Wildlife stakeholders' attitude toward surveys

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Kenneth E. Wallen*¹

*-- corresponding author, wallenk3@gmail.com

¹ University of Idaho, Department of Natural Resources and Society, Moscow, Idaho USA

Abstract

Understanding aspects of the survey climate that contribute to nonresponse is an essential component of stakeholder opinion research. Participants' general attitude towards surveys has only been recently considered as a factor contributing to nonresponse. This study presents exploratory results of data gathered using recently developed survey attitude scale among commonly sampled wildlife stakeholders: deer and elk hunters. Findings suggest the stakeholders hold a positive attitude toward surveys, i.e., they value surveys and do not consider them burdensome. Assessment of the psychometric adequacy of the survey attitude scale confirmed acceptable metrics, results which align with previous psychometric assessments. Results provide evidence that the survey attitude scale can serve as a useful and accurate tool that may contribute to our understanding of the survey climate and nonresponse therein.

Keywords: Public opinion, Psychometrics, Response rate, Survey climate, Survey research

Introduction

The survey climate is a fundamental concept to consider in the context of nonresponse and response rate decline (Loosveldt & Joye, 2016). To mitigate nonresponse, various contact and response mode considerations, or more general data collection method issues, are enacted to improve response rate (National Research Council, 2013). Specific to human dimensions research, which tends to rely on quantitative survey methods for data collection, various scholars have identified and commented on response rates declines with respect to mail (Stedman, Connelly, Heberlein, Decker, & Allred, 2019), on-site/mail follow-up (Rookey, Le, Littlejohn, & Dillman, 2012), web (Vaske, 2011), and mixed-mode surveys (Wallen, Landon, Kyle, Schuett, Leitz, & Kurzawski, 2016). A potential factor that contributes to response rate decline that is not often considered is a participant's general attitude toward surveys (Loosveldt & Storms, 2008). That attitude may contribute to a participant's response likelihood (Groves, Cialdini, & Couper, 1992). Moreover, it is becoming clearer that the current survey-taking climate is fraught with survey fatigue or over-surveying, which may exacerbate negative attitudes toward surveys (Dillman, 2016). Against the backdrop of that survey-taking climate, this exploratory study asked, what attitude toward surveys is held by commonly targeted human dimensions populations, i.e., elk and deer hunters? A secondary objective was to examine the psychometric properties of a nascent survey attitude scale (de Leeuw, Hox, Silber, Struminskaya, & Vis, 2019).

The target population for this exploratory study was Idaho resident elk and deer hunters. A sample frame of 2019 purchasers of a resident general season tag who provided an email contact was drawn from the Idaho Department of Fish and Game's (IDFG) license database. The sample frame was stratified by species tag—elk, deer (mule and white-tailed), and white-tailed deer—with 500 participants randomly selected from each strata ($n = 1,500$). Coverage, i.e., proportion of licensees providing an email addresses as compared to all licensees, was elk (58%), deer (50%), and white-tailed (49%). Sample participants were invited via email in late

February and early March 2020 to complete an internet-based questionnaire hosted by Qualtrics. Two subsequent reminders were sent at four-day intervals. A total of 314 responses (full completes) were collected from 1,467 deliverable emails (33 undeliverable) for a 21% effective response rate (6% margin of error at 95% confidence level).

Participants' attitude toward surveys were based on multidimensional measurement instrument developed by de Leeuw et al. (2019) that consists of nine items organized into three scales: enjoyment (e1-e3), value (v1-v3), and burden (b1-b3) (Table 1). The question stem read, "Thinking about the surveys that you are asked to participate in, please indicate your level of agreement with the following statements". Enjoyment was measured with three items: "I enjoy responding to questionnaires", "I enjoy being asked to complete a survey", and "Surveys are interesting". Value was measured with three items: "Surveys are important for society", "A lot can be learned from information collected through surveys", and "Completing surveys is a valuable use of time". Burden was measured with three items: "I receive too many requests to participate in surveys", "Opinion polls are an invasion of privacy", and "It is exhaustive to answer so many questions in a survey". The scales were included near the end of a 25-question questionnaire that took 10-minutes to complete. Counterbalancing (random item order) was used across the 9-item instrument to mitigate order effects. A bipolar response scale was used, 1 (strongly disagree) to 5 (strongly agree). Survey requests were developed from a social exchange perspective (Dillman et al. 2014) and were sponsored by two organizations with public legitimacy with stakeholders, the University of Idaho and IDFG, and stated the information collected would help guide management decisions to improve hunting experiences in Idaho.

Results

Participants were 93% male, 93% white, and averaged 52 years of age. Composite scores for each subscale were: 3.4 (enjoyment), 3.8 (value), and 3.5 (burden). Frequencies of the "neither" response suggest a mid-point bias yet the dispersion towards positive valence

responses—higher proportion of “agree” responses on the value and enjoyable scales and “disagree” on the burden scale—provides evidence of a substantial attitudinal difference within the sample (Table 1). To assess construct validity, a three-factor confirmatory factor analysis with a maximum likelihood estimator was conducted in Mplus 8.2. Model parameters were based on the final factor model assessed by de Leeuw et al. (2019). Fit indices were acceptable, $\chi^2 = 60.81$, $df = 22$, CFI = .97, NNFI = .94, RMSEA = .08, SRMR = .04. Convergent validity was assessed via average variance extracted (AVE; > .5) and composite reliability (coefficient omega; > .7), with a traditional coefficient alpha calculated for each scale (Table 1).

Discussion

Results suggest that the sample of Idaho resident elk and deer hunter hold more positive than negative attitudes towards surveys, i.e., stakeholders consider surveys to be of value, enjoyable, and not burdensome. Important to the enterprise of human dimensions research and public involvement in natural resource management, the survey value dimension had the highest mean composite score and the item, “a lot can be learned from information collected by surveys”, had the highest item mean score and lowest standard deviation.

The reliability of the measurement instrument, based on coefficient omega and alpha, are comparable to those of de Leeuw et al. (2019). Except for survey burden, adequate (convergent) validity was observed based on AVE and composite reliability. Reliability of each subscale can be considered adequate in consideration of the number of items and disciplinary threshold conventions (Vaske, 2008). As reliability and validity standards vary among disciplines and scholarly traditions, further study and replication are necessary to confirm the psychometric adequacy of the instrument. An additional next step towards demonstrable psychometric adequacy would be to assess predictive validity, i.e., does a participant’s or nonparticipant’s survey attitude predict their response or willingness to respond to a survey invite.

Though this exploratory study did not conduct a nonresponse follow-up, an intention of this study was to test the survey attitude scale with an eye towards that purpose, particularly as

de Leeuw et al. (2019) developed that instrument to be “short and easy to implement in both online and in mixed-mode surveys” (p. 2). Future human dimension survey research efforts may consider including an attitude towards surveys (e.g., Loosveldt & Storms, 2008; de Leeuw et al., 2019) as a standard instrument in their primary survey and as part of nonresponse follow-up efforts to allow comparison and offer an alternative explanation for nonresponse. Lastly, a welcome next step would also be experiments to assess if a value, enjoyment, or burden frame in a survey request affects response rate. Based on these results, respondents view surveys as valuable and non-invasive, which may be an effective frame considering fish and wildlife stakeholders ostensibly understand the essentiality of public involvement and the public’s voice to fish and wildlife management in the U.S.

Supporting Information

Data and codebook are available at: <https://doi.org/10.6084/m9.figshare.12234749>.

References

- de Leeuw, E., Hox, J., Silber, H., Struminskaya, B., & Vis, C. (2019). Development of an international survey attitude scale: Measurement equivalence, reliability, and predictive validity. *Measurement Instruments for the Social Sciences*, 1, 1–10.
- Dillman, D. A. (2016). Moving survey methodology forward in our rapidly changing world: A commentary. *Journal of Rural Social Sciences*, 31(3), 2016, 160–174.
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: The tailored design method* (4th ed.). John Wiley & Sons.
- Groves, R. M., Cialdini, R. B., & Couper, M. P. (1992). Understanding the decision to participate in a survey. *Public Opinion Quarterly*, 56(4), 475-495.
- Loosveldt, G., & Joye, D. (2016). Defining and assessing survey climate. In C. Wolf, D. Joye, T. W. Smith, & Y. Fu (Eds.), *The Sage handbook of survey methodology* (pp. 67–76). Sage.

- 127 Loosveldt, G., & Storms, V. (2008). Measuring public opinions about surveys. *International*
 128 *Journal of Public Opinion Research*, 20, 74–89.
- 129 National Research Council. (2013). *Nonresponse in social science surveys: A research agenda*.
 130 National Academies Press.
- 131 Rookey, B. D., Le, L., Littlejohn, M., & Dillman, D. A. (2012). Understanding the resilience of
 132 mail-back survey methods: An analysis of 20 years of change in response rates to
 133 national park surveys. *Social Science Research*, 41(6), 1404–1414.
- 134 Stedman, R. C., Connelly, N. A., Heberlein, T. A., Decker, D. J., & Allred, S. B. (2019). The end
 135 of the (research) world as we know it? Understanding and coping with declining
 136 response rates to mail surveys. *Society & Natural Resources*, 32(10), 1139–1154.
- 137 Vaske, J. J. (2008). *Survey research and analysis: Applications in parks, recreation, and human*
 138 *dimensions*. Venture.
- 139 Vaske, J. J. (2011). Advantages and disadvantages of internet surveys: Introduction to the
 140 special issue. *Human Dimensions of Wildlife*, 16(3), 149–53.
- 141 Wallen, K. E., Landon, A. C., Kyle, G. T., Schuett, M. A., Leitz, J., & Kurzawski, K. (2016). Mode
 142 effect and response rate issues in mixed-mode survey research: implications for
 143 recreational fisheries management. *North American Journal of Fisheries Management*,
 144 36(4), 852–863.

Table 1. Survey attitude (sub)scale reliability (McDonald's omega, Cronbach's alpha), validity (average variance extracted), and item means and frequencies ($n = 314$). Bold highlights agree response frequencies of enjoyable and value items and disagree response of burden items.

	M	SD	Frequencies (%)				
			1	2	3	4	5
Survey enjoyment ($\alpha = .82$, $\omega = .83$, AVE = .62)							
I enjoy responding to questionnaires (e1)	3.21	.85	3	13	50.0	28	6
I enjoy being asked to complete a survey (e2)	3.38	.90	3	10	46	31	11
Surveys are interesting (e3) ^a	3.49	.85	3	7	39	43	9
Survey value ($\alpha = .77$, $\omega = .78$, AVE = .54)							
Surveys are important for society (v1)	3.64	.88	3	6	28	50	13
A lot can be learned from information collected by surveys (v2)	3.97	.74	1	2	14	63	19
Completing surveys is a valuable use of time (v3) ^b	3.65	.82	1	6	32	49	12
Survey burden ($\alpha = .67$, $\omega = .68$, AVE = .42)							
I receive too many requests to participate in surveys (b1)	3.37	.83	10	30	49	10	1
Opinion polls are an invasion of privacy (b2)	3.76	.84	20	41	34	4	1
It is exhaustive to answer so many questions in a survey (b3)	3.33	.93	11	29	44	13	3

Note. Survey burden response scale reverse recoded for analysis to align valence: 1 (strongly agree), 2 (agree), 3 (neither), 4 (disagree), 5 (strongly disagree).

^a Modification indices suggested additional loadings survey value factor.

^b Modification indices suggested additional loadings survey burden factor.