IS WILLINGNESS TO PAY FOR VISUALISED LANDSCAPE AMENITIES SENSITIVE TO SCREEN SIZE WHEN USING WEB SURVEYS?

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Overview

It has become more and more common to use websurveys in ecoomic valuation studies relative paper based surveys. Web surveys are often cheaper and easier to administrate. Furthermore, websurveys makes it easier for the researcher to design complicated surveys with different kinds of experiments due to the flexibility regarding conditional questions and multiple survey designs. These kind of surveys are naturally answered by the respondent reading the questions from a screen and processing the presented information subsequently. Several studies have tested whether web surveys convey information differently and therefore subsequently lead to different estimates. However, to the authors knowledge, no studies have tested whether the size of the screen has any impact regarding conveying information differently. This might be of particular importance in relation to preference studies using visualisations/pictures to frame and support the preferences elicitation process.

If screen size influences preferences, after controlling for socio-demographics such as age, gender, education and income, a bias will be present and the stated willingness to pay will be a function of the screen size. Using a Choice Experiment study on the preferences for the location of onshore wind farms as the case, we test the effect of screen size on WTP and find some support of screen size bias.

Methods

Utilising stated preference data from a Danish national Choice Experiment study focusing on preferences for size/number of wind turbines (1x3MW, 2x1.5MW or 4x750kW turbines) and distance of windturbines to residential area (500 m or 1000 m), that includes information regarding the screensize of the respondents, we test whether a difference on screensize produces a difference on the estimated preferences. We test the influence of screen size on relevant preferences outcomes, protest behaviour ((Bonnichsen and Ladenburg, 2009; Meyerhoff and Liebe, 2006; Meyerhoff and Liebe, 2008), certainty in choice (Lundhede et al., 2009; Olsen et al., 2011), model error variance (Bradley and Daly, 1994; Milte et al.) and preferences on the extensive and intensive margins of choices (Bosworth and Taylor, 2012; Ladenburg and Olsen, 2014). Finally, we also tested the effect of the screen size on the reported abiliy to see the wind turbines on the screen.

Results

First of , the resulst point towards that the respondents with a smaller screen had more difficulties in seeing the different size of wind turbines at the two distances compared to the respondents with a larger screen. Focusing on the preference outcomes, screen size did not affect the propensity to state a protest preference, certainty in choice or preferences on the extensive margin of choice. However, we find that smaller screen size increases error variance in the first of four choice set but not in the 2nd, 3rd or 4th choice set. Furtermore, we find that smaller screen size increase the preferences for location 2x1,5 MW turbines at 1000 m relative to 500 m.

Conclusions

The test of screen size in an economic valuation study with visualisation of each alternative using preferences for wind energy as the case point toward that screen size have a significant influence on some of the relevant preference and model outcomes. Preferences on the intensive margins of choice and model error variance is thus sensitive to screen size. However, we do not find evidence of an effect on protest behaviour, preference on the extensive margin of choice and selfreported certainty in choice. Our results thus point that screen size biases cannot be neglected and that the choice of survey mode should be considered when carrying out preference studies using visualizations or that means to remedy the screen size bias should be considered.

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