surveying techniques that will work well under certain circumstances. One of these circumstances is during the prescreening phase of a longitudinal study, when there is no other contact information other than the addresses, then, despite the cost associated, face to face surveying will become the only available option for the researcher. Another situation that might force the researcher to use the face to face technique is when a health study is conducted where certain medical tests should be administered to the sample and there is no other way of doing it. In addition to these, international studies, countries with low literacy rate, no

technology availability would also leave no chance for other survey designs than face to face interviewing of respondents to conduct the study in that particular country (Skjak and Harkness, 2003).

In most cases though, the least expensive mode will be used as the main surveying technique in a study then, the second or even a third mode will be used in follow up studies and this multi-mode technique has proven to produce response rates as high as the face to face technique in a much more cost effective way (Dillman, Phelps, Tortora, Swift, Kohrell, and Berck, 2005). This technique is referred as the sequential mode surveying or mixed mode surveying and it has been found to be effective in reducing non response however potentially it might introduce measurement error because of the different modes used in a particular study. However, mixed mode also presents an important fact that face to face surveying will not be completely out dated. Face to face interviewing might be an appropriate follow up or prescreening technique used in a study combined with telephone interviews.

Mail Surveys

Mail surveying is the oldest surveying mode used in survey research. The oldest mail survey dates back to 1788. Sir John Sinclair sent out questionnaires to the ministers of the Church of Scotland. After 23 reminders were sent out, a 100 percent response rate was achieved (De Leeuw, 2005). Today, it is even harder to dream of a 100 percent response rate; although mail surveying is still viewed as a credible and a reliable mode of survey research. Compared to the other modes of survey, such as telephone, face to face and mail surveys, were believed to be more valid because the respondent has the convenience of checking information and consulting others (Kanuk and Berenson, 1975).

Researchers were concerned about the response quality and measurement error back in 1970s and so they investigated the inducement techniques such as the content of the cover letter, the name of the survey sponsor and the type of return postage whether the postage is regular first class mail, commemorative stamp or business reply postage that impacted response rates (Jones and Linda, 1978). Before Jones and Linda (1978), there was only one published paper that looked at the impact of postage envelopes and it reported that the postage envelope did not affect the response rate or introduced bias to the survey. This fact reveals that survey researchers can use the cost efficient postage stamp without having to sacrifice from the response rate or potential bias. It is interesting to note that this study was mostly concerned about the data quality rather than the response rate although it was conducted back in the late 70s.

Today, most of the studies are worried about increasing the response rate through various methods and yet not as much worried about the quality of the data. This above mentioned study looked at the manipulations in a cover letter that was attached to a six page questionnaire. It has been predicted that the cover letter that was manipulated with the emphasis to benefit science would enhance the response rate compared to the ones that are repeated to benefit the sponsor.

In addition, the different sponsorships such as university, government and private firm would have different impacts. In other words congruous sponsorships (science benefit with university sponsorship) would have a more positive effect on both response rate and response quality than incongruous sponsorships (science benefit with private or

government is incongruous). In the study the results of the type of message, sponsorship and return postage stamp manipulations revealed the following changes in the response rates as shown in Table 2.2 (Jones and Linda, 1978).

Table 2.2

Response Rate Change

Message		Sponsor		Return Postage	
Science	31.0	J&L	24.7	Commemorative	30.9
User	31.0	University	34.7	Regular	32.7
Resort Park	26.3	Govt. agency	29.0	Business Reply	24.8

One interesting study pointed out the fact that, when the survey sponsor is revealed in the cover letter, this situation might contribute to a major sample composition bias. The results of the study revealed that the acquaintances of faculty members were twice as likely to respond to the questionnaire as the non-acquaintances which may create a major bias (Hyman, 2000).

The literature explains the general concern of the researchers regarding response rates with the logic that is still found to be valid in most studies today; the greater the response rate, the better it will estimate the parameters of the sample population (Kanuk and Berenson, 1975). In addition, same methods used to increase the response rate has been classified into two categories: timing (preliminary, concurrent, follow-up) and technique (questionnaire size and length, sponsorship, return envelope and postage stamps, personalization of letter, method of reproduction, format, layout, color, anonymity, incentives and deadline). The effects of several inducement techniques to

response rates such as preliminary notification, follow-up efforts, questionnaire length variations, postage and mailing classes, effects of personalization and anonymity, influence of size, reproduction, lay out and color, influence of monetary or equivalent rewards and the effects of increases in these reward systems have been investigated in the literature (Kanuk and Berenson, 1975).

Some researchers also investigated to determine the socio demographic and personality variable factors on mail survey response rate. The evidence found in these studies was consistent for the most part (Rogelberg et al., 2003). Education being the most significant effect on respondents and it has been repeatedly reported that the respondents had a higher education level and socio economic status than the nonrespondents (Kanuk and Berenson, 1975; Green, 1996; Hoonakker and Carayon, 2009; Heberlein and Baumgartner, 1978; Rogelberg et al., 2003; Clausen and Ford, 1947; Vincent, 1964; Wallace, 1954).

The survey non response is also investigated from a psychological processes and various theories have been looked at in order to understand the respondent's decision making process of not participating the survey. Social exchange theory (Blau, 1964), cognitive dissonance theory (Festinger; 1954, 1957), self-perception theory (Bern, 1972), the theory of commitment and involvement (Morgan and Hunt; 1994), theory of reasoned action and theory of planned behavior (Ajzen, 1991) and the elaboration likelihood model (Petty and Caciopa,1986) are some of the theoretical reasoning given regarding the mail survey respondent behavior predictions.

Social Exchange Theory and Monetary Incentives

Social Exchange Theory (Blau, 1964) posits that social structures will be developed based on exchanges among individuals or institutions. Based on this the monetary incentives given to respondents to motivate and create a valuable social structure for both parties, in this case the surveyor and the respondent. Various studies in the literature have investigated the impact of monetary and nonmonetary incentives given and how these incentives increased the response rate (Church, 1991; Armstrong and Overton, 1975; Kanuk and Berenson, 1975; Linsky, 1975; Scott, 1961; Mc Daniel and Rao, 1980). Studies showed that monetary rewards also decrease the item omission which translates into higher response quality (Mc Daniel and Rao, 1980). Many studies have also produced results that increased response rates only slightly due to a monetary reward given, unless the reward is directly mailed with the questionnaire (Armstrong, 1975; Blumberg et al., 1974; Kanuk and Berenson, 1975; Linsky, 1975; Wortruba, 1966). However, only a few have looked at the quality of the responses based on these extrinsic motivational factors.

Pseudoaltruism can be defined as a form motivation that suggests that rewards may be internal rather than external such as self-esteem, reduced guilt etc. People, who are looking to benefit others and get internal rather than material rewards, are more likely to perform behaviors that will be consistent with their internal values. These people will be more likely to respond to surveys that they believe will benefit others because these will be perceived to possess a higher value for these individuals. The consistent finding in the literature is that surveys that offered some kind of incentive have produced higher response rates than the ones that did not.

There have been studies that have investigated the increase in response rates when a promise to participate an incentive is offered (Robertson and Bellenger, 1978; 1982).Some researchers claimed that, promise to donate to a charity where respondents choose from a list of various charitable organizations, seemed to increase the altruistic appeal and maybe more effective than a cash incentive of the same value to increase response rate (Robertson and Bellenger, 1978; 1982; Furse and Stewart, 1982).

Dissonance Theory

Dissonance Theory has been suggested to be useful to explain the respondent behavior and response rate since the respondents who opens a mail that has a monetary incentive might feel forceful to respond and return the questionnaire but also go through dissonance (Furse and Stewart, 1981). Since individuals will respond to dissonance in different ways, some will still take the incentive and not return the questionnaire. Lower socio economic class is suggested to be more responsive to a promised incentive rather than the monetary incentive included with the questionnaire where as the opposite seems to be more valid for higher socio economic class. Interestingly the amount of the reward also does not seem to matter for the respondent, even a small amount of a cash incentive may end up contributing a great deal to the increase in response rate.

Self-Perception Theory

Self-perception theory can simply be explained as the individual's way of understanding their internal states such as emotions, attitudes based on the observations of themselves (Bern, 1972). Self-perception theory helps to explain the respondents desire to respond in order to reach some intrinsic reward or to reach to a state where the

respondent will perceive himself/herself to be useful and consistent with the perceived self. In order to get the respondent to develop such positive attitudes towards the survey, there needs to be intrinsic rewards offered such as benefiting the humanity, community, science or emphasizing the value of the individual's opinions. These rewards may be given by putting on the cover letter of the survey to motivate the respondent and emphasize the importance and value of their answers to the study.

Theory of Commitment and Involvement

In order to explain how to relate the theory of involvement and commitment to survey research, we should look at the consumer involvement process. Consumers tend to be more motivated to develop attitudes and or behaviors with products that are related to the consumer's life or values and culture (Lawrence et.al, 2003). When we turn back to survey research, research topics that are more related to consumer's life style, culture and values will increase the involvement level thus will produce a certain commitment level. Which can be explained as increased participation and it may even result in repetitive participation once an enduring commitment is achieved.

Theory of Planned Behavior

Theory of planned behavior may be explained as person's behavior is a result of a set of beliefs connected to this behavior (Ajzen, 1991; Heerwegh and Loosveldt, 2009). These beliefs mentioned in theory of planned behavior has three dimensions; attitude toward the behavior, subjective norm and perceived behavioral control. The belief regarding a certain behavior links that behavior to a certain outcome or to some other attribute of the behavior (Ajzen, 1991, p.191). While negative attributes or outcomes

perceived is believed to lead to a negative attitude toward that behavior, the positive attributes or outcomes perceived toward that behavior lead to positive attitude toward the behavior (Heerwegh and Loosveldt, 2009). The subjective norm is based on normative beliefs and these reflect the person's perception of important reference individuals or group's approval or disapproval of a particular behavior (Ajzen, 1991; 195).

Based on this explanation, mail surveys that include a cover letter or any information that will likely to motivate individuals by convincing them the positive outcomes of responding to the survey and that individuals will receive approval by groups or individuals of value to the respondent will be more likely to develop positive attitudes toward responding than not responding. This is more likely to work on educated and higher socio-economic class respondents because of the intrinsic motivation factors included in the cover letter. If the target population where the sample is drawn consists of individuals from a lower socio-economic background, more extrinsic motivational factors should be used such as the monetary incentives upon completion of the survey.

The other factor is the person's belief of the level of easiness of the survey. The easier the respondent believes it would be to perform the behavior the more likely they will perform/ respond (Heerwegh and Loosveldt, 2009). One interesting conclusion drawn by the researchers is that the attitude towards a survey has a significant path to intention. In other words, the intention to respond to survey depends on the attitude toward that specific survey not on overall intention to respond to surveys in general (Hox et al., 1995, p.61). Another study added a factor called moral obligation in this context and the result showed that moral obligation factor will also increase the intention to perform the behavior which in this case to respond to the survey (Bosnjak et al., 2005).

Elaboration Likelihood Model

Most studies in the literature have focused on the stimulus driven factors and only a few looked at the individual differences factors that impact the response behavior and the involvement level of the individual regarding the survey topic (Van Kenhove, 2002). The elaboration likelihood model of persuasion (Petty and Cacioppo, 1986), in other words the information processing model well known in the marketing literature may be considered a reasonable explanation to survey response behavior.

Studies investigated the conditions of low elaboration and high elaboration conditions and the results showed that the processing of information will be through the peripheral route and when there are conditions of low elaboration and the processing of information will be through the central route when the high elaboration conditions are present. Examples of such situations are sponsorship credibility, sympathy with the source (Petty, Cacioppo and Schumann, 1983) and pictures included in the questionnaire or fancy design (Miniard et.al, 1991; Van Kenhove et al., 2002). Industrial Market Research Association (IMRA) reported that topic of interest is the most important factor in postal mail that influences the respondent's decision to respond. While researchers seem to have a consensus on the impact of topic of interest on response rate, the speed of response was not found significant when the topic of the study was of interest to the respondent. Response bias was also more likely to be present due to the different topic of interest of various individuals (Van Kehove et al., 2002).

**Effects of Socio-Demographic Factors in Mail Survey
Response Rate and Quality**

Education

Some studies suggested that altruistic appeals did help with more educated respondents, especially when used in the cover letter (Houston and Nevin, 1977; Champion and Sear, 1969). By 1996, the widely held belief among surveyors confirmed with 20 studies that respondents come from more educated groups than the nonrespondents in mail surveys (Green, 1996). The education level of the respondents increased as the response rate increased. Having said that, some findings suggested that effects of education beyond college is ambiguous (Green, 1996). In addition, some studies reported that the use of incentive did not have any impact on the speed or quality of the returned surveys (Robertson and Bellenger, 1982; Green, 1991; Wellman et al., 1980). Others reported that higher education groups responded more quickly than the lower educated ones (Baur, 1947; Dalecki et al., 1988; Donald, 1960, Finn et al., 1983). The other findings in the literature also supported that intelligence and achievement higher income and employment status (employed/ unemployed) are positively related to response rate and early response as well as response quality (Rosenthal and Rosnow, 1975; Pavalko and Lutterman, 1973; Jones, 1979; Dalecki et al., 1988; Downs and Kerr, 1986).

Age

Age is another factor known to impact the response rate and studies report that there is a negative relationship between the response rate and age (Finn et al, 1983). In other words, as age increases, response rate and response quality decreases. Some other

studies reported that there was no significant relationship between age and response rate (Wellman et al., 1980) and while other suggested a positive relationship (Dalecki et al., 1988).

As far as data quality, item completion rates are also found to be higher with younger respondents (Downs and Kerr, 1986). Reliability has been found to decline as the age increased, however the decline was not significant (Sobell et al., 1989). For example in a study where the respondents were asked to report their diet habits, there was no significant effect on the correlation of reported past diet and the diet history reported prior to that (Sobell et al., 1989). Other studies reported the quality of the responses especially with certain item formats such as ranking items (Kaldenberg et al., 1994). Researchers that investigated the techniques in order to cope with lower quality responses and found that simplifying questions, repetition of questions in different formats, explicit instructions, a statement that checks the completeness of the survey and incentives offered may help with older respondents (Craig and McCann, 1978).

Gender

The effects of gender in response rate reports that, women tend to respond more than men and they tend to respond promptly. According to some researchers the gender effects on response speed seem to be insignificant (Newman, 1962). Although some studies reported insignificant results on gender effects, some others reported that women were found to give more accurate responses compared to men (Taylor, 1976).

Marital Status

Some researchers in the field looked at the effect of marital status in mail survey response rate and reported that married people tend to respond at a higher rate than single

people (Gannon et al., 1971). Some other suggested that there was no significant difference on the response rate of married vs. single respondents (Gannon et al., 1971). A few researchers claimed that once the single respondents can be contacted they are as cooperative as the married people and they claim that the difference comes from failure to contact the single (Hawkins, 1975; Goyder, 1987).

Ethnicity/ Race

Various researchers have investigated and compared the response rates on different races. Some reported that response rates for Anglo teachers were by 12 percent more than the response rates for Hispanic teachers (Green et al., 1993). In addition, response rate and item completion rates for whites were found to be higher than non-whites (Downs and Kerr, 1986). One issue that warrants attention is that ethnicity/race might possibly interact with other socio demographic variables such as, income, education etc. and therefore to look at only the main effect may result in misleading conclusions to be drawn.

Religion

There have been few studies that examined the effect of religion on response rate. The results showed that Protestants seem to produce higher response rates than Catholics. Further, Jewish tend to have higher response rates than Christians (Suchman, 1962; Rosenthal and Rosnow, 1975).

Community Size/ Geographical Region

The findings regarding the effect of community size and geographical region have been inconsistent in the literature while some studies claimed that size of the county was unrelated to response rate when the level of urbanization had both negative and positive

effects (Dillman et al. 1974; Dillman, 1972). When response rates were compared among different regions of the United States, Central United States region produced higher response rates compared to the West and the West produced higher response rates compared to the East (Franzen and Lazarsfeld, 1945).

So far, I covered different modes of survey research, theories related to these methods and some socioeconomic factors. Definitions of survey response rate, survey bias, and specification of the research questions to be tested in further analysis are also addressed.

Survey Response Rate and Survey Bias

What is Response Rate?

In simplest terms, response rate is calculated by dividing the number of surveys returned or number of participants responded by the total number of initial surveys sent (Zikmund, Babin, Carr and Griffin, 2010). Looking at the literature, we can find several different ways of calculating response rates. Groves and Lyber (1988:195) report that since there are so many ways of calculating response rates, it becomes challenging to make comparisons between studies that adopted survey research. Shih and Fan (2008) recommend the use of minimum response rate (RR1) as one way to calculate survey response rate. RR1 is calculated by taking the number of completed surveys, partially completed surveys, refusals and break-offs, non-contact and the number of others/unknown into consideration.

Dillman et al.'s (2009:56) calculation of completed sample size needed for the desired level of precision can be mentioned here. According to Dillman and his colleagues, the calculation is as follows:

$$N_s = \frac{(N_p)(p)(1-p)}{(N_p - 1)\left(\frac{B}{C}\right)^2 + (p)(1-p)}$$

Where N_s is the completed sample size needed for the desired level of precision, p is the proportion of the population expected to choose one of the two response categories (50 percent is the most conservative when there are two response categories like yes or no), B is the margin of error, C is the Z score associated with the confidence level and finally N_p is the size of the population. According to this method, the sample size around 1,000 is enough to represent any population size greater than 40,000; even for one billion (see Dillman et al., 2009: 57).

In other words, according to Dillman et al. (2009), as long as the sample is representative of the population, which is the case when the sample size and content reaches a certain point, there is no need to worry about the response rate. Saying that, the question remains: "why are we worried about response rate?" The answer to that is simple. The reason why researchers are so much worried about response rate is, with low response rates there comes multiple problems such as lower statistical power and biased quantitative results (Van Horn et al., 2008; Thompson et al., 2011). That is why some authors consider response rate to be the sole indicator of the quality of a survey (Hox and DeLeeuw, 1994) and measure of equivalency between studies (Kaplowitz, Hadlock and Levine, 2004).

We have to remember the five premises of Dillman et al. (2009:58-61) at this point:

"Premise 1: Relatively few completed questionnaires can provide surprising precision at   a high level of confidence.

Premise 2: Among large populations there is virtually no difference in the completed sample size needed for a given level of precision.

Premise 3: Within small populations, greater proportions of the population need to be surveyed (i.e., completed) to achieve estimates within a given margin of error.

Premise 4: At higher levels of sample size, increases in sample size yield smaller and smaller reductions in the margin of error.

Premise 5: Completed sample sizes must be much larger if one wants to make precise estimates for subgroups of populations."

Looking at the above premises, it makes sense to propose that survey response rate is not a quality indicator as long as sampling is done properly. For instance, if a researcher sends out 100,000 surveys and only receives usable responses from 1,000, which corresponds to one percent response rate, as long as the sampling is done properly, the results are highly representative of the population. In other words, response rate is not as important as concepts like response error and response bias.

Response Error and Response Bias

One of the most popular survey error models used in Marketing is that of Zikmund, Ward, Lowe, Hume and Babin (2011). This model is depicted in Figure 1. According to these authors, total error is composed of two main components. The first component is the random sampling error. Although the researcher attempts to select a

highly representative sample and adopts all the best practices of sampling, there is still some error present in the data collected because of the chance of variations in the elements selected for a sample (Zikmund et al., 2011:126). In other words, no matter how well the researcher chooses the sample, conducts the research and collects the data there is some amount of random portion of error that one cannot account for. The best way to minimize the random component is to increase the sample size, which means if higher response rate results in larger sample sizes, the random component of the error is minimized.

The second component is systematic error. It results from errors due to research design or how the research is conducted. Since all the random error is included in the definition of random sampling error, this type of error is also called nonsampling error. Under systematic error, Zikmund et al. (2011) mention two subcategories of error. The first one is administrative error, which represents the error due to "improper administration or execution of the research task" (Zikmund et al., 2011: 132). Concepts like data processing error, interviewer error, interviewer cheating, and sample selection error are all included under the subtitle of administrative error. The second subtitle under systematic error is respondent error, assuming that the data is processed properly, the interviewer did not make any mistakes, did not cheat, and appropriately executed the sample selection.

Respondent error is one of the most important, yet neglected parts of systematic error. This type of error is considered to be a sample bias resulting from either response bias or nonresponse bias. A different way of defining respondent error is: it is not how respondents answer the questions but it also about which respondents failed to answer the

questions. This type of error is what I believe to be more important than survey response rate. I contend that, if the researcher did his or her job by minimizing nonresponse error and response bias then the pure percentages reported as survey response rate may lose their priorities.

Some researchers also classify nonrespondents into two categories; one passive and the other active nonrespondents. Passive nonrespondents are known to be the individuals who forgot or lost the survey and therefore did not respond but may have otherwise intended to respond. Active respondents are the ones who make a conscious decision of not to respond which means they are less agreeable individuals (Thompson et al., 2011; Rogelberg et al., 2003). Active nonrespondents are also the ones who have a general negative attitude toward the survey sponsor (Rogelberg et al., 2003). Other studies have noted that respondent behavior is one of the important determinants of data quality. Therefore, the survey value to the respondent was found to be related to item response rates, paying attention to follow directions and being participative to future survey research, which in return impacts the data quality and quantity at the same time (Rogelberg et al., 2001). Figure 2.1 outlines the categories of survey errors (Zikmund et al., 2011: 127).

First of all what is nonresponse error? "The statistical differences between a survey that includes only those who responded and a perfect survey (that would include those who failed to respond) are referred to as nonresponse error" (Zikmund et al., 2011: 128). If this difference is statistically significant that means the responses are biased and not valid (not representative of the population). Even with an extremely high response rate, because of nonresponse error, results may be statistically inappropriate.
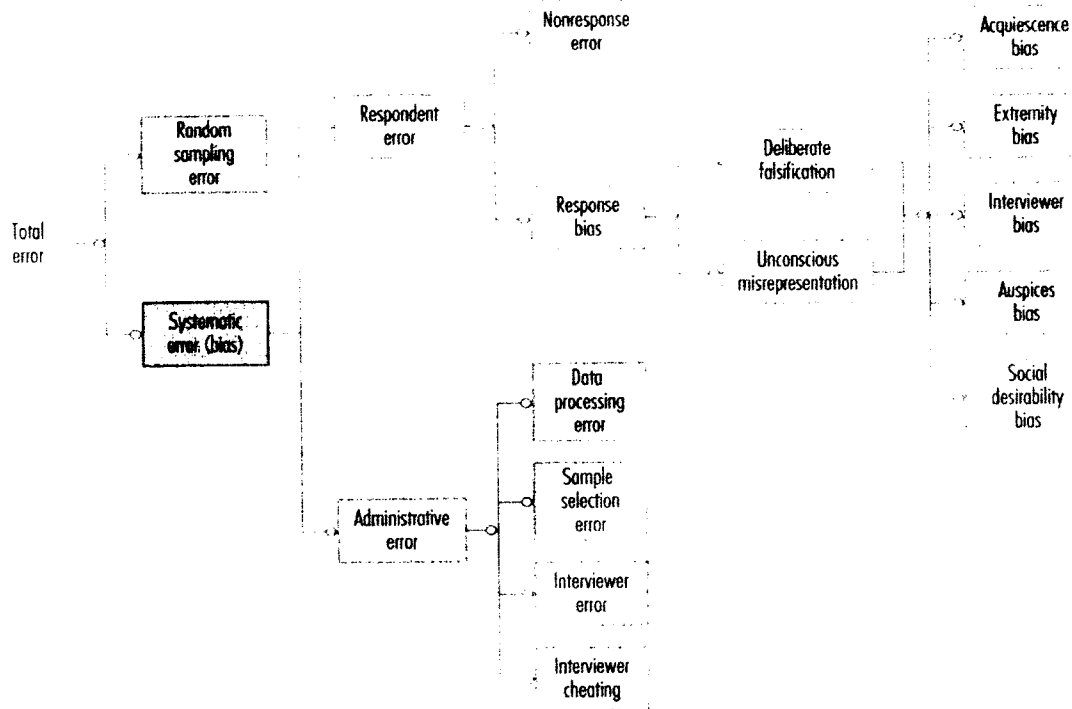
Figure 2.1 *Categories of Survey Errors*

Concepts like no contacts, refusals, and self-selection bias are all described as part of nonresponse error. What about response bias? This happens when respondents, consciously or unconsciously, answer questions in a certain way that yields to biased results. Concepts like acquiescence bias (respondents agree with all the questions), extremity bias (respondents use extremes when responding to questions), interviewer bias (the presence of interviewer biases the answers) and social desirability bias (respondents desire to gain prestige or acceptance by the society) are all described as part of response bias. This means, even with high response rate, due to the way respondents answer the questions, researcher may end up with biased results.

In summary, survey response rate is just one of the ways to lower systematic error, either through minimizing nonresponse error or response bias. It is obvious that researchers cannot control the random portion of survey error. The best they can do is to

account for it. However, there are various ways to minimize the systematic component of error. Our concentration should be on those ways. It is true that we should be concerned about survey response rate. Yet, we should primarily be concerned about minimizing respondent error.

Selection and Analysis of Articles for the Pilot Study

In order to assess the emphasis put on response rates, I decided to analyze articles published in two top-tier journals of marketing. *Journal of Marketing (JM)* and *Journal of Academy of Marketing Science (JAMS)* have the reputation of publishing high quality articles. One other reason I chose to concentrate on these two journals is that both of these journals primarily publish empirical pieces rather that conceptual papers. Due to time constraints, I included the issues published during the last three years (2007, 2008 and 2009). Using ABI-Inform I downloaded all the articles in each issue and searched for the key words response rate and survey response. Out of the ones that included these key words, I eliminated the studies that made use of online panels, online websites like Qualtrix or Zoomerang, e-mail surveys and telephone interviews. Thus, the final sample of studies includes those that used mail survey as the data collection methods. The reason I concentrated on mail surveys at the time being is to account for the differences in response rates between mail and internet surveys (Kaplowitz et al., 2004). Besides, literature reports that mail survey research reports equal or even higher response rates compared to internet based studies (James, Chen & Sheu, 2005; Ritter et al., 2004). Considering that, I believe concentrating solely on mail survey serves the purpose of the study.

Using the methods I mentioned, I was able to identify 53 articles published in *Journal of Marketing* and *Journal of Academy of Marketing Science* that made use of mail surveys during the last three years. I recorded three different variables from these articles. First, I recorded the reported response rate for *JM* and *JAMS* articles. Second, the reported sample size (N) was recorded. Third, the number of initial surveys sent was recorded to assess the effort authors put forth to increase the sample size.

Results of the Pilot Study

The results of the analyses are reported in Table 2.3. Out of the 53 articles I was able to identify, 28 were published in JM and 25 were published in *JAMS*. The distribution of the number of articles published over the three-year period is reported in Table 2.3. The top portion of Table 2.3, titled "response rate" shows that in year 2007, the average response rate for *JM* articles was 35.2 percent and average response rate for *JAMS* articles was 34.5 percent. For the year 2008, the corresponding values were 46.3 percent for *JM* articles and 43.6 percent for *JAMS* articles. Finally, for the year 2009, the *JM* average response rate for mail surveys is 51.6 percent and for *JAMS* articles, that same rate was 0.4286. The results for sample size values are also worthy of noting. The average sample size for *JM* articles was 3,503, 670 and 627 for the years 2007, 2008 and 2009 respectively. Looking at *JAMS* articles, the average sample size was 319 for 2007, 387 for 2008 and 277 for 2009. The average sample size values of the all three years were 1,573 and 329 for *JM* and *JAMS* articles respectively. Furthermore, the average number of initial surveys sent for *JM* articles in 2007 came out to be 14,252. That same number

was 2,537 in 2008 and 2,092 in 2009. Turning to *JAMS* articles, the average number of initial surveys sent was 1,155 among the articles published in 2007, 1,102 in 2008 and 797 in 2009.

Table 2.3

Response Rate

	2007 Average	2008 Average	2009 Average	Overall Average
JM	0.3518	0.4626	0.5160	0.4353
JAMS	0.3455	0.4363	0.4286	0.3876
Combined	0.3481	0.4538	0.4723	0.4134

Number of articles that used mail survey				
	2007	2008	2009	Total
JM	9	14	5	28
JAMS	13	7	5	25
Combined	22	21	10	53

N				
	2007 Average	2008 Average	2009 Average	Overall Average
JM	3,503	670	627	1,573
JAMS	319	387	277	329
Combined	1,622	576	452	986

Initial mail surveys sent				
	2007 Average	2008 Average	2009 Average	Overall Average
JM	14,252	2,537	2,092	6,223
JAMS	1,155	1,102	797	1,068
Combined	6,513	2,059	1,444	3,792

Research Questions

In the previous section, I reported the findings in literature about the different modes of survey research, related theories and the survey research related concepts such as response bias, response rate and response error. Building on top of that literature review, in this section, I will specify my research questions.

General Research Questions

The general questions asked in this study are discussed in this section.

- Research Question 1: Do marketing researchers separate the concepts of response rate from response bias?

- Research Question 2: How exactly should data quality be measured? Is it about sample representativeness, minimizing non-response error or just solely increasing the response rate?

- Research Question 3: What are researchers doing to assess and minimize response bias?

- Research Question 4: Do the additional efforts put forth by survey researchers, such as reminder letter and incentives, for the purpose of increasing survey response rate affect additional sampling bias?

- Research Question 5: Are the common techniques used by survey researchers to increase response rate equally effective?

Based on these research questions several hypotheses are developed. It should be noted that my purpose in this study is to contribute to the ways social science researchers conduct survey studies rather than taking a position and refuting the status quo. The following hypotheses are developed for this purpose.

Research question one asks whether researchers are aware of the fact that response bias and response rate are two different concepts and whether they should be concerned more about response bias rather than response rate. As mentioned in the literature review section, survey response rates have fallen during the past decades (De Leeuw and De Heer, 2002) while researchers are urged to maximize them by any means (Japec et al., 2000). Saying that, pioneer researchers of the field consider a threshold point of a sample size to be sufficient in representing any size of population (Dillman, 1978) while some propose that there is none or little correlation between response rates and response bias (Keeter et al., 2000; Groves, 2006). Furthermore, some researchers concentrated more on the nonresponse side (Bicker and Schmittlein, 1999; Werner, Praxedes and Kim, 2007; Fricker and Tourangeau, 2010).

What is obvious is researchers from different fields are very much concerned about increasing the response rate. I believe that the members of the academia, at least in marketing, have a general belief about response rate to be the sole indicator of data quality. A theoretical base for this can be found in the work of DiMaggio and Powel (1983). In that study, the authors talk about three different types of isomorphic behaviors; mimicking, normative and coercive. Mimicking happens when one party follows the exact footsteps of another party. A survey researcher working so much on increasing the response rate because others did it in similar studies can be attributed to mimicking isomorphism. Normative is when a certain practice becomes a standard. In the field of marketing, as mentioned above, extensive attention is paid to increasing response rate rather than the response bias.

This situation can be considered as normative. Finally, as the editors and reviewers of marketing journals require a certain response rate to be reported, the need for concentrating on it this much can be attributed to coercive reasons. In short, I propose that marketing researchers are more concerned about response rate than response bias. However, in this study, my purpose is to challenge the status quo and demonstrate that the traditional emphasis we are used to putting on response rate yields limited results. With that in mind, I propose that, contrary to general belief, survey response rate is a secondary determinant of data quality. In other words, there are other factors one needs to consider when administering survey research other than sole concentration on response rate.

What are these factors? For instance, "nonresponse error is the statistical difference between a survey that includes only those who responded and a perfect survey that would include those who failed to respond" (Zikmund et al., 2011: 128). Once this difference is statistically significant than the results are considered to be biased. Response bias happens when the respondents, without knowing or on purpose, answer the questions in a certain way that yield biased results (Zikmund et al., 2011). Another important concept, item nonresponse, happens when the respondents, consciously or unconsciously fail to answer a certain question in a survey (De Jong et al., 2008).

All three of these concepts are shown to impact data quality (Armstrong and Overton, 1977; Rubin, 2004; Olson, 2006; Werner et al., 2007; Groves and Peytcheva, 2008; Peytchev et al., 2009; Fricker and Tourangeau, 2010). For instance, Groves et al. (2006:721) mention that "nonresponse has several harmful effects beyond potential nonresponse bias, however. Response rates continue to be used as quality indicators in

many disciplines." Hence, although researchers demonstrated several factors as determinants of data quality, due to the previously mentioned reasons, researchers are still very much concerned about response rate. I will be testing whether data quality in survey research is primarily determined by factors other than response rate, such as nonresponse bias, item nonresponse and response bias.

Research question two is about how exactly we should measure data quality. Should researchers be more concerned about sample representativeness, minimizing non-response or once again inflating the response rate as much as possible? I propose that all should be taken into consideration with utmost care. As survey research is getting more expensive (De Leeuw and De Heer, 2002) the marketing community is very much aware of the importance of data quality (Assael and Keon, 1982). Dillman's (1978 and 2000) method is primarily concerned about increasing the survey response rate and widely cited for this purpose but that study also urges researchers to make sure the sample is representative of the population. For instance, if the researcher wants to investigate whether low income is associated with intention for unethical behavior, what kind of population and corresponding sampling he or she should be concerned about?

Let us say that the researcher sends out a mail survey to 1,000 potential respondents using one of the online survey companies and gets responses from 800 of them? Can the researcher feel confident about the results if the response rate is 80 percent like in this case? Common sense says that if a person is coming from low income family, the chances of that person having an internet access, not to mention being willing to respond to a survey, is not that high. In this case, the researcher should probably try to get in touch with people at low-income neighborhoods or even local jails while controlling

for confounding effects such as education and criminal background. If this researcher can send surveys to 5,000 of these types of individuals and get 300 responses back from them, this data would be much more reliable than the one in the previous case. In other words, response rate by itself does not imply anything about the data quality other than its potential effect on statistical power in either direction (i.e. lack of power or too much inflation of results).

Furthermore, even in the case when sampling is done properly and the response rate reaches certain threshold, concepts like social desirability may impact the data quality. For instance, Steenkamp et al. (2010) report that social desirability, although debated extensively, still does not receive enough attention in survey research. In a study where ethical tendency is measured, the importance of such social desirability becomes even more obvious. In short, I propose that data quality in survey research should be measured with several mutually exclusive concepts at the same time.

Research Question three asks about what researchers are doing to minimize the response bias. Throughout the literature section of this study the strong emphasis put on response rate is clearly outline. On top of that, researchers are concerned about making sure the sampling is done randomly, testing for common method variance (Armstrong and Overton, 1977) and testing for the differences between respondent and non-respondents (Assael and Keon, 1982). While all these activities are crucial and should continue to exist in survey research, in this study my aim is to go beyond these traditional methods and direct attention to the importance of other activities such as sample composition, data collection method and the survey administrator.

In Research Question 4, my purpose is to investigate whether the additional efforts put forth by survey researchers, such as reminder letter and incentives, for the purpose of increasing survey response rate affect additional sampling bias. Referring to a specific theory may be explanatory for my rational behind this question. According to leverage-salience theory (Groves, Singer and Corning, 2000) the reason to participate in a survey vary from person to person. For instance, one person may like the way the survey is designed while other maybe more concerned about the length of the survey. Still others may just like the stated purpose of the survey. From this perspective, the traditional methods such as reminder letters and incentives may introduce additional bias. The late respondents may only be concerned about incentives or may just like the length and purpose of the survey. Once that is the case, the sample is not representative of the population but is composed of respondents who are interested in this study one way or the other.

The final question of this study is about the equal effectiveness of the common methods used to increase response rate. The famous methods of Dillman (1978, 2000) or the recommendations made by other researchers may not be equally effective for increasing response rate. For instance, using incentives to increase response rate may not be as equally effective as reminder letters. Furthermore, reminder letters coming from a university or a government institution may be more effective than the ones coming from a marketing research company. Most of the different methods proposed by researchers over the years need further investigation. The findings of such an assessment will contribute not only to marketing research but also to the profession as well.

In summary, the study offers several potentially promising contributions to the literature and marketing practice. Chapter 3 outlines the methodology used to derive answers to the research questions.

CHAPTER 3

METHODOLOGY

In this chapter, I will address my methodological development in order to address the research questions presented in the previous section of this dissertation. The first section describes the article coding procedure I follow to evaluate articles published in pioneer marketing journals.

Article Coding

In order to expand the study, I have looked at 23 variables in two primary marketing publication outlets; *Journal of Marketing* and *Journal of Marketing Research*. I went over 250 articles and handpicked the survey research articles published in 2007-2009. Details of these variables are discussed in the sections to follow. This coding procedure will be extended to include articles published in 2005-2011 and will also include articles published in two other pioneer outlets of marketing; *Journal of the Academy of Marketing Science* and *Journal of Business Research*. I will be using various methods such as regression analysis, factor analysis and GLM to analyze the impact of these variables on response rate and data quality.

Coding Variables

<u>Convenience Sample:</u> My first variable is coded as a dummy variable. This variable looks at whether the sample drawn was a convenience sample or not. The reason I look at the type of sample is to see how the sample is chosen and even if it is not defined as a convenience sample, it might as well be one. I believe that, when the author has some kind of connection with the members of the sample, it qualifies the sample to be a convenient sample even if it is not defined that way in the study.

<u>Multinational Sample:</u> The sample being multinational or not is another factor that impacts the response rate. Multinational sample is used by authors from different nationalities or because higher response rates might be possible due to easier access of people in certain countries because of relaxed laws and regulations of privacy matters. This variable is operationalized by a dummy variable

<u>Professional Sample:</u> Another factor in explaining the response rate is the affiliation of the respondents. If the researcher has a connection with the company that the sample is drawn from and the respondents are employees of that company, a higher response rate is expected. Therefore, the sample being professional or not is another independent variable that would impact the response rate. In addition, the respondent behavior may be different if the respondents are from a professional group of people or not. Dummy variable is used to operationalize this variable.

<u>Incentive Reported:</u> In my literature review, I have covered the impact of incentives on response rates. The consensus among academics is that incentives tend to increase response rate. First, I look at whether or not incentive is reported and then I analyze the type of incentive offered to the respondent. Regarding the incentives, some

questions come to mind. How effective incentives actually are in order to increase the response rate and most importantly how high the incentive should be to convince the respondent? Also, is the incentive offered valid and acceptable for all of the respondents included in the study? In other words, for professionals (white collar workers) the incentives such as benefiting the community might be more effective then the monetary incentives which might work better for blue collar workers. In my literature review, I have stated that intrinsic motivational factors such as benefiting oneself and the society might work better for higher socio demographic groups and extrinsic motivational factors such as monetary incentives will work better for lower socio demographic groups and it will also impact the response quality. Based on all this, a detailed coding will be conducted for studies that offer incentives to respondents.

Nationality of the Author/ Nationality of the other Authors: The reason I think the nationality of the author will make a difference is because of the difference in the procedure that doctoral students follow in different countries. In Germany for example the PhD students after completion of their studies become middle managers at professional organizations. Therefore, they have many connections in the firms that they work for and this gives them a great advantage over American doctoral students since American educated students generally start to teach at a university right after the doctoral program. This can be one of the reasons why some European authors might reach very high response rates in the journal articles that I have looked at. In addition some Asian based studies tend to have higher response rates. This may be due to firms being more responsive because of the cultural norms and not being contacted for surveying purposes

as much as the firms in the United States. Based on this, I think these variables are necessary for my analysis. Different categories will be used to identify the nationalities of the authors.

Number of Authors: My other variable is the number of authors. I think the number of authors also might have an impact on response rate. I also would like to see the regression equations and understand whether or not response rate increases as the number of authors increase or vice versa. In addition, the number of authors might interact with the nationality and the affiliation of the authors.

Data Collection Method: In these journal articles, I will look at the data collection method as well. Obviously whether it is a mixed mode survey design, snail mail, web mail (if new technologies such as Zoomerang and Qualtrics are used is another independent variable in this study) or telephone is used is important in assessing the response rate and to see how different modes may result in differences in response rates.

Type of Sample: What type of sample the author /authors use in the study might also influence the response rate achieved for that study. Consumer sample vs. student sample might make a difference on the response rates or whether or not the sample was a combination of the two.

Sample Size/ Female vs Male Sample Size: Sample size is an important issue to analyze in general. The general attitude among the marketing academics tends to be to increase the sample size in order to minimize the total error. As previously mentioned in the literature review section, the gender composition of the sample is also an important determinant factor. Another important piece of information that is not included in the studies is the description of the population that the study is being generalized to. When

this information is not clear, the sample size does not really matter. A large sample size may generate greater error compared to a smaller more accurate sample size (explained in more depth in Chapter 1).

Use of Dillman Methods: Most of the survey research articles tend to use what we call here the Dillman methods. Dillman methods can be summarized as sending postcards or other types of reminders, and cover letter in order to enhance the response rate. In this analysis, I look at the articles and see whether any types of inducement techniques mentioned were used. This variable is based on the logic that these techniques will have a direct or indirect relationship with the response rate.

Dillman Cited: Although many studies used the methods mentioned by Dillman, only some of them tend to properly cite Dillman for these techniques. I think that citing Dillman vs. not citing Dillman dummy variable will give us some insights of how many of the authors use Dillman citation and how can this be generalized to see the impact of Dillman's methods.

Armstrong and Overton (1977) Cited: It has been very interesting to note that majority of the articles that I have looked so far cited Armstrong and Overton (1977) regarding late respondent. However, none of them identified a problem with their sample as far as the first and second wave if respondents are concerned. In order to demonstrate the impact of traditions in survey research, I believe this situation should be demonstrated with the citation of this important seminal article. A dummy variable will be used to operationalize this variable.

Calculation of Response Rate

The last but certainly not the least of all this is the calculation of the response rate. First, there is no standardization for the number of initial surveys sent out among the studies. I came across studies sending out 300 hundred surveys and receiving 100 back and studies that sent out 900 surveys and receiving 300 back (same response rate with different sample sizes).

Although the percentage of response rates between these studies may seem to be the same, intuitively we can propose the contrary. Therefore, there needs to be a standardized way to calculate the accuracy of the response rate in such a way that the response rates among studies can be accurately compared. Secondly, most of the studies do not report the initial contacts that they have made and therefore calculate the response rate from later contacts and draw the response rate percentages accordingly. Looking at the studies I coded so far, I have calculated the response rates using the number of initial contacts and found fairly skewed results. I believe the findings will be very interesting once I code all of the articles for the five-year period for all four journals. One of the purposes of this study is to come up with a more standardized way of calculating response rate.

Experimental Design

In order to address my research questions, I will also design an experiment where there will be several author/ reviewer manipulations to see how the reported response rates of a hypothetical manuscript affect their evaluations of the article. In this study my purpose is not to demonstrate whether or not reviewers or editors are doing something wrong but to show the extensive amount of attention paid to response rather than data

quality. Due to the nature of this study, the established constructs will not be used in this study. Rather, the reviewers and editors will be asked to evaluate hypothetical manuscripts and will be asked to answer certain screening questions. The sampling frame chosen is composed of the members of the Academy of Marketing Science. On top of this, I will also be analyzing a randomly selected articles rejected by *Journal of Business Research* reviewers and editor using the previously mentioned criteria and response rate conditions.

Summary

The five research questions are addressed using the strategy outlined in this section.

Research Question 1: *Do marketing researchers separate the concepts of response rate from response bias?* Other than the above mentioned coding criteria, I will also report the frequency of studies that mentioned response bias. A content analysis approach will be adopted for that purpose. Furthermore, the experimental design will be helpful to answer this question.

Research Question 2: *How exactly should data quality be measured? Is it about sample representativeness, minimizing non-response error or just solely increasing the response rate?* The coding criteria will set the direction for making recommendations to researchers regarding how to measure data quality.

Research Question 3: *What are researchers doing to assess and minimize response bias?* The results of the coding will be sufficient to answer this question. Furthermore, the experimental design will be helpful to answer this question.

Research Question 4: *Do the additional efforts put forth by survey researchers, such as reminder letters and incentives, for the purpose of increasing survey response rate affect additional sampling bias?* The incentive section and the use of Dillman method of the coding criteria will be helpful in answering this question.

Research Question 5: *Are the common techniques used by survey researchers to increase response rate equally effective?* The experimental design and the coding procedure will be helpful in answering this question.

Chapter 4 contains information about the results of the data collection.

CHAPTER 4

RESULTS

In the previous chapter, readers were introduced with the research methodology and specific techniques adopted to investigate the aforementioned research questions. In this part of the study, I first explain the primary and secondary data collection procedures and then move on to specification of the results regarding each research question.

Data Collection: Primary Data

In order to understand the way academicians look at survey research as far as concepts like response rate and response bias are concerned, a survey instrument was created and sent to a sample representing academics and marketing research professionals. The study design consists of a 2 X 2 X 2 between subjects experiment. The treatments are explained in this chapter. Following exposure to the experimental stimuli, subjects provide their opinions using an electronic questionnaire. The questionnaire items were developed based on the directions of a senior researcher and include items that mimic a reviewer's rating form. I created a research methods section to serve as an excerpt of a manuscript, within which I embedded the experimental stimuli. The section was patterned after a manuscript accepted for publication in a highly ranked journal but not yet published as of the time of the study.

Previous findings show that survey research respondents do not prefer to be exposed to long documents (Zikmund and Babin, 2010). With that in mind, I concluded that asking subjects to read an entire manuscript would place too much of a burden on potential participants. Thus, I prepared the two-page excerpt. The details of this document can be found in the appendix section of this study. In short, there were eight different versions of the excerpt prepared. Specifically, I used three different treatment variables to prepare these eight versions.

Treatment 1

The first treatment was related to the hints provided to reader about the study population. Based on the extensive discussions and consideration of populations used in marketing research, Canada and North America were used to contrast the relative size of the populations. Obviously, a larger sample would be expected to represent a larger population which was the case with the North American sample. Half of the versions started with the sentence, "We conducted our study in the industrial equipment industry in Canada" and went on with a second sentence related with this (details are provided in the appendix). The other half of the versions started with the sentence "We conducted our study in the industrial equipment industry in North America" and went on accordingly. This manipulation was done for several reasons. First, I wanted to figure out if the respondents will pay attention to the size of the population. Obviously there is a difference between taking a sample from North America versus Canada. On the other hand, Canada is in North America and readers may consider it as a similar population in comparison to the United States.

Treatment 2

The second treatment I used was about the number of questionnaires sent out to respondents. Half of the excerpts had 500 as the number of questionnaires mailed and the other half had 5000 written in them. To illustrate, one group contained the sentence: "A total of *5000* questionnaires were mailed to individuals randomly selected from the list" while in the other half "A total of *500* questionnaires were mailed to individuals randomly selected from the list." The number of returned completes was identical in both versions but the response rate changed based on the number of questionnaires sent out. The version with the 5000 questionnaires included this sentence: "A total of 251 usable questionnaires are included in data analysis for a response rate of 5.1 percent" while the one with the 500 respondents contained this sentence:" A total of 251 usable questionnaires are included in data analysis for a response rate of 50.2 percent" (after allowing for undeliverables).

My purpose here was to investigate the marketing researchers' views about response rate. From a mathematical perspective, both of these versions contained identical samples. In fact further information about the sample regarding the gender composition, the number of undeliverable questionnaires and the average age of the respondents were identical in both versions. Based on my previously mentioned research questions, my ultimate aim was to understand the importance of response rate according to academicians. In both of these versions, the sample size is 251 respondents and the sample demographics do not vary. What was different is the response rate due to the original number of questionnaires mailed to the potential respondents. Hence, the true

indication of response or nonresponse bias (in the form of a sample that does not match the population) reported in the manuscript (with the table included) was the same no matter what the response rate really was.

Treatment 3

The third treatment contrasted reliance on a common citation related to nonresponse (Armstrong and Overton 1977) with a provision of data showing comparability between the final respondents and known population parameters. Half of the versions included this sentence: "We compared late and early respondents and found no significant differences thus providing evidence that the data is free of nonresponse bias (Armstrong and Overton 1977)." In contrast, the table included a column about the expected demographics within the industry so that the readers might develop a conclusion about the generalizability of the sample. The other version did not include such a sentence and referred the reader to the table without the expected demographics about the industry column.

The question I had in mind was about whether the marketing researchers would rate the two different versions of the excerpts (with or without the Armstrong and Overton, 1977 citation) differently because of this manipulation. As of May 2012, this popular article written by Professors Armstrong and Overton back in 1977 was cited over 6,000 times. Although this is a great contribution to marketing research literature I believe that the authors cite this paper out of habit rather than the intended meaning of the research Armstrong and Overton (1977). My purpose is not in any way to undermine the importance of that article but rather to demonstrate the use of it by scholars as an indication of the quality of their studies. In effect, I contend that the process of citing

Armstrong and Overton (1977) is more like a control as it is very popular among marketing researchers. In summary, there were eight different versions of the excerpt prepared (2 X 2 X 2). All of these eight versions can be found in the appendix section of this study.

Survey Administration

The Academy of Marketing Science, one of the most important academic groups of the marketing field, was chosen as the target population for this study. The Academy of Marketing Science main office at Louisiana Tech University was contacted for the list of active members of the organization. As of March 2012, the academy had 1046 active members with email addresses. This organization is the second largest in marketing field after the American Marketing Association. These active members represented over 800 universities in 65 countries.

On top of the three manipulations mentioned in the previous section, the respondents were randomly assigned to two different conditions where they were asked to evaluate the paper as an author or as a reviewer. In the invitation e-mail (included in the appendix), the respondents were asked to toss a coin themselves or click on a webpage link for tossing a coin and picking the corresponding link based on that procedure. I had couple things in mind by doing this. First, and most importantly, I believed that the procedure ensured randomization. Second, should there be a difference between the number of respondents clicking on either of these links (author versus reviewer), that would reveal indications about respondents not taking time to toss a coin but rather pick the easiest one to choose.

For the purpose of ensuring the representativeness of the sample, I had to compare my sample with some known population parameters. AMS database did not contain information about the population demographics. It should be noted that due to privacy issues, no personal information was collected from the respondents. The common information in the database and in my questionnaire was about the country the respondent lives in and the type of the respondent (student, faculty, practicing market researchers, etc.). I randomly selected around three percent of the original population dataset (around 35 AMS members) and compared them with the respondent sample characteristics. The 54 percent of my respondents were from the United States. Looking at the randomly chosen ones from the master database, around 53 percent of them came out from United States as the country of choice. Turning to the respondent type, 21 percent the respondents of my questionnaire were graduate students. Closely enough, 18.5 percent of the randomly chosen ones were also students. Looking at these two parameters, I concluded that my sample was representative of the population.

<center>Study Response Rate</center>

Looking at the works of the survey research scholars (Dillman, 1978), over the years, many articles and books were written for the purpose of aiding survey researchers about increasing response rate. One of the purposes of this study was to investigate whether these propositions are still valid and applicable. For this, the sample was divided into several groups. According to Dillman, survey researchers may increase their response rate by adopting techniques such as a pre-notification, several rounds of reminder letters and even by offering incentives. After eliminating the respondents with misspelled email addresses and isolating the pretest group (the results about this

procedure will be further provided) I divided the sample first into two groups. The first group composed of 394 invitees who were not exposed to any kind of Dillman's suggested methods but were just sent the link to the survey. From the remaining sampling units, 200 potential respondents received pre-notification emails, 200 received pre-notification and reminder e-mails and finally 200 received only reminder e-mails. The first 50 invitees were used as a pre-test group and their results are included in with the 394 respondents of the first group.

Before reporting the results about each research question, some information about the response rates of the survey administration may be useful. Looking at the responses, 114 of the 444 respondents from the first group (including the pre-test group of 50) responded to the survey. Although there were several undeliverable emails I believe they should not be isolated from the calculation of the raw response rate. The total number of returns corresponds to a response rate of 26 percent. Among the 200 invitees of the pre-notification only group, there were 48 responses which translates into a response rate of 24 percent. Turning to the pre-notification and reminder group, the number of respondents was 78 out of 200 which means the response rate was 39 percent. Finally the reminder only group had a response rate of 44 percent sourcing from the 88 responses received. The overall response rate was 31.4 percent (328/1046). One thing to mention here is, the pre-notification and the reminder letters were sent out in identical intervals. Specifically, four days after the pre-notification email the invitation to participate to the survey was sent out the respondents. The reminder group received the reminder emails seven days following the initial invitation. The survey was kept open for two weeks. Nobody responded after this two week time frame.

Except for the pre-notification and the reminder group (37 vs. 41), in all of the groups there were larger numbers of respondents who clicked on the author links as can be seen in Table 4.1 (63 vs. 51, 30 vs. 18, 55 vs.33 respectively). Interestingly, looking at number of respondents assigned randomly to different treatments mentioned before, the numbers are almost identical (29-38) as will be explained in this discussion. Although randomization worked appropriately in the second case which was handled by a computer system (Qualtrics), why didn't it work when human factor comes into play (respondents were asked to toss a coin)? The implications of this finding will be further discussed. In summary, the primary data provided some insightful results. These results were used to answer research questions 1, 2 and 4.

Secondary Data Collection

In addition to the questionnaire, I also collected data from secondary sources. Articles with survey based methodologies that were published in *Journal of Marketing (JM)*, *Journal of Marketing Research JMR* and *Journal of the Academy of Marketing Science (JAMS)* during 2005-2010 periods were identified. The final sample consisted of 68 JM, 23 JMR, and 84 JAMS articles. I also randomly selected 31 rejected articles from the *Journal of Business Research (JBR)* archives to account for the potential file drawer problem (Hunter and Schmidt, 1990). The type variables collected during the coding of these articles are provided further in this section of the study. Specifically, the secondary data results are used to answer research questions three and five.

Answers to Research Questions

In this section, I provide answers to each research question based on the data I collected from primary and secondary sources.

Research Question 1: Do marketing researchers separate the concepts of response rate from response bias?

As mentioned previously in this dissertation, a survey response rate is calculated by dividing the number of surveys returned, or the total number of participants, responding by the total number of initial surveys sent (Zikmund et al., 2010). Response rate is mentioned in practically all surveys reported in marketing research although the term response bias appears less frequently. Response bias refers to error (or deviation from true scores) attributable to respondent characteristics or actions. Sometimes, for instance, respondents answer a question in a certain way that may create error such as in the case of acquiescence bias, extremity bias, interviewer bias and social desirability bias. Non-response bias on the other hand, although in a way it is a response bias, is the difference between those who do not respond and the true population. In other words, the ability of the sample to represent the relevant population is injured because sampling units representing nonrespondents are systematically different than the sampling units that did respond. In either case, response error or nonresponse error, the generalizability of the sample becomes suspect.

These concepts are described and documented in the marketing research literature. Theoretically, even if the response rate is extremely high, there is no guarantee that the data are free from response or nonresponse bias. Thus, the response rate does not automatically translate into data quality. However, I think that there is a disproportionate

attention paid to response rate at the expense of response quality which means that the response has validity both in terms of matching the respondent opinion or characteristic accurately but also in terms of the overall sample being representative of a relevant and intended population. Hence, response quality requires that data be free of response and nonresponse bias. In order to investigate that, I made use of the results from my primary data collection.

Primary Data Collection Results

One of the questions in the questionnaire (details of the questionnaire can be found in the appendix section of this study) asked subjects to rate the relative importance of response rate, response bias, sample size, surveying technique (snail mail, telephone, e-mail, on-line panel, etc.) and measurement scale as far as the data quality is concerned. Respondents ranked the relative importance of each characteristic in contributing to high data quality using a 100-points constant sum scale. I believe that their responses to this specific question may shed light on my research question.

Table 4.1 provides an overview of the responses. Paired sample t-tests were used to assess the relative importance of each data characteristic. As can be seen, respondents did not rate response rate (μ=16.9) as more important than response bias (μ=17.2) (t=-0.274, p=0.784). Looking at the relative importance of these concepts with the other three concepts, response bias was rated less important compared to sample size (t=2.969, p=.003) and measurement scale (t=9.953, p<.000) and more important compared to surveying technique (t=-2.383, p=.018). Turning to the response rate, that concept was rated less important compared to sample size (t=3.133, p=.002) and measurement scale (t=8.603, p<.000). In summary, both of the response rate and response bias concepts were

rated as less important comparing to sample size and measurement scale. The interesting finding is that neither response rate nor response bias is rated as more important than the other.

Table 4.1

Overview of Responses

Data Characteristic	Mean	Std. Deviation	Paired Sample t-test result	
Relative importance of Measurement Scale [a]	30.40	12.913	a-b: a-c: a-d: a-e:	7.214*** 9.953*** 8.603*** 11.727***
Relative importance of Sample Size [b]	20.67	9.811	b-a: b-c: b-d: b-e:	-7.214*** 2.969** 3.133** 5.389***
Relative importance of Response Bias [c]	17.21	8.986	c-a: c-b: c-d: c-e:	9.953*** 2.969** -0.274 -2.383*
Relative importance of Response Rate [d]	16.91	10.688	d-a: d-b: d-c: d-e:	8.603*** 3.133** -0.274 -1.929
Relative importance of Surveying technique (snail mail, telephone, e-mail, on-line panel, etc.) [e]	14.81	8.619	e-a: e-b: e-c: e-d:	11.727*** 5.389*** -2.383* -1.929

If the researchers consider these variables as being either more important or less important than other variables but not from each other, I believe that is an answer to the above mentioned research question. The answer is; marketing researchers do not separate the concepts of response rate from response bias. Hence, the well-documented difference between response rate and response bias is not clear among marketing researchers.

Research Question 2: How exactly should data quality be measured? Is it about

sample representativeness, minimizing non-response bias or just solely increasing

the response rate?

I address this question by examining two groups of questions from the

questionnaire that was sent to the sample of marketing researchers. Table 4.2 contains the

descriptive statistics about these questions (details of the survey can be found in the

appendix) asking the subject to rate the manuscript on the characteristic stated. As can

been seen in Table 4.2, respondents were asked to rate the first five items using a 100-

point slider scale and the remaining five with 5-point likert scale.

Table 4.2

Descriptive Statistics

	Mean	Std. Deviation	Analysis N	Type of scale
Is the study free of response bias?	41.52	22.783	182	100 point slider
Is the study free of non-response bias?	43.57	25.003	182	100 point slider
Are the results adequately generalizable to the sampling frame?	55.39	25.045	182	100 point slider
Do the results represent marketing employees in the country studied?	41.16	24.530	182	100 point slider
Do the results represent industrial salespeople?	54.08	23.561	182	100 point slider
The sampling frame is adequate to represent the population	3.02	1.025	179	5 point Likert
The resulting sample is problematic	3.08	1.054	179	5 point Likert
The response rate presents an insurmountable barrier to publication	2.48	1.051	179	5 point Likert

Table 4.2 (Continued)

The response rate is consistent with other surveys reported in JAMS	3.05	0.932	179	5 point Likert
The procedures do enough to check for non-response bias	2.5	1.057	179	5 point Likert

Exploratory factor analysis with principal component rotation was used for the initial analysis of the answers to these questions. First the unrotated matrix included two factors with eigenvalues larger than one that explained 54 percent of the variance together. "Is the sample adequate?" and "Are the results of this study generalizable to a meaningful population?" and finally "Are the results externally valid?" items are dropped from analysis. In the second step varimax rotation with Kaiser normalization procedure was adopted. As can be seen in Table 4.3, two factors emerged with seven items loading on factor one and three items loading to factor two.

Table 4.3

Descriptive Statistics

	Component	
	1	2
Do the results represent marketing employees in the country studied?	.757	.209
Is the study free of response bias?	.751	.111
Is the study free of non-response bias?	.744	.191
Do the results represent industrial salespeople?	.697	.303
Are the results adequately generalizable to the sampling frame?	.686	.458
The procedures do enough to check for non-response bias	.600	-.248
The sampling frame is adequate to represent the population	.574	.246

Table 4.3 (Continued)

The response rate presents an insurmountable barrier to publication	.045	-.867
The resulting sample is problematic	-.265	-.712
The response rate is consistent with other surveys reported in JAMS	.166	.441

Factor1 is named as the generalizability factor with items related to the representativeness of the sample such as "Do the results represent marketing employees in the country studied?" and "Do the results represent industrial salespeople?" and "Sampling frame is adequate to represent the population?" along with "Are the results adequately generalizable to the sampling frame?" loaded on this factor. Interestingly, items related to response and non-response bias such as "Is the study free of response bias?" and "Is the study free of non-response bias" together with "The procedures do enough to check for non-response bias" loaded on this factor as well. This means that, according to marketing researchers, sample representativeness and response and non-response bias are concepts that are considered to go side by side.

Factor 2, on the other hand, which I named as sample characteristics, has items such as "The response rate presents an insurmountable barrier to publication" and "The resulting sample is problematic" along with "The response rate is consistent with other surveys reported in JAMS" loaded to it. These results represent the distinction of the generalizability and the sample characteristics as far as the response rate is concerned. In other words, according to these marketing researchers, response rate is considered separately from sample representativeness and response bias. One may find this to be inconsistent with the results reported for research question 1. Although, mathematically

that may seem to be the case, research question 1 is more about the application of that separation while research question 2 is about the use of these two factors, composed of several items each, for explanation of data quality.

In order to further investigate the research question, factor scores from the above mentioned factor analysis procedures are saved for further use in a regression model where the rating of quality is regressed against these scores. Table 4.4 contains the results of this regression analysis. As can be seen the model is significant (F=46.0, p<.001) and explains over 1/3 the total variation of manuscript quality (R^2=.34). Looking at the individual coefficients, generalizability is positively related with rating of quality (β=.49, p<.001). The same situation also applies to the relationship between sample characteristics and quality rating (β=.32, p<.001). Hence, both of these concepts are considered to be determinants of quality by marketing researchers although, the generalizability factor is considered to be more determinant as can be seen in Table 4.5 (the effect size of generalizability is higher than that of the sample characteristics predictor variable).

Table 4.4

Results of Regression Analysis

	Dependent Variable: Rating of Quality	
	Standardized Coefficients	t
(Constant)		40.48***
Generalizability Factor	0.49	7.99***
Sample Characteristics	0.32	5.29***
Model F	45.95***	
R-Square	0.34	

*p<.05,**p<.01,***p<.001, N=178

Table 4.5

Secondary Data Results

		Frequency	Percent
Use of new websites	No	153	90.00
	Yes	17	10.00
	Total	170 *	
Armstrong and Overton cited	No	141	75.00
	Yes	47	25.00
	Total	188 *	

*Missing values are not reported at this table

In short, my answer to the above mentioned research question is straightforward. In order to get a higher quality rating from marketing researchers, of which 28 percent reported to ever served as a reviewer in a top tier journal, researchers should discuss about the generalizability of their sample in detail. That does not mean that sample characteristics related to response rate are not important, but based on the results of the questionnaire sent to the members of the Academy of Marketing Science, researchers are more interested in generalizability of the results.

Research Question 3: What are researchers doing to assess and minimize response bias?

In order to address this question, I considered several things from the primary data and the secondary data. The primary data collection provides first-hand opinions of marketing researchers based on their own experiences as authors and reviewers. On the other hand, the secondary data content analysis gives insight based on the steps actually reported in the marketing literature. Hence, the results from both these data sources will be insightful for answering the third research question.

Results from Secondary Data

Practically, there may be two ways to answer this research question. First, one can ask the scholars about their techniques of assessing response bias. I actually included two questions in my primary data collection for this purpose. The second way is to look at the published articles and investigate the techniques they adopt in the data collection process. Both of these ways seem appealing to me and I have both types of data for further analysis. First, I coded articles based on whether the authors made use of new websites for data collection (Qualtrics, Zoomerang, etc.) so that I can understand if authors are interested in this new technique which is criticized for many drawbacks such as problems with reliability and validity (Morrel and Samuels, 2003), relatively lower response rates and more importantly higher possibility for coverage error which means all the members of a population do not have equal chances of being included in a sample (Manfreda et al., 2006). As can be seen in Table 4.5, among the 206 articles I examined, only 17 articles' data collections were done through these new websites administered by Qualtrics or Zoomerang. This corresponds to a percentage of ten percent. The authors of the remaining 90 percent either did not use these websites or the data collection section was not clear enough to answer this question.

Tests for Sample Population Congruency

I also content analyzed the articles to find out whether the authors compared the respondents to some known populations or sampling frames like the analysis described in experimental stimulus within my own primary data collection (one of the treatments was

to include either the citation of the Armstrong and Overton 1977 article or an additional data column containing information about the populations; subjects rated the article more favorably when this was the case).

Interestingly, almost none of the authors report such a procedure in the sample of articles from the top journals. However, the use of a citation to Armstrong and Overton occurs in one out of four survey-based research articles. This citation typically refers to a comparison of late and early respondents on measures used in the actual data analysis.

Results from Primary Data

Several items in the primary data collection gather opinions and beliefs related to this research question. In the questionnaire, respondents were asked to answer to several open ended questions. These questions include, "In one sentence, what is the best way to make sure a study is free of response bias?" and "In one sentence, what is the best way to make sure a study is free of nonresponse bias?" Among the respondents only 118 out 327 respondents gave some kind of an answer to the former and only 132 elected to answer the latter questions. I content analyzed the respondents' answers to these questions.

The most popular answer was to do something with the survey design and administration such as pretesting, use of properly worded questions, use of reverse questions, integration of check items in the survey, avoiding leading questions, randomization, etc. There were 41 respondents who answered this way. Looking at the remaining ones, 24 of the respondents mentioned that comparing late and early respondents would be the one best way to account for "response bias." In fact, this was the second most popular answer. The other 14 authors proposed that there is no one best

way to make sure a study is free of response bias or they do not know of such a method. One author wrote "if I knew that I would publish it and make a major name for myself."

Two authors suggested that the survey researchers should use professional panels, online surveys and paid respondents for the purpose of decreasing response bias. Other two authors contended that the reviewers of their papers should be provided with detailed information about the sample. Further, three authors proposed that the anonymity of the responses should be assured. Other three authors suggested that the response rate should be increased.

Out of these 118 respondents, only 18 mentioned about the importance of the sample frame, the target population and the representatives of the sample itself. The lack of attention paid by marketing scholars on the representatives of the sample is alarming and is consistent with the general theme of this study.

Turning to the question about the nonresponse bias, 103 of the above mentioned 118 respondents responded to the question about the nonresponse bias. Among the 132 responses, 40 mention the comparison of later and early respondents and the use of Armstrong and Overton (1977) method. As the second most popular answer, 19 respondents believe that the researcher should come up with the appropriate survey design and data collection methodology. Once again, 17 of the respondents believe that there is not a good way to check for nonresponse bias (or they are not aware of one). Finally, only four mentioned about the importance of the sample frame, the target population and the representatives of the sample.

In summary, my answer to the research question is straightforward. Most of the marketing researchers are not doing a lot to assess and minimize response bias. The best thing they recommend is the citation of the Armstrong and Overton (1977) paper along with comparing respondents and non-respondents.

> *Research Question 4: Do additional efforts put forth by survey researchers, such as reminder letters and incentives, for the purpose of increasing survey response rate affect additional sampling bias?*

Primary Data Collection Results

Table 4.6 implies that among the different methods Dillman proposes to increase response rate, prenotification procedure does not seem to work with my sample. The group without any application of the Dillman methods resulted in a response rate of 26 percent while the group with the prenotification treatment resulted in a response rate of 24 percent. In other words, prenotification resulted in an even lower response rate. Once the reminder email treatment is taken into consideration, the response rate goes up significantly. As can be seen above, the group with reminder only treatment revealed a response rate of 44 percent while the group with prenotification and reminder treatment resulted in 39 percent response rate. In summary, just looking at the response rate, based on my data collection, reminder recommendation of the Dillman's Total Design Method seem to result in higher response rate but the prenotification letter, contrary to expectations, decreases response rate.

Obviously the story does not end here. What about the impact on the additional sampling bias sourcing from increasing response rate? In order to address that, I calculated a new type of response rate called the "fully completed response rate." As seen

in Table 4.6, a significant portion of the respondents failed to fully complete the survey. Among the first group, 62 out of 114 respondents fully completed the survey (54 percent completion rate). Turning to the prenotification group, 20 out of 48 respondents (42 percent) while 38 out of 78 (49 percent) prenotification and reminder group respondents fully completed the survey. Finally, 46 out of 88 reminder only group respondents (52 percent) completed the survey. Overall, 166 out 328 respondents answered all of the questions asked to them which translates into a completion rate of 51 percent.

Table 4.6

Survey Completion Rates

	Number of Respondents	Number of invitations	Response Rate	Fully completed	Fully completed survey response rate (Effective response rate)	Completion rate
First group (no Dillman method applied)	114	444	0.26	62	0.14	0.54
Prenotification Group	48	200	0.24	20	0.10	0.42
Pre Notification and Reminder Group	78	200	0.39	38	0.19	0.49
Reminder only group	88	200	0.44	46	0.23	0.52
Total	328	1044	0.31	166	0.16	0.51

Looking at these results, although one of the recommendations to increase response rate (reminder letters) seems to cause a relatively higher response rate, in general none of the techniques result in better data quality which is, as described under research question two results, refers to the generalizability of the findings and the soundness of the sampling frame selection. In fact, looking at the differences in the

completion rate, one of the methods, prenotification letter, not only results in lower response rate but also increases additional nonresponse bias to results.

Research Question 5: Are the common techniques used by survey researchers to increase response rate equally effective?

The previously mentioned articles are coded based on several criteria. First the popular techniques to increase the response rate are considered. As the author of a leading text on survey methodology, Dillman (2009), echoing his previous research, recommends the use of incentives, prenotification cards and reminder letters for the purpose of increasing response rates in survey research. The main theme of this study is to critique the attention scholars pay to increasing response rate relative to other sample characteristics including concepts like sample representatives, response bias and nonresponse bias.

Previous studies were able to demonstrate the positive impact of these methods on response rate. For instance Singer et al. (2000) found that incentive payments had significant effect on response rate in mail surveys while other researchers found that upfront ones to be more effective than the promised ones (Baumgarter, 1978; Yu and Cooper, 1983). Another method, sending couple of rounds of reminder letters as Dillman (1978) suggests, is associated with a higher response rate (Heberlein and Baumgartner, 1978). Other researchers, however, criticize the use tactics such as a prenotification letter as having an ineffectual result on the overall response rate and bias (De Leeuw et al., 2007). One thing to mention here is that most these studies are done outside of marketing research.

On top of this, the type of the sample may be related to the level of response. In the previous section, I briefly discussed the different types of respondents such as consumers, students or even professionals. For example, one would expect a higher response rate with a student sample (although the generalizability and/or relevance of the sample results may be questionable) when the students are encouraged to respond to the surveys in return for course credit often in the form of extra points. In fact, many universities maintain student subject response pools to be used in social science experiments. Looking at the consumers' perspectives, they may not be very much interested in responding as they get to make choices more freely based on the theory of commitment and involvement (Lawrence et al., 2003). The same argument can also be developed for a sample composed of professionals. Even a modest financial incentive serves as a weak motivator for a busy professional to take time away from their professional activities. Consider that focus group respondents are typically paid well over $100 for participation (Zikmund et al. 2010), typical survey response incentives are trivial.

Last, but certainly not least, is the importance of the data collection technique. Although much research has been done about the effectiveness of the data collection methods such as snail mail, telephone, interview or even the relatively new internet based ones, the question about the most effective technique still warrants attention. In addition, today there are professional companies that can come up with a sample for a potential research question. I believe that all of these concepts should be taken into consideration when assessing response rate.

Regression Results

In order to address all of these concepts, I created a regression model that includes dummy variables to represent whether:

- incentives were reported (1 if yes, 0 if no),

- number of authors,

- and the use of reminder letters (1 if yes, 0 if no),

- sample type (only consumer dummy is used), and

- data collection method (snail dummy, telephone dummy, combination dummy-internet dummy is not used).

I also included dummy variables to represent whether the first author was an American and whether the sample was multinational (1 if first author is affiliated with a North American university, 0 if not). These two variables are entered in two different regression models since they are directly related with each other (r=-0.558, p<.001) which may result in multicollinearity.

There were two dependent variables chosen in these models. The first one is the reported response rate in the above mentioned articles. These numbers are what the authors wrote in the text of their published manuscripts. In addition, I manually calculated the response rate in each of these articles. In my calculation, I took initial number of invitations/dataset sample size into consideration. For instance, if the authors sent out 600 invitations but 200 of those invitations came back undelivered, most used 400 as the total number of surveys sent out. If 100 ended up responding to the survey, the reported response rate was 25 percent (100/400). Since the general theme of this study is to urge the readers to switch their concentrations from response rate to concepts like

response rate and response bias, I used 600 instead of the 400 in the denominator. Hence, the calculated response rate by me in that case would be 16.7 percent. I think that the quality of the data is identical in both cases although my approach is a more conservative one as far as the response rate is concerned. Both the reported response rates and the calculated response rates were used as separate dependent variables. As one may question the strength of the relationship between the two, the results show that the correlation between the reported response rate and the calculated response rate is 0.747 (p<.001).

The descriptive statistics and Pearson correlations are demonstrated in Table 4.7. Hierarchical regression is used to analyze the models so that the impact of different data collection methods can be assessed in different models. The results of these models are depicted in Tables 4.8-4.11. In the first model, Table 4.8, the reported response rate is the dependent variable and the multi-national sample dummy, the incentive reported dummy (coded 1 if incentive provided and 0 otherwise), the number authors (coded as a continuous variable), the reminder dummy and the sample type consumer dummy (coded as 1 if the sample is consumer based and 0 otherwise) are the corresponding independent variables, the overall model is statistically significant (F=3.28, p=.008) with an R^2 value of 9.2 percent. None of the variables are significantly related to the reported response except the sample type consumer dummy (β=-.297, p=0.001) which means consumer samples result in a lower reported response rate. The results of this first model tell us that the common techniques used to increase response rate are not effective. Also, researchers may expect to see a lower response rate with consumer samples. In the second step, the use of snail mail is added to model as a dummy variable.

Table 4.7

Descriptive Statistics and Pearson Correlations

	Mean	Std.D	1	2	3	4	5	6	7	8	9	10	11
1) Calculated Response Rate	0.2945	0.1964	1.000										
2) Reported response rate	0.3808	0.2144	0.749***	1.000									
3) Sample multi-national (dummy)	0.4127	0.4936	-.003	.048	1.000								
4) Nationality of the first author (Dummy)	0.4817	0.5010	-.105	-.130	-0.558***	1.000							
5) Incentive reported (Dummy)	0.2593	0.4394	.012	.001	.039	-.069	1.000						
6) Number of authors	2.6806	0.9105	.098	.072	-.033	-.007	0.156 *	1.000					
7) Reminder (Dummy)	0.3830	0.4874	-.075	-.096	-.091	.104	.126	-.024	1.000				
8) Sample type consumer (Dummy)	0.3298	0.4714	-0.172*	-0.241**	.110	-0.181*	.087	.055	-0.183 *	1.000			
9) Snail-mail (Dummy)	0.3947	0.4901	-.142	-0.271***	-0.250**	0.252***	-0.147*	-.006	.088	-.056	1.000		
10) Telephone (Dummy)	0.2000	0.4011	.034	-.010	-.015	-.011	0.191**	.064	.065	0.154*	-0.404***	1.000	
11) Combination (Dummy)	0.3211	0.4681	.060	0.292***	0.219**	-0.170*	-.008	-.063	-.035	-0.244**	-0.555***	-0.344***	1.000

*p<.05, *p<.01, p<.001,
N=167-190

Table 4.8

Regression Results

Dependent Variable: Reported Response Rate	Model 1		Model 2		Model 3		Model 4	
	Standardized Coefficients	t	Standardized Coefficients	t	Standardized Coefficients	t	Standardized Coefficients	t
(Constant)		7.045 ***		7.985 ***		7.018***		6.107***
Sample multi-national (Dummy)	0.066	0.878	-0.008	-0.100	0.067	0.888	0.016	0.201
Incentive reported (Dummy)	0.038	0.492	-0.005	-0.070	0.030	0.383	0.028	0.370
Number of authors	0.070	0.911	0.083	1.128	0.066	0.863	0.082	1.087
Reminder (Dummy)	-0.106	-1.378	-0.083	-1.110	-0.112	-1.436	-0.087	-1.135
Sample type consumer (Dummy)	-0.297	-3.858 ***	-0.298	-3.998 ***	-0.306	-3.919***	-0.234	-2.929**
Snail-mail (Dummy)			-0.273	-3.445 **				
Telephone (Dummy)					0.057	0.732		
Combination (Dummy)							0.206	2.564*
Model F	3.277 **		5.022		2.812 *		3.922 **	
R-Square	0.092		0.158		0.095		0.128	
Change in R-Square (Relative to Model 1)			0.066		0.003		0.036 *	

*p<.05,**p<.01,***p<.001, N=166, All of the independent variables are dummy variables, None of the VIF values exceed 1.2

Table 4.9

Regression Results

Dependent Variable: Calculated Response Rate	Model 1		Model 2		Model 3		Model 4	
	Standardized Coefficients	t	Standardized Coefficients	t	Standardized Coefficients	t	Standardized Coefficients	t
(Constant)		5.271***		5.664***		7.018***		6.107***
Sample multi-national (Dummy)	-0.007	-0.084	-0.049	-0.605	0.067	0.888	0.016	0.201
Incentive reported (Dummy)	0.053	0.655	0.032	0.399	0.030	0.383	0.028	0.370
Number of authors	0.126	1.578	0.132	1.673	0.066	0.863	0.082	1.087
Reminder (Dummy)	-0.112	-1.378	-0.101	-1.262	-0.112	-1.436	-0.087	-1.135
Sample type consumer (Dummy)	-0.243	-3.019**	-0.245	-3.076**	-0.306	-3.919***	-0.234	-2.929**
Snail-mail (Dummy)			-0.169	-1.970				
Telephone (Dummy)					0.057	0.732		
Combination (Dummy)							0.206	2.564*
Model F	2.364 *		2.654*		2.812 *		3.922 **	
R-Square	0.072		0.095		0.095		0.128	
Change in R-Square (Relative to Model 1)			0.023		0.003		0.036 *	

*p<.05,**p<.01,***p<.001, N=158, All of the independent variables are dummy variables, None of the VIF values exceed 1.2

Table 4.10

Regression Results

Dependent Variable: Calculated Response Rate	Model 1		Model 2		Model 3		Model 4	
	Standardized Coefficients	t	Standardized Coefficients	t	Standardized Coefficients	t	Standardized Coefficients	t
(Constant)		7.874***		8.464***		7.854***		6.328***
Nationality of the first author (dummy)	-0.162	-2.166	-0.098	-1.305	-0.163	-2.171	-0.119	-1.569
Incentive reported (Dummy)	0.018	0.240	-0.019	-0.256	0.011	0.140	0.011	0.146
Number of authors	0.089	1.191	0.099	1.359	0.086	1.145	0.099	1.339
Reminder (Dummy)	-0.110	-1.453	-0.088	-1.189	-0.115	-1.508	-0.089	-1.193
Sample type consumer (Dummy)	-0.323	-4.247***	-0.314	-4.242***	-0.331	-4.294***	-0.258	-3.243**
Snail-mail (Dummy)			-0.247	-3.283**				
Telephone (Dummy)					0.052	0.678		
Combination (Dummy)							0.193	2.467*
Model F	4.445**		5.722***		3.768**		4.834**	
R-Square	0.12		0.175		0.122		0.152	
Change in R-Square (Relative to Model 1)			0.055**		0.002		0.032*	

*p<.05,**p<.01,***p<.001, N=168, All of the independent variables are dummy variables, None of the VIF values exceed 1.2

Table 4.11

Regression Results

Dependent Variable: Calculated Response Rate	Model 1		Model 2		Model 3		Model 4	
	Standardized Coefficients	t	Standardized Coefficients	t	Standardized Coefficients	t	Standardized Coefficients	t
(Constant)		5.821***		5.989***		5.821***		5.314***
Nationality of the first author (dummy)	-0.124	-1.589	-0.098	-1.232	-0.127	1.631	-0.124	-1.542
Incentive reported (Dummy)	0.049	0.611	0.035	0.437	0.035	0.433	0.049	0.609
Number of authors	0.116	1.480	0.120	1.532	0.112	1.418	0.116	1.471
Reminder (Dummy)	-0.105	-1.322	-0.097	-1.219	-0.113	-1.413	-0.105	-1.314
Sample type consumer (Dummy)	-0.251	-3.144**	-0.250	-3.136**	-0.267	-3.290**	-0.252	-2.989**
Snail-mail (Dummy)			-0.113	-1.418				
Telephone (Dummy)					0.088	1.116		
Combination (Dummy)							-0.001	-0.017
Model F	2.744*		2.637*		2.498*		2.272*	
R-Square	0.081		0.093		0.089		0.081	
Change in R-Square (Relative to Model 1)			0.012**		0.008		0.000*	

*p<.05,**p<.01,***p<.001, N=160, All of the independent variables are dummy variables, None of the VIF values exceed 1.2

There were 75 studies that made use of snail-mail as the data collection method. Once again the model is significant (F=5.02, p=.000) with an R-square value of 15.8 percent. The change in R^2 is statistically significant (p=.001). Interestingly, the snail mail dummy variable comes out to be statistically and negatively related to the reported response rate (β=-.273, p=.001). In other words, response rate is lower if a snail mail data collection methodology is used.

In the third model, the snail dummy is removed from the model and the telephone is included. There were 38 articles with telephone as the reported data collection method. As can be seen, the model remains to be significant (F = 2.81, p = .013) with an R^2 value of 9.5 percent. The change in R^2 is not statistically significant (p=465). Looking at the individual coefficients, telephone dummy is not statistically related to reported response rate (β = .057, p = .732). The same is not true when the combination dummy is added in the last model. The model is still significant (F = 3.92, p = .011) with a higher R^2 value of 12.8 percent. There were 63 studies that used combination of different data collection methods. Not surprisingly, this variable is positively related to reported response rate (β = .206, p = .011). This means that if the researchers want to increase the response rate, the best route to go is to use a combination data collection technique such as snail mail and telephone questionnaires used together.

Once the dependent variable is changed calculated response rate, rather than the reported response rate, the results are changed. Looking at Table 4.9, the first model is significant (F = 2.36, p = .042) with none of the individual coefficients but the consumer sample type dummy being significantly related to the dependent variable (β = -.243, p = .003). This is consistent with the previous findings. However, once the data collection

method dummies are introduced in the models such as the second model (F = 2.65, p = .018) where the snail mail dummy (β = -.169, p = .051), the third model (F = 2.16, p = 0.05) where the telephone dummy (β = .085, p = .292) and the fourth model (F = 2.00, p = .069) where the combination dummy (β = .042, p = .498), none of the dummy variables are significantly related with the calculated response rate.

Once the multinational dummy is replaced with the nationality of the first author dummy (1=U.S, 0=Non-U.S.), with all other above mentioned independent variables remaining in the models, some interesting results are observed. First, as can be seen on Table 4.10, the model is significant (F = 4.45, p = .001) with none of the independent variables significantly related to the dependent variable except the sample type consumer dummy (β = -.323, p <.001). In the second model, the snail mail dummy comes out to significantly related with reported response rate (β = -.247, p = .001). In the third model (F = 3.77, p = .002) telephone dummy is not related with the dependent variable (β = .052, p = .678) unlike the fourth model (F = 4.83, p < .001) where combination dummy is positively related with the reported response rate (β = .193, p = .015)

Finally, on Table 4.11 the results of the models with the dependent variable as calculated response rate are reported. In Model 1 (F = 2.74, p = .21), once again the sample type consumer dummy is calculated to be significantly related with dependent variable (β = -.251, p = .002). Looking at Model 2 (F = 2.64, p = .018), Model 3 (F = 2.50, p = .025) and Model 4 (F = 2.27, p = .040), none of the data collection dummies have statistically significant relationships with the calculated response rate.

Post-Hoc Results

Some other findings from the data are worth of noting. First, in the questionnaire, respondents were asked to report the average response rate they would expect to get from a typical academic survey using one of the five different data collection methods. Among 171 marketing scholars who responded to this question, the highest expected response rate was with the face-to-face method ($\bar{x} = 61.11$) followed by the online panels ($\bar{x} = 43.40$). The third one was the telephone method ($\bar{x} = 36.63$) followed by the email data collection methodology ($\bar{x} = 26.76$). The least amount of response rate was expected with the snail-mail method ($\bar{x} = 21.33$) which is consistent with the previously mentioned results.

I also conducted a multivariate GLM where the two chosen dependent variables were the quality (measured by a 100-point slider scale) and the publishability ratings (measured by a 5-point likert scale) done by the respondents. The three treatment variables are included as the fixed factors. The results are shown in Table 4.12. As can be seen, none of the treatment main effects and the interaction effects impacted rating of quality nor the publishability rating. In the second GLM model, the previously mentioned two factor scores (generalizibility and sample characteristics) were used as the dependent variables and the three treatment variables as the fixed factors. The results are reported in Table 4.13. This time, treatment two main effect (sample size treatment) impacted the sample characteristics, which is not unexpected, while the treatment three main effect (citation of A&O vs. providing the expected population parameters) had an impact on both the generalizibility and the sample characteristics dependent variables. None of the interaction effects had any impact on neither of the dependent variables.

Finally, the differences between the author versus reviewer condition may be of interest to readers. As can be seen in Table 4.14, according to the independent t-tests conducted, the respondents did not differ based on any of the concepts listed except for a marginal significance (p = .087) regarding the minimum threshold for response rate which means that those appointed to author condition assume the required response rate to be slightly higher comparing to those appointed to the reviewer condition.

Table 4.12

Multivariate GLM Results

Source	Dependent Variable		Mean	95 % Confidence Interval	F	Hotelling's Trace
Treatment 1 (North America vs. Canada)	Rating of quality	Canada	57.09	52.73 - 61.44	0.06	0.003
		North America	57.85	53.45 - 62.24		
	Publishability rating	Canada	2.93	2.75 - 3.11	0.44	
		North America	3.01	2.84 - 3.19		
Treatment 2 (500 vs. 5000 sample size)	Rating of quality	5000 sample size	57.01	52.55 - 61.47	0.09	0.012
		500 sample size	57.92	53.64 - 62.21		
	Publishability rating	5000 sample size	2.89	2.71 - 3.07	1.60	
		500 sample size	3.05	2.88 - 3.23		
Treatment 3 (A & O cited vs. expected parameters provided)	Rating of quality	A & O cited	54.30	50.07 - 58.54	4.07*	0.020
		Expected parameters provided	60.63	56.12 - 65.14		
	Publishability rating	A & O cited	2.89	2.72 - 3.06	1.84	
		Expected parameters provided	3.06	2.88 - 3.24		

Table 4.12 (Continued)

Source	Dependent Variable			Mean	95 % Confidence Interval	F	Hotelling's Trace
Treatment 1 X Treatment 2	Rating of quality	Canada	Sample size 5000	57.63	51.51 - 63.74	0.40	0.03
			Sample size 500	56.55	50.35 - 62.75		
		North America	Sample size 5000	56.39	49.90 - 62.89		
			Sample size 500	59.30	53.37 - 65.23		
	Publishability rating	Canada	Sample size 5000	2.86	2.61 - 3.11	0.02	
			Sample size 500	3.00	2.75 - 3.25		
		North America	Sample size 5000	2.92	2.66 - 3.19		
			Sample size 500	3.10	2.87 - 3.34		
Treatment 1 X Treatment 3	Rating of quality	Canada	A & O Cited	54.63	48.76 - 60.51	0.21	0.09
			Expected parameters provided	59.54	53.11 - 65.97		
		North America	A & O Cited	53.97	47.86 - 60.08		
			Expected parameters provided	61.72	55.40 - 68.04		
	Publishability rating	Canada	A & O Cited	2.92	2.68 - 3.16	1.43	
			Expected parameters provided	2.94	2.68 - 3.20		
		North America	A & O Cited	2.85	2.61 - 3.10		
			Expected parameters provided	3.18	2.92 - 3.43		
Treatment 2 X Treatment 3	Rating of quality	Sample Size 5000	A & O Cited	51.67	45.55 - 57.78	1.93	0.09
			Expected parameters provided	62.35	55.86 - 68.85		
		Sample Size 500	A & O Cited	56.94	51.07 - 62.81		
			Expected parameters provided	58.91	52.65 - 65.16		
	Publishability rating	Sample Size 5000	A & O Cited	2.74	2.49 - 2.99	1.10	
			Expected parameters provided	3.04	2.78 - 3.31		
		Sample Size 500	A & O Cited	3.03	2.79 - 3.27		
			Expected parameters provided	3.07	2.82 - 3.32		

Table 4.12 (Continued)

Source	Dependent Variable				Mean	95 % Confidence Interval	F	Hotelling's Trace
Treatment 1 X Treatment 2 X Treatment 3	Rating of quality	Canada	Sample Size 5000	A & O Cited	54.13	45.96 - 62.29	0.53	0.04
				Expected parameters provided	61.12	52.03 - 70.21		
			Sample Size 500	A & O Cited	55.14	46.70 - 63.58		
				Expected parameters provided	57.96	48.87 - 67.05		
	Publishability rating	North America	Sample Size 5000	A & O Cited	49.20	40.11 - 58.29		
				Expected parameters provided	63.58	54.30 - 72.86		
			Sample Size 500	A & O Cited	58.74	50.58 - 66.91		
				Expected parameters provided	59.86	51.27 - 68.45		
	Rating of quality	Canada	Sample Size 5000	A & O Cited	2.84	2.51 - 3.17	0.78	
				Expected parameters provided	2.88	2.51 - 3.25		
			Sample Size 500	A & O Cited	3.00	2.66 - 3.34		
				Expected parameters provided	3.00	2.63 - 3.37		
	Publishability rating	North America	Sample Size 5000	A & O Cited	2.64	2.27 - 3.01		
				Expected parameters provided	3.21	2.83 - 3.58		
			Sample Size 500	A & O Cited	3.07	2.74 - 3.39		
				Expected parameters provided	3.14	2.80 - 3.49		

Table 4.13

GLM Results

Source	Dependent Variable		Mean	95 % Confidence Interval	F	Hotelling's Trace
Treatment 1 (North America vs. Canada)	Generalizability	Canada	-0.07	-0.282 - 0.133	1.35	0.008
		North America	0.10	-0.113 - 0.315		
	Sample Characteristics	Canada	0.02	-0.173 - 0.212	0.02	
		North America	0.00	-0.198 - 0.199		
Treatment 2 (500 vs. 5000 sample size)	Generalizability	5000 sample size	0.03	-0.187 - 0.250	0.05	0.095***
		500 sample size	0.00	-0.207 - 0.199		
	Sample Characteristics	5000 sample size	-0.27	-0.475 - -0.07	16.22***	
		500 sample size	0.29	0.104 - 0.480		
Treatment 3 (A & O cited vs. expected parameters provided)	Generalizability	A & O cited	-0.16	-0.361 - 0.043	5.20*	0.099***
		Expected parameters provided	0.19	-0.033 - 0.405		
	Sample Characteristics	A & O cited	-0.23	-0.413 - -0.038	11.31**	
		Expected parameters provided	0.25	0.042 - 0.449		

Table 4.13 (Continued)

Source	Dependent Variable			Mean	95 % Confidence Interval	F	Hotelling's Trace
Treatment 1 X Treatment 2	Generalizability	Canada	Sample size 5000	-0.06	-0.353 - 0.244	0.00	0.001
			Sample size 500	-0.09	-0.382 - 0.195		
		North America	Sample size 5000	0.12	0.202 - 0.436		
			Sample size 500	0.09	-0.200 - 0.371		
	Sample Characteristics	Canada	Sample size 5000	-0.23	-0.508 - 0.045	0.20	
			Sample size 500	0.27	0.002 - 0.537		
		North America	Sample size 5000	-0.31	-0.610 - -0.017		
			Sample size 500	0.31	0.049 - 0.579		
Treatment 1 X Treatment 3	Generalizability	Canada	A & O Cited	-0.13	-0.405 - 0.155	2.60	0.016
			Expected parameters provided	-0.02	-0.330 - 0.283		
		North America	A & O Cited	-0.19	-0.484 - 0.099		
			Expected parameters provided	0.40	0.082 - 0.708		
	Sample Characteristics	Canada	A & O Cited	-0.24	-0.501 - 0.018	0.12	
			Expected parameters provided	0.28	-0.005 - 0.564		
		North America	A & O Cited	-0.21	-0.481 - 0.60		
			Expected parameters provided	0.21	-0.079 - 0.502		
Treatment 2 X Treatment 3	Generalizability	Sample Size 5000	A & O Cited	-0.13	-0.415 - 0.158	0.03	0.03
			Expected parameters provided	0.19	-0.139 - 0.521		
		Sample Size 500	A & O Cited	-0.19	-0.474 - 0.097		
			Expected parameters provided	0.18	-0.108 - 0.469		
	Sample Characteristics	Sample Size 5000	A & O Cited	-0.67	-0.931 - -0.400	5.05 *	
			Expected parameters provided	0.12	-0.186 - 0.427		
		Sample Size 500	A & O Cited	0.21	-0.051 - 0.479		
			Expected parameters provided	0.37	0.103 - 0.638		

Table 4.13 (Continued)

Source	Dependent Variable			Mean	95 % Confidence Interval	F	Hotelling's Trace
Treatment 1 X Treatment 2	Generalizability	Canada	Sample size 5000	-0.06	-0.353 - 0.244	0.00	0.001
			Sample size 500	-0.09	-0.382 - 0.195		
		North America	Sample size 5000	0.12	0.202 - 0.436		
			Sample size 500	0.09	-0.200 - 0.371		
	Sample Characteristics	Canada	Sample size 5000	-0.23	-0.508 - 0.045	0.20	
			Sample size 500	0.27	0.002 - 0.537		
		North America	Sample size 5000	-0.31	-0.610 - -0.017		
			Sample size 500	0.31	0.049 - 0.579		
Treatment 1 X Treatment 3	Generalizability	Canada	A & O Cited	-0.13	-0.405 - 0.155	2.60	0.016
			Expected parameters provided	-0.02	-0.330 - 0.283		
		North America	A & O Cited	-0.19	-0.484 - 0.099		
			Expected parameters provided	0.40	0.082 - 0.708		
	Sample Characteristics	Canada	A & O Cited	-0.24	-0.501 - 0.018	0.12	
			Expected parameters provided	0.28	-0.005 - 0.564		
		North America	A & O Cited	-0.21	-0.481 - 0.60		
			Expected parameters provided	0.21	-0.079 - 0.502		
Treatment 2 X Treatment 3	Generalizability	Sample Size 5000	A & O Cited	-0.13	-0.415 - 0.158	0.03	0.03
			Expected parameters provided	0.19	-0.139 - 0.521		
		Sample Size 500	A & O Cited	-0.19	-0.474 - 0.097		
			Expected parameters provided	0.18	-0.108 - 0.469		
	Sample Characteristics	Sample Size 5000	A & O Cited	-0.67	-0.931 - -0.400	5.05 *	
			Expected parameters provided	0.12	-0.186 - 0.427		
		Sample Size 500	A & O Cited	0.21	-0.051 - 0.479		
			Expected parameters provided	0.37	0.103 - 0.638		

Table 4.13 (Continued)

Source	Dependent Variable				Mean	95 % Confidence Interval	F	Hotelling's Trace
Treatment 1 X Treatment 2 X Treatment 3	Generalizability	Canada	Sample Size 5000	A & O Cited	-0.07	0.0457 - 0.319	0.10	0.001
				Expected parameters provided	-0.40	0.494 - 0.413		
			Sample Size 500	A & O Cited	-181.00	-0.584 - 0.223		
				Expected parameters provided	-0.01	-0.419 - 0.405		
	Sample Characteristics	North America	Sample Size 5000	A & O Cited	-188.00	-0.610 - 0.233		
				Expected parameters provided	0.42	-0.057 - 0.902		
			Sample Size 500	A & O Cited	-0.20	-0.600 - 0.207		
				Expected parameters provided	0.37	-0.036 - 0.771		
	Generalizability	Canada	Sample Size 5000	A & O Cited	-0.66	-1.016 - -0.297	0.01	
				Expected parameters provided	0.19	-0.227 - 0.615		
			Sample Size 500	A & O Cited	0.17	0.200 - 0.549		
				Expected parameters provided	0.37	-0.765		
	Sample Characteristics	North America	Sample Size 5000	A & O Cited	-0.67	-1.065 - -0.283		
				Expected parameters provided	0.05	-0.398 - 0.492		
			Sample Size 500	A & O Cited	0.25	-0.121 - 0.627		
				Expected parameters provided	0.38	0.001 - 0.750		

*p<.05, **p<.01, ***p<.001, R Squared = .172

Table 4.14

Independent T-Tests (Author vs. Reviewer)

	Author	Reviewer	t*	Df
Rating Quality	56.22	58.69	0.793	217
Publishability	2.87	3.07	1.600	216
Evaluation of reported response rate	3.22	3.24	0.072	207
Writing quality	3.26	3.42	1.126	207
Relevance to marketing	3.17	3.36	1.225	207
Generalizability	-0.07	0.07	1.024	177
Sample characteristics	-0.06	0.06	0.741	177
Potential to make a theoretical contribution	48.31	46.84	-0.480	196
Potential to make a practical contribution	54.70	56.26	0.478	196
Minimal threshold for response bias	3.30	2.84	-1.765	166

* None of the values are significant at $p<.05$

CHAPTER 5

DISCUSSION AND CONCLUSION

This section of my study is devoted to the discussion of the results, specification of the future research areas and conclusion. My aim is to tie the findings in the previous section to the research questions mentioned in the first chapter.

At this point, recall the study research questions:

- *RQ1:* Do marketing researchers separate the concepts of response rate from response bias?

- *RQ2:* How exactly should data quality be measured? Is it about sample representativeness, minimizing non-response bias or just solely increasing the response rate?

- *RQ3:* What are researchers doing to assess and minimize response bias?

- *RQ4:* Do the additional efforts put forth by survey researchers, such as reminder letters and incentives, for the purpose of increasing survey response rate affect additional sampling bias?

- *RQ5:* Are the common techniques used by survey researchers to increase response rate equally effective?

In order to provide the readers with some answers to these questions, I collected data from both primary and secondary sources. AMS members constituted the primary data respondents while four of the premier outlets marketing science were used to gather the secondary data. The specification of the difference between response bias and response error, assessment of data quality, response rate and response bias as far as the authors and reviewers are concerned, contribution to the social sciences literature regarding survey research both from a theoretical and a practitioner perspective were some of the proposed contributions of this study as mentioned in Chapter 1.

Discussion

Research question one asked whether the marketing researchers separate the concepts of response rate and response bias. Based on the primary data, the results showed that marketing scholars tend to rate response rate and response bias concepts less important compared to sample size and measurement scale quality. This tells us that, marketing scholars are less interested in the data quality as described previously but more interested in the number of respondents and the measurement scale used. Once again, I want clarify what is that I mean by the word data quality. Consistent with the general theme of this study, I describe data quality as the extent to which the results from a given sample are generalizable and the soundness of the sampling methodology. Basically, I propose that any response rate exceeding 0 percent is sufficient as long as the sample mean is close to the population mean. Once a certain sample size is gathered depending on the statistical power needed, I urge scholars not worry about the response rate and the related concepts.

Why are the marketing scholars less interested in data quality? There may be couple of explanations for that. First, the general tendency in the field is to increase the response rate (Dillman, 2009) which can be attributed to mimicking or normative isomorphic behavior in the field (DiMaggio and Powell, 1983). In other words, the stakeholders of the field adopt the generally accepted practices without questioning. Second, the researchers believe that the journal editors and reviewers are satisfied as long as a certain sample size is reached. That is why they rated sample size as more important than response rate and response bias. Finally, marketing researchers consider measurement scale results to be the most important determinant of data quality which means that as long as the researchers use a well-established scale and achieve acceptable reliability, the research methods ratings may be adequate to avoid rejection on the basis of data quality.

What is more interesting than these is that neither the response rate nor the response bias is rated more important than the other one. As the results show, survey research concepts like the survey instrument or the sample size was rated more important than response bias and response rate. Thus, marketing researchers do not separate these concepts. Most of the well-known issues about survey research such as social desirability bias, acquiescence bias and interviewer bias are components of response bias and should be taken very seriously as they are likely to bias the results. If the researchers are not paying attention to response bias as much as they pay attention to the sample size, that means they are not concerned about these components of response bias. On the positive side, marketing researchers do not rate response rate to be more important than this concept but on the negative side it is seen as less important than sample size.

Research question two asked about the ways to measure data quality. Particularly I was interested in the marketing scholars' view regarding sample representativeness and non-response bias. I adopted a factor analysis methodology to come up with two factors named as generalizability and sample characteristics. Generalizability factor was related to sample representativeness. The items included in this factor were related to sampling frame, response bias and non-response bias. The second factor of sample characteristics involved items related to response rate. When both of these factors were put in a regression equation as criterion variables, they were able to explain the 34 percent of variance in quality rating with generalizability factor having a larger effect.

What does this mean? First, researchers should pay close attention to the generalizability of the sample. In other words, the data quality, as described previously, should be measured with the extent to which the results are generalizable and the sample is representative of the target population. Among those who responded to my survey, 28 percent reported having served as a reviewer for a top marketing journal. Once those who served as a reviewer for a top journal cross tabulated against being an author in a top journal, over 80 percent of them reported publishing an article in a top rated journal. Considering the low acceptance rate (from 6% to 10%) of these journals for publication, it is safe to consider these respondents as some of the top researchers of the field. This means that according to the highly regarded researchers of the marketing field, data quality should be measured primarily with the generalizability factor.

The second factor I examined was about the sample characteristics and specifically the response rate. First, the researchers distinguish this concept from generalizability. Second, sample characteristics are also taken seriously as part of the data

quality. Third, the effect size of this variable was not as powerful as the one of the generalizability factor. That does not mean that the sample characteristics are not related with the quality of the data in hand. In fact, the combination of generalizability and sample characteristics seem to explain data quality much better. On the positive side, researchers are worried about the sampling frame but on the negative side, they still see response rate having a potential to present an insurmountable barrier to publication.

Research question three was about what researchers are doing to assess and minimize response bias. Primary and secondary data results were used to provide some answers to this question. The first thing I looked at was the popularity of the new websites as they are recommended by some researchers as economic ways of increasing response rate (Heerwegh, 2005). Parallel to this, few of the respondents of my primary data collection procedure mentioned that they use new websites to account for response and nonresponse bias. According to the results around ten percent of the articles made use of data gathered from paid sources. This may be attributed to couple reasons. First, the articles I decided to code were published in premier outlets like *JM, JAMS, JMR, and JBR*. At this point, authors aiming to publish in these high quality outlets seem to be reluctant about the use of these new websites to collect data. In other words, my results may have suffered from a journal bias. Second, the reviewers and the editors of these top marketing journals may not be very enthusiastic about submissions with web-based data.

These editors and reviewers may have issues with potential for coverage error as some scholars propose that to be the case with paid web-based data collection method (Manfreda et al., 2006).

It should be noted that the articles I looked at were those published in 2006-2010 period. Due to the recent developments in technology and the popularity of these new methods, the trend may change if future researchers collect similar data for 2011 and further.

As part of the analysis of the secondary data, I also tested for sample and population congruency. For this, I content analyzed the articles. My purpose was to investigate whether the authors compared the respondents to some known populations or sampling frames. The analysis revealed that almost none of the authors made such comparisons. Although that is alarming, one should note that majority of the time it may be very difficult to get a hold of the population parameters. In many occasions, even if the researcher wants to compare the sample to a known population, he or she may not have access to enough data to do such a thing. They do however use the famous Armstrong and Overton (1977) citation to demonstrate the comparison of late and early respondents (25 percent of the articles). I believe that the reason for citing that article is to show the reviewers and the editors that the authors are aware of the response and non-response bias problem although in reality they did not do much to account for those problems.

I also made use of the primary data results to answer this question. In the questionnaire, respondents were asked to answer some open ended questions. One question asked about the techniques they use to account for response bias and the other asked about the techniques they utilize to account for nonresponse bias. Comparison of the early and late respondents using Armstrong and Overton (1977) methods was the most popular answer for the nonresponse bias question. This answer was also the second

most popular one for the response bias question. This is consistent with the secondary data results I mentioned in the above paragraph. My purpose is not to undermine the importance of the Armstrong and Overton (1977) article but as both the primary and secondary sources reveal, the citation of this article became more of a habit rather than a sound survey methodology.

Most popular answer for the response bias question was to do something with the survey design and administration. In other words, researchers recommend the use of preliminary techniques to control for response bias. Remember that the answer to research question one was about the use of a well-established scale. That answer is parallel to the most popular answer given to response bias question. It seems like researchers do not separate the concepts of response rate and response bias and elect to control for the response bias problem with some conveniently judged metrics (i.e. Cronbach alpha of 0.70) as surrogates for all the issues that are more difficult but not less important to evaluate.

Surprisingly, several respondents mention that the response bias and nonresponse bias problems cannot be solved. Logically, if someone believes that he or she is not capable of solving a problem, he or she would not even attempt to solve it. I contend that to be the case with many researchers of the marketing field. In parallel to that, if the best we can offer to account for response and nonresponse bias problems is the citation of Armstrong and Overton (1977) article, then a problem documented to be important in the previous findings (Groves and Magilav, 1986) is primarily ignored.

Finally, only few of the respondents mentioned about the importance of a sample frame or comparison to a known population. Alarmingly, only a portion of the marketing

scholars seem to be worried about the representativeness of the sampling frame (18 out 118 as mentioned in the previous chapter). Dillman (1978) suggested that as long as a certain sample size is reached, the sample would be representative of the population. I suggest that to be the case if the sample can be shown to represent the population. This can be done with proper sampling techniques not with higher response rate or solely increasing the sample size. As shown in Figure 1.1 of the first chapter of this study, a large sample does not have to be the better one. Researchers may gather highly representative results from a smaller sample which is closer to the population characteristics.

Looking at the results, it may be safe to propose that marketing researchers are not concerned about minimizing response bias due to sample characteristics. Just a citation of a very famous study and comparison of the early and late respondents seem to be sufficient for them as they are probably more interested in publication. I believe this practice should be reconsidered as soon as possible to make sure that the results we get from our surveys are meaningful and representative of the populations we are trying to account for. To be more specific, researchers should provide information about their sample frames and compare their sample to ensure representativeness.

Dillman (1978) suggested that the survey researchers should follow his total design method for the purpose of increasing response rate. The fourth research question of this study investigates whether the additional efforts such as reminder letters and incentives introduce sampling bias. My way of answering this question happened through my own data collection. I chose to adopt an experimental design approach with questionnaire where I divided my sample into several groups. These different groups, or

the experimental subjects for that manner, were exposed to different techniques recommended by Dillman and his colleagues. The first group, similar to a control group in a typical scientific experiment, was not subject to any of these methods. Different groups of subjects from the second group received the questionnaires with being exposed to techniques like pre-notification and reminder. One group even received a pre-notification email along with a reminder email. The results, as mentioned in the previous chapter, were fairly interesting.

First off all, among the two methods, prenotification method resulted in lower response rate which can be attributed to potential problems with response bias as well. Although it is very hard to quantify, receiving a prenotification letter may have scared off the potential respondents. The mode of communication used to send the prenotification letter was email. Today, many people receive dozens of spam emails every day. This may be the reason for some respondents not to respond as they may have gotten suspicious about legitimate looking invitation to participate in a study. The second reason may be that the researchers may not have liked receiving a prenotification email and considered that to an unneeded communication that has spam characteristics. Whatever the case, prenotification letter, at least in an email format, does not seem to work either as a standalone method or when combined with a reminder letter. I suggest that, researchers should stop the use prenotification letters and if possible concentrate more on reminder letters if they want to increase response rate although the potential for response bias is a question yet to be answered.

As far as the response bias is concerned, the next set of results of research question four is noteworthy. Overall, almost half of the respondents failed to fully

complete the survey. Actually, if I were to calculate an effective response rate using the fully completed surveys, the overall response rate is almost cut in half. Among the different groups, once again the reminder group had the highest response rate and prenotification the lowest response rate. If a respondent becomes reluctant to complete a survey after being exposed to a prenotification letter, does that mean there was extra bias introduced in the study as he or she becomes a nonrespondent? My answer is definitely yes. In fact, there is more nonresponse bias due to the presence of prenotification letter.

In summary, prenotification emails should be avoided and reminder letters should be adopted if there are enough resources to handle the delivery of these letters. However, looking at the negligible response rate difference between the control group and the reminder groups, the impact of these methods is highly questionable. More importantly, which answers the aforementioned research question, there is a high possibility of additional response and nonresponse bias introduced in these model with the use of prenotification and reminder letters.

The final research question was about the effectiveness of the common techniques used by researchers to increase response rate. The secondary data results were used to answer this question. The common techniques researchers generally use to increase response rate are incentives (Singer et al., 2000) and reminder letters (Dillman, 1978). For that reason I coded the articles published in top marketing journals for the use of these methods. In addition, I also took the type of sample into consideration. I was interested in whether choice of sample is a determinant factor of the response rate. For example, the practice of using student samples is criticized for the lack of generalizability of the results. Also, while it is easier to get responses using internet options than it was 20

years ago, the validity of such responses still remains a question – perhaps even a bigger question. Regardless of the easiness of the data collection, it gets harder and harder to find consumers who are willing to participate in research studies. The same situation also applies to professionals if the researcher does not have access to a company data (although the generalizability of a sole company data is still open to debate as well).

On top of the Dillman (1978) techniques and the sample type, I also investigated whether the data collection method makes a difference. I aim to provide many answers to how the survey research should be done so leaving the data collection method out of the picture would harm the validity and applicability of my results. I specifically analyzed whether snail mail, internet, telephone and a mixed mode data collection method impact response rate.

Using the regression Models I developed, I observed some interesting results. First neither the use of incentives nor the use reminder letters in these published studies impacted both of the response rates that are reported by the authors and calculated by me with a more conservative approach. Second, contrary to expectations, researchers should expect to observe a lower response rate with consumer type samples relative to professional samples. Not surprisingly, only a handful of the studies published in these top journals made use of student samples. This means that, if researchers want to get published in high quality journals, they should be aware of the fact that very few, if any, survey based studies with student based samples are accepted for publication in these top journals. Also, researchers should expect to be faced with the lowest response rate with snail mail questionnaires.

The results show that, even a researcher wants to make use of snail mail questionnaire, the solution to low response rate problem (if it is seen as a problem) is to use it together with another method such as a telephone survey or a face to face survey. Obviously, the amount of resources devoted to the data collection would be a determinant factor in which method to choose. Face to face surveying is very effective as far as the response rate is concerned but very expensive to conduct. Snail mail is not as effective but relatively cheaper to do as long as the researchers avoid drastic approaches such as large incentives and special courier delivery. Unless the researcher does not use paid respondents, internet based is the easiest to do but has its own downsides. I propose that, if the amount of resources permit, researchers should adopt a combination type data collection method.

In summary, looking at the studies published in the high quality journals of the marketing field, the common techniques used to increase response rate are not effective. I believe that it is about time for researchers to concentrate more on establishing credibility of the resulting sample (bias free and representative) even in the light of a lower response rate.

Future Research and Limitations

There are several possible extensions of this study. First, future researchers may choose to assess the use of new technologies of data collection. As expected, it is getting harder for survey researchers to gain access to high quality samples. This means that in future the use paid respondents from online panels will become more popular. According to my findings, the representativeness of the data gathered through these new technologies is still questionable. Future researchers should further investigate that and

also come up solutions to solve the generalizability problem. One thing to note here is that in order to assess generalizability, the researcher needs to know what the results are generalizing to. Unfortunately, researchers do not know or define in their papers what the relevant population for their study is supposed to be. In the case of paid respondents, I believe that it is the online panel company's job to provide that information. These companies may need the guidance of the future researchers about how to do that.

Student samples are also worthy of noting. In my own data collection, only a few articles (5) made use of student samples. The average response rate was higher than the consumer sample (.36 vs. .30). I believe that student samples are useful as long as the researchers can prove the representativeness of the sample. This may be directly related to the research question at hand. For instance if the researcher is trying to figure out consumer purchase intentions about cell phone usage, student samples can be highly representative of the college students. However, the purchase intentions of young professionals or the parents of high school respondents may not be understood using a student sample. In short, scholars should pay close attention to the representativeness of the sample with the use of student samples. Future researchers may further investigate this topic and provide guidance to survey researchers

In this paper, I collected data from practicing (academic) marketing researchers and marketing journals. In the future, it would a great contribution to the social sciences literature if other academic and nonacademic researchers analyze the situation in their own respective fields. For instance; survey research is very popular in fields like psychology or organizational behavior. Knowing about the similarities and differences in those fields would shed more light on many of the unknowns.

Future researchers may also choose to investigate the potential effect of prenotification that is done with telephone calls. There is a high possibility that some respondents may consider email type or snail mail type prenotofication letters as spam but things may change if the mode of communication is changed to phone calls. This way, potential respondents may associate the upcoming survey with a heard voice which may result in higher response rates.

In this study, I only looked at journals with very low acceptance rates. That is probably why very few of them made use of online panel data or student samples. These journals, although shape the marketing field with their impacts, may not entirely representative of the marketing field research streams. One of the future extensions of this study would be to code articles published in other marketing journals and investigate whether similar or different trends are observed.

Finally, regarding the data collection method, I recommended the use of the combination method. One of the limitations of this study is not to assess which combination is the best for data quality. In the future, researchers may investigate this question. I suspect that in this day in age email and telephone combination may be a better practice than snail mail and telephone combination. This requires further efforts by future researchers and definitely warrants attention in all of the social sciences fields.

Conclusion

In summary, the results of study demonstrated that the survey researchers do not separate the concepts of response rate and response bias as the results of the first research question demonstrated. Also, data quality should be measured by the sample representativeness and by the extent that that the design of the study minimizes response

and non-response bias. As shown, researchers are not doing much about response bias other than citing some well-regarded articles. Reminder letters and incentives are not effective and should be reconsidered as they are likely to introduce additional bias in a study. Finally, researchers should be aware of the fact that the common techniques they use to increase response rate are generally not effective and applicability of traditional data collection methods and the choice of sample should be taken seriously.

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APPENDIX A

AUTHOR SURVEY FORM

Author Survey

Below you can find the Human Consent Form (Institutional Review Board Statement).

Click to write the question text

Do you agree to participate?

○ Yes (1)

○ No (2)

If No Is Selected, Then Skip To End of Survey

Imagine you are an author of a manuscript under review at JAMS. On the next page, you'll find a link to a small excerpt (about 2 pages) of that manuscript. Please read the excerpt (you may print it if you would like). Following this page, a few survey items will get your insights about the research.

The pdf file contained in the link below contains the research methods section of an actual article submitted to a top tier marketing journal. It is only two pages. Please read this section as questions regarding this research will follow.

Click to write the question text

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The pdf file contained in the link below contains the research methods section of an actual article submitted to a top tier marketing journal. It is only two pages. Please read this section as questions regarding this research will follow.

Click to write the question text

Presumming no major issues with other parts of the manuscript, how would you score its quality? Use the scale below where 0 = very poor quality (fatally flawed) to 100 = publishable quality.

_____ Quality (1)

Rate how likely this paper would be to publish (1=Not at all to 5=Definitely publishable):

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)
Not at All Publishable:Definitely Publishable (1)	O	O	O	O	O

Considering the excerpt you just read, how do you judge _____ (1=Not satisfactory to 5=Definitively satisfactory)?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)
The reported response rate (1)	O	O	O	O	O
Writing quality (2)	O	O	O	O	O
Relevance to marketing (3)	O	O	O	O	O

Based on what is presented here, please rate the manuscript using the slider scale on the following characteristics (0 = very poor to 100 = excellent):

_____ Importance of research area (1)
_____ Overall research methodology (2)
_____ Sampling Approach (3)
_____ Measurement Quality (4)
_____ Potential to Make a Theoretical Contribution (5)
_____ Potential to Make a Practical Contribution (6)
_____ Internal Validity (7)
_____ External Validity (8)

Here, we'd like to ask you about some aspects related to the validity of the research. To what extent:

_____ are the results of this study generalizable to a meaningful population? (1)
_____ are the results of this study externally valid? (2)
_____ is the sample adequate? (3)
_____ is the study free of response bias? (4)
_____ is the study free of non-response bias? (5)
_____ are the results adequately generalizable to the sampling frame? (6)
_____ do the results represent marketing employees in the country studied? (7)
_____ do the results represent industrial salespeople? (8)

Considering the excerpt you just read, how do you judge the population description (1=Not satisfactory to 5=Definitely satisfactory)?

	Strongly Disagree (1)	Disagree (2)	Neither Disagree or Agree (3)	Agree (4)	Strongly Agree (5)
The sampling frame is adequate to represent the population (1)	O	O	O	O	O
The resulting sample is problematic (2)	O	O	O	O	O
The response rate presents an insurmountable barrier to publication (3)	O	O	O	O	O
The response rate is consistent with other surveys reported in JAMS (4)	O	O	O	O	O
The procedures do enough to check for non-response bias (5)	O	O	O	O	O

When thinking about data quality, based on your knowledge and experience, please rate the following concepts according to their relative importance (the total should equal to 100 points):

_____ Sample Size (1)

_____ Measurement Scale (2)

_____ Surveying technique (snail mail, telephone, e-mail, on-line panel, etc.) (3)

_____ Response Rate (4)

_____ Response Bias (5)

Rate the characteristics listed below based on how much impact problems in that characteristic have on the likelihood of a paper getting rejected:

	Has no impact (1)	Has minor impact (2)	Has significant impact (3)	Has critical impact (4)	Likely Fatal (5)
Data Processing (1)	O	O	O	O	O
Sample selection (2)	O	O	O	O	O
Respondent (3)	O	O	O	O	O
Interviewer (4)	O	O	O	O	O
Social Desirability (5)	O	O	O	O	O
Deliberate falsification (6)	O	O	O	O	O
Unconscious misrepresentation (7)	O	O	O	O	O

In your experience as a researcher, what is the average response rate that you would expect to get from a typical academic survey using each of the approaches shown below.

_____ Snail mail (1)

_____ Telephone (2)

_____ On-line panel (Zoomerang, Qualtrics, etc.) (3)

_____ E-mail (4)

_____ Face-to-Face (5)

When thinking about data quality, based on your knowledge and experience, please rate the following concepts according to their relative importance (the total should equal to 100 points):

_____ Reliability (1)

_____ External Validity (2)

_____ Internal Validity (3)

_____ Convergent Validity (4)

_____ Discriminant Validity (5)

_____ Face Validity (6)

Is there a minimal threshold for response rate in order to get a paper accepted in a top tier journal like JAMS?

○ No minimum threshold (1)
○ At least 5 percent or above (2)
○ At least 10 percent or above (3)
○ At least 20 percent or above (4)
○ At least 30 percent or above (5)
○ At least 40 percent or above (6)
○ At least 50 percent or above (7)

Have you ever served as a reviewer for a top tier marketing journal?

○ Yes (1)
○ No (2)

If No Is Selected, Then Skip To Have you ever published in any of the...

Have you ever served as a reviewer for the following journals? (Check all that apply)

❑ *JOURNAL OF MARKETING (JM)* (1)
❑ *JOURNAL OF MARKETING RESEARCH JMR* (2)
❑ *JOURNAL OF BUSINESS RESEARCH (JBR)* (3)
❑ *JOURNAL OF THE ACADEMY OF MARKETING SCIENCE (JAMS)* (4)
❑ JOURNAL OF THE CONSUMER RESEARCH (JCR) (5)
❑ JOURNAL OF RETAILING (6)
❑ MARKETING SCIENCE (7)
❑ JOURNAL OF PERSONAL SELLING AND SALES MANAGEMENT (8)
❑ INDUSTRIAL MARKETING MANAGEMENT (9)
❑ OTHER (10)

Have you ever published in any of the following journals? (Check all that apply)

❑ *JOURNAL OF MARKETING (JM)* (1)
❑ *JOURNAL OF MARKETING RESEARCH JMR* (2)
❑ *JOURNAL OF BUSINESS RESEARCH (JBR)* (3)
❑ *JOURNAL OF THE ACADEMY OF MARKETING SCIENCE (JAMS)* (4)
❑ JOURNAL OF THE CONSUMER RESEARCH (JCR) (5)
❑ JOURNAL OF RETAILING (6)
❑ MARKETING SCIENCE (7)
❑ JOURNAL OF PERSONAL SELLING AND SALES MANAGEMENT (8)
❑ INDUSTRIAL MARKETING MANAGEMENT (9)

❏ OTHER (10)

Approximately how many refereed journal articles have you published (as author or coauthor) in your career?

According to your knowledge, expertise and experience, do most research projects reported in top tier marketing journals adequately check for response bias?

○ Yes (1)
○ No (2)

In one sentence, what is the best way to make sure a study is free of response bias?

According to your knowledge, expertise and experience, do most research projects reported in top tier marketing journals adequately check for nonresponse bias?

○ Yes (1)
○ No (2)

In one sentence, what is the best way to make sure a study is free of nonresponse bias? Select the one that best applies

○ Doctoral Student (1)
○ Junior Faculty (i.e., untenured or less than 7 years experience) (2)
○ Senior Faculty (i.e., tenured or more than 7 years experience) (3)
○ Practicing Market Researcher (i.e., work in industry) (4)

Which best describes the type of marketing research you do?

○ Purely academic (only for publication in academic journals) (1)
○ Some academic and some practical (2)
○ Mostly practical (for application in industry) (3)
○ Mostly pedagogical (4)

Are you
○ Male (1)
○ Female (2)

In what country do you work?

APPENDIX B

REVIEWER SURVEY FORM

Reviewer-Published Research

Below you can find the Human Consent Form (Institutional Review Board Statement).

Click to write the question text

Do you agree to participate?
O Yes (1)
O No (2)
If No Is Selected, Then Skip To End of Survey

Continue

Imagine you are a reviewer of a manuscript submitted to JAMS. On the next page, you'll find a link to a small excerpt (about 2 pages) of that manuscript. Please read the excerpt (you may print it if you would like). Following this page, a few survey items will get your insights about the research.

The pdf file contained in the link below contains the research methods section of the submitted article. It is only two pages. Please read this section as questions regarding this research will follow.

Click to write the question text

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The pdf file contained in the link below contains the research methods section of the submitted article. It is only two pages. Please read this section as questions regarding this research will follow.

Click to write the question text

Presumming no major issues with other parts of the manuscript, how would you score its quality? Use the scale below where 0 = very poor quality (fatally flawed) to 100 = publishable quality.
_____ Quality (1)

Rate how likely this paper would be to publish (1=Not at all to 5=Definitely publishable):

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)
Not at All Publishable:Definitely Publishable (1)	O	O	O	O	O

Considering the excerpt you just read, how do you judge _____ (1=Not satisfactory to 5=Definitively satisfactory)?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)
The reported response rate (1)	O	O	O	O	O
Writing quality (2)	O	O	O	O	O
Relevance to marketing (3)	O	O	O	O	O

Based on what is presented here, please rate the manuscript using the slider scale on the following characteristics (0 = very poor to 100 = excellent):

_____ Importance of research area (1)
_____ Overall research methodology (2)
_____ Sampling Approach (3)
_____ Measurement Quality (4)
_____ Potential to Make a Theoretical Contribution (5)
_____ Potential to Make a Practical Contribution (6)
_____ Internal Validity (7)
_____ External Validity (8)

Here, we'd like to ask you about some aspects related to the validity of the research. To what extent:

_____ are the results of this study generalizable to a meaningful population? (1)
_____ are the results of this study externally valid? (2)
_____ is the sample adequate? (3)
_____ is the study free of response bias? (4)
_____ is the study free of non-response bias? (5)
_____ are the results adequately generalizable to the sampling frame? (6)
_____ do the results represent marketing employees in the country studied? (7)
_____ do the results represent industrial salespeople? (8)

Considering the excerpt you just read, how do you judge the population description (1=Not satisfactory to 5=Definitely satisfactory)?

	Strongly Disagree (1)	Disagree (2)	Neither Disagree or Agree (3)	Agree (4)	Strongly Agree (5)
The sampling frame is adequate to represent the population (1)	O	O	O	O	O
The resulting sample is problematic (2)	O	O	O	O	O
The response rate presents an insurmountable barrier to publication (3)	O	O	O	O	O
The response rate is consistent with other surveys reported in JAMS (4)	O	O	O	O	O
The procedures do enough to check for non-response bias (5)	O	O	O	O	O

When thinking about data quality, based on your knowledge and experience, please rate the following concepts according to their relative importance (the total should equal to 100 points):

_____ Sample Size (1)
_____ Measurement Scale (2)
_____ Surveying technique (snail mail, telephone, e-mail, on-line panel, etc.) (3)
_____ Response Rate (4)
_____ Response Bias (5)

Rate the characteristics listed below based on how much impact problems in that characteristic have on the likelihood of a paper getting rejected:

	Has no impact (1)	Has minor impact (2)	Has significant impact (3)	Has critical impact (4)	Likely Fatal (5)
Data Processing (1)	O	O	O	O	O
Sample selection (2)	O	O	O	O	O
Respondent (3)	O	O	O	O	O
Interviewer (4)	O	O	O	O	O
Social Desirability (5)	O	O	O	O	O
Deliberate falsification (6)	O	O	O	O	O
Unconscious misrepresentation (7)	O	O	O	O	O

In your experience as a researcher, what is the average response rate that you would expect to get from a typical academic survey using each of the approaches shown below.

_____ Snail mail (1)
_____ Telephone (2)
_____ On-line panel (Zoomerang, Qualtrics, etc.) (3)
_____ E-mail (4)
_____ Face-to-Face (5)

When thinking about data quality, based on your knowledge and experience, please rate the following concepts according to their relative importance (the total should equal to 100 points):

_____ Reliability (1)
_____ External Validity (2)
_____ Internal Validity (3)
_____ Convergent Validity (4)
_____ Discriminant Validity (5)
_____ Face Validity (6)

Is there a minimal threshold for response rate in order to get a paper accepted in a top tier journal like JAMS?

O No minimum threshold (1)
O At least 5 percent or above (2)
O At least 10 percent or above (3)
O At least 20 percent or above (4)
O At least 30 percent or above (5)
O At least 40 percent or above (6)
O At least 50 percent or above (7)

Have you ever served as a reviewer for a top tier marketing journal?

O Yes (1)
O No (2)
O
If No Is Selected, Then Skip To Have you ever published in any of the...

Have you ever served as a reviewer for the following journals? (Check all that apply)

❑ *JOURNAL OF MARKETING (JM)* (1)
❑ *JOURNAL OF MARKETING RESEARCH JMR* (2)
❑ *JOURNAL OF BUSINESS RESEARCH (JBR)* (3)
❑ *JOURNAL OF THE ACADEMY OF MARKETING SCIENCE (JAMS)* (4)
❑ JOURNAL OF THE CONSUMER RESEARCH (JCR) (5)
❑ JOURNAL OF RETAILING (6)
❑ MARKETING SCIENCE (7)
❑ JOURNAL OF PERSONAL SELLING AND SALES MANAGEMENT (8)
❑ INDUSTRIAL MARKETING MANAGEMENT (9)
❑ OTHER (10)

Have you ever published in any of the following journals? (Check all that apply)

❑ *JOURNAL OF MARKETING (JM)* (1)
❑ *JOURNAL OF MARKETING RESEARCH JMR* (2)
❑ *JOURNAL OF BUSINESS RESEARCH (JBR)* (3)
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❑ JOURNAL OF THE CONSUMER RESEARCH (JCR) (5)
❑ JOURNAL OF RETAILING (6)
❑ MARKETING SCIENCE (7)
❑ JOURNAL OF PERSONAL SELLING AND SALES MANAGEMENT (8)
❑ INDUSTRIAL MARKETING MANAGEMENT (9)
❑ OTHER (10)

Approximately how many refereed journal articles have you published (as author or coauthor) in your career?

According to your knowledge, expertise and experience, do most research projects reported in top tier marketing journals adequately check for response bias?
◯ Yes (1)
◯ No (2)
In one sentence, what is the best way to make sure a study is free of response bias?

According to your knowledge, expertise and experience, do most research projects reported in top tier marketing journals adequately check for nonresponse bias?
◯ Yes (1)
◯ No (2)

In one sentence, what is the best way to make sure a study is free of nonresponse bias?

Select the one that best applies
◯ Doctoral Student (1)
◯ Junior Faculty (i.e., untenured or less than 7 years experience) (2)
◯ Senior Faculty (i.e., tenured or more than 7 years experience) (3)
◯ Practicing Market Researcher (i.e., work in industry) (4)

Which best describes the type of marketing research you do?
◯ Purely academic (only for publication in academic journals) (1)
◯ Some academic and some practical (2)
◯ Mostly practical (for application in industry) (3)
◯ Mostly pedagogical (4)

Are you
◯ Male (1)
◯ Female (2)

In what country do you work?

APPENDIX C

SURVEY LETTERS

Instrument 1

Abstract

The manuscript presents results demonstrating the efficacy of a marketing employee's stakeholder orientation on effectiveness in dealing with customer constituencies. Multiple exogenous constructs and controls are hypothesized as antecedent to a stakeholder orientation and together these constructs come together to affect the employee's job performance. The results make a significant contribution to theory and to practice by demonstrating the important role of a stakeholder orientation.

Research Method

Sample and Procedures

We conducted our study in the industrial equipment industry in Canada. The industrial equipment industry is one of the largest in Canada and although not all of the equipment is manufactured domestically, industrial equipment dealers represent a significant part of the domestic economy and account for a substantial portion of domestic employment. In this case, the employee responsibility is predominantly in the domestic market.

Respondents were recruited from registered attendees at the largest industrial equipment trade show in the country with the audience consisting predominantly of industrial equipment sales personnel. We obtained the names and mailing addresses of all attendees and drew a sample from this list. A total of 500 questionnaires were mailed to individuals randomly selected from the list. Prior to mailing the questionnaire, an email notification of the survey was sent to each of these individuals. Each packet included the questionnaire containing the study measures, a cover letter explaining the results were

part of a university research project, promising confidentiality and including a small .

incentive for responding. The questionnaire began with a screening question that asked

the respondent if he/she actively engages customers as a routine part of their job. Only

those respondents reporting routine customer contact are retained for analysis. The postal

service returned 48 packets as undeliverable.

A total of 251 usable questionnaires are included in data analysis for a response

rate of 56 percent. Table 1 displays the demographic characteristics of the sample.

Approximately 56 percent of respondents are male. Respondents report a mean age of

34.0 years and over half of respondents report that they hold a college degree.

Respondents report an average experience of slightly over 7 years. We compared late and

early respondents and found no significant differences thus providing evidence that the

data is free of nonresponse bias (Armstrong and Overton 1977).

The measurement scales used in this sample were taken from previously

published sources and display evidence of construct validity. The details about the scales

and the corresponding factor analysis results of each scale are provided in detail in the

appendix section of this manuscript.

Table 1

The Demographic Characteristics of the Sample (N=251)

Demographic Factors	Frequency	Percent
Gender		
Male	142	55.5
Female	114	44.5
Education		
High school or below	118	46.1
College	130	50.8
Master	8	3.1
Age		
20-29	72	28.1
30-39	146	57.0
40 or older	38	14.9
Monthly Salary		
$2,500-5,000	82	32.0
$5,001-7,500	148	57.8
Above $7,500	26	10.2
Tenure with the Company		
1-4 years	80	31.3
5-9 years	112	43.7
10 years or more	64	25.0

Instrument 2

Abstract

The manuscript presents results demonstrating the efficacy of a marketing employee's stakeholder orientation on effectiveness in dealing with customer constituencies. Multiple exogenous constructs and controls are hypothesized as antecedent to a stakeholder orientation and together these constructs come together to affect the employee's job performance. The results make a significant contribution to theory and to practice by demonstrating the important role of a stakeholder orientation.

Research Method

Sample and Procedures

We conducted our study in the industrial equipment industry in Canada. The industrial equipment industry is one of the largest in Canada and although not all of the equipment is manufactured domestically, industrial equipment dealers represent a significant part of the domestic economy and account for a substantial portion of domestic employment. In this case, the employee responsibility is predominantly in the domestic market.

Respondents were recruited from registered attendees at the largest industrial equipment trade show in the country with the audience consisting predominantly of industrial equipment sales personnel. We obtained the names and mailing addresses of all attendees and drew a sample from this list. A total of 500 questionnaires were mailed to individuals randomly selected from the list. Prior to mailing the questionnaire, an email notification of the survey was sent to each of these individuals. Each packet included the questionnaire containing the study measures, a cover letter explaining the results were

part of a university research project, promising confidentiality and including a small incentive for responding. The questionnaire began with a screening question that asked the respondent if he/she actively engages customers as a routine part of their job. Only those respondents reporting routine customer contact are retained for analysis. The postal service returned 48 packets as undeliverable.

A total of 251 usable questionnaires are included in data analysis for a response rate of 56 percent. Table 1 displays the demographic characteristics of the sample. Approximately 56 percent of respondents are male. Respondents report a mean age of 34.0 years and over half of respondents report that they hold a college degree. Respondents report an average experience of slightly over 7 years. The organization who organized the trade show provided us with the demographic profile of attendees. Table 1 displays those statistics and a comparison with the sample profile suggests that the demographics of the sample and sampling frame match.

The measurement scales used in this sample were taken from previously published sources and display evidence of construct validity. The details about the scales and the corresponding factor analysis results of each scale are provided in detail in the appendix section of this manuscript.

Table 1

The Demographic Characteristics of the Sample (N=251)

Demographic Factors	Frequency	Percent	Estimated Demographic Profile of the Industry (percent)
Gender			
Male	142	55.5	50-55
Female	114	44.5	40-45
Education			
High school or below	118	46.1	45-50
College	130	50.8	45-50
Master	8	3.1	0-5
Age			
20-29	72	28.1	20-30
30-39	146	57.0	50-60
40 or older	38	14.9	10-20
Monthly Salary			
$2,500-5,000	82	32.0	30-40
$5,001-7,500	148	57.8	50-60
Above $7,500	26	10.2	10-20
Tenure with the Company			
1-4 years	80	31.3	30-40
5-9 years	112	43.7	40-50
10 years or more	64	25.0	20-30

Instrument 3

Abstract

The manuscript presents results demonstrating the efficacy of a marketing employee's stakeholder orientation on effectiveness in dealing with customer constituencies. Multiple exogenous constructs and controls are hypothesized as antecedent to a stakeholder orientation and together these constructs come together to affect the employee's job performance. The results make a significant contribution to theory and to practice by demonstrating the important role of a stakeholder orientation.

Research Method

Sample and Procedures

We conducted our study in the industrial equipment industry in Canada. The industrial equipment industry is one of the largest in Canada and although not all of the equipment is manufactured domestically, industrial equipment dealers represent a significant part of the domestic economy and account for a substantial portion of domestic employment. In this case, the employee responsibility is predominantly in the domestic market.

Respondents were recruited from registered attendees at the largest industrial equipment trade show in the country with the audience consisting predominantly of industrial equipment sales personnel. We obtained the names and mailing addresses of all attendees and drew a sample from this list. A total of 5000 questionnaires were mailed to individuals randomly selected from the list. Prior to mailing the questionnaire, an email notification of the survey was sent to each of these individuals. Each packet included the questionnaire containing the study measures, a cover letter explaining the results were

part of a university research project, promising confidentiality and including a small incentive for responding. The questionnaire began with a screening question that asked the respondent if he/she actively engages customers as a routine part of their job. Only those respondents reporting routine customer contact are retained for analysis. The postal service returned 48 packets as undeliverable.

A total of 251 usable questionnaires are included in data analysis for a response rate of 5.1 percent. Table 1 displays the demographic characteristics of the sample. Approximately 56 percent of respondents are male. Respondents report a mean age of 34.0 years and over half of respondents report that they hold a college degree. Respondents report an average experience of slightly over 7 years. We compared late and early respondents and found no significant differences thus providing evidence that the data is free of nonresponse bias (Armstrong and Overton 1977).

The measurement scales used in this sample were taken from previously published sources and display evidence of construct validity. The details about the scales and the corresponding factor analysis results of each scale are provided in detail in the appendix section of this manuscript.

Table 1

The Demographic Characteristics of the Sample (*N*=251)

Demographic Factors	Frequency	Percent
Gender		
Male	142	55.5
Female	114	44.5
Education		
High school or below	118	46.1
College	130	50.8
Master	8	3.1
Age		
20-29	72	28.1
30-39	146	57.0
40 or older	38	14.9
Monthly Salary		
$2,500-5,000	82	32.0
$5,001-7,500	148	57.8
Above $7,500	26	10.2
Tenure with the Company		
1-4 years	80	31.3
5-9 years	112	43.7
10 years or more	64	25.0

Instrument 4

Abstract

The manuscript presents results demonstrating the efficacy of a marketing employee's stakeholder orientation on effectiveness in dealing with customer constituencies. Multiple exogenous constructs and controls are hypothesized as antecedent to a stakeholder orientation and together these constructs come together to affect the employee's job performance. The results make a significant contribution to theory and to practice by demonstrating the important role of a stakeholder orientation.

Research Method

Sample and Procedures

We conducted our study in the industrial equipment industry in Canada. The industrial equipment industry is one of the largest in Canada and although not all of the equipment is manufactured domestically, industrial equipment dealers represent a significant part of the domestic economy and account for a substantial portion of domestic employment. In this case, the employee responsibility is predominantly in the domestic market.

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The measurement scales used in this sample were taken from previously published sources and display evidence of construct validity. The details about the scales and the corresponding factor analysis results of each scale are provided in detail in the appendix section of this manuscript.

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Tenure with the Company			
1-4 years	80	31.3	30-40
5-9 years	112	43.7	40-50
10 years or more	64	25.0	20-30

Instrument 5

Abstract

The manuscript presents results demonstrating the efficacy of a marketing employee's stakeholder orientation on effectiveness in dealing with customer constituencies. Multiple exogenous constructs and controls are hypothesized as antecedent to a stakeholder orientation and together these constructs come together to affect the employee's job performance. The results make a significant contribution to theory and to practice by demonstrating the important role of a stakeholder orientation.

Research Method

Sample and Procedures

We conducted our study in the industrial equipment industry in North America. The industrial equipment industry is one of the largest in North America and although not all of the equipment is manufactured domestically, industrial equipment dealers represent a significant part of the domestic economy and account for a substantial portion of domestic employment. In this case, the employee responsibility is predominantly in the domestic market.

Respondents were recruited from registered attendees at the largest industrial equipment trade show in the country with the audience consisting predominantly of industrial equipment sales personnel. We obtained the names and mailing addresses of all attendees and drew a sample from this list. A total of 500 questionnaires were mailed to individuals randomly selected from the list. Prior to mailing the questionnaire, an email notification of the survey was sent to each of these individuals. Each packet included the questionnaire containing the study measures, a cover letter explaining the results were part of a university research project, promising confidentiality and including a small

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Above $7,500	26	10.2
Tenure with the Company		
1-4 years	80	31.3
5-9 years	112	43.7
10 years or more	64	25.0

Instrument 6

Abstract

The manuscript presents results demonstrating the efficacy of a marketing employee's stakeholder orientation on effectiveness in dealing with customer constituencies. Multiple exogenous constructs and controls are hypothesized as antecedent to a stakeholder orientation and together these constructs come together to affect the employee's job performance. The results make a significant contribution to theory and to practice by demonstrating the important role of a stakeholder orientation.

Research Method

Sample and Procedures

We conducted our study in the industrial equipment industry in North America. The industrial equipment industry is one of the largest in North America and although not all of the equipment is manufactured domestically, industrial equipment dealers represent a significant part of the domestic economy and account for a substantial portion of domestic employment. In this case, the employee responsibility is predominantly in the domestic market.

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Tenure with the Company			
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Instrument 7

Abstract

The manuscript presents results demonstrating the efficacy of a marketing employee's stakeholder orientation on effectiveness in dealing with customer constituencies. Multiple exogenous constructs and controls are hypothesized as antecedent to a stakeholder orientation and together these constructs come together to affect the employee's job performance. The results make a significant contribution to theory and to practice by demonstrating the important role of a stakeholder orientation.

Research Method

Sample and Procedures

We conducted our study in the industrial equipment industry in North America. The industrial equipment industry is one of the largest in North America and although not all of the equipment is manufactured domestically, industrial equipment dealers represent a significant part of the domestic economy and account for a substantial portion of domestic employment. In this case, the employee responsibility is predominantly in the domestic market.

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Instrument 8

Abstract

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Research Method
Sample and Procedures

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Tenure with the Company			
1-4 years	80	31.3	30-40
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APPENDIX D

HUMAN USE APPROVAL LETTER

![Louisiana Tech University Logo]

LOUISIANA TECH
U N I V E R S I T Y

MEMORANDUM

OFFICE OF UNIVERSITY RESEARCH

TO: Ms. Yasemin Ocal Atinc

FROM: Barbara Talbot, University Research

SUBJECT: HUMAN USE COMMITTEE REVIEW

DATE: April 20, 2012

In order to facilitate your project, an EXPEDITED REVIEW has been done for your proposed study entitled:

"Response Rate and Response Error in Marketing Research"

HUC 965

The proposed study's revised procedures were found to provide reasonable and adequate safeguards against possible risks involving human subjects. The information to be collected may be personal in nature or implication. Therefore, diligent care needs to be taken to protect the privacy of the participants and to assure that the data are kept confidential. Informed consent is a critical part of the research process. The subjects must be informed that their participation is voluntary. It is important that consent materials be presented in a language understandable to every participant. If you have participants in your study whose first language is not English, be sure that informed consent materials are adequately explained or translated. Since your reviewed project appears to do no damage to the participants, the Human Use Committee grants approval of the involvement of human subjects as outlined.

Projects should be renewed annually. *This approval was finalized on April 20, 2012 and this project will need to receive a continuation review by the IRB if the project, including data analysis, continues beyond April 20, 2013.* Any discrepancies in procedure or changes that have been made including approved changes should be noted in the review application. Projects involving NIH funds require annual education training to be documented. For more information regarding this, contact the Office of University Research.

You are requested to maintain written records of your procedures, data collected, and subjects involved. These records will need to be available upon request during the conduct of the study and retained by the university for three years after the conclusion of the study. If changes occur in recruiting of subjects, informed consent process or in your research protocol, or if unanticipated problems should arise it is the Researchers responsibility to notify the Office of Research or IRB in writing. The project should be discontinued until modifications can be reviewed and approved.

If you have any questions, please contact Dr. Mary Livingston at 257-4315.