New Opportunities for On-demand Shared-ride Services to Deliver Modal Shift and Inclusive Travel

CTS Spring Conference

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Presentation by

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Technical capacities meet...

...Real world realities





Smartphones IT Younger people

Hub and spoke (Lindsey, et al.,

2010, Brons et al. 2009; Cohen & Kietzmann, 2014)

Employment
locations (Wang et al. 2014, Laws

et al. 2009)





Affluence (Deka et al. 2010)

Sharing (Nguyen, 2013)

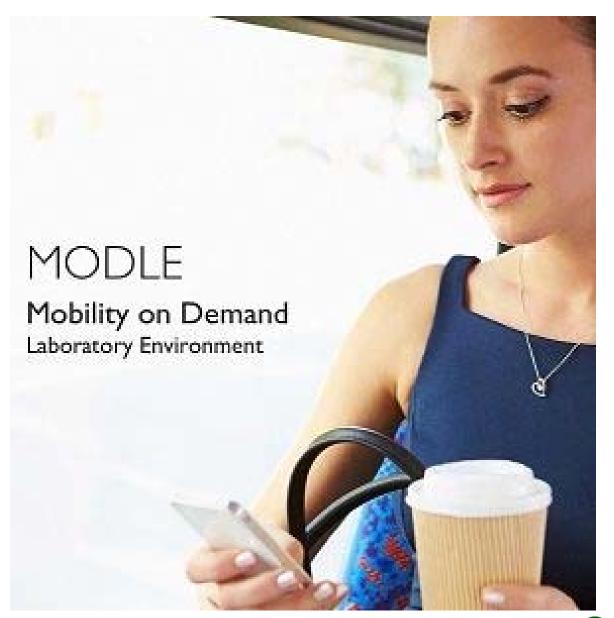
Interchange (Lindsey et al., 2010;

Crisp et al., 2018)

Unreliability (Crisp et al., 2018)

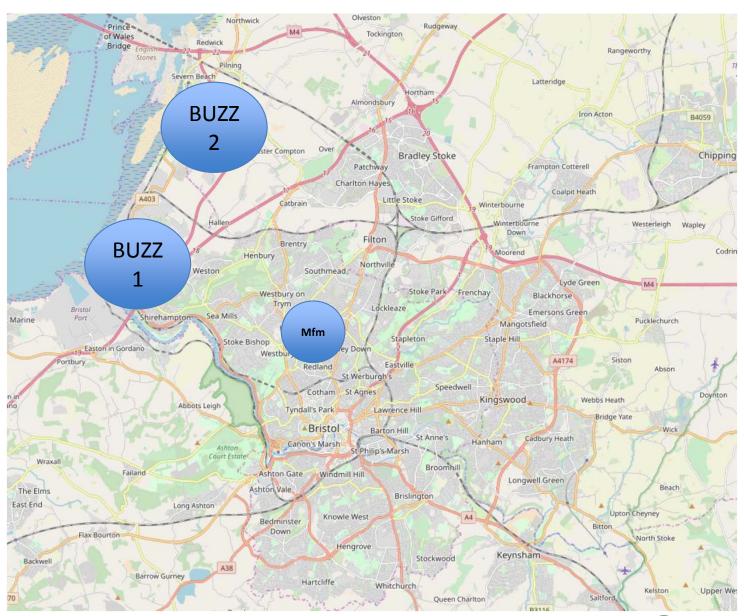
















Findings

Type

Bus

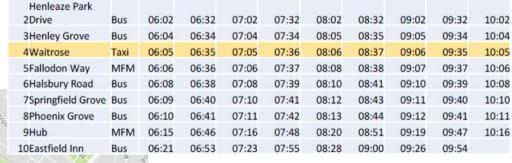
06:00

06:30

DRIVER TIMES StopName

1Eastfield Inn

Timetables



07:00

Time (leave stop)

08:00

08:30

09:00

09:30

10:00

07:30



Routing







Affluence

....and cars

Costs to employers

Costs to end-users





Conclusions

The MODLE project was successful in a number of respects, exploring and proving some important concepts in delivery of this type of service

The project shows how **iterative improvements** in dealing with real life operational obstacles, working towards financial sustainability, can be made.

The model project suggests demand responsive solutions appear more effective in increasing accessibility to employment and services than they are in abstracting affluent people from cars.

Whilst there were positive evaluations of journey experience on both services where and when a service runs and whether it is reliable appears to remain paramount. The important benefits of DRT then may be in geographical and temporal coverage, and clarity around these rather than improved journey experience





References

Brons, M., Givoni, M. and Rietveld, P., (2009). Access to railway stations and its potential in increasing rail use. Transportation Research Part A: Policy and Practice, 43(2), pp.136-149.

Cohen, B. and Kietzmann, J., (2014). Ride on! Mobility business models for the sharing economy. Organization & Environment, 27(3), pp.279-296.

Crisp, R., Ferrari, E., Gore, T., Green, S., McCarthy, L., Rae, A., Reeve, K., Stevens, M. (2018) *Tackling transport-related barriers to employment in low-income neighbourhoods.*

Deka, D., Carnegie, J. and Bilton, P., (2010). What Does It Take for Shuttles to Succeed? Comparison of Stated Preferences and Reality of Shuttle Success in New Jersey. Transportation Research Record: Journal of the Transportation Research Board, (2144), pp.102-110.

Laws, R., Enoch, M., Ison, S., Potter, S. (2009) Demand responsive transport: A review of schemes in England and Wales. Journal of Public Transportation, 12(1), 19-37





References

Lindsey, M., Schofer, J.L., Durango-Cohen, P. and Gray, K.A., (2010). Relationship between proximity to transit and ridership for journey-to-work trips in Chicago. Transportation Research Part A: Policy and Practice, 44(9), pp.697-709.

Nguyen, Duc Thien (2013). Fair Cost Sharing Auction Mechanisms in Last Mile Ridesharing. Dissertations and Theses Collection (Open Access). Available at: http://ink.library.smu.edu.sg/etd_coll/93

Wang, C., Quddus, M., Enoch, M., Ryley, T., Davison, L. (2014). Multi-level modelling of Demand Responsive Transport (DRT) trips in Greater Manchester based on area-wide socio-economic data. Transportation, 41(3), 589-610.





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