Chapter 12
Defining Labour Market Areas by Analysing Commuting Data: Innovative Methods in the 2007 Review of Travel–To-Work Areas

Mike Coombes
Newcastle University, UK

ABSTRACT
This chapter draws on research undertaken in revising a set of functional regions known as Travel-To-Work Areas (TTWAs) which are the only official statistical areas in the UK defined by academics. The objective of the research is to define the maximum possible number of separate TTWAs that satisfy appropriate statistical criteria that ensure the areas meet guiding principles for labour market area boundary definition. Thus, the research is an example of a functional regionalisation which is highly constrained by the purpose to which the resulting boundaries will be put. The chapter briefly reviews previous TTWA definition methods, setting this in the context of the very limited academic research on regionalisation methods. The production of the 2001 Census commuting data provided opportunities for defining new labour market areas and the chapter explains how the TTWA research has responded with several key innovations. The empirical component of the chapter then illustrates the effect of these innovations by presenting a new visualisation of the workings of the definition method and also some analysis of the sensitivity of the results to changes in the method. Finally, there is a very brief look at some possible ways in which this field of research could be extended.

INTRODUCTION: THE RESEARCH CHALLENGE
This chapter reflects on many years of research leading to the Coombes and Bond (2008) revision of TTWAs, the statistical geography of the Office for National Statistics (ONS) that represent a set of sub-regional labour market areas. The basis of TTWA boundary definitions is an analysis of recent patterns of commuting. These patterns change over time so TTWAs are reviewed once each decade by analysing the Special Workplace Statistics (SWS) from the population census because in Britain this is the only data available on commuting flows at
the local level. For several decades now, each new census has led to a review of TTWAs with the explicit objective of providing a consistently defined set of appropriate areas for the reporting of local labour market statistics in general, and unemployment statistics in particular. The core objective of the TTWA definitions is thus to identify patterns in the commuting data as a means of consistently defining a set of labour market area boundaries.

The key benefit of TTWAs to statistics users is that they enable valid comparisons of labour market conditions and trends across the country. This is because they have been specifically defined to be comparable in relation to key labour market statistical characteristics relevant to labour market analysis. The underlying statistical logic is about using appropriate classifications (Rose and O’Reilly, 1998) which, in this case, means an appropriate geographical classification. An additional advantage which TTWAs have over local authorities (LAs) which in Britain – as in most countries – are the ‘default’ areas for publishing official statistics, is that they can provide more local detail in areas like the Highlands of Scotland where recently-revised LAs are so large that statistics published at that scale ‘average away’ the distinctive circumstances and trends of numerous contrasting local economies.

This very brief description of the context sets the parameters for the research challenges which arise in the definition of TTWAs. The first constraint is the fact that the continued existence of this statistical geography depends upon them retaining their statistical properties which are valued by users; those properties will be detailed later in this chapter. The second constraint is the one which determines the nature of those properties: TTWA boundaries must represent a set of well-formed local labour market areas and, as such, meet criteria relevant for academic and policy debates around sub-regional economies (HM Treasury et al., 2007). The third constraint on the TTWA definitions is that their derivation from analysing localised patterns of commuting must result from a consistent approach applied nationally.

It is worth using this set of three constraints to assess the potential benefit of TTWAs to users over the alternative set of sub-regional statistical areas, the current set of LAs. It could hardly be expected that all LAs would have the statistical properties required of labour market area boundaries because they are defined to meet other criteria (e.g. Boundary Committee for England, 2008). The result is that no ‘tier’ of administrative areas forms a set of meaningful local labour market areas, as the case of the Scottish Highlands has already exemplified. Although, in some cases, commuting data has been referred to in adjusting LA boundaries, this has certainly not been a consistent national process. As a result, the case for the continued production of updated TTWAs remains a strong one, so long as the boundaries meet the above three constraints and are also widely accepted as providing a set of intuitively reasonable sub-regional entities in all parts of the country. Note that the claim is not made that they will be ‘ideal’ labour market area boundaries; such a claim would emphasise the fact that what might be ‘ideal’ for one set of users will not be so for others. Instead, the aim is to provide the generality of users with a set of boundaries which is at least plausible in all parts of the country and can meet a high proportion of user needs.

To some extent, describing this objective as one which sets a considerable challenge to the analyst is to hark back to earlier times. When the boundaries of TTWAs were being revised prior to the 1970s, the process depended entirely on regional and local knowledge; this at least meant that the stakeholders who were involved would consider that the boundaries produced were well defined! Most obviously, it also meant that there was no possibility that they were consistently defined and this became a key problem in the latter 1960s when the boundaries became used more intensively to determine where public funding