DEVELOPING AND IMPLEMENTING DIGITAL HEALTH TECHNOLOGIES FOR THE ELDERLY THROUGH THE LENS OF EQUITY

STATEMENT OF RESEARCH PROJECT

The recent announcement of the HealthierSG national initiative has put a spotlight on the use of digital health technologies to empower elderly in Singapore to adopt a healthy lifestyle. While there are several existing initiatives in the use of digital health technologies to promote active ageing such as the National Steps Challenge, and the launch of the Healthy 365 mobile app, there remain significant challenges in motivating elderly to leverage technologies to improve their physical activity and mental well-being. For instance, research has shown that while the National Steps Challenge is largely successful, there are some key challenges such as the participation rate from the elderly is low.

In line with the national momentum of HealthierSG initiative, this research project aims to pilot a small-scale sustainable community-centric, and participatory digital health technologies ecosystem to promote physical activity and well-being among seniors in Singapore. This is done by building capacity and co-creating digital health technologies—defined in this study as mobile health app, wearable and embedded sensors, and exergames—with stakeholders such as community centres, caregivers, health coaches, and the elderly. This research sets out to address these research questions (RQ):

RQ1: What is the landscape of digital health technologies adoption among the elderly in Singapore compared to ASEAN counterparts?

RQ2: What are the motivators and barriers to digital health technologies adoption among the elderly?

RQ3: To what extent would collaborative design of digital health technologies (health apps, wearable and embedded sensors, exergames) improve elderly’s adoption and improve physical activity and mental well-being?

SCOPE OF WORK FOR SELECTED PHD STUDENT

The PhD student will be involved in several different aspects of the project. First, PhD students will be engaged in qualitative work (supervised by Dr. Shannon Ang) by conducting in-depth interviews or focus groups with elderly, centre managers, technology developers, and policy makers to understand barriers and motivations of digital health technologies (wearables, apps etc) among the elderly. Second, the PhD student will be exposed to quantitative communication research by conceptualizing, designing, and implementing an online survey among ASEAN countries to understand what are the success factors in understanding digital health adoption. Third, the PhD student will conduct social-science experiments by working with different senior centres in Singapore, and examine how use of different digital health technologies could improve elderly’s mental and physical health. Finally, engineering-oriented students could have the option to be involved in technology development work, such as converting our exergames into VR games, developing and extending the UX and UI of our existing elderly mobile health app, developing backend data infrastructure system, and implementing machine learning for health prediction.