

Eliciting public preferences for managing the public rights of way.

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Abstract— **Public Rights of Way (PROW) in England and Wales, provides a wide range of social and economic benefits to those other than owners of land. The protection and extension of PROW are an important way of encouraging people to engage in informal enjoyment of urban and rural areas, with beneficial consequences for health and welfare. In urban areas they provide networks of mobility and interaction for people at the community level, helping to reduce reliance on motorised transport. In the rural context they define access to the countryside, critically linked to recreation and tourism, as well as providing mobility networks for local residents. This study describes the use of a Choice Experiment (CE) to derive monetary estimates the social benefits of PROW in an English county.**

Keywords— **Choice Experiments, Public Rights of Way, Willingness to Pay.**

INTRODUCTION

Public Rights of Way (PROW) in England and Wales, provides a wide range of social and economic benefits to those other than owners of land. The protection and extension of PROW are an important way of encouraging people to engage in informal enjoyment of urban and rural areas, with beneficial consequences for health and welfare. In urban areas they provide networks of mobility and interaction for people at the community level, helping to reduce reliance on motorised transport. In the rural context they define access to the countryside, critically linked to recreation and tourism, as well as providing mobility networks for local residents.

In England and Wales, as in many other countries, Local Government Authorities (LGAs) have statutory

responsibility for maintaining PROW, committing considerable amounts of taxpayers funds for this purpose. An efficient allocation of PROW is achieved where the extra benefit of providing a marginal increase in a unit of PROW exactly equals the extra cost; otherwise total welfare could be increased by providing more or less PROW. Measuring the costs of provision is relatively easy. They are the financial costs incurred by the LGA or a private landowner, relating to the maintenance or improvement of path surfaces, bridges, facilities and other attributes. Calculating the benefits created by these

management operations is more difficult because the benefits are in the form of nonmarket public goods.

In this context, there is a need to quantify the social and economic benefits of both the current and potential provision of PROW. This study describes the use of a Choice Experiment (CE) to derive monetary estimates the social benefits of PROW in an English county.

STUDY DESIGN AND METHODOLOGY

A parallel study of PROW (Angus, 2006) showed that usage varied according to a number of key attributes such as physical condition of surfaces, facilities and connectivity. This observation that the attributes of public footpaths have an important effect on how people value them suggested that CE would be a suitable non-market valuation method for estimating the benefits of PROW. (For an introduction to the CE

method the reader is referred to Bennet and Blamey, 2001).

The application of CE was based in Bedfordshire, a predominantly rural county in the eastern region of England. Bedfordshire County Council is the LGA responsible for the management of approximately 2,220 kilometres of PROW in Bedfordshire that comprise: 1,550 kilometres of public footpaths, 600 kilometres of bridleways and 50 kilometres of byways open to all traffic.

The attributes finally chosen were the physical conditions, sign-posting and information, facilities, and local connectivity. Given that the quality of PROW can improve or worsen in the future according to the policy support, the levels using in the “new situation” allowed the description of both better and worse PROW conditions.

The survey format finally used was face to face interviews carried out by trained interviewers to a random sample of 327 individuals residing in Bedfordshire. Each respondent was presented with 8 choice cards obtaining a total of 2,608 observations for model estimation.

RESULTS

The sample interviewed provides a reasonable representation of the Bedfordshire population, with a minor bias towards older age groups. A conditional logit model was used to analyse choice data. All coefficients are correctly signed according to a priori expectations. Overall the model is highly significant (LR test = 533.16, $P < 0.0001$) although the model fitting to data is moderate (pseudo rho-square = 0.16). “Physical condition” is considered the most important positive attribute, followed by “facilities” and “local importance”. “Sign-posting” is the least important attribute.

Different types of PROW users place different importance on different attributes, with potential differences in WTP for changes in those attributes. For this purpose three groups of frequent users were identified. Group 1 represents preferences for individuals who are predominantly frequent travel/functional users. Group 2 represents those who are predominantly frequent recreational users. Group 3

represents preferences for individuals who frequently use PROW (at least once a week) for both travel/functional and recreational purposes. Travel/functional users of PROW (Group 1) do not appear to be affected by the sign-posting and information attribute of the paths, probably because as regular users they know their own way. Also the constant term is not significant, indicating that respondents made their choices focusing mainly on the values of the attribute. Physical conditions, facilities and local importance affect the choices of this group. Recreational users (Group 2) place greatest and similar importance on physical conditions and facilities, such as dog litter bins. Frequent users (Group 3) place relatively high importance on physical condition and local relevance, that is ‘connectedness’ of PROW.

Implicit prices for PROW attributes can be derived by comparing the ratio between the coefficients for any one attribute and the coefficient for the monetary attribute, everything else being equal. In this study all implicit prices are greater than zero at a confidence level of 95%. On average, respondents are willing to pay £0.23 per household per year for improving the physical conditions of PROW by 1% and £0.12 for a 1% improvement in sign-posting and information. Differences arise between groups. For travel/functional users (Group 1) the implicit price of signposting and information as well as local importance is very low and not significantly different from zero as shown by the confidence intervals which range, suggesting that travel/functional users are not willing to pay for improvements in these attributes. Recreational users (Group 2) are willing to pay an extra £0.46 per household per year for a 1% improvement in physical conditions and £0.33 for a 1% increase in additional facilities. However, they show limited willingness to pay for enhancing the local importance of paths.

Furthermore, WTPs for different scenarios were estimated in this study. Respondents’ WTP extends over the interval £0.7 to 12.4 depending on the scenario considered. These welfare measures can be aggregated over the relevant population to be compared with the costs of achieving the specified improvements in order to determine net benefit, and hence justification for expenditure.

CONCLUSIONS

The results show that Bedfordshire residents on average placed positive value on, and wished to see a continuation of, existing standards of PROW service. It showed that welfare would decline significantly if standards fell. Confirming parallel work using expert domains (Angus et al., 2006), the citizen based CE showed that different attributes of the public good were valued differently by different user groups, with physical condition of surfaces and structures such as gates being the most important.

The CE technique has potential for wider application to assess PROW values by LGAs themselves, modified to suit local conditions. Standard estimates of willingness to pay could be transferred amongst similar LGA and PROW situations, such as typical urban or rural contexts. The estimates of WTP can be combined with estimates of the costs of providing PROW services and of likely changes in usage. This can support cost benefit analysis of PROW investments, helping LGAs justify and prioritise expenditure on public goods which target the needs of local communities. These are topics for further research.

REFERENCES

Angus A, Brawn M, Morris J, Parsons D, Stacey K, 2006, *The Social and Economic Benefits of Public Rights Of Way – Quantifying Value for Money* Final Report, Defra Project EPES 0506/07, Department for Environment, Food and Rural Affairs, London

Bennet J, Blamey R, 2001, *The Choice Modelling Approach to Environmental Valuation, New horizons en Environmental Economics* (Edward Elgar, Cheltenham, UK / Northampton, MA, USA)