

2015

A Mixed-Methods Investigation of Factors and Scenarios Influencing College Students' Decision to Complete Surveys at Five Mid-Western Universities

Kristin L. K. Koskey
The University of Akron

Bryce Cain
Kent State University

Toni A. Sondergeld
Bowling Green State University

Henrique G. Alvim
Walsh University

Emily M. Slager
University of Washington

Follow this and additional works at: <https://scholarworks.bgsu.edu/mwer>

[How does access to this work benefit you? Let us know!](#)

Recommended Citation

Koskey, Kristin L. K.; Cain, Bryce; Sondergeld, Toni A.; Alvim, Henrique G.; and Slager, Emily M. (2015) "A Mixed-Methods Investigation of Factors and Scenarios Influencing College Students' Decision to Complete Surveys at Five Mid-Western Universities," *Mid-Western Educational Researcher*. Vol. 27: Iss. 1, Article 2.

Available at: <https://scholarworks.bgsu.edu/mwer/vol27/iss1/2>

This Featured Article is brought to you for free and open access by the Journals at ScholarWorks@BGSU. It has been accepted for inclusion in Mid-Western Educational Researcher by an authorized editor of ScholarWorks@BGSU.

A Mixed-Methods Investigation of Factors and Scenarios Influencing College Students' Decision to Complete Surveys at Five Mid-Western Universities

Kristin L. K. Koskey
University of Akron

Bryce Cain
Kent State University

Toni A. Sondergeld
Bowling Green State University

Henrique G. Alvim
Walsh University

Emily M. Slager
University of Washington

Achieving respectable response rates to surveys on university campuses has become increasingly more difficult, which can increase non-response error and jeopardize the integrity of data. Prior research has focused on investigating the effect of a single or small set of factors on college students' decision to complete surveys. We used a concurrent mixed-method design to examine (1) college students' rationales for choosing to complete or not complete a survey presented to them and (2) their perceptions on the importance of multiple factors on their decision to complete or not complete surveys in a higher education setting. A total of 837 undergraduate and graduate students across five institutions in the state of Ohio completed the qualitative survey component, 808 completed the 72-scenario close-ended survey component, and 701 completed the rank-order component. The survey was administered in the classroom either at the beginning or end of the class period. The college students reported that the person administering, topic, incentives, length, and method of administration are the factors most influencing their decision to complete a survey. The undergraduate students were significantly more likely than graduate students to include incentives as one of the top three important factors in deciding to complete a survey. Qualitative results additionally revealed that the students felt day/time and location of survey request plays an important role in their decision. Recommendations are provided to survey administrators regarding potential effective and ineffective survey recruitment strategies.

The research literature is replete with information focusing on the various factors related to survey response and non-response (e.g., Church, 1993; Cook, Heath, & Thompson, 2000;

Dillman, 2000; Fan & Yan, 2010; Porter & Umbach, 2006). A number of studies testing the effects of different survey request factors on response rate focus on the general public (e.g., James & Bolstein, 1992, 2009; Trussell & Lavrakas, 2004). Some of the existing research focuses on acquiring an understanding of why college students, a population of individuals frequently provided with survey requests (e.g., Porter, Whitcomb, & Weitzer, 2004), choose to complete or not complete surveys. However, additional research on this target population is warranted as much of the existing literature fails to simultaneously include multiple factors demonstrated to impact response rates to surveys in general. In addition, the proliferation of surveys being administered to college students has created a culture of over-surveying, which is associated with several consequences. Some of these consequences include survey fatigue (Porter et al., 2004; Wise & Ann Barham, 2012), low quality survey responses (Biemer & Lyberg, 2003; Chen, 2011), and negative effects on intercampus accountability measures (Chen, 2011).

Response rates to surveys in general are found to have steadily declined over the years (e.g., Atrostic, Bates, Burt, & Silberstein, 2001; Baruch, 1999). This decline has further been observed among the college student population. For example, Dey (1997) empirically demonstrated college students' response rates to national longitudinal surveys substantially decreased from 58% between 1961-1962 to 21% between 1987-1991. A similar trend was observed more recently when comparing college students' response rates to the National Survey of Student Engagement (NSSE), one of the more widely adopted assessments administered to students on college campuses. In 2011, 668 colleges/universities participated in the administration of NSSE, which resulted in an overall response rate of 33% (NSSE, 2013a). This response rate was five percentage points lower than the 38% response rate attained during the 2010 administration when only 598 institutions participated (NSSE, 2013b).

Although it has been acknowledged that many campus officials now consider a 20% response to their surveys and assessments the norm and acceptable (Lipka, 2011), others such as Greenlaw and Brown-Welty (2009) noted that low response rates jeopardize the integrity of one's data, thus calling the validity of the inferences drawn from the data into question. In addition, when high response rates are not obtained from the administration of a particular survey, the results from the survey may become susceptible to non-response error (Dillman, 2000; Mitra, Jain-Shukla, Robbins, Champion, & Durant, 2008). Non-response error occurs when those individuals who opt not to complete a particular survey may significantly differ on the variables under study from those who chose to complete the survey.

Due to the potential ramifications associated with low response rates to the surveys university officials ordinarily request of their students, it is advantageous to investigate the factors undergraduate and graduate students identify as being most and least important when asked to complete a survey. The results can in turn be used to inform how survey requests might be structured to maximize response rate. A number of experimental studies exist where a factor, such as type of incentive or mode (paper-and-pencil and/or web-based), is manipulated to determine the effect on response rate. However, to our knowledge, no comprehensive investigation of the multiple factors has been conducted. It is beyond the scope of this paper to intricately review all of the factors shown to have an impact on response rate. Nevertheless, a brief overview of the literature guiding our study follows.

Theoretical Considerations Regarding Response Rates

Groves, Cialdini, and Couper (1992) broadly suggested that societal-level factors, attributes associated with survey design, characteristics of the sample person, attributes of the surveyor, and participant-surveyor interactions all contribute to one's decision to participate in a survey. According to the leverage-saliency theory (Groves, Singer, & Corning, 2000), the influence of attributes of a survey request differs depending on the individual's experiences and background, thus making it likely that different attributes are more or less important to different persons. In addition, Groves et al. (1992) acknowledged that, "the potential survey [*sic*] respondent typically does not have a large personal interest in survey participation, and, consequently, is not inclined to devote large amounts of time or cognitive energy to the decision of whether to participate" (p. 480). Consequently, the researchers pointed out that prospective survey participants regularly utilize at least one of Cialdini's (1988) compliance principles (also referred to as "heuristic rules") when agreeing to participate in a survey: reciprocity, consistency, social validation, authority, scarcity, and liking. We briefly describe each of these heuristics, as they are all directly applicable to our current study.

The reciprocity heuristic is similar to a *quid pro quo* or social exchange framework of thinking – if one is given something up front, such as an incentive, then that person should become more willing to comply with a given request. Dillman's (2000) social-exchange theory elaborates that if a person is provided with a non-contingent incentive upfront, then that person is more likely to respond positively by completing the survey due to a feeling of social obligation. Regarding the consistency heuristic, it essentially suggests that once a person becomes instilled with a value, belief, or position, then that person will generally act in accordance with that value, belief, or position. Applied to the current study, the consistency heuristic would suggest that if a person sees the inherent value in survey participation or having his or her voice heard on a particular survey topic of interest, then that person will likely feel motivated to engage in a certain behavior (e.g., choosing to complete a survey) without succumbing to external pressures.

The social validation heuristic resembles conformity in that it suggests if one believes that similar others would engage in a certain behavior, then that person is likely to comply with the request. For instance, if one holds the belief that most other classmates will complete a survey when survey participation is requested in class, then that person is also likely to complete the survey in an effort to "fit in" and avoid experiencing feelings of social discomfort, awkwardness, guilt, and/or isolation. When one is more likely to comply with a request if the request is made from someone with perceived authority, the authority heuristic is being applied. Related to the current study, some students might feel more obligated to complete a survey if it is made by their professor or within their professor's presence.

The scarcity heuristic implies that one is more likely to comply with a request when the request is presented in a way that seems limited, scarce, or rare. For example, some students might opt to participate in a survey if they are given the impression that they are only one of a small number of students selected to participate in a given survey. Finally, the liking heuristic suggests that one is likely to engage in a certain behavior when one likes and/or establishes rapport with a person or organization. An example of this heuristic would be a student choosing to complete a

survey simply because he or she “likes” the person’s personality who is requesting his or her participation or because he or she “likes” the organization in which the person belongs.

Research on Factors Impacting Response Rates

Fan and Yan (2010) have identified four stages of the ‘survey process’ that impact response rates to surveys: (1) survey development, (2) survey delivery, (3) survey completion, and (4) survey return. The first two stages encapsulate the majority of factors researchers have focused on when conducting empirical studies on response rates to surveys, as the factors comprising the survey development and delivery stage can be easily manipulated.

Fan and Yan’s (2010) survey development stage consists of two factors influencing response rate, namely the content and presentation of a survey. The content factor is comprised of the sponsorship, topic, and length of a survey. Galesic and Tourangeau (2007) empirically demonstrated how a survey’s sponsorship results in differential responses among participants by manipulating the sponsorship (i.e., neutral research institution vs. feminist organization) associated with a survey on sexual harassment. Groves et al. (1992) illustrated how the topic of a survey results in higher response rates if it piques the interest of prospective participants. Finally, perceived length of a survey is consistently found to negatively relate to response rates (Cook et al., 2000; Walston, Lissitz, & Rudner, 2006), with thirteen minutes or less being found as the ideal length to secure acceptable response rates among college student populations (as cited by Fan & Yan, 2010).

Question writing, question ordering, and visual display are housed under the presentation factor of the survey development stage (Fan & Yan, 2010). It has been suggested that the way survey items are worded (Dillman, 2000; Dillman & Smyth, 2007), sequenced (Dillman, 2000; Tourangeau, Couper, & Conrad, 2004), and aesthetically displayed (Dillman, 2000) also play an important role in prospective participants’ decision to complete a survey. In fact, Dillman (2000) noted that developing survey questions that are clear and easy to read, ordering questions in organized and practical way, and adopting a survey layout that is easy for prospective participants to navigate are all associated with small, albeit positive, effects on survey response rates. Further, these presentation factors were found to have an even greater impact on decreasing item-nonresponse.

Factors included in Fan and Yan’s (2010) survey delivery stage include the sampling method, contact delivery modes, invitation designs, utilization of pre-notification and reminders, and use of incentives. Although their research focused solely on web-based surveys, other common modes (e.g., paper-and-pencil) and contact delivery methods (e.g., in-person, over the phone, in the mail) comprise these two overarching factors. The method and mode used to sample participants has been shown to yield different levels of response rates (Messer & Dillman, 2011; Millar & Dillman, 2011; Shih & Fan, 2009). Regarding invitation design, researchers found response rates increased by utilizing certain personalization tactics (Cook et al., 2000; Heerwegh, 2005; Joinson, Woodley, & Reips, 2007) and making reference to the scarcity of the survey (Henley, 1976; Roberts, McCrory, & Forthofer, 1978). For instance, Heerwegh (2005) found in an experimental study that an e-mail invitation for a web-based survey including the potential respondent’s name resulted in a statistically significantly higher response rate compared to when

addressing the invitation as “Dear student.” The personalization condition yielded a 57.7% response rate, while the non-personalization condition yielded a 49.1% response rate.

Meta-analyses also consistently document that the number of contacts with prospective survey participants is associated with increased response rates (Cook et al., 2000; Heberlein & Baumgartner, 1978; Manfreda, Bosnjak, Berzelak, Haas, & Vehovar, 2008; Yammarino, Skinner, & Childers, 1991). Setting up call centers to contact non-respondents has also been noted as an effective and cost worthy method to increase response rates (Nair, Adams, & Mertova, 2008). Further, following up a web-based survey request with mail request was found to increase response rate compared to web-based only requests (Messer & Dillman, 2011; Millar & Dillman, 2011).

Use of incentives is one of the most common factors manipulated to examine the effect on response rates. Incentivizing strategies vary in form (e.g., cash, gift cards, extra credit, prizes), are awarded at different times (e.g., pre-paid, post-paid lotteries), and come in a variety of different amounts. Until recently, pre-paid incentives have consistently been found to be associated with increased response rates (Porter, 2004) while post-paid lottery incentives have not (Görizt, 2006; Porter & Whitcomb, 2003). More recently, however, Laguilles, Williams, and Saunders (2011) documented support for the effectiveness of post-paid lottery incentivizing tactics.

With a few exceptions (e.g., McCree-Hale, De La Cruz, & Montgomery, 2010), the quantity/value of an incentive, as well as the number of incentives associated with surveys, were not linearly related to increased response rates beyond a certain value (Bosnjak & Tuten, 2003; Görizt, 2006; James & Bolstein, 1992, 2009; Porter & Whitcomb, 2003; Trussell & Lavrakas, 2004). For instance, Szelényi, Bryant, and Linholm (2005) found that while the use of a \$2 monetary incentive increased response rate over no monetary incentive, the use of a \$5 monetary incentive did not substantially increase response rate over the \$2 incentive amount. Others have consistently found that response rates significant increase from \$0 to \$1 but not beyond \$1, supporting the use of non-contingent \$1 incentives (James & Bolstein, 1992, 2009; Trussell & Lavrakas, 2004).

James and Bolstein (2009) found, however, that the quality of responses (as measured by the length of qualitative comments provided and number of short answers completed on a questionnaire) was increased when using larger incentives. Trussell and Lavrakas (2004) further noted that the effect of the value of monetary incentive differed depending on a participant’s response to the initial survey request. Briefly, there was no significant difference in response rates when offered \$1 at the initial request compared to when offered higher dollar amounts. However, for those who did not agree to respond to the initial survey request, a higher dollar amount had a greater impact on the response rate to additional survey requests, a finding consistent with the leverage-salience theory.

Though a respectable amount of research has focused on ways to increase response rates to surveys, studies to date generally only include and/or manipulate one or two factors related to response rates and substantially differ in respect to sample target population. Little research has focused on acquiring a holistic understanding of what influences college students’ decision to

complete surveys. Given that college students are a large population frequently requested to complete surveys, this area of research has significant implications. This information could potentially aid researchers and university personnel in developing effective strategies to increase response rates and decrease nonresponse error when administering future surveys to college students. As a result, broadly and systematically exploring this gap in the research literature was a worthwhile endeavor.

Current Study

The purpose of this exploratory descriptive study was two-fold. First, to use a multi-faceted approach to inform the research literature of the factors college students self-report as being most and least important when presented with a survey request. Second, to establish an empirical foundation for future experimental studies focusing on increasing response rates and/or reducing non-response error on college campuses. Specifically, we identified the factors associated with undergraduate and graduate students’ decision to complete or not complete surveys when presented with a survey request. The following research questions were addressed:

1. When presented with a survey request during class, what reasons do the college students provide as rationale for why they chose to complete or not complete the survey?
2. What factors do the college students self-report as *not* influencing their decision as to whether to complete a survey when presented with a series of 72-survey-request scenarios?
3. What factors do the college students self-report as most and least influencing their decision to complete a survey when presented with a series of 72 survey-request scenarios?
4. What factors do the college students rank-order as being most and least important when presented with a survey request? Does the rank-order significantly differ between the undergraduate and graduate students?

Method

Data Collection Procedure and Instruments

IRB approval was obtained for this research from five four-year public institutions in the state of Ohio. A total of 861 undergraduate and graduate students were provided the opportunity to participate in completing two surveys in class during the 2012-13 academic year. Table 1 provides the overall enrollment at each institution broken down by undergraduate and graduate.

Table 1
Institution Enrollment Numbers

	Undergraduate	Graduate	Total
Institution 1	14,482	2,483	16,965
Institution 2	22,968	6,030	28,998
Institution 3	44,201	13,265	57,466
Institution 4	20,473	4,455	24,928
Institution 5	12,178	1,203	13,381

Note. Based on Fall 2013 main campus only 14th/15th day headcount numbers.

The students were read a standardized prompt by either the instructor or an outside researcher to explain the research, and each student was provided an informed consent form to assist them in their decision of whether or not to voluntarily participate in the study. No incentive was used to recruit the students.

Survey 1 asked for a rationale for why the students were choosing to complete or not complete the second survey. Survey 2 consisted of three sections. In the first section, the students rated how likely they were to complete a university survey for 72 different survey request-scenarios. The majority of the request-scenarios included in Survey 2 were guided by the work of Cialdini (1988) and Fan and Yan (2010). The students were asked to indicate *Would Not Influence My Decision* if they felt a factor would not influence their decision to complete or not complete a survey. For the factors the students felt would influence their decision, they rated in the following ways: *Would Not Complete*, *Unlikely To Complete*, *Likely To Complete*, or *Would Complete*. The request-scenarios developed for the study were separated into six overarching categories, namely “Characteristics of Survey Request,” “Mode and Characteristics of Survey Request,” “Length of Survey,” “Time and Location of Survey Request,” “Incentives,” and “Other Characteristics Associated with a Survey Request.” A complete list of the 72 request-scenarios is provided in the Appendix. In the second section of Survey 2, the students rank-ordered the top three factors that contribute to their decision to complete a survey. Finally, demographic information was requested in the third section of Survey 2.

The request scenarios and factors comprising the first section of Survey 2 were primarily guided by the research literature described earlier. The authors purposefully strived to create request-scenarios that coincided with Cialdini’s (1988) heuristic principles as well as Fan and Yan’s (2010) four stages of the ‘survey process’ that have been found to impact response rates to surveys. Additional survey request scenarios and factors that were not necessarily included and/or well-documented in the research literature but deemed common on college campuses and/or relevant to the study by the authors of the current study (e.g., using candy and extra credit as an incentivizing strategy, specifying various locations on campus where students might be asked to complete a survey, etc.) were also included.

The authors thematically consolidated the items that comprised the first section of Survey 2 into nine overarching factors, excluding psychological-related factors such as those oriented around obedience to authority, conformity, personalization of invitation, and the scarcity effect. These overarching factors (i.e., person, method, topic, types of questions, type of actual survey, length, day/time, location, and incentive/prize) were the factors included in the second section of Survey 2, in which students were instructed:

Listed below are several factors that may contribute to your decision to complete or not complete a survey when you are asked. Write a “1” next to the factor that would **most** affect your decision, a “2” next to the **second most** important factor, and a “3” next to the **third most** important factor. **Leave the lines next to the remaining factors blank.**

The survey materials were piloted using a convenience sample of ten college students. The students were instructed to complete Survey 1 and Survey 2, and to elaborate on any portion of the surveys they found confusing or needed re-wording. After receiving this preliminary feedback, only minor adjustments were made to the surveys as no major discrepancies were

brought to the authors' attention. Copies of the surveys used in our study are available upon request by contacting the first or second author.

Sample and Response Rates

Forty-seven classroom visitations were completed across the five institutions. Table 2 provides the number of respondents by institutions broken down by undergraduate and graduate students.

Table 2
Number of Students Participating by Institution

	Undergraduate	Graduate	Not Specified	Total
Institution 1	159	2	13	174
Institution 2	53	11	8	72
Institution 3	195	21	21	237
Institution 4	195	71	23	289
Institution 5	0	64	1	65
Total	602	169	66	837

The final sample ($n = 808$) was demographically diverse (see Table 3).

Table 3
Self-Reported Demographic Information for Students Participating in Survey 2

	<i>f</i>	%
Sex		
Female	448	55.45
Male	329	40.72
Transgender	5	0.62
Did Not Answer	26	3.22
Race		
American Indian/Alaskan Native	2	0.25
Asian or Pacific Islander	24	2.97
Black	66	8.17
Hispanic/Latino(a)	20	2.48
Multiracial	19	2.35
White	606	75.00
Other	16	1.98
Did Not Answer	55	6.81
Class Rank		
Freshman	211	26.11
Sophomore	96	11.88
Junior	115	14.23
Senior	184	22.77
Graduate Student	169	20.92
Did Not Answer	33	4.08
Student Classification		
Full-Time	715	88.49
Part-Time	64	7.92
Did Not Answer	29	3.59

Note. A total of $n = 808$ students participated in Survey #2 (93.84% response rate). The participants ranged from 16-60 years old ($M_{age} = 22.78$; $SD_{age} = 6.23$).

The number of students participating across institutions varies due to the researcher accessibility to classrooms and success in recruiting instructors willing to provide class time for the study. A total of 837 of the 861 students (97.21% response rate) presented with our survey request participated in Survey 1. Of these 837 students, 32 indicated that they did not want to participate in Survey 2. Three of the students did not complete Survey 1 but chose to complete Survey 2. As a result, a total of 808 students (93.84% response rate) participated in Survey 2.

Data Analyses

Research Question 1. The first two authors independently coded the qualitative responses to address the first research question as to why the students chose to complete or not complete the second survey. Only two rather than all five of the authors coded the qualitative data because the students' written responses were straightforward lists of reasons. The data did not necessitate a deep content analysis.

For those providing a rationale why they chose not to complete Survey 2, the researchers independently examined the responses to make a list of the emergent codes. The emergent codes generated by each researcher were then compared to generate a complete list of codes. After determining a final coding scheme, the responses were coded independently as a pilot and any clarifications needed in the description of when a code would be assigned were made to increase the agreement between the two raters. Data were then independently coded and any disagreements in codes assigned were discussed by the two raters and resolved to assign final codes. Discussions typically related to a rater overlooking a code that should have been assigned or assigning the wrong code in error. Some of the students provided multiple rationales and thus their responses were assigned multiple codes.

A similar process was used when coding responses as to why the students chose to complete Survey 2; however, an a priori coding scheme guided by the literature (similar to as the survey items were) was used. After a pilot round of coding of 50 randomly selected responses, modifications were made including collapsing codes that were repetitive or closely related and clarifying the wording and meaning of codes. The two researchers then independently coded all of the data and resolved any disagreements to assign final codes.

Three students chose not to complete Survey 2 but did not provide an accompanying rationale. Some of the students provided up to three rationales as to why they did not complete Survey 2. As such, the raters assigned up to three codes per student. Cohen's Kappa was computed to test the degree of agreement between the two raters on the first code assigned, second code assigned, and third code assigned. Given that each rater coded the data independently and could have entered up to three codes per person (reflecting up to three rationales), the order of codes entered in the data spreadsheet was important so that meaningful inter-rater reliability analyses could be conducted. Thus, each rater entered the code in the data file aligned with a student's response in the order it appeared in the student's response. For instance, if a student first mentioned or listed "I don't like completing surveys," then the code entered in the data file aligned with that category would be entered in Column 1 of the data file for that student. If that same student then wrote "The survey is too long," then the code associated with that category would be entered in Column 2 of the data file. This process ensured that the reliability was being analyzed across the

same segments of text being coded. An inter-rater reliability analysis indicated substantial to perfect agreement¹ between the two raters across all three codes assigned with Kappa's ranging from .793 to 1.00, $p < .001$.

Research Questions 2 and 3. Descriptive statistics were used to determine what factors the students reported as being the least to most important in their decision to complete or not complete a survey.

Research Question 4. An item analysis applying the Rasch model (1960, 1980) using Winsteps (Linacre, 2006) was conducted to determine the rank-order of the factors. While this model is traditionally applied for constructing measures, an item-map is also produced when conducting the item analysis where items (factors in this study) are rank-ordered on a continuum based on the item measures (see Bond & Fox, 2007 for elaboration on the Rasch model). When using the Rasch model with rank-ordered data outcomes produced look like that of a one-facet test because the items are placed on a continuum centered around the mean difficulty item, but it is not possible to compare average person agreement levels with item difficulties (two-facets) due to the nature of the data (Bramley, 2010; Linacre, 1989). A differential item functional analysis (DIF) was then used to test whether the factors ranked as the three most important significantly differed between the undergraduates and graduate students. DIF was conducted at the individual item level rather than overall scale level since rank-ordered data were being evaluated.

Results

Research Question 1 – Rationales for Choosing to Complete or Not Complete the Survey

A total of 29 students provided a response as to why they chose not to complete Survey 2. Some of the surveys were administered at the beginning of class, while others were administered at the end of class based on each instructor's request. When administered at the beginning of the class, the students who did not participate in Survey 2 stayed in the room and sat quietly (e.g., reading). When administered at the end of the class, the students who chose not to complete Survey 2 left the room.

Table 4 provides the final coding scheme and a summary of the frequencies and exemplars of the rationales provided. One of the most frequent rationales was that they had other class-related priorities to attend to during the time allotted for the survey (28%). The students specified class-related priorities to work on such as "a paper to finish," assigned readings to complete for class, or generally stated "hav[ing] stuff due today." Another equally frequent rationale was that they disliked competing surveys in general (28%). For instance, one student wrote, "I dislike surveys." Others indicated they did not have an interest in this survey in particular due to the topic by stating, for example, "I have zero interest in the subject matter."

¹ < 0.00 = poor agreement; 0.0-0.20 = slight agreement; 0.21-0.40 = fair agreement; 0.41-0.60 = moderate agreement; 0.61-0.80 = substantial agreement; 0.81-1.00 = almost perfect agreement (Landis & Koch, 1977).

Table 4
Rationale Frequencies and Percentages for Students Choosing Not to Complete Survey 2 (n =29)

Code/Category	<i>f</i> ^a	% ^b	Exemplar
Other class related priorities to attend to	8	27.59	“Because I heard it would be 10 minutes of my time that I can spend reading [at] least 6 pages of my book.”
Dislike completing surveys in general or lack of interest in completing this survey	8	27.59	“I dislike surveys.”
Tired, want to go home	6	20.69	“I’m ready to go home.”
Survey length is too long	6	20.69	“Too long.”
No benefit to me (no personal benefit, no incentive)	4	13.79	“No incentive!”
Over surveyed	3	10.34	“I have participated in many studies already this year.”
Other	3	10.34	“I don’t have the time to take surveys.”
Not required	1	3.45	“I was informed at the beginning of the survey that I did not have to complete it...”

Note. A total of 32 students indicated that they did not want to participate in Survey 2, with $n = 29$ providing a qualitative explanation and $n = 3$ opting not to provide a qualitative explanation. ^aFrequencies sum to greater than the sample size of students choosing not to complete Survey 2 because some students provided multiple reasons (up to four) as to why they chose not to complete Survey 2. ^bPercentages computed out of the total sample size of those who provided a qualitative response explaining why they chose not to complete Survey 2 ($n = 29$).

A total of 764 students provided a response as to why they chose to complete Survey 2. Some of the students provided up to four rationales for choosing to complete Survey 2. An inter-rater reliability analysis indicated almost perfect or perfect agreement between the two raters with Kappa’s ranging from .940 to 1.00, $p < .001$. Table 5 provides the final coding scheme and a summary of the frequencies and exemplars of the rationales provided.

The most frequent rationales were that they wanted to help out the researcher (32%), because they were asked to complete it during class time (29%), to benefit society by helping to inform research in general (17%), and were interested in the survey topic (13%). The least frequent rationales were that they were interested in learning the results of the study (1%), appreciated the demeanor of the person administering the survey (e.g., “seemed nice”) (1%), or because the items only required circling responses to statements (< 1%) as compared to providing written responses to open-ended type questions. The college students were not told that the results of the study would be disseminated to them, which could be one reason why this was not a commonly cited rationale for choosing to complete the survey.

Table 5

Rationale Frequencies and Percentages for Students Choosing to Complete Survey 2 (n =764)

Code/Category	f ^a	% ^b	Exemplar
To help out the researcher	245	32.07	“I would like to spend a portion of my time to help the researchers complete their study.”
Day/Time (asked to complete during class)	218	28.53	“Since the survey was distributed during class (which we must sit through whether we complete the survey or not), I am willing to complete the survey to fill time.”
Benefit society by helping to inform research in general/see value in research efforts	129	16.88	“To contribute to the advancement of knowledge and understanding.”
Survey topic	98	12.83	“Because I found the purpose of this study to be interesting.”
Because of who administered the survey	76	9.95	“I know the professor needs the data. Have a relationship instead of a blind survey.”
Enjoy completing surveys and sharing my opinion	73	9.55	“I like surveys.”
No harm, risk, or discomfort in completing the survey (questions are not sensitive or anonymity is maintained)	49	6.41	“The information provided to me determined there was no foreseeable risks.”
Other (e.g., “Why not?”)	49	6.41	“I am indifferent.”
Conformity – notice everyone else is completing it	40	5.24	“Everyone else is doing it.”
Survey is a reasonable length	36	4.71	“It seems quick and easy.”
Quid pro quo – completing now in hopes that when I need participants, others will help me (or vice versa)	34	4.45	“Hopefully karma will be in my favor when I need participants for a study.”
Feel obligated	16	2.09	“I feel socially obligated.” “I really don’t want to, but it would be rude not to, so I begrudgingly will.”
Method asked to complete survey (in-person)	16	2.09	“You came to our class instead of just emailing.”
Interested in the results	11	1.44	“I am curious to know the results from this research study.”
Demeanor of person administering the survey	10	1.31	“The lady who asked seemed nice.”
Types of questions on the survey (rating statements)	7	0.92	“Because the survey consists of circling choices that most relate to me.”

Note. A total of 805 students indicated that they wanted to participate in Survey 2, with $n = 764$ providing a qualitative explanation and $n = 41$ opting not to provide a qualitative explanation. ^aFrequencies sum to greater than the sample size of students choosing to complete Survey 2 because some students provided multiple reasons (up to four) as to why they chose to complete Survey 2. ^bPercentages computed out of the total sample size of those who provided a qualitative response explaining why they chose to complete Survey 2 ($n = 764$).

Research Question 2 – Factors That Would Not Influence Their Decision

The frequencies, response rates, and percentages for the top ten rated scenarios that the college students reported as *Would Not Influence My Decision* are included in Table 6. Six of the 10 highest rated scenarios were oriented around the day (weekday), time of day (morning, afternoon, evening), or location (Student Union, library) associated with a survey request. Accordingly, the three most frequently rated scenarios belonging to this category were being requested to complete a survey during the afternoon (41.88%), in the Student Union (41.49%), and during the evening (41.44%).

Table 6
Top Ten Frequencies, Response Rates, and Percentages for College Students Responding, “Would Not Influence My Decision To Complete” To Survey Scenarios

How likely are you to complete a survey if:	<i>f</i>	<i>n</i>	%
You are asked to complete it in the afternoon	338	807	41.88
You are asked to complete it in the Student Union	334	805	41.49
You are asked to complete it in the evening	334	806	41.44
It is made up of a mix of items you rate on a scale and open-ended items	328	802	40.90
You are pre-notified of the survey you are going to be asked to complete before the actual survey is sent to you	324	801	40.45
It indicates that your responses will help your university collect the information they need	311	803	38.73
You are asked to complete it in the library	310	803	38.61
You are asked to complete it in the morning	301	798	37.72
You are asked to complete it on a weekday	300	804	37.31
You are given a piece of candy	299	801	37.33

Research Question 3 – Factors Influencing Most to Least in their Decision

The 20 survey-request scenarios the students reported as having the most influence in their decision to complete a survey are presented in Table 7 whereby 1 = *Would Not Complete*, 2 = *Unlikely To Complete*, 3 = *Likely To Complete*, and 4 = *Would Complete*. The highest ten and lowest ten scenario means and medians are included in Table 7, as scenarios belonging to both ends of the spectrum yield equally important information regarding the factors that influence the college students’ likelihood to complete a survey. The top ten scenarios listed were reported as the most likely to promote survey participation among the students, while the lowest ten scenarios listed were reported as the most likely to deter the students from completing a survey when presented with a survey request.

Scenarios related to incentives, person administering a survey, and method of survey administration comprised eight of the ten highest mean ratings, with earning extra credit after survey participation ($M = 3.79, SD = .50$), being requested to complete a survey in-person by a professor ($M = 3.69, SD = .52$), and being provided \$10 or more in cash, up front, before participating in survey ($M = 3.68, SD = .55$) assigned the highest ratings. The other two highest rated scenarios included surveys that are expected to take less than 10 minutes to complete and

surveys in which topic seems interesting. Scenarios related to length and method of survey administration comprised seven of the ten lowest rated scenarios. The students' reported that surveys expected to take 1 hour or more to complete ($M = 1.25, SD = .50$), 51-60 minutes to complete ($M = 1.36, SD = .57$), and 41-50 minutes to complete ($M = 1.46, SD = .62$) deterred them from completing a survey. The other three lowest rated scenarios included having to schedule an appointment to take a survey at a later time, being asked to complete a survey while walking from one location to another on campus, and noticing that a survey request has also been sent out to thousands of other students via e-mail.

Table 7
Twenty Scenarios Most Likely to Influence Decision to Complete a Survey

How likely are you to complete a survey if:	<i>n</i>	<i>M</i>	<i>Mdn</i>	Mode	<i>SD</i>
Top Ten Rated Scenarios					
You earn extra credit points in a class after completing the survey	778	3.79	4	4	.50
The request is made in-person by a professor	775	3.69	4	4	.52
You are offered \$10 or more in cash, up front, before agreeing to complete the survey	751	3.68	4	4	.55
The request is made in-person by someone you know	737	3.61	4	4	.57
It is expected to take less than 10 minutes to complete	769	3.61	4	4	.53
It is surveying on a topic you are interested in	764	3.58	4	4	.51
The request is made by someone you know	734	3.53	4	4	.60
You have a chance to win more than a \$100 gift card after completing the survey	710	3.53	4	4	.72
The request is made by a professor	744	3.52	4	4	.58
You are offered \$5-9 in cash, up front, before agreeing to complete the survey	691	3.49	4	4	.66
Lowest 10 Rated Scenarios					
It is expected to take more than 1 hour to complete	793	1.25	1	1	.50
It is expected to take 51-60 minutes to complete	772	1.36	1	1	.57
It is expected to take 41-50 minutes to complete	743	1.46	1	1	.62
It is requested that you schedule an appointment to complete it at a later time	738	1.50	1	1	.71
The request is made online via a web link you are e-mailed by someone you do not know	714	1.53	1	1	.70
It is expected to take 31-40 minutes to complete	693	1.67	2	1	.74
You are asked to complete it outside when walking from one place to another on campus	673	1.71	2	1	.78
It is to be completed over the phone	673	1.73	2	1	.77
It is sent to you in the mail	656	1.73	2	1	.82
You take notice that the survey has been sent to you and thousands of other students in the "To" field of an e-mail	597	1.79	2	2	.81

Note. Statistics exclude non-respondents and those who responded "Would Not Influence My Decision To Complete" to a factor.

Some interesting patterns emerged in examining the students’ responses to scenarios asking the likelihood of completing a survey comparing in-person to online modes. As shown by the medians in Table 8, the students reported on average that they would be more likely to complete a survey if in-person compared to online via a web link whether the request is from a professor, employee from the university, researcher, someone they know, or someone they do not know. If the request is from someone in the program they study in, the students were likely to respond, on average, regardless if in-person or online. When scenarios were presented where the survey request would be sent online via a web link, the students reported they were unlikely to complete the survey if it was sent to thousands or even 500 students, but likely to complete the survey if the request indicated they are 1 of 100 students or their name is in the title of the e-mail. Finally, if the request indicated their responses will help the university get the information they need, the students also reported they would likely complete the survey, on average.

Table 8
In-person Compared to Online Modes of Survey Request

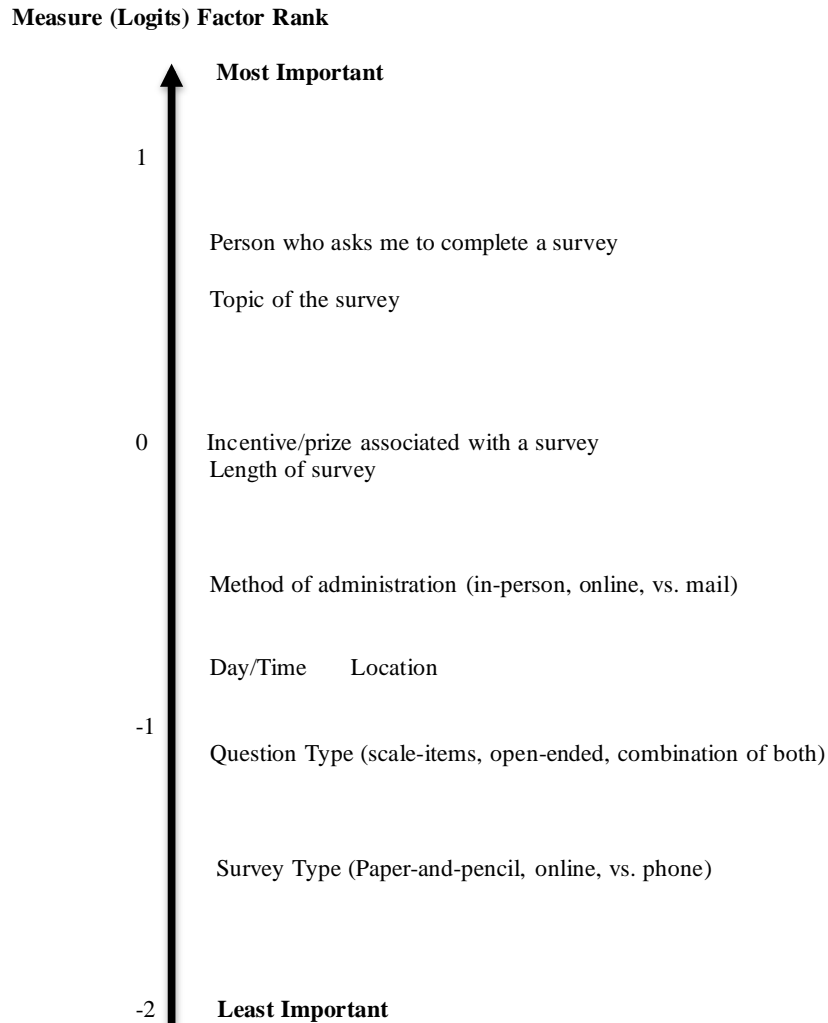
Mode and Characteristic of Survey Request and Invitation Design	<i>n</i>	<i>M</i>	<i>Mdn</i>	Mode	<i>SD</i>
In-person by professor	775	3.69	4	4	.52
Online via a web link emailed by a professor	656	2.75	3	3	.94
In-person by an employee from university	616	3.17	3	3	.76
Online via a web link emailed by an employee from university	578	2.15	2	2	.87
In-person by someone from the program you study in	691	3.35	3	4	.68
Online via a web link you are emailed by someone from the program you study in	606	2.55	3	3	.93
In-person by researcher	631	3.20	3	3	.75
Online via a web link emailed by a researcher	618	2.13	2	2	.89
In-person by someone you know	737	3.61	4	4	.57
Online via a web link emailed by someone you know	644	3.05	3	3	.90
In-person by someone you do not know	587	2.32	2	2	.96
Online via a web link emailed by someone you do not know	714	1.53	1	1	.70
Indicates sent to you and thousands of other students in the “to” field of an email	597	1.79	2	2	.81
Indicates that you are 1 of 500 students asked to complete it	537	2.17	2	2	.93
Indicates that you are 1 of 100 students asked to complete it	552	2.63	3	3	.96
Take notice that the survey request has your name displayed in the title of an email	524	2.65	3	3	1.00
Indicates that your responses will help your university collect the information they need	492	2.94	3	3	.84

Research Question 4 – Rank-Order of Factors Influencing Decision

A Rasch item analysis was implemented to address research question four to test if the students’ (*n* = 701) rank order of the top three factors influencing their decision to complete a survey were statistically significantly different in terms of their ranking from least to most important. In other words, whether the students ranked one of the factors as significantly more important than

another. Figure 1 shows the rank order of factors with *Person Requesting Completion* being most important, which concurs with earlier finding that the top rated scenarios most likely to influence their decision to complete a survey were those related to who administers the survey. *Survey Type* was ranked the least important in influencing their decision to complete a survey.

Figure 1. Item map illustrating rank order of factors. Factors are on the right of the map ordered from least to most important in logits where the item mean is 0.



When adding and subtracting a factor’s *SE* from its measure, all factors statistically significantly differed (did not overlap in range) with the exception of *Day/Time and Location*, which were similar in measure (see Table 9).

A DIF analysis was conducted to test if undergraduates and graduates significantly differed in the factors rank-ordered as the top three most influencing their decision to complete a survey. Of those who completed the rank-order section of the survey, 677 (96.58%) indicated if they were an undergraduate or graduate and thus were included in this analysis. The DIF analysis revealed that the undergraduate students were significantly more likely than the graduate students to rank

Incentive/Prize Associated With A Survey as one of the top three factors influencing their decision to complete a survey, $t = 2.74(SE = .19)$, $p < .01$. No other significant differences in factors ranked as one of the top three influences were observed between the undergraduate and graduate students, $p > .05$.

Table 9
Rank Order of Responses for Importance in Completing a Survey From Most to Least Important

Factor	Rasch Measure (logits)	SE	Range	Overlap
Person	0.74	0.06	0.80 – 0.68	None
Topic	0.49	0.08	0.57 – 0.41	None
Incentive	0.01	0.07	0.08 – -0.06	None
Length	-0.08	0.06	-0.02 – -0.14	None
Method	-0.45	0.10	-0.35 – -0.55	None
Day/Time	-0.78	0.17	-0.61 – -0.95	Yes, with Location
Location	-0.81	0.13	-0.68 – -0.94	Yes, with Day/Time
Question Type	-1.14	0.13	-1.01 – -1.27	None
Survey Type	-1.55	0.19	-1.36 – -1.74	None

A DIF analysis was conducted to examine if undergraduates and graduates significantly differed in the factors rank-ordered as the top three most influencing their decision to complete a survey. Of those who completed the rank-order section of the survey, 677 (96.58%) indicated if they were an undergraduate or graduate and thus were included in this analysis. The DIF analysis revealed that the undergraduate students were significantly more likely than the graduate students to rank *Incentive/Prize Associated With A Survey* as one of the top three factors influencing their decision to complete a survey, $t = 2.74(SE = .19)$, $p < .01$. No other significant differences in factors ranked as one of the top three influences were observed between the undergraduate and graduate students, $p > .05$.

Discussion

The results from this study elucidate the multiple factors associated with college students’ decision to complete or not complete surveys when presented with a survey request. Quantitative results from our 72 survey-request scenarios and our rank-order section of Survey 2 coincide to suggest that person requesting completion, topic of survey, incentive(s)/prize(s) associated with survey, length of survey, and method of survey administration are the overarching factors that the students reported contributing the most to their decision to complete a survey.

Cialdini’s (1998) heuristic rules were supported by our research findings, specifically the authority heuristic. For instance, the person requesting completion of the survey was a common theme that emerged when asked for a rationale for choosing to complete the survey in our current study. Additionally, a survey being administered in-person by a professor was one of the top ten factors the students reported increasing their likelihood of responding to a survey request. This finding suggests that the students are more likely to complete a survey if the request comes from a professor (a person with perceived authority) or someone who they know, and are not likely to complete a survey if the request comes from a person they do not know.

Interestingly, our research team was able to secure a high response rate even though an outside researcher administered the surveys during several of the classroom visits. We did not experimentally manipulate this variable of person administering the survey in this study and thus cannot draw inferences about this observation. Future research could experimentally test the effect of person administering the survey. We speculate that the students' instructor merely being present in the classroom during survey administration might have exerted the same kind of influence we are discussing here on behalf of the researcher. The qualitative results also indicated that feeling that they wanted to help out the researcher was one of the leading factors influencing the students' decision to participate in this study, perhaps suggesting the importance of the researcher making a case to potential participants in what ways completing a survey request would "help" him/her. Despite this finding, noteworthy is that having persons with perceived authority such as professors administer a survey *to their own students* for their own research might not align with the ethical guidelines for conducting human subject research due to coercion.

Although it has been theoretically suggested that attributes of the person administering a survey (Groves, Cialdini, & Couper, 1992) and compliance to a request from a person with perceived authority (Cialdini, 1988) might contribute to one's decision to participate in a survey, these factors have not been previously applied to a college student population. Given the emphasis placed on the person requesting completion among the students included in our study, it is recommended that this factor be explored more intricately in future studies, perhaps applying an experimental design to manipulate who is administering the survey and evaluating the impact on response rates.

Regarding the topic of the survey, the students reported they were more likely to complete a survey when they deem the topic of the survey to be interesting. The qualitative responses converged with this finding in that of some of those who did not complete the survey noted it was because they were not interested in the survey topic or in completing surveys in general. This finding makes practical sense, and is commensurate with the existing research literature involving the impact of survey topic on response rate (e.g., Groves et al., 1992).

In congruence with much of the existing literature focused on incentive(s)/prize(s) associated with a survey, the findings from our study suggest that the students found incentives of both the pre-paid and post-paid lottery type desirable and contributing to their decision to complete a survey. This finding lends further support to Cialdini's (1998) heuristic principle model, specifically the reciprocation heuristics rule. This being said, only four of the 29 students who chose not to complete the survey in this study indicated no incentive was the rationale for their decision. It is important to acknowledge that the perceived importance placed on incentives was found to significantly differ among the undergraduate and graduate students included in our current study, with the undergraduate students finding incentives more appealing than the graduate students.

Although much of the existing research has found that the quantity/value of an incentive is not linearly related with increased response rates beyond a certain value (Bosnjak & Tuten, 2003; Göritz, 2006; Porter & Whitcomb, 2003; Szelényi et al., 2005), our results suggested that the quantity/value of an incentive might play an important role among college students in their

decision to respond to surveys, particularly if incentives are perceived to be of large monetary value and offered up front. This finding supports the social exchange theory (Dillman, 2000) in that this population might respond positively to the request if given a non-contingent incentive that makes them feel “indebt” to complete the survey. Also, in relation to the leverage-saliency theory (Groves et al., 2000) this attribute could hold different degrees of leverage with different populations, a potentially high leverage attribute for college students.

This latter finding should be interpreted with caution however, as priming affects could have certainly played a role while students completed our survey. For instance, it is not surprising that the students would assign the largest incentive amounts on our survey the highest ratings. This finding does not necessarily mean that incentives of smaller amounts might not be equally effective in practice as found in prior research, although this prior research was conducted with different populations such as Washington State University students or the general public (James & Bolstein, 1992, 2009; Trussell & Lavrakas, 2004). The effect of the value of the monetary incentive might differ depending on the target population, aligned with the leverage-saliency theory. Our results simply demonstrate that the students identified both pre-paid and post-paid lottery incentives as factors positively contributing to their decision to complete a survey.

Noteworthy is that the incentivizing strategy rated the highest among the students in our sample (and highest rated factor, overall, in our entire study) was not of the monetary type; it was earning extra credit in a class after completing a survey. Awarding extra credit points to college students in exchange for their participation in a survey is a common tactic used by faculty members and researchers conducting research in higher education settings. Although awarding extra credit or an incentive to college students in exchange for their survey participation might not always be feasible, condoned, or deemed educationally desirable by faculty members, the students in our current study reported incentives as being an effective strategy for recruitment.

Similar to existing research that has found the perceived length of a survey to be negatively related to response rates (Cook et al., 2000; Walston et al., 2006), the students reported that they likely would not take a survey if it is perceived to take more than 30 minutes to complete, but are likely to take a survey if it is perceived to take less than 10 minutes to complete. This finding essentially mirrors prior research findings that surveys of thirteen minutes or less being were the ideal length to secure acceptable response rates among college student populations (Fan & Yan, 2010).

In terms of method of survey administration, the students reported that they are more likely to decide to complete a survey if the request is made in-person. The students reported they would not likely complete a survey if the request were made over the phone, by mail, and, in some instances, online. Further, the qualitative responses indicated that nearly 30% of the students who chose to complete the survey in our current study did so because they were asked to complete the survey in-person during class. At the same time, nearly 30% of those who did not choose to complete the survey indicated it was because they had other class-related things to complete, thus suggesting during class time was not convenient for them. It can be speculated from these results that the effectiveness of the method of survey administration utilized might also depend on the person requesting a student’s survey participation. Future research should explore potential relationships between these two variables.

When presented with scenarios asking the likelihood of completing a survey online, the students reported they likely would complete a survey requested via email with a web link if they were indicated as 1 of 100 sent the request compared to one of a thousand or 1 of 500. This finding supports Cialdini's (1998) scarcity principle in that compliance is higher when the request is presented in a way that seems limited. Also, our finding that the students reported they are likely to comply if their name is in the title of the subject-line of the request supports earlier findings on the effectiveness of personalization tactics on increasing response rates (Cook et al., 2000; Heerwegh, 2005).

A key finding from the quantitative portion of our study provides information regarding the overarching factors that the students self-reported contributing least to their decision to complete a survey. Our study yields evidence, both from the 72-scenario section and rank-order section of Survey 2, to suggest that day/time, location, and question-types featured on a survey are the factors reported as least likely to influence the students' decision to complete a survey when presented with a survey request. More specifically, the students comprising our sample indicated that the time of day in which they receive a survey request (i.e., morning, afternoon, evening, weekday), location where they are asked to complete a survey (i.e., Student Union, library), and surveys that contain a mixture of scale and open-ended items are of little relevance when it comes to their decision to complete a survey. The utilization of pre-notification tactics, acknowledging that a survey will help the students' university collect the information they need, and using a piece of candy as an incentivizing strategy were also found to minimally impact the students' decision to complete a survey. Finally, although survey type (i.e., paper-and-pencil, online, phone) was found to be the lowest rank-ordered factor in our study in terms of most likely to affect our students' decision to complete a survey, some contrary evidence suggests that this factor might have a greater influence. In retrospect, we speculate that the survey type and method of survey administration factors included in the rank-order section of Survey 2 might have had overlapping components, perhaps making it difficult for some of the students to differentiate between the two.

Limitations

A number of limitations to this study are consistent with limitations to survey research in general. Self-report data were used and thus the conclusions were drawn based on what the students reported they would *likely* do in different survey-response scenarios, thus presenting a potential threat to the internal validity of the results. Nevertheless, self-report data gathered from a relatively large sample should not be dismissed as the results might have credibility for other similar samples of college students. While there is no indicator of the degree of honesty of the responses in our study, the motivation to be dishonest is arguably low on this topic of survey as the questions are not sensitive.

Additionally, the data is descriptive in nature and thus causality claims cannot be made and interactions among factors were not tested. Future experimental studies should be conducted considering the multiple factors highlighted in this study in order to test for causality and predictive tendencies. Finally, a convenience snowball sampling technique was used to recruit the students strictly in a classroom setting, thus limiting the generalizability of the results. While

our sample was somewhat diverse in terms of undergraduate and graduate status and academic programs, we were unable to gain access to students belonging to a wide variety of academic programs (e.g., engineering, business, nursing, etc.). Moreover, our study only consisted of students belonging to medium to large-sized public universities in the Mid-West. As a result, the degree of external validity of the results to other college students might be limited to only samples similar to those who participated in this study.

Recommendations and Potential Implications

It is our belief that the findings from this study might be of great interest and/or benefit to university personnel. Faculty, administrators, graduate students, and researchers alike may use the self-report data we have collected to develop effective survey recruitment strategies. By giving deliberate consideration to the various factors that the students in our sample reported contributing most and least to their decision to complete a survey when presented with a survey request, future survey administrators might be able to yield increased response rates to surveys/assessments and decrease levels of non-response error for similar samples to this study. University personnel might find it advantageous to conceptually apply Groves, Singer, and Corning's (2000) Leverage-Salience Theory of Survey Participation based off the findings from our study. We believe our study may begin to shed some light on the specific "leverages" (i.e., factors/survey request scenarios) that may have the greatest (e.g., Person, Topic, Incentive, Length, Method) and least (e.g., Question Type, Location, Day/Time) impact, or influence, on college students' decision to complete a survey. We therefore suggest that university personnel begin to give greater consideration to emphasizing or deemphasizing various aspects associated with future surveys and/or survey requests by making a concerted effort to increase or decrease the "salience" of certain aspects of the survey request when appropriate.

It is important for us to reiterate, however, that some of the factors and survey request scenarios rated most likely to influence their decision to complete a survey by the students in our study might not be feasible or educationally desirable to adopt or implement in practice. For instance, although the students rated awarding extra credit or utilizing large, prepaid, monetary incentives as two of the top three survey-request scenarios having the most positive influence in their decision to complete a survey, these tactics might not always be condoned and/or possible to extend for a variety of reasons. Faculty members might be strongly opposed to awarding extra credit to their students in lieu of survey participation and many institutions of higher education will likely not be able to offer large, prepaid, monetary incentives due to the harsh economic situation many presently face. Because of this, we merely recommend that individuals who administer surveys to college students utilize this research as a resource when thinking about ways to increase survey response rates. Also, factors presented to the students on our survey did not include the full realm of overlapping scenarios reflecting different combinations of locations, person administering the survey, and incentives (e.g., a peer student administering a survey in person during class and using an incentive). Future research should examine the effect of a combination of the factors rated as most important on response rate.

Take for example a graduate student researcher who is looking to recruit college student participants for a research study s/he is conducting. Let us say that this researcher is unable to offer extra credit or prepaid monetary incentives to prospective participants because the

researcher desires to recruit a minimum of 500 students to secure a representative sample. This researcher might consider using the results from this study to determine alternative leverages that have been self-reported by college students to deter or promote survey participation and place more salience on these leverages when executing his/her survey request. To illustrate, this particular survey administrator might opt to reduce the length of the survey and market it as such, collaborate with faculty members to see if they will personally extend the research opportunity to their students during class, and potentially describe the research topic in a way that might appeal to prospective college student participants. As a bonus, this researcher might also try to include a \$50 lottery incentive in his/her survey request to hopefully ensure an even higher response rate, especially, as our study has found, if the researcher's target population consists solely of undergraduate students.

The findings related to design features when sending a survey request via email to college students has potential implications for university employees such as administrators and those working in human resources seeking to survey students on various topics. An effective strategy might be to send requests for completing the online survey out to a smaller number of students or more targeted groups of students, indicate the need for the information being collected, and including the student's name in the title of the e-mail. This approach might entail more work in the forefront but could potentially increase response rates. For instance, if seeking to gain information across campus from all undergraduate students, a more personalized request to students in each college or program indicating the need for the information might increase the likelihood they will choose to complete the survey. A generic example request follows: "We are interested in your perceptions on [insert topic] as an undergraduate student in the College of X or in the X program. Your responses will help the university [insert the need for their responses and how the information will be used]."

Author Notes

Kristin L. K. Koskey is an Associate Professor in the Educational Foundations and Leadership Department at The University of Akron.

Bryce Cain is an Academic Advisor in Undergraduate Studies at Kent State University.

Toni A. Sondergeld is an Assistant Professor and CAES Co-Director in the School of Educational Foundations, Leadership and Policy at Bowling Green State University.

Henrique G. Alvim is an Assistant Professor in the Counseling and Human Development Department at Walsh University.

Emily M. Slager is the Program Manager of the Student Affairs Department at University of Washington.

Correspondence concerning this article should be addressed to Kristin Koskey at koskey@uakron.edu

References

- Atrostic, B. K., Bates, N., Burt, G., & Silberstein, A. (2001). Nonresponse in U.S. government household surveys: Consistent measures, recent trends, and new insights. *Journal of Official Statistics, 17*, 209-226.
- Baruch, Y. (1999). Response rate in academic studies: A comparative analysis. *Human Relations, 52*, 421-438. doi: 10.1177/001872679905200401
- Biemer, P. P., & Lyberg, L. E. (2003). *Introduction to survey quality*. Hoboken, NJ: John Wiley & Sons.
- Bond, T. G., & Fox, C. M. (2007). *Applying the Rasch model: Fundamental measurement in the human sciences* (2nd ed.). Mahway, NJ: Lawrence Erlbaum Associates.
- Bosnjak, M., & Tuten, T. L. (2003). Prepaid and promised incentives in web surveys. *Social Science Computer Review, 21*, 208-17.
- Bramley, T. (2010, June). *Locating objects on a latent trait using Rasch analysis of experts' judgments*. Paper presented at Probabilistic Models for Measurement in Education, Psychology, Social Science and Health conference. Copenhagen, Denmark. Retrieved from <http://www.cambridgeassessment.org.uk/images/109795-locating-objects-on-a-latent-trait-using-rasch-analysis-of-experts-judgments.pdf>
- Chen, P. D. (2011). Finding quality responses: The problem of low-quality survey responses and its impact on accountability measures. *Research in Higher Education, 52*, 659-74. doi: 10.1007/s11162-011-9217-4
- Church, A. H. (1993). Estimating the effect of incentives on mail survey response rates: A meta-analysis. *Public Opinion Quarterly, 57*, 62-79.
- Cialdini, R. B. (1988). *Influence: science and practice*. Glenview, IL: Scott, Foresman.
- Cook, C., Heath, F., & Thompson, R. L. (2000). A meta-analysis of response rates in web- or internet-based surveys. *Educational and Psychological Measurement, 60*, 821-36.
- Dey, E. L. (1997). Working with low survey response rates: The efficacy of weighting adjustments. *Research in Higher Education, 38*, 215-27.
- Dillman, D. A. (2000). *Mail and internet surveys: The tailored design method*. New York, NY: Wiley.
- Dillman, D. A., & Smyth, J. D. (2007). Design effects in the transition to web-based surveys. *American Journal of Preventive Medicine, 32*(5S), 90-6.

- Fan, W., & Yan, Z. (2010). Factors affecting response rates of the web survey: A systematic review. *Computers in Human Behavior, 26*, 132-39. doi: 10.1016/j.chb.2009.10.015
- Galesic, M., & Tourangeau, R. (2007). What is sexual harassment? It depends on who asks! Framing effects on survey responses. *Applied Cognitive Psychology, 21*, 189–202.
- Göritz, A. S. (2006). Incentives in web studies: Methodological issues and a review. *International Journal of Internet Science, 1*, 58–70.
- Greenlaw, C., & Brown-Welty, S. (2009). A comparison of web-based and paper-based survey methods. *Evaluation Review, 33*, 464-80. doi: 10.1177/0193841X09340214
- Groves, R. M., Cialdini, R. B., & Couper, M. P. (1992). Understanding the decision to participate in a survey. *Public Opinion Quarterly, 56*, 475-95.
- Groves, R. M., Singer, E., & Corning, A. (2000). Leverage-Salience Theory of survey participation. *Public Opinion Quarterly, 64*, 299-308.
- Heberlein, T. A., & Baumgartner, R. (1978). Factors affecting response rates to mailed questionnaires: A quantitative analysis of the published literature. *American Sociological Review, 43*, 447–62.
- Heerwegh, D., Vanhove, T., Matthijs, K., & Loosveldt, G. (2005). The effect of personalization on response rates and data quality in web surveys. *International Journal of Social Research Methodology: Theory and Practice, 18*, 85–99.
- Henley, J. R. (1976). Response rate to mail questionnaires with a return deadline. *Public Opinion Quarterly, 40*, 374–75.
- James, J., & Bolstein, R. (1992). Large monetary incentives and their effect on mail survey response rates. *Public Opinion Quarterly, 56*(4), 442-454.
- James, J., & Bolstein, R. (2009). The effect of monetary incentives and follow-up mailings on the response rate and response quality in mail surveys. *Public Opinion Quarterly, 54*(3), 346-361.
- Joinson, A. N., Woodley, A., & Reips, U-D. (2007). Personalization, authentication and self-disclosure in self-administered internet surveys. *Computers in Human Behavior, 23*, 275–85.
- Laguilles, J. S., Williams, E. A., & Saunders, D. B. (2011). Can lottery incentives boost web survey response rates? Findings from four experiments. *Research in Higher Education, 52*, 537-53. doi: 10.1007/s11162-010-9203-2
- Landis, R. J., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics, 33*, 159-74.

- Linacre, J. M. (1989). Rank ordering and Rasch measurement. *Rasch Measurement Transactions*, 2(4), 41-42. Retrieved from <http://www.rasch.org/rmt/rmt24b.htm>
- Linacre, J. M. (2006). *WINSTEPS Rasch measurement computer program*. Chicago: Winsteps.com
- Lipka, S. (2011). Want data? Ask students. Again and again. (cover story). *Chronicle of Higher Education*, 57(43), A1-A6.
- Manfreda, K. L., Bosnjak, M., Berzelak, J., Haas, I., & Vehovar, V. (2008). Web surveys versus other survey modes. *International Journal of Market Research*, 50, 79–104.
- McCree-Hale, R., De La Cruz, N G., & Montgomery, A. E. (2010). Using downloadable songs from Apple iTunes as a novel incentive for college students participating in a web-based follow-up survey. *American Journal of Health Promotion*, 25(2), 119-21. doi: 10.4278/ajhp.09012S-ARB-39
- Messer, B. L., & Dillman, D. A. (2011). Surveying the general public over the Internet using address-based sampling and mail contact procedures. *Public Opinion Quarterly*, 75, 429-457. doi: 10.1093/poq/nfr021
- Millar, M. M., & Dillman, D. A. (2011). Improving response to web and mixed-mode surveys. *Public Opinion Quarterly*, 74(2), 249-269. doi: 10.1093/poq/nfr003
- Mitra, A., Jain-Shukla, P., Robbins, A., Champion, H., & Durant, R. (2008). Differences in rate of response to web-based surveys among college students. *International Journal on E-Learning*, 7, 265-81.
- Nair, C. S., Adams, P., & Mertova, P. (2008). Student engagement: The key to survey response rates. *Quality in Higher Education*, 14, 225-32. doi: 10.1080/1353820802507505
- National Survey of Student Engagement. (2013a). *NSSE 2011 U.S. Response rate information by key institutional characteristics*. Retrieved from http://nsse.iub.edu/2011_Institutional_Report/pdf/2011ResponseRates.pdf
- National Survey of Student Engagement. (2013b). *NSSE 2010 response rate information by key institutional characteristics*. Retrieved from: http://nsse.iub.edu/NSSE_2010_Results/ResponseRates.cfm
- Porter, S. R. (2004). Raising response rates: What works? *New Directions for Institutional Research*, 121, 5-21.
- Porter, S. R., & Umbach, P. D. (2006). Student survey response rates across institutions: Why do they vary? *Research in Higher Education*, 47, 229-47. doi: 10.1007/s11162-005-8887-1
- Porter, S. R., & Whitcomb, M. E. (2003). The impact of lottery incentives on student survey response rates. *Research in Higher Education*, 44, 389-407.

- Porter, S. R., Whitcomb, M. E., & Weitzer, W. H. (2004). Multiple surveys of students and survey fatigue. *New Directions for Institutional Research, 121*, 63-73.
- Rasch, G. (1960). *Probabilistic models for some intelligence and attainment tests*. Copenhagen, Denmark: Danskmarks Paedagogiske Institut.
- Rasch, G. (1980). *Probabilistic models for some intelligence and attainment tests* (expanded ed.). Chicago: University of Chicago Press.
- Roberts, R. E., McCrory, O. F., & Forthofer, R. N. (1978). Further evidence on using a deadline to stimulate responses to a mail survey. *Public Opinion Quarterly, 42*, 407-10.
- Shih, T-H., & Fan, X. (2009). Comparing response rates in e-mail and paper surveys: A meta-analysis. *Educational Research Review, 4*, 26-40.
- Szelényi, K., Bryant, A. N., & Lindholm, J. A. (2005). What money can buy: Examining the effects of prepaid monetary incentives on survey response rates among college students. *Educational Research & Evaluation, 11*, 385-404. doi: 10.1080/13803610500110174
- Tourangeau, R., Couper, M. P., & Conrad, F. (2004). Spacing, position, and order: Interpretive heuristics for visual features of survey questions. *Public Opinion Quarterly, 68*, 368-93.
- Trussell, N. & Lavrakas, P. J. (2004). The influence of incremental increase in token cash incentives on mail survey responses: Is there an optimal amount? *Public Opinion Quarterly, 68*, 349-367. doi: 10.1093ppq/nfh022
- Walston, J. T., Lissitz, R. W., & Rudner, L. M. (2006). The influence of web-based questionnaire presentation variations on survey cooperation and perceptions of survey quality. *Journal of Official Statistics, 22*, 271-91.
- Wise, V. L., & Barham, M. A. (2012). Assessment matters: Moving beyond surveys. *About Campus, 17*(2), 26-9.
- Yammarino, F. J., Skinner, S. J., & Childers, T. L. (1991). Understanding mail survey response behavior: A meta-analysis. *Public Opinion Quarterly, 55*, 613-39.

Appendix

List of 72 Survey-Request Scenarios Comprising Survey 2

Characteristics of Survey Request (i.e., How likely are you to complete a survey if the request is made by:)

- A professor
- An employee from your university
- A student from the program you study in
- A researcher
- Someone you know
- Someone you do not know

Mode and Characteristics of Survey Request (i.e., How likely are you to complete a survey if the request is made (or if it is):)

- In-person by a professor
- Online via a web link you are e-mailed by a professor
- In-person by an employee from your university
- Online via a web link you are e-mailed by an employee from your university
- In-person by a student from the program you study in
- Online via a web link you are e-mailed by a student from the program you study in
- In-person by a researcher
- Online via a web link you are e-mailed by a researcher
- In-person by someone you know
- Online via a web link you are e-mailed by someone you know
- In-person by someone you do not know
- Online via a web link you are e-mailed by someone you do not know
- Surveying on a topic you are interested in
- Mostly made up of items you rate on a scale (e.g., On a scale of 1-4, how much do you agree with the following statements?)
- Mostly made up of open-ended items (e.g., Describe how you feel about something.)
- Made up of a mix of items you rate on a scale and open-ended items
- To be completed on a computer on campus
- To be completed via paper-and-pencil
- To be completed face-to-face
- To be completed online
- To be completed over the phone
- Sent to you in the mail
- Requested that you schedule an appointment to complete it at a later time

Length of Survey (i.e., How likely are you to complete a survey if it is:)

- Expected to take less than 10 minutes to complete
- Expected to take 11-20 minutes to complete
- Expected to take 21-30 minutes to complete
- Expected to take 31-40 minutes to complete
- Expected to take 41-50 minutes to complete
- Expected to take 51-60 minutes to complete
- Expected to take more than 1 hour to complete

Appendix Continued

Time and Location of Survey Request (i.e., How likely are you to complete a survey if you are asked to complete it:)

- In the morning
- In the afternoon
- In the evening
- On a weekday
- On the weekend
- During class
- In the Student Union
- In the library
- Outside when walking from one place to another on campus
- While at home
- Immediately after an event you attend on campus

Incentives (i.e., How likely are you to complete a survey if you:)

- Are given a piece of candy
- Are offered \$1-4 in cash, up front, before agreeing to complete the survey
- Are offered \$5-9 in cash, up front, before agreeing to complete the survey
- Are offered \$10 or more in cash, up front, before agreeing to complete the survey
- Have a chance to win less than a \$25 gift card after completing the survey
- Have a chance to win a \$25 gift card after completing the survey
- Have a chance to win a \$50 gift card after completing the survey
- Have a chance to win a \$75 gift card after completing the survey
- Have a chance to win a \$100 gift card after completing the survey
- Have a chance to win more than a \$100 gift card after completing the survey
- Have a chance to win an electronic device (e.g., an iPad) after completing the survey
- Earn extra credit points in a class after completing the survey

Other Characteristics Associated With a Survey Request (i.e., How likely are you to complete a survey if:)

- You take notice that the survey has been sent to you and thousands of other students in the "To" field of an e-mail
- The survey indicated that you are 1 of 500 students asked to complete it
- The survey indicated that you are 1 of 100 students asked to complete it
- You take notice that the survey request has your name displayed in the title of an e-mail
- Someone asks you to complete a survey because it will greatly help with his/her research
- It indicates that your responses will help your university collect the information they need
- You feel pressured by the person administering it
- You take notice of other individuals around you completing the same survey you have been asked to complete
- You are pre-notified of the survey you are going to be asked to complete before the actual survey is sent to you
- You are reminded on several occasions to complete the survey after it has been provided to you
- The person asking for your survey participation indicates that the main results from the survey will be shared with you after the study is complete
- The survey administrators will know your identity
- The survey administrators will not know your identity