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AN ANALYSIS OF THE LOWEST FARES AND SHORTEST DURATIONS FOR AIR-TICKETS ON TRAVEL AGENCY WEBSITES

Rob Law
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ABSTRACT. Despite the existence of numerous published articles on website evaluations, the present tourism literature has no prior studies that examined the topics of lowest fares and shortest durations for air-tickets that are offered by travel websites. This study reports the findings of a study that investigated the practices of five online travel agency (OTA) websites. In terms of lowest airfares and the shortest in-flight durations (hereafter known as shortest durations) in four destinations for travelers who originated from Hong Kong, empirical findings showed the regional OTA outperformed other global leaders in airfares. Likewise, a smaller scale OTA offered lowest-fare air-tickets with the shortest durations. Practical implications are offered at the end of the article.

KEYWORDS. Online travel agency, airfare, duration, online practice

INTRODUCTION

It is widely known that the Internet enables the present tourism industry as a marketplace where consumers and suppliers can communicate with each other directly without any constraints in time and geographical areas. According to Koo, Mantin, and O'Connor (2009), 15% of the air travel market in the United States is conducted on online travel agency (OTA) websites, and the corresponding percentages in Asia and Europe would be even higher. Eyefortravel (2007) further stated that 66.9% of travel website users in the United

States made subsequent online purchases, primarily for air-tickets and hotel rooms. Yu (2008) stated that about 40 million families in the United States booked travel products/services online in 2007, and spent US\$86 billion on airline tickets and travel-related products.

In terms of business usage, O'Connor and Frew (2004), via their Delphi study with 42 experts, found that the number one reason for using electronic distribution channels is the potential to open up new market segments. In other words, other than keeping the existing customers, the Internet is able to attract new customers, thus enlarging the market segment of a

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business. Airlines generally perform yield management for profit maximization (Belobaba & Wilson, 1997; Gorin & Belobaba, 2004, 2008; Pels & Rietveld, 2004). An intrinsic problem of the airline industry is the existence of price differentiation (Alderighi, 2010). That is, airlines can charge unequal prices to different groups of consumers for similar products. Malighetti, Palerari, and Redondi (2009, 2010) examined the pricing strategies of Ryanair's flights to Europe and found the positive relationship between average fares and other variables such as frequency of flights and percentage of fully booked flights. Malighetti et al.'s (2009, 2010) studies covered 90 days for advance bookings. The seasonal variations in a year, however, were not discussed. Likewise, the recently introduced Bing.com can display the lowest airfare for a 1-month period (and mainly in North American cities). The website then suggests when to leave and when to come back for the lowest airfare. While Bing.com's approach is unique, the 1-month advance booking does not seem to be of particular use for long-term travel planning.

The existing literature has a plethora of published articles that emphasize the importance of price from the perspective of consumers (Chernev, 2003; Gorin & Belobaba, 2004; Kim, Bonjanic, & Warnick, 2009). The existence of numerous travel websites, unfortunately, poses unexpected challenges for consumers to search and compare prices among the virtually countless websites. Recently, some travel-based meta-search engines such as Kayak can partly relieve the difficulty but these search engines are far from mature in terms of feature provision and website coverage.

With the higher level of disposable income as compared to the past few decades and a higher tendency for traveling to their preferred destinations, consumers are now more sophisticated than they previously were. Many travelers, especially senior travelers, are flexible on the departure date/time. In addition to comparing and contrasting different prices offered on different channels, these consumers would like to know the lowest airfares and the shortest durations as both will have a direct impact on their trips. While airfares are related to consumers' travel expenses, shortest durations

on the flights can reduce the flight-induced stress and fatigue. Eyefortravel (2008) stated that making consumers know when to buy air-tickets is very important. Starkov and Price (2008) further stated that 83% of travel planning in the United States is conducted online, during which consumers search for the best deals on the Internet. Surprisingly, a database search of the tourism literature reveals that no prior attempts were made to examine the issue of lowest airfares and shortest durations for flights. To bridge this gap in the existing tourism literature, this study makes an initial attempt to investigate the practices of offering the lowest airfares and shortest durations on different major OTA websites, using Hong Kong as the departing city. By adopting a novel approach of searching the longest ahead, lowest airfares, and shortest durations, findings of this research could be of use to flexible travelers to better plan their trips in a multiple-month time period. Similarly, the research will benefit industrial practitioners from better formulating their business strategies in the virtual environment.

This section has presented the background of the research. The remaining sections of this article are organized as follows. The next section reviews published articles that are related to online distribution channels and pricing practices. After that, the methodology section discusses the data collection process and explains the rationale for selecting different destinations and websites. The subsequent section presents and analyzes the findings. Implications are then offered for consumers and industrial practitioners. The article ends with a concluding section that summarizes the research and offers directions for future studies.

LITERATURE REVIEW

The effective distribution of online travel products has been widely discussed by academic researchers (Christodoulidou, Brewer, Feibstein, & Bai, 2007; Tse & Yim, 2001). The importance of the effectiveness is largely attributed to the perishable nature of travel products. Fretchling (1996) stated that if travel products cannot be sold prior to a specific time,

the associated revenues would be lost. Reid and Pearce (2008) further stated that the electronic distribution of travel products can reduce the coverage of a distribution chain, and strengthen the extent to which suppliers and intermediaries can reach their target customers directly. Other researchers such as Dabas and Manaktola (2007), as well as Kim et al. (2009), argued that using information and communication technologies (ICTs) in tourism and hospitality can assist practitioners to achieve the goal of effective distribution, in general, and particularly in the virtual environment. The Internet thus imposes a large impact on consumers' searching and purchasing behaviors.

The large demand for travel products exerts a driving force for tourism managers to look for new customers, in addition to retaining existing customers. Prior studies have shown using multichannels, particularly online distribution channels, can enhance the visibility of a business to a larger potential audience (Choi & Kimes, 2002; Gilbert, Beveridge, & Lee-Kelley, 2005; Kang & Brewer, 2009; O'Connor & Frew, 2002). Airlines, therefore, distribute their tickets through their own websites and on OTA websites (Koo et al., 2009). Using a theoretical approach, Koo et al. further stated that airlines may be less likely to use OTA websites if they already have a large group of loyal customers. Koo et al.'s presented concept, albeit interesting, had no empirical evidence to show its applicability.

Although there are numerous online distribution and sales websites, Law, Chan, and Goh (2007) grouped these websites into wholesalers and retailers. While wholesale websites mainly focus on Business-to-Business transactions, retail websites (which are also known as travel agencies) deal directly with customers for offering travel advice and making reservations. Since OTAs work directly with consumers, this study covers selected OTAs for airfare offerings.

As mentioned in the previous section, consumers would like to search different websites before making their purchases. For airfares, consumers would check availability, prices, and durations. Mantin and Koo (2010), as well as O'Connor and Murphy (2008), stated that price is the primary driving force that motivates

customers to make online purchases. Chernev (2003) further showed that consumers prefer to select rather than to generate a price, suggesting that the naming a price approach is less attractive as compared to other approaches. In an early study, Law and Leung (2000) found North American-based airline websites offered more options for airfares to consumers than their counterparts in Europe and Asia.

At present, the abundant supply of online distribution channels render revolutionary changes to consumers' knowledge, behavior, and decisions of purchasing travel products from traditional intermediaries to websites. The abundant supply of online distribution channels, however, also leads to oversupply of information which consumers have to go through in the lengthy process for searching and comparing prices among different websites. This situation directly applies to the online hotel and tourism websites in Hong Kong (Cheung & Law, 2009; Law & Wong, 2010). In two previously conducted studies, Tso and Law (2005), as well as Law et al. (2007), examined the changes of room rates offered on selected websites for hotels in Hong Kong; and findings in both studies showed that, among all selected channels, a local OTA offered the lowest room rates for all hotel categories. In a similar study, Law and Chang (2007) manually counted the online airfares for 89 days from three travel websites, but their findings are of limited use as almost all selected websites provided incomplete information for long-haul flights that originated from Hong Kong. In another study, Gazzoli, Kim, and Palakurthi (2008) compared online room rates of global hotel chains among Expedia, Travelocity, Priceline, Orbitz, and chain websites. Findings showed chain websites returned the lowest rates than the OTA websites for hotels in the United States; whereas Orbitz slightly outperformed other websites for international hotels.

In addition, while some published articles have analyzed the impact of duration of a trip on travelers (Law & Cheung, 2007; Ropers et al., 2008), the issue of flight duration is largely overlooked by tourism researchers. Grammatikopoulou, Zakas, Papadopoulou, and Panayiotoglou (2007) recorded the flight

durations in their study to analyze nutritional values of in-flight meals. The authors, however, did not provide further analysis on the flight duration data. It is natural to argue that among the available flights to the same destination, *ceteris paribus*, the shortest one would be the most attractive as it reduces the chance of flight-induced fatigue and other health concerns. Passengers would thus have more time to do other things instead of staying in the airport or in the plane cabin.

These findings, along with the fact that airfares are one of the primary online travel products (Eyefortravel, 2007; Yu, 2008), necessitate the emerging need for investigating the publicly available lowest online airfares and shortest durations offered by OTA websites. Findings of this study are thus expected to contribute to bridge this gap in the tourism literature.

METHODOLOGY

This study makes an initial attempt to investigate the issues of lowest airfares and flight durations on the lowest airfares on OTA websites. As such, it is exploratory in nature. Five OTA websites—including Cheaptickets, Expedia, Orbitz, Travelocity, and Zuji—were included in this study. The selection was based on their global or regional popularity. The background information for these websites is as follows:

1. Zuji is affiliated with Travelocity, and is based in Asia Pacific (i.e., for travelers from Asia Pacific) with sites in several Asia Pacific countries/regions.
2. Travelocity is owned by Sabre Holdings, one of the world's leading suppliers of travel-related services and products. Travelocity is based in North America.
3. Orbitz is a leading online travel business, jointly formed by some of the world's largest airlines that provide a wide range of travel products.
4. Cheaptickets is affiliated with Orbitz. Cheaptickets also offers additional products such as event tickets like concerts, sports, and theater.
5. Expedia was developed by Microsoft for consumers to check and book a wide variety of travel products and services.

Expedia is included in this study as it is one of the largest and most important OTAs (Tso & Law, 2005). The reason for including Travelocity-Zuji and Orbitz-Cheaptickets pairs is to analyze whether the lowest fares along with flight durations on these fares are consistent on affiliated websites. These websites can all assist users research, plan, and purchase various types of travel products, in general and in particular for air-tickets.

Hong Kong, a cosmopolitan city with millions of inbound and outbound tourists in each year, was selected as the source origin. The selected destinations included Beijing, Bangkok, New York, and London. Beijing and Bangkok are two popular short-haul travel destinations for Hong Kong residents which also represent destinations within the country (China) and within the continent (Asia). New York in North America and London in Europe, in contrast, are the popular long-haul travel destinations for Hong Kong residents. New York and London were determined as the popular travel destinations as different direct and indirect flights from Hong Kong to these two large cities are made available from various airlines on a daily basis.

Data collection was conducted in mid-2009 in Hong Kong. During the data collection stage, a computer program was developed that retrieved daily information for one-way airfares from the five OTA websites, including the lowest fares and durations on lowest fare on each day in the next 11 or 12 months. Expedia and Travelocity provided airfare information in the next 12 months. Zuji, Cheaptickets, and Orbitz, instead, offered airfare information in the coming 11 months. In this study, data that were available for more than 10 and 11 months in advance were grouped into the 11-month and 12-month ahead categories. The airlines that offered the lowest airfares and durations on the lowest airfares were selected separately for further analysis. The computer program crawled

and parsed the five OTA websites. To increase the efficiency of data collection, a Ruby script was used to automate the process of data gathering. In other words, the computer program was able to look up for price information like a human customer and download the resulting web pages. The results were then parsed into a database for further analysis.

FINDINGS AND ANALYSIS

To recap, this study investigated the lowest airfares and durations of the lowest airfares for flights that are available on OTA websites. The existing literature in tourism research does not have any prior studies that are related to the topic.

Table 1 lists the airlines for the lowest airfares and the shortest durations on the OTA websites to different destinations. It is interesting to note that no low-cost carriers were included in Table 1.

Among the included OTA websites, Zuji consistently ranked the first in terms of the lowest airfares for all destinations (Table 2). In contrast, Travelocity, which owns Zuji, returned the highest airfares among all destinations. Such a finding is somewhat unexpected. A possible reason could be due to the Asia Pacific-based regional background for Zuji, but further work is needed to examine the underlying factors that had caused such a large discrepancy between two closely affiliated businesses.

Cheaptickets ranked second and third for short-haul destinations, but the corresponding number is fourth for long-haul destinations. Orbitz, in contrast, ranked third and fourth for airfares to Bangkok and Beijing, and the corresponding ranks for New York and London were third and second. Apparently, these two related websites performed slightly different in which Cheaptickets excelled in short-haul destinations; whereas Orbitz did better for long-haul destinations.

Expedia had an average performance for offering the lowest fares, in which Beijing and New York ranked second, London ranked the third, and Bangkok ranked the fourth.

Additionally, the lowest airfares largely follow seasonal fluctuations to all destinations with the exception of Beijing. Orbitz and Cheaptickets provided very similar fares throughout the entire data series, and with very little variations as indicated by the very low standard deviation values. Furthermore, the result of Tukey HSD post hoc analysis shown in Table 2 also indicated the lowest fares provided by Cheaptickets are always competitive with Orbitz for flights to Bangkok, Beijing, and New York. Besides, the lowest airfare provided by Cheaptickets, Expedia, and Orbitz are close with no statistical significance.

Relating to the flight durations on the lowest airfare (Table 3), Cheaptickets generally performed the best which ranked first for all destinations except London which the website ranked second. In other words, consumers can pay less and arrive at their destinations in the shortest time when they book on Cheaptickets. Similarly, the affiliated Orbitz also performed fairly well which ranked first for Beijing, second for Bangkok and New York, but third for London.

While Zuji ranked average for shortest durations with ranks from 1 (to London) to 5 (to New York), Travelocity, its possessor, did poorly with the worst ranks for Bangkok and London and fourth for Beijing and New York. Expedia, likewise, did not perform well with ranks from the third to the last. This implies the lowest airfare choices provided by Travelocity normally take longer traveling time than the others.

Cheaptickets had low values of standard deviation for shortest durations. That is, consumers can expect a similar traveling time on flights throughout the year when they purchase on Cheaptickets. Additionally, other than Expedia, all websites attained low standard deviations for flights to Beijing and there was no statistical significance in Tukey HSD post hoc analysis. Similar to the result in the post hoc analysis on the lowest fares, the choices on flight durations with the lowest fares that were available on Cheaptickets and Orbitz are very competitive except for London. The flight time for New York among the OTA websites varies. As such, customers may need to consider carefully finding their best choice.

TABLE 1. Airlines That Provide the Lowest Fare or Shortest Duration on the Selected Websites

	Cheaptickets	Expedia	Travelocity	Orbitz	Zuji
Aeroflot-Russian Airlines		3, 4	4		3
Air Canada	4	4	4	4	
Air China International	2, 3	2, 3	2, 3	2, 3	2, 3
Air France	3	3	1, 3	3	
Air New Zealand	1			1	3
American Airlines	4	4	3, 4	4	4
Asiana Airlines					4
Bangkok Airways		1	1		1
British Airways	3	3	3		3, 4
Cathay Pacific Airways	4	1, 2, 3, 4	1, 2, 3, 4	4	1, 2, 3
China Airlines		4	4		1
China Southern Airlines				1, 2	2
Continental	4	4	4	4	4
Dragonair		2, 4	2, 4		2
El Al Israel Airlines		3	3, 4		
Emirates Airlines	1, 3	1, 3	1, 2, 3	1, 3	1, 3
Ethiopian Airlines	1	1	1	1	
EVA Airways		4			
Hong Kong Express Airways	2			2	
Japan Airlines	4	4	4	4	
Jet Airways	3	3	3	3	3
Kenya Airways					1
KLM		3			
Korean Air					3
Lufthansa			4		
Northwest Airlines	4	4	4	4	4
Pakistan International Airlines			1		1
Philippine Airlines		1, 2	1, 2		1, 2
Qantas Airways		3	3		3
Qatar Airways	3	4	3, 4	3	4
Royal Jordanian	1		1	1	1
Singapore Airlines					3
Sri Lankan Airlines	1	1		1	1
Thai Air International	1	1	1	1	1
Trans North Aviation			2		
Turkish Airlines	3		3	3	
United Airlines	4	4	4	4	4
US Airways		4	4		
Virgin Atlantic	3	3, 4	3, 4	3	3, 4

Note. The numbers in the Table indicate the flight departed from Hong Kong to:

1—Bangkok; 2—Beijing; 3—London; 4—New York.

DISCUSSION AND IMPLICATIONS

Numerous published articles have shown the importance of utilizing online channels for distributing travel products. This study, as the first one to investigate the issue, has shown the gigantic OTA websites such as Expedia, Travelocity, and Orbitz did not gain the advantage of economy of scale by offering the most attractive air-tickets both in lowest airfares and shortest durations. Instead, regional and

specialized websites like Zuji and Cheaptickets outperformed the conglomerates that own them. Such an unexpected finding is likely due to the different aims of global reach and local intelligence as adopted by the websites. Another factor to consider relates to customers' location and experience that are associated with using online travel websites. If a customer is geographically located in Hong Kong and searches for a flight from Hong Kong to any of the selected destinations, it is more likely for the

TABLE 2. ANOVA Analysis for Lowest Airfares on Different Websites

Destinations		Cheaptickets	Expedia	Orbitz	Travelocity	Zuji	df	F ratio	Sig.
Bangkok	Mean	236.87 ¹ (2)	269.85(4)	238.82 ¹ (3)	317.72(5)	221.06(1)	4	98.47	.000*
	Std.	64.53	74.02	69.27	78.47	38.09			
¹ <i>p</i> = .996 is not significant at the .05 level.									
Beijing	Mean	696.95 ¹ (3)	619.93(2)	697.00 ¹ (4)	671.88(5)	486.67(1)	4	940.31	.000*
	Std.	.45	70.78	.00	22.00	85.09			
¹ <i>p</i> = 1.000 is not significant at the .05 level.									
New York	Mean	810.99 ^{1,2} (4)	794.24 ^{1,3} (2)	810.79 ^{2,3} (3)	830.35(5)	704.14(1)	4	105.04	.000*
	Std.	85.82	95.35	85.23	76.20	75.61			
^{1 to 3} <i>p</i> = .083, 1.000, .096 are not significant at the .05 level.									
London	Mean	1179.60 ¹ (4)	1144.39 ² (3)	1133.65 ² (2)	1206.76 ¹ (5)	1033.78(1)	4	53.29	.000*
	Std.	164.67	185.17	126.74	169.52	122.33			
^{1, 2} <i>p</i> = .219, .911 are not significant at the .05 level.									

Note. The other mean differences are significant at the .05 level. Numbers in parentheses under mean values represent the ranking of websites in a destination. *Denotes a significant difference at a 0.05 level.

TABLE 3. ANOVA Analysis for Flight Durations on Lowest Airfare Among Different Websites

Destinations		Cheaptickets	Expedia	Orbitz	Travelocity	Zuji	df	F ratio	Sig.
Bangkok	Mean	2.77 ¹ (1)	4.38(4)	2.79 ¹ (2)	5.92(5)	3.63(3)	4	88.67	.000*
	Std.	.25	2.87	.34	3.39	3.01			
	Min.	2.67	2.67	2.67	2.67	2.67			
	Max.	5.75	9.50	5.75	9.50	14.42			
^{1 to 3} <i>p</i> = 1.000 is not significant at the .05 level.									
Beijing	Mean	3.17 ^{1,2,3} (1)	7.23(5)	3.17 ^{1,4,5} (1)	3.22 ^{4,6} (4)	3.19 ^{3,5,6} (3)	4	178.5	.000*
	Std.	.08	5.34	.08	.07	.08			
	Min.	3.08	3.08	3.08	3.08	3.08			
	Max.	3.25	14.25	3.25	3.25	3.25			
^{1 to 6} <i>p</i> = 1.000 is not significant at the .05 level.									
New York	Mean	16.84 ¹ (1)	20.78(3)	17.03 ¹ (2)	21.69(4)	22.96(5)	4	225.64	.000*
	Std.	1.82	3.67	2.30	3.00	4.49			
	Min.	15.42	15.58	15.42	15.58	15.42			
	Max.	23.23	33.17	21.17	35.08	33.17			
¹ <i>p</i> = .958 is not significant at the .05 level.									
London	Mean	18.41 ^{1,2} (2)	18.62 ^{1,3} (4)	18.42 ^{2,3} (3)	19.63(5)	16.84(1)	4	44.93	.000*
	Std.	1.03	2.18	1.21	2.34	4.50			
	Min.	12.83	12.83	12.83	12.83	12.83			
	Max.	19.17	28.75	23.00	28.67	28.00			
^{1 to 3} <i>p</i> = .836, 1.000, .883 are not significant at the .05 level.									

Note. The other mean differences are significant at the .05 level. Numbers in parentheses under mean values represent the ranking of websites in a destination. *Denotes a significant difference at a 0.05 level.

customer to use a regional online travel website like Zuji in comparison to the customers located in North America and Europe. Zuji is affiliated with Travelocity, but these OTAs cater

to different markets. Although customers from all around the world can book airline tickets on these websites, Travelocity generally serves North America and Europe; whereas Zuji serves

the Asia Pacific region. When a customer in Hong Kong would like to search for an airline ticket using Travelocity, the Travelocity website directs the customer to Zuji, promoting Zuji as the OTA with packages and promotions tailored to customers in this region. However, the same option is not available for the customers in North America that would like to search for the same airline ticket as customers in Hong Kong. Travelocity and Zuji have several hybrid local travel websites in other parts of the world including but not limited to Australia, the United Kingdom, India, and France. Examining the pricing structure of different OTAs along with the customized websites available in different geographical locations, it appears that OTAs might be taking advantage of the infrequent travelers or customers that are not very experienced in booking tickets online.

While online travel agencies have enabled customers to “do it yourself,” an infrequent traveler might still have difficulty with the complex shopping and reservation process through these websites. A typical online customer would browse multiple online websites before the customer makes a booking decision (Law et al., 2007). It seems that it is in the best interest of a customer to shop around to find the best airfares by checking regional and specialized online websites in addition to well-established counterparts. Using findings of this study, consumers can have a more realistic expectation from travel websites for searching and purchasing air-tickets from OTA websites. More importantly, the data collected in this study ranged from 11 to 12 months ahead of a trip. Timing is another important factor that customers should consider when they make travel plans. For international destinations that are similar to the ones selected in this study, customers can book 3 to 6 months in advance to get better deals. Price-sensitive consumers can appreciate the variations in airfares and make their appropriate decisions of the traveling date. Similarly, time-flexible consumers can determine the flights that have the shortest durations in order to save time at airports or in flights.

After all, the future of eBusiness seems very promising. Tourism managers should thus take advantage of this unprecedented opportunity

to develop and improve their product promotions in the virtual environment. With careful interpretation, findings of this study can assist tourism practitioners in various ways. First, the recent advances in ICTs have revolutionized the way which business is conducted. Since information can be checked easily from the Internet, managers are no longer able to perform price discrimination easily. As such, they have to continuously keep track of the pricing practice of related sectors on different online channels, and act or react accordingly in order to remain competitive. Also, since profit maximization is a key factor for business operation, managers should make ongoing efforts to review their pricing strategy, which can offer competitive and best available fares. Such efforts are essential in keeping the positive relationship with loyal consumers in the long run. Lastly, it is generally agreed that OTA websites can largely assist suppliers distribute their products and services via different business models. Tourism practitioners, however, should also conduct some analyses on the performance of their own websites in terms of prices and other features, as the process of mediation is always costly.

CONCLUSIONS

The contribution of this study to the tourism literature lies in its approach to examine lowest daily airline fares along with flight durations for four popular destinations from Hong Kong in a period of 11–12 months. In terms of the volume of the data collected on lowest airline fares and flight durations from OTAs, this study is the most comprehensive study of its kind to date. As stated, it would be of use to practitioners to better formulate their business strategies to cope with the increasing demands from online consumers. Consumers can also learn from the experience of the findings to plan their trips by taking advantage of the lowest airfares and shortest durations on flights.

Like other studies, this research has some limitations, which render its inability to generalize the findings to all OTA websites and for all destinations. The major limitations of this study are the involvement of one-way airfares

and for four destinations from one source origin. A natural extension of this study would thus be to incorporate more websites with different business backgrounds and more destinations and origins into the analysis. It would also be interesting to examine the pricing practice between the possessing websites and their affiliated websites in detail. In addition, airlines may continuously change their time periods for flight availability. As such, future studies can repeat this research on a longitudinal basis. Other future research directions can incorporate additional factors such as competitive relationships, pricing and marketing strategies, marginal price differentiations, and travel product combinations into analysis. Lastly, future research can examine the relationship among the lowest airfares, shortest durations, and the affiliated airlines. Such an attempt would provide a more optimal solution for consumers to choose their most preferred flights from the online distribution channels.

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