

Introduction to Panel 6

Dynamics of consumption

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THE DYNAMICS OF CONSUMPTION panel assembles papers from very different disciplines, ranging from anthropology to econometrics, with a majority of empirical studies that give detailed description of the complexity of the dynamics of energy consumption. The main trend of the presented studies on energy consumption is thus result-oriented, probably because of funding opportunities and maybe also because of a tacit wish from the social sciences, newer in the field of energy, to challenge traditional disciplines in the field whose results are more operational and more prescriptive.

RESIDENTIAL ENERGY CONSUMPTION

The majority of the studies that are reported on in this panel have the household as unit of analysis. This is rather new in social studies about energy consumption as pointed out by Aune and Moezzi (2003, p. 1070).

Several papers presented here may be referred to as Demand-Side Management (DSM) and they analyse metering data and/or survey data to study how customers respond to dynamic electricity prices or direct control of appliances at certain times or other incentives. Papers in this line of thoughts include the study of P. C. Næsje, T. Andersen and H. Sæle for Norway, E. Lampaditou and M. Leach for the United Kingdom. These researches point to behavioural or attitudinal factors that influence electricity consumption: five attitude dimensions are revealed in the Norwegian survey (importance or not of comfort, economic profit versus environment concern, indulge versus sober inclination, preference for individual freedom or for state regulation, home improver versus relaxed dweller). On the other hand, E. Lampaditou and M. Leach base their analysis on a recent Time-Use Survey (these surveys are carried in a lot of Euro-

pean countries). In this field of demand-size analysis, an innovative and fruitful approach is followed by H. Devine-Wright and P. Devine-Wright who have interviewed a number of electricity industry stakeholders and analysed their representations about the demand side: an information deficit model of human behaviour is still largely shared, although some electricity consumers become also co-producers with the deployment of renewable technologies. These commonly-held representations and expectations about the typical electricity consumer will contribute to constrain both the evolution of the electricity-supply system and consequently, the margins of "choices" for individual customers/consumers.

Other papers are devoted to a detailed description of the practices, opinions and attitudes of individual energy consumers. A comparison on these matters through 15 European countries is made by D. Stead, who reveals that reported actions are higher than reported intentions: many Europeans believe that they have already done what they can, even though only one respondent out of five reported taking action on three or four of the areas of interest (home insulation, heating reduction, home-appliance efficiency, car fuel use). This paradox is further examined for Sweden by C. Isaksson, for the United Kingdom by J. Keirstead and for Belgium by L. Moreau and A.-L. Wibrin. C. Isaksson presents the occupants' experience of purchasing and living in low energy houses. The houses are built to show that it is possible to maintain good indoor climate with use of only half of the energy usually used. The households are positive towards the low energy profile, but it was not the reason for buying this house. Drawing upon a recent survey on households with a photovoltaic installation, J. Keirstead suggests that further energy-savings can be realised by these selected

households. His approach translates at a micro level the focus on further benefits, a line of thoughts followed by a recent OECD publication (2004). Not surprisingly, the study based on a representative sample of the Belgian population leads to a different conclusion: for L. Moreau and A.-L. Wirbrin, there are no clear or linear relationships between energy-related practices, knowledge on global warming and ecological motivation: these results question the theories that assume actor rationality. Indeed, individual consumers are embedded in broader relationships and in social contexts that shape their daily practices (Guy and Shove, 2000, p. 64). Choices made decades earlier in energy policy may well better explain the present energy consumption of households than hypothetical "choices" made by individual (and again hypothetical) "decision-makers": this conclusion is drawn by F. Bartiaux and K. Gram-Hansen after a detailed and comparative search of potential factors for explaining the higher electricity consumption per household in Belgium than in Denmark.

Drawing upon a survey on Dutch households, R. Bruel and J. Hoekstra identify among the survey respondents two distinct socio-economic profiles with different factors associated to energy consumption. The authors then match these segments of the target population and different policy instruments. By showing that different target groups think and act differently, they remind us that the "general public" is not one unified group. What works for one group does not fit another group. To be able to segment the market (Pfau and Parrott, 1993) seems to become increasingly important in the field of energy savings campaigns. Analyses from marketing and communication theory are limited in the papers, and they could perhaps bring a better understanding for reaching the targeted audience with different messages.

Some papers join empirical results and a theoretical discussion or the introduction of new concepts or new methodologies. The relevance for energy-consumption studies of Veblen's and Bourdieu's theory on distinction is discussed in K. Gram-Hansen paper and this theory is inserted in a larger model, called the inertia model, by O. M. Jensen who shows the paradox that conspicuous consumption, which is the essence of being a new house owner, rarely supports energy savings. H. Throne-Holst proposes the concept of efficiency of consumption to address the rebound effect in households' energy consumption; for him, when studying the efficiency of consumption, sufficient attention should be given to the following steps: planning of purchase, moment of purchase, use, durability, repairs, purchase of supplements, disposal. The socio-technical perspective is represented with the paper of W. Glad and with the presentation by D. Shipworth of the methodology underlying models of Bayesian Belief Networks, which offer considerable potential as a transdisciplinary method for knowledge synthesis across the social, economic and behavioural sciences.

Beside this paper, the only few papers that have a multi-disciplinary scope are reporting the design of tailored information systems to energy consumers and the energy-saving results obtained in Japan (paper by T. Ueno, R. Inada, O. Saeki and K. Tsuji) and in the Netherlands (H. van Elburg's paper): information and communication technology is associated with marketing and behavioural studies. Both papers

evaluate the influence of this information system on further residential energy consumption.

INFORMATION RELEASE

L. Harrington, R. Foster and C. Edlington describe in their paper the energy efficiency websites of the Australian government and how these websites are now used to manage all aspects of government energy efficiency programs in Australia. The intention is to provide regulators, manufacturers and public or private consumers with a lot of information on energy efficiency of products and appliances. An analysis of the effects of this system would be quite interesting to evaluate the importance of the "information barrier" – the concept of barrier is often used in behavioural studies in energy consumption.

This topic of information release is also addressed in L. Nielsen's paper, who gives a precise definition of consultancy in general and in the field of energy and shows the differences between consultancy and information. The 2002 European Directive on the Energy Performance of Buildings is scheduled to be transposed in national legislations for the beginning of 2006, at the latest. In this context, more research from the social sciences is needed in this area of energy consultancy to evaluate it in terms of bringing about change of behaviours: does it work or not? Why? Are there other factors that intervene as other determinants of change or reluctance to changes?

ENERGY DEMAND IN DEVELOPING COUNTRIES

Two papers take on this topic. M. McNeil and V. Letschert model the relationship between income and appliances for several Central and Southern American countries as well as for South Africa and they predict national ownership rates with a macroeconomic model. With a focus on different types of appliances for clothes washing available in China, J. Lin and M. Iyer show how technological choices and standards are leading to rapid cultural change (hot wash instead of cold wash) and potential huge increase in energy use in China.

LIMITATIONS

The papers presented in this panel should not be considered as representative of the studies on the dynamics of consumption nor are they representative of policies and actions for energy savings. Indeed, several 'barriers' may have limited the access to this panel: maybe there is some cultural and linguistic obstacle (it is striking that as in 2003, there are no paper from Mediterranean countries), probably there are financial limitations for NGOs presenting their actions.

WHAT WORKS AND WHO DELIVERS?

To implement efficient mechanisms governments and others have to take a lot of different aspects into considerations. The papers give some guidance and show that this is not an area where the solutions are fixed and universal. The situations and the target groups are different, and this must be taken into consideration. The answers of what works are not found in one single paper, but the panel as a whole gives us a lot of inputs to consider before designing and promoting incentives.

A main obstacle is maybe the lack of interest in energy savings and energy efficiency among the general public. A lot of people agree that energy saving is important, but they are busy living their lives, running their businesses, and have to make decisions in an instant. They have a lot of roles, and sometimes these can not be combined. Being an “energy saver” competes with being a professional, a good parent, a housewife etc.

A lot of elements in the society increase the use of energy, and some of them are hard to fight back, as the declining number of persons per household, the hygiene standards and so on. H. Throne Holst discusses them as they set the stage for the rebound effect. Therefore, the focus on households and on individual behaviours and opinions is sometimes too narrow and it can lead to overlook how these behaviours and opinions are socially shaped. For example, the influence of commercial practices and advertisements is a topic that is unfortunately not addressed in the panel this year. As noted by S. Darby, “consumers are never just consumers. Talking about them as such conveniently ignores (...) the limitations on choice that are set by political decisions on energy supply and use”. Other limitations are set by norms and conventions on comfort, convenience and excellence (Shove, 2003).

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