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AN EXAMINATION OF ONGOING TRENDS IN AIRLINE ANCILLARY REVENUES

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The airline industry seems permanently embedded in producing thin margins and continuously combatting downward pressure on yields. To perpetuate the problem, the industry remains eclipsed with high cost structures and low barriers to entry. However, a new sizzling concept continues to counterbalance these effects in the form of ancillary revenues. Globally, these revenues have increased by 121% from 2010 to 2014 – and the trend is set to continue as carriers are quickly implementing structural changes to accommodate these revenues streams. This paper examines the performance of the two core classifications of ancillary revenues, which are unbundled products and commission based income. It also investigates the willingness of passengers to pay for these services together with what type of ancillary items are acceptable at a particular price point. The study found that passengers value a narrow range of perceived ‘necessity’ products and services such as food and drink, checked baggage and seat assignment as opposed to perceived ‘optional’ unbundled or commission based products/services. It also found significant differences in WTP for specific ancillary services based on carrier type (FSC/LCC/Charter), length of flight (long and short haul) and journey purpose (business, leisure, VFR).

Key words: ancillary revenue, unbundled products, commission based income

1. Introduction

Achieving profitability in the airline industry over the last few years has improved but remains challenging. The industry has only returned marginal profitability through the decades which can be directly attributed to its high fixed cost structure, overleveraged balance sheets, low barriers to entry, high barriers to exit, network fragmentation, strong unions, cyclical macroeconomics, fluctuating fuel prices, a unique regulatory environment, and monopolistic/oligopolistic suppliers – which are just a small sample of the ongoing barriers that impede profitability. However, IATA (2014a) reported that airlines worldwide generated net profits of almost \$20 billion in 2014, which were the highest in the industry to date but the overall net margin remains miniscule at just 2.7% which nets a return of around \$6 per passenger (IATA, 2015).

IATA's financial outlook forecasts into the near future are encouraging as it anticipates: strengthening GDPs; increasing passenger and cargo demand; improving industry structure and efficiency gains; together with increased traction in ancillary revenue earnings (IATA, 2014). These ancillary revenues are producing a fast paced paradigm leap in spawning addition income streams. O'Connell and Warnock-Smith (2013) describe ancillary revenue as income beyond the sale of tickets that is generated by direct sales to passengers, or indirectly as a part of the travel experience. Ideaworks (2014) estimated that these ancillary revenues amassed US\$49.9 billion from 116 airlines in 2014 as shown by category in Table 1, which is up by 121% from 2010. In comparison IATA reported that air cargo, which has been an embedded component since the inception of the airline industry only produced US\$62 billion in revenue in 2014. Clearly this exponential growth in ancillary revenue has positive ramifications that significantly benefit carrier financial performance while Bisignani (2014) stated that the practice is poised to become an integral aspect of the business model of airlines worldwide.

Table 1 Worldwide Estimate of Ancillary Revenue – by Carrier Type for 2014

Airline category	Total Ancillary Revenue	Frequent Flyer Revenue	A la Carte activity
Traditional Airlines	\$17.5 billion	\$10.5 billion	\$7.0 billion
US Major Airlines	\$15.4 billion	\$10.0 billion	\$5.4 billion
Champs	\$9.3 billion	\$0.5 billion	\$8.8 billion
Low Cost Carriers	\$7.7 billion	\$0.4 billion	\$7.3 billion
Worldwide totals	\$49.9 billion	\$21.4 billion	\$28.5 billion

Source: Ideaworks (2014)

At the 2014 IATA World Passenger Symposium, senior economists within IATA presented compelling research that proved that there is a positive correlation between airlines that had a high percentage of revenue from ancillaries and carriers that benefitted from high operating profits as a percentage of revenue. This research suggests that airlines should consider placing an increasing focus not only on selling their core airline products, but also on upselling and cross-selling of air and non-air ancillary products to increase the share of the wallet per passenger (IATA World Passenger Symposium, 2014). Aviation consultancy Oliver Wyman published a report in 2014 entitled ‘Airline Economic Analysis’ stating that airlines have found that passengers are less price-sensitive when it comes to ancillary fees, which renders it as an opportunistic revenue source that is being increasingly exploited (Wilson, 2014).

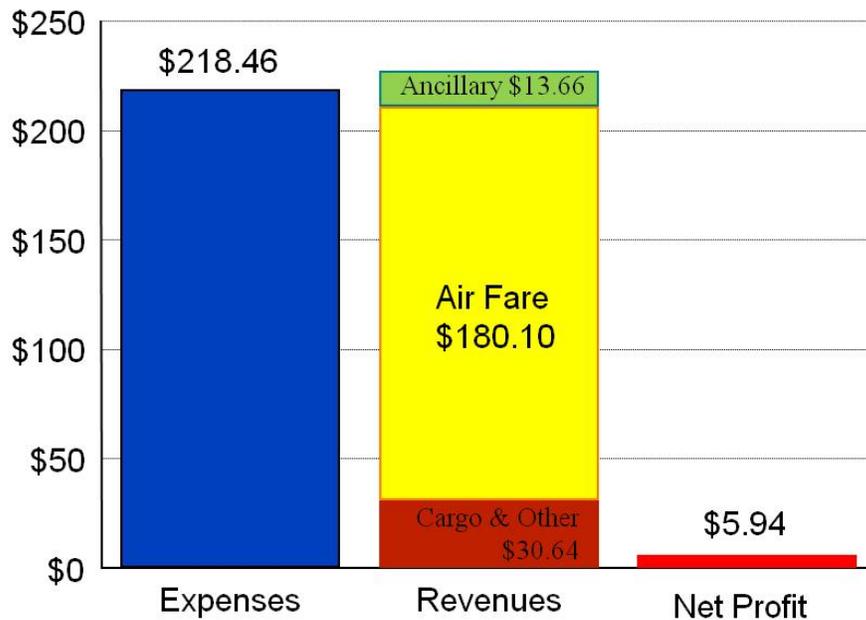
This study aims to examine the performance of the two core classifications of ancillary revenue, which are unbundled products and commission based income using a passengers’ willingness to pay method (at particular price points). It also aims to establish a willingness to use ranking between different ancillaries and passenger types based on the responses to a comprehensive passenger survey, the results of which add to the body of knowledge on the ancillaries airlines could focus on based on stated passenger preferences by market segment, carrier type and length of haul.

The study is broken down in 5 sections. Section 2 reviews the fast moving developments in ancillary revenues, section 3 discusses the data collection phase and presents results, section 4 details the hypothesis testing results and section 5 concludes.

2. Ancillaries: Recent developments

Airline yields have continued to deteriorate over the last few decades as more entrants have joined the fray and today airlines operate in fiercely competitive ‘electronic markets’ which have made fares very transparent - while this has also forced archaic fare rules to be dismantled. This results in more ‘Y fare’ (unrestricted economy) passengers dropping down to lower fare buckets. In-turn, the revenue management system encounters less demand for higher fares and so makes them less available, leading to higher load factors, but lower yields. It is becoming more apparent that the traditional revenue management systems can no longer maximise revenues. However ancillary revenue is fast becoming an embedded engine that turns over increased revenues, which has become a core competency within the marketing mix – thus its implementation is gaining much traction in airline boardrooms throughout the world. IATA now recognises that ancillary revenues have become a key component of the improved financial performance of the industry. The importance of ancillary revenue is evident when its \$49.9 billion projection is compared to the overall transport of 3.3 billion passengers globally and without such an income from ancillary components, the industry would be making a loss from its core seat and cargo products as shown in Figure 1.

Figure 1 Worldwide airline financial results per departing passenger for 2014



Source: IATA (2014b)

As a group, the 2007 top 10 carriers generated total ancillary revenue of nearly \$2.1 billion. Seven years later, some of the original airlines remain on the top 10 list. But the total revenue volume for the top 10 has undergone drastic change by surging to \$20.4 billion by 2013 as shown in Table 2. The increase in ancillary revenues is primarily triggered as carriers expand their revenue footprint by: unbundling the fare and charging for additional products that were once encapsulated within the fare; together with commission based incomes; by turning frequent flyer programmes into innovative profit centres and through diverse advertising gateways that generate payoffs as illustrated in the proceeding section.

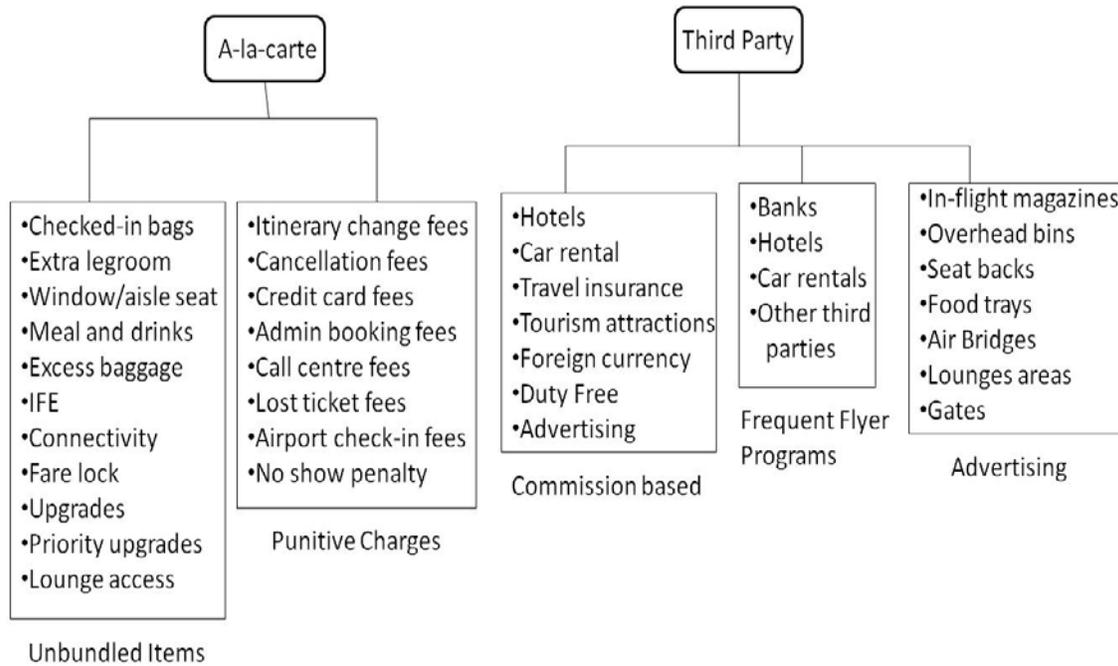
Table 2 Top 10 airlines that generate ancillary revenues in 2013 and 2007

Annual Results 2013 (US\$bn)		Ancillary Source 2013	Annual Results 2007	
United	\$5.7	Various	United	\$0.6
Delta	\$2.5	Various	Ryanair	\$0.5
American	\$2.1	Various	easyJet	\$0.3
Air France/KLM	\$1.7	Various	Alaska Air Group	\$0.2
Ryanair	\$1.7	Various	Aer Lingus	\$0.1
Southwest	\$1.6	Various	Air Berlin	\$0.1
easyJet	\$1.4	Various	Korean Air	\$0.1
Lufthansa Group	\$1.3	Various	WestJet	\$0.1
Qantas Airways	\$1.3	80% FFP	Austrian	\$0.1
US Airways	\$1.1	Various	Alitalia	\$0.1
	\$20.4			\$2.1

Source: Ideaworks, 2013

Ancillary Revenues can be grouped into two distinct categories. Firstly, the a-la-carte entity which comprises unbundled items for sale and punitive charges, which are penalties that are imposed for indecisions and poor planning by passengers. The second category is third party ancillary streams which comprises commission based incentives, revenues from frequent flyer programs and advertising, which are shown in Figure 2.

Figure 2. The attributes of a-la-carte and third party ancillary revenue streams



Source: Authors

2.1 A-la-carte:

This is the revenue that is generated from selling products or services separately, which traditionally have been included in the price of the airline ticket. The low cost carriers initiated this process by disassembling the fare into various individual components, becoming known as the ‘unbundled flight products’, which included separate charges for items such as: pre-assigned seats; checked baggage and excess baggage; priority boarding; in-flight entertainment; in-flight Wi-Fi internet access and food and beverage. Baggage is the largest generator of such revenues with US carriers garnering around \$3.5 billion in 2014, while cargo which has been transported along with passengers since the inception of the industry, produced a lower \$3 billion for the US carriers (US DOT, 2015). British Airways for example earned £45 million from baggage fees in 2013 along with an additional £40 million from assigned seating (British Airways, 2014). Corporate travel departments, travel agents, online travel agents and other travel retailers that are powered by GDSs are now able to offer and book the same ancillary services that were offered only through the airline websites, kiosks or call centres. Booking these a-la-carte

services via a GDS intermediary remains an important cornerstone as the 2014 IATA global passenger survey found that 41% of passengers rely on indirect channels to purchase tickets (IATA, 2014). An IATA commissioned report by Harteveltdt (2013) reported that around 16% of LCC ticket sales moves through GDS interfaces (IATA, 2013). GDSs remain an entrenched appliance in distributing an airline inventories to customers worldwide and have mutated in order to incorporate ancillary revenue streams. Punitive charges are another key revenue driver as consumers are financially impacted if they choose to alter their travel itineraries and for purchasing tickets via credit cards. Reservation changes made by passengers travelling on US carriers in 2014 totalled \$2.9 billion (US DOT, 2015). The fastest growing fee is the credit card burden – most carriers pass on this cost to their passengers (Adeniran, 2012). Research through the airline websites reveals that KLM charges €7.50 for credit card transactions on European flights and €15 for international bookings, while Monarch Airlines issues a 2.5% levy or £5.00 per booking (whichever is greater) with EasyJet charging 2% of the reservation price. Table 3 gives a detailed comparison of a-la-carte fees for a number of airlines in 2015 and there are significant variances occurring. Analysis by Ideaworks (2012) argues that unbundling has reached maturity as there is little opportunity remaining for ‘big revenue’ items to be extrapolated. The next paradigm upsurge is to offer purchasable ancillary services that bring more value adding comfort and convenience amenities to economy class travel.

Table 3. Comparing Airline Charges 2015

Airline	Check In	Priority Boarding	Advanced Seat Selection	Inclusive Luggage Allowance	Baggage Fees/ Excess Fees	Sports/ Music Equipment	Meals Refreshments	Other Charges	Credit Card Charges
Aer Lingus	All check in types included.	N/A	SH: £5 - £14 for standard seats. LH: £18 - £40.	LH: 1 x 23kg bag SH: N/A.	SH: 1st 15kg bag 20 – 30 EUR (online) and 60 EUR (airport). LH: 2nd and subsequent £65. Overweight bags: £65.	£25 (online) or £32 (call centre / airport) per item per flight.	LH: meal and soft drink included. SH: meals from £6.50 (online).	Date/Itinerary/Route change: £35 (online), £40 (phone/airport) or LH £120. Plus fare difference. APD refund fee: £13.50 Name change: £80 per passenger.	No charge.
Air Canada	All check in types included.	Included for Gold members and premium economy and up fares.	Standard seat selection included. Extra legroom / preferred seats: from 19 CAD.	1 x 23kg bag.	2nd 23kg bag: 70 CAD. Overweight and oversized bags: 100 CAD.	Over weight sports and music equipment: 50 CAD.	Meal and/or refreshments included appropriate for length of journey.	Name changes within 24 hours of booking: free of charge.	No charge.
Air France	All check in types included.	Available for Sky Priority Club members.	LH: 50 - 70 EUR. S/MH: 10 - 20 EUR.	1 x 23kg bag, some Mini Fares are hand baggage only.	Overweight bags: 70 EUR. Oversized bags: 75 EUR. 2nd bag: 70 EUR. 20% online discount for online bookings.	Equipment can be carried as part of the inclusive allowance. Excess charges apply. 20% online discount for online bookings.	Meal and/or refreshments included appropriate for length of journey	Phone bookings: £13 per ticket. Ticket office booking: £20 per ticket. Time to Think: £5 - £15 per reservation.	£4.50 per passenger r.
American Airlines	All check in types included.	Group 1 Boarding: 15-40 USD.	4-169 USD (includes extra legroom/ preferred seats).	1 x 23 kg bag	2nd 23kg bag: £65. Overweight bags: 100 USD. Oversized bags: 100 USD.	Equipment can be carried as part of the inclusive allowance. Excess charges apply, some items have individual charges e.g. bikes: 15	Meal and/or refreshments included appropriate for length of journey.	PayPal: £4.50 per ticket. Round the world itineraries: £25 per passenger. Same day flight change: 75 USD.	£4.50 per ticket.
British Airways	Included in ticket price.	N/A	Free of charge 24 hours before	Most fares include at	Extra 23kg bag. Flight to/from	Equipment can be carried as part of the	Meal and/or refreshments	PayPal: £5 per booking APD	£5 per booking.

			departure. Extra leg room seats: SH from £5 and LH from £50.	least 1 x 23kg bag (some fares are hand baggage only)	LGW: £36 (online), £40 (airport). All other destinations: £40 (online), £65 (airport).	inclusive allowance. Standard excess charges apply.	included appropriate for length of journey.	refund fee: £15-30. Name change: free of charge within 24 hours of booking. Spelling mistakes can be corrected without charge.	
Delta	Included in ticket price.	10 USD.	Included in ticket price, extra leg room seats: 9-59 USD.	At least 1 x 23kg bag included in most fares transatlantic fare.	2nd 23kg bag: 100 USD.	Equipment can be carried as part of the inclusive allowance. Excess charges apply.	Meal and/or refreshments included appropriate for length of journey	On board Wi-Fi: from 4.99 USD. In flight alcoholic drinks vouchers: 5 USD	No charge.
EasyJet	Online check in only. Airport check in is not available.	Speedy Boarding is included for passengers who have purchased extra leg room or up front seats	Advanced seat selection and extra leg room seats: £0.99 - £15.99.	N/A	1st 20kg bag: £11-21 (online), £30 (airport), £45 (boarding gate). Excess charges: £3 per kg (online), £10 per kg (airport).	Small equipment: £30 (online), £40 (airport). Large equipment: £35 (online), £45 (airport).	Available for purchase on board.	Cancellation fee: £30. Name/flight change: £35 (online), £40 (airport). Rescue fee: £65. APD refund fee: No charge.	2% per booking.
Emirates	Included in ticket price.	N/A	Standard seating can be requested free of charge.	30 kg per passenger.	Extra 5kg: £113. Extra 10 kg: £225.	Equipment can be carried as part of the inclusive allowance. Standard excess charges apply.	Meal and/or refreshments included appropriate for length of journey.	On board Wi-Fi: 2.75 USD per phone, 7.50 USD per tablet. Free on A380's.	No charge.
Flybe	Included in ticket price.	N/A	Standard seats: £6.50 (online), £8 (phone/airport). Extra leg room: £15 (online), £16 (phone/airport).	N/A	1st bag at 15 kg: £16.50 (online), £18 (phone). 20 kg: £17 (online), £20 (phone), £40 (airport). 23kg: £22 (online)	Equipment: £30 (phone/ airport) e.g. bikes or surf boards.	Available for purchase on board.	Ticket/route change: £35 (online). Name change: £40 (phone/airport) Call centre booking fee: £8. APD refund fee:	3% per booking.

								£25.	
Jet2.com	Airport check in is £15 for passenger who check in luggage.	N/A	Seat selection: from £4 (online). Extra leg room: from £10 (online). Prices vary on route.	N/A	22kg: from £10 (online) price varies on route. Passengers who check bags must also pay for airport check in: £15.	Equipment e.g. golf clubs or skis: from £30 (online).	Available for purchase on board. Meals can be pre ordered from £6.50 (online).	Boarding pass reissue fee: £17.50 (for passengers who check in online but don't bring a printout) PayPal: 2% per booking. APD Refund fee: £25 per booking. Flight/name change: £35.	2.5% per booking.
KLM	Included in ticket price.	N/A	Standard seat selection is included in ticket price. Extra leg room: 20-90 EUR (online). Comfort seats: 10- 160 EUR (online).	LH - 1 x 23 kg bag. SH – N/A	SH – 1st 23kg bag: 15 EUR (online). 2nd 23kg bag: 56 EUR (online), 70 EUR (airport). Overweight bag: 70 EUR (airport).	Over standard luggage allowances are charged individually e.g. bikes: 100 EUR (airport).	Meal and/or refreshments included appropriate for length of journey.	Western Union payment fees apply.	£4.50 per passenger.
Lufthansa	Included in ticket price.	N/A	Standard seat: 25 EUR (online). Extra leg room: 50-90 EUR (online).	1 x 23 kg bag.	Overweight: 50-100 EUR. Oversized: 100-200 EUR. Overweight + oversized: 150-300 EUR.	Over standard luggage allowances are charged individually from 50 EUR.	Meal and/or refreshments included appropriate for length of journey.	PayPal: no charge.	£4.50 per booking
Monarch Scheduled (ZBXXX)	Included in ticket price Online check in is only available for passengers who purchase allocated seats.	N/A	Standard seats: £2.99-9.99 (online). Extra leg room: £4.99-32.99 (online).	N/A	£9 - £30 for 15kg can be pooled between multiple bags. Excess SH - £10/kg, LH/MH - £15/kg, USA and Dominican: 20 USD/kg	Golf clubs, bikes, skis 20kg: £24.99 (online), £30 (airport).	Available for purchase on board. Meals can be pre ordered from £7.99 (online).	PayPal: no charge. Name change: £100 (online), £120 (phone). Time/date change: £35 (online), £40 (phone). APD refund fee: £25.	2% of total £5 per booking whichever is highest
Monarch Charter (MONXXX)	Online check in is only available for passengers	N/A	Standard seat allocation SH: £8. LH: £10.	1 x 20 kg bag is usually included. Passengers	Extra 3kg SH: £37.50 LH: £50	Up to 25kg: £25 (airport only). 25-32kg: £35 (airport only).	Available for purchase on board. Meals can be pre ordered from	PayPal: no charge. ADP refund fee: £25.	2% of total or £5 per booking whichever is highest.

	who purchase allocated seats.			should check with their tour operator			£7.99 (online).		
Norwegian Air Shuttle	Included in ticket price.	Fast track: £10.	Standard seats: £7-25.	N/A	1 x 20 kg bag: £7-50 depending on route and if purchased online or airport. Excess: £9 per kg.	Snow / golf 20kg: £20-33 (online), £30-54 (airport). Bikes / surfboards 25kg: £30-50 (online), £40-60 (airport). Musical instruments 20kg: £30-54 (online).	Available to purchase on board.	Ticket change: £36-75. Name change: £36. Call centre booking charge: £15. APD refund fee: £5.	1.99% per booking.
Ryanair	Airport check in: £70 Online check in: 2hrs-7days before departure included in fare. Online check in 7-30 days before departure is available for passengers who have paid for advance seat selection.	From £2 (online), from £4 (airport). Also included with premium seat allocations.	Premium seat (inc priority boarding): from £10 (online), from £15 (airport). Regular seat: from £5 (online), from £7 (online). Check in 7-30 days is also included for passengers who pay for seat allocations	N/A	1st or 2nd x 15 kg bag: £15-£25 (online), £30-70 (airport/ phone). 1st or 2nd x 20 kg bag: £25-45 (online), £40-75 (airport/ phone). Excess fee: £10 per kg.	Up to 20kg: £50 (online), £60 (airport).	Available to purchase on board.	Boarding card reissue: £15 (for passengers who have checked in but cannot produce their boarding pass). Flight change: £30-60 (online), £45-90 (airport). Call centre booking fee: £20 per booking. Name change fee: £110 (online), £160 (airport, phone) APD refund fee: £17 per passenger.	2% per booking.
SAS	Included in ticket price.	N/A	Standard seats: free of charge 22 hours before departure. Preferred seats SH: 12 EUR (online), LHs: 35 EUR (online).	1 x 23 kg bag.	2nd and 3rd bags from 51 EUR (online), 66 EUR (airport). Overweight bags: from 30 EUR (airport).	Equipment can be carried as part of the inclusive allowance. Standard excess charges apply.	Tea and coffee are included, snacks / refreshments are available to purchase.	Name change: 60 EUR (phone).	No charge.
Swiss Airlines	Included in ticket price.	N/A	Seat preferences can be made when booking	1 x 23 kg bag.	2nd bag: 75-150 EUR. Oversize bag: 100- 200 EUR.	Prices vary on length of journey and equipment. Bikes /	Meal and/or refreshments included	72 hour fare lockdown: £17 per booking.	£4.50 per ticket.

			e.g. aisle or window. Seats can be selected free of charge 48 hours before departure.		Overweight bag: 50-100 EUR. Oversize and overweight bag: 150-300 EUR.	golf: 50-100 EUR. 1 ski bag is carried free of charge: 2nd and subsequent: 50-100 EUR.	appropriate for length of journey.		
Thomas Cook Airlines	Online check in is included but conditions may vary for holiday bookings, check with your tour operator.	N/A	SH: from £6.50, MH: from £9.50, LH: from £14. Children half price.	Some package holidays may include hold luggage, passengers are advised to check with their travel agent. From May 2015 all LH will include 20 kg.	1 x 20 kg bag: SH - £19 (online), £39 (phone), MH - £22 (online), £48 (phone), LH (ex USA) - £28 (online), £48 (phone). USA flights - 23 kg bag £50 (online), £70 (phone).	Varies depending on item, e.g. golf club 15 kg: £60 per return trip. Ski/snowboard equipment: £70 per person per return trip.	SH: £6.50 (online), MH: £9 (online), LH: £11 (online). Children half price.	Name or flight change: short and MH over 25 hours before departure or LH over 80 hours before departure - £35 + fare difference (online), £55 + fare difference (phone).	2% per booking.
Thomson Airways	Included in ticket price.	N/A	From £7.50. Premium seating from £149.	Some package holidays may include 15 or 20 kg hold luggage, passengers are advised to check with their travel agent. Most ski flights include 15 kg per passenger.	Excess: short/MH - £13 per kg (airport), LH: £18 per kg (airport).	Equipment should be booked at least two months in advance.	SH: food and drinks can be purchased on board. LH: meals are included in the ticket price. Refreshments on sale on all flights.	Minor name changes: £50, surname/ passenger/ passenger type: £50-100% of fare. Date/ flight time/ airport/ duration: from £30+50% of fare - 100% of fare. Price depends on how many days until departure.	2% per booking max of £95.
United Airlines	Included in ticket price.	Available for Premier Access customers.	Seats are allocated free of charge at check in.	1 x 23 kg bag.	2nd 23 kg bag: 100 USD. Oversized bags: 200 USD. Overweight bags: 200- 400 USD.	Bikes and other sporting equipment: 150- 200 USD.	Meal and/or refreshments included appropriate for length of	Western Union payment: £10 per transaction. Premier Access/ Airport lounge:	No charge

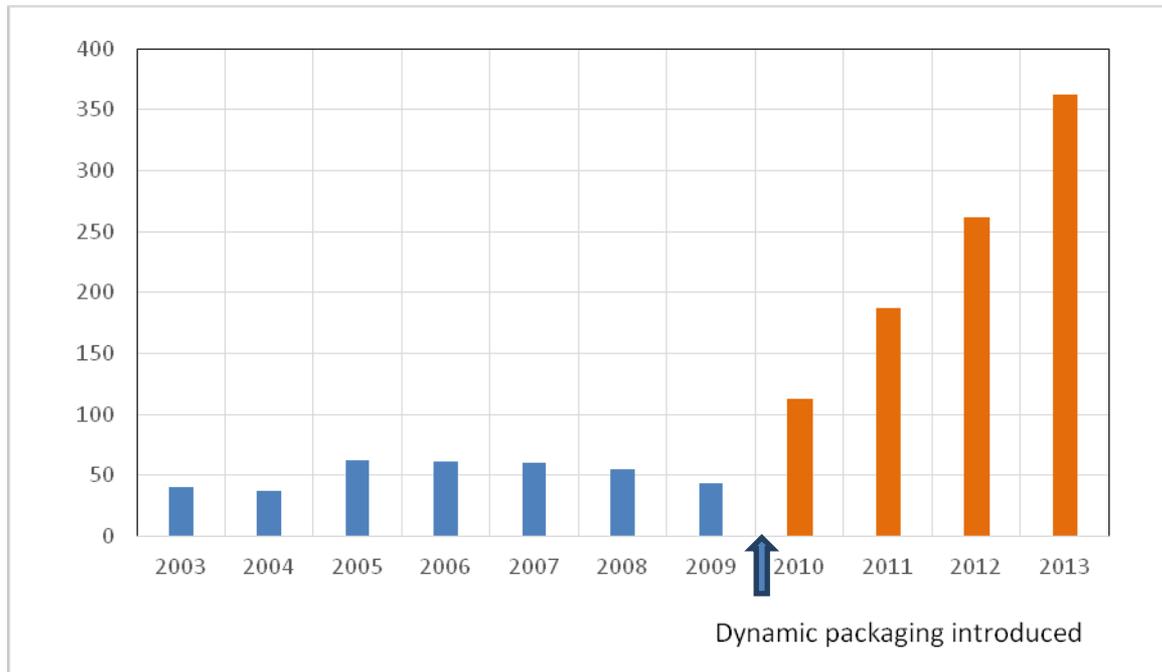
							journey.	48 USD. Spelling mistakes can be corrected free of charge, large mistakes must be substantiated e.g. marriage certificate.	
Virgin Atlantic	Included in ticket price.	Included in Premium fares.	Seats allocated free of charge at check in. Exit row seats: £50-90. Extra leg room: £35-50. Seat plus: £60- 199.	1 x 23 kg bag.	2nd 23kg bag: £55 (online), £65 (airport). 3rd bag +: £120 (online), £140 (airport). Overweight/sized: £40 (airport).	Equipment can be carried as part of the inclusive luggage allowance, standard excess fees apply.	Meals and refreshments are included.	Fare locker: £10. Paper tickets: £25. Upgrades: £10-5000. Guest list package: from £240. APD refund fee: £30. Name change: £30 per name.	1.5% of booking.
Wizz Air	Airport check in: £8 (online), £25 (airport). Online check in: free.	£3 (online), £6 (airport).	Standard seats: £6.50-14. Extra space: £10-11.59. XXLlong: £12 (airport).	N/A	£13-39 per 32kg bag (online), £51 (airport).	£24 (online/phone), £51 (airport).	Available to purchase on board.	Call centre booking fee: £8.12. Seat protection fee: £63.77. Flight change: £15-44.06. Flex fee: £8. Invoice change: £4. SMS confirmation: £1.30. Name change: £36 (online), £47.54 (phone). Missed departure: £56. On arrival guarantee: £8	No charge

Source: UK CAA (2015)

2.2 Commission based ancillaries:

The internet has shifted power from the supplier to the consumer. It allows a customer to combine multiple travel components such as hotel accommodation and car hire from an airline website, as they are obvious products that naturally complement the sale of an airline seat. O'Connell and Warnock-Smith (2013) stated that it integrates tourism related data onto one transparent platform and in effect, consumers become their own travel agents by building a tailor-made package that suits their specific requirements. This process known as dynamic packaging is handled seamlessly in one transaction and requires only one payment from the consumer. It is dynamic because pricing, constraints and ultimately choice are determined online based on a real-time inventory. Research by Google analysis reveals that the typical traveler uses 22 websites to research a trip in multiple shopping sessions before booking (Harteveldt, 2012). Airlines have been leaking huge volumes of revenues to suppliers for decades and dynamic packaging directly through airline websites aims to significantly curtail this trend. The global car rental business is worth \$42 billion each year and is an increasingly important source of ancillary revenue for airlines (Alten, 2009). Figure 3, for example, shows the revenue impact from dynamic packaging on British Airways Holidays since it introduced the concept, which triggered an exponential revenue growth in 4 years as it vastly reduced leakages to third party providers (Guestlogix, 2015). The managing director of BA Holidays stated that the number of hotels and resorts in the range of 3, 4 and 5 star amenities had increased to more than 6,000 by 2010 (Bentley, 2010). A passenger survey initiated by GuestLogix found that more than half would take advantage of destination-related offers onboard a flight, particularly services that could be utilised immediately such as entertainment and attraction tickets, ground transportation and tours (Ascend, 2012).

Figure 3. Revenues from British Airways Holidays (£Millions)



Source: Guestlogix (2015)

2.3 Frequent Flyer Programme (FFP) Activities:

The primary objective of FFP is to retain travelers, thereby mitigating the risk of losing business and any erosion of existing customer bases. This category consists of sales of points and mileage to programme partners such as co-branded credit cards, hotel chains, car rental companies, online retailers and also the sale of points or mileages directly to the programme members. There are bonus points given for silver, gold and platinum members, which are incentives for high valued travellers. According to a survey of business passengers flying Delta Air Lines, 64% are unmanaged travellers who are not controlled by corporate travel policies, which in-turn creates a big opportunity for the US incumbent to develop a strong personalised relationship (Atmosphere Research Group, 2014). An airline's FFP membership is fast becoming a core competency of the business evolution as around 50% of United Airlines \$37 billion revenues for 2012 were generated through the members of its MileagePlus program (Ideaworks, 2013). These programs have become a huge source of revenue for carriers. United Airlines, for example, disclosed

mileage sales of around \$2.8 billion in 2012, which represented 7.6% of the carriers annual revenue (United Airlines, 2012). The amount spent on United's co-branded credit card increased by 35% and active card members increased 16% over the last 3 years. These co-branded credit cards are now offered in 15 countries (Garrido, 2014). In 2010, approximately 62% of American Airlines AAdvantage miles were sold to third parties (mostly banks), while only a third were accrued by members flying on the carrier (AMR, 2010). The majority of the 114 billion miles sold by American during 2010 were purchased by Citibank, which is the primary issuer of credit cards linked to the carriers FFP. Many of these miles go unclaimed, which advantages the operating carrier as today's airlines have garnered very high load factors thereby leaving little incentives to redeem miles for tickets that would essentially displace revenue passengers. According to a report by International Travel News (2013), the Economist estimated that there were 14 trillion unused miles/points accumulated worldwide in 2004. Skift (2013) announced that the Economist and WebFlyer revised that the number of unredeemed miles exponentially increased to 23.8 trillion by 2012. Retana (2013) echoed this theme by reporting that 25% of United/Continental allotted mileage was expected to expire or go unredeemed by the end of December 2012. There is now a paradigm shift from a mileage award mechanism towards a revenue based accrual system – Delta, United and Qantas have quickly transformed by awarding miles based on the fare paid rather than the distance travelled. The FFP member status is also correlated to the number of miles awarded in order to incentivise loyalty and repeat patronage. United Airlines, for example, awards 7 miles for each dollar spent for premier silver members while premier platinum receives 11 miles for each dollar expended (United Airlines, 2015).

2.4 Advertising:

This category includes sales of advertising by the airline in-flight magazines, overhead luggage bins, seat backs, air-bridges, exclusive lounges, gate areas, etc. also placement of samples and consumer products associated with a commission fee. Ryanair (2015) states that its overhead bin, tray table and boarding card advertising media offers an effective communication platform as the advertisements become lodged into the long term memory of its passengers. The inflight magazine is populated with upmarket luxury advertisements together with a wide range of articles from sports to entrepreneurial stories to capture and

attract passengers' attention. Over 150 airlines worldwide now offer such a magazine, thus making it a potential revenue generator. In 2009, the Wall Street Journal reported that more than 80% of passengers read the magazines that airlines place in front of them and readers average around 30 minutes a flight with the magazines (Michels, 2009). According to Lufthansa, its magazine reaches the top 20% of households in terms of income in Germany and has more readers than Time Magazine Europe, Newsweek Europe, and The Economist (Huson, 2015). In 2008 Lufthansa charged €19,500 for a 30 second in-flight TV spot, whereas with British Airways it cost advertising companies as much as €43,443 for the same 30 second slot (IMM International 2008).

Today, airlines have exclusive control of the passenger from check-in to departure, and it will become increasingly important for airlines to continue to explore new retailing opportunities at the airport. Airlines have been limited in their ability to influence travelers across the entire customer journey. Bisignani (2014) revealed that Siloed data, coupled with decades of cost-saving initiatives (instead of value creation), has left travelers around the world feeling disconnected and underappreciated. This is reiterated in a recent study conducted by Timetrade (2013) and Businessinsider (2015) who found that around 60% of retailing executives report a personalised customer experience as the No. 1 shopping factor missing today. Retailing strategies of the future should consider customisable content through flexible channels for a range of purposes: product and service status; news; advertising, branding and infotainment. Advances such as dynamic online advertisements on items such as car rental and hotels based on previous browsing sessions and predictive product suggestions based on purchase history will condition consumers to think that all online interactions will be tailored to suit their individual preferences.

Customer data profiling for personalisation could be the next paradigm leap in passenger analytics providing a 360-degree view of customer insights that combines structured and unstructured data from internal and external sources and triggers actionable insights across the customer journey. This "master data profile" could be the nuclei of successful retailing strategies by providing the ability to personalise offers and target customers. Industry collaboration by the authors deduces that around a terabyte of customer data is circulating at any given time within a large carrier's system, airlines that use this can create a seamless customer-data environment. This can become a reality as SITA (2015) researched that 97% of air travelers now carry their own device when travelling, with 81%

carrying a smartphone, 43% a tablet, 43% a laptop and 17% carrying all three. This high penetration creates huge opportunities in terms of communications with the personalisation of its passengers throughout the start-to-end travel process.

3 Survey data and results

An online survey was arranged in November 2014. The questionnaire was uploaded to the “Questionpro” website and over 400 survey invitations were sent using a convenience sampling approach through social media to Cranfield University air transport MSc graduate alumni who work in aviation throughout the world. These aviation professionals were specifically targeted as they are knowledgeable about unbundled and commission based products. It also ensured the credibility and relevance of the responses as it harnessed their collective wisdom and experience. A total of 220 responses were collected of which 170 were fully completed from 37 countries giving the response rate of 43%.

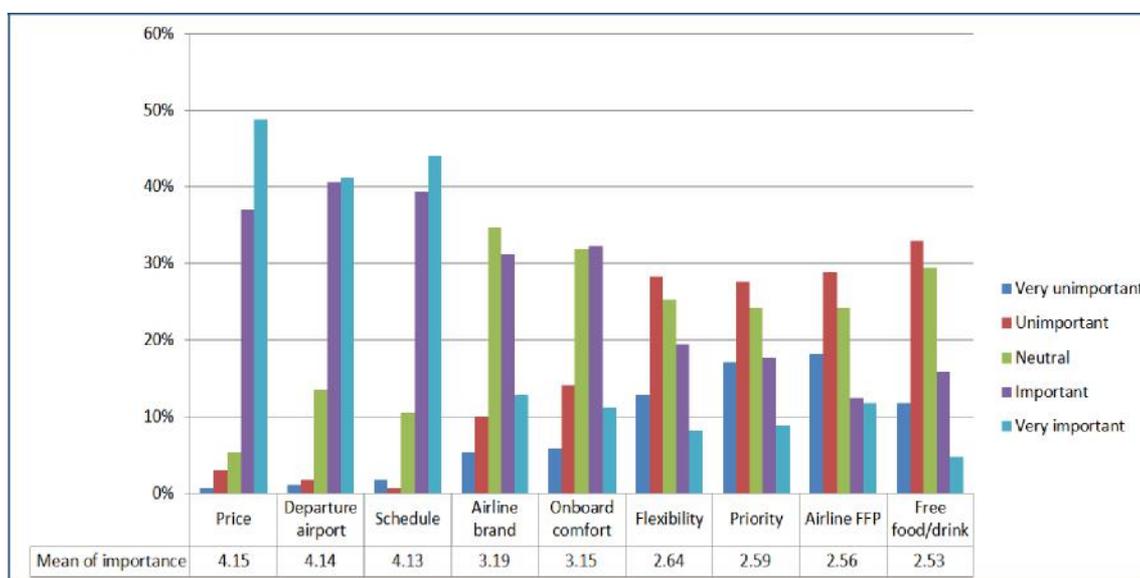
3.1 Analysis of trip-related factors

Flight purpose for the majority of respondents was holiday, while business trips accounted for around one-third of trips, with one-fifth of the journey’s being to visit friends and relatives. A small proportion of this sample indicated other purposes such as a study trip. Most respondents purchased their most recent flight directly from an airline’s website (43%). Interestingly, almost one fifth of respondents stated that somebody else booked their ticket for them. Almost two thirds of respondents had flown their last flight with full service carrier and nearly one third with a low cost airline. All three of these trip-factors act as attribute variables and help to explain exposure and attitude to various categories of ancillary revenue.

3.2 Analysis of priority and preferences

Figure 4 and Table 4 show the importance of various flight attributes to respondents. As shown, price, schedule and departure airport were considered the most important factors, whilst on-board comfort, priority and free food and drink were the least important to them.

Figure 4 Importance of flight attributes to the respondents



Source: compiled by author

Table 4 Mean and standard deviation of the flight attributes

		Price	Departure airport	Schedule	Airline brand	Onboard comfort	Flexibility	Priority	Airline FFP	Free food/drink
N	Valid	170	170	170	170	170	170	170	170	170
	Missin	0	0	0	0	0	0	0	0	0
Mean of importance		4.15	4.14	4.13	3.19	3.15	2.64	2.59	2.56	2.53
Std. Deviation of importance		1.24	.996	1.13	1.28	1.25	1.32	1.33	1.36	1.19
Very important: 5, Important:4, Neutral: 3, Unimportant:2 and Very unimportant:1										

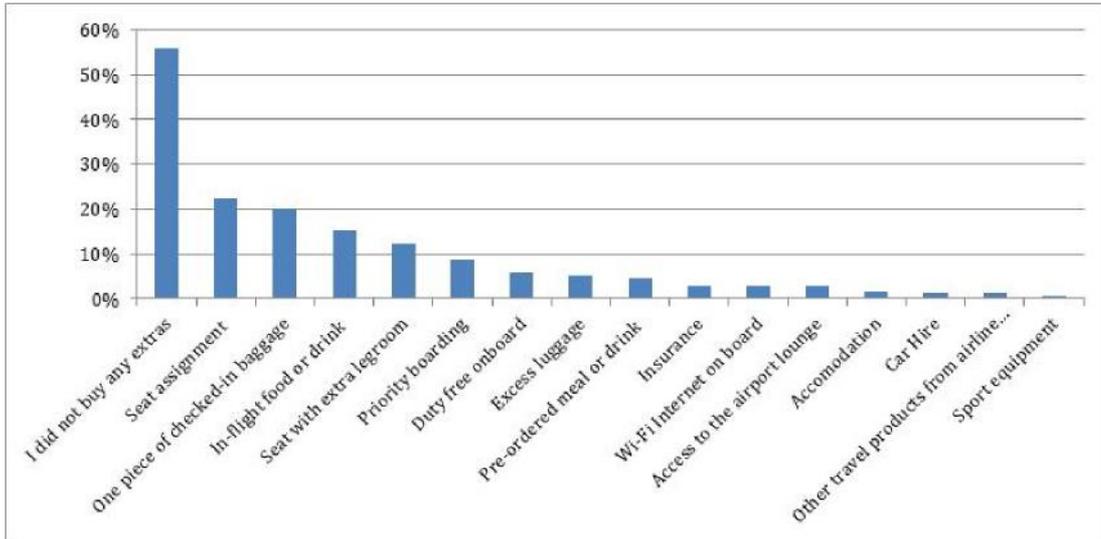
Source: compiled by author

This would suggest that getting the basic package right in terms of basic price, departure airport and schedule provides a highly important platform for airlines to access passenger preferences in relation to secondary products and services. Equally regardless of how enticing airline secondary products and services are, if the basic product there would be precious little opportunity to generate secondary revenues.

3.3 Analysis of recent purchase behaviour

Respondents were asked what ancillary services they purchased on their most recent flight. The questions were a combination of an airline’s a-la-carte and travel related products from third-party service providers such as accommodation, car hire and travel insurance through the airline website/call centre.

Figure 5 Ancillaries purchased by respondents on their most recent flight



Source: compiled by author

Figure 5 shows that more than half of the respondents stated they did not purchase any ancillaries on their recent flight. Amongst passengers who purchased extras, seat assignment, checked-in baggage and inflight food/drink were the most popular categories, all of which can be considered unbundled products.

3.4 Analysis of willingness to use and willingness to pay

Respondents were asked to express their willingness to pay for a-la-carte products and services offered by the airline over a short-haul and a long-haul flight. The percentage of respondents who were willing to pay for each a-la-carte item and the maximum, minimum and the average amount that they were willing to pay for these products are listed in Table 5.

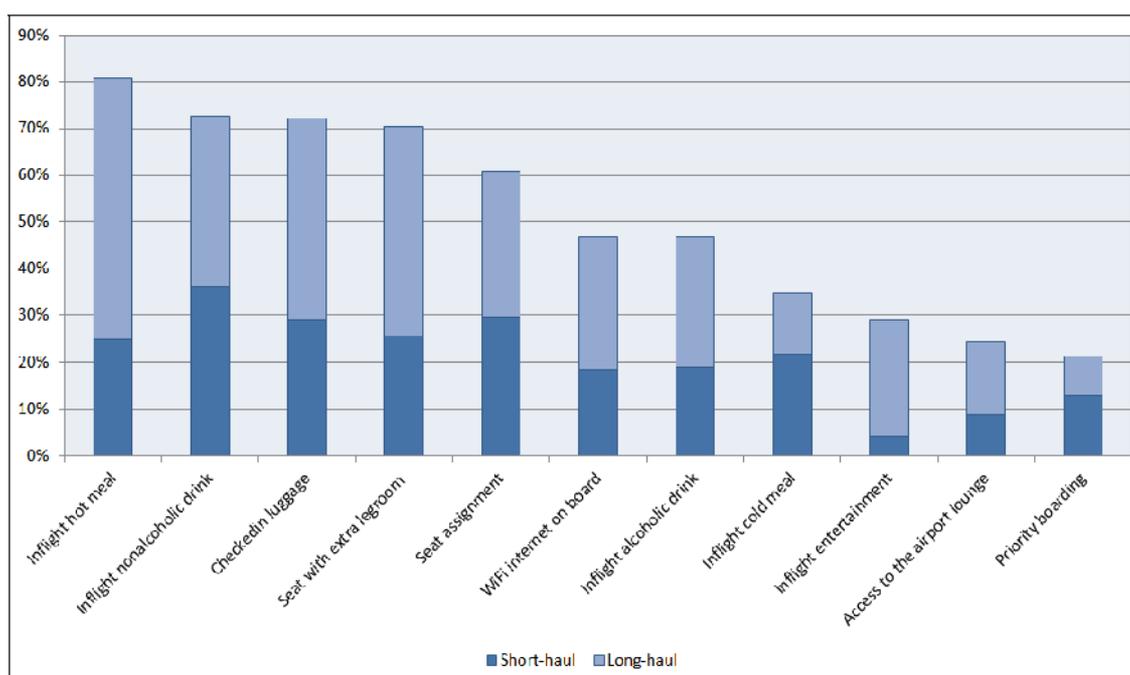
Table 5 Willingness to use and pay for a-la-carte products by length of haul

	Short-haul				Long-haul			
	%Frequency	Min	Max	Mean	%Frequency	Min	Max	Mean
Inflight hot meal	24.7%	£3.00	£20.00	£6.14	56.5%	£3.00	£20.00	£8.43
Inflight non-alcoholic drink	35.3%	£1.50	£3.99	£2.07	37.1%	£1.50	£3.99	£2.11

Checked-in luggage	28.8%	£1.00	£15.00	£4.16	42.9%	£2.00	£30.00	£11.59
Seat with extra legroom	24.7%	£3.00	£30.00	£10.78	45.3%	£3.00	£40.00	£14.71
Seat assignment	29.4%	£2.00	£10.00	£4.34	31.2%	£2.00	£11.99	£6.33
Wi-Fi internet on board	18.8%	£15.00	£29.99	£21.49	28.8%	£10.00	£59.99	£24.59
Inflight alcoholic drink	18.8%	£5.00	£34.99	£16.55	27.6%	£5.00	£34.99	£17.63
Inflight cold meal	21.8%	£2.50	£10.00	£3.52	13.5%	£2.50	£4.99	£3.65
Inflight entertainment	4.1%	£2.00	£5.00	£2.99	25.3%	£2.00	£9.99	£6.30
Access to the airport lounge	8.8%	£2.00	£9.99	£6.01	15.3%	£2.00	£9.99	£6.49
Priority boarding	12.4%	£1.00	£5.99	£4.65	8.2%	£1.00	£10.00	£4.86

Source: compiled by author

Figure 6 Distribution of willingness to use a-la-carte products by length of flight



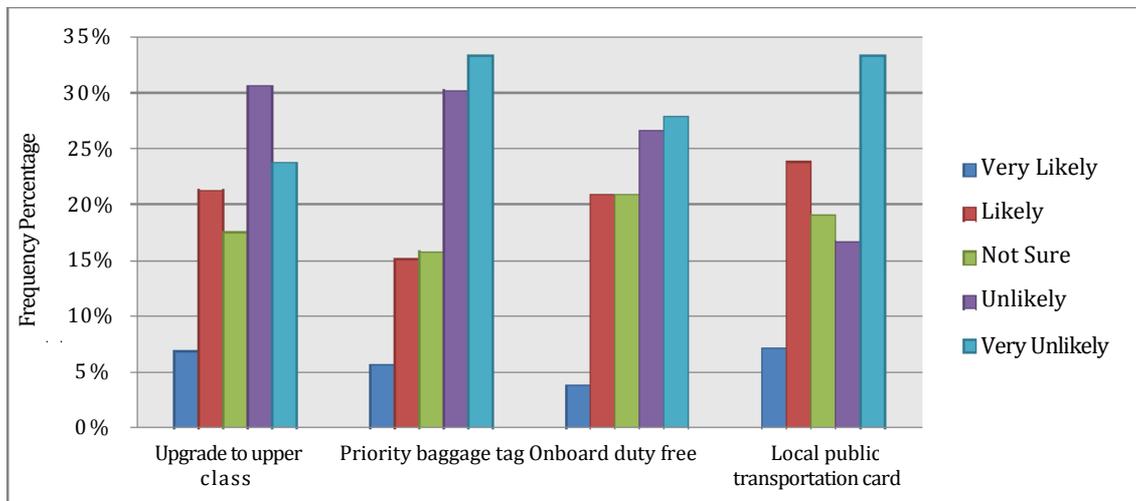
Source: compiled by author

Table 5 and Figure 6 show that the majority of respondents on a long-haul flight would buy an in-flight hot meal for average £8.43 and on short-haul flight would buy a non-alcoholic drink for average £2.07. At the other end of the spectrum very few respondents would be willing to purchase in-flight entertainment on a short-haul flight (4.1%) and priority boarding on a long-haul flight (8.2%). Clearly there are different values placed on specific ancillary products and services for long-haul and short-haul passengers, which should be borne in mind by airline commercial departments.

Respondents were also questioned about whether they would consider buying other ancillary products such as an upgrade to upper class, priority baggage tags, on-board duty free and local transportation tickets. The majority stated that they are very unlikely

to purchase these items (see Figure 7), suggesting that scope for ancillary revenues is large but within a small range of what are perceived to by value adding products and services.

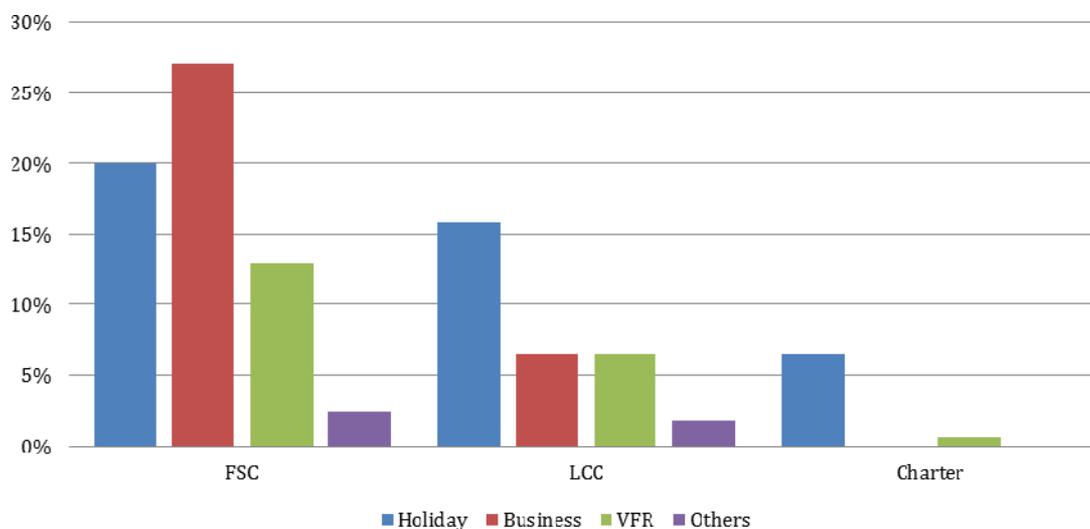
Figure 7 Probability of buying other ancillary product



3.5 Analysis of responses based on type of carriers

Figure 8 shows that the main purpose of flight with FSC was business. Whereas holiday was the main purpose of LCC and charter airline passengers.

Figure 8 Distribution of respondents based on carrier type and main purpose of their recent trip

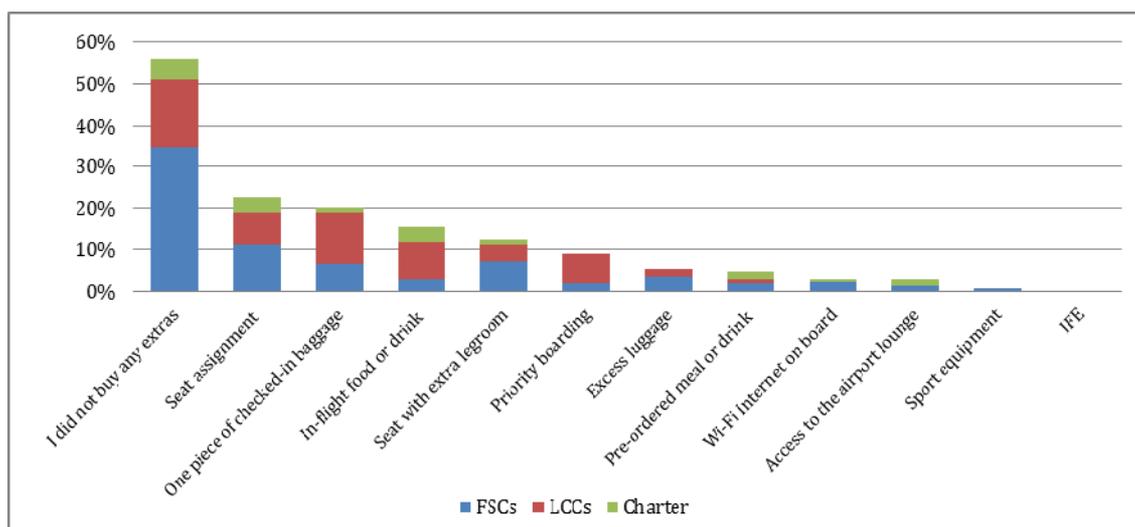


Source: compiled by author

Figure 9 shows that majority of respondents who flew with FSCs did not buy any ancillary products on their last flight. The most popular products for FSC travelers were

seat assignment and extra legroom seat. Conversely, a higher proportion of LCC passengers purchased some form of ancillary product with most purchasing checked-in baggage. While the most popular products for charter passengers was jointly seat assignment and in-flight food and drink. None of the respondents paid for inflight entertainment on their most recent flight.

Figure 9 Respondents’ purchase of ancillaries on their most recent flight broken down by type of carrier

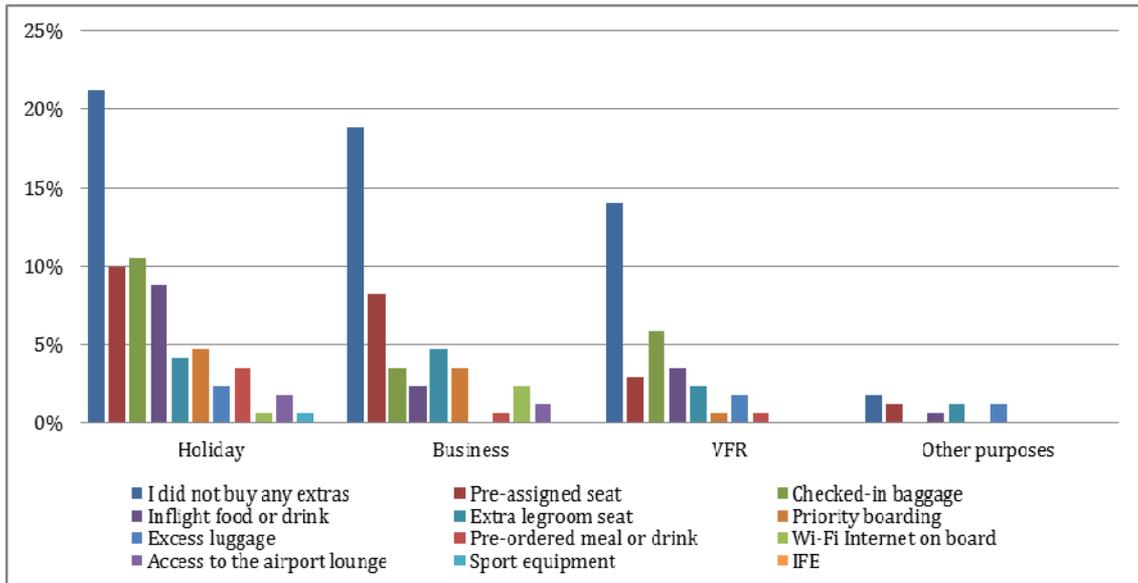


Source: compiled by author

3.6 Analysis of responses based on purpose of the recent flight

Figure 10 shows that the top items of ancillary products purchased by holidaymakers in this study were checked-in baggage, pre-assigned seats and in-flight food and drink. The top purchases of business travellers were seat assignment and seats with extra legroom. The VFR sub-group mostly purchased checked-in baggage and in-flight food and drink, which was largely in line with holidaymakers. The top purchases of respondents in other journey purpose categories were excess luggage, seat assignment and seats with extra legroom.

Figure 10 Respondents' purchase of ancillary products and services based on main purpose of flight



Source: compiled by author

4. Hypothesis testing

Since almost all the independent and dependent variables of this study were categorical, a chi-square test was applied to examine the impact of flight related factors on Willingness to Pay (WTP) for ancillary products and evaluate the significance of any differences. The hypotheses are as follows:

Hypothesis 1

H0: Purpose of flight has no impact on WTP for ancillary products and services

H1: Purpose of flight has impact on WTP for ancillary products and services

Hypothesis 2

H0: Type of carrier has no impact on WTP for ancillary products and services

H1: Type of carrier has impact on WTP for ancillary products and services

Hypothesis 3

H0: Length of flight has no impact on WTP for ancillary products and services

H1: Length of flight has impact on WTP for ancillary products and services

Hypothesis 1

Table 6 shows that there is a significant correlation between purpose of flight and willingness to pay for one piece of checked-in baggage and excess baggage (p-value \leq 0.05) therefore *H0* hypotheses for these two items is rejected and *H1* is accepted. As a result, purpose of flight has an impact on willingness to pay for one piece of checked-in baggage and excess baggage.

However since the p-value for the rest of ancillary services and products listed in the above table is $>$ 0.05 consequently *H0* hypotheses for these products are not rejected. It can be concluded that there is no significant association between purpose of flight and WTP for these items.

Table 6 Chi-square test for purpose of flight and WTP for ancillary products and services

	Value	df	P-value
Pearson Chi-Square for Checked-in baggage	7.955	3	.047
Likelihood Ratio for Excess Baggage	10.843	3	.013
Likelihood Ratio for Priority boarding	3.853*	3	.278
Pearson Chi-Square for Seat assignment	1.954	3	.582
Likelihood Ratio for Extra Legroom	1.954*	3	.582
Likelihood Ratio for Sport equipment	1.726*	3	.631
Likelihood Ratio for Pre-ordered meal	4.123*	3	.248
Pearson Chi-Square for In-flight food/drink	4.870	3	.182
Likelihood Ratio for Wi-Fi	5.609*	3	.132
Likelihood Ratio for Access to the Lounge	2.845*	3	.416
* Since more than %20 of cells have expected count less than 5, therefore Chi-square test assumption is violated and Likelihood Ratio test result is used instead.			

Source: compiled by author

Hypothesis 2

Table 7 illustrates that there is a significant correlation between type of carrier and willingness to pay for one piece of checked-in baggage, priority boarding, pre-assigned seats, pre-ordered meals, in-flight food/drink and access to airport lounges (p-value \leq 0.05) therefore *H1* hypotheses for these items are accepted. The correlation and

statistical significance for food and drink purchases is especially high when the sample is split by carrier type.

However since the p-value for excess baggage, extra legroom seats, sport equipment and Wi-Fi internet on-board is > 0.05 consequently H_0 hypotheses for these items are not rejected. It can be concluded that there is no significant association between type of carrier and WTP for these ancillary items.

Table 7 Chi-square test for type of carrier and WTP for ancillary products and services

	Value	df	P-value
Pearson Chi-Square for Checked-in baggage	19.723	2	.000
Likelihood Ratio for Excess baggage	1.356*	2	.508
Likelihood Ratio for Priority boarding	17.984*	2	.000
Pearson Chi-Square for Seat Assignment	6.692	2	.035
Pearson Chi-Square for Extra Legroom	.370	2	.831
Likelihood Ratio for Sport equipment	.948*	2	.622
Likelihood Ratio for Pre-ordered meal	6.765*	2	.034
Pearson Chi-Square for In-flight food/drink	27.683	2	.000
Likelihood Ratio for Wi-Fi	4.167*	2	.125
Likelihood Ratio for Access to the Lounge	11.776*	2	.003
* Since more than %20 of cells have expected count less than 5, therefore Chi-square test assumption is violated and Likelihood Ratio test result is used instead.			

Source: compiled by author

Hypothesis 3

Since all respondents were asked to express their opinion about willingness to pay for extras over a flight of less than four hours and a flight more than four hours, instead of Chi-square test, a paired samples test is used to examine the impact of flight length on WTP for ancillary products and services.

Table 10 Paired sample test result for Length of flight and WTP for ancillary services

Paired Samples Test									
		Paired Differences					t	df	P-value
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	Short-haul Cold meal & Long-haul Cold	.08235	.41315	.03169	-.01980	.14491	2.599	169	.010
Pair 2	Short-haul Hot meal & Long-haul Hot meal	-.31765	.60003	.04602	-.40850	-.22680	-6.902	169	.000
Pair 3	Short-haul Non-alcoholic drink & Long-haul Non-alcoholic drink	-.01765	.45474	.03488	-.08650	.05120	-.506	169	.614
Pair 4	Short-haul Alcoholic drink & Long-haul	-.08824	.37430	.02871	-.14491	-.03156	-3.074	169	.002
Pair 5	Short-haul Extra legroom & Long-haul Extra legroom	-.20588	.54281	.04163	-.28807	-.12370	-4.945	169	.000
Pair 6	Short-haul Pre-assigned seat & Long-haul Pre-assigned seat	-.01765	.42792	.03282	-.08244	.04714	-.538	169	.591
Pair 7	Short-haul Checked baggage & Long-haul	-.14118	.47799	.03666	-.21355	-.06881	-3.851	169	.000
Pair 8	Short-haul Priority Boarding & Long-haul	.04118	.27426	.02103	-.00035	.08270	1.958	169	.052
Pair 9	Short-haul IFE & Long-haul IFE	-.21176	.42396	.03252	-.27596	-.14757	-6.513	169	.000
Pair 10	Short-haul Wi-Fi & Long-haul Wi-Fi	-.10000	.37131	.02848	-.15622	-.04378	-3.511	169	.001
Pair 11	Short-haul Lounge access & Long-haul Lounge access	-.06471	.26965	.02068	-.10553	-.02388	-3.129	169	.002

Source: compiled by author

Table 10 displays that length of flight impacts on passengers' willingness to pay for cold and hot meals, alcoholic drinks, extra legroom seats, checked-in baggage, IFE, Wi-Fi and access to the airport lounges (p-value ≤ 0.05). Therefore, *H1* hypotheses for these items are accepted.

However, the P-value for non-alcoholic drinks, pre-assigned seats and priority boarding is greater than 0.05, therefore the *H0* hypotheses for these items is valid and it can be concluded that flight length does not have any impact on WTP for these services.

5. Conclusion

By conducting an on-line survey as recent as November 2014 among frequent travelers and air transport professionals with a positive response rate, this study has shown that airlines could benefit greatly from understanding ancillary preferences and WTPs based on type of carrier, length of journey and journey purpose.

Willingness to Pay (and to Use) for various ancillary services were shown to differ between Low-cost carrier and full-service carrier passengers, short-haul and long-haul flights and overall journey purpose (business, leisure, VFR etc..). Significant statistical differences were found with regards to the purchase of food and drink, extra baggage, priority boarding and seat assignment with LCC holiday-makers on a short-flight much more willing to purchase food and drink than anything else and long-haul, business travelers flying with a full-service carrier much more likely to value the benefit extra legroom.

It was also found that commission based ancillary revenues receive a lower willingness to use and pay than some unbundled products/services and a narrow range of unbundled products appear to be commonly purchased, namely checked baggage, food and drink and seat assignment across most sub-categories of trip related factor.

Airlines and researchers are encouraged to investigate disaggregated market data further in relation to ancillary revenues as an important feed into commercial strategies. Against a backdrop of poor airline margins, intelligence based development of ancillaries revenue streams is a must.

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