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**| RESEARCH ARTICLE**

**A PLS-SEM Approach: Examining Factors that Influence the Growth of Low Cost Carriers for Post-Pandemic Travel**

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**| ABSTRACT**

Despite the Covid-19 outbreak in late 2019 that caused fears of traveling on a global scale, the airline's business outlook in the South East Asia region seems to be badly affected. A bigger challenge that remains in the industry is the uncertainty of the market growth for post-pandemic travel in this highly competitive airline industry. Therefore, this study aims at investigating the factors that influence the market growth of Low Cost Carriers such as Air Asia for post-pandemic travel. A sample of 500 respondents was collected through simple random sampling from those who had travelled at least once with LCCs in the past 5 years. The results indicate that brand image has the strongest prediction towards the growth of LCCs in this region. This study provides useful information for strategic planning in the LCCs industry and to better understand the travellers' needs in the region.

**| KEYWORDS**

Market Growth, Low Cost Carrier, Brand Image, PLS-SEM

**| ARTICLE INFORMATION**

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**1. Introduction**

The rapid growth of Low Cost Carriers (LCCs) during the 21st century has created a very challenging environment for the airline industry, especially the competitiveness between full service airlines versus budget airlines. The existence of LCC makes travel by flight becomes more affordable for the consumer and encourages them to travel more frequently. It helps certain countries in this region, such as Indonesia, Thailand and Malaysia, to develop their economies through job opportunities and wealth creation. With the increasing demands from middle income labors in South East Asia countries, particularly in Malaysia, there are more people who frequently opt for leisure travel with LCCs as their main transportation mode. Many LCCs brands, i.e. AirAsia, Lion Air, Batik Air, Citilink and Malindo Air, are available in the ASEAN region. Chief Executive Officer of AirAsia X, Mr Kamarudin (2019), mentioned that today's challenges are not solely due to stiff competition but mainly the attitude of regional consumers who frequently seek low air fare as they are extremely price conscious and seeking short vacations. According to [newsroom.airasia.com](http://newsroom.airasia.com) (access: 22/6/22), the low-cost airline AirAsia generated revenue of around 1.84 billion Malaysian ringgit in 2021, which marked the lowest figure within the eight-year timeline, as a result of the COVID-19 pandemic and its measures. However, AirAsia is continuing to grow its market despite the financial loss. In fact, AirAsia is planning to open new routes into other potential markets in order to grow its business. Hence, it remains crucial to identify factors that affect the market growth of LCCs in the region for strategic decision making, particularly during financial difficulty.

The new generation of LCCs has brought different challenges, and some of them appeared to be very successful in the airline industry, for instance, causing pressure on full service airlines due to the competitive pricing strategies (Diggines, 2018). However, it is important to note that competitive pricing should not be the only advantage of an LCC. The industry players should emphasize other factors, such as airline service, to differentiate themselves from others to attract consumer retention in order to grow their market (Stephan & John, 2019). According to Chron (2021), determinant attributes are the elements that a consumer uses to

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differentiate among the alternatives, and all of these are important for them to determine which brands they choose. There is therefore, the objectives of this paper are mainly focused on identifying the needs of the market and examining the factors that positively affect the market growth of Low Cost carriers in the region. The research questions for this study remained as follows:

1. What are the key factors that affect the regional market growth of Low Cost Carriers?
2. What is/are the needs of customers (air passengers) to choose a Low Cost Carrier as their preference in the region?

## 2. Background of Study

The market for low cost carriers (LCCs) has experienced significant growth in recent years. LCCs are airlines that offer lower fares compared to traditional carriers by operating with lower overhead costs and fewer amenities. Several factors have contributed to the growth of LCCs. The increasing demand for air travel, particularly in developing markets, has supported the growth of LCCs. LCCs also typically have lower operating costs than traditional carriers, which allows them to offer lower fares and make air travel more accessible to a wider market. The following literature highlighted four important factors that influence customers' decisions to purchase an LCC product.

### 2.1 Pricing

Price plays a major role in the LCCs industry as low airfare is the main characteristic of the industry. Mark & Ryan (2017) stated carriers are now facing an uncertain amount of demand due to the conventional wisdom on the profile of airline's price, and the uncertain demand can help to enhance carrier's profit by giving a monotonically increasing price to different groups of seats. According to Clemons (2017), LCCs have to set their own price before demand is known, and the transaction cost of changing the prices of the air ticket in response to the current information about the demand is high. Bachis, Enrico & Claudio (2016) observed that the fares posted less than a week before departure increase at a consistent pace, and some early booking fares may be higher than those available from four to two weeks before departure. Hence, it can seem that most of the LCCs' pricing schemes did not fully describe the monotonic property. In addition, Diego (2018) noticed that when the advance-purchase discount tactic is cared for, the LCCs need to originate schemes in a condition where the demand or the traveller's choices are unsure will be arising. The differences in price are due to the inclusion of connecting flights are removed by the fact that LCCs give only "point to point" tickets (Mark & Ryan, 2019). Hence, the difference in prices of the ticket will influence the purchasing decision of customers.

H1: Pricing has a significant influence towards the market growth of Low Cost Carriers in the SEA region.

### 2.2. Airline Safety

Most airlines tried to limit the risk of air travel through different types of safety and security measurements (Matthew J. M. & David R. W., 2014). According to Sarah (2014), passenger perception of airline safety can be influenced by a variety of factors. Some research has suggested that media coverage of aeroplane accidents and incidents can shape public perception of airline safety, even if the actual number of accidents is relatively low. Passengers may also be influenced by their own personal experiences with air travel, as well as the safety ratings and reputation of specific airlines (Strong & Peeters, 2013). In addition, the level of transparency and communication from an airline about its safety practices and procedures may affect passenger perception of safety. Finally, the perceived risk of other modes of transportation, such as a car or train travel, can also influence how safe passengers feel when flying (Bagheri & Zamanzadeh, 2011).

It is generally accepted that a high level of perceived safety is important for the success of an airline, particularly in the LCCs market. This is because passengers are more likely to choose an airline that they perceive as safe, even if it means paying a higher price (Gkritza, K., Niemeier, D., & Mannering, F., 2006). In contrast, if an airline has a poor reputation for safety, it may struggle to attract passengers, even if it offers low prices. This suggests that perceived safety can have a significant impact on the market growth of LCCs. When consumers perceive LCCs as being safe, they may be more likely to choose that carrier over others, which can lead to increased demand and market growth for the LCCs. On the other hand, if an LCCs is perceived as being unsafe, it may struggle to compete with other carriers, even if it offers low prices. When the consumer perceived safety towards the LCCs is high and more demand from the market towards the carrier, it may help the market growth of LCCs.

H2: Perceived Safety has a significant influence towards the market growth of Low Cost Carriers.

### 2.3 Competitions of Low Cost Carrier

Since the early year 2000, LCCs have emerged as strong competitors as appose to full-service airlines in Southeast Asia, which consist of 600 million population; they now account for more than half of the seats available in this region (Capa, 2013). LCCs are a type of airline that typically offer lower prices for air travel by cutting out many of the traditional frills and services associated with full-service carriers. In order to reduce costs, LCCs may operate on a point-to-point route structure, use secondary airports,

and offer a limited range of services to passengers. As a result of their lower prices and growing popularity, LCCs often face significant competition from both other LCCs and full-service carriers (Shiu and Lo, 2017). In order to compete effectively, LCCs may focus on offering low prices, a convenient route network and frequency of flights, and a reputation for reliability and punctuality. However, it is important to note that the competition among LCCs can be intense, and carriers must continually seek ways to differentiate themselves and offer value to their customers in order to succeed in this highly competitive market.

Today, the level of competition can vary depending on the specific market in which the LCC operates. According to Park & Sim (2018), in markets where there are many LCCs, the competition can be intense, as each carrier seeks to attract price-sensitive customers with low fares. In addition to competing on price, LCCs may also compete on factors such as route network, frequency of flights, and convenience. LCCs also face competition from full-service carriers, which may offer a wider range of amenities and services at a higher price point. Full-service carriers may try to compete with LCCs by offering lower prices on certain routes or by promoting their additional services as being worth the extra cost. Overall, competition is an important factor for LCCs to consider as they seek to grow and maintain market share in the airline industry.

H3: Competitive environment (air carriers) has a significant influence towards the market growth of Low Cost carriers in SEA.

**2.4 Brand Image**

The brand image of an LCC refers to the overall perception of the carrier among consumers. According to Kabadayi & Saren (2018), a strong brand image can be an important factor in attracting and retaining passengers, as it can influence consumer perceptions of the quality and reliability of the LCC's services. There has been a significant amount of research on the brand image of LCCs in the literature. Some studies have found that LCCs often have a lower overall brand image compared to full-service carriers due in part to their lower prices and limited range of services. However, other research has found that LCCs can still establish a strong brand image by focusing on key factors such as convenience, reliability, and value for money. In addition to these general factors, the brand image of an LCC may also be influenced by specific elements of the carrier's image, such as its logo and corporate identity, its customer service and communication practices, and its reputation for safety and punctuality.

A strong brand image can be an important factor in the success of an LCC, as it can influence customer loyalty and decision-making. There are several ways in which LCCs can enhance their brand image. One way is by consistently delivering a high level of customer service and meeting customer expectations. This can involve offering convenient booking and check-in processes, timely flights, and responsive customer support (Kelleher & Gorman, 2017). LCCs can also build their brand image through effective marketing and branding efforts. This can include the use of catchy slogans and memorable logos, as well as targeted advertising and promotions that showcase the benefits of flying with the LCC.

H4: Brand Image has a significant influence towards the market growth of Low Cost carriers in SEA.

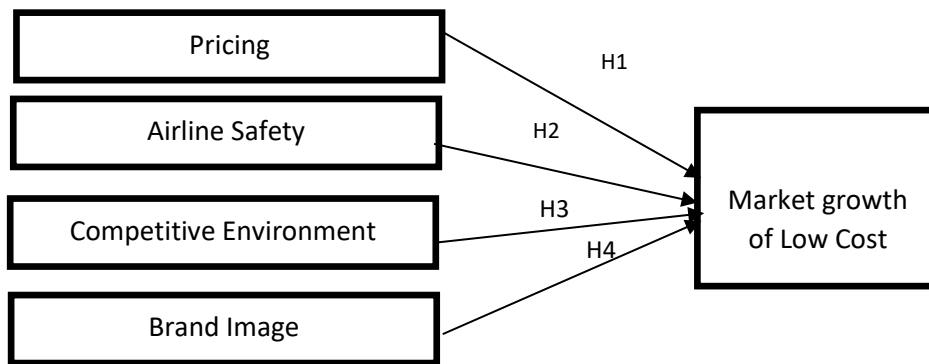


Figure 1: Factors that affect market growth of Low Cost Carriers in the SEA region.

Figure 1 Alt Text: Factors affect market growth of Low Cost Carrier in SEA region.

Based on the reviews of the literature, there are four independent variables determined in this research: pricing, airline safety, competitive level and brand image. The dependent variable is the market growth of LCC. Hence, a total of four factors were examined in this paper and opinions from consumers on this topic were collected and analyzed too.

**3. Methodology**

The primary purpose of this study is to identify the contributing factors to the growth of the LCCs market, using a quantitative survey design to understand the significance of certain identified factors in their decision. This study uses structured questionnaires

in order to collect data and provide a high level of standardization in the data collection process, which improves the reliability and validity of the results (Richard and Louis, 2018). Questionnaires were distributed mainly at the LCC terminal to the targeted respondents through simple random sampling. In order to get a higher respondent rate, online methods proved to be efficient in managing the time and distance constraints that the researcher faced. The use of online quantitative research has become accepted and widely prevalent throughout North America (Scott, D.G. & Barbara, B., 2018). It allows researchers to reach a large and geographically dispersed sample quickly and efficiently. According to Hand D.J. (2008), online research methods also often have a lower cost compared to traditional methods such as mail surveys or telephone interviews. Additionally, online research methods can offer a higher response rate, as people are more likely to participate in a survey if they can complete it at their own convenience.

The researcher has adopted five factors, and multiple statements are provided for each factor to ensure reliability to yield similar readings. Contextualizing these factors in the SEA region through three expert reviews (Devellis, 2003), four out of the five factors are found to be most suitable for this study: pricing, airline safety, competitive level and brand image. Some of these statements and factors have been adapted to suit the environment of the study zone, which is comprehensively explained under the conceptual model included in the theoretical framework. A widely used Likert scale of 1-5 that ranges from "Strongly disagree" to "Strongly agree" has been used to scale responses. The sample sizes of this paper were specifically taken into consideration over the other literature that was reviewed due to the fact that the above-mentioned studies have the closest relationship with the topic (Richard and Louis, 2018). For the purpose of this study, 500 questionnaires were distributed based on the sample size criteria highlighted by Peng and Lai (2012) for SEM models, which is ten times the total number of indicators in the study; there was a response rate of 88.3% (n=422) were collected among that 44.8% were females and 55.2% were males and used for analysis using partial least squares based structural equation modelling (PLS-SEM). For this study, hypotheses were tested using SmartPLS version 2.0 to conduct the analysis (Ringle, Wende & Will, 2005). The PLS analysis for this study was found to be useful as one of the factors using a single item for measurement (Hair et al., 2013). The PLS algorithm technique also determined the significance levels of the loadings, weights, and path coefficients and the bootstrapping (5000 resample) to determine the significance level of the hypotheses, as suggested by Anderson and Gerbing (1988).

#### 4. Findings and Results

First, the demographics were analyzed from a sample size of 422 majorities. Table 1 shows that 21.1% were between 22-25 years, 17.8% were 18-21 years and, followed by 40% of 26-29 years, and 28.4% were 30 years and above; among them, 44.6% of the respondents had travel frequency of 'once in a year' where other 29.1% have 'twice a year' with a majority margin of 7-14 days (9.5%) of duration for the trip.

**Table 1.** Demographics

**Table 1 Alt Text.** Demographics

	<b>Frequency (n)</b>	<b>Percentage (%)</b>
<b>Gender</b>		
Female	189	44.8
Male	233	55.2
Total	<b>422</b>	<b>100.0</b>
<b>Age</b>		
Less than 18	3	0.7
18-21 years	75	17.8
22-25 years	89	21.1
26-29 years	135	40.0
30 and above	120	28.4
Total	<b>422</b>	<b>100.0</b>
<b>Occupation</b>		
Employed in the private sector	202	47.9
Employed in the public sector	28	6.6
Self-employed	48	11.4
Student	133	31.5
Unemployed	11	2.6
Total	<b>422</b>	<b>100.0</b>
<b>Monthly Income</b>		
Less than MYR 5,000	312	73.9

MYR 5,000 – MYR 10,000	77	18.2
MYR 10,000 – MYR 15,000	25	6.0
MYR 15,000 and above	8	1.9
Total	<b>422</b>	<b>100.0</b>
<b>Travel Frequency</b>		
Once a year	188	44.6
Twice a year	123	29.1
Thrice a year	78	18.5
Other	33	7.8
Total	<b>422</b>	<b>100.0</b>
<b>Trip Length</b>		
1-3 days	168	39.8
3-7 days	197	46.7
7-14 days	40	9.5
More than 14 days	17	4.0
Total	<b>422</b>	<b>100.0</b>

### 5. Structural Model

SmartPLS 2.0 was used to test the hypotheses and structural model in this study (Ringle *et al.*, 2005). 5000 iterations of bootstrapping procedure were performed to examine the statistical significance of the value of sub-constructs and the path coefficients (Chin, Peterson & Brown, 2008). According to Wasko & Faraj (2005), the PLS does not generate overall goodness of fit marks; the primary way to evaluate the explanatory power of the model is through the  $R^2$  value. The Goodness of Fit (GoF) index measures the model fit by using the geometric mean of the average communality and the average  $R^2$  (for endogenous constructs). The cut-off values for assessing the results were introduced by Hoffmann and Birnbrich (2012) for the GoF analysis; GoFsmall = 0.1; GoFmedium = 0.25; GoFlarge = 0.36. The results, according to Table 2, for the GoF index are valued at 0.724, which indicates a very good model fit.

**Table 2.** Goodness of Fit Index

**Table 2 Alt Text.** Goodness of Fit Index

	<b>AVE</b>	<b>R<sup>2</sup></b>
Pricing	0.768	
Airline Safety	0.720	
Brand Image	0.820	
Competitive Envi.	0.756	
Market Growth	1.000	0.637
Average Scores	0.824	0.637
AVE*R2	0.523	
(GOF = $\sqrt{AVE \times R^2}$ )	0.724	

Table 2 shows the tested hypotheses testing in the structural model. The correct  $R^2$  refers to the explanation power of the predictor variables on the dependent construct. The pricing, airline safety, competitive environment and brand image all together explain 63.7% of respondents attribute towards the market growth of LCC ( $R^2 = 0.637$ ). In concerns to the validity of the model, Chin *et al.* (2008) categorized endogenous latent variables as important, moderate or weak based on the  $R^2$  value of 0.67, 0.33, or 0.19, respectively. Studied variables in this study, pricing, airline safety, competitive level and brand image towards the market growth of LCC ( $R^2 = 0.637$ ), can be described as moderate. In addition, all four hypotheses (H1, H2, H3, and H4) in Table 3 have shown a strong positive significant value indicating that pricing, airline safety, competitive level and brand image are good predictors for market growth of the LCC industry.

**Table 3.** Structural estimates (hypotheses testing)

<i>Hypotheses</i>		<i>Standard Beta</i>	<i>Standard Error</i>	<i>T-Statistics</i>
<b>H1</b>	Pricing -> Market Growth	0.266	0.021	13.706*
<b>H2</b>	Airline Safety -> Market Growth	0.037	0.016	02.216*
<b>H3</b>	Competitive Level -> Market Growth	0.229	0.019	10.799*
<b>H4</b>	Brand Image -> Market Growth	0.370	0.013	27.564*

*Note: Critical t-values. \*\*2.59 (P<0.01); \*1.95 (P<0.05)*

## 6. Conclusion

The identification of the particular factors that influence the growth of LCC helps the industry players to better market to the targeted group of consumers. In terms of the main research, the structural estimates show that *brand image* as a factor has the highest prediction value on 'market growth', as stated in Table 3. This result has added support to the statement that a high level of brand awareness and positive brand image help to increase the probability of the consumer choosing the brand and also helps to increase customer loyalty and the ability to reduce the negative effect of the market (Lee W. and Wu C.C., 2015). Hence, it influences the market growth of low cost carriers as a positive brand image helps general consumers to build trust and gain confident towards the brand. Additionally, pricing is a key factor in the success of low cost carriers (Dana, 2017). These carriers offer lower prices for air travel by cutting out many of the traditional services and amenities that are offered by full-service carriers. This allows them to offer competitive prices, which can be a major factor in attracting price-sensitive customers. As Shuo (2018) asserted that LCCs also often have a lower cost structure than full-service carriers, which allows them to offer lower prices while still remaining profitable. As a result, LCCs have been able to grow significantly in recent years, particularly in markets where there is strong price competition.

Other major important factors, such as competitive level, have shown a positive influence on the *market growth of LCC*, whereas the results clearly indicate that airline safety has a lower positive effect on the market growth of LCC within this region's travel behavior context. It is difficult to say definitively which factor has the highest prediction value on market growth, as this can vary depending on the specific industry and market. However, brand image can certainly be an important factor that can affect a company's market growth. A strong brand image can help a company attract and retain customers, as it can instill trust and confidence in the company's products or services (Plewa C. & Jan H., 2013). A positive brand image can also help a company differentiate itself from its competitors, which can be especially important in highly competitive markets. It is important to note that brand image is just one factor that can affect market growth, and other factors, such as pricing, product quality, and marketing efforts, can also play a role. However, these factors can enable the decision makers to determine consumer typologies and package and market products accordingly, making it easier to reach the target market (Sarker, M. R., Hossan, C. G., & Zaman, L., 2012).

It is recommended that future research can be based on the different sample groups from different backgrounds and geographic regions, particularly the emergence of the youth market, as this can help to ensure that the results are representative of the population being studied and capture the full range of experiences and perspectives within this market. This is especially important when studying emerging markets, as the characteristics and needs of these markets may differ from more established ones. By conducting research with a diverse sample group, one can gain a more comprehensive understanding of the market and its trends, which can be useful for businesses seeking to target this market. In this case, it helps to analyze and understand the needs of the digital generation or youth market, which eventually affects the market growth of the LCCs market. For future research, the primary data collected to conduct this research is recommended to include both quantitative (survey) and qualitative methods (unstructured interview). The data obtained from the interview with the target sample is able to get more reliable results as there is a continuing conversation between the interviewer and the respondents (Parry R.A. & Rachel L. H.S., 2018).

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