

Toward Proactive Support for Older Adults: Predicting the Right Moment for Providing Mobile Safety Help

Tamir Mendel, Roei Schuster, Eran Tromer and Eran Toch

1. INTRODUCTION

Proactive support is when support systems recognize the user's willingness to receive support. The existing literature investigated reactive support in which users initiate support requests themselves in mobile safety situations. However, older adults are less able to detect security attacks.

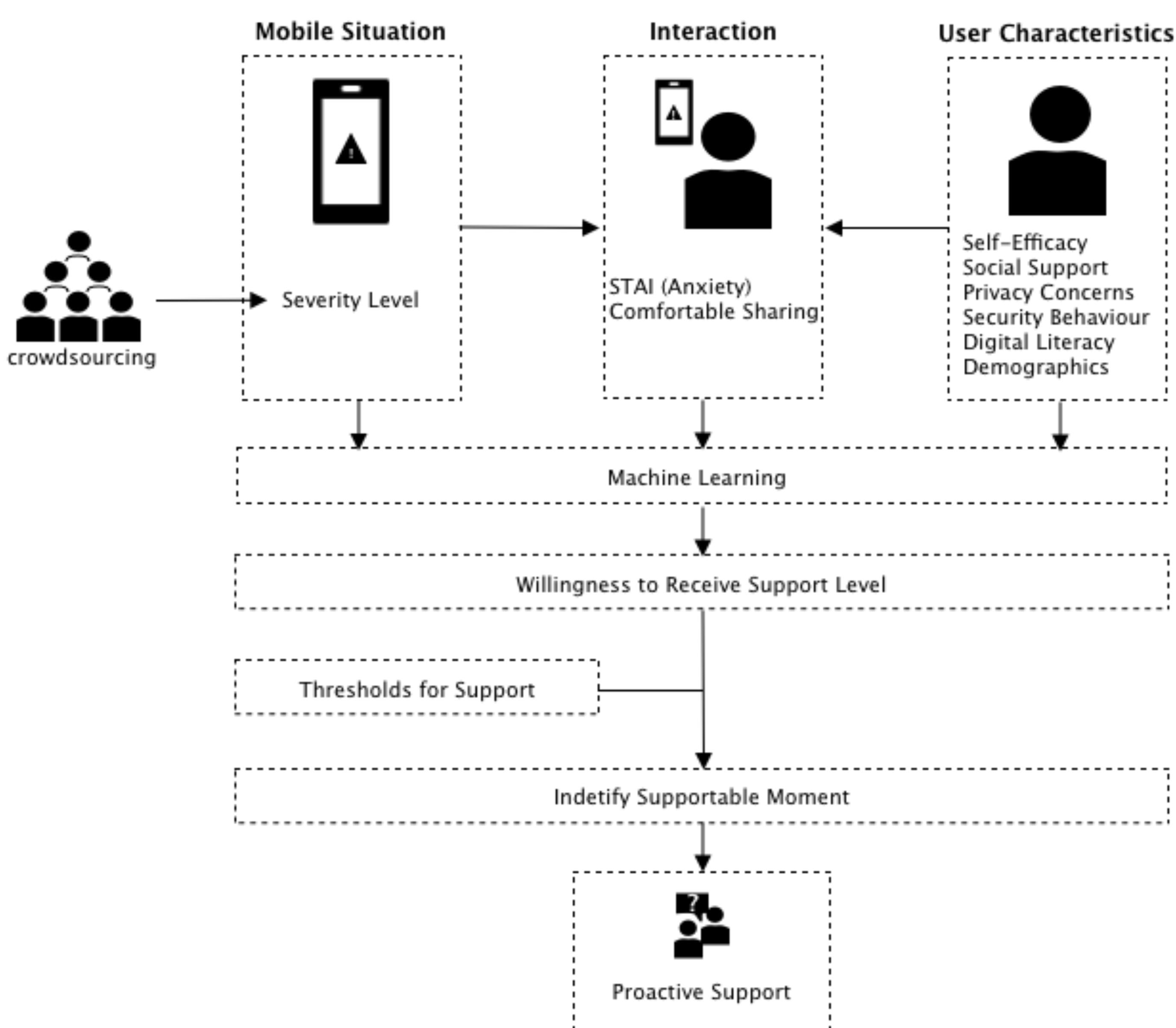
2. RESEARCH QUESTIONS

RQ1: How well can we predict the willingness to receive support?

RQ2: What is the contribution of different features to the willingness to receive support?

3. THE MODEL

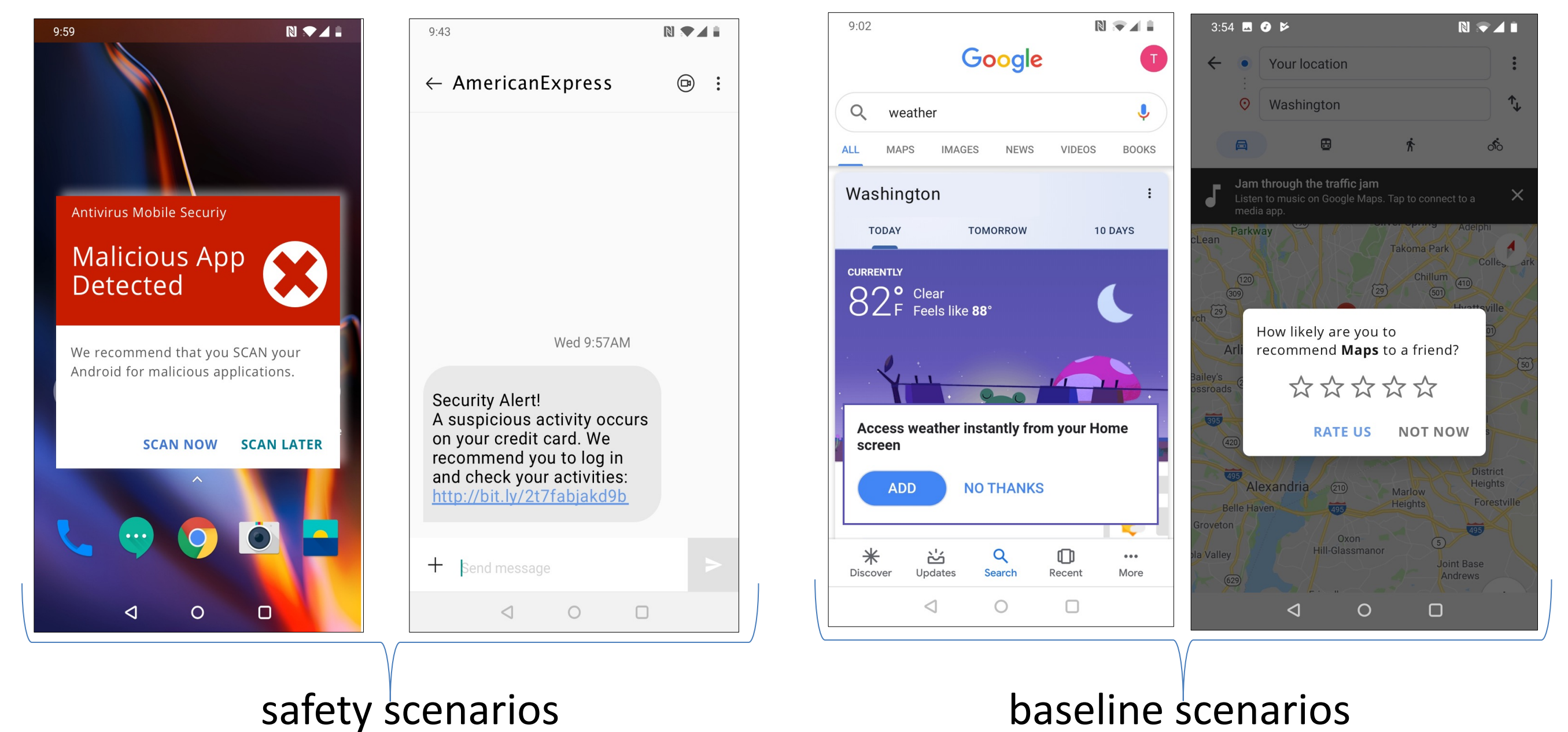
Given a set of moments with a range of security severity values, we want to predict the user's willingness to receive support and identify supportable moments.



4. METHOD

One user study evaluated the Mobile Situation (n=300). The second user study measured the Interaction, User Characteristics, and willingness to receive support (n=150). Both studies were with the same nine vignettes.

Example of vignettes

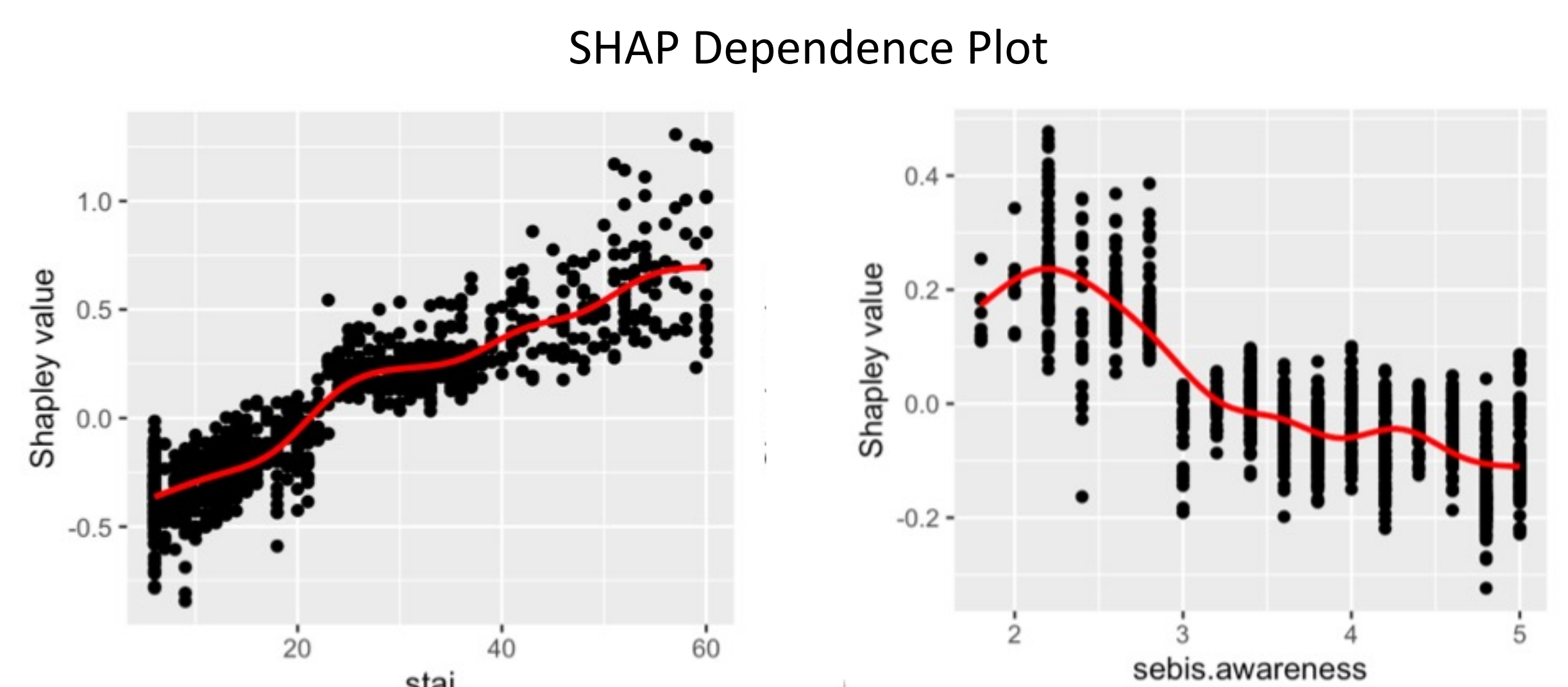
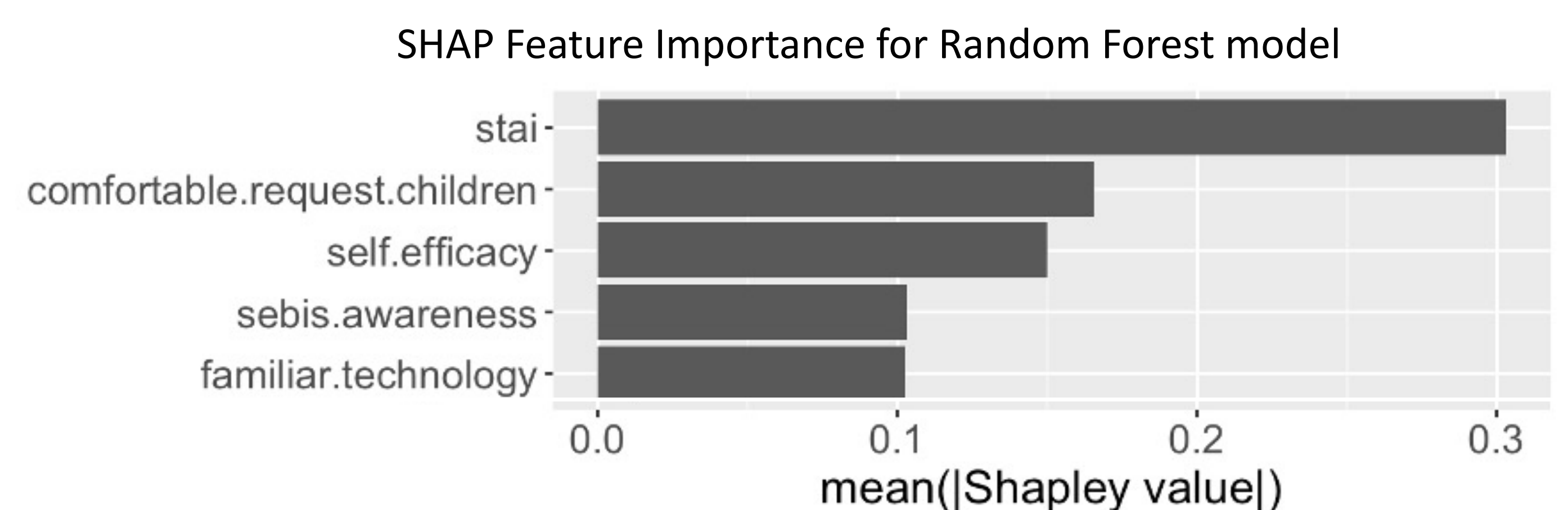


5. RESULTS

We used 5-fold cross-validation with random forest, XGBoost, LME, and NN.

Random forest was the best model: MAE of 0.89, RMSE of 1.095, R² of 34%.

The STAI (Anxiety) (r=0.390), comfortable to request children (r=0.351), and Security Awareness (r=-0.449) correlated with willingness to receive support.



6. CONCLUSION

Anxiety is an essential factor in predicting whether users need Support.

The results indicate that mobile proactive support systems can identify supportable moments.

The poster is based on our IMWUT published paper: <https://doi.org/10.1145/3517249>

