

Smart Energy Consumers: An Empirical Investigation on the Intention to Adopt Innovative Consumption Behaviour

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Abstract : The aim of the present study is to investigate consumers' determinants of intention toward the adoption of Smart Grid solutions and technologies. Ajzen's Theory of Planned Behaviour (TPB) model is applied and tested to explain the formation of such adoption intention. An exogenous variable, taking into account the resistance to change of individuals, was added to the basic model. The elicitation study allowed obtaining salient modal beliefs, which were used, with the support of literature, to design the questionnaire. After the screening phase, data collected from the main survey were analysed for evaluating measurement model's reliability and validity. Consistent with the theory, the results of structural equation analysis revealed that attitude, subjective norm, and perceived behavioural control positively, which affected the adoption intention. Specifically, the variable with the highest estimate loading factor was found to be the perceived behavioural control, and, the most important belief related to each construct was determined (e.g., energy saving was observed to be the most significant belief linked with attitude). Further investigation indicated that the added exogenous variable has a negative influence on intention; this finding confirmed partially the hypothesis, since this influence was indirect: such relationship was mediated by attitude. Implications and suggestions for future research are discussed.

Keywords : adoption of innovation, consumers behaviour, energy management, smart grid, theory of planned behaviour

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