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Assessing the optimal period in which to purchase airline tickets to international destinations departing from South Africa

Professor Renier Steyn
Graduate School of Business Leadership,
University of South Africa, PO Box 392, Unisa 0003, South Africa
steynr@unisa.ac.za

Abstract

Much research has been done on the best time to purchase airline tickets. Most of these studies were conducted within the United States of America (USA) and no such research relevant to the South African context could be located. The aim of this study was to determine the optimal time to buy airline tickets to international destinations from South Africa at low prices. The prices of airline tickets issued by seven airlines operating on seven different international routes constituted sources for departure dates ranging from one week to12 months in advance. Similar to USA research, the results revealed that the best time to purchase tickets at the most advantageous fare is between 150 and 200 days prior to departure. The collected data are presented as graphs reflecting the fluctuations in price over time. The results further revealed that the pricing of airline tickets to international destinations peaks around July and January each year. Pricing therefore seems to be seasonal, following the Northern (July) and Southern (January) summer holiday patterns. The information contained in this article should assist individuals travelling from South Africa to international destinations when purchasing tickets as they will be able to select optimum price purchase periods.

Keywords: Travel cost, airfare, South Africa, peak season

Introduction

The cost of an airline ticket contributes substantially to the total cost of travel (Baum, 2006; Eugenio-Martin, & Inchausti-Sintes, 2016; Oppermann, & Cooper, 1999). As money is a scarce commodity, most consumers try to reduce the money spent on travel. The internet provides many suggestions to minimise the cost of airplane tickets (CheapAir.com, 2015; Expedia, 2015; Geekyexplorer.com, 2015).These include comparing fares across airlines, flying on specific days of the week and flying using alternative routes. Most of these websites list purchasing at the correct time, i.e. not too early, but also not too late, as a way of avoiding paying too much for a ticket to whatever destination. This article focuses on finding the optimal period during which to purchase airline tickets at the cheapest fare when departing from South Africa. No research could be found addressing this issue from a South African consumer perspective and the aim of this research was to seek to address this apparent gap.

Literature review

Academic literature on the pricing of air tickets is available in the social sciences, but it is often presented as a more complex matter seen from the angle of statistics and actuarial science (see Ambite, Barish, Knoblock, Muslea, Oh, & Minton, 2002; Chen, Cao, Feng, & Tan, 2015; Etzioni, Tuchinda, Knoblock, & Yates, 2003; Gordiievych, & Shubin, 2015;Hotle, Castillo, Garrow, & Higgins, 2015;Law, Guillet, & Leung, 2010; Law, Leung, Guillet, & Hee, 2011). This aspect does not constitute the focus of this article.

The literature which follows may be linked to the hard or social science of pricing airline tickets, but actually originates in the world of popular science. The work most often referred to is the research of the Airlines Reporting Corporation (ARC) based in the United States of

America (USA). In their 2014 report, and using ARC data, Expedia (2015) state that the prices of sold[1] tickets remain relatively low between 150 and 225 days prior to departure and at almost 25 percent cheaper than the average prices.

Furthermore, ticket prices match the average price around 25 days before departure while they peak around five days before departure, generally being priced at that moment at 25% more than the average prices. Important to note in this context is that the lowest average international ticket price was found 171days before departure (Expedia, 2014). Figure 1 provides a graphic representation of this trend in air ticket prices in the USA.

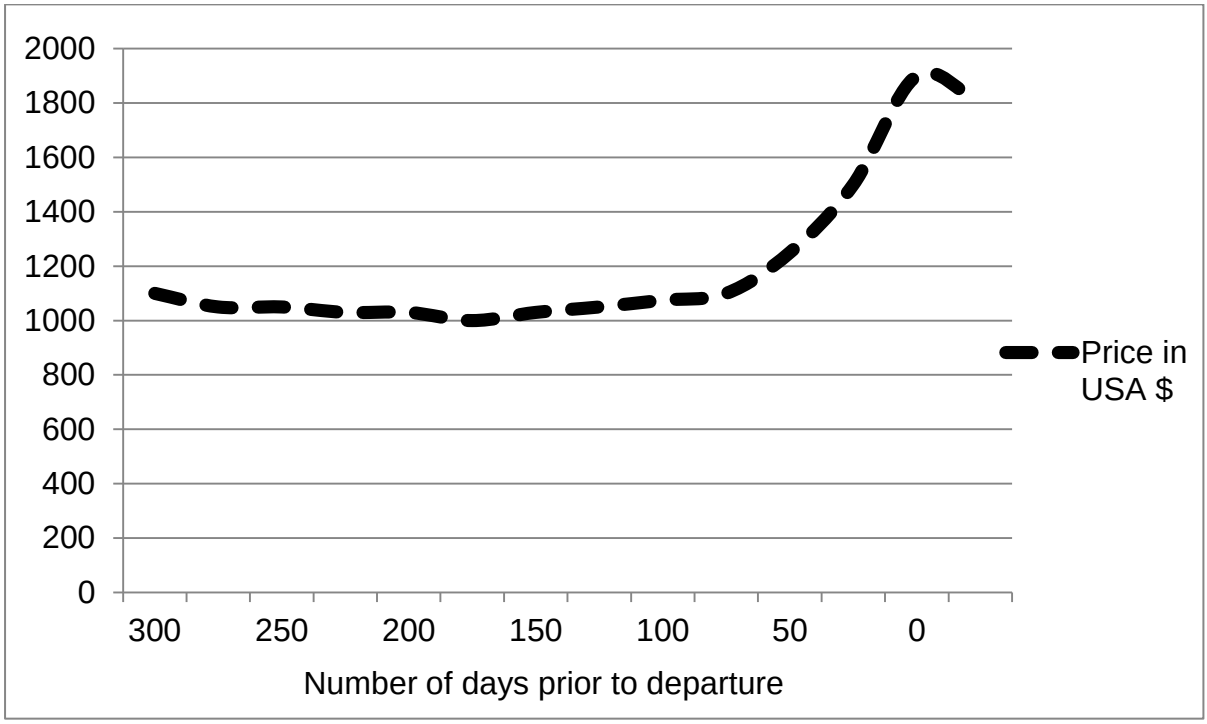

Figure 1: *Average ticket price for international flights purchased in the USA*
Source: Adapted from Expedia (2015)

However, not all sources are in agreement as to the optimal time to purchase an international air ticket. The ideal time varies between 21 days and 171 days, according to who you ask, but flight tickets bought within the 14 days before departure are always the most expensive (Geekyexplorer.com, 2015). CheapAir.com (2015) acknowledges that international flights cover a multitude of different countries and regions and that, when breaking the study down by region, real differences are seen to occur.

The optimal time to book a ticket to Canada was 47 days in advance on average compared to Central and South America where the best fares were to be had 96 days ahead of time. For flights from the USA departing for the Caribbean, the figure was 144 days, in the case of the Middle East, 213 days and for the South Pacific it was 244 days. For Europe, the optimal time was 276 days, in the case of Africa it was 262 days and, lastly, for Asia it was 318 days in advance.

A similar picture is presented McCartney (2015) in Image 1, presented below. McCarthy states that travellers often see prices drop as soon as they buy tickets and other times see

[1] The emphasis is placed on sold tickets. Expedia (2015) report that the data are based on 10 billion sold tickets, extracted from the Airlines Reporting Corporation (ARC) data base (Airlines Reporting Corporation, 2015). This is the expo facto price of the ticket which may differ from the price of a ticket not yet purchased.

prices climb when they wait hoping to obtain a more lucrative deal. The days of last-minute discounts to fill up airplanes are a thing of the past. Airlines globally are filling close to 90% of their seats and thus last-minute fares are very high for business travellers, and far from low for on the spur-of-the-moment leisure fliers. “The sad truth for consumers is there is no golden rule you can use to beat the airlines” (McCartney, 2015: no page). It is however evident from Image 1 that the best option is to buy airline tickets far earlier than when required.

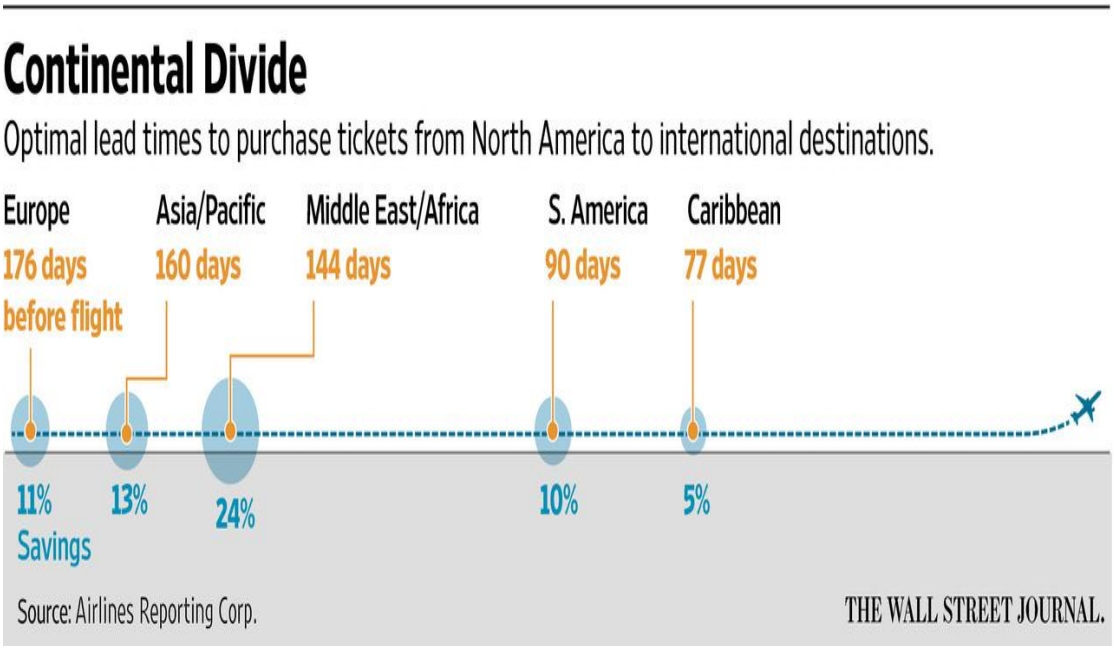

Image 1. *Continental Divide*
Source: The Wall Street Journal (Dec. 11, 2015)

All of the aforementioned data refer to flights originating in the USA and to sold airline tickets. Some similar reports are produced in other countries and regions. For travels from the United Kingdom, Skyscanner.net (2016) report that seven weeks before departure constitutes the best time to purchase an international flight ticket leaving the United Kingdom. They also provide a breakdown of the best times to buy tickets per region.

The research done for this article focuses on identifying the best time to purchase tickets for international travel from South Africa. No such research specifically focusing on departures from this destination was found.

Method

Data were collected on the lowest purchase prices of direct air tickets to destinations across the globe departing from Johannesburg’s O.R. Tambo International Airport – South Africa’s busiest international airport. Figure 2 presents the destinations targeted. These destinations were selected to cover most of the regions to which direct flights from South Africa depart.

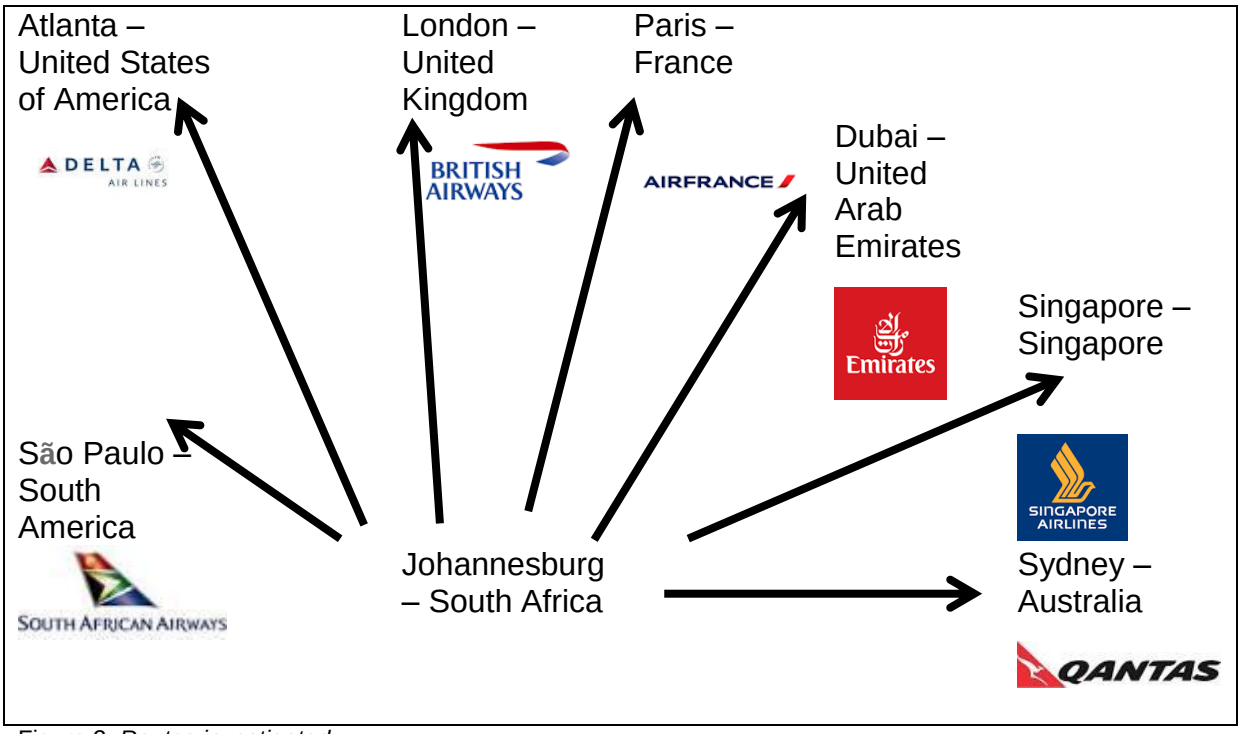

Figure 2: *Routes investigated*
Source: Author

Data on direct non-stop economy class flights were collected. From Figure 1 it can be observed that all these flights originated in Johannesburg, and the destinations and carriers were as follows: South African Airways (São Paulo), Delta Airlines (Atlanta), British Airways (London), Air France (Paris), Emirates (Dubai), Singapore Airlines (Singapore), and Qantas Airways (Sydney).

Data were collected on Tuesday 5 April 2016, between 16h00 and 19h00. Information was found on the official websites of the various airlines and quotations were collected for flights departing on the following Tuesday (12 April 2016) as well as the two subsequent Tuesdays (19 and 26 April 2016). Thereafter data were collected for every first Tuesday of the month. The selected days are reflected in Table 1.Quotations were collected for return flights scheduled for eight days after the outward journey (i.e. the next Tuesday).

Data are presented in table form, where averages ($\bar{x}$) are reported per route. Standard deviations (σ) were also calculated. Peaks in prices are presented as being 1 and 2 standard deviations above the average price. Price fluctuations are also presented graphically.

The results

In total, 96 invoices were created, covering seven international routes, departing from and returning to Johannesburg, South Africa. The data were collected from the official websites of South African Airways (São Paulo), Delta Airlines (Atlanta), British Airways (London), Air France (Paris), Emirates (Dubai), Singapore Airlines (Singapore), and Qantas Airways (Sydney). The results are presented Table 1.

Table 1
Purchase prices of non-stop tickets from Johannesburg to international destinations

Dates	Day	São Paulo	Atlanta	London	Paris	Dubai	Singa-pore	Sydney	Total
5 April	0	-	-	-	-	-	-	-	-
12 Apr	7	12 559	**20 365**	**20 050**	**15 255**	7 655	**13 443**	**24 572**	**16 271**
19 Apr	14	12 558	14 160	12 549	10 132	7 655	11 143	19 335	12 504
26 Apr	21	12 558	14 160	11 900	10 642	7 655	11 143	**35 390**	14 778
03 May	28	12 558	14 720	10 670	10 132	7 655	11 143	19 025	12 271
07 Jun	63	13 548	14 720	10 670	10 132	7 655	10 143	13 891	11 537
05 Jul	91	13 548	**21 446**	14 910	**15 142**	**11 675**	12 793	13 891	14 772
02 Aug	119	12 868	**23 086**	13 200	11 142	7 795	10 143	13 891	13 160
06 Sep	154	12 558	14 160	11 970	10 132	7 795	10 143	13 891	11 521
04 Oct	182	12 558	14 160	11 320	11 142	7 795	12 093	13 891	11 851
01 Nov	217	12 558	14 160	10 670	**14 392**	7 795	11 343	13 891	12 115
06 Dec	245	14 108	15 938	12 160	10 232	9 975	**13 643**	14 235	12 898
03 Jan	273	**29 488**	19 486	14 860	**14 392**	**13 925**	**13 393**	18 503	**17 721**
07 Feb	308	13 548	15 826	**18 904**	9 616	9 967	10 143	13 891	13 127
07 Mar	336	13 368	-	11 870	10 132	-	10 143	13 891	11 880
$\bar{x}$		14 170	16 645	13 264	11 615	8 845	11 489	17 299	13 314
σ		4 440	3 239	2 965	2 138	1 997	1 347	6 146	1 890
$\bar{x}$ + 1σ		18 611	19 884	16 230	13 753	10 843	12 836	23 445	15 204
$\bar{x}$ + 2σ		23 051	23 123	19 195	15 891	12 839	14 183	29 591	17 094

Note: $\bar{x}$ is the symbol for sample mean and σ is the symbol for standard deviation; price deviations of **1 standard deviation** are presented in bold and price deviations of **2 standard deviations** are presented underlined as well as in bold.
Source: Calculations from datasets

From Table 1 it can be observed that on the South African Airways São Paulo route, *one peak* n prices occurred and this was more than two standard deviations higher than the average.

On the British Airways London route, the Emirates Dubai route, as well as the Qantas Airways Sydney route, *two peaks* were found; one more than one standard deviation higher than the average and the other more than two standard deviations higher than the average.

On the Delta Airlines Atlanta route, as well as in the case of the Singapore Airlines Singapore route, *three peaks* were observed, all more than one standard deviation higher than the average.

On the Air France Paris route, *four peaks* were found, all more than one standard deviation higher than the average. Note that only peaks were found – and no dips.

In Table 1 it can be observed that price peaks occur when tickets are purchased seven days before departure.

Prices then spike at around 100 days and again, quite steeply, at around 280 days before departure. It is important to note that the times at which these peaks occur coincide with the Northern and Southern Hemisphere's summer holiday seasons. The abovementioned trends are observable in Figure 2 (the USA data).

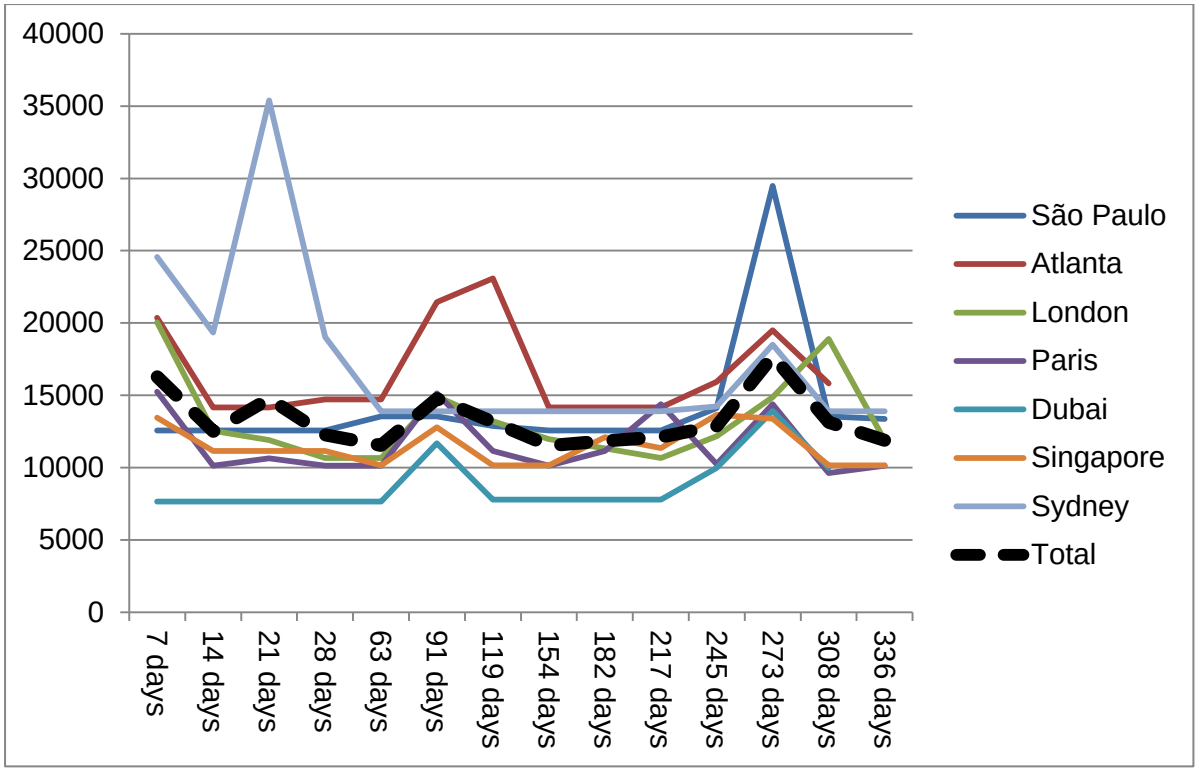

Figure 3: *Line chart depicting air ticket prices as per departure dates of outbound flights.*
Source: Calculations from datasets

From Figure 4 it can be observed that the prices of tickets purchased between 150 days to 250 days before departure seem to be relatively low on all routes. Given the fluctuations in prices during other periods, it may best to purchase a ticket during the 150–250 days period, irrespective of the route selected.

It is also interesting to note how the curves of the data on sold tickets differ from the ticket prices initially quoted for. This information is presented in Figure 4 where the trend with regard to international tickets sold in the USA is contrasted with quoted ticket prices for future ticket purchases pertaining to flights departing from Johannesburg.

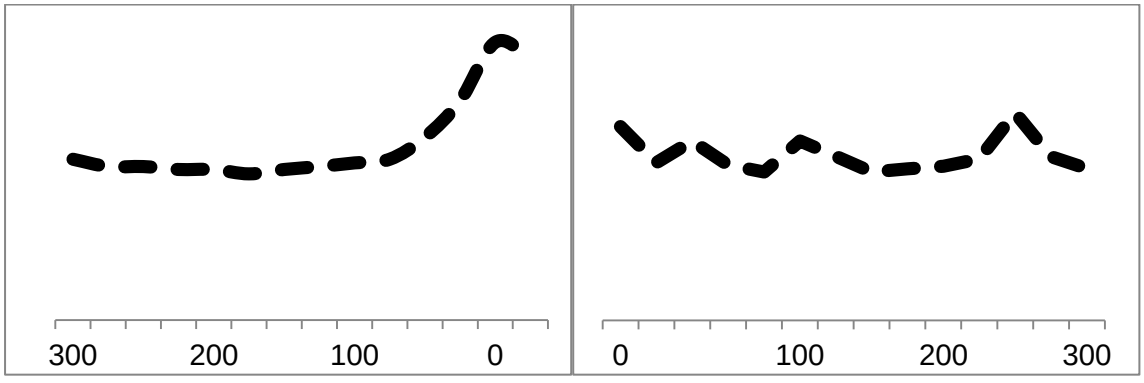

Figure 4: *Findings on ticket sales (in the USA) and the purchase price of tickets departing from Johannesburg (South Africa)*
Source: Adapted from Expedia (2015) and calculations from datasets

From Table 4 it is clear that the steep peak in ticket prices before departure is not particularly evident in the initial quotations. The lack of a peak in the South African data may be the result of the manner in which data were collected, namely via the internet. Using this

medium it was, in 99% of the cases, impossible to purchase tickets on the day of the flight or the day before. The USA data reflects the prices of those sales which took place on the days when ticket prices skyrocketed. In Figure 4 it is also visible that the curves for the USA data are much smoother than is the case for the South African data. There are two explanations for this phenomenon. The zero-point (departure date) on the sales scale is constantly moving, and is therefore not dependent on a specific season, whilst the zero-point on the South African data is fixed (the departure date data were fixed at the date when the quotation for the ticket was requested), and therefore possibly influenced by the seasons. In addition, a smoother trend line might be expected where close to 10 billion data points are used (as is the case with the USA data), compared to this study with its 96 data points.

Conclusions

As online bookings of air tickets become increasingly available on the World Wide Web, consumers attempt to understand how these prices vary over time. In this paper the matter is addressed from the perspective on an individual travelling from South Africa.

Despite the fact that the curves of effected sales differ from future purchases (Figure 4), the data collected from the South African perspective reveal two important facts. Firstly, that air tickets are available at the best prices if purchased between 150 and 200 days before departure. The South African data and published USA data both demonstrate this trend. The second important finding is that the pricing of South African tickets follows the seasonal holiday patterns, which may be an important finding. It is not only the time when a ticket is purchased that influences the fare, but also the time (season) when the ticket is actually used which determines its price. This is not evident in the case of Figure 1 (USA data). The seasonality of the South African findings casts some doubt on the finding that the period 150 to 200 days may be the optimal time to purchase a ticket as this was also the period between the two peak holiday seasons – viz. the tickets were priced for the low season.

This research makes a valuable contribution to the discourse about the appropriate time to purchase air tickets. Huge amounts of money are at stake as air travel accounts for a large part of the 7.54 trillion dollars spent on tourism in 2015 (this figure excludes expenses on business travel). It also adds to the debate by introducing the important matter of seasonal differences in pricing as mentioned in the previous paragraph. The content of this paper may therefore be of value to individuals interested in optimising their expenditure on air travel. The research also shows that this is not a simple matter and that further research in this area is necessary.

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