Prospective respondent integrity behavior in replying to direct mail questionnaires: a contributor in overestimating nonresponse rates

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Abstract

The research questions of this study were to what extent are deliverable mail questionnaires addressed to the wrong prospective respondent returned unopened to the researcher vs. completed by someone other than the persons they were mailed to? Thus, the purpose was to investigate the existence of a prospective respondent integrity behavior factor among people who received incorrectly named, yet deliverable, questionnaires and the impact of this behavior on estimating nonresponse rates, nonresponse bias, and administrative sampling error as well as on the generalizability of results to the original defined target population. Since only approximately 41% of such questionnaires are returned to the researcher, reported response rates of mail surveys will be incorrect if this particular integrity behavior factor is not considered. Since only 0.5% of such questionnaires are completed and returned, incorrect deliverable questionnaires are not a significant contributor in limiting the researcher’s ability to assess response type errors.

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1. Introduction

Although there are a variety of data collection methods available to researchers for the acquisition of primary data, self-administered questionnaires remain among the most popular methods (Hair et al., 2003). While few would argue that the emergence of technology has allowed delivery systems for self-administered surveys to expand, the most common type of self-administered survey is still the ad hoc (i.e., one-shot) direct mail questionnaire. In turn, direct mail questionnaires, in comparison to other data collection methods including mail panels, have traditionally suffered from much higher nonresponse rates (McDaniel and Gates, 2002; Visser et al., 1996). As a result, both practitioners and academicians conducting direct mail surveys are generally very concerned with nonresponse rates and normally report these rates in their research output (for a meta-analysis, see Yammarino et al., 1991). In addition, many researchers are compelled to provide discussions to whether they were able to detect nonresponse bias (Finlay and Thistlethwaite, 1992; Lankford et al., 1995). To be able to generalize the data results to the initial defined target population, it is critically important to determine (or assess) the error that results from a systematic difference between those who responded to a mail questionnaire and those who did not. It has been acknowledged that such a systematic difference raises serious doubts concerning not only the representativeness (the accuracy) of the results, but also raises issues of data quality, reliability, and validity (Dillman, 2000; McDaniel and Gates, 2002). A key assumption underlying these concerns is the notion that the prospective respondents have correctly received the mail surveys.

In contrast, it is acknowledged that to varying degrees, every mailing list used to conduct survey research projects includes some percentage of incorrect addresses (i.e., the deliverable mailing address is incorrect) rendering the questionnaires as undeliverable. In those cases where the questionnaires are mailed as first class pieces of mail, questionnaires with incorrect mailing addresses (wrong or incomplete location indicators) are automatically returned to
the researcher by the U.S. Postage Service’s (USPS) system as undeliverable. Historically, mail questionnaires returned as undeliverable are taken out of the denominator when calculating the final response rate under the logic that incorrect addresses should not be included in the sampling frame, but rather be addressed as a population frame error. That is, the response rate for mail surveys is normally calculated as $C/(S - U)$, where $C =$ completed questionnaires received, $S =$ number of questionnaires mailed, $U =$ undeliverable questionnaires returned to researcher by post office. These types of undeliverable questionnaires do not reflect prospective respondents’ unwillingness to participate in the study. Consequently, the main benefit of undeliverable questionnaire returns is that they allow researchers to clean up their mailing list and send questionnaires to replacement subjects on that list. Such activities could result in increasing response rates and possibly reducing nonresponse bias. In turn, not cleaning up the original mailing list of undeliverable addresses can have a negative impact on strategies designed to increase response rates such as sending reminder cards, second copies of the questionnaires, etc., because those additional mailings are likely to fall prey to the same fate as the original mailing.

On the other hand, what happens in those cases where a questionnaire is delivered to a correct mailing address but the intended prospective respondent does not live at that address or the wrong name is used in identifying the intended prospective respondent at that deliverable address? The USPS does not automatically return those questionnaires to the researcher as undeliverable. Unfortunately, little is known about the extent to which deliverable mail questionnaires to wrongly named prospective respondents are returned to the researcher. That is to say, to what extent will people who wrongly receive a deliverable mail questionnaire exhibit the behavior of returning the misaddressed questionnaire to the researcher? The key issue here focuses on investigating a particular human behavior that could influence any assessment of nonresponse rates of mail surveys, but which has been empirically neglected in the literature. Thus, the main purpose of the current study is to investigate a particular human response behavior, which we simply refer to as the “prospective respondent integrity behavior factor” (hereafter denoted as integrity behavior), which should exist with incorrectly named, yet deliverable mail questionnaires and its potential impact on estimating nonresponse rates. Conceptually, this integrity behavior factor is viewed as a conscientious, ethical-oriented behavior representing a person’s responsive act of returning, to the sender, a piece of first class deliverable mail (i.e., questionnaire) that was incorrectly addressed to an unknown person at his or her residential mailing address. The uniqueness and critical importance of this study is that it is the first known attempt to empirically investigate integrity behavior among prospective respondents who are known to have inappropriately received a direct mail questionnaire. This study also explores the extent to which respondents, who wrongly receive mail questionnaires, are likely to exhibit either deliberate or nondeliberate identification falsification behavior and return completed questionnaires to the researchers.

2. Literature review and hypotheses

While response rates and nonresponse rates in survey research are reciprocal in nature, much of the research in past decades has focused on response rates and the measurement of nonresponse bias in direct mail surveys (Chen, 1998; Dillman, 2000; Groves and Couper, 1998; Peterson et al., 1989; Schlegelmilch and Diamantopoulos, 1991; Yammarino et al., 1991). In general, it can be argued that nonresponse in mail surveys is not a problem as long as everyone targeted by the survey has an equal probability of responding (McDaniel and Gates, 2002). However, some research has shown that certain types of respondents—those with a lower level of education, lower level occupations, and those more interested in the topic—have a higher probability of responding than their opposite counterparts (Parker and McCrohan, 1983). Interestingly, Sosdian and Sharp (1980) found evidence that nonresponse is not only an issue of respondent resistance but also of respondent access or rather the lack thereof. The latter has been blamed on “poor handling of questionnaires by the USPS” (p. 397) through failing to forward the questionnaire to those who had moved and return undeliverable materials. Specifically, Sosdian and Sharp (1980) found that approximately 28% of individuals who failed to respond to the mailing of the questionnaire claimed, when contacted by phone, that they had never received it. However, in light of the above discussion, the definition of undeliverables as understood by the USPS in comparison to that held by researchers using direct mail questionnaires are likely to differ. For researchers, any piece of mail that does not reach the intended respondent is, in effect, undeliverable and should be returned. The USPS, on the other hand, views as undeliverable only those first class pieces of mail with incorrect mailing addresses, i.e., with wrong or incomplete location indicators. Those mailings addressed to valid addresses are considered to be deliverable and it is the task of residents at these locations to return, as undeliverable, mailings addressed to individuals who do not reside there.

As indicated by this discussion and the fact that few studies actually report the percentage of returned undeliverable mail questionnaires, estimating the “true” percentage of undeliverable questionnaires is a difficult task. Further, the studies that do report the percentage of undeliverables usually point out how low that percentage is. Energy User News (1988), for example, mailed 4003 questionnaires to approximately 30% of its subscribers and reports that “only” 10 questionnaires (0.2%) were returned as undeliverable by the USPS. Likewise, Shannon and Bradshaw (2002) mailed 189 questionnaires to college faculty and report that “only” 11 (or 5.8%) were returned as undeliverable by the USPS.
Shannon and Bradshaw (2002) suggest that such a small rate of undeliverables can likely be contributed to mail being forwarded to respondents who had moved to a new location by either the USPS or colleagues. These two studies, however, do not report how many of the intended respondents actually received the questionnaires. Thus, even though the reported percentages of undeliverable questionnaires do appear low, there is no assurance that the remaining questionnaires actually were delivered to the intended respondents. As pointed out before, researchers generally seem to assume that all questionnaires that cannot be delivered to the intended respondents will be returned as undeliverable. As such, the integrity behavior factor introduced by the present research is not taken into account. As may be recalled, this factor represents an individual’s responsive action of returning to the sender a piece of mail wrongly addressed to a person not living at the deliverable mailing address. It can be initially measured as the percentage of incorrectly named, yet deliverable mail questionnaires that are actually returned unopened as undeliverable. From an intuitive perspective, if integrity behavior is truly a significant contributing factor, then one can expect a significantly large number of misaddressed mail questionnaires to be returned to the researchers unopened; therefore, a low nonresponse rate.

Considering Sosdian and Sharp’s (1980) findings that indicate that approximately 28% of those who fail to respond to a mail questionnaire claim that they never received it, we suggest that these mailings might very well have fallen victim to a lack of integrity behavior. In other words, since these questionnaires had not been returned by the USPS as undeliverable but also had not been received by the intended respondents, we assume that whoever happened to receive these questionnaires did neither forward them to the intended respondents nor return them as undeliverable to the researcher. Thus, the first hypothesis states:

**H1:** It is estimated that approximately 72% of those who receive incorrectly named, yet deliverable, direct mail questionnaires should return them unopened as undeliverables to the researcher.

A number of recent studies have shown gender to have an effect on response propensities. Specifically, it has been found that females are more likely to respond to a mail questionnaire than males (Collins et al., 2000). For example, one study reports that only 31% of males responded to a mail questionnaire as compared to 49% of females (McCabe et al., 2002). We suggest this effect of gender to hold for the integrity behavior factor as well. Therefore, the second hypothesis states:

**H2:** Females who receive incorrectly named, yet deliverable, mail questionnaires are more likely to display integrity behavior than their male counterparts, thus, are more likely to return these questionnaires unopened as undeliverables to the researcher.

The next two hypotheses address gender issues as well, but of a different kind. The question that is investigated here is whether those who receive a deliverable mail questionnaire packet incorrectly addressed to somebody of the opposite sex are more likely to return it unopened as undeliverable, as compared to those who receive such a questionnaire packet addressed to somebody of the same sex. The hypotheses are of exploratory nature and are thus stated as null hypotheses:

**H3:** There are no significant integrity behavior differences between males who receive incorrectly male-named mail questionnaires and those males who receive incorrectly female-named mail questionnaires.

**H4:** There are no significant integrity behavior differences between females who receive incorrectly female-named mail questionnaires and those males who receive incorrectly male-named mail questionnaires.

The second behavior source error is termed the “identification falsification factor” and represents an individual’s behavior—intentionally or unintentionally—of wrongly assuming the identity of the incorrectly named respondent at a deliverable mailing address and returning the completed questionnaire to the researcher. Although normally difficult to detect, this particular behavioral source error is measured in the current study as the percentage of direct mail questionnaires that are falsely completed and returned by individuals other than the individuals to whom they were originally addressed. As such, if identification falsification behavior does exist as a contributing factor, then one can expect a significant number of completed questionnaires returned to the researchers. The fifth hypothesis is thus of exploratory nature as well and stated as a null hypothesis:

**H5:** Individuals will not falsify their identification and wrongly return a completed survey to the sender.

In light of the above hypotheses, the major contributions of the present study are that it provides the initial efforts to investigate the integrity behavior of assumed prospective respondents and identification falsification as contributing factors that can potentially impact the assessment of nonresponse rates associated with the direct mail survey approach of collecting primary data structures.

### 3. Methodology

A quasi-experimental design was used to collect the necessary data for testing the study’s expressed hypotheses. A total of 1000 questionnaires were mailed to individuals on a test list. The sample test list of prospective respondents and their residential addresses was compiled from larger purchased mailing lists associated with 125 different direct mail survey studies conducted by a research firm in the United States in the previous year and were national in scope. All respondent names and addresses on the test list
were known to be valid, because after having purchased the addresses, they were submitted to the Coding Accuracy Support System (CASS) Certification Program of the USPS and only those names and addresses that could be CASS certified were used. Moreover, the sample test list of 1000 respondents and addresses used in the current study was created by randomly selecting eight records from each of the 125 sample files. In an effort to reduce potential gender bias, care was taken to randomly extract four male and four female respondents from each of the 125 files. Furthermore, none of the names and addresses selected for this study’s sample list was used by the research company in any of the 125 studies conducted in the previous year. After creating the sample test list, all the original prospective respondents’ names were replaced with either the fictitious names of Bill Cunningham or Susan Cunningham. Control was integrated into the selection process to ensure that none of the original prospective respondents living at the randomly chosen addresses were actually named Susan, Bill, or Cunningham. To eliminate potential gender bias, 500 questionnaires were addressed to Bill Cunningham and 500 to Susan Cunningham. After controlling for gender, the 1000 addresses were randomly assigned to the following four test conditions:

- **Test Condition #1**—MDA/Male, 25% (250) of the questionnaires were sent to known deliverable male addresses and addressed to Bill Cunningham;
- **Test Condition #2**—MDA/Female, 25% (250) of the questionnaires were sent to known deliverable male addresses but addressed to Susan Cunningham;
- **Test Condition #3**—FDA/Male, 25% (250) of the questionnaires were sent to known deliverable female addresses but addressed to Bill Cunningham;
- **Test Condition #4**—FDA/Female, 25% (250) of the questionnaires were sent to known deliverable female addresses and addressed to Susan Cunningham.

The topic of the survey was “Satisfaction with healthcare services,” and the 1000 questionnaires were mailed in plain white business envelopes with the research company’s return address. On the outside of the envelope of each deliverable questionnaire, there was a clearly printed request that the mailing be returned if undeliverable. The study was conducted in Spring 2001 and all questionnaires were mailed first class. A key underpinning to the success of the current research project is that the USPS’ delivery standard is that first class mailings are deliverable if the actual address portion of the mailed item is accurate regardless of the named individual associated with the address listing. According to the Office of the U.S. Postmaster General, a first class letter is normally considered deliverable if the street (or location) address information is deemed correct, even if the individual’s name associated with that street address information is actually incorrect. Given this USPS standard, it was assumed that all 1000 questionnaires with first class postage were deliverable and that for any of the questionnaires to be returned to the researchers as unopened “undeliverables,” the return process would be initiated by the individual residing at the known mailing address rather than by the USPS.

### 4. Analysis and results

In testing the study’s stated hypotheses, the corresponding percentages of the actual returned questionnaire counts were subjected to cross comparisons between and within gender groups using z tests, chi-square, and uncertainty coefficient test procedures.

#### 4.1. Integrity behavior of people who wrongly receive direct mail surveys

H1–H4 were used to investigate the study’s first issue of assessing the existence (or degree) of integrity behavior among people who incorrectly receive another person’s mail survey packet. H1 has to be rejected; that is, from an aggregate perspective, the data results (see Table 1) indicate that among all 1000 respondents included in the study, 407 subjects (40.7%) demonstrated integrity behavior by return-

<table>
<thead>
<tr>
<th>Male deliverable addresses (n = 500)</th>
<th>Female deliverable addresses (n = 500)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Integrity behavior</strong></td>
<td><strong>No integrity behavior</strong></td>
</tr>
<tr>
<td>Incorrect male-named addressee (n = 500)</td>
<td>Test condition #1—MDA/Male (n = 250)</td>
</tr>
<tr>
<td>Bill Cunningham</td>
<td>52 (20.8)</td>
</tr>
<tr>
<td>[cell %] (n = 250)</td>
<td>197 (78.8)</td>
</tr>
<tr>
<td>Incorrect female-named addressee (n = 500)</td>
<td>Test condition #2—MDA/Female (n = 250)</td>
</tr>
<tr>
<td>Susan Cunningham</td>
<td>89 (35.6)</td>
</tr>
<tr>
<td>[cell %] (n = 250)</td>
<td>161 (64.4)</td>
</tr>
<tr>
<td>MDA—Column total [MDA %] (n = 500)</td>
<td>141 (28.2)</td>
</tr>
<tr>
<td></td>
<td>358 (71.6)</td>
</tr>
<tr>
<td></td>
<td>1 (0.2)</td>
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<tr>
<td></td>
<td>266 (53.2)</td>
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<tr>
<td></td>
<td>230 (46.0)</td>
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<tr>
<td></td>
<td>4 (0.8)</td>
</tr>
</tbody>
</table>

The data results (see Table 1) indicate that among all 1000 respondents included in the study, 407 subjects (40.7%) demonstrated integrity behavior by return-
ing the misaddressed survey packet unopened. Another 588 of the subjects (58.8%) failed to demonstrate integrity behavior in returning the misaddressed survey packets. Another five subjects (0.5%) exhibited identification falsification behavior. Chi-square analysis, z test, and uncertainty coefficient test procedures were employed to assess the significance of the integrity behavior illustrated. Overall, the chi-square ($\chi^2 = 25.22, P = .0001$) and uncertainty coefficient ($t = 4.172, P = .0001$) test results suggest that significantly fewer subjects exhibited integrity behavior than nonintegrity behavior. The resulting 40.7% integrity behavior was also compared to a 50/50 proportional chance model using a z test procedure. The test results ($z_c = 5.769, P = .0001$) further support the notion that while the reported 40.7% is significant in nature, it is well below what could be expected from random chance. Consequently, while 40.7% of the subjects did exhibit integrity behavior, the real concern is that 58.8% of the subjects failed to exhibit integrity behavior. The results suggest that integrity behavior is low and might only have a weak inverse impact on nonresponse rates. More interesting is the existence of a moderately strong lack of integrity behavior that has a direct impact on the nonresponse rates associated with direct mail questionnaires.

4.2. Integrity behavior differences between females and males

In investigating H2 that dealt with integrity behavior differences between females and males, the results associated with males at deliverable mailing addresses (test conditions #1–MDA/Males and #2–MDA/Females) were compared to the results of females at deliverable mailing addresses (test conditions #3–FDA/Males and #4–FDA/ Females). The aggregated total return results displayed in Table 1 indicate that a total of 266 (53.2%) of the questionnaires sent to females (FDA conditions #3 and #4) were returned as undeliverable while only 141 (28.2%) of the questionnaires sent to males (MDA conditions #1 and #2) were returned as such. Since we are dealing with dependent and independent categorical variables, the uncertainty coefficient and z test procedures were used to test for statistical significance. Accordingly, the gender difference is statistically significant (uncertainty coefficient $t = 4.172, P = .0001$; $Z_c = 8.33, P = .0001$), and H2 can be confirmed.

In an attempt to gain a clearer understanding of the aggregate gender difference results, the integrity behavior of subjects (48%) associated with known deliverable mailing addresses with opposite gender-named addresses (test conditions #2–MDA/Female (89) and #3–FDA/Male (151) or (240)/500) was tested against the integrity behavior factor of subjects (33.4%) with known deliverable mailing addresses with same gender-named addressees (test conditions #1–MDA/Male (52) and #4–FDA/Female (115) or (167)/500). The data results indicate that 240 (48.0%) of the 500 subjects receiving mail questionnaires addressed to a person of the opposite sex exhibited integrity behavior by returning their questionnaires to the researcher as undeliverable, whereas only 167 (33.4%) of the 500 subjects receiving direct mail questionnaires addressed to a person of the same sex demonstrated human integrity by returning their questionnaires as undeliverable. This difference is statistically significant (uncertainty coefficient $t = 2.333, P = .0001$; $z_c = 4.76, P = .0001$). The results suggest that those who receive a direct mail questionnaire addressed to an unknown person of the opposite sex are more likely to return the questionnaire to the researcher as an undeliverable questionnaire.

A further investigation was conducted on gender differences by directly comparing the integrity behavior of the 35.6% of male subjects of known male deliverable addresses in which the questionnaires were incorrectly addressed to Susan Cunningham [test condition #2–MDA/ Female (89)/250] to that of the 60.4% of female subjects of known female deliverable addresses for which the questionnaires were incorrectly addressed to Bill Cunningham [test condition #3–FDA/Male (151)/250]. This difference is statistically significant (uncertainty coefficient $t = 1.852, P = .0001$; $z_c = 5.73, P = .0001$). Gender differences were further explored by comparing the integrity behavior of the 20.8% of male subjects of known male deliverable addresses in which the questionnaires were incorrectly addressed to Bill Cunningham [test condition #1–MDA/ Male (52)/250] to that of the 46% of female subjects of known female deliverable mailing addresses in which the questionnaires were incorrectly addressed to Susan Cunningham [test condition #4–FDA/Female (115)/250]. Again, this difference was found to be significant (uncertainty coefficient $t = 1.583, P = .0002$; $z_c = 6.21, P = .0001$). The results from the last two comparisons further support H2 and, therefore, the notion that gender of the receiver has a significant influence in determining the integrity behavior of a person who mistakenly receives a mail questionnaire not addressed to him/her. The results suggest that females who receive a mail questionnaire addressed to some other person are more likely than males to exhibit integrity behavior by sending back unopened the misaddressed questionnaire to the researcher as undeliverable.

4.3. Integrity behavior among males receiving incorrectly addressed surveys

H3 limits the investigation of integrity behavior to only the male subjects receiving incorrectly addressed mail questionnaires. Here, male recipients (20.8%) who returned mail questionnaires incorrectly addressed to Bill Cunningham [test condition #1–MDA/Male (52)/250] were compared to those male recipients (35.6%) who returned mail questionnaires incorrectly addressed to Susan Cunningham [test condition #2–MDA/Female (89)/250]. This difference was found to be significant ($z_c = 3.73, P = .0001$). The results suggest that even though integrity behavior tends to be somewhat low among male subjects, males are more likely
to exhibit integrity behavior and return an unopened mail questionnaire as undeliverable if it is incorrectly addressed to a female.

4.4. Integrity behavior among females receiving incorrectly addressed surveys

H4 investigates integrity behavior among only female subjects who received incorrectly addressed mail questionnaires. Female recipients (46%) who returned mail questionnaires incorrectly addressed to Susan Cunningham [test condition #3–FDA/Male (151)/250] were compared to those female recipients (60.4%) who returned mail questionnaires incorrectly addressed to Bill Cunningham [test condition #3–FDA/Male (115)/250]. This difference was found to be significant \( z_c = 3.26, P = .0001 \). The results suggest that integrity behavior is somewhat strong among female subjects, especially among those females who receive a mail questionnaire incorrectly addressed to a male.

4.5. Likelihood of creating identification falsification error

H5 focused on investigating the likelihood of recipients of incorrectly addressed mail questionnaires creating an identification falsification behavior by wrongly completing and returning the questionnaire to the researchers. The data results displayed in Table 1 indicate that among the 1000 subjects receiving incorrectly addressed mail questionnaires, one questionnaire that was sent to a male addressed as Bill Cunningham, three questionnaires sent to females addressed as Susan Cunningham, and one questionnaire sent to a female addressed as Bill Cunningham were wrongly completed and returned to the researchers. That out of the five respondents who did wrong complete and return the questionnaire not addressed to them than are males. In addition, the findings indicate that individuals who receive a mail questionnaire addressed to an unknown person of the opposite sex are more likely to return the unopened questionnaire to the sender as an undeliverable. Here again, a significantly higher percentage of the returned questionnaires addressed to persons of the opposite sex came from females than from males. There is a definite need for more empirical research concerning integrity behavior (or the lack thereof) among prospective respondents of mail questionnaires and the development of strategies to increase such behavior. Concerning problems of identification falsification, the results indicate that only 5 (0.5%) of 1000 sampled questionnaires were wrongly completed and returned to the researchers. This finding is fortunate in that it strongly suggests that administrative sampling/coverage error is unlikely to be significantly increased by the inclusion of data from individuals who respond to a questionnaire not addressed to them. That out of the five respondents who did wrongly complete and return the questionnaire not addressed to them, four (80%) were female, suggests that if identification falsification takes place, it is more likely to be among females rather than males.

5. Discussion

In dealing with the problems of nonresponse rates with mail questionnaires, most of the research emphasis has been on developing methods of increasing response rates by better understanding the factors that prospective respondents use to disconnect their willingness to engage in participating in a deliverable survey. Little is known or understood about the integrity behavior associated with people who receive a direct mail questionnaire that was intended for some other person. The proper ethical-oriented response behavior in this type of situation would be for the respondent to return the unopened survey packet to the researcher as undeliverable. The results of the present study indicate that integrity behavior does exist among a significant group of people (40.7%). More importantly, the results strongly indicate that almost 60% of questionnaires mailed to known valid addresses, but to individuals who do not live at those addresses, are not returned to the researcher. In these cases, wrongly named prospective respondents’ lack of exhibiting integrity behavior to such mailings does not represent their unwillingness to participate as selected respondents; therefore, should not be viewed as nonresponse behavior. Yet in turn, such a high number of nonreturned questionnaires definitely poses a problem because they improperly reduce the response rate and inflate the nonresponse rate and any resulting nonresponse error. One of the main ways to diminish this particular problem is to make sure that the selected mailing lists used for mail surveys are as accurate as possible by submitting the addresses to the CASS Certification Program of the USPS. From an integrity behavior perspective, the results suggest that females are more likely to return unopened mail questionnaires not addressed to them than are males. In addition, the findings indicate that individuals who receive a mail questionnaire addressed to an unknown person of the opposite sex are more likely to return the unopened questionnaire to the sender as an undeliverable. Here again, a significantly higher percentage of the returned questionnaires addressed to persons of the opposite sex came from females than from males. There is a definite need for more empirical research concerning integrity behavior (or the lack thereof) among prospective respondents of mail questionnaires and the development of strategies to increase such behavior. Concerning problems of identification falsification, the results indicate that only 5 (0.5%) of 1000 sampled questionnaires were wrongly completed and returned to the researchers. This finding is fortunate in that it strongly suggests that administrative sampling/coverage error is unlikely to be significantly increased by the inclusion of data from individuals who respond to a questionnaire not addressed to them. That out of the five respondents who did wrongly complete and return the questionnaire not addressed to them, four (80%) were female, suggests that if identification falsification takes place, it is more likely to be among females rather than males.

6. Conclusion, limitations, and suggestions for future research

Although exploratory in nature, this study makes several important contributions to the literature. This study is the first to empirically investigate and identify the existence of a specific response behavior that has nothing to do with either a person’s willingness or unwillingness to participate in mail surveys. Yet, this response behavior does directly impact how researchers post facto assess both response and nonresponse rates. While there is a significant number of people who display integrity behavior, more disturbing is the fact that there appears to be a significantly larger group of people (about 60%) who lack this important behavior, even when there are printed instructions on the outside of the survey...
packet to return the packet to the sender. This lack of integrity behavior on the part of prospective respondents receiving incorrectly addressed questionnaires poses a problem because it automatically reduces the response rate, thus increases the nonresponse rate and raises questions and concerns about the impact of nonresponse bias on data quality, reliability, validity, and the generalizability of the data results. Confounding the difficulty of detecting the level of integrity behavior (or lack of it) in mail survey studies is how most researchers view the issue of nonresponse rates as a post facto issue. Traditionally, researchers view nonresponse rate simply as a measure of the level (or degree) of respondent’s unwillingness to assume the role of a respondent and calculate it as the reciprocal percentage of the response rate (nonresponse % = 100% − response rate %). Moreover, reported response rates end up being incorrect if this integrity behavior factor is not considered. For example, the study’s results suggest that actual usable response rates of direct mail questionnaires may be higher than reported by a factor of about 59% of those undeliverable—from a researcher’s point of view—questionnaires that should have been returned.

Regarding concerns about the degree of identification falsification in survey research, this study’s findings suggest that in this particular misaddressed direct mail survey situation, few individuals actually complete and return questionnaires not meant for them, thus inflation of administrative sampling or coverage error from this behavior source should not be a concern.

As is often the case, there are limitations of the present study that lead to suggestions for future research. First, the uniqueness of this study limits the generalizability of its findings to only other direct mail questionnaires with the same type of uniqueness. That is to say, this study focused simply on having prospective respondents return an unopened questionnaire to the researchers because of a wrong (fictitious) named person on the mailing address. Whereas, most direct mail questionnaires are designed with the desire of having a prospective respondent open, complete, and return the questionnaire. For example, recent research suggests that dollar incentives tend to increase response rates for deliverable mail questionnaires by 30% to 52% (Wayman, 1997). It would be interesting to explore what the likelihood might be that mail survey packets that include cash incentives and clearly advertise this fact on the outside of the envelope might actually cause more individuals to return the survey packet as undeliverable rather than throwing it in the trash. On the other hand, such a practice might also increase identification falsification behavior (i.e., the number who wrongly complete and return a questionnaire not meant for them).

Second, this investigation limited how prospective respondent integrity behavior was defined as being just an ethical-oriented response act of returning a misaddressed piece of first class mail. This initial definition and its measurement may be too restrictive in nature. There is a definite need for more research that focuses on refining the integrity behavior construct and investigating what factors might trigger greater levels of integrity behavior in direct mail questionnaires as well as specific strategies that can enhance the activation of such a behavior among individuals who wrongly receive direct mail questionnaires. Here, qualitative research efforts are needed to investigate and gain clearer insights into the attitudes, emotions, and motives that people use to justify, to themselves, exhibiting a lack of integrity behavior in returning wrongly addressed mail survey packets. Another important research area would be in determining whether a trade-off between reducing nonresponse bias and inflating administrative sampling or coverage error would occur under different mailing conditions, especially since much research has focused on identifying factors that can effectively increase response rates in mail questionnaires (Dillman, 2000; Finlay and Thistletwaite, 1992; Fox et al., 1998; Schlegelmilch and Diamantopoulos, 1991; Shaw et al., 2001; Yammarino et al., 1991).

Another limitation of the study is that the demographics of the recipients living at the chosen addresses are not known, other than gender. For example, it is impossible to assess whether older or more educated individuals are more or less likely to exhibit integrity behavior and return such undeliverable questionnaires than their opposite counterparts. In summary, researchers need a clearer understanding of the elements that create nonresponse in mail survey studies. We hope that the current study’s findings help generate more interest among other researchers on this important, yet neglected, topic of inquiry.

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