

Perception of and Intentions to Protect against Risks of Ubiquitous Information and Communication Technologies: Towards a Typology Using Mixture Distribution Modeling

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Introduction

Ongoing technological trends in the field of information and communication technologies (ICT) have fostered a new generation of ICT devices. These devices are shaped by a decrease in their size accompanied by an increase in their power. This allows prospective ICT components to be embedded in everyday objects, as well as their context sensitivity and their adaptiveness to be enhanced.

Such technological possibilities evoke visions called “ubiquitous computing”; visions of environmental settings pervaded with ICT, which enable communication and the exchange of information anytime and anywhere. The best known examples of such settings are smart homes, electronic shopping, and ubiquitous-ICT-supported administration in the health sector (electronic health records).

However, it must be expected that the pervasion of daily life with ubiquitous ICT carries potential risks, such as ecological risks (e.g., increased consumption of power and natural resources), social risks (e.g., increase in the digital divide), and personal risks (e.g., loss of privacy and data protection).

These risks may be prevented by a responsible and precautionary use of prospective ICT applications. A first step in this direction is an early sensitization of people to the risks, as well as improving their capacity for protective behavior.

The aim of the present study was to gain insights into individual risk perception and protective intentions in order to identify different potential reaction patterns to the risks

of ubiquitous ICT. Thus we asked whether we could identify different target groups for risk and protective information.

Method

Data was collected in a representative survey of 5030 German residents in the year 2007. With the help of a quantitative questionnaire, face-to-face interviews were conducted in order to assess current use of ICT, appraisal of current and prospective ICT, behavioral intentions, and demographic information.

Results and Implications

With the help of Rasch and latent class analysis five subgroups of people were identified who differ in their perception of personal, social and ecological risks, the negative emotions felt, the responsibility they attribute to institutions for risk protection, their non-protective reactions, the coping options appraised, and their protective intentions. These five groups can be characterized by differing demographical attributes (such as gender, age, income, and education), and in the credibility they attribute to different information sources (TV, newspapers, online news, etc.)

Our results lead to first implications for the development of target group specific risk information.

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