

## Predicting behaviour - energy efficiency types in organizational settings

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Targets of the European Union prescribe nearly-zero energy by the end of 2018 for all new buildings used and owned by public authorities. Although sophisticated energy efficient construction and technology is available, energy-related behavior of the building users often counteracts efficiency efforts. Thus, there is a need to build general awareness for energy efficiency among building users and to identify effective approaches how to engage building users in everyday energy saving. A lot of studies have been conducted in the field of energy-related user behaviour with the aim to investigate predictors or to examine the effectiveness of intervention strategies, which aim at changing behaviour. Most of these studies address energy consumption in the private household context.

We draw on these studies as proxies to inform our understanding about predictors and behaviour in the organizational context. The difference between the residential and the organizational setting is, that among large groups of co-workers who jointly use appliances and energy systems, individual responsibility diffuses in social dilemma dynamics, although collective action would be necessary to reduce energy consumption. Indeed, previous studies did not sufficiently elaborate on public buildings in the organizational setting. Therefore, there is a call for more work on how community aspects influence energy-related behaviour. We developed own items (individual, group and organizational goal as well as social perceived behavioural control) which take the social dilemma regarding the need of collective action for energy efficient behaviour, especially in the organizational setting, into account.

The aim is the investigation of occupants' energy-related behaviour in the organizational context in order to identify energy efficiency types. Based on these types we examine different behavioural determinants (already established ones as well as newly self-developed ones).

By conducting a survey we examine energy-related behaviour (e.g. use of heating, cooling, lights and appliances) behavioural determinants (based on the Theory of Planned Behaviour and the Norm Activation Model) and socio-demographic characteristics of users in different buildings related to organizational settings. Energy efficiency types as well as their description in terms of characteristics in behavioural determinants are identified by cluster analysis.

Three energy efficiency types ranging from very inefficient to efficient in the workplace as well as the academic organizational context were identified also differing in their characterization of behavioural determinants. Determinants' scales dealing with the social dimension consistently show that the least efficient types have lowest values meaning that this type does not have the impression of an organizational or group goal regarding energy efficiency and that there is no social pressure perceived to behave energy efficiently.

The identification of energy efficiency types with relevant behavioural determinants leads to substantive points of references to create concrete intervention strategies for different target groups stimulating behavioural changes towards energy efficiency in organizational settings.