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# An Investigation into the Hub-and-Spoke Model Using Brand and Frequent-Flyer Program: The Case of Southeast Asian Carrier

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#### Abstract

**Purpose:** This paper seeks to understand if customer acceptance on flying through a hub has changed today, compared to the findings from past research conducted many years ago. The study involves investigations of Singapore Airlines, a successful FSC in terms of its ability to generate sustainable profits for many consecutive years as reflected in its annual financial reports. The carrier also has a strong corporate brand, a world-class airport hub as well as a frequent flyer program, which makes it attractive to explore.

**Design/methodology:** The survey method is utilized in order to seek the answers to the three questions developed in the literature review. Descriptive statistics are employed to analyze 723 datasets using SPSS v20.

**Findings:** Although the paper shows that some findings resonated past arguments, some others have changed. Brand has no longer become a significant factor for passengers when deciding to travel with a full-service carrier (FSC) via its hub, and an FFP that is likely to hold less compelling attractiveness with passengers with regard to purchasing consideration.

**Research limitations/implications:** The research involved only passengers traveling two routes in Southeast Asia, therefore the generalization of the findings must be carried out with caution. Future studies to extend this research to different geographical markets are necessary to investigate if similar behaviours are also observed, as described in this study.

Originality/value: This paper offers insights into in the hub-and-spoke airline business model discipline. The author suggests that the role of strong brands and frequent flyer program to

attract passengers travelling via a hub have diminished. Nowadays, even FSC passengers are more concern with airfare.

**Keywords:** Airline brand, airport brand, frequent-flyer program, hub-spoke model, hub-skipping flights, airfares.

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### 1. Introduction

Similar to full-service carriers (FSCs) in other parts of the world, Southeast Asian FSCs, such as Garuda Indonesia, Malaysia Airlines, and Singapore Airlines have also been under pressure from low-cost carriers (LCCs) and other FSCs on their point-to-point segments. Apart from the fierce competition on the point-to-point routes, the three FSCs also face hub-bypassing threats from both low-cost and other full-service competitors. However, Garuda Indonesia and Malaysia Airlines have been able to maintain their Jakarta and Kuala Lumpur sector with a few daily flights (all prior to the COVID-19 pandemic). On the same route, four LCCs, Air Asia, Citilink, Lion Air, and Malindo, are also operating using either Airbus A320 or Boeing 737 series. Likewise, Singapore Airlines and Garuda Indonesia have been able to keep the Jakarta – Singapore route with around 20 flights a day. On this route segment, they are shadowed by four LCCs as well, namely Air Asia, Jetstar Asia, Lion Air, and Scoot. The four LCCs connect the last sector with almost the same number of frequencies.

Within the other Indonesian international market, the segments between Denpasar (Bali) or Surabaya to Kuala Lumpur or Singapore are also linked by the same three FSCs and four LCCs, as well as other FSCs, such as China Airlines and KLM. Garuda Indonesia, Malaysia Airlines, and Singapore Airlines offer a few daily flights between the two-city pairs, despite the fact that LCCs have been crouching from below. Nevertheless, Singapore Airlines (and its full-service regional subsidiary SilkAir) has managed to either maintain or increase daily slots between Surabaya and Singapore (three times) and six flight frequencies between Bali and Singapore. Garuda Indonesia, on the other hand, flies once daily on both the routes. On the other hand, Malaysia Airlines serves Denpasar – Kuala Lumpur four times a day (Garuda does not provide a direct connection between Bali and Kuala Lumpur) and runs three daily flights between Surabaya and Kuala Lumpur.

This observation is likely to be in line with a couple of previous researches, which suggest that FSCs can still survive despite facing the ferocious competitions from LCCs, for example, Charitou and Markides (2003), Hazledine (2011), and Taneja (2004). On the contrary, a few other scholars convey otherwise stating that the fullservice hub-and-spoke model has broken, for example, Costa, Harned, and Lundquist (2007), Doganis (2006), Tretheway (2004) and Zeigler, Pagliari, Suau-Sanchez, Malighetti, and Redondi (2017). In the case of the three hub-and-spoke FCSs above, only Singapore Airlines reported steady operating and net profits for many consecutive years (as reflected in the airline's annual year reports), which in turn, agrees with the first proposition, that their business model is not broken. The other two FSCs have been showing mixed-bag reports for many years. Malaysia Airlines has previously sought for assistance from its government (O'Connell & Williams, 2005) and today it is still looking for investors to help boost its financial situations (Flight Global, 2019). On the other hand, Garuda Indonesia is not far from this particular neighbour's flag carrier. The airline has mostly been in a difficult situation for many years. Hence, apart from the reason such as the ability to generate sustainable profits, other reasons discovered in the literature review also espouse the author to focus more on investigating Singapore Airlines. Nevertheless, the study also involves surveying passengers of other carriers, such as Air Asia, Garuda Indonesia, Jetstar Asia, and others, in order to enhance the discussion, such as examining respondents' decisions under a few different scenarios.

Singapore Airlines is a well-known and respected brand in the airline industry and its outstanding performance has attracted many scholars to investigate further this phenomenon, for example, Fan and Lingblad (2016), Loizos Heracleous and Wirtz (2009), L Heracleous, Wirtz, and Pangarkar (2009), Lohmann, Albers, Koch, and Pavlovich (2009), Pangarkar (2014), Raynes and Tsui (2019), and Yun, Yong, and Loh (1996). Although the author has identified a few prior studies associated to Singapore Airlines and the Indonesian international market, many are published in the academic journals managed by Indonesian universities, for example Mulyantina (2019) and Nasution and Sitepu (2015) and are lacking areas of investigations that this paper attempts to explore.

As a hub-and-spoke carrier, Singapore Airlines rely on carrying transit or connecting passengers. Earlier publications have suggested that this type of carrier may carry up to 60% connecting passengers onboard its flights, for example Lohmann et al. (2009) and CAPA (2013). Previous studies also reveal that LCC's hub-skipping (point-to-point) strategy has diverted passengers from FSCs and their hubs (Holloway, 2012; Mason & Alamdari, 2007; Shaw, 2013). Although, scholars, such as Narangajavana, Garrigos-Simon, García, and Forgas-Coll (2014), Gilbert and Wong (2003), contend that a well-known brand may help mitigate this threat.

Henceforward, this paper aims to investigate three areas. First, to investigate if Singapore Airlines' well-known brand has contributed to the success of attracting passengers to fly via its hub in Singapore, whether or not its strong brand possession can possibly deter passengers from taking hub-bypassing flights without the necessity of competing on prices (a strategy commonly adopted by FSCs as a response to the direct flight's threats (Doganis, 2001; Holloway, 2012; Hunt & Truong, 2019)).

Second, to explore whether transiting via Changi Airport, which is known in the industry as an award-winning and one of the best airports in the world, may also help influence passengers' decision to fly Singapore Airlines, instead of taking hub-skipping flights or transiting via other hubs nearby. This is based on the arguments that claim that a well-known airport helps entice passengers to connect through it (Lohmann et al., 2009; Sezgin & Demiral, 2019).

Lastly, since scholars argue that frequent-flyer programs may also contribute to passengers' decision to deflect their journeys through a hub (in order to benefit from their FFP memberships) (Flores-Fillol, 2009; Narangajavana et al., 2014), this study also aims to examine if Singapore Airlines' frequent-flyer program (FFP) does support this claim, which in turn, strengthen the company's hub-and-spoke business model.

This paper is structured into five sections. The first section is the introduction, followed by the literature section that reviews the theory of a hub, the benefits of the brand, and the frequent-flyer program that may mitigate a few concerns associated with the airline hub-and-spoke model. Section three presents the method and data collection. The author discusses the results of the surveys in section four and concludes the paper in section five.

#### 2. Literature Review

## 2.1. The Hub-and-Spoke Model and Brand Image

Through their hubs, FSCs fly between 40% to 60% connecting passengers and in the case of Singapore Airlines, the carrier is said to carry half connecting and half point-to-point passengers between its Singapore – Kuala Lumpur route (Aviation Strategy, 2003; CAPA, 2013; Francis, Dennis, Ison, & Humphreys, 2007; Lohmann et al., 2009; O'Connell & Williams, 2005). However, FSCs operating from hubs have been encountering a few challenges, from both the passengers' and the airlines point of views. In this paper, we will only discuss the issues seen from the eyes' of passengers. Scholars have identified a few concerns encountered by network carriers, in other words, the hub-and-spoke FSCs, where passengers dislike flying through a hub because of possible delays that may happen (Franke, 2004; Janić, 2007; Martín & Román, 2004), passengers may face travel uncertainty as a result of massive delays or cancellations (Hsiao & Hansen, 2011), and last but not least, passengers' preference of direct flights whenever available (Franke, 2004; Holloway, 2012; Hsiao & Hansen, 2011; Hunt & Truong, 2019; Jones, 2007; Mason & Alamdari, 2007; Soyk, Ringbeck, & Spinler, 2018; Zeigler et al., 2017). Low airfare is known as one of the possible strategies to attract passengers to deviate from flying on FSCs through their hub, which is commonly implemented by LCCs (Holloway, 2012; Mason & Alamdari, 2007; Shaw, 2013).

However, a few other academics have suggested that a strong brand can help FSCs alleviate this threat. Gilbert and Wong (2003), Lijesen, Rietveld, and Nijkamp (2002), Narangajavana et al. (2014), Sezgin and Yuncu (2016), Wang (2014), and Zeigler et al. (2017) argue that a well-known brand is likely to enable the hub-and-spoke FSCs to persuade passengers connecting through their hubs. Having a powerful brand also provide other benefits to FSCs, such as retaining passengers, avoiding high marketing costs (to attract new passengers), enhance relationships with passengers, endure passengers from low airfares, and so forth (Holtbrügge, Wilson, & Berg, 2006; Nenem & Ozkan-Gunay, 2012; Sezgin & Kozak, 2012; Zeigler et al., 2017), which in turn, keeps the transit passengers travelling on them.

In the Southeast Asian market and probably also in a larger geographical scope, Singapore Airlines has been able to build a powerful brand over many years (L Heracleous et al., 2009; Yun et al., 1996). At the time of writing, Singapore Airlines is one of the only ten airlines in the world that is awarded the 5-star airline rank by Skytrax. Additionally, Mak and Go (1995) describe that Singapore Airlines has developed intense brand loyalty, so that not only is it able to increase passengers acceptance to take flight connections through Changi Airport, but also able to benefit from selling their tickets at high airfares. A similar strategy of optimizing strong brand is also implemented in Thai Airways in responding to the threats from new low-cost entrants (Hooper, 2005).

Additionally, compared to Garuda Indonesia and Malaysia Airlines, Singapore Airlines is likely to gain benefits from its renowned hub, Changi Airport. The Singapore Airlines' hub is famous for its facilities to entice transit passengers, such as cinema, 24-hour restaurants and cafes, pharmacies, children's playgrounds, rest areas, butterfly garden, roof-top swimming pool, and many more. Operating via a hub and asking airlines to provide activities and convenience during transit, since these two factors play important roles to lure passengers flying through their hubs (Gilbert & Wong, 2003; Lapparent, Axhausen, & Frei, 2013; Zeigler et al., 2017). The airport has also won many awards, accolades, and recognitions for its performance because of its management and state-of-the-art infrastructure to support flight connections (Loizos Heracleous & Wirtz, 2009).

It has gained a reputation as a 5-star airport, where arguably being a well-known airport helps to attract passengers to connect through it (Lohmann et al., 2009; Sezgin & Demiral, 2019). The brand is also reinforced by the operator's effort to label themselves as "the region's premier gateway," which is commonly observed in many other major hubs to increase attractiveness (Lew & McKercher, 2002). Furthermore, Singapore Airlines is likely able to persuade transit passengers flying with them because its hub offers numerous destinations beyond Singapore, where passengers can continue their journey either within the airline's network or on other airlines (Lew & McKercher, 2002; Lohmann et al., 2009; Narangajavana et al., 2014; Nenem & Ozkan-Gunay, 2012).

Hence, the author attempts to explore if Singapore Airlines' connecting passengers, particularly those travelling from Surabaya and Bali to their final destinations via Singapore, will not be deterred by any hub-skipping (direct) flights because of Singapore Airlines' well-known brand, the airline's massive hub has to offer, or both.

# 2.2. The Hub-and-Spoke Model and Frequent-Flyer Program

O'Connell and Williams (2005) suggest that frequent-flyer program or FFP is one of the four groups of dimensions involved in assisting passengers in deciding which airline they will travel on (the other three dimensions are brand – reliability, quality, and comfort; networks – flight schedules and connections; and fare). Likewise, Gilbert and Wong (2003) also found that the networks and FFP are expected from, especially, business travellers. Similarly, the Brazilian business travellers would rather fly FSC because of the FFP reason as well (Huse & Evangelho, 2007).

Scholars have for a long time suggested that FFP will benefit both passengers and airlines. For passengers, the FFP may offer points that may be used in other industries, such as banks, hotels, restaurants, retailers, spas, dedicated check-in counters, priority boarding, the use of lounge, and personalization (the last four are usually applicable for certain levels of FFP members) (Loizos Heracleous & Wirtz, 2014; Mak & Go, 1995; Tomová & Ramajová, 2014).

Meanwhile, from the airlines' perspectives, such a program can increase passenger loyalty and improve load factors (Chang & Hung, 2013; Flores-Fillol, 2009). Mak and Go (1995) also found that although FFP can increase passenger loyalty, the program came third in mind when their respondents were considering for a flight (after schedule and brand image). The FFP is commonly applicable among alliance members as well. The integration among alliance members is benefited by long-haul FFP members (with flight connections at a hub), particularly if a passenger is travelling to a destination where his/her FSC does not serve (Narangajavana et al., 2014). For instance, although Lufthansa does not have a direct flight to Bali from Germany, their passengers can still accrue FFP points and other benefits when travelling to Bali from Frankfurt (they can connect to another Star Alliance member either in Bangkok or Singapore).

Singapore Airlines, on the other hand, has also benefited from its FFP, Krisflyer. According to Chin (2002), the airline's FFP has generated a significant positive impact on passengers' decisions in choosing Singapore Airlines. Additionally, Chin also suggests that the airline's FFP members, who participated in his survey, showed a willingness to pay higher airfare. While in the case of the Taiwanese travellers, in his research, Wang (2014) also found similar findings to Chin's.

Hence, the author will also investigate if the same group of connecting passengers who participated in the surveys considered FFP as a driven factor to choose Singapore Airlines.

### 3. Methods and Data Collection

The author utilized the survey method in order to seek the answers to the three questions developed in the literature review. This survey method is chosen because the variables were mostly already available and unlike experiments that might involve the deliberate manipulation of variables, there was no manipulation of variables in this research, among other reasons (Creswell, 2014; Kalaian, 2008; Kothari & Grag, 2014). Close-ended questionnaires were handed out to respondents. However, prior to developing the final questionnaire, the author conducted a pilot-test with 15 respondents in order for the author to generate a rigorous and acceptable level of reliability for the surveys (Bryman & Bell, 2011).

After analysing the pilot test, the author developed the final structured questionnaire. Questions were asked in a set order (Malhotra and Birks, 2006). Other survey methods, like a semi-structured interview or using an unstructured questionnaire, were not chosen because the research topic was not completely new in academia (Kothari, 2006), so the author could refer to past research and publications with some adjustment as required. A non-probability sampling (quota sampling) technique was employed in the survey because the author did not have access to actual passenger lists.

Additionally, quota sampling is commonly used in market research with the intention of creating a sample that can be generalised to the population (Bryman and Bell, 2011). The author decided to employ passengers' types of journey (for instance, point-to-point and transit/connecting travellers) as a quota to determine the required sample size. Past reports and scholars, for example Aviation Strategy (2003), CAPA (2013), Francis et al. (2007), Lohmann et al. (2009) and O'Connell and Williams (2005), suggest that FSCs typically have around 40% point-to-point and 60% transit/connecting passengers.

As stated earlier, the research aims to investigate passengers traveling via Singapore from Surabaya and Bali in Indonesia. Surabaya is the second biggest city in Indonesia, while Bali is a well-known holiday island. The structured direct survey was randomly handed out to passengers in two airports in these cities before they boarded their flights (three days in Bali and four days in Surabaya). The author adopted a single cross-sectional design (single point of time), instead of longitudinal design because of the nature of the research and the available time.

At the end of the surveys, there are 723 total usable respondents, and with this sample size and a confidence level of 95%, the author has a margin of error of 3.7% and utilized SPSS version 20 to analyse the dataset. Of these 723 respondents, 48% are point-to-point respondents and 52% are connecting travellers (Table 1). Of the 723 datasets, 327 of them Singapore Airlines and SilkAir passengers participated in the surveys, which consist of

132 point-to-point or 40% respondents and 195 respondents with connecting flights or 60%. These figures reflect similarity as to the previous research that suggests FSCs typically carry around 40% to 60% connecting passengers (as discussed earlier). Additionally, there are 158 usable transit respondents who travelled on LCCs to other destinations via Singapore.

Since the focus of this paper is to investigate Singapore Airlines' connecting passengers, the author utilizes only 195 usable respondents who had flight connections at Singapore Airlines' hub. SilkAir respondents are included in the count for two reasons. First, both Singapore Airlines and SilkAir are full-service carriers belonging to the same group company. Second, passengers holding either SilkAir's or Singapore Airlines' tickets can fly both Singapore Airlines and its full-service regional subsidiary, and vice versa. However, passengers from other carriers (Table 1) are also included in the discussions for a few reasons as follows, to understand if there are differences in time of ticket purchase between Singapore Airlines' and other carriers' passengers, their purpose of travel, among others.

NI C. Alaliana	Total Respondents on Each Segment				
Name of Airlines	Point-to-Point	Transit			
Air Asia	14.1%	5.3%			
Garuda	1.4%	6.1%			
Jetstar Asia	28.2%	20.2%			
Scoot	17.3%	16.5%			
Singapore Airlines (incl. SilkAir)	37.9%	51.9%			
Others	1%	0%			
Total Percentage	100%	100%			
Respondents per Segment	347	376			
Total Respondent (n)	723				

Table 1. Total Respondents on Each Segment

#### 4. Results and Discussion

## 4.1. General Findings

Indonesian residents accounted for over half of the total Singapore Airlines connecting passengers participating in the surveys, at 56%. European residents made up 11%, 5% for each group of residents in Australia, New Zealand, India, and North Asia and 19% represented other countries. The respondents were also 63% female and 36% male (1% preferred not to answer). The socio-demographic data also shows that the majority of the passengers surveyed (33%) are young adults (in this study, aged between twenty-five to thirty-four years). This finding resonates with previous research that describes that the majority of their FSC respondents belonged to a similar age group (Lu, 2017; O'Connell & Williams, 2005).

Furthermore, the majority of the Singapore Airlines transit respondents (48%) declared that they had purchased the tickets by themselves, which contradicts prior research on Malaysia Airlines that suggested that the majority of the respondents of Singapore Airlines' next-door competitor bought their tickets from travel agents (O'Connell & Williams, 2005). However, this is consistent with a more recent study that reveals that around 54% of the Taiwanese FSC passengers decided to purchase their tickets without any influence from brick-and-mortar travel agents or their offices (Lu, 2017). On the other hand, 51% of the LCC transit passengers bought their own tickets, lower than what the two previous studies had suggested (e.g., Lu reported that around 90% of his LCC respondents self-purchased their tickets). The second observation from the surveys is that family members took

care of their tickets (24%), while the LCC respondents stated that travel agents had bought their tickets for them, (24%) – even though some may argue that travel agents do not buy tickets, but there are passengers who leave the decisions on their travel agents to choose for them (Table 2).

Regarding time of purchase, on the other hand, 42% of the Singapore Airlines respondents purchased their tickets more than two months in advance, and the majority of the LCC respondents (23%) bought their tickets one to two weeks before the travel date (Table 3). This finding offers a new insight that contradicts a previous argument that LCC passengers plan their journeys in advance to get low airfares, unlike FSC passengers (Mikulić & Prebežac, 2011).

Table 4 shows that 64% of the respondents who had connecting flights on Singapore Airlines were traveling for the holidays and 21% were on business trips, and the three LCCs showed similar figures – 68% on holiday trips and 20% on business trips. This finding reveals that Singapore Airlines, as an FSC, flies more business travellers than previously suggested, around 8% (Lu, 2017), although lower than O'Connell and Williams (2005) finding of around 30% to 37%.

	Both Connecting and Point to Point				Connecting Only			
Person Bought the Ticket	Singapore Airlines		LCCs		Singapore Airlines		LCCs	
	n	%	n	%	n	0/0	n	%
Myself	150	46%	202	55%	93	48%	80	51%
Family member	75	23%	61	17%	46	24%	21	13%
Office/Company	36	11%	32	9%	17	9%	12	8%
Travel agent	64	20%	56	15%	38	19%	38	24%
Other	5	1%	14	4%	1	1%	7	4%
Total	327	100%	365	100%	195	100%	158	100%

Table 2. Person Who Purchased the Ticket

	Both Connecting and Point to Point				Connecting Only			
Point in Time	Singapore Airlines		LCCs		Singapore Airlines		LCCs	
	n	0/0	n	%	n	%	n	%
< 7 days	14	4%	56	15%	6	3%	25	16%
1 – 2 weeks	51	16%	96	26%	18	9%	36	23%
3 – 4 weeks	36	11%	30	8%	25	13%	14	9%
1 – 2 months	87	27%	85	23%	60	31%	33	21%
> 2 months	123	38%	70	19%	81	42%	29	18%
Don't know	16	5%	28	8%	5	3%	21	133%
Total	327	100%	365	100%	195	100%	158	100%

Table 3. Time the Ticket Was Purchased

	Both Connecting and Point to Point				Connecting Only			
Reason for Travel	Singapore Airlines		LCCs		Singapore Airlines		LCCs	
	n	%	n	%	n	0/0	n	0/0
Business trip	76	23%	66	18%	40	21%	31	20%
Visiting friends/ family/relatives	44	13%	30	8%	25	13%	6	4%
Holidays	196	60%	240	66%	124	64%	108	68%
Medical reasons	4	1%	6	2%	0	0%	2	1%
Studies	4	1%	17	5%	4	2%	10	6%
Other	3	1%	6	2%	2	1%	1	1%
Total	327	100%	365	100%	195	100%	158	100%

Table 4. Purpose of Travel

	Both Connecting and Point to Point				Connecting Only			
Types of Traveller	Singapore Airlines		LCCs Sin		Singapore Airlines		LCCs	
	n	0/0	n	0/0	n	0/0	n	0/0
Single traveller	98	30%	125	34%	53	27%	41	26%
Two travellers	76	23%	87	24%	40	21%	35	22%
Three or more travellers	152	47%	152	42%	102	52%	82	52%
Total	326	100%	364	100%	195	100%	158	100%

Table 5. Types of Traveler

Flight Time from Changi Airport	n	0/0
Less than 5 hours	91	47%
5 to less than 7 hours	21	11%
7 to less than 10 hours	50	26%
More than 10 hours	32	16%
No answer	1	1%
Total	195	100%

Table 6. Locations of Final Destination after Singapore

In terms of traveller type, while O'Connell and Williams (2005) suggested that LCCs fly more group travellers (three or more people), the survey findings reveal that as an FSC, Singapore Airlines, in fact, has more group travellers than suggested, where 52% of the respondents travelled in groups of three or more. This figure, however, is in line with Lu's (2017) findings that describe that FSCs in Taiwan carry around 45% group travellers.

Table 6 shows that 47% of the connecting passengers who had participated in the surveys had flight connections through Singapore Airlines' hub to other destinations within five hours of flying time from the airport – in other words, within the range of the likes of the Boeing 737-800 or the Airbus A320 family (commonly operated by LCCs as well). Additionally, 26% of the passengers travelled to destinations beyond seven hours but less than ten hours away, such as Dubai, Sydney, and Tokyo – 16% of the connecting respondents went to destinations beyond ten hours away from Changi Airport (11% went to cities more than five hours but less than seven hours away).

## 4.2. Powerful Brand as a Deterrent to Hub Skipping

In both cases of Malaysia Airlines and Taiwanese FSC passengers, O'Connell and Williams (2005) and Lu (2017) found that their FSC respondents valued more brand or image associated variables than airfares. By contrast, the survey findings reveal that the majority of Singapore Airlines connecting passengers who had participated in the surveys stated airfare as their primary reason to purchase tickets (31%), as opposed to what the literature suggested, i.e., brand related factors, such as services or convenience offered by the airline (only third on the list at 15%). Similarly, Punel, Hassan, and Ermagun (2019) and Ciliberto and Williams (2010) found that more travellers chose lower prices over loyalty.

Flight frequency is the second primary reason to travel on Singapore Airlines, at 24% (Table 7). Although this finding contradicts arguments that airlines with well-known brands, such as Singapore Airlines, can leverage this to charge higher airfares (Fan & Lingblad, 2016; Mak & Go, 1995), it is consistent with what Nenem and Ozkan-Gunay (2012) and Zeigler et al. (2017) proposed, which is that itinerary choice may depend on either low airfare or high brand loyalty.

Hence, in this case, attractive airfares seem to be a stronger pull factor than the Singapore Airlines brand. This condition may be as a result of competitive pressures from either other FSCs that offer similar services or convenience or LCCs or both, as acknowledged by the airline itself: "[the] decline in passenger yield [is] because of intense competition in the regional markets" (Singapore Airlines, 2018, p. 54). In addition to advocating brand power, Fan and Lingblad (2016) also suggested that lower airfares may be needed should an FSC face challenges from similar-quality competitors. For instance, passengers from Surabaya or Bali have a few options for taking other one-connection flights – such as through Jakarta (on Garuda Indonesia, also a five-star airline), Hong Kong (Cathay Pacific – another five-star FSC, Hongkong Airlines – a four-star airline), or Kuala Lumpur (Malaysia Airlines) – and continuing to their final destinations.

Reasons	n	0/0
Price/airfare	60	31%
Frequency	47	24%
Service/convenience offered	30	15%
Safety perspectives	18	9%
Suggestions from others	11	6%
Travel agent's recommendation	10	5%
Frequent-flyer program,	7	4%
Company policy/instruction	6	3%
Don't know	4	2%
Other	2	1%
Total	195	100%

Table 7. Reasons for Choosing Singapore Airline (Connecting Passengers Only)

The survey findings also deviate from another view that suggests that airlines should focus on customer relationship management, such as understanding changes in customer needs and solving their problems as important factors to keep their customers (Cheng, Chen, & Chang, 2008). In this case, what matters to these types of travellers seems to be attractive airfares (assuming that other factors are similar, as discussed above). This also disagrees with Fan and Lingblad (2016) who claimed that because of Singapore Airlines' hub geographical location, higher frequencies between Changi Airport and the spokes may increase attractiveness to connecting passengers to/from the region instead of prices. The connecting passengers who had participated in the survey put flight frequencies (i.e., time of departure) as the second most important factor after price.

Another conflicting observation is found in the results. Although Fan and Lingblad (2016) described that Singapore Airlines was able to charge higher airfares from cities such as Denpasar (one of the two airports where the author handed out the questionnaires), the passengers who had participated in the surveys stated differently. The attractive price was their main driving factor to connect through the airline's hub. Fan and Lingblad may have utilized only one source for their research, Skyscanner, an online travel company, as well as the selections of sampling times of departure and particular destinations only, which is also admitted by them (p. 121): "the lowest available in Business or Economy for a reasonably convenient itinerary at the point of our sampling." Meanwhile, the survey participants purchased their tickets at various timeframes, from various sources, and travelled to many destinations, not just between Bali and Amsterdam.

Furthermore, the majority of Singapore Airlines' passengers who participated in the two surveys acknowledged that they would consider direct flights should they be available (under the following two conditions: the same airfare and time of departure) – Table 8. 70% (137 respondents) stated that they would take direct flights on other FSCs should they be available, and 30% (58 respondents) revealed the opposite. Those who did not want to take direct flights said that flight frequency (time of departure) is the primary reason for staying with Singapore Airlines (19% of the 58 respondents). Singapore Airlines, together with SilkAir, connect to Surabaya three times daily and to Bali six times daily with their hub. Other reasons are "not sure" (also at 19%), "no choice" (14%), "airline brand" (10%), "airport image" (7%), and so on (Table 8).

However, the ratios above differed when the direct flight opportunity was offered by an LCC (under the same conditions as above, the same price and time of departure). In this situation, only 55% or 107 respondents would take the flight (down from 70% earlier), and 45% or 88 respondents would prefer to stay with Singapore Airlines (an increase from 30%). This data shows a slight increment from a study conducted in 2005 for a similar scenario, where two incumbents (AerLingus and Malaysia Airlines) registered only about 34% loyalty (O'Connell & Williams, 2005). Furthermore, of the 88 respondents, 28% said that Singapore Airlines' brand image was the main deterrent to take the LCC's direct flights and 17% mentioned flight frequency as their main considerations (Table 8).

Singapore Airlines' Connecting Passengers on Taking Direct Flights on Other FSCs (Same Departure Time and Price)					
Yes	137 (70%)				
	58 (30%)	Why not?	%		
		Flight frequencies	19%		
		Not sure	19%		
No		No choice	14%		
		Airline brand	10%		
		Airport image	7%		
		6 other reasons	31%		
N =	195 (100%)				

Table 8. Opportunity for Direct Flights on Other FSCs

Singapore Airlin	Singapore Airlines' Connecting Passengers on Taking Direct Flights on LCCs (Same Departure Time and Price)							
Yes	<b>Yes</b> 107 (55%)							
	88 (45%)	Why not?	0/0					
		Airline brand	28%					
No		Flight frequencies	17%					
100		Safety perspectives	8%					
		Airport image	7%					
		7 other reasons	40%					
N =	195 (100%)							

Table 9. Opportunity for Direct Flights on any LCC

Singapore Airline	Singapore Airlines' Connecting Passengers on Taking Direct Flights on LCCs (Same Departure Time and Lower Price)						
Yes	Yes 38 (44%)						
	47 (53%)	Prices lowered by	0/0				
		10%	19%				
No		20%	13%				
		30%	25%				
		40%	43%				
N/A	3 (3%)						
N =	88 (100%)						

Table 10. Direct Flights on LCCs and Lower Airfares

Despite this finding, under an additional scenario of the LCC lowering its hub-skipping airfares by up to 40% (supported by many cost advantages over FSCs (Moreira, O'Connell, & Williams, 2011)), assuming Singapore Airlines did not respond to this move, 53% of the same 88 respondents revised their decisions and said that they would switch to the LCC (Table 10). Hence, under this scenario, the potential respondents who might shift to the LCC amount to 79% or 154 respondents of the total 195 connecting passengers who had participated in the surveys. Therefore, the flag carrier of Singapore is likely to face more threats given hub-skipping flight opportunities on other FSCs with similar frequencies or departure times as Singapore Airlines' propositions as well as additional threats from LCCs if their pricing strategies are up to 40 % lower than what the respondents paid for their trip on that day.

The literature review has suggested that a reputable airport, such as Changi Airport, may persuade passengers to connect through it. By contrast, only 3% of the transit respondents stated renowned airports as their principal reason for flying with Singapore Airlines (instead of taking direct flights when available). The data may also be consistent with a recent text mining analysis on passenger expectations of service quality. What the researchers found is that the most frequent phrase sought in ten different geographical regions was "seat comfort" and that nothing mentioned airports (Punel et al., 2019). This may be affected by the argument that passengers prefer the shortest connection times (Nenem & Ozkan-Gunay, 2012; Zeigler et al., 2017), so transit passengers are less likely able to enjoy what Changi Airport has to offer anyway. 51% of the respondents with flight connections

had connection times of less than three-hour at Changi (considered rapid connections), also in line with Air France's offer of short connection times to entice its connecting passengers (O'Connell & Bueno, 2018)).

Therefore, the author suggests that although Changi Airport may be admired by many and has received many awards, minor associations have been found between the success of persuading travellers to connect through this mega airport and its brand.

### 4.3. Hub-and-Spoke Persuasion through Frequent Flyer Program

Another strategy to encourage passengers to accept flight connections is by leveraging the frequent flyer program (FFP). In addition to what has been discussed in the literature review, according to O'Connell and Warnock-Smith (2013), a few U.S. carriers have been relying more on FFPs to attract more passengers. Moreover, according to Wu (2017), passengers feel they benefit more from FFPs, which means that FFPs contribute to their decision to travel with their respective airlines. However, the surveys reveal that only 28% of the connecting passengers (55 respondents) are members of Singapore Airlines' FFP, including seven of them (less than 4%) who were on business trips.

Thus, this finding also likely opposes arguments that describe that business travellers value their FFPs more and are less likely to give up on their airlines on longer journeys because of frequent flyer credit purposes (Francis et al., 2007; Gilbert & Wong, 2003). Nevertheless, although the overall results still show small portions on the point-to-point segment (i.e., Surabaya or Bali to Singapore only), more members of Singapore Airlines' FFP travelled for business trips, 16 out of 327 point-to-point respondents (about 5%).

As shown in Table 7, the FFP is ranked the seventh reason for traveling on Singapore Airlines. Gilbert and Wong (2003) found similar evidence in their research, where the FFPs were not highly regarded by the respondents. Additionally, the data from these surveys is likely to mirror that from two earlier studies. O'Connell and Williams (2005) found that only around 8% of 128 Malaysia Airlines respondents and around 13% of 132 AerLingus passengers who had participated in their surveys (Aer Lingus was then still an FSC) considered FFP membership as a reason to travel with their respective airlines. Similarly, in more recent research, Lu (2017) reiterated that his FSC respondents perceived FFP as one of the least necessary services.

Hence, FFP less likely becomes a significant consideration with regard to a passenger's decision to travel on an airline. This finding is in concurrence with Gilbert and Wong's (2003) outcomes, which concluded that in general, FFP is not a service that is highly regarded by the passengers. Therefore, airlines should probably start rethinking their FFPs, either to make them more attractive or to abandon them, the latter of which is likely more difficult to do.

## 5. Conclusions

This paper offers insights into the theory, confirmations, and disagreements of past research in the air transport studies, particularly in the hub-and-spoke airline business model domain. On flight connection segments, contrary to the initial assumptions that suggest that the hub-and-spoke model can benefit from strong brands (of airlines, airport, or both), the findings suggest that passengers do not have brand loyalty and only concerned with low airfare, which is similar to a prior research conducted about 16 years ago by Hooper (2005). However, Hooper was referring to the late 1970s case of PeopleExpress, a now defunct U.S. LCC. A similar argument is also pointed out by Mason and Alamdari (2007) who claimed that passengers value prices over services for short sector flights. This paper has extended price preferences over brand or other factors to both the case of FSC and the passenger segment with flight connections, i.e., longer sectors.

Likewise, in the case of passengers traveling through a hub, unlike what has been described earlier, the findings suggest that an FFP is likely to hold less compelling attractiveness with passengers with regard to purchasing consideration. Nowadays, passengers likely put prices over FFPs when purchasing their tickets. The appeal of FFPs has fallen to the seventh position, after price, flight frequency, service/convenience, safety perspectives,

suggestions from others, and travel agents' recommendation. Moreover, on this type of flight segment, the FFP may be able to entice only a fraction of business travellers.

Since passengers still show preferences of taking direct flights, threats for hub-and-spoke carriers still exist, particularly if full-service competitors can offer similar times of departure or flight frequencies. These threats are likely to be significant because hub-skipping flights may be flown by narrow-body airplanes since, in this study, most of the passengers connected to spokes that can be reached in less than seven hours from the hub. Passengers are also likely to consider hub skipping on LCC flights, and we may see more FSC passengers taking direct LCC flights provided that the airfares are lower by up to 40% than the incumbent's.

Hence, to keep passengers from deflecting to direct flights, the author recommends FSCs, such as the likes of Singapore Airlines, to keep their costs favourable without jeopardizing their full-service value propositions. Out-of-the-box considerations may be needed, such as opening crew bases in resident countries at lower cost so that lower employment packages can be offered as well. This strategy has been used in a few European LCCs. To tap into non-stop demand, particularly passengers traveling within seven hours from their dwellings, setting up joint ventures in countries with a huge potential market may be considered as well, another strategy commonly adopted by LCCs in Southeast Asia. Although these may be difficult to implement, Francis et al. (2007, p. 398) suggested, "Any airline wishing to maintain cost advantages may find itself needing to continually look for ways to innovate."

The author also suggests that FSCs need to rethink their FFPs, since these programs are less likely to entice passengers and started losing their effectiveness compared to attractive prices. For LCCs that do not already have FFPs implemented, copying and pasting these programs is likely not necessary to minimize additional costs.

However, this paper has limitations. The research involved only passengers traveling two routes in Southeast Asia: Surabaya to Singapore and Bali to Singapore. Hence, the generalization of the findings must be carried out with caution. The questionnaire only focused on one factor that could primarily drive passengers' decision. In other words, it did not consider for possible secondary factors that may additionally affect passengers' purchasing decisions. Therefore, future studies to extend this research to different geographical markets are necessary to investigate whether FSC passengers traveling to spokes within seven hours from a hub in Europe or the United States show similar behaviours as observed in this study.

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