

# NTTA Consumption (in time and monetary units)

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# Review yesterday

1. India time results
2. Anyone else want to present results?
3. Questions/comments about NTTA production?
4. Friday country presentations
  - 10-15 minutes each
  - A few slides with interesting results (NTTA or NTA by gender, or just interesting time use patterns)
  - I'll do a cross-country comparison of all the male/female YL curves you all sent me

# Outline

1. Estimation strategy
2. Imputing time consumption to individuals based on total time production
3. Producing age/sex means
4. Finalizing the profiles
5. Sensitivity tests

# Estimation Strategy (time units)

1. Prepare files with production data and hh members
2. Compute nta time production for each time producer
3. Impute consumption of time produced in the household to household members
4. Smooth age/sex means
5. Adjust profiles so that they are balanced in the aggregate

# Consumption Imputation Assumptions

- For care activities
  - If care is for household members, implement regression method using household members in target age range
    - Example: for care of household children aged 0-18, estimate regression equation using number by age and sex for household members age 0-18
  - If care is for non-household members, divide equally among general population in target age range
    - Example: for volunteering, divide time equally among total population

# Consumption Imputation Assumptions

- For care activities ALTERNATIVES
  - For childcare: calculate time spent on children by age and sex for households with only one child; use those as weights
  - If you only have a general “care” variables instead of child/elder care separately
    - Leave producer ages out of the regression
    - Other?

# Consumption Imputation Assumptions

- For general household activities
  - Divide equally among all household members

# Producing consumption means

- A question has come up about the methodology
  - Complicated method is to go from producer profiles, to aggregate producer/consumer matrix, to consumer profile.
  - Simple method is to calculate consumer profiles just using survey microdata
- Not sure if simpler method is correct... or if it is correct in some cases but not others
- Bequests example highlights the issue



# Producing consumption means

- Simple method
  - Impute consumption to individuals in households
  - Take age/sex means as you did for producers
  - Different sample weights available for total household?
- Complex method
  - Compute mean production by age and sex of producer and age and sex of imputed consumer (using weights for time respondents)
  - Multiply by population number in producer age/sex groups
  - Divide by population number in consumer age/sex groups to get mean consumed amount

# Simplified Spreadsheet Example for Complicated Method

- Available on the wiki
  - [www.ntacounts.org](http://www.ntacounts.org)
    - > Projects > Working Groups > Gender, time use

# Finalizing profiles

- Smooth and adjust smoothed and unsmoothed profiles so that consumption equals production and inflows equal outflows
  - Simple method: adjustment factors on consumption and inflows will be large
  - Complex method: adjustment factors will be needed only for smoothed profiles and those should be close to one

# Sensitivity tests

- Our allocation assumptions are equal for males and females
  - So, the only way males and females can differ is through household structure (e.g. if households with only baby girls have greater average production of childcare, baby girls will look like they have higher consumption of care than baby boys)
- In contexts with heavy “son preference,” this may be a very bad assumption!
  - Do some sensitivity tests trying an allocation of childcare or other activities to girls of  $x\%$  of boys
  - OR implement regression-based allocation to get a data-driven estimate (will only partially address the issue, but it’s a start)

# Finalizing

- Reasonability checks
  - Look at production and consumption for each activity. Do they look reasonable?
    - Is childcare only being consumed by children? Adult care only by adults?
    - Is consumption of general household activities reasonably smooth?
  - Does aggregate consumption equal aggregate production for each type of activity?
- Sensitivity tests
- Smoothing
- Adjust smoothed profiles to make sure that production equals consumption