

Pre-Implementation Technology Acceptance for In-Car Input Modalities

Sebastian Osswald, Manfred Tscheligi
Christian Doppler Laboratory for "Contextual Interfaces"
HCI & Usability Unit, ICT&S Center
University of Salzburg
Sigmund-Haffner-Gasse 18, 5020 Salzburg, Austria
{sebastian.osswald, manfred.tscheligi}@sbg.ac.at

ABSTRACT

Using a modified Technology Acceptance Model (TAM), a online survey was conducted to examine patterns of technology acceptance and perception of three in-car interaction modalities situated on the steering wheel. Combining the qualitative findings of 422 responses with the calculated TAM scales lead to a set of interlinked acceptance factors supporting future in-car acceptance research.

Categories and Subject Descriptors

H.5.2 [Information Interfaces and presentation]: User Interfaces — *evaluation/methodology*

Keywords

Technology Acceptance, In-car Interfaces

1. MOTIVATION & METHOD

Taking a closer look on the drivers' general attitude towards in-car technology, a technology acceptance questionnaire was used [2], modified for fitting the context car. Three innovative in-car input modalities, namely a touch display, a row of buttons and a combination of both items were presented in this study. Assessing the users willingness to employ the presented technologies, the user acceptance factors: behavioral intention of use (BI), perceived usefulness (U) and perceived ease of use (EOU) were computed [1]. Descriptions and illustrations (e.g. Figure 1) were also provided as well as open ended questions.

2. RESULTS

301 Participants (115 female, 186 male) completed the online survey for all three TAM ratings, the participant age ranged from 17 to 76 ($M = 28.55$ years; $SD = 9.46$ years). Before computing the TAM scales the internal consistency was calculated and the Cronbach's alpha was > 0.8 for all items. Subsequently a repeated measures ANOVA was conducted. The results show a significant main effect for the



Figure 1: Input Modality: Touch Display Steering Wheel

within subject factor ($F[12,576] = 15,571$, $p = .005$) resulting in a greater acceptance of the touch display. Factors influencing acceptance emerged from the general low values for EOU and BI contrasting a high PU value. Related to the strong participant apprehensions found in the qualitative data, the analysis shows that perceived functionality, perceived security and perceived quality cover most of the users apprehensions towards all innovative input modalities.

3. CONCLUSION

This study investigated in-car input modality acceptance in a pre-implementation stadium. The main contribution of this paper is to propose a set of extracted factors that could influence the acceptance process and envisaged for the objectification phase contributing the in-car acceptance process modelling.

4. ACKNOWLEDGEMENT

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5. REFERENCES

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