

S1 Appendix. Qualitative Research Study Design.

In this Appendix we outline the qualitative research design and how it addresses Domains identified by Tong [1].

Domain 1: Research team and reflexivity.

1. Personal characteristics

- (a) Dr. Fitzsimmons primarily conducted interviews, with assistance from Ms. Kinchla and Ms. Allingham.
- (b) Dr. Fitzsimmons holds a PhD in economics and focuses on business decision-making. Ms. Kinchla has an M.S. in Food Science and works with food businesses to provide food safety Extension and Training.
- (c) Dr. Fitzsimmons is a Research Assistant Professor. Ms. Kinchla is an Extension Assistant Professor. Ms. Allingham is a Graduate Assistant.
- (d) All interviewers are female.
- (e) Dr. Fitzsimmons has conducted several interviews and focus groups with small businesses regarding financial decision-making and firm financial structure.

2. Relationships with participants

- (a) Relationships with participants were established over a roughly eight-month period during which intensive training was provided to participants in both group and individual sessions.
- (b) Participants were informed of researcher goals.
- (c) Participants were informed of background of each individual researcher and what led each to their interest in this research.
- (d) Participants were informed of research motivations, research goals, use of research results, potential impact of research results.

Domain 2: Study design.

1. Theoretical framework

- (a) Our theoretical framework and methodology most closely follows content analysis. We began with a discussion of economic principles of firm costs, and then provided a spreadsheet format of costs that we had identified as researchers. We asked participants to both critique and revise the framework as a group and provide numeric estimates of items within the framework/revised framework as individual firms.

2. Participant selection

- (a) We used purposive selection to identify participants. In addition to selecting businesses that fell within our population of interest, criteria used included products manufactured, business life-stage, type of facility, stage of food safety preparedness, and food safety plan goals. We sought to have a broad range of participants with respect to these characteristics. Due to limitations presented by COVID 19, we also considered location.
- (b) Participants were approached over email.

- (c) Four SMPs in Group 1 and six SMPs in Group 2.
- (d) One SMP dropped out of Group 1 due to time commitment.

3. Setting

- (a) Data were collected online over Zoom meetings due to COVID 19.
- (b) Only participants and researchers were present.
- (c) All reportable demographics are available in the main body of the manuscript.

4. Data Collection

- (a) We began with a discussion of economic principles of firm costs, and then provided a spreadsheet format of costs that we had identified as researchers.
- (b) Repeat interviews were not carried out.
- (c) The research used video recordings to collect data as back-up.
- (d) Field notes were taken, primarily in the form of modifications to the spreadsheet and entry of numeric data.
- (e) Each interview session lasted between 1.5 and 2 hours.
- (f) Data saturation was not discussed.
- (g) Raw transcripts were not returned, but draft analyses and draft outputs were returned to participants prior to public release for comment/correction.

Domain 3: Analysis/findings

1. Data analysis

- (a) Numeric data were not coded. Two researchers reviewed numeric data and framework.
- (b) Themes were not identified, although an alternative framework that used economic theory to identify cost patterns was developed.
- (c) Microsoft Excel was used to manage and analyze data.
- (d) Participants provided feedback on findings.

2. Reporting

- (a) Quotations were not presented.
- (b) There is consistency between data and findings.
- (c) Major cost patterns within the framework are identified in findings.
- (d) There are descriptions of variations from primary cost patterns within the framework.

References

1. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007;19(6):349–357. doi:10.1093/intqhc/mzm042.