

Data-Driven Decision Making and the Design of Economic Census Data Collection Instruments

Eric B. Fink, Jennifer L. Beck, and Diane K. Willimack

U.S. Census Bureau¹, Washington, D.C. 20233

Proceedings of the 2015 Federal Committee on Statistical Methodology (FCSM) Research Conference

Abstract

As it is becoming increasingly common for surveys at the U.S. Census Bureau to shift to a single-mode electronic instrument, survey managers will have to think about both the opportunities and the risks associated with such a transition. At the extreme, the adoption of an electronic instrument allows a “form” to be uniquely customized to a respondent. This has the desired outcome of potentially reducing respondent burden to a substantial degree. In this paper, we explore this idea of a customized form by looking at how products may be pre-listed in the upcoming 2017 Economic Census.

Keywords: Instrument design and pretesting, multi-mode and web data collection, Economic Census, NAPCS

Introduction

The economic census, which the U.S. Census Bureau conducts every five years, is undergoing a major re-engineering effort. For the 2012 Economic Census, establishment-level data were collected using two-self-administered modes: mail-out/mail-back and electronic. For the 2017 Economic Census, only electronic reporting will be available. This presents unique challenges and opportunities for designing electronic instruments. For example, in past censuses, paper questionnaires contained long, detailed lists of products that filled multiple pages; respondents had to search for goods and services in this list and enter revenue data. A Web instrument offers automated features that may reduce the burden of sifting through long product lists, and improve data quality.

This paper focuses on the planned electronic collection of detailed product lines for implementing the North American Product Classification System (NAPCS), a comprehensive demand-oriented classification system that is being developed by the statistical agencies of the United States, Canada, and Mexico. As part of this effort, we analyzed product information that businesses reported in the 2012 Economic Census to discern reporting patterns associated with industries in the economic census. These reporting patterns may be leveraged in 2017 instrument design, providing a familiar starting point for respondents to begin supplying product-level receipts. We use the results from this analysis, in conjunction with usability testing, to aid development of an effective design for obtaining product-level detail.

We demonstrate how analyzing respondent reported data, paired with instrument design testing, may be used to inform instrument-design decisions for business surveys. As many Federal surveys increasingly rely on electronic-based data collection, electronic instruments can provide many benefits over traditional paper forms. The electronic instrument need not have the look and feel of its paper-based counterpart to be effective, but can be uniquely customizable to the respondent to improve the survey experience, thus reducing respondent burden and increasing data quality.

The paper will be organized as follows. First, background on both the economic census and NAPCS will be given, and then a discussion of the methods will follow. Finally results will be presented and discussed with ideas on next steps.

¹ Any views expressed are those of the authors and not necessarily those of the U.S. Census Bureau.