



The Role of Low Cost Carriers in the Development of Tourist Regions in Egypt

Karam Ahmed Mohamed¹, Mustafa Hussein Mahmoud², Farouk Abdelnabi Attaalla²

¹ Post Graduate Scholar, Faculty of Tourism and Hotels, Fayoum University, Fayoum, Egypt

² Professor, Faculty of Tourism and Hotels, Fayoum University, Fayoum, Egypt

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ABSTRACT

The aim of the study is to identify the economic airlines and present their impact on the tourist regions in some different countries of the world, and to review the current situation of the economic airlines and their impact on the tourist regions in Egypt. The current study adopted the quantitative method by using the questionnaire to collect data to test the study hypotheses and achieve its aim and objectives. So, the questionnaire was conducted on seven LCCs in Cairo, and 93 forms were included in this study. The study finds There is a statistically significant correlation relationship between the monopoly policies, the prices and quality of service provided on board low-cost aircraft and economic aviation impact (economic, social, environmental). Some recommendations were directed LCCs management. The following was one of the essential recommendations'(LCCs should utilize global distribution systems (GDSs) when selling products or services, utilizing GDSs is a must to succeed in the aviation market and try to avoid allowing the pricing of their services to become more expensive. Price was considered the most important criterion for the LCCs).

Introduction

Almeida and Garrod (2017) found that Low-cost travel is becoming the dominant way of flying and figures of low-cost growth are stunning. However, there are signs of a slowdown in the organic growth of low-cost carriers (LCC) due to decreasing average frequencies and increasing average route distances, which is forcing LCC to adopt other business strategies for growth including the possibility of establishing long-haul low-cost operations and the hybrid low-cost business models (Chonsalasin *et al.*, 2020; Bugis, 2022). Snyder and Tai (2014) found that there are great impacts for LCCs on the countries region. These impacts can be divided into three categories: direct, indirect, and induced. Direct impact represents economic activities that would not have occurred in the absence of air transportation. Examples of direct economic impacts include the salaries of airline personnel, fuel purchased, landing fees, salaries of airport personnel, and other similar purchases and expenditures. Indirect economic benefits include the financial benefits that are

¹ Contact Mr. Karam Mohamed at: ka4147481@gmail.com

attributed to airport/airline activities. Examples of indirect economic impacts for air transportation include hotels, restaurants, and other retail activities (Hassan and Salem, 2022).

The study's core problem lies in the scarcity of information on low-cost airlines, especially in Egypt. Particularly, with regard to the size of the activity of these companies and their impact on tourism in Egypt, compared to other countries. Meanwhile, few studies have investigated in the economic airlines and present their impact on the tourist regions in Egypt. The importance of study is to know the relationship the low-cost airlines' policies and economic aviation impact (economic, social, and environmental) impact. Hence, the study aims identify the economic airlines and present their impact on the tourist regions in some different countries of the world, and to review the current situation of the economic airlines and their impact on the tourist regions in Egypt. Limitations of the study are divided into two limitations. Human limitations represented in tourism experts (academic professors in tourism studies, and vocational managers in LCCs). Time limitations are represented in distributing survey forms during the period from September 2022 to December 2022.

Research Hypotheses

The research hypotheses could be suggested as follows:

H1: There is a statistically significant impact of monopoly policies on economic aviation (H1a economic, H1b, social, H1c environmental).

H2: There is a statistically significant impact of prices and quality on economic aviation (H2a economic, H2b, social, H2c environmental).

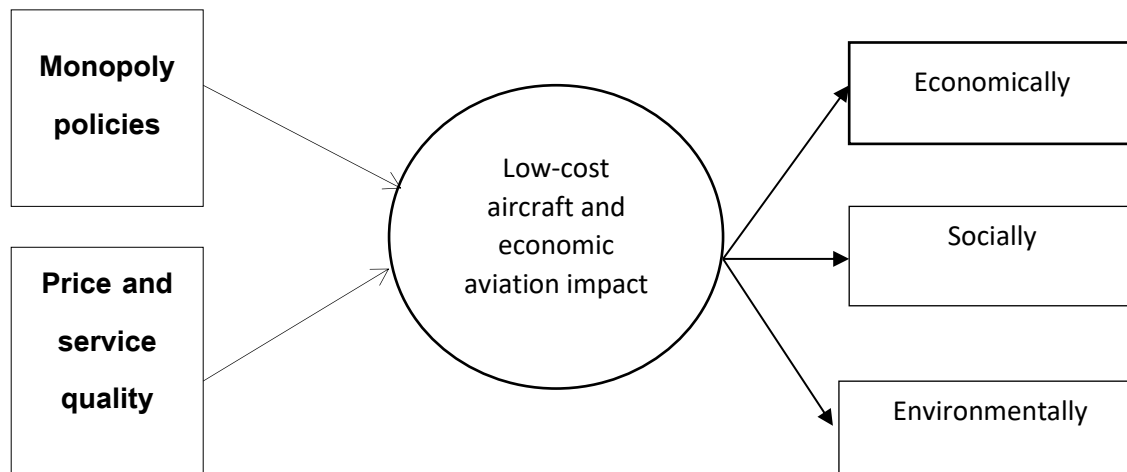


Figure (1): The study conceptual model

Literature review:

The historical background of the Low-Cost Carriers (LCCs)

In 1965, the airline industry was deregulated, which allowed for the creation of an international market and the emergence of LCCs. This created a favorable environment for them to flourish (Hasan et al, 2019). The concept of LCCs emerged after the emergence of Southwest Airlines in the US during the 1970s. They are referred to as low-cost carriers or no-frills airlines, and they aim to provide low-cost services with a competitive advantage over other airlines (Jiang, 2013). Unlike other airlines, LCCs do not focus on providing a service experience. Instead, they are focused on providing low-cost services. This concept distinguishes them from full-service airlines,

which often operate a hub-and-spoke network and offer a variety of services (Chonsalasin et al., 2020).

The various cost reduction strategies adopted by LCCs are designed to help them achieve their goals (Jiang, 2013). One of these is the use of a new homogeneous fleet of medium-size and large-range aircraft, such as the Airbus A320 and Boeing 737. This allows them to reduce their operational expenses and realize economies of scale (El Haddad, 2019) that older customers tend to take complaint actions more than younger consumers.

One of the most common strategies used by LCCs is to reduce their costs by implementing various cost-saving measures, such as increasing the number of seats and introducing single-class service. They also eliminate on-board amenities, such as free food and drink (Zhu, 2017). These airlines often operate both short-haul and medium-haul routes, and they often use secondary cities or airports within smaller towns and cities nearby major cities (Farooq et al., 2018). The implementation of these cost-saving measures can result in a 50% reduction in per-passenger expenses. This can then be passed on to the consumers in the form of lower ticket prices (El Haddad, 2019).

Low-cost carrier VS A full service carrier

The low-cost carrier (LCC) model is one of several changes in the way airlines operate (ELFAA, 2004). Figure 1 compares the business models of an LCC and a full-service carrier. According to Donzelli (2010), LCCs operate a flat, straightforward class structure, no direct sales, and a single-model aircraft fleet. They also use short-haul services, typically between secondary cities.

Unlike other low-cost carriers, the fare structures of the freight-focused carriers (FSCs) are complex and often involve price discrimination (Huderek, 2008). They also use a hub-and-spoke network and various sales channels (Castillo-Manzano, 2011). An FSC may offer a variety of classes, such as first, business, and economy. On the other hand, most LCCs only provide a single class of service. The two different business models that exist in the industry attract different kinds of travelers. For instance, leisure and business travelers are more likely to use the LCC model than the FSC (Graham, 2013). These attempts to compare low-cost carrier VS a full service carrier can be summarized in Figure 2.

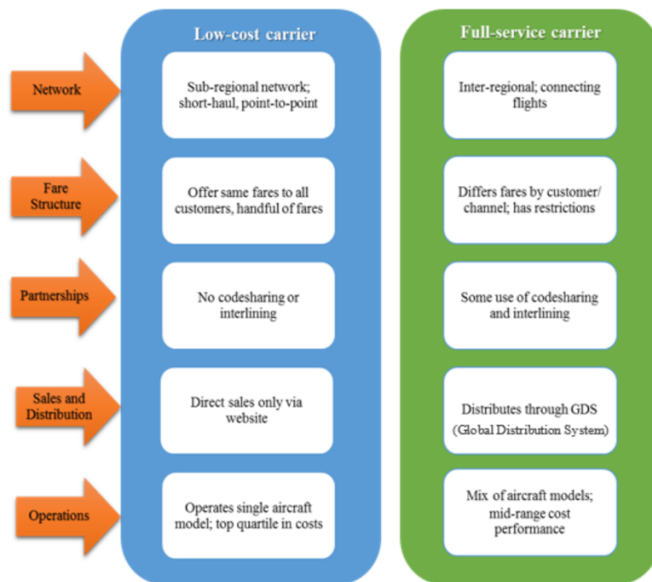


Figure 2: Summary of business models for LCCs and FSCs

Source: Adapted from Huderek (2008)

Advantages and Disadvantages of the Low-Cost Model

Although the overall situation regarding low-cost airlines is positive at first glance, there are still some areas that need to be considered. Here are listed some of the main advantages and disadvantages of this concept:

Positive (Button et al., 2018)

- Improves efficiency in airports
- Improves the sector's efficiency by increasing productivity and competitiveness
- Responds rapidly to market opportunities
- Increases traffic in secondary and regional airports
- Enhances economic and social development in secondary regions
- Promotes investment in new regions, by creating new direct routes
- Brings equality to air transport and broad access to international tourism

Negative (Yang et al., 2012)

- Cannibalizes approximately 36% of the existing air traffic
- High flexibility when it comes to changing/abandoning routes creates uncertainty and instability for the region's economic development
- Too much price competition may pose a threat to the system's sustainability
- Frequently depends on incentives schemes to establish a new route or frequency
- Ability to block new entrants

The impact of Low-Cost Airlines

According to Hussain *et al.*, (2015), over the past two decades, the rise of low-cost airlines has greatly impacted the global aviation industry. They have created new markets and stimulated demand. Unfortunately, their business models are still not fully tested. The rise of LCCs has made it impossible to ignore their influence on the development of the air travel industry (Wu, 2021). The increasing number of flights and passenger traffic has made it possible for regional airports to compete with the major European airports. These new services allow cities in the European Union to finally connect with each other (Hasan et al., 2019). In response to the changes brought about by the new economic climate, many traditional airlines have started adapting to new business models. The rapid emergence and evolution of low-cost carriers have greatly contributed to the development of the aviation industry. One of the main achievements of LCAs is the availability of air travel to everyone in the world (Bugis, 2022). Besides the impact on the aviation industry, low-cost airlines are also contributing to the development of the tourism industry in different countries. Due to the increasing number of flights and the demand for more effective and efficient services, tour operators and airlines are starting to change their operations (Hasan and Salem, 2022). In the following, the various impact of low-cost airlines:

- *Environmental Issues*

Graham and Dennis (2020) mentioned that one of the primary sources of CO₂ emissions and pollution is air travel. Even though LCAs may look like they're made from materials that are more sustainable, they still contribute to the environment in a negative manner. The cost-effectiveness of LCAs has been greatly improved by the reduction of fuel consumption and waste levels. Modern fleets can operate at lower fuel burn rates and reduce noise emissions. They can also avoid flying at night since most of them operate to or from secondary airports that are less populated. These

facilities can help minimize holding times and improve the efficiency of their operations (Kalaiarasan et al., 2015).

The main advantage of the LCA model is its ability to reduce the emissions and energy consumption of an aircraft by optimizing the single-class configuration. In addition, the average load factor of the aircraft is higher compared to that of traditional carriers. Figure 6 shows how this type of aircraft can fit more passengers. LCAs are also known to minimize waste by providing no-frills services. This means that they don't offer free food, drinks, or newspapers. This means that the amount of waste that they generate is lower than that of traditional airlines (Hassan, Salem, 2022). The concentration of greenhouse gases in the atmosphere is a measure of how climate change is affecting the Earth. Air quality is another indicator of how the industry is affecting the environment. It is based on the emissions of both SO₂ and NO_x. The effects of these emissions on the soil acidification are also known to affect the growth of plants. Another environmental indicator that's related to the operations of airlines is the amount of waste produced (Gössling and Peeters, 2017).

One of the most important environmental indicators that an airline can consider when it comes to improving its operations is the energy resource utilization. This indicator includes various aspects of ground handling, such as the consumption of fluids, fuel spill incidents, and vehicle emissions (ELFAA 2004). Noise pollution is another indicator that's relevant to the operations of the aviation industry. It's often emphasized in the sustainability reports that European airlines produce (Gillen and Lall, 2017). Despite the fact that LCAs are a real contributor to CO₂ emissions, the European Union is still taking various steps to control and reduce these emissions. Currently, the emissions of air transport are not included in the limits of the Kyoto Protocol (Ali et al., 2016).

- *Impact on the Tourism Industry*

The rapid growth of the tourism industry and air transport has been linked. Although there have been various downturns in the past, such as the terrorist attacks in 2001, the link between these two sectors is still strong (Perovic, 2013). Due to the increasing number of air transport routes that are available to holiday destinations, the demand for holiday packages has decreased. This has put a strain on the traditional travel accommodations (Spasojevic et al., 2018).

The rapid emergence and growth of LCAs have greatly impacted the tourism industry in Europe. By providing more efficient and comfortable air travel, tourists are now more likely to travel by air instead of using other modes of transport. This has also led to the development of new tourism regions and the reduction of prices in certain tourist routes (Graham and Dobruszkes, 2019).

The European Air Transport Association (ELFAA) stated that LCAs has three main benefits for the tourism industry in the region. Firstly, they help develop secondary cities and regions, which would increase the number of tourist destinations that can be accessed by air. They also promote these areas through their marketing campaigns. By providing year-round flights, LCAs have been able to distribute traffic more evenly across different tourist destinations, which have resulted in a reduction in the seasonality of the travel industry. This also helps boost the overall tourism industry (ELFAA, 2004). The pricing strategy adopted by LCAs also resulted in mid-week travel becoming more prevalent. This allows customers who are price sensitive to travel outside of the weekends. A report identified three main effects of LCAs on the tourism industry. These include the pull effect, push effect, and derived effect. In one case, cities that have significant international gateways such as Paris or London tend to experience a reduction in tourism demand as domestic travelers use these services (Costa and Almeida, 2018).

- *Air transport and economic growth*

Bachwich and Wittman (2017) delineated that the aviation industry has various social and economic benefits. Ahmed et al., (2020) noted that the sector has created over 10 million jobs globally and contributed over 704.4 billion dollars to the world's GDP in 2019.

Apart from directly supporting employment, aviation also indirectly contributes to the economic activity of other sectors such as retail, agriculture, and manufacturing. Aviation has facilitated trade and tourism by linking the world. Through its connectivity, aviation promotes tourism and trade, and it facilitates education and leisure travel (Cho et al., 2017).

One of the main factors that contributed to the growth of global trade was the availability of fast and safe air transport. This has allowed companies to produce goods and services in different parts the world at lower prices (Perovic, 2013). ATAG (2008) noted that the positive effects of globalization can be seen in the economic growth of the country.

The tourism industry can stimulate change within the aviation sector. It can also affect the development of new business models for airlines. For instance, the behavior of tourists can influence the establishment of low-cost carriers. Figure 8 illustrates the relationship between air transport and economic growth (Huderek, 2008).

Research Methodology

The Data have been collected through a structured questionnaire directed to tourism experts based in their experience in airline field in order to identify the economic airlines and present their impact on the tourist regions in Egypt. The reason behind choosing a structured questionnaire is to set standardization in both asking the questions and collecting the answers from the respondents.

Table 1: Questionnaire Forms Distributed to the Investigated Experts

Answers	Distributed Forms	Lost Forms	Returned Forms	Excluded Forms	Valid Forms
Freq.	100	3	97	4	93
%	100	3	97	4	93

A total of (100) forms have been distributed to tourism experts, (97) forms have been received, and (4) forms have been excluded when the data is unloaded for incomplete completion, and the number of valid forms has reached (93), 93%. They are very good rates in their field, so it is possible to rely on the results obtained in testing the hypotheses of the study and drawing conclusions.

The questionnaire consisted of three sections. The first section intended to reveal the elimination of monopoly in air transport. The second section intended to determine the prices and quality of service provided on board low-cost aircraft. The third section included (economic, social, environmental) impacts of low-cost airlines. The respondents were asked to answer these statements by using a five-point Likert-type scale (Strongly agree = 5, agree =4, don't know = 3, disagree = 2 and strongly disagree = 1) to determine the levels of agreement with the statements investigated. The Statistical Package for the Social Sciences (SPSS) version 26.0 was used to analyze and compute the collected data. The range of each level of agreement was calculated as follow:

Table 2: Questions Answered Scale

Category	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Code	1	2	3	4	5
Range	1 – 1.80	1.81–2.60	2.61-3.40	3.41–4.20	4.21 - 5

Reliability Analysis

Table 3: Reliability Analysis

Number of Statements	Alpha
26	0.92

Table 3 indicated that alpha coefficient of the questionnaires dimensions was 0.92 (higher than 0.70). This result indicated the reliability of the questionnaires for using in the study (Taber, 2018).

Results and Discussion

The results involved two main stages. Descriptive analysis was used to discover participants’ responses, and regression analysis was conducted to examine the relationship between independent variables and dependent variables. The results obtained were computed and analyzed in the following tables.

Table 4: The elimination of monopoly in air transport and the growth of low-cost airlines

Attributes	\bar{x}	SD	R	t-test	P-Value
The economic airlines linked the governorates and regional agglomerations with the main governorates and cities in Egypt	3.84	.838	1	11.421	.001 **
The Egyptian government worked to liberalize and support economic aviation, especially at the level of domestic flights, and EgyptAir did not monopolize it	3.71	.984	3	8.017	.001 **
There are many foreign and Egyptian economic airlines operating in Egypt	3.72	.852	2	10.538	.001 **
Low-cost air carriers collectively accounted for a large proportion of (domestic-international) flights in Egypt	3.58	1.014	4	9.007	.001 **
Average of Responses	3.71	.636	----	----	----

N= 93 \bar{x} : Mean SD: "Standard Deviation" R: Rank **sig. \leq (. 01)

The results in Table 4 showed that the perceptions of the investigated respondents towards the elimination of monopoly in air transport and the growth of low-cost airlines in Egypt show that the experts agreed on all statements in the dimension (AV Mean= 3.71, SD= 0.636). Also, the results showed that there are significant differences among respondents towards the attributes of the table above which p-value \leq (. 01).

With regard to the elimination of monopoly in air transport and the growth of low-cost airlines, the respondents agreed that The economic airlines linked the governorates and regional agglomerations with the main governorates and cities in Egypt (Mean = 3.84, SD = 0.838). In addition there are many foreign and Egyptian economic airlines operating in Egypt (Mean = 3.72, SD = 0.852). This result agrees with Bachwich and Wittman (2017) finding that the concept was founded in the airline industry, referring to airlines with lower operating costs than their traditional

competitors. Cheap budget flights with limited service should not be confused with domestic airlines offering short-haul domestic flights. Moreover, the Egyptian government worked to liberalize and support economic aviation, especially at the level of domestic flights, and EgyptAir did not monopolize it (Mean = 3.71, SD = 0.984). In addition some of the respondents found low-cost air carriers collectively accounted for a large proportion of (domestic-international) flights in Egypt (Mean = 3.58, SD = 1.014). In another sense, Ahmed et al., (2020) claimed that low-cost airlines are developing rapidly in the aviation industry and airplanes will carry about 40 percent more traffic in 2027 (measured RPK) than the average aircraft today.

Table 5: Prices and Quality of Service Provided on Board Low-cost Aircraft

Attributes	\bar{x}	SD	R	t-test	P-Value
There is positive competition for low-cost air carriers with traditional air carriers	3.49	.916	٤	15.900	.001 **
The brands of low-cost airlines spread in Egypt	3.44	.994	٥	14.982	.001 **
Low-cost airlines provide non-stop services in Egypt	3.56	.961	٢	22.134	.001 **
Low-cost airlines do not differ much from traditional airlines in terms of services provided on all their routes, and low-cost air carriers usually provide basic air transport service without exaggerations and at low prices	3.38	1.093	٦	17.836	.001 **
LCCs gain significant economies through the commonalities of their fleet, lower distribution cost using the Internet, point-to-point service, and non-refundable ticket	3.56	.840	١	20.723	.001 **
Low-cost airlines provide food and drink services and souvenirs on board their aircraft operating	3.15	1.142	٧	19.540	.001 **
Low carrier advances For its customers online booking, free seat selection and free baggage loading	3.51	1.080	٣	12.579	.001 **
Average of Responses	3.44	0.684	----	----	----

N= 93 \bar{x} : Mean SD: "Standard Deviation" R:Rank **sig. \leq (. 01)

The results in Table 5 showed that the perceptions of the investigated respondents towards the prices and quality of service provided on board low-cost aircraft show that the experts agreed on the majority of statements in the dimension, as the Average Mean was 3.44. Also, the results showed that there are significant differences among respondents towards the attributes of the table above which p-value \leq (. 01).

With regard to prices and quality of service provided on board low-cost aircraft, the respondents agreed that LCCs gain significant economies through the commonalities of their fleet, lower distribution cost using the Internet, point-to-point service, and non-refundable ticket (Mean = 3.56, SD = 0.840). In addition Low-cost airlines provide non-stop services in Egypt" (Mean = 3.56, SD= 961). Moreover, low carrier advances for its customers' online booking, free seat selection and free baggage loading (Mean = 3.51, SD = 1. 080). In addition some of respondents found there is positive competition for low-cost air carriers with traditional air carriers (Mean = 3.49, SD = 0.916). There is positive competition for low-cost air carriers with traditional air carriers"

(Mean=3.49). This result agreed with Graham and Dobruszkes (2019) that low-cost airline operators have competitive advantages in many countries due to the low tariffs compared to traditional airline operators. The needs and expectations of all customers are not the same. So, low-cost airlines have different package policies even among themselves. Furthermore, the brands of low-cost airlines spread in Egypt (Mean=3.44).

Meanwhile, it could be noticed that the respondents' answers were neutral on two of the statements in the dimension. These statements indicate that the experts to some extent believe that "Low-cost airlines do not differ much from traditional airlines in terms of services provided on all their routes, and low-cost air carriers usually provide basic air transport service without exaggerations and at low prices" (Mean=3.38). There are some features that distinguish the low-cost airline companies from the traditional ones. These features are the low-cost structures, the use of single type of airplanes, the use of uniforms in airplanes, the use of secondary airports, no service differences such as "business class" in the cabin, paid seat selection, no customer loyalty program, and no unionization. "Low-cost airlines provide food and drink services and souvenirs on board their aircraft operating" (Mean=3.15). The same result mentioned in Ivan et al., (2021) study that ticket sales costs can be minimized. No Customer Loyalty Program: By not using customer loyalty programs, the costs of operating expenses such as food and beverage services and souvenirs are avoided. No Union and a Lower Wage Policy: Lower paid staff can be employed because of the lack of union activity in low-cost airlines. Nonstop Flights: Low-cost airlines avoid point-to-point travel costs by arranging point-to-point nonstop flights.

Table 6: Economic, social, and environmental impacts of low-cost airlines

Attributes	\bar{x}	SD	R	t-test	P-Value
Economic Impacts of Low-cost Airlines					
Providing job opportunities	3.62	.966	ξ	7.751	.001 **
Developing other economic activities.	3.89	.814	2	9.536	.001 **
Infrastructure support	3.56	.914	ο	8.159	.001 **
Opening new markets and global transport systems	3.86	.774	ϣ	9.237	.001 **
Promote industry and trade and facilitate the movement of people and goods	3.89	.744	ϥ	7.568	.001 **
Average of Responses	3.77	0.644	----	----	----
Social Impacts of Low-cost Airlines					
Freedom to travel all over the world	3.80	.951	4	7.397	.001 **
Airlines donate to charities	3.56	1.016	2	2.370	.022 •
Building hospitals and health centers for the community	3.34	1.027	1	6.970	.001 **
Availability of affordable transportation services in the aviation industry	3.80	.927	3	4.366	.001 **
Exchange of cultural and educational practices	3.67	.925	5	3.017	.004 **
Average of Responses	3.63	0.736	----	----	----
Environmental Impacts of Low-cost Airlines					
Noise pollution	3.43	1.026	ξ	4.204	.001 **
Water pollution	3.11	1.026	ο	-.747	.459
Air pollution	3.61	.956	ϥ	7.348	.001 **

The effect on the atmosphere	3.57	.971	۲	4.002	.001 **
Impact on climate change	3.48	.962	۳	4.751	.001 **
Average of Responses	3.44	0.806	----	----	----

N= 93 \bar{x} : Mean SD: "Standard Deviation" R: Rank **sig. \leq (. 01)

The results in Table 6 showed that most of the perceptions of the investigated respondents towards the economic, social, environmental impact of economic aviation on local communities in Egypt show that the experts agreed on all statements in the dimension, as the average mean was between 3.44 and 3.77. Also, the results showed that there is significant differences among respondents towards the attributes of the table above which p-value \leq (. 01). With regard to this regard, Graham and Dennis (2020) mentioned that one of the primary sources of CO2 emissions and pollution is air travel. Even though LCAs may look like they're made from materials that are more sustainable, they still contribute to the environment in a negative manner. Bachwich and Wittman (2017) delineated that the aviation industry has various social and economic benefits. Ahmed et al., (2020) noted that the sector has created over 10 million jobs globally and contributed over 704.4 billion dollars to the world's GDP in 2019.

Testing hypotheses

H1 There is a statistically significant impact of monopoly policies and economic aviation impact (H2a economic, H2b, social, H2c environmental).

Table (7): R2 coefficient to study the interpretation of the independent variable for the dependent variable

R	R Square	Adjusted R Square	Std. Error of the Estimate
.578a	.334	.331	.62844

According to the coefficient of determination R2 in Table (7), the dimensions of the independent variable explain about (33.1%) of the dependent variable economic aviation impact (economic, social, environmental) and the rest (66.9%), may be due to a random error in the equation, or perhaps because other independent variables were not included. It is meant to be included in the form.

Table (8) Significance test of quality-fit regression model

ANOVA ^a						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43.778	1	43.778	110.847	.000b
	Residual	87.281	92	.395		
	Total	131.059	93			

* Significance at 0.01 or less

To test the significance of the variables of the model as a whole, as shown in Table (8), the F-test was tested, where the values of F (110.847), which are statistically significant at a level of significance less than (0.001), which indicates that the variables related to each of economic aviation impact (economic, social, environmental), is the most affected by monopoly policies.

Table (9): T-test to study the effect of the monopoly policies on of low-cost airlines

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.973	.343		2.838	.005
	economic	.543	.052	.578	10.528	.000
	social	.474	.053	.516	8.960	.000
	environmental	.358	.067	.338	5.331	.000

* Significance at 0.01 or less

From the T-test as shown in Table (9), it found that the significant dependent variables in the multi-linear model are (economic= 0.543, social= 0.474, environmental= 0.358) at a level of significance less than (0.05%). Bachwich and Wittman (2017) delineated that the aviation industry has various social and economic benefits.

H2: There is a statistically significant impact of prices and quality and economic aviation impact (H1a economic, H1b, social, H1c environmental).

Table (10): R2 coefficient to study the interpretation of the independent variable for the dependent variable

R	R Square	Adjusted R Square	Std. Error of the Estimate
.657a	.432	.430	.58026

According to the coefficient of determination R2 in Table (10), the dimensions of the independent variable explain about (43.2%) of the dependent variable economic aviation impact (economic, social, environmental) and the rest (56.8%), may be due to a random error in the equation, or perhaps because other independent variables were not included. It is meant to be included in the form.

Table (11) Significance test of quality-fit regression model

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	56.648	1	56.648	168.245	.000 ^b
	Residual	74.411	92	.337		
	Total	131.059	93			

* Significance at 0.01 or less

To test the significance of the variables of the model as a whole, as shown in Table (11), the F-test was tested, where the values of F (168.245), which are statistically significant at a level of significance less than (0.001), which indicates that the variables related to each of economic aviation impact (economic, social, environmental), is the most affected by prices and quality.

Table (12): T-test to study the effect of the independent variables on the dependent variable

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.973	.343		2.838	.005
	economic	.694	.054	.657	12.971	.000
	social	.637	.055	.616	11.631	.000
	environmental	.313	.077	.262	4.041	.000

* Significance at 0.01 or less

From the T-test as shown in Table (12), it found that the significant dependent variables in the multi-linear model are (economic= 0.694, social= 0.637, environmental= 0.313) at a level of significance less than (0.05%). Graham and Dennis (2020) mentioned that one of the primary sources of CO2 emissions and pollution is air travel. Bachwich and Wittman (2017) delineated that the aviation industry has various social and economic benefits.

Recommendations Addressed to LCCs management

According to the literature review and the results extracted from the field study, the following recommendations could be suggested:

1. LCCs should utilize global distribution systems (GDSs) when selling products or services, utilizing GDSs is a must to succeed in the aviation market.
2. LCCs should try to avoid allowing the pricing of their services to become more expensive. Price was considered the most important criterion for the LCCs.
3. LCCs should follow a strategy, either reinvigorate their low cost differentiation strategy or innovate to keep their superiority in the aviation market, despite the bad times associated with a global economy or strategies implemented by main competitors.
4. LCCs should seriously consider entering into alliances with other FSCs and LCCs. As the situation currently stands, LCCs cannot provide nearly enough destinations within their long-haul network to be a serious competitor. An alliance in the form of interlining agreements or code-sharing, while increasing administration costs, will immediately increase the size of LCCs' international network and make them a much more attractive option for passengers.
5. LCCs should rely on the major airports, not only the low-cost terminals (LCTs), to increase their market share.
6. LCCs should create (if they do not have so far), maintain and publicize their loyalty programs (FFPs) to attract more passengers.
7. LCCs should continue to offer their current broad range of destinations rather than trying to cut back on the number of destinations they serve. LCCs will have to adapt some of the core features of the low- cost business model to compete effectively over long-haul routes.
8. LCCs should remain competitive by providing better air service and comfort to passengers, to maintain and increase their market share. Protecting price and service quality, as discussed above, will help with public reputation. Accordingly this will help in establishing the LCCs as a reliably low-cost and good service carrier. Reputation

management will also help the airline to become more acceptable in the aviation market, leading to a generalized social norm that LCC travel is acceptable.

9. LCCs' employees need to be retrained for a more efficient system that emphasizes increase in productivity.
10. LCCs should reduce or eliminate the service which passengers do not need, possibly less luxurious travel options. Therefore, LCCs can sell at a decreased price and still maintain profit margins. Increased sales due to the decreased price of the service whilst still maintaining profit margins helps LCCs to achieve a main aim to maximize profits.
11. LCCs should highlight their safety records and the level of service quality they provide to passengers.
12. LCCs should reward their loyalty card holders and FPPs with more favorable rates to increase their market share in the aviation market by attracting more passengers.
13. LCCs should focus on the target market and differentiate their services by examining the strengths/ weaknesses, and key points of these and the FSCs.

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