

TOWARDS A DIFFERENTIATED UNDERSTANDING OF CITIZENS' ENERGY-SAVING BEHAVIOR

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1. INTRODUCTION

Collaboration between cities and science supports the ongoing energy transition. Local authorities face the challenge of implementing interventions to support and foster a shift in citizens' energy consumption behavior while having to adhere to budgetary restrictions. A differentiated understanding of the determinants that drive behavior change towards a more sustainable energy consumption might help them to choose and administer more targeted, and hence more efficient interventions. Therefore, we collaborated with the administrations of two Swiss cities to develop a framework that explains the process and determinants of behavior change for different types of energy-relevant behaviors. The framework is based on a social-psychological background that combines phase models of behavior change [1] with research on determinants of pro-environmental behavior [2] for different types of pro-environmental behaviors (bike riding; energy-efficient homes; meat consumption; prolonged usage of mobile phones). First, we introduce the psychological background and derive propositions. Second, these propositions are analyzed in an empirical study among the citizens of a Swiss city. Finally, we discuss implications for the design of targeted and effective interventions.

2. PSYCHOLOGICAL BACKGROUND AND PROPOSITIONS

A considerable number of studies in environmental psychology and related disciplines investigate and describe determinants of pro-environmental behavior (for an overview see [2]). There is considerable agreement on the importance of attitudes, norms, emotions, perceived behavior control when predicting pro-environmental behavior [2]. However, generally those previous studies do not account for the dynamic nature of behavior change and disregard the diverging importance of the above-mentioned psychological determinants along the process of behavior change. The present paper addresses this gap in the literature and proposes a more differentiated understanding of pro-environmental behavior, based on the combination of psychological determinants (e.g. attitudes, norms) and phase models of behavior change. These models explain behavior change along a linear process with different phases also in the context of pro-environmental behavior [1]: the predecisional action phase (1), preactional phase (2), actional phase (3), and postactional phase (4). Moreover, they propose that within each stage different psychological determinants predict behavior change [3]. Hence, we derive the following proposition:

P1: The influence of psychological determinants on pro-environmental behavior varies

depending on the target groups' phase of behavior change.

Additionally, the present paper draws on previous research that differentiates between different types of pro-environmental behavior, clustering conservation behavior based on distinct dimensions (e.g. curtailment vs. efficiency; behavioral vs. technical; repeated vs. investment; difficult vs. easy) [4,5]. Consequently, this research suggests that the influence of the psychological determinants depends on the type of pro-environmental behaviors. Therefore, we propose the following relationship:

P2: The influence of psychological determinants on pro-environmental behavior varies depending on the type of pro-environmental behavior.

3. EVIDENCE FROM AN EMPIRICAL STUDY

In order to test these propositions a survey among randomly selected citizens of a medium sized Swiss city was conducted ($N = 1798$; response rate of 51%). The questionnaire included the following constructs: Social norms, personal norms, anticipated emotions, attitudes, perceived behavior control, behavioral intentions and self-reported environmental behavior. All measures have been used in previous research and have been found to measure the respective constructs reliably [1]. Additionally, we measured an individual's phase in the behavior change process. All of these constructs were related to the four different types of energy consumption behavior that had been determined as most relevant in collaboration with representatives of the city administrations: (1) bike riding instead of using a car; (2) energy-efficient homes; (3) reduced meat consumption; (4) prolonged usage of electronic devices. Results – based on a multi-nominal logit approach – confirm propositions: First, findings corroborate that the influence of the psychological determinants varies along the process of behavior change. Second, the empirical evidence substantiates that the influence of those determinants depends on the type of pro-environmental behavior.

4. CONCLUSIONS

This study adds to existing research in several ways. First, this approach enhances our understanding for pro-environmental behavior because it combines the dynamic nature of human behavior by accounting for the procedural character of behavior change not only with psychological determinants (e.g. attitudes, norms) and but also with the type of behavior addressed (e.g. bike riding instead of using a car). Second, the empirically verified model of behavior change will provide a heuristic framework that helps to segment the population and to choose appropriate interventions along the process of behavior change. This should allow local authorities to address the population segments with more impactful interventions based on citizens status in a certain behavior change phase and adapted to the type of pro-environmental behavior.

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