



On the flight choice behaviour of business-purpose passengers in the Australian domestic air market

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ABSTRACT

This paper aims to explore the flight choice behaviour of business passengers; in particular, we explored the potential differences between those who work in small and medium enterprises (SMEs) and those in non-SMEs. Discrete choice models with attribute non-attendance data were used to model flight choice behaviour. Results showed that fewer flight service attributes were significant on flights between Sydney, Melbourne and Brisbane due to shorter flight duration but ticket flexibility features were considered significant by business passengers. Self-funded business passengers were more price-sensitive and flight service attributes were considered differently from ticket flexibility attributes by business passengers.

1. Research background and literature

Passenger segmentation in the airline context is traditionally classified into the categories of Business, Leisure and VFR (visiting friends and relatives) (Boyd and Kallesen, 2004; Dresner, 2006; Gilbert and Wong, 2003). Using known demand characteristics of these passenger segments, airlines design and sell their tickets based on observed spending behaviour of passengers, with the aim of capturing market share from competitors and maximising revenue. Business travel tends to contribute to higher revenue per seat sold, i.e. higher yields, compared to leisure travel. With the increasing demand of air travel for business purposes, airlines are increasing the number of products being offered in order to remain competitive. Hence, there is an incentive for airlines to further explore the choice behaviour of passengers in the business travel category.

Certain routes in an airline network may be considered more ‘business-focused’ with higher flight frequencies and stronger focus on flight punctuality to suit the needs of time-sensitive and price inelastic business passengers. In return, a higher level of airfare is maintained to maximise revenue. Tickets are offered in separate cabins (e.g. business and economy cabins) aboard an aircraft and within each cabin, further price discrimination is applied through the usage of *fare families* (or *ticket classes*) that offer different levels of ticket flexibility through various restrictions on booking change and cancellation (Holloway, 2003; Mason, 2001). During peak travel periods, for example in the morning and evening periods, airlines use discriminatory pricing to demand a premium on average fare; hence, maximising ticket yields

and sales revenues (Boyd and Kallesen, 2004).

1.1. Ticket booking preferences of business-purpose passengers

The study of Espino et al. (2008) found that for business purpose trips, passengers were willing to pay more to ensure an on-time flight. These passengers were also more willing to pay for the flexibility to change their ticket itineraries and to pre-order meals at the time of booking, as compared to passengers travelling for non-work purposes. Similarly, Graham et al. (2010) concluded that the purchase, exchange, and refund behaviour of business passengers were influenced both by the time from ticket purchase and the time until flight departure. More cancellations were made by business passengers for recently purchased tickets and for tickets associated with near or imminent departure dates.

Through previous studies, it is known that business passengers tend to book tickets with flexibility options close to their departure dates and prefer using travel management consultants (TMC) to create their trip itineraries often due to restrictions of company travel policies. This booking preference is also due to the imminent, unpredictable nature of travel for business purposes and lower price elasticity to air tickets (Anderson and Wilson, 2003).

1.2. Previous studies on passenger segmentation

Previous studies attempted to segment passengers based on their demand for airline services. Jung and Yoo (2014) looked at the choice

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behaviour of South Korean domestic passengers in light of emerging competition from the domestic high-speed rail system in South Korea. The research of [Espino et al. \(2008\)](#) examined passengers' preference for various services offered by airlines on the popular tourist route between the Canary Islands and the Iberian Peninsula. [Chang and Sun \(2012\)](#) investigated passenger choice decisions between full service and low-cost carriers between Taiwan and China. [Drabas and Wu \(2013\)](#) proposed a comprehensive framework for passenger segmentation based on potential passenger ticket preferences and developed a segment specific cross-nested logit model that also considered brand loyalty of a passenger in air ticket purchase.

Analyses from these choice models and passenger surveys have contributed to useful insights into passenger ticket choice behaviour. For example, attributes such as *fare*, *flight frequency*, *baggage allowance*, and *comfort on board* were found to be significant towards the utility of airline services. [Chang and Sun \(2012\)](#) concluded that there was a clear difference in choice behaviour between business and leisure passengers. In the study of [Espino et al. \(2008\)](#), the willingness to pay for certain ticket attributes were derived, hence providing a benchmark on the value of airline services, potentially improving future airline product design and pricing.

1.3. Emerging challenges on passenger segmentation

The emergence of low-cost carriers (LCC) has resulted in the blurring of traditional passenger segmentations. [Boyd and Kallesen's \(2004\)](#) research showed that it has been more challenging for airlines to effectively segment passengers. [Martinez-Garcia et al. \(2012\)](#) looked into the new choice behaviour of business passengers when travelling on LCCs in Europe. Their research indicated that there were similarities in business and leisure passengers when it came to travelling on LCCs, with both segments being equally price-conscious. It was shown by [Mason and Alamdari \(2007\)](#) that 'trading down behaviour' had increased in business purpose travel on intra-European flights. This indicated an increase in price sensitivity, especially on short-haul sectors, for which business passengers consider price points more important than frequent flyer program incentives and flight schedules.

The research by [Neal and Kassens-Norr \(2011\)](#) on US business passenger choice behaviour conducted after the global financial crisis in 2008 showed a noticeable shift into LCC services, further demonstrating that the characteristics of passenger segments were changing and required new definitions for airlines to maximise revenue based on passenger choice preferences. This insight was echoed by [Drabas and Wu \(2013\)](#) and they proposed passenger segmentation by three factors: price, time and airline, going beyond the traditional segmentation method by price and time factors only. The study of [Teichert et al. \(2008\)](#) on passenger choice data concluded that the traditional method of segmentation into broad business and leisure categories was not sufficient in capturing preference heterogeneity among airline passengers. The study by [Garrow et al. \(2007\)](#) found that opportunities exist for premium pricing through online channels, as long as the method to segment passengers based on their needs is clear. This was in line with the study of [Anderson and Wilson \(2003\)](#), where it was found that passengers were increasingly aware of the existence of pricing strategies used by airlines.

Along with the convenience of the Internet, air passengers are now behaving more 'strategically' in their buying decisions. The value of de-commoditisation was investigated by [Granados et al. \(2012\)](#). It was suggested that the de-commoditisation of airline products could lead to less trading down behaviour of passengers, as they would be able to purchase non-traditional alternatives based on their preferences, and hence, reducing the chance of searching for less expensive offers. The study of [Martin et al. \(2011\)](#) examined how airlines could increase the perceived benefits for frequent flyers and maintain their loyalty.

2. Research scope, aims and objectives

2.1. Research gaps

Most studies in the literature focused on comparing business and leisure passengers. Some studies used passenger choice surveys to examine either competing airlines (products) or competition among modes of transport (e.g. plane versus high-speed rail). To date, there has been limited insight in comparing various fare 'products' offered by the same airline and how passengers may choose among different products. Although ticket choice behaviour of business purpose travellers was previously examined in the literature, with the emerging 'trading down' behaviour of business purpose travellers, it is not as clear how airline products could be better aligned to changing market segments, especially for the business travel category.

In addition, when the ticket purchase behaviour was studied in the literature, there was insufficient attention paid to how business passengers could be further categorised so to improve the alignment of airline products to the needs of business purpose passengers. One of the more established methods by which to categorise business purpose passengers is by company size. It has been shown that company size has an influence on the price elasticity of demand ([Mason, 2001 & 2005](#)). It is believed that the choice behaviour and therefore spending habits of passengers are different between large corporations and small and medium enterprises (SMEs), mainly due to different travel budget allocation and bargaining power when negotiating for travel contracts with airlines. Company size may have an influence on the price elasticity of demand, where passengers travelling on LCCs are more likely to work in SMEs, and legacy network carriers attract more passengers from larger companies.

The [Australian Bureau of Statistics \(2002\)](#) defines a 'Small Business' as a business that employs 20 workers or less, while a 'Medium Business' employs more than 20 but less than 200 workers. The term 'business purpose passengers' is simplified as 'business passengers' for the remainder of this paper. This is not to be confused with passengers in the business cabin ('business class passengers'), which will be specified where appropriate in the paper.

2.2. Research aims and objectives

This paper aims to examine the flight choice behaviour of business passengers, with a particular focus on differentiating the flight choice behaviour based on company size and passenger preferences. There are two objectives for this paper. First, the factor of company size is considered as a context variable in a choice experiment in order to ascertain the influence of company size on the ticket purchase behaviour of business passengers. Second, we specifically tested some features of auxiliary products (current and hypothetical ones) by airlines, aiming to explore how airline tickets could be better designed or further unbundled for more revenue opportunities.

Descriptive analysis from past passenger purchase data and discrete choice models from stated preference surveys are both used to ascertain attributes that are significant to the choice behaviour of business passengers. The finding of significant attributes and passengers' ticket purchase preferences may help airlines promote the spending of particular passenger segments, leading to yield and revenue maximisation opportunities in the future. The rest of the paper is organised as follows: Section 3 presents the theoretical framework of discrete choice model and the experimental design adopted for data collection. Section 4 presents model estimation results and discussions. Finally, Section 5 summarises findings and provides insights to the industry.

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