

# Valuing the Recreation Outings of Children

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# Presentation Topics

- Direct Valuation Approach
- Indirect Valuation Approach
- Aggregate Welfare Measure
- Implications for Future Research

# Direct Valuation Approach

- Consumer surplus is unlikely to apply to the recreation outings of children
- Even if consumer surplus applies, economists' approaches for measuring consumer surplus are not useful for directly valuing children's outings:
  - Stated preference approach
  - Revealed preference approach
- Proposition 1:
  - Traditional non-market valuation approaches are not appropriate for directly estimating the value of recreation outings by children ( $\$Children$ )

# Indirect Valuation Approaches

- It is likely that parents consider the tastes & preferences of their children when choosing a recreation site for an outing involving the children.
- This means that the value per outing for parents includes an implicit value for the recreation outings of their children.
- Proposition 2:
  - If the value per outing for parents ( $\$Parents$ ) includes an implicit value for the recreation outings of their children, then an indirect measure of  $\$Children$  would be  $(\$Parents - \$Non-parents)$ .

# Teal and Loomis (2000)

- CV telephone survey
- San Joaquin Valley (CA) residents
- Elicited a value for:
  - Increasing wetlands
  - Reducing wildlife contamination
  - Increasing salmon populations
- Parental status was not a significant determinant of WTP for any of the programs

# DuPont (2004)

- CV mail survey
- Hamilton Harbor watershed (Ontario, Canada)
- Elicited a value for specific improvements in:
  - Swimming
  - Recreational fishing
  - Recreational boating
- Only swimming had a statistically higher WTP for improvements

# Hilger and Hanemann (2008)

- Revealed preference data from panel
- Use of 51 beaches in southern California
- Estimated WTP for improvements in water quality using RUM approach
- Coefficient for the presence of children in recreation party was either negative or insignificant
- Coefficient on interaction term for presence of children and getting in water was negative and significant

# Indirect Valuation Approach (cont.)

- Proposition 3:
  - If  $\$Parents$  includes an implicit value for the recreation activities of their children and  $\$Adults$  is a proportion of both  $\$Parents$  and  $\$Non-parents$ , then
$$\$Adults > \$Children$$
 at most recreation sites.
- Some important relationships:
  - $\$Parents - \$Non-parents = \$Children$
  - $\$Adults = (\theta \cdot \$Parents) + [(1 - \theta) \cdot \$Non-parents]$
  - $\$Parents > \$Adults > \$Non-parents$



# Proposition 3 Examples

## ■ Example A:

- \$Parents = \$20 & \$Non-parents = \$15
- \$Adults = \$18 & \$Children = \$5
- So, \$Adults > \$Children

## ■ Example B:

- \$Parents = \$20 & \$Non-parents = \$5
- \$Adults = \$18 & \$Children = \$15
- So, \$Adults > \$Children

# Indirect Valuation Approach (cont.)

- Proposition 4:
  - If \$Parents excludes an implicit value for the recreation activities of their children, then an indirect valuation approach for \$Children does not exist.
  
- Philosophical question:
  - If parents do not implicitly value the recreation outings of their children, then should an analyst assign a value to the recreation of those children?

# Aggregate Welfare Measure

## ■ Proposition 5:

- If \$Parents includes an implicit value for the recreation outings of their children, then the appropriate aggregate welfare measure is  
$$(\#Adults \cdot \$Adults)$$

## ■ Proposition 6:

- If \$Parents excludes an implicit value for the recreation outings of their children, then the appropriate aggregate welfare measure is  
$$[(\#Adults \cdot \$Adults) + (\#Children \cdot \$Children)]$$

# Implications of Findings

- If a \$Parents includes an implicit value for the recreation outings of their children, then a separate per-outing value for children is not needed
- Original studies need to get information on:
  - Parental status
  - Composition of recreation parties
  - Household income
- Benefits-transfer applications need to know the relative mix of parents and non-parents among recreators

# Outstanding Questions

- How should “children” be defined?
  - Under driving age (i.e., 16 years of age)
  - Under 13 years of age
  
- Should very young children (i.e., infants) be excluded completely from welfare measures?
  - They are held or pushed in strollers for the entirety of the recreation visit
  - They do not participate in recreation activities
  - They may be unaware that they are at a particular recreation site

**Feedback?**

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