The role of big data in exploring and informing lifelong learning (Part 2)

Prof Mike Osborne

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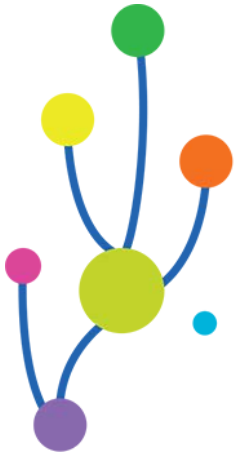

Urban Big Data Centre

An ESRC Data Investment

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The Urban Big Data Centre (UBDC) is a research resource promoting the use of innovative methods and complex urban data to address global city challenges.

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Our Objectives:

Develop novel solutions for using and sharing urban big data

Provide high quality training and outreach activities

Deliver cutting-edge research

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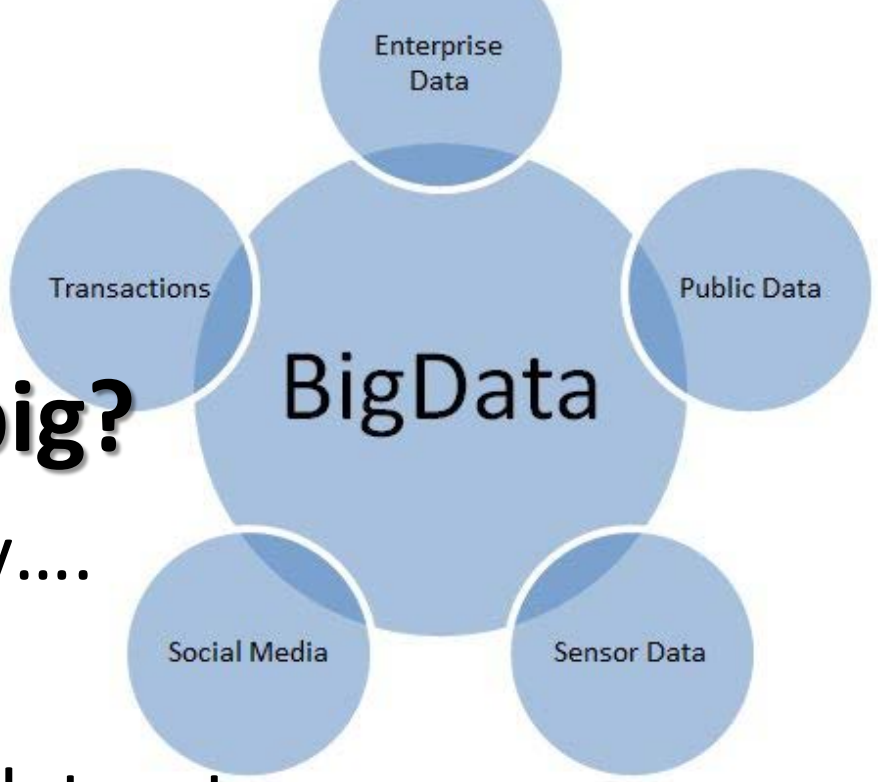

- **What makes data big?**
- Volume, Velocity, Variety….
- Verification & Value
- Existing large/ complex datasets
- Online, real time, social media data, videos
- The ‘internet of things’ (e.g. computer chip/ sensor data).

Integrated Multimedia City Data (iMCD) Project

- **Lead Investigator:**
  Vonu Thakuriah

- **Co-Investigators:**
  Mike Osborne
  Gwilym Pryce
  Zhenhong Li
  Jinhyun Hong
  Mark Livingston
  Iadh Ounis
  Joemon Jose
  Craig McDonald

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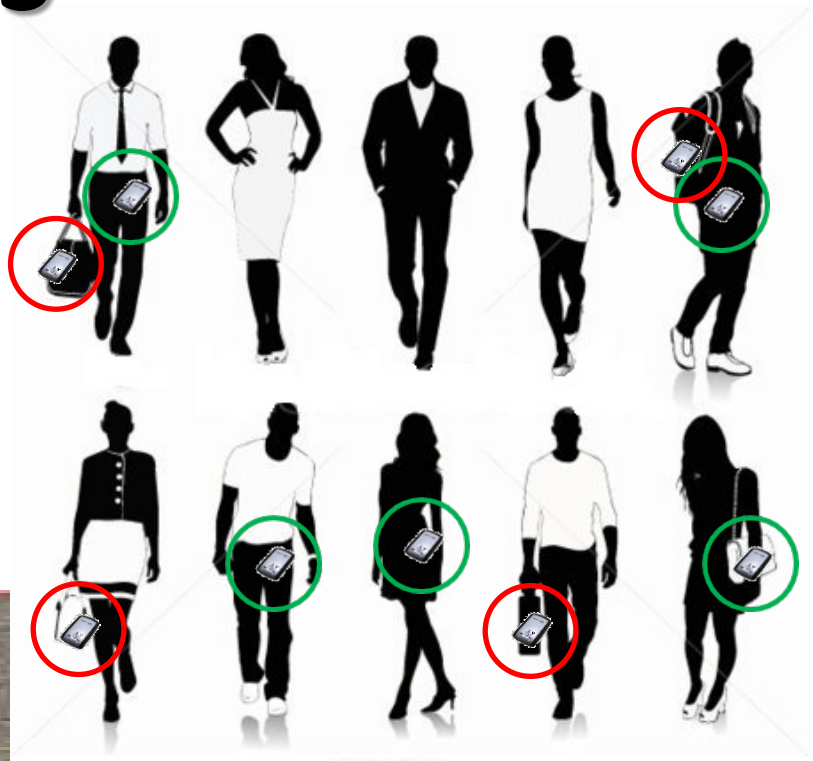
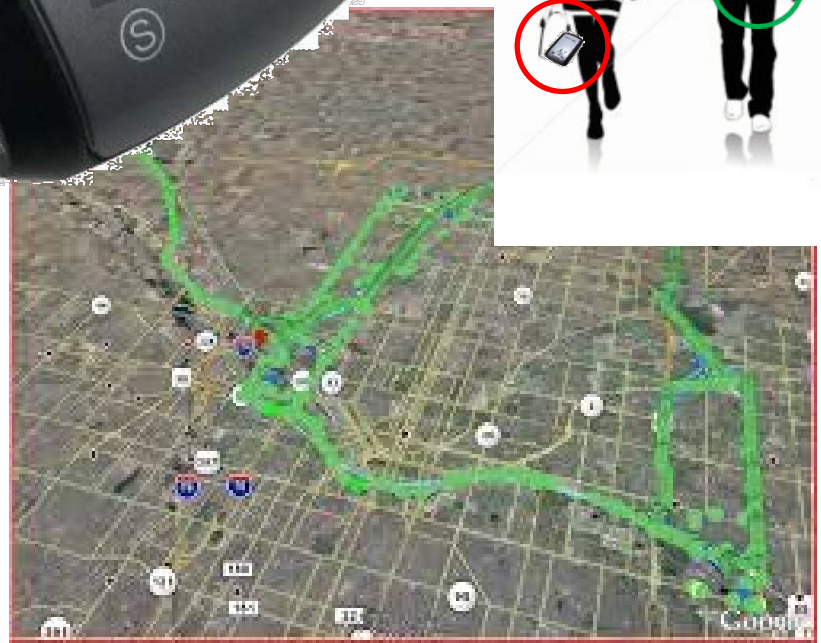
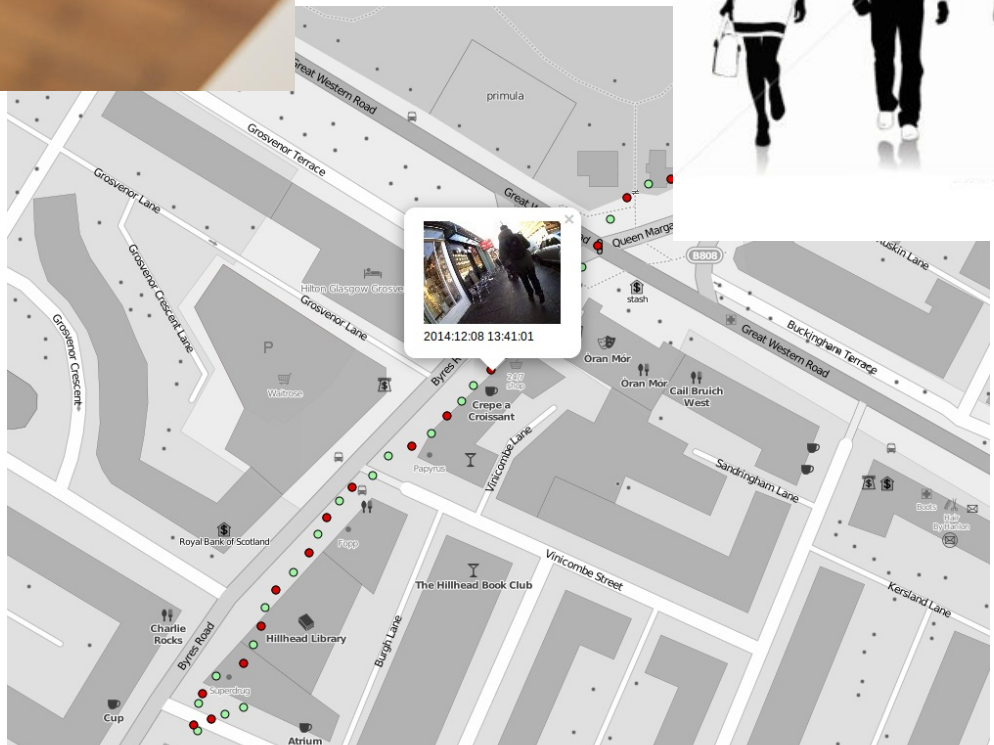
- Integrated Multi-media City Data Project
- 1600 Household Survey
- GPS data
- Life logging and sensing data
- Glasgow Memory server (social media capture)

GPS





Lifeloggers



Survey measures

- Individual & household demographics
- Attitudes, values
- Literacy/ knowledge
- Behaviours in 5 domains**:**
  - **Sustainability**
  - **Transport**
  - **Education/ skills**
  - **Cultural/ civic activities**
  - **ICT/ technology**
- Explicit Link to UNESCO Key Features of Learning Cities

Adult Education Emphasis

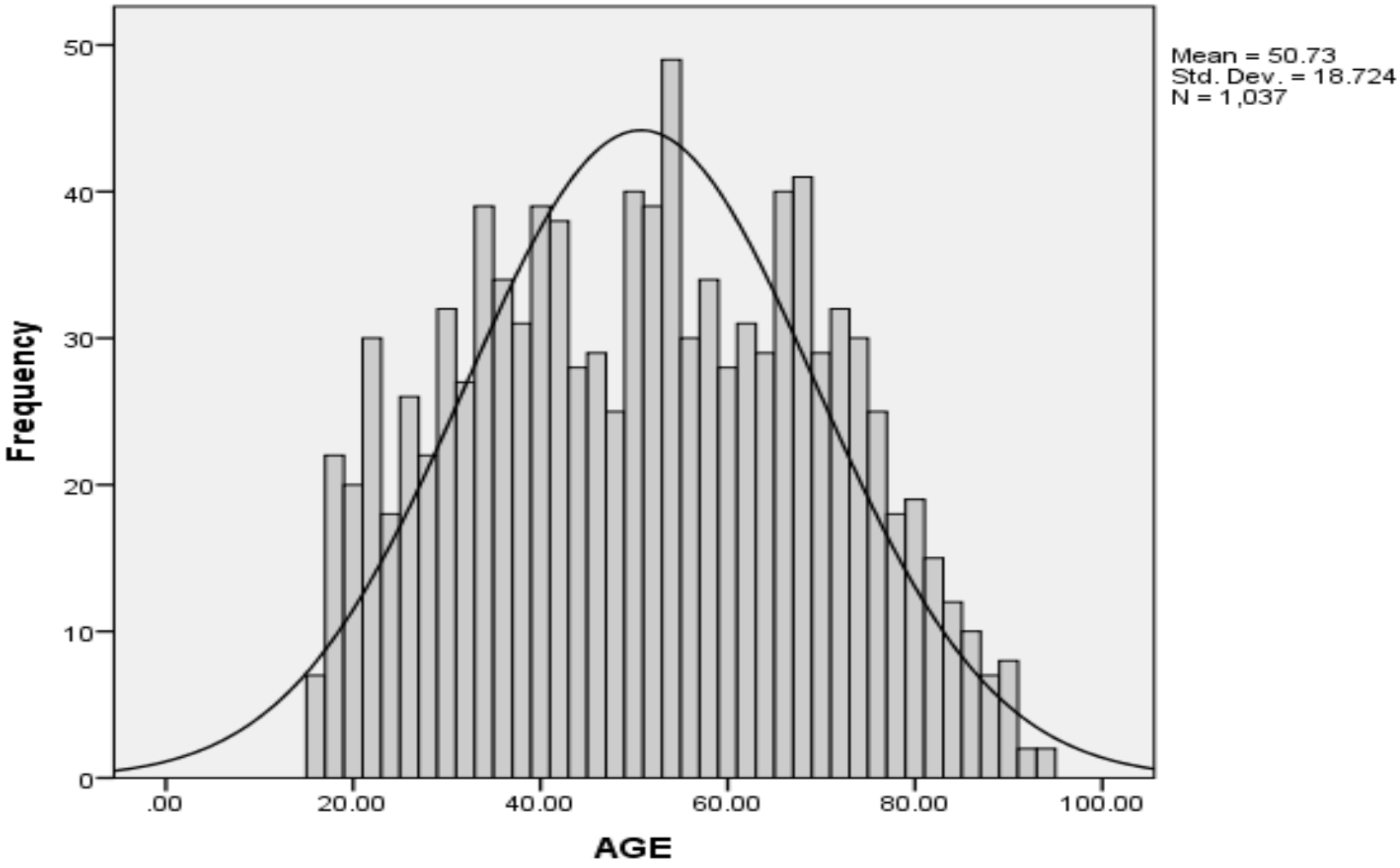
- Qualifications, Skills, Activity, Attitudes
  - Formal Learning
  - Informal Learning
  - Non-formal Learning
  - Family Learning

- Literacies - English, Foreign Language, Maths & Financial, Health, Environmental

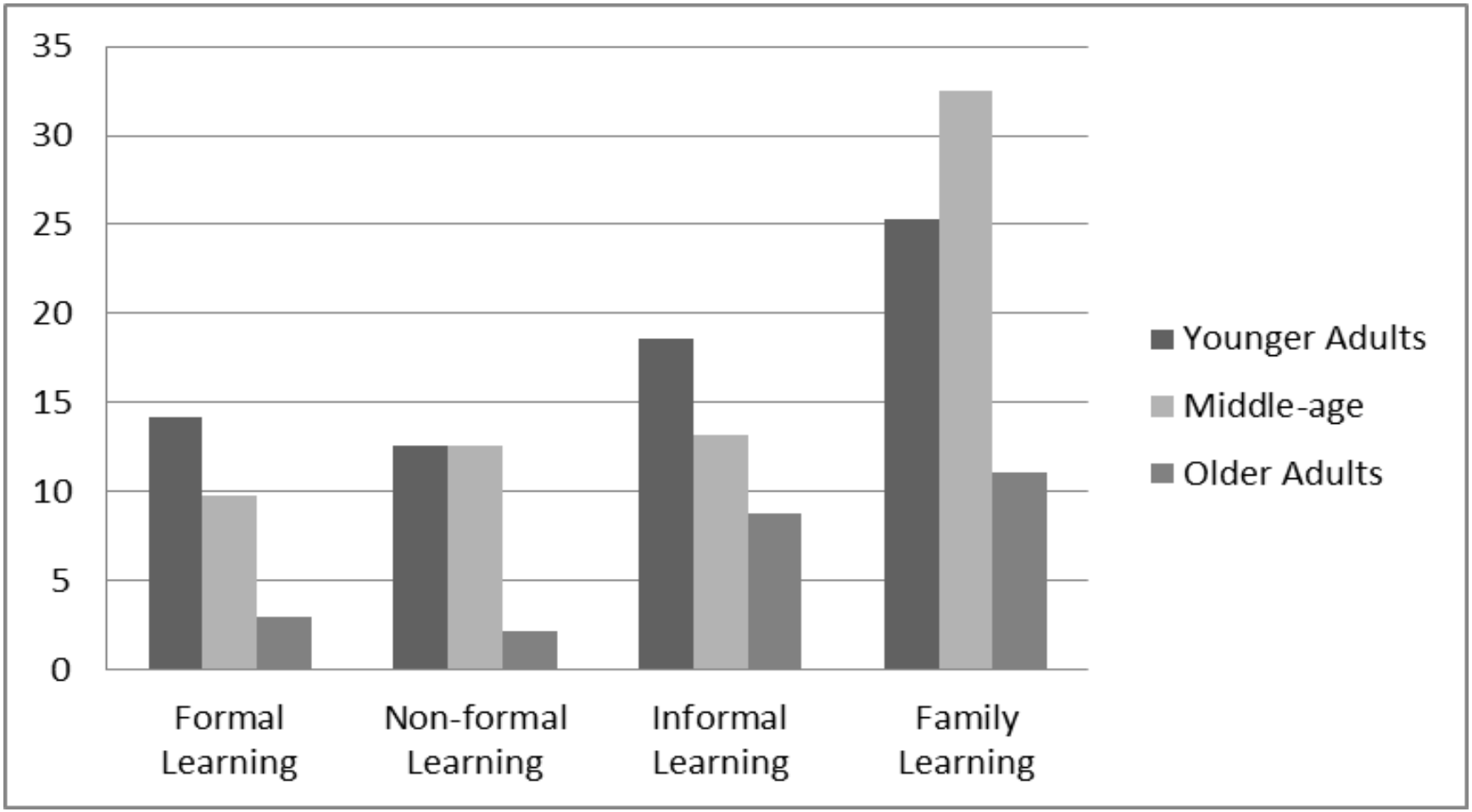
The case of adult learners

- Sub-samples of learning engaged and non-engaged adults, migrants and older adults.
- How are they engaging and why?
- Analysis of demographics, sustainability, political/ cultural, housing and transport variables for predictors of lifelong learning
- Where are engaged learners going (where are they based)?
- What are they seeing? Doing (inside & outside learning environments)?

Sample


Mean = 50.73
Std. Dev. = 18.724
N = 1,037
Frequency
0
10
20
30
40
50
.00
20.00
40.00
60.00
80.00
100.00
AGE

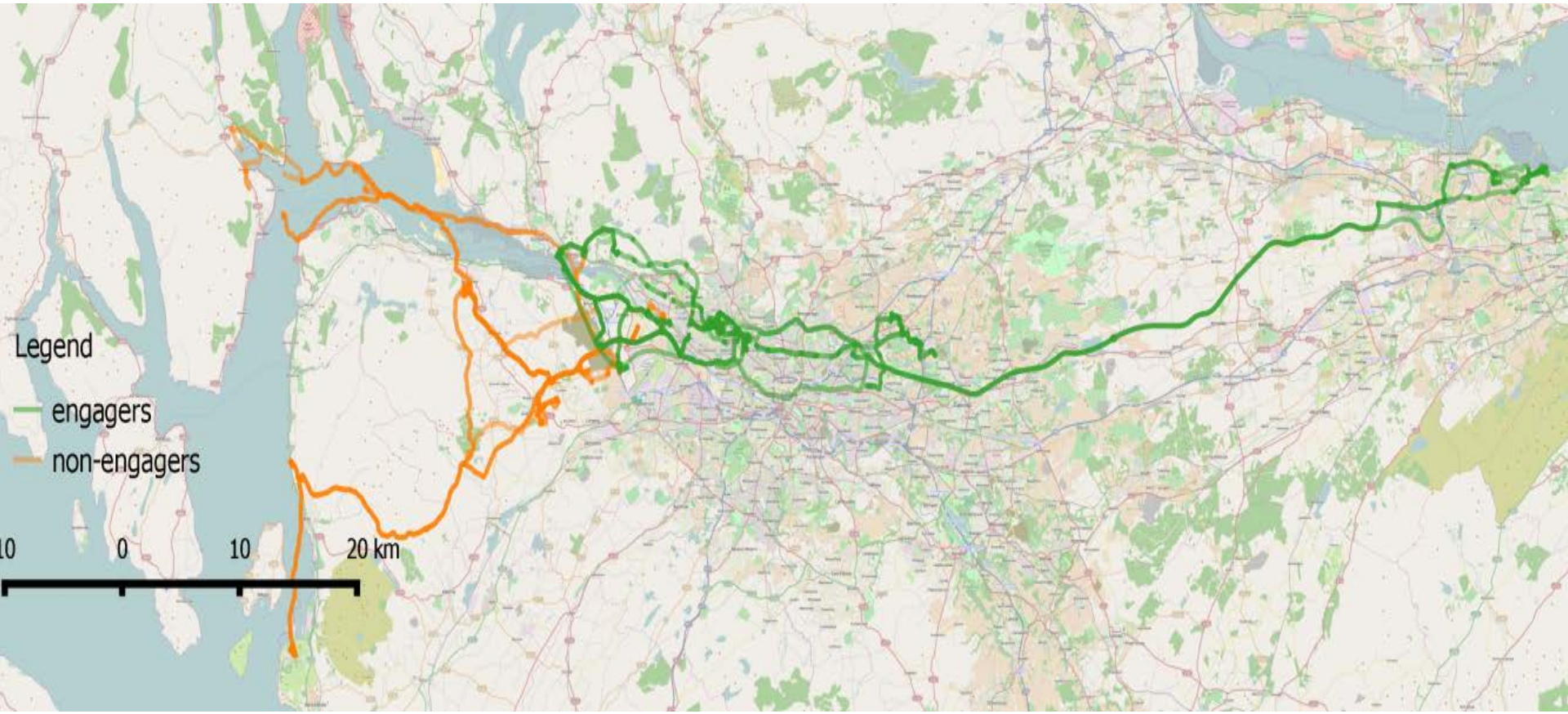
Engagement


35
30
25
20
15
10
5
0
Formal Learning
Non-formal Learning
Informal Learning
Family Learning
Younger Adults
Middle-age
Older Adults

Predictors

- Age
  - Older people participate less in all forms of learning
- Health
  - Those reporting better health participate more
- Planning to move
  - Those who planned to move were more likely to engage in learning activities
- Feeling Safe
- Belonging

Learning engaged and matched non-engaged older adults travel across Scotland

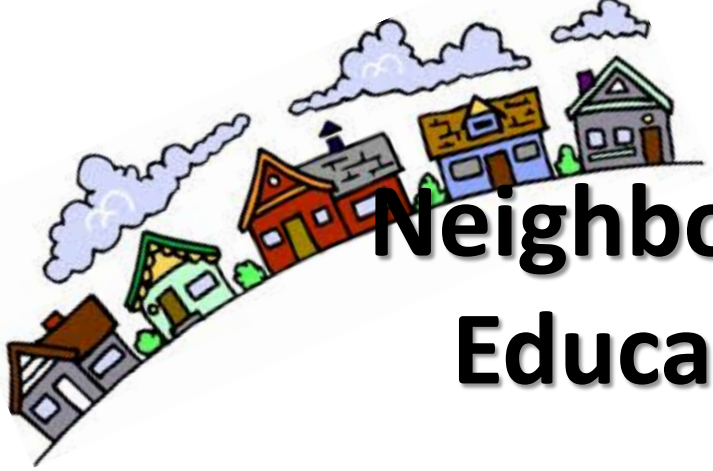


Learning engagement and other engagement

- 46 engaged 60+ adults (12.2% of sample of 377)
- Also more engaged in cultural, civic, online and physical activities within the city and beyond
- Actively aging older learners report
  - more positive health
  - more likely to be working and caring for others
  - participating in online social engagement and boycotts

Policy Implications

- Digital Competence
- Health
- Safety
- Belonging



Neighbourhoods, housing & Educational opportunity

- Unequal educational outcomes
  - Social Class
  - Poverty
- Policy Problem
  - Social mobility and social justice
  - Available skills to economy
  - Hourglass Labour Market
  - Immune to successive education reforms

Aims

- School-level educational outcomes and links with geographic place, neighbourhood space, school choice and transport in and around Glasgow
- Links between schools' performance, and neighbourhood indicators with VET, HE and participation in lifelong learning (formal, informal and non-formal learning)

Schools and Place

- *Places affect schools*
- *Schools affect Places*

Datasets

- Administrative data drawn from pupil, school and teacher census records
- UCAS (Universities and Colleges Admissions Service) Data
- HESA (Higher Education Statistical Agency) Data
- iMCD

Anticipated Outcomes

- Create predictive models of successful lifelong learners, with successful economic outcomes (income and employment), by geographic location, neighbourhood satisfaction, deprivation and school indicators.
- Examine where significant cohort effects occur for educational and economic success by postcode/school locations across Glasgow.
- Provide a model representing the extent to which housing and school choice drives (or countervails) inequity in school and individual lifelong learning outcomes.

Emerging Research Areas

- *The relationship between financial and household literacies, attitudes and behaviours*
- *Neighbourhood effects (deprivation and diversity) on migrants' spatial mobility*
- *Social identity in social media as it is shaped by terrorist events*
- *Political literacies, civic engagement and online discourse.*
- *Community lived experience of deprivation*
- *The impact of government policy change and political events (referendum and elections) on education-related tweets*

More

- Lido, C., Osborne, M., Livingston, M., Thakuriah, P., and Sila-Nowicka, K. (2016) Older learning engagement in the modern city. *International Journal of Lifelong Education* (in press)