



# BUCKINGHAMSHIRE NEW UNIVERSITY

EST. 1891

Downloaded from: <https://bnu.repository.gulidhe.ac.uk/>

This document is protected by copyright. It is published with permission and all rights are reserved.

Usage of any items from Buckinghamshire New University's institutional repository must follow the usage guidelines.

Any item and its associated metadata held in the institutional repository is subject to

## **Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0)**

### **Please note that you must also do the following;**

- the authors, title and full bibliographic details of the item are cited clearly when any part of the work is referred to verbally or in the written form
- a hyperlink/URL to the original Insight record of that item is included in any citations of the work
- the content is not changed in any way
- all files required for usage of the item are kept together with the main item file.

### **You may not**

- sell any part of an item
- refer to any part of an item without citation
- amend any item or contextualise it in a way that will impugn the creator's reputation
- remove or alter the copyright statement on an item.

If you need further guidance contact the Research Enterprise and Development Unit  
[ResearchUnit@bnu.ac.uk](mailto:ResearchUnit@bnu.ac.uk)

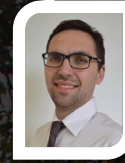


This research has been kindly supported by the BNU Alliance Fund with external collaboration from London Heathrow and Luton Airports and Buckinghamshire Country Council (2023-24)

# Locally driven sustainable airport surface access solutions for Buckinghamshire

Warnock-Smith, D\* and Nweke, U

\*Corresponding author: david.warnock-smith@bnu.ac.uk



## Introduction

In line with the 9<sup>th</sup> UN SDG related to Industry Innovation and Infrastructure, UK Airports have progressively focussed on improving their infrastructure and services available for sustainable surface access alternatives. According to Sustainable Aviation (2017) between the years 2006 and 2016 the number of passenger journeys using public transport modes increased from 37% to 44% in the South East of England, whilst outside the South East, it increased from just 13% to 18% over the same period. Although the South East is arguably in a better position than other regions in terms of moving towards more sustainable airport access solutions, there are sub-regions within the South East that do not benefit from the same level of infrastructure or choice of services as those that are typically offered within airport LA boundary areas (e.g. Heathrow and the Borough of Hillingdon or Luton airport and Luton Borough). Buckinghamshire is one such area. According to recent survey work from Heathrow Airport 52% of airport journeys to/from Buckinghamshire were made by more unsustainable private vehicles, compared with 47% for Bedfordshire and 39% for Berkshire.

Building on previous BNU airport surface access work (e.g. Risby et al., 2021), this study represents phase 1 of a wider project where more granular data at Middle-Layer Super Output Area (MSOA) level within Buckinghamshire (including MK) are obtained to pinpoint where private vehicle journeys and a lack of suitable transport options are highest to generate detailed heat maps for the first time that stakeholder airports and local authorities can use to plan for more targeted surface access solutions (phase 2).

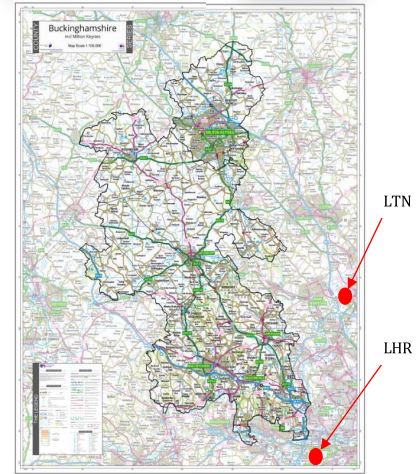


Fig 1: Buckinghamshire and participating airports

## Methodology

For 67 MSOA areas in Buckinghamshire (including MK), a sample of recent local journey patterns to/from London Heathrow and Luton airports was obtained through BNU survey work and cross-checked against more aggregate results from the airport participants' survey data. This data was used to determine a ranking of single occupancy private vehicle journeys in terms of prevalence and volume by origin point in Buckinghamshire. A list of currently available access options was then derived for each MSOA in the county to include rail, bus/coach and road (private vehicles) with factors such as average trip durations, costs and reliability considered. The results were then superimposed onto detailed ONS supported maps at MSOA level to highlight areas of the county that are most in need of solutions in order to maximise the impact of any interventions on the sustainability of surface access journeys from Buckinghamshire to the surrounding airports.

## Some Next Steps

- Complete BNU airport journey pattern survey and cross-check with aggregate airport survey data
- Complete heat maps and ranking of MSOAs in Buckinghamshire by volume and prevalence of Single Occupancy vehicle usage and alternative transport capacity
- Hold results workshop with the stakeholders (LTN, LHR and BCC)

## Some Preliminary Findings

- Areas of Buckinghamshire with viable alternative connections to Heathrow and Luton are currently limited. There is no currently viable bus or rail option from any location in the county to Luton Airport and only a handful of locations in South Buckinghamshire that have connecting rail options to Heathrow along with one bus and one coach option that run from and through High Wycombe respectively.
- Due to typical journey purposes the distances involved from any part of the county to Luton and Heathrow, active travel (walking and cycling) is of negligible viability
- Usership of the currently limited public transport options to Heathrow is low – suggesting a lack of awareness and utility relative to private vehicle trips.

## References

- Risby, J., Guest, S., & Warnock-Smith, D. (2022). A critical analysis of Bristol Airport's employee surface access habits: Developing strategic recommendations for reducing private vehicle usage. *Research in Transportation Business & Management*, 43, 100700.
- Sustainable Aviation (2017); Progress report 2015-2017. Accessed <https://www.sustainableaviation.co.uk/wp-content/uploads/2018/06/SA-Progress-report-2015-17-1.pdf>
- Warnock-Smith, D., & Fake, J. (2023). Assessing sustainable journey-to-work solutions around stated and revealed employee preferences: the case of Bristol International Airport. *Transport Research Procedia, World Conference on Transport Research, Montreal, Canada, July 17-21, 2024*

# 2024





BUCKINGHAMSHIRE  
NEW UNIVERSITY  
EST 1991

BNU Research and Enterprise  
Conference 2024

## Empowerment Through Research: Bridging Academia and Society

# 2024



BUCKINGHAMSHIRE  
NEW UNIVERSITY  
EST. 1891

BNU Research and Enterprise  
Conference 2024

Empowerment Through Research:  
Bridging Academia and Society

2024



BUCKINGHAMSHIRE  
NEW UNIVERSITY  
EST. 1891

BNU Research and Enterprise  
Conference 2024

# Empowerment Through Research: Bridging Academia and Society

