

Participatory Establishment Survey Research: Centering the Respondent in Developing the Annual Integrated Economic Survey (AIES)

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Abstract:

The U.S. Census Bureau has been engaged in the integration of seven annual economic surveys. This major redesign has presented an opportunity to engage establishment survey respondents in new and innovative ways, but primarily, to use a survey design paradigm that centers on respondent needs. In this presentation, we will outline the myriad of research efforts aimed to keep the respondent at the center of our survey design, including:

- Record-keeping study designed to understand how companies keep their data internally;
- Data accessibility study to learn about what data are most accessible and the levels detailed information is available within the company;
- Cognitive testing of harmonized survey questions;
- A multi-phase, multi-method pilot of the survey instrument, including data collection, a Response Analysis Survey, semi-structured debriefing interviews, and impromptu questions and discussions with respondents over two rounds of data collection;
- Three rounds of usability research to tailor and refine the survey design; and
- Systematic review of respondent communications.

Attention is paid to the ways that we engaged respondents in design decisions, with the goal of lowering response burden and increasing data quality. We will conclude with thoughts on applicability of these methods for wider establishment survey research, including lessons learned and next steps.

Introduction

At the request of the U.S. Census Bureau, the National Academy of Sciences (NAS) convened an expert panel to review and recommend improved methodologies for its appropriated annual economic surveys. [Released in May 2018](#), the panel's primary recommendations were to integrate these programs, harmonize content and coordinate data collection procedures in order to manage and minimize respondent burden, and develop and implement an integrated sampling strategy to gain efficiencies. The Census Bureau's Economic Programs Directorate undertook an intensive, multi-pronged research effort to investigate, identify, operationalize, and implement methodologies to meet the intent of the NAS panel's recommendations, which has grown to become the Annual Integrated Economic Survey (AIES). This paper explores the application of participatory research orientation in establishment surveys. While we find that the AIES research has been respondent-centered, it does not rise to the level of participatory; we suggest establishment survey research that may be a better fit for a participatory orientation.

Background:

The Census Bureau enlisted the NAS expert panel to systematically review our annual economic surveys. This panel was charged with providing recommendations to improve the "relevance and accuracy of the

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data, reduce respondent burden, incorporate alternative sources of data where appropriate, and streamline and standardize Census Bureau processes and methods across surveys” (NAS 2016: 6). Traditionally, the Census Bureau has used a sector-driven approach to annual surveys.

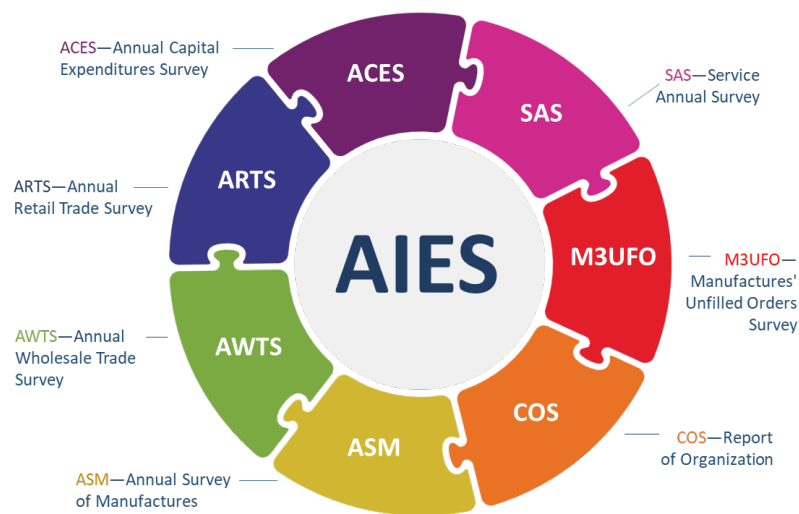
One of the recommendations from the NAS panel is the implementation of an Annual Business Survey System (ABSS). The ABSS should include the following characteristics (2016: 160):

- Administer a core set of questions to all respondents;
- Use a rotating panel sample;
- Use standardized data collection, processing, and estimation methods;
- Develop a single application programming interface for access to the data;
- Use administrative records to the maximum extent possible; and
- Incorporate small-area models to produce subnational geographic estimates.

The Annual Integrated Economic Survey

Over time, the ABSS grew to become the Annual Integrated Economic Survey (AIES). The AIES represents the integration of seven legacy annual economic surveys at the US Census Bureau. It is a cross-economy survey designed to produce national and subnational estimates, and to produce industry-specific estimates. It includes three units of collection, the company-level, the establishment (location)-level, and the industry-level. It uses harmonized content designed to be asked across the economy wherever possible.

Figure 1: AIES In-Scope Annual Economic Surveys



In approaching the development of the AIES, the Census Bureau also considered the way that we research emerging surveys. Historically, Census Bureau economic surveys are necessarily conservative about methodological changes, as the preservation of year-over-year comparisons often outweighs gains from any methodological tweaks. Over time, this stability can cause the survey to grow clunky from a

respondent point of view. The AIES represented the opportunity to center establishment survey design on the respondents' perspective to reduce response burden.

Participatory Research

In considering the ways that we approach research, we began to explore participatory research methods in an establishment survey context. Could a participatory orientation be a way of researching the AIES?

German sociologist Dirk Schubatz provides a theory of participatory research wherein participatory research stands in juxtaposition with so-called 'conventional research' - it seeks to engage research participants in the research process, not as passive donors of data but rather as active co-creators of knowledge (2020: 10). This represents "a fundamental difference" by "shift[ing] power relations toward co-researchers" and away from researcher-as-expert; "linked to this convention is the belief that more active involvement of the subjects or target audience of research may help ask more appropriate questions and ultimately provide better answers to the questions posed" (12).

Participatory research, then, necessarily places the researcher and community in relationship: they together define the research questions, select and implement the appropriate methodologies for inquiry, and determine the analyses, documentation, programming, and perpetuation of the data. There is also a community stake in outcomes, which generally leads to more specific and collaborative dissemination of findings and programming.

Participatory Survey Methods

In fact, there are examples of participatory research orientation using survey methods. Schubatz argues that while surveys are often criticized for being standardized, sanitized, and out of touch with reality, "there are very few elements of survey research which are out of bounds when it comes to co-design approaches, and surveys should not be regarded as unsuitable for collaborative research designs" (2020: 190). Participatory survey research has three main benefits (2020: 192):

1. Improved study robustness and rigor;
2. A closer connection between the study approach and outcomes and people's lived experiences; and
3. An improved response rate to survey questionnaires.

Brown et al. (2005) provide an overview of the community-based participatory research principles used in the California Health Interview Study (CHIS). In this case, the researchers argue that community-based participatory research methods "emphasize the role of community members as agents of change and consider participatory research to be an effective way to encourage and initiate community change by the community members who are affected" (2005: 1). Respondent feedback was used to determine sample size and composition, influence the final instrument design (including content), and periodicity of collection (2005: 3). Note that respondents who provided feedback in the planning process "were not involved in decision making" (2005: 3) - feedback was considered and incorporated where possible, but decision making still rested with the research team. Still the CHIS is a rare example of a large-scale health survey using community based participatory research methods. The model "ensures that the survey is relevant to the communities that plan it; the survey appropriately measures factors related to community needs, and data and results are available and accessible to the relevant communities and their advocates" (2005: 7). Though, the authors admit that "the community and advocacy participation in CHIS planning and development is not as extensive as the participation in local community-based studies... however... the model is a viable approach, incorporating flexibility... and collaboration" (2005: 7).

Further still, AmeriCorps' Office of Research and Evaluation recently fielded a supplement to the Current Population Survey (CPS) on Civic Engagement and Volunteering. This office regularly engaged in

participatory research, and links the practice to data equity: “the participatory process produces more equitable and actionable solutions and can improve our democratic processes” (AmeriCorps 2021). This provides another example of participatory research orientation and survey methods.

AIES Respondent Research

In approaching the integration and harmonization of the seven in-scope legacy surveys for the AIES, the Census Bureau engaged in an extensive suite of respondent research. First, we developed three research questions to investigate over the research lifecycle. These included:

1. Definitions: how do businesses define themselves relative to the Census Bureau’s definitions?
2. Accessibility: how accessible are key data points at varying business units?
3. Burden: how resource intensive is gathering data at these varying business units?

We determined that the research would be cumulative: each round should inform the next round of investigation. We also broke the research into three parts: formative, summative, and simulative. Formative research is exploratory research designed to inform instrument design decisions. Summative research is research that induces independent response from the field. Simulative research is designed simulate field conditions as closely to the ‘real’ survey as possible. Each of these parts builds on the one that comes before; that is, we considered respondent feedback from preceding rounds of research to inform the research questions and methodologies moving forward.

Formative Research

The first respondent research conducted on behalf of the AIES was the Record Keeping Study (RKS). The RKS included 29 in-depth interviews with medium sized companies on the ways that they keep their records. This study focused in on businesses’ North American Industry Classification System (NAICS) classification, asking questions about the applicability of the classification and if it reflected what the business does or makes. We then asked about key variables used in creating economic estimates, including revenue, inventory, expenses, and capital expenditures. We also started to investigate the response process overall, particularly how these medium sized companies were keeping their records, at what unit, and at what detail. The major findings coming out of this first set of interviewing is that NAICS classification is not as intuitive to businesses as we may have assumed it to be. We also noted that operating units vary across businesses by size and by industry, and we noted that for most companies, the most accessible data are at the company-level.

This interviewing informed the next round of research, called the Data Accessibility Study (DAS). The DAS included 30 in-depth interviews with medium size companies. First, we asked more in-depth about the units that companies use when keeping their records. We asked about the NAICS again to further explore mismatches in classification. And, we used a novel online card sort methodology to have respondents categorize the accessibility of key variables at different levels within the business. For example, we would ask ‘how accessible are your revenue data by state? how accessible are your revenue data by establishment?’ and so forth. We found that NAICS classification continued to be a challenge for some respondents, and that the data we were asking about were not necessarily being universally tracked across all of our businesses. We also learned that were we to ask for data by state, respondents would need to pull the data at a more granular level and sum it up to state.

In preparation for the integrated survey, staff at the Census Bureau began a program of consolidating company contacts across the current annual surveys to identify one primary contact for AIES. To better understand how contact consolidation might impact response processes, researchers conducted two rounds of debriefing interviews. The first round was 35 interviews with responding companies during which Census Bureau researchers asked questions about communication materials and challenges. The second round was 19 interviews with non-responding companies to understand where response may have

broken down. In general, we found that the COVID-19 global pandemic impacted communication strategies for the Census Bureau, and that respondents were expressing preference for email as the primary contact. We also noted that respondents have a positive reaction to the online response portal they use to complete their surveys for the Census Bureau, but that respondents are less positive about in-field responsiveness, like the Help Desk. We also found that barriers to response can be external - that is, things outside of our control like company staffing churn, the global pandemic, and others – or internal – that is, things we can control like multiple topics on one survey, communications messaging, and responsiveness to in-field requests.

As we started to get a sense of what the issues were going to be in harmonizing and integrating the legacy surveys for AIES, we conducted 39 interviews to test out preliminary mockups of screens to guide respondents through what an integrated and harmonized survey might look like. During this interviewing, we also asked questions about preferences in respondents' mode of completion and the mode of communication, as well as some other general impressions of integrating and harmonizing. We found that both unit and topic play a role in response, such that not every respondent has access to every data point across every topic. We note, too, that respondents identified some of the response support features that they use when they answer our surveys, like using a spreadsheet for response, looking at PDF previews to know what they're going to be asked, and the ability to share or delegate the survey to others within their company to provide response.

In total, we conducted 152 total in-depth interviews in support of the formative research for AIES.

Table 1: AIES Formative Respondent Research

Project	Timeline	Description	Number of Interviews	Major Findings	Recommendations:
Record Keeping Study	Fall 2019	In-depth semi-structured interviews of medium size companies focused on how they keep accounts and financial records	28	<ul style="list-style-type: none"> • Mismatch in unit definitions • NAICS classification is challenging • Consolidated figures are an anchor 	<ul style="list-style-type: none"> • Take a holistic approach to surveying companies • Avoid classifications and terminology that do not work for businesses
Data Accessibility Study	Winter 2021	In-depth semi-structured interviews of medium size companies focused on the accessibility of their data at various levels	30	<ul style="list-style-type: none"> • NAICS can be challenging • Company-level data more accessible • State-level required summation 	<ul style="list-style-type: none"> • Use company-level data as a check on data quality • Ask for establishment-level response in place of state-level response
Coordinated Collection Respondent and Non-Respondent Debriefing Interviews	Summer 2020 and Summer 2021	Phone debriefing interviews	54 (35 respondents, 19 non-respondents)	<ul style="list-style-type: none"> • Mixed results with communications • Letters and emails: COVID-impacted 	<ul style="list-style-type: none"> • Consider time and place, historical events • Streamline contacts for surveys

Project	Timeline	Description	Number of Interviews	Major Findings	Recommendations:
				<ul style="list-style-type: none"> • Respondent portal: positive response • In-field responsiveness: mixed response • Barriers to response can be external (company-related) or internal (survey-related) 	<ul style="list-style-type: none"> • Ensure Census follows up on outstanding issues
Survey Structure Interviewing	Winter 2022	Interviews with companies in various industries using mockups of modules and survey	39	<ul style="list-style-type: none"> • AIES introduce complexity for reporting by unit and topic • Respondents plan their response process 	<ul style="list-style-type: none"> • Specify terminology for companies • Provide both spreadsheet and downloadable survey • Explain industry classification • Allow flexibility for answers about industry

Summative Research

Once we had a better understanding of the respondent-centered issues in the AIES, we could move toward summative research to induce independent response from the field for the integrated and harmonized instrument. We decided to use a two-phase pilot approach. The AIES Pilot would include not only response to a first draft of a survey instrument, but also additional research modalities to fully understand the response processes at play, including debriefing interview with respondents, a Response Analysis Survey focused on burden, and cataloguing contact from the field in the form of emails and phone calls requesting response support.

In March 2022, we launched the AIES Pilot Phase I to 78 companies from across the country. In total, 62 companies (79 percent) provided at least some response data to the harmonized survey. The Phase I Pilot was focused on understanding response process for the integrated survey. The survey was broken into four sections that corresponded to units of collection - company, establishment, and industry, plus one section for newly opened or acquired establishments. In general, respondents used both response spreadsheets and screen-by-screen response. Some questions were asked at more than one collection unit, which added to response burden. And, respondents mentioned using communications materials to respond, like PDF survey previews.

In February 2023, we launched the AIES Pilot Phase II to 890 companies, with 318 providing at least some response (36 percent) by April 15 (the cut-off date for preliminary analyses)². We found that we need to continue to refine and revamp our communication materials both in outreach to respondents (like letters, emails, the survey website, and others) and in response support (like FAQs, videos, help desk response, and others). We've found that there are a suite of instrument features that support response – like autosumming, formatting, and a unified listing of all units in the survey – and that we should continue to develop out those features as we move toward the final instrument design. We note that just changing the instrument is going to increase respondent burden.

Table 2: AIES Summative Respondent Research

Project	Timeline	Description	Number of Companies	Major Findings	Recommendations:
AIES Pilot Phase I	Spring 2022	Online survey instrument, respondent debriefing interviews, Response Analysis Survey (RAS), and contact from the field	78	<ul style="list-style-type: none"> • Mixed collection approach preferred • Duplicate content is adding burden • Respondents use communications materials 	<ul style="list-style-type: none"> • Use a holistic spreadsheet approach • Further investigation into burden • Develop respondent communications
AIES Pilot Phase II	Spring 2023	Online survey instrument, respondent debriefing interviews, Response Analysis Survey (RAS), and contact from the field	890	<ul style="list-style-type: none"> • Communications needs refining • Instrument features support response • Instrument change is a source of burden 	<ul style="list-style-type: none"> • Continue to refine communications materials • Let the instrument do the ‘heavy lifting’ wherever possible • Warn respondents of the upcoming change

Simulative Research

In late summer, we will engage in the final round of research in preparation for the 2024 launch of the AIES. Simulative research is designed to simulate field conditions both for the respondent and the researchers to act as a last check – a dress rehearsal – before the full survey implementation. This collection will include more than 8,000 companies, and use a newly rendered survey instrument informed by the previous two rounds of research. We will conduct additional qualitative and quantitative research around this collection – including usability interviewing, respondent debriefings, and another round of the Response Analysis Survey – for final recommendations in preparation for full deployment.

Participatory Research Revisited

Considering the high volume of respondent interaction in researching the AIES, we wondered, then, if we had met the bar for this research to be called “participatory.” Participatory research invites the communities of interest to be ‘co-creators’ of knowledge; in this sense, while we shifted the paradigm of the AIES research to be more respondent-centered, it does not rise to the level of participatory research.

² Note: we continue to encourage response to the Phase II Pilot; as of 07/14/23, 484 companies had provided response to the AIES Pilot Phase II representing a 55.8% response rate. The final cut-off for collection is September, 2023.

During the formulation of our research, while we considered respondent-needs, respondents themselves were not involved in the creation of the research questions. We did not invite respondents to participate in selecting the methodologies of inquiry; we considered novel ways of engaging respondents (as in the card sort activity in the formative research, or the hands-on approach to questions from the field in the summative research), but we did not consult with respondents in selecting those methodologies.

Throughout the research, we found ourselves wondering if establishment surveys *can* be participatory. One important consideration is motivational mismatch in establishment surveys. Unlike in demographic surveys, we are asking our respondents to complete our surveys on behalf of their institutions or on behalf of their businesses. The businesses' main motivation is the perpetuation of the business; responding to our surveys is not within core mission of any of the businesses that we survey. It may be challenging to find common ground when businesses are not necessarily motivated by a community-orientation. We recognize that even efforts to activate response from a business motivation (e.g., telling respondents that Census Bureau data can be used for business planning) can be ineffectual, such that most of our respondents are in positions within their business where they are not using aggregated Census Bureau data to make business decisions (that is, accountants provide the data, but do not use the published statistics in their work within the business).

At the same time, we are cognizant that the Census Bureau's motivations are those of the production of official statistics, and that this motivation will always be at the forefront of the Census Bureau's orientation to researching data collection. We can invite businesses into the process of the co-creation of knowledge only in so far as it serves the overarching goal of the production of official statistics. If we were to use participatory methods, we would need mutual understanding that the community goals and the Census Bureau's goals must dovetail.

We do note, however, that there are areas of the establishment survey field that may be ripe for participatory investigation. This includes the exploration of historically undercounted populations in an establishment survey context. This may be a space where the participatory orientation provides an opportunity for data equity by inviting historically undercounted establishments to co-create research to better account for their needs and interests. We could also see the exploration of new measures of economic conditions that are principally informed by the communities that are being measured, such that economic measurement is reflective of the community of interest. Finally, we suggest that although the businesses themselves may be driven by self-perpetuation, they are embedded within the social context in which they are found. Our unit of collection is a business, but our respondent is ultimately a person, and that person is a part of a community that ultimately benefits from the production of official economic measures.

At this stage, while we can say with confidence that the AIES respondent research was not participatory, it is respondent-centered, which represents a paradigm shift from the processing-centered orientation with which we usually start. We believe that the respondent-centered approach to instrument development will benefit both respondents (through lower response burden) and the Census Bureau (through better quality and more timely data). We see opportunities for a participatory research paradigm in establishment surveys in the future, and encourage appropriate use of the orientation depending on the goals and communities involved in the research.

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