

Title: ADVANCES IN CRIMINOLOGICAL RESEARCH USING SMART PHONE APPLICATIONS TO GATHER DATA: THE POTENTIAL FOR ADDITIONAL VALUE IN A CROSS-SCIENTIFIC RESEARCH PROJECT ON URBAN SAFETY

Authors: Alexander Engström (alexander.engstrom@mah.se) and Karl Kronkvist (karl.kronkvist@mah.se), Malmö University

Abstract: As the City.Risks project has proceeded with developing technological solutions for avoiding and mitigating safety issues in urban environments, new questions have risen that call for attention within criminological research. Although research on safety and fear of crime indicates that *situational* circumstances are of great importance for understanding these phenomena, studies of perceptions of safety in relation to situational circumstances often lack proper operationalisations of what is being studied (i.e. situations). One of the most suitable approaches for studying situational phenomena is the experience sampling method (ESM). In short, ESM examines individuals' perceptions and emotions as they occur in a particular situation (i.e. 'here and now'). However, ESM has rarely been employed in studies of safety and fear of crime despite its potential to provide important information on situational aspects of safety that in turn may assist in developing safety increasing interventions. The lack of ESM studies in criminology, as revealed in the development of the City.Risks project, therefore called for action. Yet, while acknowledging the importance of ESM studies, it was not evident on how to proceed with a solution within the City.Risks framework. With assistance from the Department of Computer Science at Malmö University, a project idea emerged that could run in parallel with City.Risks to both benefit from and provide knowledge to City.Risks. In the project, two groups of students in computer science (N=15) were assigned to develop a prototype of a research instrument that could examine perceptions of safety using an ESM approach. As identified by other researchers (e.g. Solymosi et al, 2016), a smart phone application would be the optimal framework in which a short ESM inspired self-administered questionnaire could be developed. The students were provided with the requirements for the research instrument which were mainly related to basic principles of what constitutes a situation. Somewhat simplified, these principles include e.g. the possibility to record *when*, *where*, and *with whom* an individual takes part of a situation, in addition to *what* is happening in that specific situation, and the ability to correlate this information with the perception of safety. In a collaborative process between the authors and the students, and by employing a SCRUM approach, the two groups developed two diverse prototypes that to various extent tapped into the requirements of an ESM instrument for studying perceptions of safety and fear of crime. Although the instruments are only prototypes, they illustrate how experiences from City.Risks evoke advancements in social science by highlighting the need to further develop criminological research. Moreover, with more knowledge on experiences and emotions in relation to particular situations, law enforcement agencies, practitioners and policy makers may better address the highly difficult task of increasing citizens' perceptions of safety as well as reducing fear of crime. Finally, by employing students, the project also highlights the potential for Horizon 2020 projects to stimulate participation and interest in cross scientific research (e.g. the diverse disciplines of criminology and computer science).