AREC2004 Tutorial 10 (Week 11) – Key Concepts

Choice Modelling (stated preference)

- Stated Preference technique (similar to Contingent Valuation)- can be used to estimate non-use as well as use values.
- Like contingent valuation, it is a ***hypothetical method*** – it asks people to make choices based on a hypothetical scenario. However, it ***differs from contingent valuation because it does not directly ask people to report their willingness to pay (WTP)*** to obtain a 'specified good'. ***Instead, values are inferred from the hypothetical choices or trade-offs that people make.***
- Choice modelling ***breaks a good down into attributes and levels and respondents are required to state their preferences comparing different policy scenarios (associated with different characteristics/ attributes) at different prices or costs to the individual***
- Responses are focused on trade-offs. Once trade-offs and preferences are stated possible to ***to gauge agents WTP***
- Choice modelling is especially ***suited to policy decisions where a set of possible actions might result***
- Four different approaches

    1. **Choice experiments (CE)**
    2. **Contingent ranking**
    3. Contingent rating
    4. Paired comparisons

(1) Choice experiments (CE)

- Respondents are presented with series of scenarios/ choices (each scenario has unique set of attributes) and respondents are asked to choose their most preferred option (generally chose between two options and the status quo)
- See example in lecture – lists attributes of each scenario along with the cost of making changes. Asks if respondent prefers scenario A, B or neither

(2) Contingent Ranking

- Similar to CE - Respondents are presented with series of alternatives/scenarios
- Instead of opting for preferred choice, ***respondents are now asked to rank options according to their preferences***
- ***Contingent ranking usually involves more than three scenarios*** (CE usually only two scenarios in addition to status quo)

(3) Contingent rating

- Score a series of alternatives on a scale from 1-10

(4) Paired Comparisons

- Score pairs of scenarios on a similar scale – often qualitative ranking (e.g. strongly preferred, moderately preferred, slightly preferred etc.

Steps in Choice modelling

1. ***Identify the main attributes/ characteristics of the pubic good/asset***
2. ***Design different bundles of possible attributes/policy outcomes***
3. Define valuation problem /hypothetical market (same as CVM)

4. Make preliminary decisions about the survey – test – refine survey – implement survey (similar to steps in CVM but ***different method of establishing WTP***)
5. Use of ***discrete choice analysis methods*** to estimate the average value for each of the services of the site and infer WTP.
6. ***Extrapolate to the relevant population in order to calculate the total benefits from the site under different policy scenarios.***

Choice Modelling v Contingent Valuation

- ***Similar design*** (both are stated preference techniques – used for use and non- use values)
- ***Similar implementation problems*** (Choosing target population, sample size, survey method, define hypothetical market)
- ***Difference in the way the participants are asked to elect their value for a particular scenario -*** allows respondents to think in terms of trade-offs, which may be easier than directly expressing dollar values.
- Choice modelling ***allows valuation of specific attributes/changes in characteristics associated with a policy change*** (CVM doesn't look at this). As such ***Choice modelling has a greater capacity to allow an understanding of the choices of respondent in addition to the value as a whole.***
- Choice modelling is especially ***suited to policy decisions where a set of possible actions might result***
- Choice modelling may ***reduce/avoid some of the response difficulties that plague CVM*** – e.g. protest bids due to bias and the often unrealistic task of putting prices on non-market amenities.
- Choice modelling requires ***more sophisticated statistical techniques*** to estimate willingness to pay.
- ***Translating ranking of trade-offs into dollar values, may lead to greater uncertainty*** in the actual value that is placed on the good or service of interest.

Benefit transfer method

- The benefit transfer method is used to estimate economic values for ecosystem services ***by transferring available information from studies already completed in another location and/or context.***
- For example, values for recreational fishing in a particular state may be estimated by applying measures of recreational fishing values from a study conducted in another state.
- Benefit transfer ***is often used when it is too expensive and/or there is too little time available to conduct an original valuation study***, yet some measure of benefits is needed.

- Four main transfer methods:

Transfer method	**Description**	**Example**
Single point value transfer	A mean value is transferred without adjustment from source study to target site	A forest protection value of $50/person is transferred from Case Study A (Study site) to Site B (Policy site)
Marginal point value transfer	A single value adjusted to allow for site differences is transferred	A forest protection value of $2/hectare/person is transferred from Case Study A to Site B. The values are adjusted for the size of the area and other characteristics. ***Adjustment tends to be ad hoc***
Benefit function transfer	An entire valuation approach (function) is transferred, allowing adjustment for variety of site differences	A forest valuation function that involves several attributes is transferred Case Study A to Site B. ***Values at the policy site are predicted using independent variables collected from secondary data at the policy site.*** Regression parameters from the study site and characteristics of the policy site are combined.
Meta value analysis	Results of several studies are combined to generate a pooled model	Results from studies A, X, Y and Z are pooled to estimate a value for Site B

Advantages of BCT

- Benefit transfer is typically ***less costly*** than conducting an original valuation study.
- Economic benefits can be estimated more ***quickly*** than when undertaking an original valuation study.
- The method can be ***used as a screening technique*** to determine if a more detailed, original valuation study should be conducted.

Issues and Limitations

- Benefit transfer may ***not be accurate unless the 'study site' share all the same characteristics as the 'policy site'***
- ***Good studies*** for the policy or issue in question ***may not be available.***
- ***Adequacy*** of existing studies may be difficult to assess.
- Benefit transfers can ***only be as accurate as the initial value estimate.***
- ***Estimates can quickly become dated***. Estimates of existing studies may no longer be valid.

Travel Cost method (Revealed Preference)

- The travel cost method is a revealed preference approach that is used to estimate the value of ***recreational benefits (use values)*** generated by ***ecosystems***. It ***assumes that the value of the site or its recreational services is reflected in how much people are willing to pay to get there.***
- Referred to as a "revealed preference" method, because it ***uses actual behaviour and choices to infer values.*** Thus, peoples' ***preferences are revealed by their choices***.