

**Title: Watching how they are talking – Analyzing verbal behavior in two non-residential building projects to save energy by means of user participation**

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When organizations implement energy saving measures, building users are not always ready for the organizational change process (By, 2007). While user motivation is crucial for facilitating the change process, resistance to change inhibits well-intended measures. Many organizations use participatory interventions in order to increase participation and motivation of building users (Kauran, 2013; Griesel, 2004). We propose a behavioral approach to measure motivation and resistance to change in terms of the observable verbal behavior: While 'change talk' expresses the willingness to adopt behavioral changes, 'sustain talk' expresses resistance and signals that any efforts to promote behavior change are worthless. Our approach focuses on the dynamic interactions between change agents and building users. Therefore, we apply interaction analysis - a scientific procedure that allows investigating communication exchange on an utterance-by-utterance level (Mangold, 2010). We show that this method is particularly useful to understand how to increase users' participation and user motivation within energy saving projects.

In our first preliminary study, we analyzed three simulated interactions from a kick-off workshop within a European energy saving project on Re-Commissioning. Re-

commissioning is a form of building quality management that involves technical and behavioral improvements in building operation and maintenance in order to improve cost and energy performance. It requires interaction with building occupants, maintenance personnel and building owners, as changes to be implemented may affect building operations and standard procedures. Energy advisors had the task to discuss energy saving measures with their conversational partner. Conversational partners were instructed to be highly resistant to the proposed measures. We used an observational measure originating from psycholinguistics and research in motivational interviewing (cf., Klonek & Kauffeld, 2012) in order to classify participants' motivation. We coded 208 micro-events and classified participants' verbal behavior. Results revealed high variability of change recipients' resistance to change and indicate phases within the interaction in which motivation to change was very high. We discuss how simulated encounters and feedback of the interaction analysis can be used as a training tool for Re-Co advisors and, more generally, for those who have to communicate energy saving measures.

In our second field study, we analyzed user participation in a kick-off workshop aimed to reduce energy consumptions in a Chemistry laboratory. Interaction analysis was used to test specific design characteristics of the workshop. User and change agent participation was operationalized by counting verbal utterances of participants. In total, we counted 873 micro-events and related user participation to the design-specific phases of the workshop (i.e., "informing about energy saving measures" versus "user-centered method"). Our results indicate that users showed significantly higher participation within the user-centered phase of the workshop in comparison to information-centered phases.

Based on our observational studies, we discuss implications for enhancing participatory workshops and motivation to change in non-residential energy-saving projects. We further propose that change talk may be an active ingredient in the implementation of energy saving measures and present ways how energy advisors may influence user motivation by means of being more attentive to their verbal behavior.

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