Modeling Values of Internet of Things (IoT) Consumers' for Privacy Decision-Making

Emergent Research Forum Paper

Romilla Syed
University of Massachusetts, Boston
romilla.syed@umb.edu

Abstract

The Internet of Things (IoT) has been gaining popularity; however, consumer privacy remains a challenge. Particularly, the lack of knowledge about IoT consumer's privacy concerns coupled with uncertainty about the protection mechanisms provided by IoT manufactures inhibits one's ability to make self-interested privacy decisions. Informed by multi-attribute utility theory, this study presents a decision model referred to as Privacy Expectation-Perception (EP) Utility Model. The model explicates consumers privacy concerns represented as privacy protection objectives and calculates the expected utility of achieving the objectives to the best level. The model is applied to assess the achievement of privacy objectives for a set of alternatives (i.e. IoT devices) and calculates the perceived utility of the IoT devices. This analysis provides privacy expectation-perception utility gap, an indicator of how well an IoT device achieves one's privacy expectations. This study is expected to contribute to privacy concern and privacy decision making literature. The utility model will be a useful decision aid for both IoT consumers and manufacturers to strategize about privacy protection.

Keywords (Required)

Privacy Concerns; Privacy Decisions; Utility Model; Internet of Things.