Heterogeneity in the demand for recreational access – distributional aspects

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Abstract: This paper addresses the question of how to adequately model empirical variation in willingness to pay (WTP) for a public good and demonstrates the importance of appropriate modelling of heterogeneity for policy and decision making on public good provision. Even if on average voters are to gain from a specific decision (positive mean WTP), politicians may decide against it if the median voter stands to loose—and vice versa. We use a choice experiment, which among other attributes, includes an attribute suggesting enhanced public access in privately owned forests in Denmark. We focus our investigation on this attribute, due to its current policy relevance and find a remarkable and illustrative pattern. We compare results—in terms of WTP distributions—from four models *i*) a multinomial logit model, *ii*) a mixed logit model assuming a Normal distribution of WTP for access, *iii*) or assuming an Johnson S_B distribution and finally, *iv*) assuming a mixture of two Normal distributions to describe the distribution of WTP. The latter models have, by a margin, the best model fits. We find that across all models, the sample mean WTP for enhanced access is negative. However, the asymmetric models reveal that the empirical distribution does in fact have a positive median WTP. In the model assuming a mixture of Normals, we find a minority group of respondents expressing very negative mean WTP, whereas the large majority group has a significantly positive mean WTP—but a factor of 10 smaller in absolute terms. Consequently the mean and the median WTP have opposite signs and are quite different. This highlights the importance of analysing in detail the distribution of WTP before giving policy recommendations.

Keywords: Mean and median WTP, Johnson S_B, Mixing distributions, Access policy, Forests, Denmark.