

AI-based emotion analyses in virtual meetings

Which factors influence employee acceptance?

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The research
behind the
paper



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Background

Virtual meetings have become an integral part of everyday working life in many companies. However, the digital form of collaboration also brings with it new challenges. One disadvantage of digital meetings is that they are significantly more limited than face-to-face meetings, especially in terms of non-verbal communication. Due to the limited space on computer screens, the participants in a video conference can often only be shown in small face tiles, which makes it difficult for the participants to recognise each other's body language and make eye contact.

Against this backdrop, AI-based emotion analysis from voice data is becoming increasingly important in virtual meetings. Thanks to recent advances in the field of artificial intelligence (AI), trained software programmes are now able to recognise people's emotions with the help of voice analyses. Such software could therefore be used in video conferences to give employees feedback on the reactions shown

by their colleagues. The results can, for example, be presented graphically in the form of a dashboard overview (see illustration) and thus made available to participants. An emotion analysis dashboard could contain information about which emotions occurred particularly frequently or how emotional past meetings were overall.

But what about the acceptance of such technologies among employees? Emotion recognition is a controversial topic, as sensitive and personal employee data is analysed.

Subject of investigation

We have developed a survey instrument that integrates findings from various existing theories in order to record the intention to use and the reasons for this. This brings together findings from the fields of health economics, business informatics and psychology. At the heart of the survey instrument is the idea of duality, which represents people's trade-off between the situation without an emotion analysis and the use of the software. Employees can weigh up the



various advantages and disadvantages of the two situations. For example, not analysing emotions would be associated with limited non-verbal feedback, but at the same time there would be no „monitoring“ of their own emotions.

On the other hand, if the software is used, the analysis can be assessed as useful in order to improve mutual understanding in video conferences, but at the same time its use could also cause anxiety and discomfort. In the two options, use or non-use of the software, various aspects are weighed up that ultimately lead to an intention to use the software or not. Between the two dimensions is the perception of social norms with regard to technology, which encourage or discourage a person from deciding in favour of one or the other dimension.

Results of the study

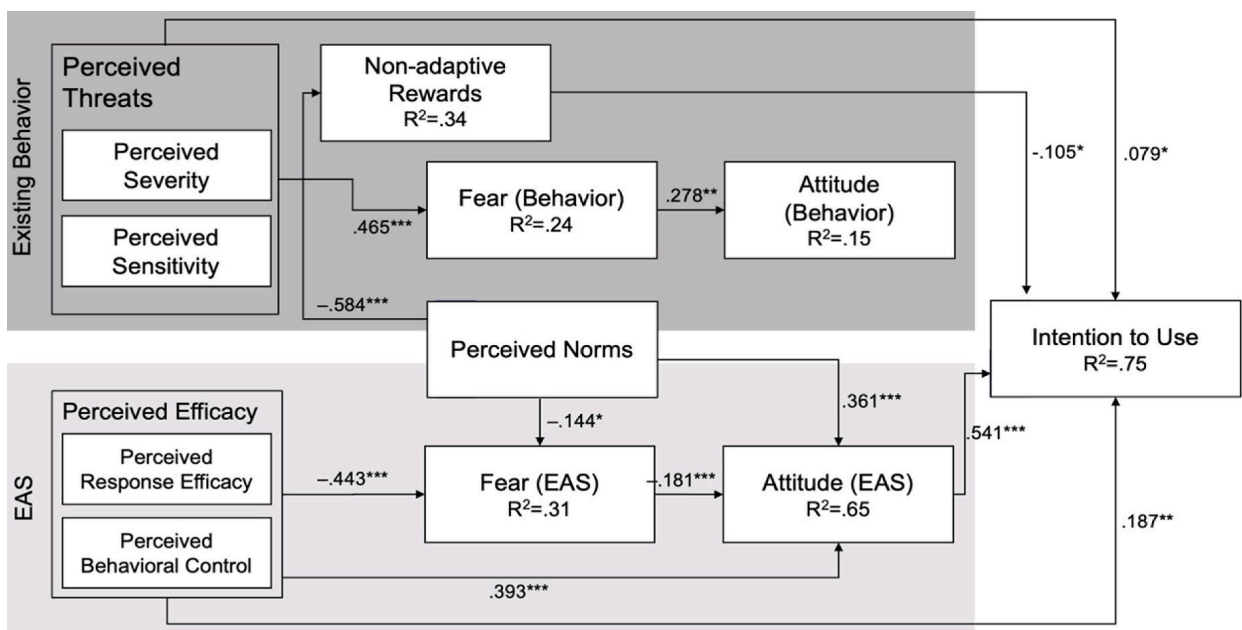
To test the theory, we conducted a survey of a total of 470 employees in Germany between 2021 and 2023. The participants were presented with a fictitious scenario in which

they could decide whether to use the emotion analysis tool. 54.8% of respondents stated that they would generally make use of the support provided by . The other 45.2 % of respondents, on the other hand, refused to use it.

The results also fundamentally underline the relevance of the duality approach, i.e. both the employee's assessment of the advantages and disadvantages of the software and the assessment of the previous situation without emotion analysis are relevant for the decision to use AI-based emotion analyses. The survey showed that employee attitudes, perceived norms, perceived effectiveness and the perceived threat of a lack of non-verbal feedback are significant factors influencing the acceptance of such technologies. Interestingly, data protection concerns were less of a reason for rejection than expected.

Conclusions for companies & software developers

The results of the study provide some useful in-



Results of the study (* p<0,05, ** p<0,01, *** p<0,001)

sights that are relevant both for companies and for the developers of AI-supported emotion analysis. It became clear that many employees are generally interested in using an emotion-recognising assistance system to improve digital meetings. At the same time, however, it also emerged that some employees have fears that lead them to reject the technology. For companies, this means that they need to take the concerns and fears of their employees into account when introducing emotion analysis technologies. In order to increase the willingness to use the technology, companies should endeavour to reduce these fears and the uncertainty of their employees. A key component of this can be to ensure that the application is as transparent as possible. Before an emotion recognition tool is used in a virtual meeting, it should therefore be clearly defined for what purposes the analysis results will be used and which decisions they will serve as a basis for. Another prerequisite should be that the consent of all video

conference participants is obtained in advance.

Conclusion

AI-based emotion analysis in virtual meetings offers many opportunities for more effective communication and collaboration. The study shows that a positive attitude among employees, supported by transparent communication and consideration of data protection aspects, is crucial for the successful implementation and utilisation of this technology. Companies that take these aspects into account can benefit from the advantages of this innovative technology and at the same time gain the trust and acceptance of their employees.



Prototypical Dashboard

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