‘Measuring liveability and active living – the adaptation and implementation of MAPS-Full’

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Background

- Liveability is a complex multifaceted concept that can be viewed and defined differently

- Links safety, health, sustainability, inclusivity, education, sense of place, walkability, amenities, transport and living standards etc. and relates to health and well-being

- It can be assessed on a range of geographical scales (neighbourhood, city, county) and routinely measures macro-level features (income, employment, infrastructure, inequalities etc.)

- Informs investment, policy-making and the determination of area/city development

“Is 20 plenty for health?”

- NIHR study - Introduction of 20mph legislation, signage, enforcement and publicity in Edinburgh (2-years from July 2016) and Belfast (Feb 2016).

- Funded by local government and Sustrans.

- Aims to evaluate impact on casualties, journeys (foot and bicycle), public perceptions (safety, mode of travel, driver behaviour and attitudes).

- Systematic review, quantitative and qualitative research, policy review and economic evaluation.

- Systematic review published 2019 showed many 20mph zones and limits have been implemented although limited evidence reported regarding liveability.

Review

ELSEVIER

Journal of Transport & Health

Available online 4 October 2019, 100633

In Press, Corrected Proof

Effects of 20 mph interventions on a range of public health outcomes: A meta-narrative evidence synthesis

Claire L. Cleland [a], Katy McComb [a], Frank Kee [a], Ruth Jepson [b], Michael P. Kelly [c], Karen Milton [d], Glenna Nightingale [e], Paul Kelly [f], Graham Baker [f], Neil Craig [g], Andrew James Williams [h], Ruth F. Hunter [a]

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https://doi.org/10.1016/j.jth.2019.100633

Definition of a liveable place

“the well-being of a community and represents the characteristics that make a place where people want to live now and in the future”

(Victorian Competition and Efficiency Commission. A State of Liveability: An Inquiry into Enhancing Victoria's Liveability. Final Report, Melbourne: Victorian Competition and Efficiency Commission. 2008. [Online])

“safe, attractive, socially cohesive and inclusive, and environmentally sustainable; with affordable and diverse housing linked to employment, education, public open space, local shops, health and community services, and leisure and cultural opportunities; via convenient public transport, walking and cycling infrastructure”

(Lowe M, Whitzman C, Badland H, Davern M, Hes D, Aye L, Butterworth I, Giles-Corti B. Liveabile, Healthy, Sustainable: What Are the Key Indicators for Melbourne Neighbourhoods? Place, Health and Liveability Research Program. Research Paper 1. 2013. [Online])

Problem

- High-level assessments are required to assess liveability in terms of income, employment, the economy, infrastructure etc.
  - inappropriate and unfeasible for smaller studies operating on a localized scale

- As liveability encourages physical activity, leads to individuals accessing and interacting with/in their environment (built and social) it needs to be assessed at the micro-level:
  - roads and road features (cycle lanes, pathways, crossings), parks, open space, trees, amenities etc.

- Has the potential to further public health research, policy and practice by identifying modifiable environmental features to cost-effectively produce public health returns

Liveability Tool

- Direct observations are a common approach (in person or online)

- ‘Microscale Audit of Pedestrian Streetscapes’ (MAPS) that was developed to collect audit data on the pedestrian environment and walkability in neighborhoods

- MAPS-full was originally created primarily from the Analytic Audit Tool and has been adapted over time

- Aims to assess:
  - destinations, land use, streetscape, aesthetics and social variables at the micro-scale of the street
  - has the potential for data to be aggregated to neighborhood, town, city etc.
  - Also collects data on roads and road features (cycle lanes, pathways, crossings), parks, open space, trees, amenities etc.

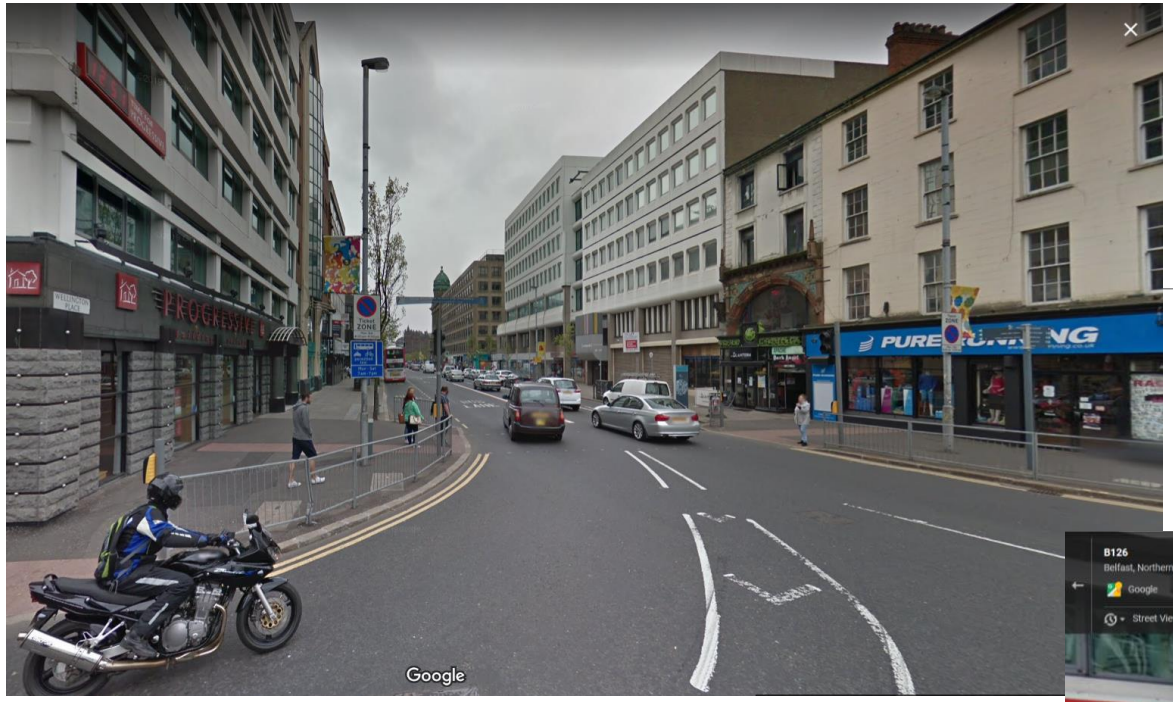
Aims/methods

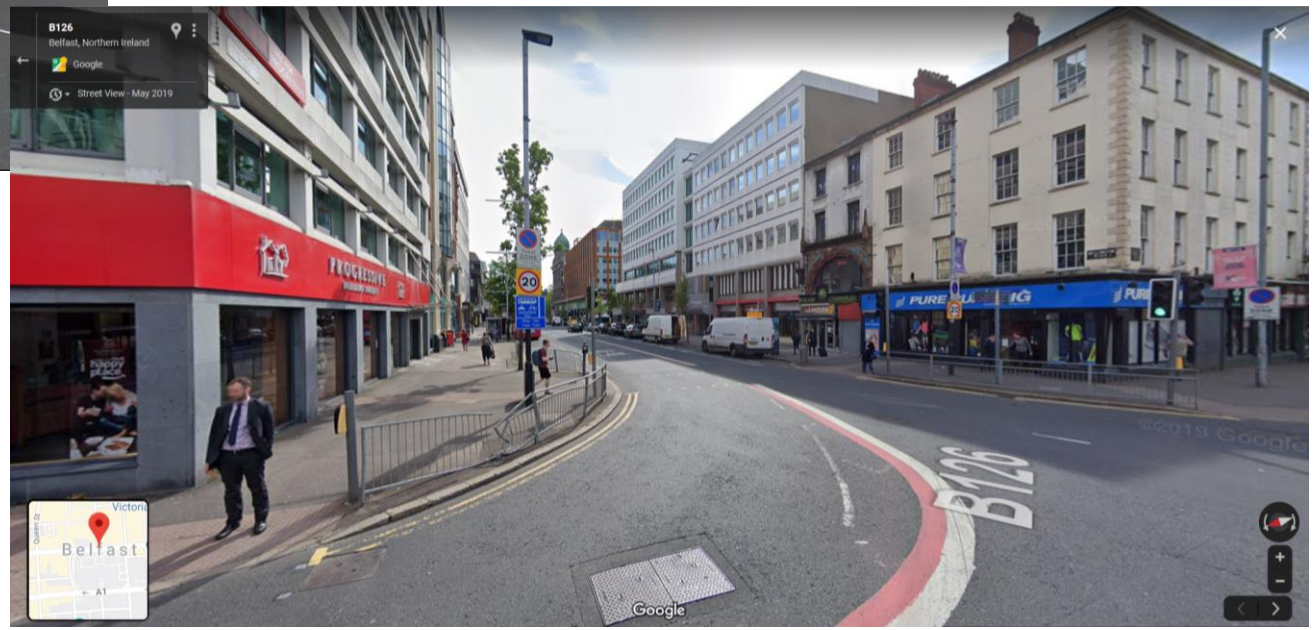
1) A review of the literature to determine if the content of MAPS-Full tool required adaptation for the purpose of assessing liveability;

2) following any content adaptions from objective (1) piloting of MAPS-Full to determine if any of the MAPS-Full processes required adaption for the purpose of assessing liveability;

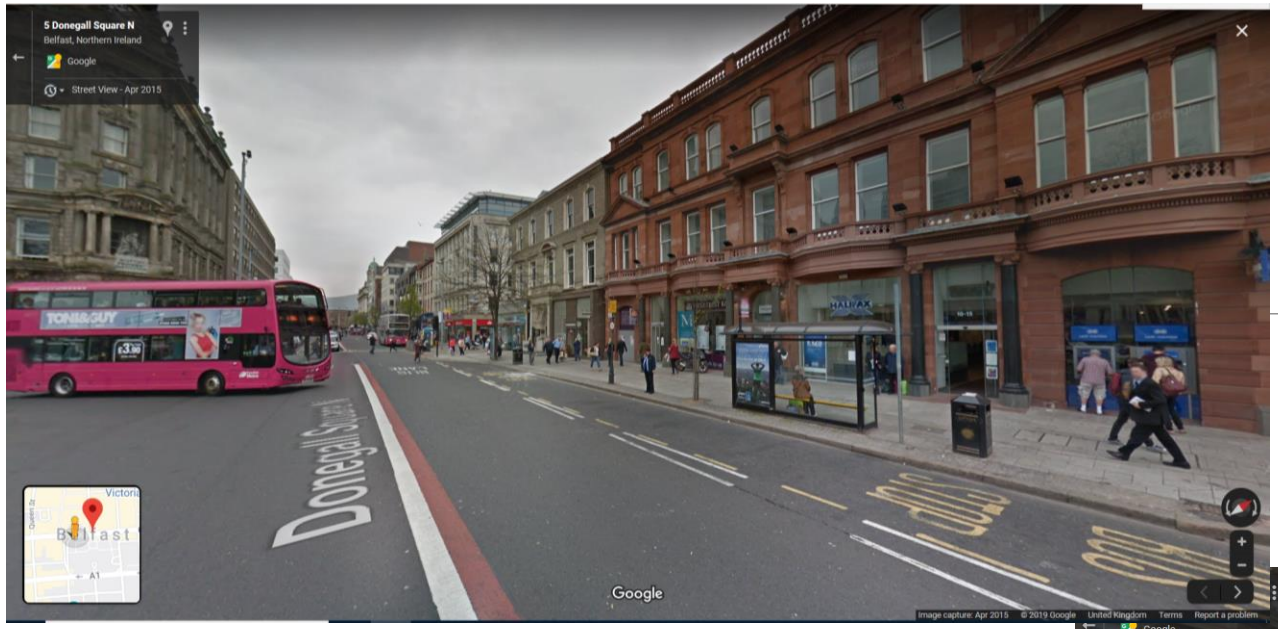
3) following any adaptations that were put in place from objectives 1 and 2 establish a scoring system for MAPS-Full adapted; and

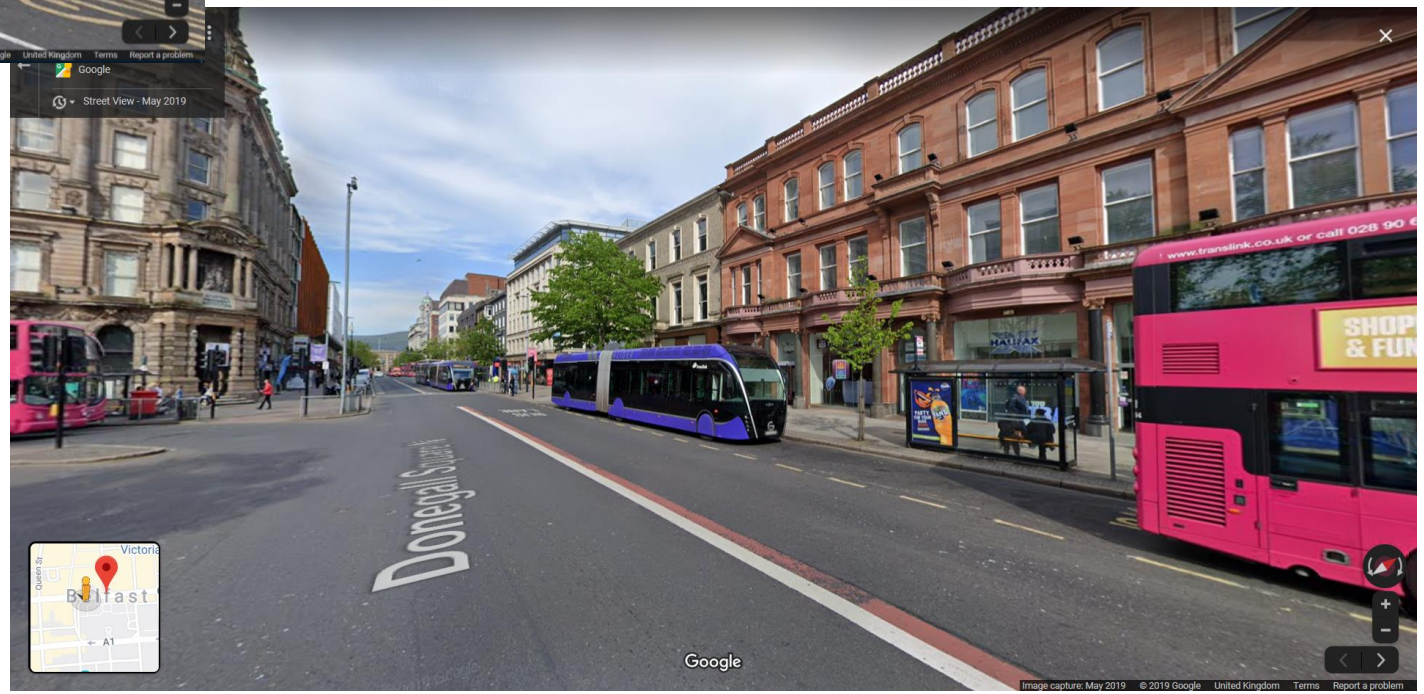
4) implementation and reliability testing of MAPS-Full adapted.





- April 2015 vs May 2019
- 20mph signage
- Bus lanes
- Pedestrians
- Cars driving
- Loading only





- April 2015 vs May 2019
- Bus lanes
- Pedestrians
- New rapid transport system

Results

- REVIEW: 11 items missing: 1) safety/panic buttons; 2) walking trails; 3) bicycle tracks; presence of 4) individuals cycling; 5) performing other physical activity or exercising; 6) smoking areas; 7) car charging points; 8) presence of cars; 9) rapid transport; 10) pollution; and 11) pleasantness.

- PROCESSES: entire street (one end to another) or route to a specific destination

- SCORING: original with additional items, nine characteristics of liveability and qualitative data

- RELIABILITY: no significant differences between auditors pre- and post, changes found (traffic/transport) but no significant differences between auditors and no significant differences in total liveability score (pre- and post-intervention and change)

Discussion

- An ideal tool to operate at a street level but it also has the capacity to be aggregated to an area/neighbourhoods.

- Comparisons can be drawn across streets/areas and cross-sectionally or longitudinally to show change.

- Practically MAPS-Liveability provides an in person or virtual tool:
  - GSV enables researchers to acquire data pre- and post-intervention and provides a cost-effective and efficient replacing expensive in person auditing
  - However there are constructs of liveability that cannot be assessed via GSV (air pollution, noise, perceived safety etc.)

- No significant differences were found between the results reported by auditors 1 and 2 for the nine characteristics of liveability, the total liveability score and the twelve behavioural outcomes.

- MAPS-Liveability was sensitive to change, both auditors reported change and no significance differences between auditor 1 and auditor 2 (inter-rater agreement and reliability considered high).

- The greatest change pre- and post-intervention was ‘traffic/transport’, ‘number of parked cars’ and ‘total number of cars (moving or parked)’. Consequently, MAPS-Liveability showed the capability to detect changes to transport systems - linked to “is 20 plenty for health?”

Conclusions

- This study presents the adaption and reliability testing of MAPS-Liveability to examine liveability and behavioural outcomes.

- The iterative adaption process and the positive reliability findings make the tool relevant and useable for researchers, policy makers and practitioners to assess liveability at a lower geographical level and assessing micro-level characteristics

- Results from the tool make it possible for recommendations to be made for changes to environmental features which ultimately impact liveability, public health and active living