

Develop Contextual Measurement Tools for Self-Efficacy Norms and Perceived Self-Efficacy

A Practical Field Implementation Guide

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Acronyms

BANI	Bandarban Agriculture and Nutrition Initiative
CHT	Chattogram Hill Tracts
FES	Focused Ethnographic Study
IDEAL	Implementer-Led Design, Evidence, Analysis and Learning
IYCF	Infant and Young Child Feeding
Pro-WEAI	Project-Level Women's Empowerment in Agriculture Index
PSE	Perceived Self Efficacy
SAPLING	Sustainable Agriculture Production Linked to Improved Nutrition Status, Resilience, and Gender Equity

Introduction

Why Do We Want a Contextually Defined Self-Efficacy Scale?

As researchers and implementers in food and health systems, we approach the study of self-efficacy from a definition that is meaningful to and shared among us. However, we assume our definition is shared by program and research participants. If individuals in a socio-cultural group share a model of self-efficacy that is different from what we measure with standardized measurement tools, we could miss critical information which could help us design and implement more effective programs to empower women and households.

Who is This Guide For?

This guide is intended for food and health systems program planners and implementers to use when self-efficacy will be a measured indicator.

How Can This Guide Help You?

This guide provides food and health systems practitioners with a step-by-step toolkit for measuring: 1) self-efficacy norms and, 2) perceived self-efficacy. The approach takes an emic (i.e., cultural insider) perspective. The ethnographic and measurement methods presented here are adopted from anthropology theory and part of a package of methods called cultural domain analysis. These methods identify salient and meaningful content for interventions and social behavior change approaches and provide a measurement tool for change in perceptions and practices of self-efficacy norms over time. Specifically, this guide will help you:

1. Identify socio-cultural norms of self-efficacy as a dimension of women's empowerment through cultural domain analysis.¹
2. Develop a measure of those socio-cultural norms to monitor over the life of the project.
3. Develop a scale to measure perceived self-efficacy over the life of the project.

What is Self-Efficacy and Why Do We Measure It?

Self-efficacy is defined as an individual's judgement, or perception, of their own capability to successfully perform an action (Bandura, 1986). It is widely used to explain and predict behavior (Glanz and Bishop, 2010) and is considered a factor on the resilience pathway to improved food security and nutrition (Bene et al., 2019). Self-efficacy beliefs are factors for human motivation, well-being, and personal accomplishment.² They are also believed to be a more consistent predictor of behavioral outcomes than any other motivational construct (Graham and Weiner, 1996). This makes self-efficacy an important factor to understand and measure in programs that aim to influence behaviors and practices.

What is Cultural Domain Analysis?

Cultural domain analysis (Romney et al., 1986) has been used widely in anthropology since the 1980s and builds on work in ethnoscience from the 1950s and 1960s. It is a set of methods to collect systematic data about people's knowledge and norms related to a topic of interest, such as self-efficacy. Cultural domain analysis determines if people share cultural knowledge within that domain of interest and produces tools which can measure norms (i.e., the cultural knowledge) and how people behave in relation to those norms. For further reading on theory, methods, and applications of cultural domain analysis, see Additional Resources at the end of this guide.

¹ The methods presented here could be used to identify and measure socio-cultural norms of self-efficacy for men, adolescents, or any population of interest.

² See Bandura (1977) for a description of Social Cognitive Theory.

Methodology

Time and Resources

The entire process, from key informant interview preparations to data analysis, should take an estimated 6-10 weeks, depending on research team member level of effort. Our study took approximately 8 weeks of total level of effort and was supported by a 3-person research management team, six qualitative data collectors, and two analytical staff, in addition to the quantitative survey team. This timeline does not include the research protocol development and ethical approval process.

Key Informant Interviews



Who are key informants? What is their role in the research? Why?

In the development field, qualitative data collection tends to consider key informant interviews as interviews of “Very Important People” (such as: government officials, health practitioners, teachers). Depending on the research objectives, these VIPs can be important to interview. However, their status as VIP does not necessarily make them cultural experts. In ethnographic research such as cultural domain analysis, we want key informants who are from the community of interest and have a keen understanding of its people and culture. This could be anyone who is willing to share their experiences openly and understands the type of information you need for your research.³

For a perceived self-efficacy cultural domain analysis in food and health systems programming, the purpose of key informant interviews is to elicit information that builds an understanding of what may influence an individual's perceptions of their own capabilities to perform promoted behaviors.

To develop contextual perceived self-efficacy scales, a key informant:

- Is someone who can articulate insights into their culture, sociocultural norms, and people’s behavior around the topic of interest, regardless of status or position in the community.
- Can serve as a “cultural insider” to help understand the context for “cultural outsider” researchers. Note that even if researchers are from the same culture, they may not have the same insight as someone from a different segment of the community. For example, the “insider” might speak to the experiences of poor or marginalized communities the researcher is not part of.
- Can be interviewed, usually before other data collection, to help researchers narrow down key components of a topic to investigate and design more formal data collection tools. Key informants should also be available and willing to be contacted throughout the research process to help make sense of findings.

Steps for Key Informant Interviews:

- Design interview guide
- Train interview team
- Identify key informants
- Conduct key informant interviews and follow up as needed
- Analyze data

³ Bernard (2017) distinguishes between 1) key informants as people who have a lot of knowledge about their culture and are willing to talk to you, and 2) specialized informants who have specialized knowledge within a specified cultural domain. Pelto and Armar-Klemesu (2014) developed a tool using cultural domain analysis for Focused Ethnographic Study of infant and young child feeding in which their key informants are specialized informants. They included free list respondents as key informants in their approach.

Design Key Informant Interview Guide

For this type of research, develop an interview guide with a list of potential discussion topics and/or questions as your primary data collection tool. The interview guide is simply that – a guide; it is not a structured tool or a rigid survey that needs to be followed in order. This allows the interviewer to define the focus on the conversation, while following a guide, based on the content provided by the key informant. Mentally, the interviewer should be prepared for the key informant to introduce new topics and understand they may not have time to address all topics in the guide. It is, in a way, like being a journalist – follow the lead and let your informant tell you the story. The guide should have open-ended questions or topics focused on the issue being explored. These questions/topics should be informed by the theory behind the issue, literature related to the issue, and experience of the researchers and implementers working with the issue.

TIP: IRB

Internal Review Boards will understandably want to know how many times a key informant will be contacted. Make a best guess to give yourself a cushion that accounts for some follow up throughout the project (e.g., “up to X times”). The IRB may also think key informants should be VIP interviewees and can question whether repeated visits with someone from the community will produce bias in the study. Explaining the purpose of the key informants in your IRB application can help. Also, be specific about what data will be coded and used in analysis versus more informal discussions to understand data (e.g., “only data from the first interview will be coded and used in analysis”).

A sample key informant interview guide can be found in Annex 1.

Train Key Informant Interview Team

Training the interviewers to effectively collect qualitative data is foundational to the research. Remember, the purpose of the research is to gain sociocultural insight to develop a self-efficacy construct that is meaningful to the people participating in the program. An interviewer who does not understand the purpose nor the interview method (i.e., a guided conversation) will miss useful information. We recommend the training include the following elements:

1. Presentation and discussion of the objectives of the program and key concepts of the program (e.g., food security, malnutrition, resilience capacity, market development). Assume your interviewers do not know why you are implementing this program and teach them why.
2. Overview of qualitative vs. quantitative research and cultural domain analysis theory and methods (collecting good qualitative data can lead to a meaningful quantitative tool)
3. In-depth discussion on the purpose of this type of key informant interview
4. Methods and Dos and Don'ts of qualitative interviews, including probing techniques and body language (videos in appropriate languages or with sub-titles can be useful)
5. In-depth discussion of each topic in the interview guide, making additions or changes as needed. The interviewers are part of the research team and their feedback is valuable.
6. Classroom interview practice using role play and feedback
7. Field-based interview practice recorded on video and audio. Bring back to the classroom and watch and critique as a group. Highlight what was done well, how the person being interviewed responded, where further information could have been probed, etc.

Best practices for obtaining quality data:

- Probe effectively. Be the guide and let your respondent provide the content.
- Transcribe daily. Each evening, while the interview is fresh, transcribe the interview from your notes and recordings. Including observations and analytical thoughts.
- Review content and provide interviewer feedback. A research or data collection manager should review transcripts regularly and provide feedback, ensuring interviewers are getting insightful relevant information.

The interviewer should have the skills to recognize important and relevant information, probe further, and stimulate the key informant to think and discuss deeply on the topic.

Identify Key Informants

“How many key informants is enough?” This is a common question whose answer depends on how key informants are used in a study and whether they are classic key informants or actual in-depth interviews with a focused sample. In general, suggestions from the literature range from 4-10 key informants. In their 2014 Focused Ethnographic Study (FES) tool for infant and young child feeding (IYCF), Pelto and Armar-Klemesu (2014) recommend eight key informants as sufficient to obtain cultural knowledge in a domain of inquiry.

Key informant sampling guidance:

- Purposive sampling can be used to identify and recruit key informants.
- Recruit both men and women of different ages and with different backgrounds in the communities who are willing to talk about the topic and show keen insight.
- If the target area includes communities with varying access to resources, markets, and services, try to select informants with these different experiences. Engaging a diverse set of key informants helps to develop a more complete understanding of socio-cultural constructs, such as self-efficacy, since they are influenced by all members of a culture.

TIP: MAKE BACK UP PLANS!

Challenges such as climate events, disrupted roadways, pandemic travel restrictions, or poor network coverage, can arise during data collection – and generally something always does. Have backup plans and make sure the research and project team, interviewers, facilitators, and enumerators are fully aware of what to do in the range of circumstances you’ve planned for. Keep the funder and partners well informed as well to manage expectations.

The sampling goal is to capture a range of perspectives to inform development of the remaining tools. Cultural domain analysis may produce more than one cultural model for the issue/domain of interest. If there is more than one model, this is due to intracultural variation, or intra-geographical variation, so key informants that bring variation are especially helpful. As you identify your key informants and recruit them for the research, the person recruiting them (e.g., project staff, interviewer) should explain the expected role and anticipated level of involvement. ***We recommend having recruitment talking points available and an information sheet for the informant to keep.***

“The key to successful interviewing is learning how to probe effectively – that is, to stimulate the respondent to produce more information, without injecting yourself so much into the interaction that you only get a reflection of yourself in the data.”

Bernard (2017; p. 161)

Conduct Key Informant Interviews and Follow-Up

As mentioned, the key informant interview is a ***guided conversation*** between the interviewer and interviewee. The key informant is allowed to freely discuss what they are thinking and move from one topic to another while the interviewer uses the question or topic guide to keep the interview focused on the issue. This can be difficult for data collection teams that are accustomed to more structured a Question & Answer format. ***If we design a structured interview from what we already know and the interviewer does not deviate, we will never find out what we do not know.*** Using the semi-structured interview removes research assumptions about the domain of interest. It

gives us an opportunity to learn from the key informant. This semi-structured interview is the crucial first step toward establishing emic (cultural insider) validity for the future perceived self-efficacy scale.

Key informant interview guidance:

1. Obtain informed consent from the respondent.
2. Record interview and take notes.
3. Conduct interviews by a person who speaks the same language as the key informant (translators can be used if this is not possible).
4. If circumstances prevent the interview from being conducted in-person (e.g., a protracted pandemic), interviews can be conducted by phone. Follow-up conversations can also be conducted by phone.

REMINDER: The interview is a guided conversation and not a structured interview. Let the key informant talk freely and use the guide to gently nudge the conversation in the direction of the issue of interest. Advise the key informant you may be following up later by phone or in person to get their input into the research findings. The follow up conversations are informal, voluntary, and not meant to be a lengthy interview.

Analyze Key Informant Interview Data

Data Management: The data from the key informant interviews is narrative text. We recommend using a qualitative data management software to identify themes and code the data, such as MAXQDA⁴, Atlas.ti, NVivo, Dedoose, or others. Such software will make both data management and the coding process an easier task.

Identifying Codes: Coding, like developing a good questionnaire, is an art and it takes practice. Coding in cultural domain analysis is both inductive and deductive but emphasizes the inductive approach.

- Deductive coding: Using pre-formed codes that from our theoretical understanding of the relevant topic, what we expect to find, and creating codes that match the questions.
- Inductive coding: Codes are created as they emerge from the data.

A common error in coding qualitative data is for the analyst to code only by the question (deductive) and not create codes based on what the responses tell us (inductive). Your approach to coding and identifying themes should be a mix to ensure all the information is captured and well-organized for the next steps. Let the data speak.

REMEMBER: We are learning from the informants to get an emic (cultural insider) perspective. If we only code using a pre-formed list of codes, we will miss out on the insider information. The purpose of key informant interviews in cultural domain analysis is to get the insider knowledge – for the informant to tell us what we do not know. These insights may appear at any point in the conversation.

Group Coding: If multiple people will be coding the data, here are two options for orienting analysts to the same coding approach:

1. Code 2-3 transcripts together as a group to develop a common understanding of the draft codebook, each code, and rationale. This can be done in person or via an online communication platform, which is especially useful if the analysts are in different locations. It is best if everyone has reviewed the transcript beforehand so they can come to the group with coding suggestions or questions.
2. The lead researcher codes 2-3 transcripts to develop a draft codebook. The analyst group then meets (in-person or online) to go through each code, discuss and adjust.

In both cases, it is important to discuss a process for adding new codes beyond the initial samples. When multiple analysts are coding a set of transcripts, it can be difficult

⁴ Dengah II et al. (2021) give step-by-step instructions on coding in MAXQDA. The MAXQDA website has tutorials in multiple languages. The other software also have guides and tutorials.

to ensure uniformity since a new code added by one analyst may not reach the transcripts analyzed by someone else. The new code will need to be applied to all transcripts, including those that have already been coded. A good practice is to have the analyst flag the date the new code was added and list which documents have used the code. This makes it easier to go back and code the other documents in the set.

Before moving on to the next step, ensure:

- All key informant interviews are coded and a codebook is developed.
- The research team has reviewed the coded documents and is satisfied with quality, intensity, and consistency of coding.
- The research team has discussed the results and determined the themes or elements that are likely shared by members of the target group.

Recommended Reading: Bernard and Ryan (2010) provide an in-depth guide to analyzing qualitative data, including how to identify themes/codes, and specifically discuss cultural domain analysis, in their book *Analyzing Qualitative Data: Systematic Approaches*.



Implementation Example:

The purpose of our key informant interviews in our research in the CHT, Bangladesh was to explore women's self-efficacy and their practice of agriculture and health behaviors promoted by food security and nutrition programs. It also helped us understand how self-efficacy was defined by each ethnic group. Because we wanted to have both female and male key informants from different backgrounds, we selected four women and four men from each of the three ethnic groups in our area of interest, for a total of 24 interviews. We developed an open-ended interview guide to understand how the concept of self-efficacy is constructed and influenced within the sociocultural context. The initial interview lasted between 30 – 60 minutes, depending on the conversation flow. Later, we followed up with a smaller group of the original key informants (based on availability) to informally ask questions and talk about topics for which we wanted more explanation.

The 24 key informant interviews were conducted over a period of two weeks. After the interviews were transcribed and translated into English, a team of three analysts coded the transcribed interviews in MAXQDA software. The coding was inductive with no pre-assigned categories to minimize external bias. The translation took two weeks and the coding took approximately two weeks. This was longer than anticipated because of competing priorities for all on the research team, including the translators. This is an important factor to consider – if resources are available for a team to work full-time, the translation and analysis should not take more than 1-2 weeks, depending on the number of team members.

Lesson Learned: The concept of self-efficacy is abstract and the data collection team discussed at length what it meant to them before heading into the field. They discussed how to describe the concept and how to speak with key informants about it. Key informants then helped interviewers develop locally meaningful language that could be used to explain the concept to free list respondents.



It is easy to dismiss seemingly obvious information as not needing a code because we think it is not important. For example, someone analyzing a key informant interview from a self-efficacy study in the United States might decide having equal rights to men is not worth assigning a code and not a relevant theme because they assume all women want to have equal rights to men and it will not impact their perceived self-efficacy. Not only is this an example of not coding the obvious (all information a respondent provides should be coded, no matter how obvious), but also an excellent example of analytical bias. It is impossible to remove all bias when we code and analyze qualitative data, but we try to be as objective as possible. Again, **we don't know what we don't know.**

Free List Interviews



“Please list all the X you can think of.”

The second step of this research is to take the themes that emerge from the key informant interviews and develop free list questions to identify distinct components of self-efficacy, as understood by participants.

The “humble free list” (as Bernard 2017 refers to it) is a type of interview where a person is asked to brainstorm about the specific domain of interest. It is a simple elicitation technique used in cultural domain analysis to obtain a list of thoughts in the order they come from a person’s mind and a way to get people to tell you the components of their knowledge. When multiple free lists are collected, we can begin to see common components in people’s knowledge – the possible beginnings of a shared cognitive schema or cultural model.⁵

For cultural domain analysis of self-efficacy, open-ended key informant interviews provide information to design the free list interviews, which are administered to a second, larger group of respondents. There is not a standardized free list questionnaire for self-efficacy because it is a socio-cultural construct and we have to learn from the key informants and our contextual experience how self-efficacy is defined by members of that culture.

TIP

When submitting the protocol to the IRB, note that the free list questions are illustrative because the finalized questionnaire will be dependent on the key informant results and coding. This allows for the needed flexibility to continue an emic inquiry.

Steps for Free List Interviews:

- Develop free list questions
- Train data collection team on free list method
- Identify respondents for interviews
- Conduct free list interviews
- Analyze data



Implementation Example:

From our key informant interviews in Bangladesh, the themes of confidence, power, social support, behaving well, and taking care of/supporting/obeying husbands emerged as important for self-efficacy. These characteristics linked being a good woman to her belief in own abilities to achieve things. Through the range of questions asked and responses collected, we were also able to determine which themes were distinct components of self-efficacy or, if the responses to the questions overlapped with each other, a shared underlying dimension. In addition to the original free list questions, we also asked 14 supplementary questions to specifically discuss the extent to which various attributes are valued by free list responses. Some of these attributes may not have come up organically through the free listing process but understanding relationships to the concepts is important for self-efficacy inquiries. For example, we asked if self-reliance and confidence were valued in a woman, if a woman’s independence is valued by her husband and by her community, and other similar questions. These types of questions were also included to verify if cultural consensus statements on specific attributes were relevant.

⁵ See Weller and Romney (1988), Borgatti (1994), Bernard and Ryan (2010), Bernard (2017), Dressler (2018), and Dengah II et al. (2021) for more description on designing, implementing, and analyzing free list interviews.

Develop Free List Questions

The themes identified from the key informant interviews are used to inform the content of questions asked in the free list exercise.

There is no rule for how many questions should be developed. It depends entirely on the themes you want to pursue and include from the key informant interviews, as well as any literature or theoretical topics that need exploration. These interviews can also include structured or open-ended questions to dive deeper into the findings from the key informants.

Train Free List Data Collection Team

Although data collection for the free list questions is straightforward, interviewers should be trained to be flexible and be willing to probe. They should feel comfortable to ask relevant follow-up questions that may not have been included in the questionnaire.

The data collection training includes:

1. Discussion of key informant interview findings and explanations of how the free list questions were developed.
2. Description of the free list technique and how to conduct interviews, including what might require probing.
3. An overview of how the data will be analyzed.
4. In-depth discussion of each topic in the interview guide, making additions or changes as needed. The interviewers are part of the research team and their feedback is valuable.
5. Classroom interview practice using role play and feedback.
6. Field-based interview practice recorded on video and audio. Bring back to the classroom and watch and critique as a group. Highlight what was done well, how the person being interviewed responded, where further information could have been probed, etc.

Identify Free List Interview Respondents

Sample size depends on the cultural domain being explored. A domain that is well known (e.g., names of trees) might not need more than 15 people, but a sample size of 30 is generally accepted as sufficient for free lists, especially for less defined domains, such as self-efficacy.⁶ As with any qualitative data collection, if you have collected and analyzed data from 30 respondents and do not see a lot of overlap in the lists (i.e., a core group of items), you may determine you have not reached saturation and should conduct more interviews. This is okay. The research team must decide when enough interviews have been conducted.

SAMPLING:

- **For perceived self-efficacy in women, both women and men of various ages and backgrounds should participate in free list exercises.**
- The sampling method will depend on access to the target population. A random sampling strategy should be used to recruit the free list respondents. For example, if the interviews will be done with participants in an ongoing project, a random sample might be generated from participant rosters. If the goal is to sample from the general population, a more traditional approach such as going to every 5th house to ask for an interview or using a map of a village and assigning numbers to houses and using a random numbers table may be more appropriate.
- Select the approach that works best in your situation, making sure you use random sampling so that your free list responses are generated from experiences across the target population.

⁶ See Handwerker, Hatcherson, and Herbert (1997) and Handwerker and Wozniak (1997) for detailed discussion on sampling for cultural data.

Conduct Free List Interviews

- Free list interviews are semi-structured - they are open-ended questions and respondents can answer as much or as little as they want.
- All questions must be asked to analyze the data correctly and generate results using the responses from the whole sample.
- The interviewer can and should probe the respondent to think deeply and expand upon their lists at their discretion.
- The goal is to get a list of as many items as possible for each question, so it is important to probe after their initial answer before moving to the next question.

Analyze Free List Data

Identify Core Items

Free list data are analyzed using *Visual Anthropac – Freelists* (Borgatti 1992), a free software designed specifically for this type of analysis. *Visual Anthropac - Freelists* simplifies the analysis process for the free list data for you by producing a master list of responses according to the Smith's salience of each response.⁷

- The salience score is determined by both the order in which the response was given by each individual respondent, and the frequency of the response across all respondents.
- Weighting is given to respondents whose responses are more representative of the respondent group.
- Put the items in order from most to least culturally salient with 0 being least salient and .1 being most salient.
- Detailed information on how to use the software for this purpose are included in Annex 2. Other resources for using *Visual Anthropac - Freelists* are included in the Additional Resources section.

Typically, there will be a core set of items listed often by respondents, as well as a lot of items listed by only one or two respondents. The list can be long and it would be unrealistic to include all items for further analysis.

Approaches to reduce the free list results to a shortened list:

- The first thing to do is look for a natural break in the salience scores. An easy way to do this is generate a scree plot and look for the “elbow.” If no elbow or natural break is discernible, the research team can decide how to proceed.
- Other ways to decide which items to include:
 - Determine the number of items you want to keep and only use those items from the free lists (e.g., keep 20 items with the highest salience score).
 - Determine a salience score cutoff and only keep items with that score or higher (e.g., keep all items with a salience score between .05 and .1).
 - Determine a response frequency cutoff and only keep items that were mentioned with that frequency or higher (e.g., keep all items mentioned by 20% of people or by 2 or more people).

⁷ Dengah II et al. (2021) provide an excellent and very useful step-by-step guide on how to enter, clean, and analyze data in *Visual Anthropac - Freelists*. When you download the software, it also comes with a handy user guide that provides instructions and theoretical background. Both are recommended reading.



Implementation Example:

For our research in Bangladesh with participants from two USAID food security and nutrition programs, 90 interviews total were collected from 15 women and 15 men of each ethnic group (Bengali, Marma, Mro). The interviews were transcribed in a Word document. Each respondent list for each of the 15 free list questions was then transferred into Excel to be cleaned for Smith's salience analysis in Visual Anthropac - Freelists. We decided to use Excel, but it may have been faster to use Visual Anthropac - Freelists. A master list of terms (i.e., master codes) was created for each of the 15 questions and, then, each response was recoded using the master list (example in the table below).

After recoding the 15 lists from each of the 90 respondents, one plain text document was created for each question for entry into Visual Anthropac - Freelists (see Annex 2 for our detailed analysis; see also Dengah II et al. 2021 for step-by-step instructions for uploading into Visual Anthropac - Freelists). Within the text document, responses were labeled by ethnicity and gender to allow for analysis and comparison between ethnic groups and genders, both for the entire sample and within each ethnic group.

Once the salience scores were generated for responses to each free list question, we produced a scree plot, but did not see a visible elbow. There was no gap between a core set of items and other items in the lists. With the large number of respondents, many items were listed by a small number (2-5) of people. So, we decided to include only terms that had a salience score of 0.05 or higher – the midway point in the range of salience scores. We disaggregated the sample by ethnicity so we could identify if there were differences in responses between ethnicities. While there were small differences between genders, we didn't further disaggregate by gender since the differences seemed to be captured just by comparing ethnicity. Response items with salience of 0.05 or higher were put into an Excel spreadsheet and compared by ethnicity to look for similarities and differences. We identified the following items from the free lists as possible components of a shared cultural model of a woman's self-efficacy:

Table 1: Example of master list of codes for one free list question

Support	Human Capital and Resources	Character Attributes
Husband Support	Access to Resources	Good Character
Family Support	Earns Income	Behaves Well
Community Support	Skills and Knowledge	Follows Social Rules
	Educated	Respectful to Others
	Does Quality Work	Good Wife
	Easily Learns New Things	Good Mother
	Completes Tasks	Communicates Well
	Has Equal Rights to Men	Asks for Help/Advice

Develop Consensus Survey and Perceived Self-Efficacy Scale



What is the consensus survey? What is the difference between the consensus survey and the perceived self-efficacy scale?

- The **consensus survey** collects data to **identify shared socio-cultural norms** for self-efficacy.
- The **perceived self-efficacy scale** collects an **individual's self-assessment** of her own self-efficacy and how she thinks she meets the socio-cultural norms.

Once your team has decided on which free list items that you want to keep, the next step is to design consensus survey statements based on the free list items. **Note, the research team can choose to include items that were not listed by any or many**

respondents based on experience, evidence from the literature, and the key informant interviews.

Consensus surveys can use true/false, Likert scale, rank order, or multiple-choice survey questions or statements. **This guide presents survey and analysis with Likert scale response options.** See the Additional Resources section for sources to guide other survey types and the various benefits or drawbacks.

- For the consensus survey, each item from the most salient free list responses is converted into an agree/disagree statement using a 4-option Likert scale. Create some statements to be negatively worded so the respondents are not biased to only answer one way for all questions. See the example below.
- The consensus survey items will be analyzed to determine if there is shared agreement among the respondents on socio-cultural norms, which indicates a shared cultural model of self-efficacy.
- For the perceived self-efficacy scale, another agree/disagree statement is created for the respondent to self-assess her own experience against each of the consensus survey items.

For example, if “women have family support” is a high salient item from the free list responses, a potential statement for the consensus survey could be, “A woman needs support from her family to believe in her abilities to achieve something.” For the perceived self-efficacy scale, a potential statement for respondent self-assessment could be, “I think I have support from my family to achieve what I want to achieve.”

Table 2: Illustrative consensus and perceived self-efficacy survey items for free list result “women have family support” when asked to list everything a women needs to be confident

EXAMPLE: Free list result for “List everything a woman needs to be confident”	EXAMPLE: Possible consensus survey agree/disagree statement	EXAMPLE: Possible perceived self-efficacy scale statement
<p>Women have family support</p>	<p>A woman needs support from her family to believe in her abilities to achieve something. (Negative wording: A woman does not need support from her family to have confidence in her abilities to achieve something.)</p> <ul style="list-style-type: none"> – Strongly Agree – Agree – Disagree – Strongly Disagree 	<p>I think I have support from my family to achieve what I want to achieve.</p> <ul style="list-style-type: none"> – Strongly Agree – Agree – Disagree – Strongly Disagree

Create a minimum of 20 survey items for the consensus survey module (Weller, 2007).

Can I design and collect the consensus survey and perceived self-efficacy scale at the same time?

- The best practice is to design the consensus survey first and then, based on the results, develop the perceived self-efficacy scale. However, to save time, the two survey modules can be developed at the same time and the perceived self-efficacy scale can be adjusted after analyzing the consensus survey data.
- If you decide to design and collect both the consensus survey and perceived self-efficacy scale at the same time, determine if items in the perceived self-efficacy scale can be removed by using the consensus analysis answer key produced by *Ucinet*⁸. If some of the items in the consensus survey turn out a low score on the answer key produced, they can be removed from the final perceived self-efficacy scale. In his 2018 article, Dressler recommends assessing the cutoff in the weighted consensus ratings of the answer key. For a 4-point agree/disagree scale, where 3 is “agree” and 4 is “strongly agree”, any item that does not have a consensus rating of 2.75 or higher in the answer key can be removed from the perceived self-efficacy scale. Going below 3 to a cutoff of 2.75 accounts for low ratings which pull down the weighted average. See Annex 3 for steps to analyze consensus survey data in *Ucinet*.

TIP: LIKERT SCALES

When using Likert scale response options, we strongly recommend a 4-point scale that does not include a neutral or “neither agree/disagree” option because it does not provide new insights and can be a default answer for a respondent to avoid giving an answer. During the field test of the survey modules, you can include a 5th response option of “I don’t understand the question” to assess comprehension of the survey items.

Other types of questions that could be formulated for the consensus survey:

1. True/false: Create true/false response options instead of agree/disagree
2. Rank order items: Ask respondents to rank the most salient free list results in order of importance for self-efficacy.
3. Rating of importance: Create a Likert scale of very important, important, somewhat important, not important.

For the perceived self-efficacy scale, only agree/disagree statements are recommended.

Validate Cultural Consensus Statements and Perceived Self-Efficacy Scale

Group discussions provide feedback on the wording and comprehension of the consensus survey statements and the perceived self-efficacy scale items. These discussions are not moderated like focus group discussions which use a discussion guide and analyze the discourse, power relations, and interactions between participants. Rather, the purpose of these group discussions is to get feedback on the wording, comprehension, and relevance of the survey items from the consensus and perceived self-efficacy modules. This is also the research team’s chance to validate the findings from the key informant and free list analysis with a mixed group of participants.

Steps for Group Discussions:

- Train facilitators
- Identify group discussion participants
- Conduct validation exercise and capture participant feedback
- Make needed revisions to consensus statements and perceived self-efficacy scale items

⁸ *Ucinet* is a software by Analytic Technologies, the same company that developed *Visual Anthropac – Freelists*. We recommend *Ucinet* because it is designed to analyze cultural consensus data and tells you if you have a cultural model and gives results in a format specifically for consensus analysis. Detailed guidance can be found in Annex 3: Steps for Consensus Analysis in *Ucinet*.

Train Facilitators

- ***With the group discussion described here, our objective is to obtain feedback on both the wording and comprehension of data collection tools and their relevance to perceived self-efficacy.***
- By now, data collectors should be familiar with the research and the facilitators can be chosen from this team.
- ***All group discussions need a skilled facilitator who can subtly manage the social dynamics between the participants.***
- Ideally, each group has two facilitators: one to move the discussion along, prompt participants to provide feedback, ask for rewording suggestions, etc.
- The primary role of the second facilitator is to take notes and write down observations.
- The training should include practice sessions with role play, and each facilitator should get a chance to play each role.

TIP: FACILITATION

Participants may see facilitators as people senior to them or worthy of respect. They may feel awkward or not permitted to give critical feedback. “Breaking the ice” and trying to establish trust in a safe space can help. One way to do this is for the two facilitators to role-play and simulate a discussion. The facilitator role-playing as the participant can give critical feedback (e.g., making comments like “that statement does not make sense”, “that statement is offensive”, “the words used in this statement are not appropriate”, etc.). The facilitator role-playing as the facilitator should demonstrate that no feedback is wrong and no one will be punished for sharing their honest opinions.

Practice the following competencies:

1. Introduce the objective of the group discussion and explain how the participants are co-collaborators and part of the research team.
2. Demonstrate to participants the type of feedback you want (i.e., critical and honest).
3. Present the research findings from the key informant interviews and free lists
4. Ask for thoughts and feedback and facilitate discussion to build understanding.
5. Read out each consensus survey statement and perceived self-efficacy scale statement and facilitate discussion on appropriateness of terms and reactions to the statements.
6. Notetaking.
7. Being a group participant. The people role playing the participants should make it challenging!

Training Reflection

- After the practice sessions, the trainees should have critical discussions on the challenges they faced, what worked well, and what to do and not to do.
- Notes taken during the practice need to be reviewed and discussed – do the notes capture all of the relevant points and revisions of statements? Did others think more observations should have been noted?

Identify Group Discussion Participants

- To reduce travel burden and time, group discussions can be conducted at the village or community level.
- Ideally, villages should be randomly selected. However, if circumstances (such as travel restrictions, transportation disruptions, and climate events) complicate a true random selection of villages, group discussions can be conducted in areas that are available.
- It is important to sample groups from a range of backgrounds and factors, but this diversity is by group and not within the group. Participants within a group should be similar in background. For example, women and men may not feel comfortable to express their true opinions or discuss their real experiences related to the socio-cultural norms of women’s self-efficacy in front of the other gender. Group discussions held among peers work better for sensitive topics.

- For research on self-efficacy, **between 6-10 people are a sufficient group size**, though circumstances may cause a smaller group. It is not recommended to have a larger group because too many people can hinder in-depth discussion.

Conduct Validation Exercise, Capture Participant Feedback, and Finalize Tools

The purpose of the group discussion is for participants to:

- Tell you if they understand the statements
- Tell you if they think the statements are relevant to defining and measuring self-efficacy
- Give suggested revisions to the statements

Guidance to facilitate the group discussion sessions:

1. Check that everyone has given informed consent to participate and they understand that at any time they can leave or not participate.
2. Let participants know the discussions will be recorded so the research team can listen later and enhance the notes.
3. Introduce the project or activity's objective (e.g., improving nutrition and food security of households with pregnant women and children under two years of age).
4. Explain to them that the project wants to understand self-efficacy and how people in their community think about self-efficacy and that you have already had conversations with people in the community to understand how self-efficacy is defined in their communities.
5. **Remember, the group participants are collaborators in the research, their role is to help you make better data collection tools, so you want honest and critical feedback.** Make sure they understand this critical role. Without providing context and taking time to establish rapport and engage participants as co-designers, you will not get the needed feedback to help make statements more appropriate and effective for data collection.
 - a. This introduction to the research and the participants' role in the group discussions is a very important step. Allow time for the participants to ask questions and get clarity on what they are expected to do during the discussions. Do not jump right in reading the statements and requesting feedback.
6. Present the research and findings from the key informant interviews and free lists to the group and ask for thoughts and feedback.
 - a. First read through all the statements to build familiarity.
 - b. Next, go through them one at a time and ask for feedback. Be sure to ask if the statements are understood and for them to explain back to you what the statement is saying so you can verify they really do understand
 - c. Ask if the statements are relevant to the topic (woman's self-efficacy) and how
 - d. Ask if they have any suggested changes. No feedback is wrong. **The goal is for lively discussions in which participants will engage once they realize they really are helping to co-design the data collection tool.** Co-create revised statements with the group until everyone is happy.

If consensus statements and scale statements are not relevant and meaningful, they will not have validity or be useful in program monitoring and implementation. Co-designing them with members of the community is key.

Finalize the Tools

These group discussions are not part of data collection. They are co-design of data collection tools. Therefore, coding discussions is not necessary. Transcription of the discussions is not necessary, which saves time and resources. However, the facilitators must be well trained in notetaking.

- The research team will listen to recordings together and verify and discuss the feedback.
- Consider the feedback and suggested revisions to the wording of the statements from the group discussion.
- Consider the information gathered from key informants and free list respondents that informed the development of the statements.
- The last step before fielding the surveys is to finalize the consensus and self-efficacy scale statements with the research team. Ensure everyone is in agreement.

You now have information from key informants, a quantified culturally salient list of components of self-efficacy from the free lists, and feedback on wording and relevance of statements from group discussions to give you confidence that:

1. The finalized consensus statements will tell you whether there is shared agreement and a cultural model of self-efficacy.
2. The finalized perceived self-efficacy tool has emic validity.

Remember: designing a consensus survey is an “art,” not a science. We are operationalizing an intangible socio-cultural construct that is unique to the culture with which we are implementing a program. Determining which components potentially make up a model of shared agreement requires qualitative analysis - an art and skill that takes time to develop.

Survey to Administer Consensus Module and Test Perceived Self-Efficacy Scale Items

After finalizing the two modules (consensus survey and perceived self-efficacy scale), they are ready to be fielded. The following are objectives for administering the survey:

1. Collect the consensus data to determine if there is a cultural model of self-efficacy socio-cultural norms
2. Collect self-efficacy scale data to determine if the perceived self-efficacy scale has internal validity and is an effective tool
3. Determine if statements in both modules are understood by a larger sample

Steps for Administering the Survey:

- Train the enumerators
- Field test
- Data collection
- Data analysis

Training the Enumerators

This step follows the same approach used for any quantitative survey.

- Train enumerators on the data collection method and collection hardware (e.g., paper-based questionnaire or digital data collection using a platform such as Ona or Kobo on a tablet or phone).
- Discuss each survey item to ensure enumerators understand the statements and how to navigate the interview flow (e.g., “If NO, move to 3c”).
- Train enumerators how to troubleshoot the software and who to contact with issues they cannot resolve.
- Explain how to upload data later if data are collected offline in areas with poor network coverage, and who to contact if hardware malfunctions. If data are collected offline, they should be uploaded as soon as possible.
- If data are collected via a digital platform, provide enumerators with paper copies of the questionnaire in the event of hardware or software malfunction.

Field Test and Data Collection

A field test is a best practice to test the two modules in a survey setting with a smaller sample before including in a larger sample. **However, in the reality of implementation, it is not always possible to conduct a field test due to time and resource limitations.** If this research is part of formative research or implementation research and the two modules will be used as monitoring tools, we highly recommend trying to do a quick field test of the survey modules. If time and resources are tight, however, skip the field test and include the tools in a larger survey. At this stage, you have constructed a consensus survey tool and a perceived self-efficacy scale based on significant input and opportunities to refine and validate the items in the two modules. The steps you have taken already to develop the tools strengthen the likelihood that the two modules are culturally relevant and adequately represent socio-cultural norms around self-efficacy.

Guidance to select the sample

- **Cultural consensus requires a sample size of at least 30 respondents** to determine if there is shared agreement among respondents and, thus, a cultural model.⁹
- If you want to know if men and women have different models, then the sample should include at least 30 men and 30 women. This applies to any sub-groups in your population for which you want to know if there are distinct cultural models between them (e.g., ethnic groups, religious groups, rural and urban inhabitants, etc.).
- Sample size calculations also need to be made to ensure a large enough sample for determining construct validity for the perceived self-efficacy scale.¹⁰

Data Analysis

Consensus survey analysis to determine if a shared cultural model of self-efficacy socio-cultural norms is present among respondents

Clean the quantitative data in the statistical platform of choice (e.g., SPSS, STATA, R). Detailed steps for analyzing consensus survey data can be found in Annex 3.

Determining scale validity and generating a perceived self-efficacy score for each respondent. After cleaning the quantitative data in the statistical platform of choice (e.g., SPSS, STATA, R), the perceived self-efficacy scale is ready to be analyzed.

1. Generate a score for each respondent by summing the answers for each respondent.¹¹
2. Test the internal validity of the scale with Cronbach's alpha or other validity test.
3. Look at the answer key from the consensus analysis. This answer key gives the average correlation coefficient (called the average cultural competence in consensus

TIP: RESPONDING TO A LIKERT SCALE

Some respondents, especially in populations not accustomed to thinking in scales, may have trouble with choosing from four response options. For a 4-point Likert scale, one approach is to first ask if they agree or disagree, then ask them if they strongly agree or only somewhat agree, or if they strongly disagree or only somewhat disagree.

⁹ For consensus analysis, a conservative estimate is 50% sharing of beliefs (considered low because 67% generally indicates a single response pattern) and high accuracy of answers at .95 validity. Using these parameters, a sample size of 30 is sufficient. See Weller, Susan C. 2007. Cultural Consensus Theory: Applications and Frequently Asked Questions. *Field Methods* 19:339-368.

¹⁰ Suggest using a formula introduced by Bonnett, DG. (2002) and also see Mohamad, A.B, Evi, D.O., and A.B. Nur (2018).

¹¹ Another option is to assign a weight to each perceived self-efficacy scale item based on how much agreement that same item had in the consensus analysis results. Dressler (2018) describes a process he and colleagues used in which they weighted scale responses by the size of the score in the consensus answer key. This means, if items have stronger agreement in the consensus survey analysis, they have a higher weight in the perceived self-efficacy scale analysis. If you think it is worthwhile based on your research, try weighting the scale items first and then test the Cronbach's alpha of the weighted scale and the non-weighted scale and see which has better internal validity.

analysis) for each of the consensus survey items based on responses. It represents the extent to which respondents answered the same way for each survey item. A lower number means respondents did not the same answers and, therefore, do not share the same knowledge about the survey item. For example, if the average correlation coefficient for the consensus survey item “*A woman needs support from her family to believe in her abilities to achieve something*” is low, this tells you that respondents did not agree on whether this statement is true. What does this have to do with the perceived self-efficacy scale items? If there is not agreement among respondents, then you may consider removing the perceived self-efficacy scale statement “*I think I have support from my family to achieve what I want to achieve*”.

4. Based on the consensus analysis answer key, determine if any items in the scale should be removed. After removing, test the internal validity again to see if there is any change. In theory, the internal validity should strengthen if items that are not relevant to the scale are removed.

Application of Consensus and Perceived Self-Efficacy Results

1. For program strategy and intervention design, the culturally correct answers from the consensus analysis provide a cognitive model of socio-cultural norms of women’s self-efficacy. For example, you may learn that people think a woman who has support from her husband will have higher belief in her abilities to achieve something, or that a woman gains support by following social rules of subordination and deference. These insights can help you design more effective social behavior change strategies and other interventions to strengthen the program and support sustained and relevant change. Look through the data you have collected and “listen” to what your sample has told you to identify pathways to achieve desired outcomes.
2. Integrate the consensus survey module and the perceived self-efficacy scale into the program’s monitoring system. With the consensus survey module, you can measure change in self-efficacy socio-cultural norms over time and continue to learn and adapt programming to address social behavior change. With the perceived self-efficacy scale, you can measure change in perceived self-efficacy over time and continue to learn and adapt the program to influence desired outcomes.
3. The cultural competence scores produced by *Ucinet* (remember, these are correlation coefficients from the consensus analysis that is really a factor analysis) can be included as a variable in your program’s dataset of individual-level variables. You can test the association of this variable with others – for example, if an individual highly agrees with the self-efficacy socio-cultural norms (i.e., has a high cultural competence score for the self-efficacy cultural model), is that associated with adopting optimal child feeding practices?
4. Likewise, the perceived self-efficacy scores can be included as a variable in your program’s dataset of individual-level variables. You can test the association of this variable with others – for example, if an individual perceives themselves to have higher self-efficacy, is that associated with adopting optimal child feeding practices

Conclusion

Socio-cultural norms are determinants of behavior within food and health systems. Cultural domain analysis can help us identify socio-cultural norms and create tools to measure the extent of agreement within a population on those norms and measure change in those norms over time through monitoring. By identifying socio-cultural norms that make up a shared cultural model of self-efficacy in a program context, we can design a perceived self-efficacy scale that measures self-efficacy as it is defined by the people we are working with. Such insider knowledge helps us to design better and more effective programs to empower households and improve nutrition, food security, and resilience.

Annexes

Annex 1: Sample Key Informant Interview Guide

Table 3: Key Informant Interview Guide

CONSENT Did the respondent agree to participate?	1 = No → END 2 = Yes	
IDENTIFICATION INFORMATION		
INTERVIEWEE IDENTIFICATION NAME OF RESPONDENT: _____ TITLE: _____ VILLAGE/PARA: _____ UNION: _____ DISTRICT: _____ MOBILE NUMBER: _____	INTERVIEW RECORD <u>Interviewer:</u> Name: _____ Signature: _____ Date: _____ Remarks: _____ <u>Supervisor:</u> Name: _____ Signature: _____ Date: _____ Remarks: _____	

Notes to Researcher: The questions are meant as a guide for a discussion. The Key Informant should lead the discussion with prompting and encouragement from you. Note any information given by the informant that answers questions below and prompt the discussion with unanswered questions. The discussion should flow freely and does not have to follow questions in order.

Instructions to Respondents

I would like to discuss with you some questions that will help us learn about how people in your community make decisions and what things they think about when making decisions about growing food, having a business, and healthcare. Specifically, we want to learn more about what influences women’s confidence in themselves when making decisions about health and nutrition, agriculture, and earning income. Though I have questions to ask you, please feel free to talk about anything you think is important for this discussion. We do not have to only talk about the questions. I would like to you to tell me anything that you can think of for each question. There are no wrong or right answers. We want to know what you know. This will help us know what your needs are and better design programs to meet the needs of the community.

General Topics to Explore

- How women from each ethnic group think about food production and income generation
- Primary sources of influence on food production and entrepreneurial behavior
- Family and community structure and context

- Desirable attributes in the sociocultural context

Questions to Guide Discussion

1. From your perspective as a member of your community, what are the values that influence how women carry out their daily lives?
2. What are the attributes that a woman needs to make good decisions to take care of her family each day?
3. What else influences women's day-to-day decisions?
4. How would you describe a confident woman? What are characteristics of women who have confidence?
5. Is confidence a valued characteristic of a [Marma, Mro, Bengali] woman? Can you describe what it means to be a confident woman?
6. Is having confidence the same as having power? Can you explain?
7. What types of decisions does a confident woman make?
8. How do [Marma, Mro, Bengali] people think about women who make their own decisions?
9. Who does a [Marma, Mro, Bengali] woman talk to for advice on health decisions? What about agriculture production?
10. If a woman had confidence that she had knowledge and had learned a lot about growing food in the garden and she had access to resources she needed like seeds and other inputs, what else would she need to make a decision to start growing food?
11. Why do some women do what they have learned in SAPLING and others do not? How would you describe the women who are practicing what they have learned from SAPLING and the women who are not practicing what they have learned in SAPLING? Specific practices/behaviors could be probed: handwashing at critical junctures, growing nutritious foods in the garden, purchasing nutritious foods at the market, selling produce, following infant and young child feeding and maternal nutrition and care practices
12. In this community, how important is producing food compared to other activities? What do people think about producing food? What about women producing food?
13. What are the challenges for women to grow food in their garden? Despite these challenges, what motivates some women to be successful at producing food? How are they different from women who didn't try or weren't successful?
14. How important is earning income compared to other activities? How do people think about women earning income when she also has other responsibilities like making food, cleaning, taking care of the children? What support would she need to be able to earn income? If she gets more support, is she more confident?
15. How important is health compared to other issues? There are many challenges to accessing healthcare. What motivates women to take their children to be weighed? What about going for antenatal care visits?

Annex 2: Steps for Free List Analysis in *Visual Anthropac - Freelists*

Free list data are analyzed using *Visual Anthropac - Freelists*, a free software designed specifically for free list analysis as part of cultural domain analysis. *Visual Anthropac* simplifies the analysis process for the free list data for you.

- The free listing data analysis in *Visual Anthropac - Freelists* produces a master list of responses according to the Smith's salience of each response (possible score between 0 and 0.1), determined by:
 - 1) the order in which the response was given by each individual respondent, and
 - 2) the frequency of the response across all respondents.
 - Weighting is given to respondents whose responses are more representative of the respondent group.
 - The master list puts the items in order from most to least culturally salient with 0 being least salient and .1 being most salient.
1. The items in the lists must be "cleaned" before they can be analyzed. Respondents will likely use different words or different spellings to refer to the

same item. For example, one respondent might list “courage”, another respondent might list “has courage”, and yet another might say “be courageous.” These are all the same item, but the Smith’s salience analysis will not recognize them as one item unless they are all written and spelled the exact same way. It does not matter which term you as the analyst choose to use but be consistent. All lists need to be reworded with one master term for each item in each list. See the example in the table below:

Table 4: Example of recoding similar responses under one master term

Master Term	Examples from respondent lists to be recoded to “Does Quality Work”
Does quality work	<ul style="list-style-type: none"> Do any work properly – she does her work well/quality of doing work/can do household work properly (cleaning, cooking) They are valued if they do job If she doesn’t do bad works

Recoding can be computed in *Visual Anthropac - Freelists* (see Dengah II et al. 2021 for step-by-step instructions) or it can be done in Excel or Word prior to uploading to *Visual Anthropac – Freelists* (or *SPSS* if using for additional analysis).

- Create a text file by saving a document in any word processing software as “.txt”. Enter the list of responses for each individual into the text file, exactly as in the example in Figure X. Each respondent’s name must have a # in front of it and with no space between. Each response item be on a separate line. Do not leave spaces at the end, make sure all blank lines are deleted. Save your text document when finished entering all responses by respondent.
- Open *Visual Anthropac – Freelists* and go to File→Import. A dialogue box will pop up. Choose the folder where you saved your text document with responses. Next, go to the bottom of the dialogue box where it says “Files of type” and change the file type to Text Files (*.txt). Now you should see your document listed. Click on your file name and then click Open.
- Visual Anthropac – Freelists* produces an output file with results that opens immediately on your screen. The file has multiple tabs at the bottom. The default is to open on the I-Frequencies tab (item frequencies), which has the results we are really concerned with – the frequency, average rank, and salience. The higher the salience score, the more salient the item is across the responses.
 - Open the I – Attr. Matrix tab (item attribute matrix) and carefully check all items are spelled and entered correctly. If you spot any errors, correct them in the .txt file, click save, and import the file again.
 - Open the R- Attr. Matrix tab (respondent attribute matrix) and check that each respondent has a “YES” by their name. A “YES” indicates the data from that respondent was included in the analysis. If there is a “NO”, review the .txt file for any errors in the respondent label and how the data were entered. If any corrections are made to the .txt file, save it again, and import it again.
- SAVE YOUR RESULTS.** The analysis can be exported to either .txt or Excel files. Go to File→Save All Matrices to save all the tabs as .txt files. Or...go to File→ Export→Excel and save the open tab to an Excel file. The Excel file will not automatically open when you export it to Excel. Go to the folder where it is saved and open the Excel file.

Figure 1: Anthropac import file example in plain text

```

Anthropac import file example - Notepad
File Edit View

#1FBengali
Behaves Well
Good Character
Purdah
Earns Money
Obeyes Husband
Religious Ritual
Good Homemaker

#2FMro
Does Quality Work
Good Homemaker
Behaves Well
Earns Money
Respects Others
Obeyes Husband

#3FMarma
Does Quality Housework
Good Homemaker
Not Quarrelsome
Good Character
Takes Care of Herself
Obeyes Husband
Honest
Behaves Well

```

Annex 3: Steps for Cultural Consensus Data Analysis in *Ucinet*

Steps for Cultural Consensus Analysis:

1. After cleaning the quantitative data in the statistical platform of choice (e.g., SPSS, STATA, R), create a *Ucinet* dataset (a spreadsheet) for the cultural consensus analysis. To do this, data can either be entered directly into *Ucinet* via the Matrix Editor or imported from a program such as *Excel* using the *Excel* Matrix Editor, both found in the *Ucinet* tool bar. In the spreadsheet, each respondent should be represented by one row of data and each column should represent one statement from the consensus survey module (see Figure X). All data should be numerical. Reverse code all negatively worded statements. **Important:** Save the data as a *Ucinet* file type.
2. Open *Ucinet*. Go to File and Change Default Folder to a folder destination of your choice so your output goes where you can find it again.
3. To run the analysis, go to Tools and choose Consensus Analysis. Import the dataset you created in the *Ucinet* file type. The window that opens provides drop-down menus for you to choose the Input Dataset and the destination folders for the Output competencies, Output agreement matrix, and Output answer key (this is the folder you created earlier). **Important:** Each time you run an analysis, the new output replaces the old output files, so save each new analysis output with a different name unless you intend to overwrite the previous output.
4. The same window gives options for type of data. If you are following this guide, select “Profile: A row of data for each respondent”. The window also gives options for Analytic Model. This depends on the type of response options in the consensus statements: true/false, multiple-choice, or interval (including ordinal). If using a 4-point Likert response option, select “Interval”. Click OK to run the analysis.
5. A box with the output pops up. **Important:** Save this document now in the desired location. The output summarizes the information that has just been sent to your destination files as separate text documents, except for the second factor loading, which you will want to copy and save.
 - a. Consensus analysis is simply a factor analysis. The benefit of using *Ucinet* to analyze it is the tailored output. There is a lot of information to be examined for deeper analysis of the model, but to know if there is a shared cultural model of women’s self-efficacy, *Ucinet* tells you.¹² You will get a message that reads, **“The large eigenvalue ratio and the lack of negative competence scores indicates a good fit to the consensus model.”** In general, negative competence scores indicate a significant proportion of the variance in the cultural model is not accounted for by the first factor in the factor analysis. *Ucinet* will tell you that the model is not a good fit if there is even one negative competence score. Depending on the size of your sample, a few negative competence scores may not need to dash all hope. Consider removing these from your sample and re-running the analysis or look at the individuals with negative scores and try to identify shared traits. This may also indicate a sub-model, which can be explored by analyzing competence scores in the second factor.
 - b. The **ratio of the largest eigenvalue to the next eigenvalue should be 3 or higher to have some consensus on the first factor.** The first eigenvalue represents the amount of variance in the model accounted for by the first factor and the second eigenvalue represents the amount of variance in the model accounted for by the second factor.
 - c. The average competency scores in the first factor should be above 0.5 for consensus. Competency scores range from -1 to 1.
6. The answer key produced by consensus analysis tells you the culturally correct response to each statement. Each answer is a weighted average, with greater weight given to individuals with higher overall competence.

¹² See Dengah II et al., 2021; Borgatti and Halgin, 2011; Weller, 2007; Dressler et al., 2015, among others, for instruction on how to interpret the different output components and do more in-depth analysis.

Figure 2: Numerical data ready for import to Ucinet from Excel

Additional Resources

Table 5: Illustrative Time and Resource Need

Action	Duration	Resources
<p>Protocol development and Internal Review Board (IRB) ethical approval</p>	<ul style="list-style-type: none"> • Protocol development, revisions, finalization before sending to IRB – 2-3 weeks, depending on organizational availability • IRB review process, including revisions – 4-8 weeks (varies according to availability of the IRB) 	<ul style="list-style-type: none"> • Personnel to develop protocol and revise per IRB recommendations • Fees for IRB review and approval
<p>Data collection training for key informant interviews*</p>	<ul style="list-style-type: none"> • 2-3 days for logistical arrangements • 2 days of training, including field practice 	<ul style="list-style-type: none"> • 2 training facilitators familiar with the research • Data collection team (at least 1 female, 1 male per ethnic group skilled in qualitative interview techniques) • Logistical arrangements (training venue, copies of interviews, voice recorders, respondents for field practice)
<p>Key Informant interviews</p>	<ul style="list-style-type: none"> • 1-3 interviews per day, per interviewer. The number per day depends on the distance between respondents and length of interviews. • Interviewers should plan their time after the interviews to transcribe the interview from the recording and add notes/observations 	<ul style="list-style-type: none"> • A minimum of 2 interviewers, 1 female and 1 male, per ethnic, social, or cultural group
<p>Translate key informant interviews (if necessary)</p>	<ul style="list-style-type: none"> • 1 translator can translate 1-3 interviews per day, depending on the length 	<ul style="list-style-type: none"> • Minimum of 1 translator and 1 member of the research team for quality control

Action	Duration	Resources
<p>Develop free list questions, field validation, field test, and load into digital platform (if using)</p>	<ul style="list-style-type: none"> • 1 day to develop questions • 1 day to discuss and validate content with key informants (could be done by phone) • 1-2 days to validate comprehension with a participant group, revise, and finalize • (note: depending on distance and access to mobile phones, the validation with key informants and a participant group could be completed in one day instead of two) • ½ day to configure questions and response items in digital data collection platform (if using) 	<ul style="list-style-type: none"> • Minimum of 1 person on the research team to develop questions • Research team to discuss and approve • 2 facilitators to call or visit key informants to validate and to conduct group discussion to confirm comprehension, then revise • Logistical resources to conduct field test through group discussion with target population to support comprehension of the questions
<p>Train interviewers on free list interviews and generate sample</p>	<ul style="list-style-type: none"> • 1 day of training, including field practice • 1 day to generate sample • 1-2 days to contact potential participants and recruit for interviews 	<ul style="list-style-type: none"> • Logistical arrangements for a 1-day training • Team of data collectors – minimum of 1 female and 1 male per ethnic, cultural, social group
<p>Conduct free list interviews</p>	<ul style="list-style-type: none"> • 2-3 days to arrange logistics • Average question/response time per free list question is 30 seconds to 1 minute • Include 5 minutes for introductions and informed consent • Example: Interviews with 18 questions lasted approximately ½ hour 	<ul style="list-style-type: none"> • Team of data collectors – minimum of 1 female and 1 male per ethnic, cultural, social group • Logistics to support data collection team (hotel, per diem, tablet/phone or paper copies to collect)
<p>Clean and analyze free list data</p>	<p>Note: Time to clean and input data depends on number of questions and respondents</p> <ul style="list-style-type: none"> • 1-3 days: Responses must be checked for spelling and similar terms must be combined under one parent term/code • Example: 90 free list respondents, with 18 questions per respondent took approximately ½ hour per respondent to clean and recode for a total of 5 days for one person (45 hours) • 2-3 days: Response lists for each question must be copied into a .txt file for Visual Anthropac – Freelists • Example: For 90 respondents, to copy cleaned/recoded responses into a .txt file, takes 30 minutes to an hour per question. 18 free list questions require approximately 18 hours of one person’s time 	<ul style="list-style-type: none"> • 1 or more researchers to clean, recode, and put into .txt file • Visual Anthropac-Freelists openware is recommended for analysis

Action	Duration	Resources
Develop and validate consensus survey statements	<ul style="list-style-type: none"> • 1 day to develop statements • 1 day to facilitate group discussions, refine and finalize statements 	<ul style="list-style-type: none"> • 1 or more researchers to develop statements • 1 or 2 researchers/facilitators to conduct a group discussion to validate comprehension and relevance of the statements • Logistics needed to organize and conduct a group discussion
Conduct consensus survey	<ul style="list-style-type: none"> • If using digital data collection platform, such as Ona, at least 1 day to program the statements and response options • 3-7 days to collect survey data (depends on sample size and geographic distribution) 	<ul style="list-style-type: none"> • Data collection team (could be the qualitative data collectors) • Logistics to support survey data collection, including tablet/phone or paper data collection forms
Analyze consensus survey data	<ul style="list-style-type: none"> • 2-5 days to clean depending on amount of data • 1 day to run consensus analysis 	<ul style="list-style-type: none"> • 1 or more research team members to clean the data and run analysis • Ucinet software by Analytic Technologies recommended for consensus survey analysis
Develop and validate perceived self-efficacy scale statements ***If time is limited, this step can be done at the same time as the consensus survey statement development and validation and some of the statements removed later if they are determined to not be part of the cultural model.	<ul style="list-style-type: none"> • 1 day to develop • 1 day to refine and finalize 	<ul style="list-style-type: none"> • 1 or more researchers to develop statements • 1 or 2 researchers/facilitators to conduct a group discussion to validate comprehension and relevance of the statements • Logistics needed to organize and conduct a group discussion
Conduct perceived self-efficacy scale survey ***If the statements are developed at the same time as the consensus statements, the surveys can be administered at the same time.	<ul style="list-style-type: none"> • 3-7 days to collect survey data (depends on sample size and geographic distribution) 	<ul style="list-style-type: none"> • Data collection team (could be the qualitative data collectors) • Logistics to support survey data collection, including tablet/phone or paper data collection forms
Analyze perceived self-efficacy scale	<ul style="list-style-type: none"> • 2-5 days to clean depending on amount of data • 1 day to run analysis (Cronbach's alpha, factor analysis) and determine final set of scale items 	<ul style="list-style-type: none"> • 1 or more research team members to clean the data and run analysis • Recommend SPSS, Stata, or other statistical software for analysis

There are several excellent theory and method guides and research examples for operationalizing culture and analyzing qualitative data and data for cultural domain analysis. A small selection include:

- Bandura, A. 1986. *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, N.J: Prentice-Hall.
- Béné, C., Frankenberger, T., Griffin, T., Langworthy, M., Mueller, M., and S. Martin. 2019. 'Perception matters': New insights into the subjective dimension of resilience in the context of humanitarian and food security crises. *Progress in Development Studies*. 19. 186-210. [10.1177/1464993419850304](https://doi.org/10.1177/1464993419850304).
- Bernard, H.R. 2017. *Research Methods in Anthropology: Qualitative and Quantitative Approaches*. Lanham, Maryland: Rowman & Littlefield.
- Bernard, H.R. and G.W. Ryan. 2010. *Analyzing Qualitative Data: Systematic Approaches*. Thousand Oaks, California: Sage Publications, Inc.
- Bonett, D.G. 2002. Sample size requirements for testing and estimating coefficient alpha. *J Educ Behav Stat*. 27(4):335–340. <https://doi.org/10.3102/10769986027004335>.
- Borgatti, S.P. 1992. ANTRHOPAC version 4.0. Columbia, South Carolina: Analytic Technologies.
- Borgatti, S. 1994. Cultural Domain Analysis. *Journal of Quantitative Anthropology*. 4:261-278.
- Borgatti, S.P. and D. Halgin. 2011. Consensus Analysis. *A Companion to Cognitive Anthropology*. 171-190. [10.1002/9781444394931.ch10](https://doi.org/10.1002/9781444394931.ch10).
- Borgatti, S.P., Everett, M.G. and Freeman, L.C. 2002. *Ucinet 6 for Windows: Software for Social Network Analysis*. Harvard, MA: Analytic Technologies.
- Copeland, T.J. 2011. Poverty, nutrition, and a cultural model of managing HIV/AIDS among women in Nairobi, Kenya. *Annals of Anthropological Practice*, 35(1):81-97.
- Dengah, H. J.F. 2014. How religious status shapes psychological well-being: Cultural consonance as a measure of subcultural status among Brazilian Pentecostals. *Social Science and Medicine*, 114:18-25.
- Dengah II, H.J. Francois, Snodgrass, Jeffrey G., Polzer, Evan R., and William Cody Nixon. 2021. *Systematic Methods for Analyzing Culture*. Routledge. New York.
- Dressler, William W. 2018. *Culture and the Individual: Theory and Method of Cultural Consonance*. Taylor & Francis. New York.
- Dressler, W.W. and J.E. dos Santos. 2000. Social and cultural dimensions of hypertension in Brazil: A review. *Cadernos de Saúde Pública* 16: 303-315. [10.1590/S0102-311X2000000200002](https://doi.org/10.1590/S0102-311X2000000200002). Dressler and dos Santos 2000
- Dressler, W.W., Balieiro, M. and J.E. Dos Santos. 1997. Cultural consonance and arterial blood pressure in urban Brazil. *Social Science and Medicine*, 61(3):527-540.
- Dressler W., Balieiro M., dos Santos J. 1998. Culture, socioeconomic status, and physical and mental health in Brazil. *Medical Anthropology Quarterly*. 12:424–446. [10.1525/maq.1998.12.4.424](https://doi.org/10.1525/maq.1998.12.4.424)
- Dressler, W.W., and J. Bindon. 2000. The health consequence of cultural consonance: Cultured dimensions of lifestyle, social support, and arterial blood pressure in an African American community. *American Anthropologist*, 102(2):244-260.
- Dressler W. W. and K.S. Oths K. S. 2014. Social survey methods. In *Handbook of Methods in Cultural Anthropology*, 2nd Ed. (pp. 497–515). Bernard H. R. and C.C. Gravlee (Eds.). Lanham, MD: AltaMira Press.
- Glanz, K. and D. Bishop. 2010. The Role of Behavioral Science Theory in Development and Implementation of Public Health Interventions. *Annual Review of Public Health*. 31: 399-418. <http://dx.doi.org/10.1146/annurev.publhealth.012809.103604>
- Graham, S., & Weiner, B. 1996. Theories and principles of motivation. In *Handbook of Educational Psychology*. D. C. Berliner & R. C. Calfee (Eds.), (pp. 63–84). Macmillan Library Reference USA: Prentice Hall International.
- Handwerker, W.P., Hatcherson, J. and J. Herbert. 1997. Sampling Guidelines for Cultural Data. *Cultural Anthropology Methods*. 9(1):7-9.

- Handwerker, W.P. and D.F. Wozniak. 1997. Sampling Strategies for the Collection of Cultural Data: An Extension of Boas's Answer to Galton's Problem. *Current Anthropology*. 38:869 - 875.
- Jackson, M.A. 2009. Cultural models, pregnancy, and stress: Examining intracultural variation in Jalisco, Mexico. University of Alabama Libraries. Tuscaloosa, AL.
- Mohamad, A.B, Evi, D.O., and A.B. Nur. 2018. A review on sample size determination for Cronbach's alpha test: a simple guide for researchers. *Malays J Med Sci*. 25(6):85–99. <https://doi.org/10.21315/mjms2018.25.6.9>
- Pelto, G. H., Armar-Klemesu, M. 2014. Focused ethnographic study of infant and young child feeding 6–23 months: Behaviors, beliefs, contexts and environments. *Manual on conducting the study Analyzing the Results and Writing the Report*.
- Romney, A.K., Weller, S.C. and W.H. Batchelder. 1986. Culture as consensus: A theory of culture and informant accuracy. *American Anthropologist*, 88(2):313-338.
- Weller, Susan C. 2007. Cultural Consensus Theory: Applications and Frequently Asked Questions. *Field Methods*. 19:339-368.
- Weller, S. C. and A.K. Romney, A. K. 1988. *Systematic Data Collection*. Thousand Oaks, California: Sage Publications, Inc.