What are the factors of gap between desired and actual fertility?
A comparative study of four developed countries

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Purpose of research

• To explore what factors contribute to the gap between desired and actual number of children in a comprehensive model.
• Counties analyzed:
  the U. S., France, Japan, and South Korea
• To discuss which policies should be given priority with regard to achieving desired fertility.
Trend in Total Fertility Rate

Average desired and actual number of children for people in a couple

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<th>U.S.</th>
<th>France</th>
<th>Japan</th>
<th>Korea</th>
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<td></td>
<td>Men</td>
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<td>20's</td>
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<td>30's</td>
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<td>40's</td>
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<td>Total</td>
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<td>Actual number of children</td>
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<tr>
<td>20's</td>
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<td>30's</td>
<td>1.6</td>
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<td>40's</td>
<td>2.5</td>
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<td>1.9</td>
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Definition of “Achievement rate of fertility”

Achievement rate of fertility (AR) = \frac{\text{Actual number of children}}{\text{Desired number of children}}

- In the case where both numbers are 0, we assign 1.
- There was only 1 respondent whose AR exceeded 1. This sample was excluded during data cleaning.
- Thus, AR runs from 0 through 1 (0 \leq \text{AR} \leq 1).

Achievement rate of fertility desire for people in a couple

The lowest group
Previous studies (1)

• Analysis on the consistency between the intended number of children and actual number of children.

The principal explanatory variables used to estimate the consistency: (the expected effect) the age of respondents (+), the duration of marital relationship (+), household income (+), the age at first marriage (-), real number of children (-), birth spacing (-), women’s income (-), and disagreement between spouses regarding number of children (-).

Previous studies (2)

The consistency between intended and actual number of children tends to be ...

- confirmed by those who analyzed less than ten years of panel data (Coombs 1974, Schoen et al. 1999, and Matsumura 2009)

- denied by those who analyzed more than ten years of panel data (Symeonidou 2000, Noack and Østby 2002, and Quesnel-Vallée and Morgan 2003)
Previous studies (3)

• Analysis on the consistency between the desired number of children and actual number of children.
  - Heiland et al. (2008) deny the consistency, and claim that the desired number could be modified by a change in one’s values regarding having children, which results from actually experiencing childbearing. One’s desire can be sequentially updated.

Previous studies (4)

• Analysis on the gap between desired and actual fertility
  - The fertility behavior is sensitive to labor policy, family policy, and the other social policies and how they are mixed (Van Peer (2002))
  - Spanish women facing a high unemployment rate in their mid-twenties tend to have a greater gap, and the gap is more significant for employed women than inactive women (Adsera 2006)
Previous studies (5)

• Key factors in the achievement of desired number of children:
  (1) life events concerning marriage (or cohabitation), childbirth and divorce or separation by death and their timing
  (2) disagreement between spouses
  (3) the economical situation and its predictability
  (4) difficulties in balancing work and life
  (5) one’s health condition including infecundity
  (6) strong gender preferences
  (7) unwanted fertility
  (8) the cost of raising children

The cost of raising children

• The top answer to the question “why you will not or cannot have as many as children as you want” is
  “Because it costs too much to raise and educate children”
The direct cost has a negative impact on the number of children.
The effect of the indirect cost on the number of children will depend on work-life supports and housework sharing between spouses.
Data

• “International Opinion Survey on a Low birthrate society”
  conducted by the Cabinet Office of Japan in 2010
  Counties surveyed: the United States, France, Sweden, Japan, and South Korea
  We excluded single people and those who didn’t have a partner at the moment of investigation.

Analysis of the gap between desired and actual number of children (1)

• Methodology
  Model: Ordered Logistic Model
  Dependent variable: Achievement rate (AR)
    if AR = 0, then P=1
    if 0<AR<1, then P=2
    if AR =1, then P=3
  Independent variables: age of respondent, age at first marriage (only for Japan and Korea), the cost of raising children, university degree for both spouses, household income, working hours for both spouses, precarious labor market situation for both spouses, living in a big metropolitan area, and view about child rearing.
Analysis of the gap between desired and actual number of children (2)

1. Estimation of Child direct cost
   Model: Heckman two-stage estimation
   1\textsuperscript{st} stage: Estimation for having children
   2\textsuperscript{nd} stage: Estimation of child direct costs
   (Average age of children used as the instrumental variable)

2. Estimation of the gap between desired and actual number of children

Share of private expenditure on educational institution (2006)

Source: OECD, Education at a Glance 2009
Results (1)

• Estimation results of direct cost per child
  - Household income (+) in all cases
  - Average age of children
    (+) in Japan and Korea
    (-) in the U.S. and France

Results (2)

• Estimation results of the achievement rate of desired fertility
  - Age of respondent (+) in all cases
  - Age at first marriage (-) in Japan and Korea
  - Direct cost of raising children (-)
    in the cases of the lowest rates of achievement
    (Japanese men and women, Korean men)
  - In the cases of the highest rate of achievement
    (American men and French men and women) no noteworthy negative effects were found.
Results (3)

- Estimation results of the achievement rate of desired fertility – continued
  - Household Income (+) for both men and women in Japan, only for women in the U.S. and France, and only for men in Korea.
  - Spouse's working hours (+) for American women and Japanese women
  - Men's precarious labor market situation (-) in Japan
    → Sexual division of labor can increase and decrease the achievement rate, depending on whether the husband has a secure and well-paid job.

Discussion

- This comprehensive analysis showed significant negative impacts of direct costs of children as well as delayed marriage as the main causes for low achievement of desired fertility.
  → Reducing the direct costs of raising children and stabilizing the employment situation should be given priority rather than other measures with regard to achieving desired fertility.
- Data constraints and challenges in our next study

Thank you for your attention.