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Adoption of Sustainable Technologies: A Mixed-Method Study of German Households

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Abstract

Although technologies spurred by the “internet of things” are increasingly being introduced in homes, only a few studies have examined the adoption or diffusion of such household technologies. One particular area of interest in this context is electricity consumption, especially the introduction of smart metering technology (SMT) in households. Despite its growing prominence, SMT implementation has met with various challenges across the world, including limited adoption by consumers. Thus, this study empirically examines the antecedents of SMT adoption by potential consumers. Using a mixed-methods design, the study first unearths the SMT-specific antecedents, then develops a contextualized model by drawing on theories from motivational psychology and the antecedents identified earlier, and then tests this model using a large-scale survey of German consumers. Results provide support for many of the hypotheses and highlight the importance of motivational factors and some household demographic, privacy, and innovation-related factors on consumers’ intention to adopt SMT.

Keywords: Household technology adoption, smart meter technology, mixed methods, motivational psychology, sustainability