THE IMPACT OF BELIEFS, MOTIVES AND WORLDVIEWS ON SOCIAL ACCEPTANCE OF RENEWABLE ENERGY TECHNOLOGIES

Robert Gennaro Sposato, Alpen-Adria-Universität Klagenfurt, +43 463 2700 4087, robert.sposato@aau.at
Nina Hampl, Alpen-Adria-Universität Klagenfurt, +43 463 2700 4085, nina.hampl@aau.at

Overview

With increasing demand for renewable energy, research focusing on social acceptance of the facilities necessary to harness the respective sources such as wind and the sun has firmly established itself over the past decades (Aitken, 2010; Fast, 2013). We built on this rich literature investigating factors from social-acceptance research but expand this set of variables with theoretical insights from risk perception literature, noteably ideology; most promintently discussed in cultural theory of risk and cultural cognition research (Douglas & Wildavsky, 1983; Kahan, Jenkins-Smith, & Braman, 2011). While the influence of ideology on individuals perceptions' and behaviour has received widespread scholarly attention regarding a variety of topical issues from vaccinations, to gun legislation and climate change, social acceptance of RET has not been one of them (Braman, Kahan, Slovic, Gastil, & Cohen, 2007). The study presented here is aimed at addressing this shortcoming in the literature by examining the predictive power of various constructs, including ideology, with respect to individuals' willingness to accept the building of renewable energy technologies (RET) in their vicinity.

Methods

The study presented here is conceptualized in a psychometric research tradition and builds on a representative sample of Austrian citizens (n=1,000) who were invited to complete an online-survey conducted in 2016. Data are analysed using multiple regression, entering respondents' willingness to accept the siting of RET in their neighbourhood as the dependent variable. Predictors include: RET belief, RET scepticism, general RET motives, and extrinsic RET motives. Ideology is measured using two scales measuring communitarianism/egalitarianism and individualism/hierarchism respectively. A variety of socio-demographic variables are included as well.

Results

The final regression model accounts for 29 % of total variance. As can bee seen in Table 1 RET belief and RET scepticism area most strongly associated with acceptance regarding the construction of RET in participants' community. Further we find that the more strongly participants feel about a variety of motives that generally support the use of renewable energies, the more supportive they are with regards to local RET power plants. Interestingly, the effect of extrinsic RET motives, which includes experiences of friends and family and status is non-significant. Regarding the effect of cultural orientation we find that individuals who value common goods and equality are more supportive of RET developments in their vicinity. No significant effect, however, was found for the combined individualism and hierarchism measure pointing towards the idea that acceptance of RET is an issue that does not polarize between individuals of different cultural orientations. With respect to demographic variables the statistical analysis indicates that older and female participants are less likely to accept the building of wind turbines and photovoltaic power plants in their neighbourhood.

Table 1

Linear model of predictors of RET acceptance

Variables	**Coefficient** [a]	**Standard error**	***p*-value**
Intercept	3.34***	0.13	0.001
Control variables			
Age	-0.08**	0.00	0.004
Gender	-0.06[†]	0.04	0.052
Education	0.00	0.02	0.977

Income	0.04	0.00	0.203
Explanatory variables			
Renewable energy technology belief	0.37***	0.03	0.001
Renewable energy adoption motives	0.22***	0.02	0.001
Renewable energy technology scepticism	-0.10**	0.02	0.006
Communitarian/egalitarian worldview	0.08*	0.02	0.027
Individualist/hierarchical worldview	-0.01	0.03	0.817
Renewable energy extrinsic motives	-0.03	0.02	0.362
Number of observations	1,000		

[a] Coefficients reported in this table are standardized beta.

* Correlation significant at $p < 0.05$ (two sided)

** Correlation significant at $p < 0.01$ (two sided).

Conclusions

This study contributes to the field by integrating existing theoretical stock from the rich risk perception literature (Douglas & Wildavsky, 1983; Kahan, 2013) with social acceptance of RET research investigating a potential extension of existing theoretical models (Devine-Wright, 2005; Wüstenhagen, Wolsink, & Bürer, 2007). Additionally, this research demonstrates the effect of novel measures of RET beliefs and motives, which might be further developed and investigated in future work. Our discussion focuses on implications for developers, policymakers and other practitioners involved in the framing of communication measures targeting the local community, and ultimately, in successfully siting RET.

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