

Breaking Down Complex Concepts Into Simpler Questions: Experience with Two Economic Survey Topics

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Background

Many proposed survey questions represent complex concepts, not just conceptually but also in their use of complicated sentence structure. This is not simply a matter of replacing or simplifying jargon with the use of “plain language.” Survey questions about complex concepts are often formulated using complicated question structures, as researchers attempt to specify or clarify attributes of the concepts with multiple clauses, parenthetical phrases, and/or instructions.

Complex questions are more cognitively challenging for respondents to process and can result in suboptimal data.

The U.S. Census Bureau has survey data quality standards, the goal of which is to ensure the questions are being understood and interpreted as intended. This poster describes two different economic survey topics – Factoryless Goods Producers and E-Commerce – where their associated, current survey questions were not performing well due to the complexity of their underlying concepts.

This poster summarizes the research goals and methodologies, along with relevant cognitive pretesting findings. The focus is on efforts and experience with parsing out these complex concepts into their base attributes, and challenges and obstacles for developing multiple, simpler questions to measure these attributes.

Example 1: E-Commerce Project (Services Annual Survey)

-Purpose: Investigate the suitability of proposed new questions about e-commerce.

-**A comparative analysis** of data collected from U.S. Services Annual Survey (SAS), the U.S. Annual Survey of Manufactures, the Canadian Survey of Digital Technology and Internet Use, and the UK Survey of E-commerce and ICT Activity **indicates that Services sector e-commerce may be under-reported in the U.S.**

-The revised questions tested in this study share characteristics with those used in these other data collections.

-Objectives included:

Is e-commerce under-reported in Services sector?

Do the revised questions prompt Services companies to report more sales as e-commerce?

Research conducted:

-**Cognitive testing** of draft questions, 2 rounds, **41** interviews, 2017

Previous E-Commerce Questions on Services Annual Survey (SAS):

Revised E-Commerce Questions on Services Annual Survey (SAS):

1. Did this firm have any revenues from customers entering orders directly on the firm's websites or mobile applications in 2017? Yes/No
2. Did this firm have any revenues from customers entering orders directly on third-party websites or mobile applications in 2017? Yes/No
3. Did this firm have any revenues from customers entering orders via any other electronic systems (such as private networks, dedicated lines, kiosks, etc.) in 2017? Yes/No
4. Of the total 2017 revenues reported in Section 6 (\$xx,xxx,xxx), what was the dollar amount (or percentage) that was from the revenues identified in A-C above? Please provide an estimate if exact figures are not available.

\$ _____ OR _____ %

Example 2: Factoryless Goods Producers (FGPs) Project

-Purpose: Attempt to identify Factoryless Goods Producers (FGPs) – establishments that control the design, production and sale of products but contract with unaffiliated establishments to perform transformation activities

-Why? To inform a decision re: future industry classification

-Complex concept, with multiple criteria

-Rare event, with potential significant impact on economic measurement

Research conducted:

-**Respondent debriefings** on 2012 Economic Census contract manufacturing questions, **97** interviews, 2014, establishments

-**Cognitive testing** for 2016 Company Organization Survey – Enterprise Statistics Program (COS-ESP), 2 rounds, **37** interviews, 2015, enterprises

-**Early stage scoping** interviews, 2 rounds, **21** interviews, 2015, establishments and enterprises

-**Cognitive testing** on 2017 Economic Census draft questions, 4 rounds, **62** interviews, 2016, establishments

Previous Contract Manufacturing Questions on 2012 Economic Census:

Revised FGP Questions on 2017 Economic Census (for multi-unit companies):

1. In 2017, did this establishment manufacture any products or produce any goods at this location? Yes/No
2. In 2017, did this establishment have any manufacturing done on its behalf by any other locations of your company inside the U.S.? Yes/No
3. In 2017, did this establishment have any manufacturing done on its behalf by any affiliated companies inside the U.S.? Yes/No
4. In 2017, did this establishment have any manufacturing done on its behalf by any unaffiliated companies inside the U.S.? Yes/No
5. In 2017, did this establishment have any manufacturing done on its behalf outside the U.S. by either affiliated or unaffiliated companies? Yes/No
6. In 2017, did this establishment determine the design or specifications for any of the products that were manufactured on its behalf? Yes/No
Design or specifications refers to the function of the product, not just the appearance or its packaging.
7. What percentage of this establishment's total revenue in 2017 was from the sale of products that were manufactured on its behalf, per this establishment's design or specifications?
Estimates are acceptable.
 - 0%
 - 1-25%
 - 26-50%
 - 51-75%
 - 76-99%
 - 100%
8. In 2017, was your U.S. company as a whole responsible for the design of any products that were manufactured outside the U.S. or by any affiliated companies? Yes/No

Findings: Breaking Down Complex Concepts into Simpler Questions

-Previous questions, although fewer in number, included long instructions and were difficult for respondents to understand and answer.

-**Revised questions, though greater in number, were each simpler concepts, which, in testing, were easier for respondents to understand and answer.**

-In general, the four revised E-Commerce questions were well received by respondents in cognitive testing.

-FGP cognitive interview respondents generally found the eight revised questions easy to understand and quick to answer. (There were some indications of potential misreporting, however, especially for multi-unit companies. Therefore, the revised questions were added to the 2017 Economic Census **only for research purposes**. We plan to use the resulting data to further study and improve our ability to identify FGPs.)

-**Breaking the concepts into smaller chunks allowed respondents to focus on one attribute at a time, rather than having to keep all attributes in mind when answered one more concept question.**

Challenges and Obstacles

-Some decision makers were still wary about the greater number of questions, thinking it looks more burdensome (perceived burden).

-Took multiple rounds of testing to parse out these concepts into their base attributes.

-We were unable to do larger scale field pretests of revised questions to see how they performed before implementation.

Future Directions

-Both sets of questions (E-Commerce and FGP) are currently in the field.

-Respondent debriefings and data analysis are planned to evaluate how the revised questions performed in production.

References

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