

# Choosing not to Choose: Learnings about Consumers' Preferences and Switching Behaviour of Electricity Contracts for Emerging Economies

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## Overview

Since the beginning of the liberalisation of electricity markets in many developed countries during the 1990s, several developing countries have started to reform and restructure their electric power sectors to improve their performance and meet environmental policy goals (Joskow, 2006; IEA, 2016). Due to increased awareness and knowledge about environmental problems it was to expect that consumer will adopt an active role by choosing green electricity contracts and overtake responsibility for restructuring the electricity sector. However, switching rates in numerous countries remain low (Giulietti et al., 2010) giving rise to the question why it is hard to predict choices when neither material interests nor environmental concerns can be used to forecast or explain consumer behaviour. One possible explanation used in economics as well as in psychology is, that changes to the current electricity contract could lead to subjective utility losses of the customer that exceed the advantages of a new contract. This effect could lead to the absence of electricity contract changes, the so-called status quo bias (Hartman, 1990; Samuelson and Zeckhauser, 1988). While the status quo bias has been deeply investigated in the field of experimental economics, it has not been taken into account in consumers' preference elicitation methods, such as the discrete choice experiment. The central research question of this contribution is, if in repeating choice situation between varying electricity contracts the preselection of one of the contracts as the status quo leads to the result that this option is significantly more chosen than in choice situation in which no status quo option is pre-selected.

## Methods

So far studies on consumer preferences and switching behaviour of electricity contracts have not considered the status quo bias methodologically, which is potentially influencing consumer behaviour in reality. To implement a status quo in the experimental design, we developed a modified discrete choice experiment. Our modified DCE approach draws upon Lancaster's economic theory of value and random utility theory which serves as a widely used theoretical framework for preference elicitation methods (McFadden, 1973; Lancaster, 1966). To reduce complexity it was assumed that electricity customer gain utility from the attributes "Additional costs per month", "electricity mix" and "place of production" (Kaenzig, 2013). The electricity customers provide insights into their preferences by choosing one of five electricity contracts with varying attribute combinations in 15 different choice tasks. To investigate the status quo bias the participants of the experiment were divided into different treatment groups. In the status quo group, a electricity contract was pre-selected in each of the 15 choice tasks. The pre-selection was according to a lexicographic rule, and was either the most expensive, the most renewable or the most local electricity contract. In the control group there was no pre-selection and participants could "freely" choose their most favoured contract. The data is used to estimate individual part worth utilities for each attribute level. According to the theory of rational decision-making the part worth utilities between the control group and the status quo group should be the same. This effect should be also valid for the relative importance of the attributes, that derive from the attribute levels accordingly. If there are any status quo effects to be found the utilities should differ significantly, e.g. if the most expensive contract is preselected as a status quo the relative importance of the cost attribute increases while the relative importance of the other two attributes decreases. The same effect accounts for the case when the most renewable and the most local electricity contract is set as the status quo.

## Results

The experiment was conducted in the US state of California in August 2016. 584 participants were randomly assigned to one of the treatments. The nonparametric Mann-Whitney-U-Test is used to look for any differences between the individual part worth utilities of the attribute levels and the relative importance of the attributes. The results show that the individual part worth utilities of the attribute levels and the relative importance of the attributes between the control group and the status quo group differ significantly. Looking, for instance, at the results of the case when the status quo option is the most renewable electricity contract in comparison to the control group where no status quo was chosen. While the relative importance of the "electricity mix" attribute increases from 42.80 to

57.30 ( $p < .000$ ), the relative importance of the “electricity cost per month” decreases from 33.34 to 21.86 ( $p < .000$ ) and the relative importance of the “place of production” attribute decreases from 24.53 to 18.73 ( $p < .000$ ). Almost equal results are obtained in the case that the status quo is the most local electricity contract or the most expensive electricity contract. In addition, linear regression models support these empirical findings. These results show that independently of the determination of the status quo option, this seems to affect consumer behavior significantly.

## Conclusions

The results of the study on the existence of a status quo bias in the context of consumer switching behaviour in the electricity market are of great importance. Contrary to the assumptions of the rational choice model, the maximising choice of alternatives in decision-making is not independent of the type of framing as claimed by the invariance axiom. The results of our experiment show that the monetary and environmental valuation of the attributes are significantly affected by the procedure individuals had to follow when they were offered the opportunity to make a choice. Of course the empirical findings of this status quo bias are not the only possible explanations. As Frederiks et al. (2015) mention there are potential more biases of consumers when they have to make rational decisions in proenvironmental situations such as loss and risk aversion, satisficing and sunk costs. These results are twofold for future investigations. On the one side emerging economies and their electricity providers can use these insights to customize their electricity products to meet their energy demands and the development of the energy transformation process more effectively. If the choice of the electricity contract is biased by a status quo, policy implications like defaults or nudges into a more sustainable, energy-friendly or local direction can be considered, calling for measures of libertarian paternalism (Thaler and Sunstein, 2003). This form of state coordination overcomes the limitations of human rationality and favors socially desirable developments (Momsen & Stoerk, 2014). At the same time, the freedom of the consumers or citizens of state should not be restricted. On the other hand these findings contribute to the development of consumer preference elicitation methods using discrete choice experiments. According to the results only slight changes to the decision situation - by introducing a status quo option - changes the course of the preference function. This deviation needs to be addressed and considered in future environmental and energy-related investigation of consumer choice. Practitioners and policymakers should be encouraged to consider this persistent cognitive bias when deciding on how to best transform consumer's intention to consumers' action.

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