Physical Activity in the UK: findings from a commercially available App

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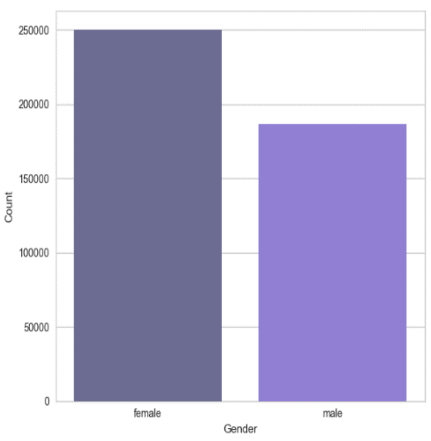
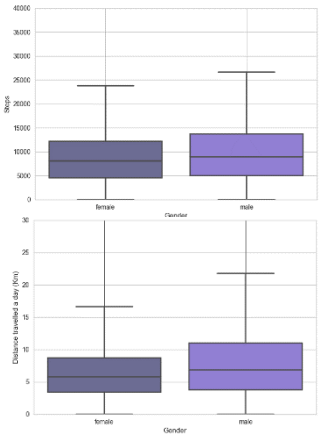
Introduction

Physical Inactivity is the fourth leading cause of early death globally. To date Physical Activity research in the UK has relied on self reported activity level or small scale studies of short duration using activity trackers. However there is an underutilised large body of data outlining population level physical activity in the form of activities tracked on smart phones and physical activity trackers, individuals are currently using to monitor their own activity. This study outlines the demographic and geographic qualities of such individuals.

Gender disparity:

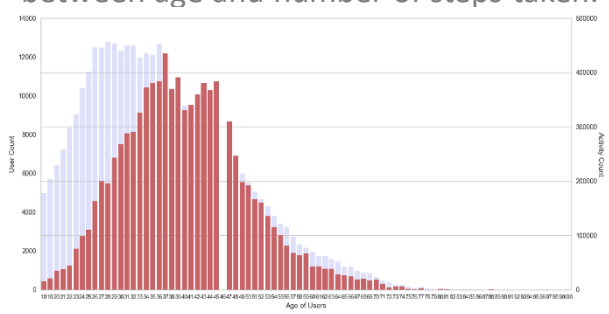
More women than men are using the app. However on average men are more active; taking more steps and tracking further distances.

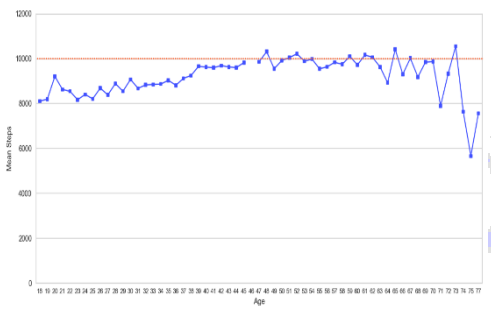


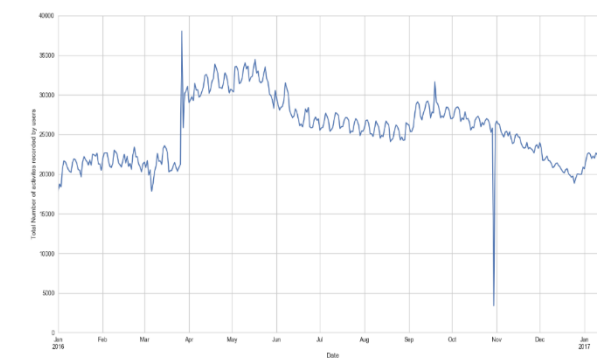


Age and steps:

The age bracket with the most users signed up is 25-35 year olds, despite this more activities are recorded by the 35-45 year old age bracket. Moreover there is a positive relationship between age and number of steps taken.







Seasonality:

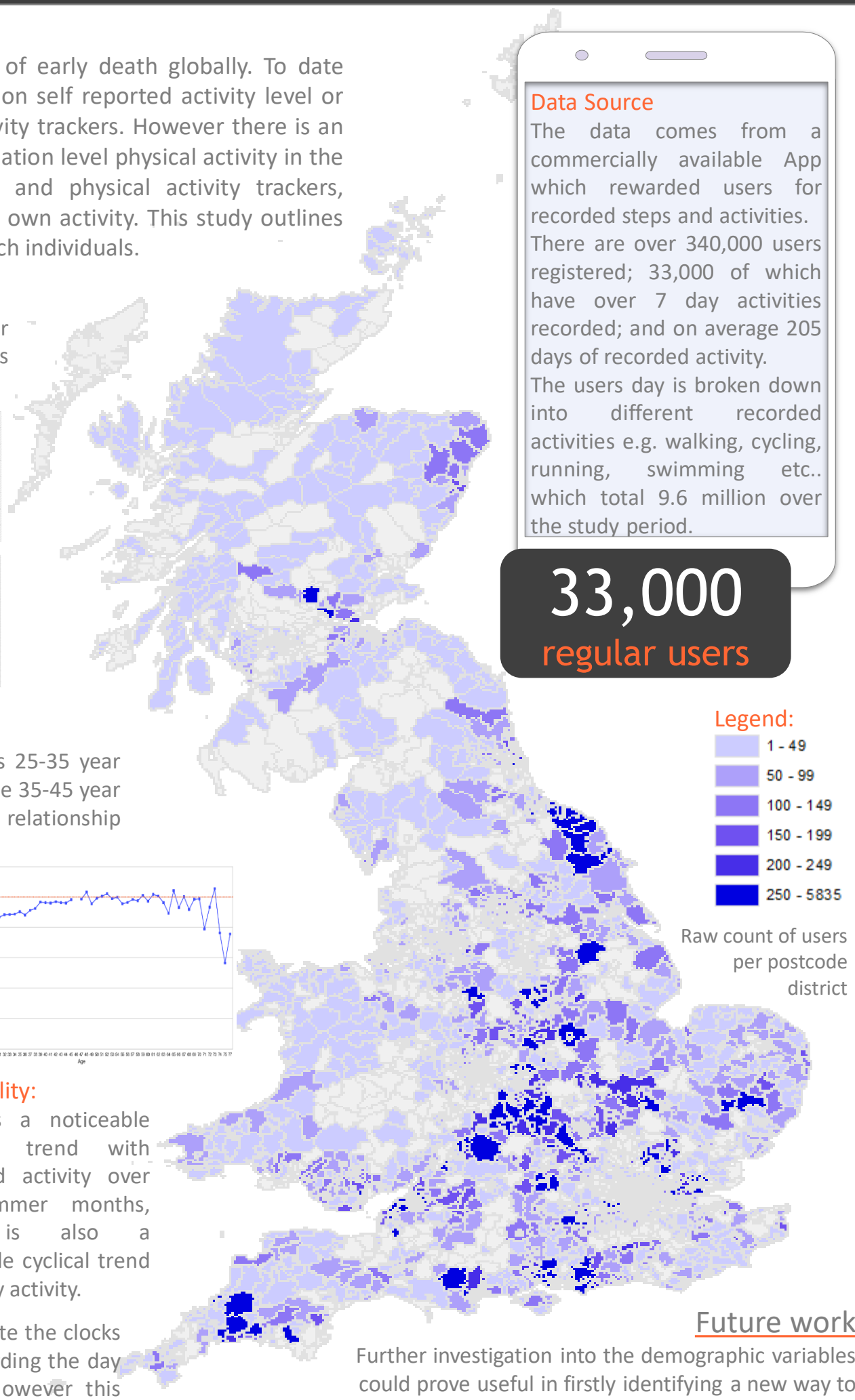
There is a noticeable seasonal trend with increased activity over the summer months, there is also a noticeable cyclical trend in weekly activity.

The spikes at the end of March and October indicate the clocks changing, which has resulted in the app miss recording the day of activity and hence the anomalous results. However this enables us to clearly identify patterns of increased or decreased activity dependent on daylight hours.

Data Source

The data comes from a commercially available App which rewarded users for recorded steps and activities.
There are over 340,000 users registered; 33,000 of which have over 7 day activities recorded; and on average 205 days of recorded activity.
The users day is broken down into different recorded activities e.g. walking, cycling, running, swimming etc.. which total 9.6 million over the study period.

33,000
regular users



Raw count of users per postcode district

Future work

Further investigation into the demographic variables could prove useful in firstly identifying a new way to measure population level physical activity and secondly in predicting activity levels of an individual and to effectively target physical activity interventions.

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