

Consumer awareness and perception to innovation: smart garment labels

Ada Traumann^{1*}, Marina Järvis^{2,3}, Merily Olljum¹

¹Institute of Engineering and Circular Economy, TTK University of Applied Sciences, 10135 Tallinn, Estonia

²Estonian Entrepreneurship University of Applied Sciences, Suur-Sõjamäe 10a, 11415 Tallinn, Estonia

³Tallinn University of Technology, Ehitajate str 5, 19086 Tallinn, Estonia

*Corresponding author: ada.traumann@tktk.ee

ABSTRACT

It is believed that smart clothing as well as smart labels has the potential, but at present, it is not scarce scientific information about advantages and possible challenges. The aim of this research was to develop a digital clothing label based on a survey conducted among Estonian consumers on the readiness of a digital solution. In today's consumer society, everyone is exposed to a clothing label that provides instructions for the care of clothing and informs about the fibrous composition of the product. The labeling is important information for the subsequent processing of the product from a circular economy point of view.

The current study is an empirical study of both, consumers' awareness, perception and attitudes toward smart garment labels. The study explores on a sample of 276 consumers their satisfaction and an experience with clothing labeling, their awareness and readiness for digital clothing labeling as well we consumer-specific criteria for digital clothing labeling. The survey confirmed the readiness of consumers to use digitized clothing labels. However, several specific features of perception to smart garment labels, such as provided information about usefulness and risk for health, clear profit to be gained from using smart labels, improved quality and functions or design. Respondents of 72% are found to influence the readiness of consumer acceptance of innovation solutions and consumption of smart clothing and labels. As a part of the current research one possible NFC technology for digital clothing labeling was developed in cooperation with an IT company. From a consumer perspective, machine-readable digital clothing labeling facilitates direct communication with a washing machine or other home appliance. By further developing digital clothing labeling, the technology can be used in logistics and inventory management. As an added value, the legibility of clothing labels for different groups of society such as the visually impaired would be highlighted. The care instructions on the label would extend the life of the product by following the correct care regime and increase the consumer's responsibility for an environmentally friendly lifestyle.

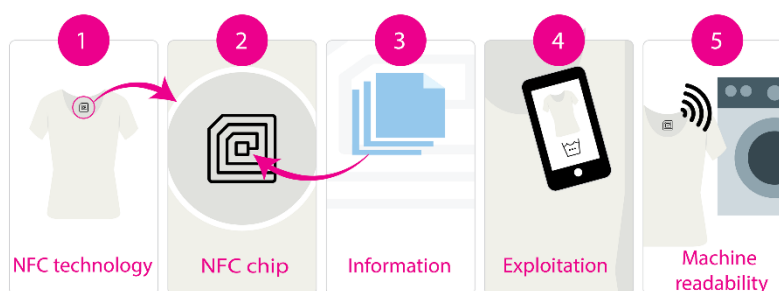


Fig. 1 The scheme of digital machine-readable labeling

If in the future, all clothing products will be equipped with a digital label, it would be used for a great many other applications that are sustainable for society and the environment.

Keywords: digital clothing label, NFC technology, machine readability, smart clothing