Conjoint analysis for measuring family planning provider bias against youth clients

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Outline

- Motivation
- Conjoint analysis: discrete choice (factorial) experiment
- Data
- Preliminary Results
  - Summary statistics from standard questionnaire
  - Conjoint analysis results
Motivation

- Countries such as Tanzania still have high total fertility rates (5.2) and low adoption of modern family planning (27%)\(^1\)
- Total FP demand has increased from 28-60% since 1991, yet unmet demand has remained constant at 22%\(^1\)
- Unmet need is particularly high among youth
- Concern that youth are vulnerable to provider biases that restrict their access to FP services. Providers may believe e.g.:
  - Youth are too time-consuming to counsel
  - FP promotes promiscuity among unmarried youth
  - FP interferes with pronatalist aims for married youth

\(^1\) TDHS (2016). “Tanzania Demographic and Health Survey and Malaria Indicator Survey, 2015-2016:Final Report”.
Research questions

- Do providers discriminate against young clients BECAUSE OF THEIR YOUTH?
- Or do reports of discrimination against YOUTH instead reflect confounding due to biases against UNMARRIED and NULLIPAROUS?
Methods to measure youth bias

- **Patient-level:**
  - Exit interviews with patients (costly, many unobservables)
  - Observing patient visits (Hawthorne effects)
  - Standardized patients (limited to counseling, non-intervention)

- **Provider-level:**
  - Survey regarding attitudes and practices (desirability bias)

**QUESTION:** Can a conjoint analysis approach improve measurement of bias, and ability to parse AGE vs other client characteristics?
Conjoint analysis

▪ Stated preference method to elicit preferences over product attributes
  • Market research: survey consumers to ask which specific product they would buy among a set of choices.
  • Respondents choose from among a set of experimentally controlled profiles consisting of multiple attributes with various levels.
    – E.g. cell phones: vary size, screen, camera quality, etc.
  • Useful to reveal the underlying product characteristics that are most important to consumers.

▪ Provider bias application: discrete choice (factorial) experiment
  • Survey providers, and ask whether would provide specific type of FP (e.g., IUD) to hypothetical clients with specific demographics.
  • Experimentally vary client attributes by: age, marital status, and parity.
  • Conditional logit estimation: which client attributes drive provider behavior?
Data: Gates-funded “Beyond Bias” project

- Sample size: 811 providers surveyed in Tanzania (n=301), Burkina Faso (n=310), Pakistan (n=200)

- Standard questions on provider-reported knowledge, attitudes, and practices towards youth clients

- Conjoint questionnaire:
  - Provide hypothetical client FP counseling? Modern methods?
  - Hypothetical client attributes vary by:
    - Age: 15, 20, 25
    - Marital status: Unmarried, married
    - Parity: 0, 1, 2+
  - Total of 18 potential hypothetical clients
    - Each provider randomly asked about 3 hypothetical clients
Conjoint scenario examples

Client is 15 years old, unmarried, and has no children. Let us talk about what it might be like if she came in today to ask for services.

The client is interested in learning more about different FP methods. What is the next step before you begin any FP consultation?

1. Decline counseling
2. Ask questions before agreeing to provide FP counseling
3. Offer FP counseling

Would it be appropriate to provide modern methods of family planning to this client, such as injectables, pill, implant?

1. Yes
2. No
3. Need additional information
## Provider characteristics

<table>
<thead>
<tr>
<th></th>
<th>Full Sample</th>
<th>Tanzania</th>
<th>Burkina Faso</th>
<th>Pakistan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young provider (&lt;33 years old)</td>
<td>21.0%</td>
<td>30.6%</td>
<td>19.7%</td>
<td>8.5%</td>
</tr>
<tr>
<td>Provider Muslim</td>
<td>46.7%</td>
<td>26.2%</td>
<td>33.5%</td>
<td>98.0%</td>
</tr>
<tr>
<td>Counsels youth (14-18) several times per week</td>
<td>48.5%</td>
<td>53.8%</td>
<td>61.0%</td>
<td>21.0%</td>
</tr>
<tr>
<td>Sample size</td>
<td>811</td>
<td>301</td>
<td>310</td>
<td>200</td>
</tr>
</tbody>
</table>
### Provider beliefs from standard questionnaire

<table>
<thead>
<tr>
<th>Age</th>
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</thead>
<tbody>
<tr>
<td>According to provider's religious beliefs, acceptable to limit contraceptive options to youth clients</td>
<td>58.4%</td>
<td>57.5%</td>
<td>45.8%</td>
<td>79.5%</td>
</tr>
<tr>
<td>Young married &amp; unmarried clients should have same family planning</td>
<td>54.5%</td>
<td>49.5%</td>
<td>88.4%</td>
<td>9.5%</td>
</tr>
<tr>
<td>Provider dislikes working with young clients</td>
<td>11.0%</td>
<td>2.3%</td>
<td>22.9%</td>
<td>5.5%</td>
</tr>
<tr>
<td>Contraceptive methods more appropriate for women over 25</td>
<td>43.3%</td>
<td>28.2%</td>
<td>60.3%</td>
<td>39.5%</td>
</tr>
</tbody>
</table>

### Age and other client characteristics

<table>
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</thead>
<tbody>
<tr>
<td>Young couples should have children as soon as possible after marriage</td>
<td>44.8%</td>
<td>25.2%</td>
<td>53.5%</td>
<td>60.5%</td>
</tr>
<tr>
<td>IUD is an inappropriate method for young, nulliparous women</td>
<td>50.7%</td>
<td>64.1%</td>
<td>21.3%</td>
<td>76.0%</td>
</tr>
<tr>
<td>Unmarried clients require parental consent</td>
<td>25.9%</td>
<td>23.3%</td>
<td>6.1%</td>
<td>60.5%</td>
</tr>
<tr>
<td>Young married clients require spousal consent</td>
<td>35.1%</td>
<td>39.9%</td>
<td>18.4%</td>
<td>54.0%</td>
</tr>
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</table>
Results: Provider decline counseling

Magnitudes are marginal effects on probability of declining counseling, from regression model. Model controls for age, marital status, parity, and country.

Results: Providers more likely to decline counseling for unmarried and nulliparous women. But controlling for marital status and parity, provider stated responses do not vary by patient age.
Results: Provider decline counseling

Tanzania

- AGE
  - 25 years old
  - 20 years old
  - 15 years old
- MARITAL STATUS
  - Married
  - Unmarried
- PARITY
  - 2+ children
  - 1 child
  - 0 children

Burkina Faso

- AGE
  - 25 years old
  - 20 years old
  - 15 years old
- MARITAL STATUS
  - Married
  - Unmarried
- PARITY
  - 2+ children
  - 1 child
  - 0 children

Pakistan

- AGE
  - 25 years old
  - 20 years old
  - 15 years old
- MARITAL STATUS
  - Married
  - Unmarried
- PARITY
  - 2+ children
  - 1 child
  - 0 children
Results: Provider denied modern methods

- Deny modern methods, mean .26
- Estimate
- 95% CI
Results: Provider denied modern methods

**Tanzania**

- **Age:**
  - 15 years old
  - 20 years old
  - 25 years old

- **Marital Status:**
  - Married
  - Unmarried

- **Parity:**
  - 0 children
  - 1 child
  - 2+ children

**Burkina Faso**

- **Age:**
  - 15 years old
  - 20 years old
  - 25 years old

- **Marital Status:**
  - Married
  - Unmarried

- **Parity:**
  - 0 children
  - 1 child
  - 2+ children

**Pakistan**

- **Age:**
  - 15 years old
  - 20 years old
  - 25 years old

- **Marital Status:**
  - Married
  - Unmarried

- **Parity:**
  - 0 children
  - 1 child
  - 2+ children

- **Estimate:**
  - Deny modern methods, mean .22

- **95% CI:**
  - Decline counseling, mean .05
  - Deny modern methods, mean .53
Summary

- Results:
  - Standard questionnaire appears to reveal strong youth bias.
  - But conjoint analysis suggests this is due to confounding with marital status and parity.

- Implication:
  - Research:
    - Design standard questionnaires in future to better parse age effects vs marital/parity.
  - Intervention design:
    - “Youth bias” may be wrong target.
    - Instead focus on attitudes/practices towards unmarried and/or nulliparous women.
Thank you

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