FSQCA CALIBRATION GUIDE
Household Resilience in Syria
By: Kimberly Howe & Tyson Patros

The Study

The research asks the following questions: Which combinations of conditions strengthen the ability of Syrian households to cope with crisis in war? In particular, which combinations drive food security outcomes, psychosocial well-being, and livelihood adaptation?

This study is built off of two quantitative data sets from a stratified sample of urban and rural communities exposed to varying levels of conflict. The household-level survey consisted of 1,168 respondents across 125 different communities from a broad range of socioeconomic strata. It also relied on a survey of 350 community informants from 115 different communities. The data includes a third set of semi-structured qualitative interviews with households exhibiting successful livelihood adaptation, but is not directly used in this current study.

Calibrating Macroconditions

For this study, we often constructed "macroconditions," which combine several component conditions or variables into a single encompassing set. We did this because one of the difficulties of using configurational methods like fsQCA is the huge number of logical combinations of conditions, a number which increases as the number of causally-relevant conditions in the analysis increases. We found it useful to construct macroconditions out of our initial pool of conditions when there were compelling theoretical and empirical reasons to do so.

The different components of a macrocondition are meaningfully colligated through one of three different approaches, or some mix of them. First, a compensatory approach sees the components as being able to compensate for one another. The individual set membership scores for each component are averaged in order to create the encompassing macrocondition. This approach can use equal or weighted averages, and we set the weight of each indicator with theoretical and/or case-based justifications.[1] One example of this first approach is in evaluating job candidates, where job experience might compensate for weak education credentials. Second, a weakest-link approach (called the *logical and*) means that a case must exhibit every component to be in the macrocondition set. This operation takes the lowest score of all the component indicators (two or more) to create the overall macrocondition, given that a case must exhibit all the components to belong to the set. For example, "good government" can mean that government is both receptive to local populations and ensures the provision of basic services. Third, a substitutable-conditions approach (called the *logical or*) means that a case must exhibit at least one component (out of two or more) to be in the overarching macrocondition set. Since a case can exhibit any or all of the components, the highest score of the components is counted as the overall set membership score. This is because each condition alone can satisfy the macrocondition. One example is credit worthiness, where the substitutable conditions might be "ownership of significant assets" or "high income," where either condition suffices for credit worthiness. Here, we often mix these three different approaches, which is a common practice in fsQCA, when appropriate (see Ragin, 2015: 46-50; Ragin and Fiss 2017: 75-77).

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[1] For this process, we either calibrated each component and then averaged the set membership scores to get the macrocondition, or we create a composite index from the raw data and then calibrate the index score.

We use both the direct method of calibration and the indirect method of calibration (see Ragin 2008: 89-94). We also often calibrate the macroconditions and the outcomes in several different ways as a check on the calibrations themselves and the resulting configurational analysis, meaning that we adjusted the thresholds to make sure comparable results were found across iterations of the analysis (see Skaaning 2011). For the study, we use fsQCA (Version 3.0; for a user's manual at http://www.socsci.uci.edu/~cragin/fsQCA/download/fsQCAManual.pdf.

Outcomes of Interest

Food Security: We calibrated two different outcome sets in order to help understand and explain food security for each household in a holistic way – one outcome set based on the Household Hunger Scale (HHS) and the other on the Coping Strategies Index (CSI). For our analysis, we calibrate both sets to include the most severely food insecure households according to the specific scale.

1. **Household Hunger Scale**
   - The original HHS score is located in column HX in the Household Survey spreadsheet, and FM—FR have the original questions/responses (see also USAID indicator guide for the construction of HHS as well as the Sample Variable Construction document in Dropbox). For the original coding, the overall HHS score is between 0 and 6. It is the sum of three questions on hunger frequency, coded as 1 (Rarely: 1-2 times a month), 2 (Sometimes: 3-10 times a month), and 3 (Often: more than ten times a month). To obtain the HHS in the original report, these scores were recoded as 0 for never; 1 for Rarely and Sometimes; and 2 for Often. The final HHS score meant the following:

     0-1 Little to no hunger in the HH
     2-3 Moderate hunger in the HH
     4-6 Severe hunger in the HH

   - To calibrate this outcome set, we recoded the original data in order to not collapse the responses "rarely" and "sometimes," as the original coding did, because we saw this as unnecessary and potentially misleading. Instead of the scoring above, we used a 0-3 scale to code each of the original questions: 0 for "None", 1 for "Rarely", 2 for "Sometimes", and 3 for "Often." Then, we summed these three main components for scores totaling between 0-9. For the recoding, in excel we used the following function: =IF(AY2="Often",3,IF(AY2="Sometimes",2,IF(AY2="Rarely",1,IF(AY2="",0))))

The Calibration:
   A. HHS – "Severely food insecure households"
      a. Run the operation with the recoded HHS scores in fsQCA (Version 3.0): calibrate(hhs,5,1.5,0)
         - 0 is fully out of the set, 1.5 is the threshold point, 5 is fully in the set
         - This calibration thus captures those severely food insecure households, and for our analysis we negated the set in order to find the configurational patterns behind those households that avoided severe food insecurity. To do so, press "set negated" when choosing the outcome set in fsQCA (Version 3.0).
      b. What this calibration does is 1) not substantially differentiate between the different scores of severe household hunger (5-9) and also 2) considers

moderate household hunger (2-4) as belonging to the set but not fully in the set.

- In particular, to be fully in the set, a HH at the very least responded "Sometimes" twice and "Rarely" for the other question, or "Often" once and "Sometimes" for one of the other questions.
- Also, to be in the set but not fully in the set (2-4), it means that a HH experienced impactful food insecurity at least "Sometimes" over the month for one of the questions, or "Rarely" over the month for two of the questions.

2. **CSI – "Severely food insecure households"**
- The original CSI scores (i.e. the reduced csi or r_csi), which is also called "Distressful coping strategies" in this data, is located in column IT in the Household survey spreadsheet. For the original questions/responses, see EA—EV in the same spreadsheet. For the original calculation of the r_csi score, the following were the only questions used: EB, EC, ED, EE, EG
  - See Annex: gen r_csi_score=(csi1)+(csi6*2)+csi2+(csi4*3)+csi3

- However, we did not use the r_csi to calibrate this outcome set given that it only takes advantage of some of the available CSI data collected for this study. Instead, we use weighted averages and a three-stage *logical or* to calibrate the outcome set, meaning that we view the components as substitutable. (See below for all of the CSI-related questions and their weights). First, we separate out the questions/responses dealing with daily coping strategies vis-à-vis food from those relating to major decisions to acquire food that will have lasting impact on a HH's present and future.[2] We also separate out questions that will have a permanent life impact. So, this gives us three component sets to the macrocondition, each of which indicates severe coping strategy. If a HH belongs to any one of the components, then the HH is considered in the set (using the logical or, we take the highest score of the three components for a HH's overall membership score in the outcome set). The main rationale for our calibration, then, is these different components substitute for one another. So a HH is in the set if they engage in daily coping strategies even if they don't make major life decisions to acquire food, or they make permanent life decisions for the sake of food access, but don't engage in daily coping strategies.

The Calibration:
- First, daily coping strategies, in Excel, recode the data with a 0-7 scale:

=IF(I2="Daily",7,IF(I2="Six times a week",6,IF(I2="Five times a week",5,IF(I2="Four times a week",4,IF(I2="Three times a week",3, IF(I2="Twice a week",2,IF(I2="Once a week",1,IF(I2="Never",0)))))))))

- Then, in Excel, weight the index scores for CSI 1-10. These specific weights are based on case knowledge and correspondence with humanitarian organizations on the ground. For example, we gave CSI7 and CSI9 greater weight than in r_csi based on the Syrian context

=(I2)+(K2)+(S2)+(U2*2)+(Y2*2)+(M2*2)+(W2*2)+(AC2*2)+(O2*3)+(Q2*3)+(AA2*3)

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[2] These decisions were made in consultation with members of Syrian humanitarian organizations.

Rely on less expensive or less preferred foods (1)
Limit portion sizes or reduce quantity (1)
Reduce number of meals eaten per day (1)
Reduce adult consumption so children can eat more (3)
Reduce male consumption so that females can eat more (3)
Borrow food or rely on help from friends or relatives (2)
Purchase food on credit (from trader using a loan) (2)
Gather unusual types or amounts of wild food/hunt (2)
Send HH members to eat at a friend's or relatives house (2)
Rely on begging for food (3)
Consume seed stock to be saved for next season (2)

- The average HH CSI index score based on CSI 1-10 ends up as ~19 and the highest (and extreme outlier) score is 154 (only one HH).
- To calibrate this component outcome set in fsQCA (Version 3.0), we used the indirect method of calibration. We assigned scores above 35 to fully in the set (.95), scores between 20 and 34 to mainly in the set (.8), scores between 5 and 19 to mainly out of the set (.2), and scores between 0 and 4 to fully out of the set (.05).
  - The rationale behind this calibration is simple. It captures those severely food insecure households. The households with an above average score for daily coping strategies are scored in the set, while those average or below average are out of the set. Furthermore, a score of 20 or above means that a household engaged in at least one daily coping strategy weighted as a 2 and one weighted as a 1.

- Second, for life impacting decisions[3], we recoded the data for a 0-5 scale where all the components are equally weighted. The questions/responses were as follows:

Sell HH items
Sell productive assets
Sell mortgage, land, house, irrigation rights
Send family members away to work to send money home
Abnormal migration for work

  - 3 was the highest score of any HH
  - For this calibration, we used the direct method of calibration in fsQCA (Version 3.0), calibrate(CSI2,3,1.5,0)

0 places a HH fully out of the set at .05.

1 places a HH just out of the set at .2 (this marks a HH engaging in only one major coping strategy)

≥ 2 places a HH in the set at .8 (given that a HH is engaging in two major coping strategy actions)

≥ 3 places a HH fully in the set at .95 (given that a HH is engaging in a variety of actions)

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[3] The decisions on this calibration were made in consultation with members of Syrian humanitarian organizations.

- For the third component, we use a crisp set for the decisions made in order to acquire food that will have a permanent impact the life of a HH[4]. What this means is that if a HH makes one of the following decisions, then they are fully in the set.

Marry daughters early
Participate in military action
Take children out of school to work

  - To recode the original responses, in Excel use the formula: =IF(OR(AM2=1,AN2=1,AO2=1),1,0)
  - Then, in fsQCA (Version 3.0), use the operation: compute: csi2afz = calibrate(CSI2a,1,.5,0)
    - A raw score of 1 means that a HH engaged in one of the severe coping strategies, such as marrying off a daughter early in order to secure access for food, and a 0 means they did none of those actions.

  - For our analysis, we negated the set to find the combinations of causally relevant conditions behind households avoiding severe food insecurity.

Psychosocial Well-being: The outcome set relies on the Human Security Index, which is built into the Human Insecurity Scale in the original data. The point is to measure whether or not and to what extent a HH lives in "fear," which can have various sources. The scores are in column HY in the Household Survey spreadsheet. The "psychosocial well-being" questions/responses on "fear" are in columns GF – GO. For the ten questions, the responses were on a scale of 1-5, either "Not at all" (1), "A little" (2), "Moderately" (3), "Very" (4), and "Extremely" (5). The original scale averaged the scores from the ten questions.

- For our calibration, we modify the original scale. First, we drop questions 1, 2, and 7 (W1, W2, W7) from our calibration, given that these questions are sufficiently equivalent to some of the other questions and thus we wanted to avoid redundancies. We then added the scores for each question/response together. The following are the questions from the HH survey, which were labeled as W1-W10:

    W1: To what extent do you fear for yourself in your daily life?
    W2: To what extent do you fear for your family in your daily life?
    W3: To what extent do you feel worry/fear not being able to provide your family with daily life necessities?
    W4: To what extent do you worry/fear about losing your source of income or your family's source of income?
    W5. To what extent do you worry/fear losing your home?
    W6: To what extent do you feel worry/fear from displacement or uprooting?
    W7: To what extent do you worry/fear for your future and your family's future?
    W8: To what extent do you feel fear for your safety?
    W9: To what extent do you feel fear for the safety of your family?
    W10: To what extent does your family fear for your safety?

- The average household score was 26.4 out of a possible 35 (with a median of 27), signaling that generally speaking these Syrian households exhibit significant levels of fear – a reality not hard to grasp given the intensity of the Syrian war. We thus calibrated this outcome set as extreme (i.e., well above average) fear or extreme lack of psychosocial well-being, meaning that we aimed to find the combinations of causally relevant conditions behind avoiding not average levels of fear in

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[4] These decisions were made in consultation with members of Syrian humanitarian organizations.

contemporary Syria, but extreme levels of fear. With this calibration, roughly 40% of the Syrian households in this study were in the outcome set.

- In order to do so, we used the indirect method of calibration. We marked households that scored between 33 and 35 as fully in the set (.95), between 30 and 32 as mainly in the set (.8), between 12 and 29 as mainly out of the set (.2), and from 0 to 11 as fully out of the set (.05).

Livelihood Adaptation*:* We used the indirect method of calibration for whether or not a HH had members starting a new livelihood activity and/or restarting their pre-conflict livelihood activity. A household was fully in the set (.95) if it had members who both restarted a main income source from before the war as well as started a new source of income; mainly in the set (.85) if it had a member(s) who restarted their pre-conflict activity; in the set (.7) if it had a member start a new source of income; and out of the set (.05) if it had neither.

- The questions/responses are in columns BU and BV in the Household Survey spreadsheet.

  - In order to calibrate this set, we first gave more weight to those households with a member(s) restarting their pre-conflict livelihood activity – a score of 2 for a "Yes" answer and a score of 0 for a "No" answer. For those households with a member(s) starting a new activity, we gave a score of 1 to those answering "Yes" and a score of 0 to those answering "No." In Excel, to recode the data for the first question, use the following formulas: =IF(B2="Yes",2,0); =IF(C2="Yes",1,0)
    - Then, in Excel, in order to calibrate the set, we added together the scores for the two questions. The possible scores ranged from 0-3. A 3 is fully in the set; a 2 is mainly in the set; a 1 is in the set; a 0 is out of the set.
      - Use the following formula for the indirect method of calibration: =IF(F2=3,0.95,IF(F2=2,0.85,IF(F2=1,0.7,IF(F2=0,0.05))))
  - We also negated this outcome set, as discussed in the report, in order to understand the combinations of causally relevant conditions behind households that did not adapt their livelihoods.
- Furthermore, as discussed in the report, we constructed an outcome set of the ability of a household to have a higher number of income earners. The question/response is in column BC in the original household data set. Given that most Syrian families are relatively large and that war situations are often desperate, we calibrated this set based on the idea that many households should have more than one income earner. In our calibration, to be fully in the set (.95), a household has 3 or more income earners, mainly in the set (.85) means 2 income earners, in the set (.75) means 1 income earner, and out of the set (.05) means 0 income earners.
  - In Excel, use the following formula: =IF(AND(J2>=3,J2<=10),0.95,IF(J2=2,0.85,IF(AND(J2=1),0.75,IF(J2=0,0.05))))

Causal Conditions

1. Favorable Economic Situation: We combined market functionality and economic resources into a macrocondition, favorable economic situation, for methodological reasons and we felt the move was compelling theoretically and empirically. Methodologically, it was best to reduce the number of causally relevant conditions. With this macrocondition, we assume that the two main component sets are substitutable for households in that either suffices for favorable economic situation. So, if a household is located near a market with stable prices, or if a household has considerable economic resources, or

both, they are considered to have a favorable economic situation in the context of the Syrian civil war. We also did analyses where these were separate conditions.

- **Market Functionality:** This macrocondition includes two main components – the *distance* of a HH to a market as well as the *price stability* for three staple goods. Each component is first calibrated as a fuzzy set and then combined using the *logical and* operation, which means that a HH must belong to both component sets in order to be in the encompassing macrocondition. In other words, a HH must be close to a market which has relatively stable prices for that HH to be considered as having market functionality as a causal condition. To calibrate set memberships in the macrocondition, then, we take the lowest membership score from the two component sets.

    A. **Distance to Marketplace:** is in column X in the Household Survey spreadsheet. It is based on a 6-point Scale: "Less than one km" (6), "1 to 2km" (5), "2 to 3km" (4), "3 to 4km" (3), 4 to 5km (2), "more than 5km" (1)

        o In Excel, recode using the following formula: =IF(C2="Less than one km",6,IF(C2="1 to 2 km",5,IF(C2="2 to 3 km",4,IF(C2="3 to 4 km",3,IF(C2="4 to 5km",2,IF(C2="more than 5 km",1))))))

        o Then, in fsQCA (Version 3.0), calibrate the data: calibrate(distance,6,4.5,1). The criteria here is that a HH must be under 2km away from the market to be in the set, anything more is considered too distant.

    B. **Price Stability**: This condition looks at the stability of prices for bread, wheat, and fuel, and in particular how often their prices over the month change. The original data is located in columns AC – AF in the Household Survey spreadsheet. The question asked how often the prices changed for these staple goods over a month. The scale was 0-4, with "Prices stayed the same" (4), "Some Days (less than half the month)" (3), "Most days (more than half the month)" (2), "Everyday" (1), and "Item was never available" (0).

        ▪ To recode, in excel use the formula: =IF(M2="Prices stayed the same",4,IF(M2="Some days (Less than half of the month)",3,IF(M2="Most days (More than half of the month)",2,IF(M2="Everyday",1,IF(M2="Item was never available",0)))))

        o Then, to calibrate in fsQCA (Version 3.), run the operation: calibrate(prices,4,2.5,0). This means that a HH is fully in this component set if prices stay the same or mainly in the set if they only change "Some Days." The rationale here is that if prices are changing most days of the month or more, then the markets are 'not functioning properly/strongly' likely due to issues with supply, whether because of general unpredictability or specific problems with that market's distribution system.

        ▪ Then, to calibrate the component set for prices, we did two different calibrations. In the first, we used a modified version of the *logical and*, where here two of the three items needed to be relatively stable to be included in the set. This calibration was used for the "favorable economic situation" macrocondition discussed below. In the second, all three items needed to be relatively stable to be included in the component set, a higher bar than the first calibration. This second calibration was then used to construct the "strong market functionality" set.

C. **Market Functionality**
  o With the two component sets, we then use the *logical and* function, where a HH had to be in both the distance and the price stability component sets to be in the set of market functionality. This means that we take the lowest score from the two component sets given that to belong to the set of market functionality a household must be relatively close to a market with stable prices.
    ▪ In fsQCA (Version 3.0), use the following: fuzzyand(distance,prices)

- **Economic Resources:** This macrocondition centers on whether a HH accesses remittances, savings, and loans. In particular, it combines four components that deal with whether or not over the past six months a HH receives remittances, spends savings, gets loans, and/or saves money or gold. To create this macrocondition, each of these components is recoded – a 1 for a "yes" and a 0 for a "no" – and then added up. If a HH responded "Yes" to at least 2 of these – e.g. they received remittances and borrowed cash – then they are in the set (.73) while responding in the positive to 3 or 4 of these makes them fully in the set.

  o Access to remittances is in column BZ in the Household Survey spreadsheet, with the question asking whether or not a HH received remittances in the last six months.
    ▪ In Excel, to recode, use the following: =IF(D2="Yes",1,IF(D2="No",0))

  o Setting aside money or gold for emergencies in the past 6 months. This "Yes" or "No" question/response is in column CM of the Household Survey spreadsheet.
    ▪ In Excel, to recode, use the following: =IF(J2="Yes",1,IF(J2="No",0))

  o Spend savings in the past 6 months. This "Yes" or "No" question/response is in column CO of the Household Survey spreadsheet.

  o Borrowing money in the past 6 months. This "Yes" or "No" question/response is in column CP of the Household Survey spreadsheet.

  - To then calibrate the macrocondition, the four components are added up on a scale of 0-4, and this score is calibrated. In fsQCA (Version 3.0), use the following: calibrate(econ,3,1.5,0)

2. Social Connectedness: This macrocondition combines two main components to evaluate the social interactions of an HH, and whether it uses the internet and/or a mobile phone, the major modern of modern communication. In order to belong to the macrocondition set, a HH must regularly social communication technologies, either the internet or a mobile phone, or both, and they must have social interactions in socially and economically meaningful ways.

- Social interactions are located in DE and DF in the original spreadsheet (questions H2 and H3), which get at economic connections outside the community as well as attendance at social functions outside of the community or religious group.
  - In Excel, we recoded both questions as 0 or 1 using the following: =IF(DB="Yes",1,IF(DB="No",0))
    ▪ We then summed the three together for a possible score of 2.
    ▪ In fsQCA (Version 3.0), we calibrate as follows: calibrate(socint,2,.5,0). This rationale here is that fully in the set (.95) means a HH has the social and economic interactions, and in

the set (.73) means that a HH has one of these interactions. Out of the set (.05) means a HH has neither.

- o Use of digital/analog network technologies are in columns DI – DK in the Household Survey spreadsheet. The questions ask how often in the past 3 months has a HH used the following, and we recoded the responses on a 0-4 scale:
  - o Mobile Phone (DJ in Excel)
  - o Internet (DK in Excel)
    - ▪ "Everyday" (4), "A few times a week" (3), "A few times a month" (2), "Less than once a month" (1), "Never/No access" (0)
  - o In fsQCA (Version 3.0), we calibrated each individually using the following: calibrate(mobile/internet,4,2.5,0). The rationale here is that using these technologies a few times a week or more means than a HH is well-connected given the prevalence of these technologies and widespread everyday reliance on them for communication and maintaining social networks.
    - o We then used the *logical or*, taking the highest score from the two conditions. The rationale here is that these communication technologies are substitutable and either one suffices to belong to the component set of social communication technology use.

- o **Social Connectedness**: we then calibrated this macrocondition by using the *logical and*. Here, a HH must exhibit both of the main components – phone use and/or internet use, and social interactions. The rationale here is that social connectedness derives from regular interactions and communication.

3. Good Governance: This macrocondition includes inclusive governance and provision of social infrastructure. Each main component is a composite in itself, and is first calibrated based on data from the HH or the Community survey. The first main component – inclusive governance – is calibrated using the *logical or*. The second main component – provision of social infrastructure – is calibrated using a modified *logical and*, where two out of three of the forms of social infrastructure must be substantially provided. Then, we calibrate the encompassing macrocondition using the *logical and*. To be in the set of good governance, a HH must be in a community with inclusive governance and one with basic social infrastructure provision.

- **Inclusive Governance:** This component set is calibrated by combining two conditions, the first being from a group of HH questions on the inclusivity of local governance and the second being from a group of Community questions on women and youth participation in local governance. We assume here that these conditions are substitutable in that either suffices to belong to the component set of inclusive governance. After we calibrate each of the two component sets below, we then run a *logical or* in fsQCA (Version 3.0), which takes the maximum score of the two sets.

- From the HH survey, the questions/responses on local council governance are in columns DS-DZ in the Household Survey spreadsheet. We use the following:
  - Local council helps HH obtain basic services like flour and water (DS in Excel). "Yes" or "No" question
    - o We recoded in Excel using the formula: =IF(DS="Yes",1,IF(DS="No",0))

- In fsQCA (Version 3.0), calibrate this component using the following: calibrate(basic,1,.5.0). "Yes" is in the component set and "No" is out of the component set.
  - Local council ensures service provision equally or without any distinction for water, bread, garbage collection. (DV in Excel) "Yes" or "No" question
    - We recoded in Excel using the formula: =IF(DV="Yes",1,IF(DV="No",0))
    - In fsQCA (Version 3.0), calibrate this component using the following: calibrate(equal,1,.5.0). Yes is in the component set and No is out of the component set.
  - To what extent does an HH feel heard by local council such as through local meetings or voting. (DY in Excel). There were five possible responses which we recoded on a 1-5 scale.
    - "Extremely" (5), "Very" (4), "Moderately" (3), "A little" (2), "Not at all" (1)
    - In Excel, use the following: =IF(DY="Extremely",5,IF(DY ="Very",4,IF(DY ="Moderately",3,IF(DY ="A little",2,IF(DY ="Not at all",1)))))
    - In fsQCA (Version 3.0), use the following to calibrate: calibrate(voice,5,2.5,1). The rationale is that if a HH sees the local council as being moderately receptive, then they are just in the set, while extremely receptive is fully in the set and not at all is fully out of the set.
  - To exhibit the main component condition 'inclusive local governance', a HH must belong at least to two out of three of these sets. This means that a HH could see the local council as not ensuring equal provision but at the same time the HH receives help from the local council to obtain basic services and sees the local council as being receptive. We use a modified *logical and* for this calibration: we take the median score from the three component sets. In Excel use the formula: MEDIAN(A:C)

- **From the Community survey, we look at women and youth public participation.** This set is calibrated out of an index of four components – women's participation in community meetings, women's work on local council, youth on the local council, and presence of youth council. We rely on the Community Survey and average the response scores of the community informants for each community. Each community's score is then transferred to the HHs in that community. The idea here is that an HH exhibits this macrocondition if it lives in a community where women and youth regularly partake in public affairs.
- Women's public participation:
  - Women participate in community meetings (local council/community meetings for education/health/rebuilding services/civil society/cleaning services/other((DO in the Excel) – Yes or NO
  - Women work on local council (DO in the Excel) – Yes or NO
  - In Excel, we recode using the following: =IF(DO="Yes",1,IF(DO="No",0))

  - Youth public participation:
    - Youth on the council (DQ in Excel) – Yes or NO
    - Presence of a youth council (DR in Excel) – Yes or NO
    - In Excel, we recode using the following: =IF(DR="Yes",1,IF(DR="No",0))

- o   Gender and Youth Public Participation: we then add the four components up to create a 0-4 scale. In fsQCA (Version 3.0), we calibrate the macrocondition using the following: calibrate(4,1.8,0). The rationale is that a community (and thus its HHs) are fully in the gender and youth public participation set if they exhibit all 4 of the components, are solidly in the set if they exhibit 3, and are just in the set if they have 2. On the other hand, 0 is fully out of the set and 1 is out of the set.

- **Social Infrastructure:** Along with inclusive local governance, an HH must also have a community where basic social infrastructure or services are provided – based on HH access to education, health, and water – which are taken from the Community Survey which has between 1-7 community informants each for 115 different communities. We average the community informant scores for each community, calibrate each component set, and then the set membership score for the social infrastructure condition of each community is transferred to the HHs in that community.

- Education: for this component, a HH must live in a community that provides safe space for primary and secondary education. These were "Yes" and "No" questions. Safe primary education space is in column Q and safe secondary education space is in column R in Community Survey spreadsheet.
  - We recoded in Excel using =IF(Q="Yes",1,IF(Q="No",0)) and then averaged the scores of the community informants for each community – so each community has a score between 0-2.
  - In fsQCA (Version 3.), use the following to calibrate: calibrate(2,1.5,0). The rationale here is that a community must have safe primary and secondary schools to exhibit this component. The threshold is set at 1.5 because by averaging the responses of the community informants for each community there are several cases where responses varied. We thus count in the set those communities where the majority of responses were yes for safe primary and secondary schools.

  - Health: for this component we use percentage of community HHs without access to medical facilities. This question/response is in column ET of the Community Survey spreadsheet.
    - In fsQCA (Version 3,0), we use the following to calibrate: calibrate(health,5,35,75). The rationale here is that 95% access to medical facilities is fully in the set, that 65% access to medical facilities is the threshold point (which means that two-thirds of the HHs must have access for the community to be in the component set), and that anything below 25% access is fully out of the set.

  - WATER/WASH: for this component we use percentage of community HHs without access to clean drinking water. This question/response is in column ES of the Community Survey spreadsheet.
    - [We also calibrated percentage of community HHS without access to WASH for this component]
    - In fsQCA (Version 3.0) we used the following to calibrate: calibrate(water,5,25,75). The rationale here is that water has a higher bar the medical facilities, and so 95% access to clean drinking water is fully in the set, that 75% access to clean drinking water is the threshold point (which means that three-fourths of the HHs must have access for the community

to be in the component set), and that anything below 25% access is fully out of the set.

- Social Infrastructure: For the component set of social infrastructure, we use a modification of the *logical and* operation, where a HH must be in a community that exhibits 2 out of 3 of these components to be in the set of 'good social infrastructure.' To do so, in Excel, use the following: =MEDIAN(A:C)

- [For all missing data on Kobane communities, we asked Syrian humanitarian workers about the state of social infrastructure in these communities and used their responses for our calibrations]

4. Gender & Youth HH Income Earners: This condition takes the proportion of women and/or youth participating in paid labor among all HH income earners, and relies on the Household Survey.
- Number of people in family earning an income (BC in Excel).
- Number of youth in family earning an income (BD in Excel)
- Number of women in family earning an income (BE in Excel)
- We then add the number of women and youth together and divide it by the total number of income earners to get the proportion of women and youth income earners in the HH
- In fsQCA (Version 2.0), we calibrate this set using the following: calibrate(gy,.74,.24,0). The rationale is that if 75% of income earners (or three-fourths) in a HH are women or youth, then they are fully in the set. A HH is just in the set if 25% of income earners in the HH are women or youth.

5. Conflict Exposure: This macrocondition creates a composite index using weighted averages from four different questions/responses questions/responses – displacement, property damage, family injured/killed, and family detained/kidnapped – in the Household Survey. So, this macrocondition does not use the conflict_score (KT in Excel) but a modified version

- o Number of times displaced/moved since leaving home. This is weighted as a 2 for the composite index. (M in the Excel).
- o Number of times property damaged in violent incident the past 12 months. This is weight as a 1. (N in the Excel).
- o Number of family members injured or killed in the past 12 months. This is weighted as 2. (O in the Excel)
- o Number of family detained or kidnapped in the past 12 months. This is weighted as a 2. (P in the Excel)

- In order to create the composite index, in Excel, use the following: =(D2*2)+(E2*2)+(G2)+(H2*2)+(I2*2)
- In order to calibrate the macrocondition out of the index score, in fsQCA (Version 3.0), use the following: calibrate(conflict,13,3.5,0). The rationale here is that a score of 13 means that a HH often experiences one of the components weighted as 2 either three or four times, or experienced two of the components weighted as 2 at least 2 times. Furthermore, a score of 3 means that none of the components weighted as 2 happened twice to a HH, and that the HH did not experience more than one of the components weighted as 2. On the other hand, a 4 means that one of the components weighted as 2 happened twice, or that two of the components weight as 2 happened once.

o   For the Kurdish regions, data was unavailable for number of family members injured/killed and number of family members detained/kidnapped. So, in order to compensate for these absences and assign scores for the missing two points, we looked at the first two components for the HHs (displacement and property damage) in the Kurdish areas. We then looked to the non-Kurdish area HHs that had the same combination of numbers for the first two components as the Kurdish-area HHs. We averaged the non-Kurdish area HHs' scores and the transferred them the Kurdish-area HHs that match them in the combination of numbers for the first two components. So, for example, if a HH in a Kurdish area was displaced 2 times after first leaving their home location, and experienced 1 incident of property damage in the past 12 months, then we assign to it the average scores for the other components from the non-Kurdish area HHs that were also displaced 2 times after first leaving their home location, and experienced 1 incident of property damage in the past 12 months.

THE ANALYSIS: Frequency thresholds

What we aimed for was a good balance between consistency and threshold scores in the first iteration, while in the second some coverage is sacrificed for higher consistency. This is the difference between a more rough-grained analysis and a finer-grained one.

We ran two or three analyses for each outcome, using different threshold settings. First, our baseline thresholds were .85 for the consistency threshold and a frequency threshold of 5 cases when running the "Truth Table Algorithm" in fsQCA (Version 3.0). Second, we set the thresholds higher, usually between .85 and .9 (relying on any 'natural gaps' in that range) and the frequency cutoff of 5 or 10 cases. We report results using two or three frequency and consistency thresholds for each outcome. This step allows us to examine different thresholds and appraise the consequences of raising/lowering the consistency and frequency cut-offs. By reporting multiple results for each outcome, we also avoid the charge that we have arbitrarily selected the thresholds and it also helps us deal with the issue of no apparent threshold value (this happens when the consistency and frequency scores are tightly clustered together). With the thresholds, we made minor adjustments when the results for one or the other were contradictory. In all of the analyses, the thresholds were always set above a .8 and always at 5 or more cases.

Our basic model included the conditions detailed above: social connectedness, favorable economic situation, gender/youth household income, good governance, and intense conflict exposure. When this model produced ambiguous findings, we tested other models that made sense for analyzing the specific outcome. We did this by breaking apart the macroconditions and running component sets, like strong market functionality instead of favorable economic situation.