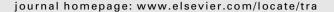
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## Transportation Research Part A





# An empirical examination of the growing phenomenon of off-site residential car parking provision: The situation at UK airports



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#### ABSTRACT

Parking management is a strategy that has been extensively employed by authorities and organisations world-wide in an attempt to address traffic-related congestion and associated environmental impacts at a variety of sites and scales. At airports, parking control and pricing regimes are used to generate revenue and manage traffic demand. On the supply side, within the last few years a new trend in unregulated off-site, predominately residential, car parking provision around UK airports has emerged and quickly grown in popularity. Through a survey of three UK-based self-styled 'parking marketplace' websites and an in-depth analysis of one, this paper provides an empirical examination of the growing phenomenon of off-site residential car parking provision around the UK's 25 busiest passenger airports and discusses the potential implications of this niche but growing phenomenon. Data is provided on the supply and the demand for these alternative spaces, as well as their physical location, attributes, and pricing regimes. The empirical findings indicate that, while this currently represents a relatively small proportion of overall airport parking supply it is experiencing rapid growth and may become significant in the future. The paper concludes by contending that airport operators and local authorities need to be cognisant of the existence of, and the challenges and opportunities associated with, alternative parking provision in order to be able to better plan for, and respond to the planning, environmental, and consumer implications it may create.

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#### 1. Introduction

The car plays a major role in travel, and every car journey, irrespective of its motivation, duration, or location, requires there to be a space available at its destination to park the vehicle. It is interesting therefore that far more research appears to have conducted into the demand for parking than the supply of suitable spaces (RAC, 2012). In relation to parking policy Barter (2010) suggests that there are three broad approaches. 'Conventional supply-focused policy', which emphasises adequate supply via minimum parking requirements which describes a policy pursued by airports over many years; 'parking management', which sees parking used as a tool to further wider policy objectives such as traffic demand management (an approach which has been used extensively by public authorities and commercial organisations, including airports, to address congestion and environmental degradation); and 'market-based parking policy', which advocates allowing commercial market processes to shape local parking provision (Barter, 2010).

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With respect to airport parking, there is evidence of a small but growing phenomenon of alternative off-site car parking provision in which individual property owners advertise and sell car parking spaces on their residential driveways and private properties located near major UK airports. Certainly, passenger car parking does lend itself to competition from off-site providers and, as a result, highly competitive markets for car parking have developed in and around major airports. Given the recent emergence of a growing availability of alternative off-site parking provision this paper offers an empirical examination of current market-oriented passenger parking around UK airports. The paper starts by situating the research within existing literature on airport parking and airport ground access, before the data collection method is described, the empirical findings presented, and their implications discussed.

#### 2. Parking provision and airport ground access

In terms of airport ground access there are essentially three groups of people – passengers, employees and 'meeters and greeters' – who need to access airports (Ashford et al., 1997; de Neufville and Odoni, 2003). While UK airports, in common with many around the world, are supporting the improved provision of public transportation to/from passenger terminals, the private car remains the most important mode by which passengers, staff, and meeter–greeters access airports. Private cars are typically considered to be the most convenient and flexible mode of transport for time critical journeys and as such remain the dominant mode at airports worldwide (Humphreys and Ison, 2005). At Manchester Airport in the UK, for example, 60% of passengers arrive by private car (DfT, 2011). Given the volume of airport access trips made by private cars and the differing demands and trip characteristics of these different user groups, it is unsurprising that airport parking has become an increasingly complex issue.

The need to manage the differing requirements and characteristics of customers and employees as well as balancing supply and demand and the trade-off between generating car parking revenue and achieving environmental goals creates a challenging dilemma for airport authorities. The importance of car parking revenue to airports was recently demonstrated by Jacobs Consultancy (2010) who determined that, for US airports, as much as 26% of total airport revenues can be accounted for by parking revenue alone. Clearly, car parking provision and pricing regimes are strategically important to an airport's competitiveness and profitability (Ison et al., 2008) but there is also an important distinction to be made between the commercially-orientated policies of airport operators and the public-value focus of local authorities. The addition of off-site parking to the more traditional onsite airport parking is resulting in the development and refinement of a local market-oriented parking system similar to that which Barter (2010) described.

As Ison et al. (2007) have shown, there is a significant difference between the needs of airport passengers and airport employees with respect to parking. Passengers pay directly for their parking, whereas airport employees in the UK typically enjoy free parking. Staff permits are usually sold to the third-party organisations that operate franchises or businesses on the airport site who then allocate them to their employees but generally do not pass on the cost. One of the main motivations underpinning this policy relates to staff recruitment and retention (Ison et al., 2007); airport authorities conventionally accommodate the demand for employee parking rather than seek to bring about modal shift (Ricondo et al., 2010).

'Meeters and greeters' and passengers being dropped off at an airport present less of an issue in terms of parking provision. However, as the price of parking increases, it is possible that more passengers will choose to be dropped off and picked up at the airport by friends or relatives (the so-called 'kiss-and-fly' phenomenon) rather than pay to leave their vehicle on site. This would result in four vehicle trips being undertaken to and from the airport rather than two. In addition to the impact on parking revenue, increased 'kiss-and-fly' traffic results in increased congestion. In response, airports such as East Midlands and Birmingham, in the UK, try to encourage long stay car parking and discourage 'kiss-and-fly' journeys by charging private vehicles to enter designated 'drop off' zones in front of the terminal building (East Midlands Airport, 2006; Birmingham International Airport, 2006).

At East Midlands Airport, for example, passenger car parking is demand responsive and not based on predict and provide (East Midlands Airport, 2006). Similarly, London Stansted Airport (2008) has stated that it will only develop additional parking facilities as and when demand requires it. This would also appear to be important in a US context in that a study of fifteen US airports by Ricondo and Associates et al. (2010) revealed that in a constrained airport parking environment passengers tended to prefer being dropped off and picked up by relatives rather than travel to the airport by public transport.

While most of the academic and practitioner interest in airport parking has been concerned with on-site parking, increased attention is also turning towards the provision and management of off-site facilities. For example, at Scotland's Edinburgh airport, a number of independent commercial companies provide courtesy coach services to and from the airport to connect the terminal complex to approximately 4500 off-site spaces (Ison et al., 2009). At Glasgow Airport, as many as 13,000 off-airport long stay spaces are provided by third party operators (BAA Glasgow, 2009). It is not unreasonable to assume that an increase in the price of airport parking could stimulate demand for alternative (and cheaper) off-airport parking.

The growth of off-airport parking has been countered, to a certain extent, by airports developing their own off-site park and ride provision. Manchester Airport in the northwest of England provides an example of this. According to the airport operator, meeting long-stay parking demand on the current site will be problematic as there is competing priorities for land for operational uses. Furthermore, future development of long-stay is likely to be both on-site and off-site. The airport believes that this will provide a platform for a more extensive network of park and ride sites and remoter satellites linked to the

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