

The influence of Political and Security Instability on Egyptian Tourism during the Period (2007-2019)

Shimaa Ramadan Nwar (Corresponding . Author)

Lecturer, Geography Department, Faculty of Women, Ain Shams University, Egypt.

Dr.shimaanwar@women.esu.edu.eg

Bartosz Korinth

Uniwersytet Gdański, Wydział Oceanografii i Geografii, Gdańsk, Polska

bartosz.korinth@wp.pl

Ahmed Younes Saleh

Lecturer, Geography Department, Faculty of Arts, Fayoum University, Egypt.

ays01@fayoum.edu.eg

ABSTRACT

This paper deals with the political, security stability, and its impact on the tourism industry two global crises: The global economic crisis of 2007/2008, and the emerging Corona Virus pandemic 2019. (COVID-19), where tourism differed before and after these crises.. It takes Egypt as a model, because it is a main touristic country. Additionally, it faced a political and security turmoil after 2010, due to the wave of the Arab Spring revolutions and its implications.

The authors used the Political Stability Index (PSI) and the Security Apparatus Index (SAI) to determine the state of stability in Egypt and its temporal development during the period (2007-2019). Moreover, the number of terrorist incidents (TI), officially and unofficially registered, was additionally used to analyze the spatial variations of the state of security stability in Egypt. Three axes measured the impact of these indicators on tourism: tourism air traffic, hotel occupancy rates, and tourism revenues.

Researchers found a strong inverse relationship between security and political instability and hotel occupancy rates: the value of (R^2) was 0.707 for (SAI), and 0.633 for (PSI). Likewise, the relation between (PSI) and tourism revenues is positive; the Pearson Correlation Coefficient was (0.9), which mean that increasing the political stability will lead to increasing the revenues. As a result, it was inverse between security instability and tourism revenues, where the correlation coefficient was (-0.97).

Keywords: Political Stability; Egypt; Security Stability; Terrorism; Tourism Traffic,

1. Introduction;

Tourism is one of the axes of the national economy in many countries, and it is the most sensitive axis as for political, security, social, economic, and environmental turmoil. The evidences demonstrate that safety, tranquility and peace are important for the prosperity and sustainability of the tourism industry (Ferreira, S. L.,1999).

Egypt is a touristic country that possesses diverse and unique elements of tourism. According to the number of visitors, Egypt occupied the 17th rank among the countries of the world in 2010, with a number of visitors amounting to more than 14 million visitors. Because of the wave of security and political instability, that accompanied the Arab Spring in Egypt, Egyptian tourism declined to an unprecedented level. The number

of visitors decreased to 5.2 million visitors in 2016, which ranked Egypt in the 54th place among the countries of the world (<https://www.theglobaleconomy.com/Egypt/>). Further, the contribution of tourism to GDP in Egypt was not less than 5% of GDP until 2010. Due to the instability state this percentage reached the lowest level (1.1%) in 2016 (MOF).

Thus, it was possible through this research to make a temporal analysis of the indicators of security and political instability in Egypt and their impact on tourism using the Political Stability Index (PSI) and the Security Apparatus Index (SAI). Likewise, the spatial analysis of the state of security stability in Egypt was carried out through the number of terrorism incidents (TI) to determine the Egyptian touristic regions that were severely affected by the turmoil, and to identify the safe regions that can maintain the continuity of Egyptian tourism if the riots recur or continue.

The relationship between political and security instability and the tourism sector variables in Egypt was inverse: tourism traffic to Egypt suffered from a general decline in the years (2009, 2011, 2013, 2015, and 2016). But the negative change rate reached its highest level in 2016 (-42.1%), followed by (-33.2%) in 2011, because of the political turmoil of 25th January 2011 revolution, and the security unrest in 2015 and 2016 resulting from the crash of the Russian touristic plane, which led to the distortion of the image of Egypt as a safe touristic destination. This accident led to a noticeable decrease in the number of Russian tourists from 3.14 million tourists in 2014, which presented 32% of the total number of tourists in Egypt to 0.053 million in 2016, representing only 1%.

2. Literature Review

The study of the relationship between political instability and the tourism industry was not recent, as it began during the last quarter of the twentieth century. This interest has increased in the past two decades, due to the increasing importance of tourism as one of the main national income sources in touristic countries. Moreover, this sector is characterized by a high degree of sensitivity to any kind of economic, social, political, and environmental turmoil, due to the increasing severity of political crises and the related security unrest in some touristic destinations in recent times.

The “Arab Spring” is the main factor that caused a somewhat different touristic crisis in some touristic destinations; these destinations, along with their administration, were seen as victims of extremism and terrorism, and this view allowed more sympathy from organizations supporting accelerating recovery from crises. However, this crisis confirmed that the problem is not only in extremism and in terrorism, but also comes from the political systems of these countries, which have recently hindered the aid from the international supportive bodies, except Jordan and Egypt (Mansfeld & Winckler, 2015)

The researchers were able to define three methodologies in the literature of this topic: the first relied on secondary data from the official bodies and its analysis; the second relied on secondary data, field interviews, and questionnaires; while the third depended on mathematical and statistical methods.

Depending on the application of questionnaires on registered members of the African Travel Association (ATA), (Brown, D. O., 2000), the study showed that there are two types of political turmoil and risks to African tourism: regionalized and globalized risks, but regional turmoil is more influential on tourism. Likewise, by analyzing the results of conducting 52 personal interviews with representatives of the

public and private tourism sector in the cities of Sarajevo, Banja Luka, Mostar, and Bihac. The study of (Causevic, S., & Lynch, P. 2013) confirmed that the difficulties facing the development of tourism in Bosnia and Herzegovina are directly or indirectly related to the "Dayton" Peace Agreement and the country's social, cultural, economic and geopolitical settings.

Using mathematical methods, (Neumayer, E.,2004) indicated in his study that continuous political strikes led globally to lower tourist arrivals in the long run by about one quarter. He, additionally, stressed that authoritarian regimes do not affect the numbers of foreign tourists as long as there is no political turmoil, even though these regimes take more difficult travel procedures than democratic regimes.

Many studies dealt with the impact of the political environment on tourism in the Arab region. Among these studies is (Mansfeld&Winckler, 2015) which reviewed different data about the impact of the Arab Spring on the tourism industry, and analyzed the economic consequences of this crisis using the macroeconomic approach. They, additionally, compared the situation in non-oil countries including Egypt, Tunisia, and Morocco, and the implications of the crisis on the activity of the tourism sector in oil states like Qatar and the United Arab Emirates. In addition, how non-oil countries failed to manage the crisis, while the oil states and the Gulf Cooperation Council states were the tourists winners.

Also, (Wendt,2016) studied the change in air transport to Egypt during the period 2005-2014 and explained that the impact of terrorist attacks on tourism was the reason for the sharp decline in flights to Egypt, especially after the crash of the plane (Airbus A321) as a result of the recommendation of many countries not to travel to Egypt. (Abahre&Raddad, 2016) demonstrated the inverse relationship between the political tension between Palestine and Israel on the one hand and the decrease of tourism indicators on the other; they used the secondary data and personal interviews.

North Africa represents the core of the Arab Spring: it is politically and securely instable, especially countries like Tunisia, Egypt, and Libya. Thus, there are many studies focusing on the political and security instability and tourism sector in this area. Nassar indicated that the events of 2011 and the ensuing events led to a decrease in the number of tourists coming to Egypt due to the travel agencies cancellation of their flights to Egypt, which led to a decrease in hotel occupancy and closing restaurants and financial institutions due to the low number of tourists (Nassar,Mohamed A., 2012).

To delve deeply, (Mohammad, A. et al, 2012) discussed the impact of political events in Egypt in 2011 on the occupancy rates in Cairo hotels; they analyzed the situation in Cairo in comparison to some other touristic regions like South Sinai, the Red Sea, and Alexandria. The study adopted the concept of "ceteris paribus" through which the factors affecting the phenomenon under study were frozen, except for political events. The study found that the negative impact of political events in 2011 on hotels in Cairo was greater than its counterparts in the global economic crisis, and that remote touristic regions recovered faster than Cairo.

In a study tending to use the statistical method (Esmail, H. A. H., 2016), Esmail tried to estimate the relationship between terrorism and tourism in Egypt and Tunisia; she used Ordinary Least Squares (OLS) and Serial Correlation (Durbin Watson (D- W)) test and found that there was a strong inverse relationship between these two variables of terrorism and tourism.

The study of (Elshaer&Saad, 2017) aims to explore the impact of political instability on job insecurity in the tourism sector and the impact of job insecurity on the attitudes of survivors (i.e. trust, organizational commitment, and turnover intention) in downsized tourism companies and hotels in Egypt. The study concluded that the consequences of job insecurity may lead qualified employees to leave their jobs and search for other jobs outside the tourism sector, and this may harm Egyptian tourism.

Furthermore, (Tomazos, K. 2017) introduced a chapter entitled "Egypt's Tourism Industry and the Arab Spring". Where he presented a review of conflicts, wars and terrorism, and their impact on tourism. He also discuss the resilience of tourism and the impact of political instability on it as well as the state of tourism industry in Egypt during the period 2010-2016, and how the media and various events affected the deterioration of Egypt's image as a tourism destination during that period .

"Neagu" pointed to the direct impact of geopolitical events on the Egyptian tourism sector in general in the period 2011-2017, relying on the public data for the tourism sector issued by the Egyptian Central Agency for Public Mobilization and Statistics and the World Tourism Organization. The study referred to the detrimental terrorist operations, which influenced the number of tourists, especially of the Europeans. The study, in addition, mentioned that the government should take more measures to preserve security and stability if it wants to attract greater numbers of tourists (Neagu, 2018).

3. Methodology

The methodology of the research goes through three methodological stages as follows:

- The first stage: It reviews and analyzes literature and determines the indicators used. It was agreed to use three indicators to measure political and security instability: the Security Apparatus Indicator (SAI), the Political Stability Index (PSI), and the number of reported terrorist incidents (TI). This stage, in addition, determines the tourism indicators that the study will rely on to examine the change in the Egyptian tourism sector, which are the number of visitors, the hotel occupancy rate, and the tourism revenues.
- The second stage: It highlights the temporal analysis of variations and the relationships between stability variables and tourism variables. The development of tourism indicators was studied in general, and the growth rate was clarified using the exponential function for the tourism indicators, and Pearson correlation coefficient between stability indicators and tourism variables was measured.
- The third stage: It is preoccupied with an analysis of the spatial variations of the impact of stability on the air traffic in the main tourism airports. In addition to the occupancy rates in the main tourism regions, to determine the most affected regions and the possibility of identifying "the safe touristic regions" in the case of continuing or repeating the political and security instability in Egypt.

The study relied on secondary data issued by many local and international organizations, such as tourism data issued by the Central Agency for Public Mobilization and Statistics (CAPMAS) and data on air transport at Egyptian airports issued by the Egyptian Holding Company for Airports and Air Navigation (EHCAAN). Tourism statistics and revenues issued by the Central Bank of Egypt (CBE), Ministry of Finance (MOF), Census and Economic Information Centre (CEIC) as well as the data of political

stability index from World Bank, and security apparatus index as a part of the fragile state index that is powered by the Fund for Peace.

4. The profile of Egyptian tourism (2007-2019):

A simplified picture of Egyptian tourism can be presented through three basic variables, Tab.1:

- **The number of visitors:** The number of visitors to Egypt reached a maximum in 2010, it reached 14.7 million, and Egyptian tourism has not witnessed such a number so far. The number of visitors witnessed a clear fluctuation from 2007 to 2019 because of many reasons, including the 2008 global economic crisis, the 2011 Arab Spring revolutions, and other reasons.
- **Hotel occupancy rates:** Hotel occupancy rates reached their highest in 2007, while they reached their lowest in 2018, due to the increase in capacity and the number of hotels on the one hand, and the decrease in the number of visitors in recent years on the other hand. However, occupancy rates were not less than 30% in Egypt.

Tab.1, the Egyptian tourism profile (2007-2019)

year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Visitors (Millions)	11.09	12.85	12.54	14.73	9.84	11.53	9.46	9.88	9.33	5.40	8.29	11.3	13.02
Occupancy %	63	56	52	55	48	39	36	48	35	30	34	30.5	(-)
Revenue % GDP	6.3	6.7	5.5	5.3	3.7	3.4	3.4	1.7	2.2	1.1	1.9	1.65	2.8

(-) un available.

Source: CAPMAS, UNWTO, MOF, CBE, www.theglobaleconomy.com .

- **Tourism revenues:** Tourism contributed to the Egyptian GDP at a modest rate, ranging from 1.1% in 2016 to 6.7% in 2008. The contribution of tourism as a major economic sector to the Egyptian GDP has declined in recent years, reaching 2.8% of the GDP in 2019 .

5. Political and Security Instability in Egypt: Spatio-temporal Evolution;

5.1. The Temporal Evolution of the Instability Status

The World Bank defined the political stability index (PSI) as "Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism"(Kraay, A., Kaufmann, D.,& Mastruzzi, M., 2010). This indicator is the result of a set of sub-indicators issued by a group of official and unofficial institutions; it is used as one of the Worldwide Governance Indicators (WGI). The value of this indicator ranges between (-2.5: 2.5), and the higher the index, the higher the stability.

It is clear from Table 1 that Egypt experienced a state of political instability throughout the study period, but after 2011, the state of political instability increased because of the "Arab Spring". It was additionally noted that in the years 2011 and 2013, the political turmoil increased in Egypt; 2011 is the year of the overthrow of the rule of

"Mubarak", and the year 2013 is the year of the overthrow of the rule of "Morsi": with the high political instability in Egypt, the indicator was declining.

"Fund For Peace" has prepared a report for fragile states, which includes a set of indicators, including the Security Apparatus Index (SAI) whose role has been defined as "The Security Apparatus indicator considers the security threats to a state, such as bombings, attacks and battle-related deaths, rebel movements, mutinies, coups, or terrorism. The Security Apparatus also takes into account serious criminal factors, such as organized crime and homicides, and perceived trust of citizens in domestic security" (FFP,2017).The value of the indicator ranges between (0-10); the higher the value, the more turbulent the security. This indicator is considered high for Egypt; it increased significantly after 2011.It is clear that the years 2015 and 2016 have the highest values, due to the high frequency of terrorism incidents in these two years as is evident from Table 2.

Table 2: The Instability Variables in Egypt (2007-2019)

Index	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
PSI	- 0.55	- 0.51	- 0.61	-0.9	- 1.44	- 1.44	- 1.64	- 1.63	-1.5	- 1.44	- 1.42	- 1.16	-
SAI	6.1	6.1	6.2	6.5	6.8	7	7.3	7.9	8.2	8.3	8.1	8.2	8.2
TI	-	-	-	-	32	13	232	182	310	243	169	38	34

Source: World Bank, the Fund for Peace, (A.Aqeel, 2019).

Likewise, the number of Terrorist Incidents (TI) reflects the number of terrorist incidents recorded in the country from official and/or unofficial sources, and it is clear from the indicator that the years 2012, 2015, and 2016 are the highest recorded years of terrorist incidents in Egypt, and that these years are linked to political turmoil.

5.2. Spatial Variations of Instability Status

The unstable security situation in Egypt varied from one place to another; some of the Egyptian governorates witnessed bloody events, while others were clear. According to the spatial variations of terrorist incidents, Fig. 1, Egyptian governorates can be divided into four classes:

- **Very Safe Governorates:** The governorates where the frequency of terrorism incidents is less than 1 accident/year; they include border governorates, except North Sinai, in addition to the governorates of Kafr El-Sheikh, Luxor, and Aswan.
- **Safe Governorates:** The security situation in these governorates suffers from threats at separate times, with an average frequency of terrorist incidents of (1-6 incidents/year), which are small incidents that do not target tourism, as in Sohag, Qena, and Asyut, the Nile Delta governorates in general, and the governorates of the Suez Canal and Alexandria.
- **Semi-stable Governorates:** They include Cairo, Giza, Fayoum, and Minia. The average frequency of terrorist incidents in these governorates is (6-24 incidents/year). Tourism has been targeted by a few of these incidents occurring especially in Cairo and Giza.

- **Instable Governorates:** This category included only the North Sinai governorate. It is dangerous due to the repeated terrorist incidents that reached more than 90 accidents/year during the mentioned period. However, what reduces their risk in terms of tourism is that most of these incidents are non-touristic, although the Russian tourist's plane crashed in this area.

It is worth noting that the increase in the number of terrorism incidents in Egypt was in the period (2013 - 2017); during those four years, 94% of terrorist incidents took place due to the political instability in Egypt in the same period. However, later, the intensity and frequency of terrorist incidents decreased due to the tight security measures taken by Egypt against terrorism, especially in the Sinai Peninsula after the operation launched by the Egyptian army, known as "Sinai 2018," The rates of terrorist incidents decreased in all of Egypt, and most of the governorates became relatively safe. This is generally reflected in the revitalization of tourism and the amelioration of the image of this destination; thus, the number of visitors increased in the years 2018-2019

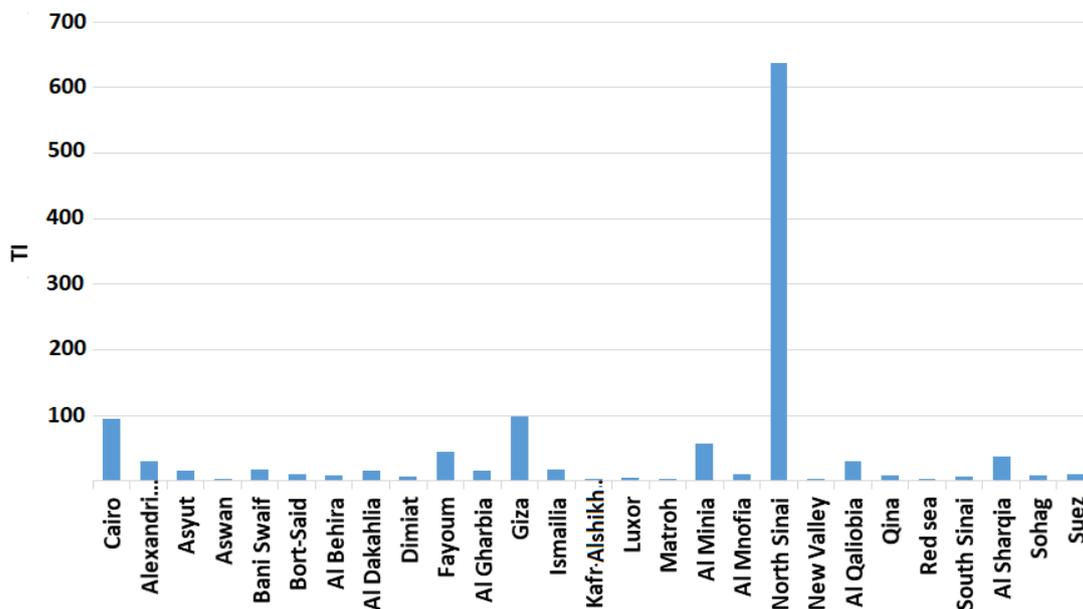


Fig. 1: Egyptian Governorates according to the frequency of Terrorism incidents (2013-2019)

Source: By Authors based on (A.Aqeel, 2019)

6. The instability and Egyptian Tourism

6.1. Tourism Traffic Changes;

6.1.1. The Tourism Traffic Volume Changes;

Through analyzing the number of visitors during the period (2007-2019) and comparing the annual growth rates of tourist air traffic to Egypt, a side of the negative impact of internal security and political instability in Egypt on the tourism sector can be detected. Table 3 specifies 5 years in which the overall growth rate of tourist air transport traffic to Egypt decreased, and this rate was negative until 2017 (-2.6%), but it began to recover slowly during the year 2018 (0.2%), due to the expanded security operations of the Egyptian army in Sinai during 2018.

According to the annual growth rate of the tourism transport movement to Egypt, in the five years that tourism traffic to Egypt suffered from a decline (2009, 2011, 2013, 2015, 2016), it is clear that this rate reached the lowest level in 2016 (-42.1%), followed by 2011 (-33.2%). This is due to the countries warnings to their citizens not to go to Egypt during that period in general. In addition, the spread of the news of violence and terrorism through international media led to "distorting the image of the destination".

Another cause is canceling reservations and trips to Egypt, especially what happened after the downfall of the Russian tourists' plane (Airbus A321), which killed 224 individuals on the 31st of October, 2015 (BBC, 2015). With the increase in violence that resulted from the overthrow of the rule of the Muslim Brotherhood in Egypt in 2013, the annual growth rate reached (-17.9%) in 2013 and (-5.6%) in 2015, which represents the highest year in the repetition of terrorist operations inside Egypt. This year was the beginning of a sharp decline (during 2015-2016) that Egyptian tourism has never experienced in the last two decades.

Table 3: The Number of Visitors according to origins (2007-2018) (Millions)

Regions	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Europe	6.9	9.1	9.1	11.2	7.2	8.4	7.0	7.6	6.8	2.6	3.4	5.8
Middle East	1.7	1.7	1.7	1.8	1.5	2.0	1.5	1.3	1.4	1.6	1.8	2.2
Africa	0.3	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.6	0.7
Americas	0.4	0.5	0.5	0.6	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.4
Asian & Pacific	0.5	0.7	0.6	0.7	0.6	0.4	0.4	0.2	0.4	0.4	0.6	0.6
Other countries	0.01	0.03	0.04	0.04	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.04
Total	9.8	12.3	12.3	14.7	10.0	11.5	9.6	9.8	9.3	5.3	6.6	9.8

Source; CBE, UNWTO.

To show the relationship between the volume of tourist traffic and the security and political instability in Egypt, the researchers calculated the Pearson correlation coefficient; it was found that the relationship between the volume of tourist traffic and security stability is an inverse relationship, where the value of the correlation coefficient reached (-0.71). While the relationship between the volume of the tourist traffic and the political stability index is a positive relationship, where the value of the correlation coefficient (0.63).

6.1.2. Changes in the directions of tourist traffic

A clear influence of political and security instability is observed on the tourist traffic to Egypt. As a general average, European tourists represent the largest proportion of incoming tourists to Egypt; the average percentage reached 70.2% in the period 2007-2018, while the average proportion of tourists from the Middle East was 16.6%, the Asian tourists (4.9%), and Africans (4.6%), while tourists from the Americas accounted for nearly 3.5%. These ratios went through a change during the period affected by the political and security instability resulting from the Arab Spring and its implications. This effect is observed from Fig.2 that shows the decrease in the number of European tourists in general during the study period. The decline is very clear after the year 2015, as the

proportion of this tourist current (from Europe to Egypt) decreased to 48.4% in 2016, reaching 59.3% in 2018, and this sharp drop was a direct result of one terrorist incident, which was the accident of the downing of the Russian tourists plane over Sinai. This accident led to a noticeable decrease in Russian tourists from 3.14 million tourists in 2014, (32% of Egypt's tourists) to 0.053 million in 2016, (only 1% of the total number of tourists in Egypt).(UNWTO,2018).

This confirms two important points in the Egyptian tourism industry: the first is its reliance on one market to promote its touristic product, which is Europe in general and Russia in particular. The second point is the reliance on certain touristic resources in tourism promotion (beach tourism and the Red Sea based tourism) which attracts Russians because Egypt is the closest and cheapest for them, and therefore neglecting other resources made tourism in Egypt depends on the number of visitors, not on the type of visitors. This is very clear from the increase of the occupancy rates in the coastal regions, which are higher than the internal ones.

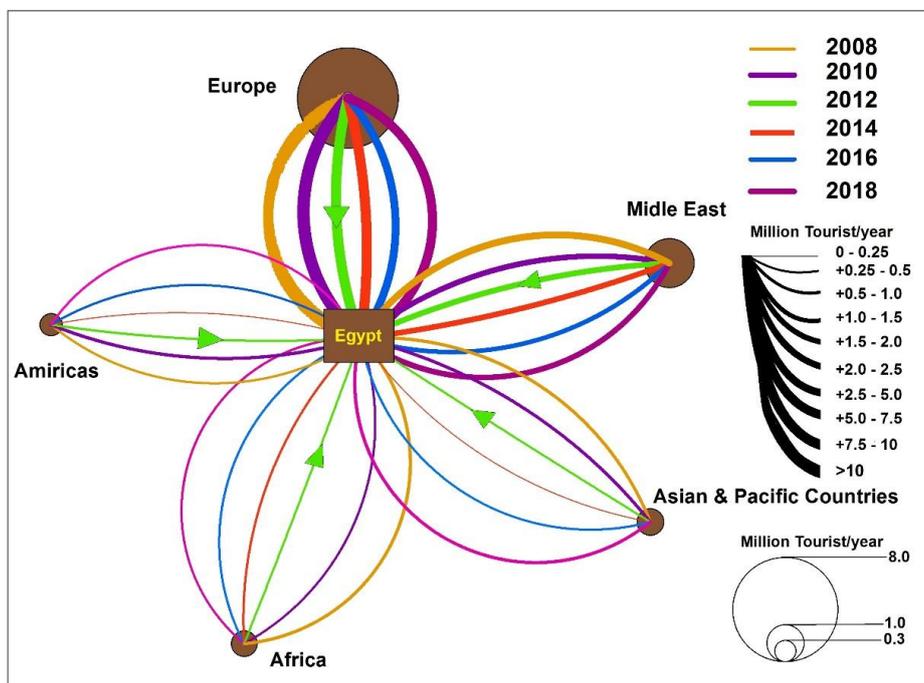


Fig.2: Changes of Tourism Air Traffic directions (2007-2018)

Source: by Authors based on table 3.

The change in the size of the European tourist current was in favor of the growth of the tourism current heading from the Middle East to Egypt. The volume of this current increased from 1.3 million tourists in 2014, representing 13.1% of the total Egyptian tourism volume to 2.2 million tourists, representing 22.2% of the total Egyptian tourism volume in 2018. It is possible that the similarity of the situation in the Middle East region, which did not differ significantly in the level of security and political stability from Egypt, was a reason for the increase in this current, especially with the decrease in the costs of tourism in Egypt, which matched the decline of demand for it. The same applies to the increase in the volume of the African tourist current, and the Asian tourist current and the size of the Americas' current, especially South America.

6.1.3. The spatial variations of tourism traffic changes in touristic regions;

As one of the objectives of this paper is to show the spatial variations in the impact of political and security instability in Egypt on tourism. The researchers have worked to measure the relationship between terrorist events in the governorates of Egypt and international and domestic air transport at airports that fall within these tourist regions and serve access to and from them. Fig.3 shows the development of tourist traffic in the selected airports in the period (2007 - 2019). It is clear that there is a decrease in the total air traffic in airports in general in the years 2011, 2013, 2016 due to the decrease in tourism traffic to Egypt in those years for the reasons previously mentioned.

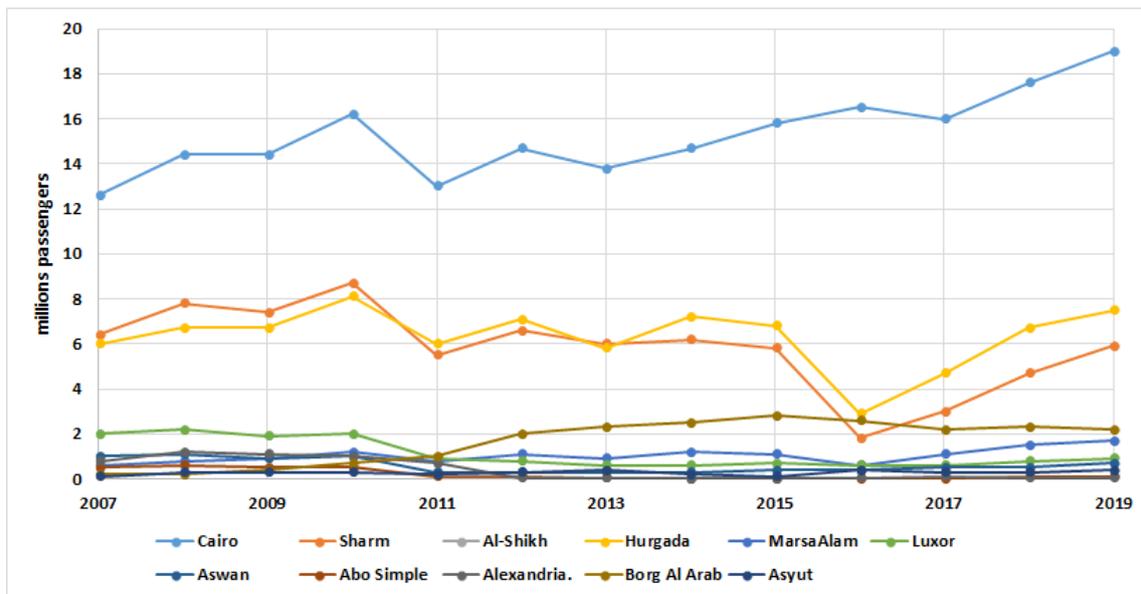


Fig. 3 Changes of Traffic in Main Tourist Airports (2007-2019)

Source: Authors based on EHCAAN.

In more detail, the impact of political and security instability on the air traffic in each airport can be seen by calculating the growth rate of traffic in each one between 2007-2019. The growth rate was negative in Alexandria Airport (-24.4%) because of the transfer of traffic to Borg Al Arab Airport in the same governorate. The southern Egypt airports have additionally suffered from a decline in the tourism traffic, the growth rate in Abu Simbel Airport was (-24.13%), in Luxor(-11.17%), and in Aswan (-7.13%). These airports were receiving many flights coming from Western Europe, especially from Germany, UK, and France; these countries canceled their flights and warned their citizens of traveling to Egypt repeatedly due to the security and political turmoil. Likewise, the traffic growth rate of the Red Sea region airports was reduced; the traffic in Hurghada airport has decreased to (-2.26%) and in Sharm El-Sheikh airport to (-7.38%), as a result of the downing of the Russian tourists plane over the Sinai Peninsula and the reduction of the number of Russian tourists to more than 2 million tourists between 2015-2016, who used to represent the largest proportion of tourists visiting the Red Sea and South Sinai regions.

By comparing the number of terrorist incidents in the governorates in which the previous airports are located, it is found that there is a weak inverse relationship (-0.07) between the frequency of terrorist operations and the volume of transport traffic in airports. This does not apply to the type of terrorist incidents; thus, it can be said that the process of only one terrorist incident of a specific type can negatively affect more than 100 terrorist operations of another type. This was clear from the comparison of the

volume of passenger traffic at Cairo airport between 2015-2016, which reached an annual growth rate of 4%, although the frequency of terrorist operations reached 13.57 incident/year. In contrast, Hurghada and Sharm El-Sheikh airports were negatively affected after one terrorist accident, namely the fall of the Russian tourists plane in 2015, where the annual rate of growth in air traffic between 2015-2016 was(-57.11%) for Hurghada, and (-69.55%) for Sharm El-Sheikh). However, the frequency of terrorist incidents in the Red Sea and South Sinai governorates amounted to 0.43, 1.0 events/year each.

The increase in the volume of air traffic in the chosen tourist airports after 2016 confirms the reflection of the relative political and security stability and the measures taken by the Egyptian Ministry of Civil Aviation in securing airports after the Russian plane accident in 2015, and the hijacking of the Egyptian plane in Cyprus in 2016. In those two years, 2015 and 2016, the (SAI) rose to an unprecedented level, reaching 8.1 in 2015 and 8.3 in 2016; and the (PSI) in Egypt, in addition, rose by the same strength, amounting to 6.81 in 2015 and 7.3 in 2016. Later, terrorist incidents decreased due to the expanded security measures taken by Egypt, especially the "Sinai 2018" initiative launched by President Al Sisi, due to which the terrorist incidents decreased to 38 incidents in 2018 and 32 incidents in 2019 in comparison to 169 incidents in 2017. This explains why the volume of air traffic in most airports returned to what it was during 2011 and before.

6.2. The Hotel Occupancy Rate Changes

Since 2011, the hotel occupancy rate has changed in most tourist areas in Egypt because of the security threats and the political instability that accompanied the Arab Spring revolution in Egypt in 2011. Table 4, shows that hotel occupancy rates in Egypt have not achieved the level of 2010 until now in most tourism regions in Egypt (data available until 2018 only). With the exception of Alexandria, which is an internal tourist destination, more than an international one, as well as the Red Sea Governorate that witnesses a high occupancy rate in 2011 and experienced a rapid decrease soon after.

Table 4: The Changes of the Hotel Occupancy Rate (%) in the Main Tourist Governorates

Governorate	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Alexandria.	58	39	31	21	23	29	21	34.7	32.7	31	48	32.3
Cairo	78	48	34	52	39	37	40	50.3	40.9	42	23	26.4
Luxor	61	44	31	44	18	14	13	12.2	14.6	14	18	14.3
Aswan	29	33	13	34	10	10	7	11.8	16.2	17	18	9.2
Red Sea	79	53	60	61	76	53	48	60.4	36.9	29	36	26.4
South Sinai	73	74	70	71	51	52	44	61.7	43.5	30	43	38
Giza	76	52	50	44	19	25	20	29.4	26.5	32	37	34
Average	63	56	52	55	43	39	36	48	35.4	30	34	30.5

Source: CAPMAS, CBE.

By calculating the rate of change, it was found that the changes in hotel occupancy rates in Egypt during the period (2007-2017) were not the same in all of

Egypt's tourist regions, and was not as much during the whole ten years. From table 5 and Fig.5, we can conclude the following:

- Spatially, Giza, Luxor, and Aswan were affected by the events of insecurity resulting from the demonstrations and protests in 2011 more than other tourist governorates. The rate of change in hotel occupancy rates in those governorates reached -56.8%, -59.1%, -70.6%, respectively. The Red Sea, South Sinai, and Cairo were affected by terrorist incidents that have increased in intensity since 2015. Hence, the rate of change in the Red Sea Governorate reached its maximum (-38.9%) in 2015, South Sinai (-31%) in 2016, and Cairo (-45.2%) in 2017 as a result of the repeated terrorist incidents in the heart of the capital city during 2017, when Greater Cairo ranked second after North Sinai in terrorist incidents.
- Chronologically, the years 2011, 2012, 2013, 2015, and 2016 represent the years of the general negative change in hotel occupancy rates in most of the Egyptian governorates because of political and security instability. As for the years 2008 and 2009, the change was negative because of the global economic crisis. It is clear that both 2011 and 2015 years represent the largest years in the rate of change in occupancy rates; the change was surprising in 2011 due to the outbreak of the revolution and general security turmoil in the country, and 2015 was the largest year in the occurrence of terrorist incidents in Egypt (25.7% of terrorist incidents). On the other hand, the years 2010, 2014, 2017 represented the years of relative stability and the positive change in hotel occupancy rates in Egypt in general. The year 2010 was the peak year for Egyptian tourism, while 2014 was the beginning of President AL Sisi's rule after a period of political and security instability, and 2017 was a year of relative security stability and a decrease in the rates of terrorist operations.

Numerous studies have demonstrated a strong relationship between political and security instability on the one hand and hotel occupancy rates on the other. This study is consistent with those studies in this result; researchers found a strong inverse relationship between (SAI) and hotel occupancy; the value of (R^2) was 0.707 as demonstrated by Fig. (4-A). As for the relationship between the hotel occupancy rate and the (PSI), it was a positive relationship, which means that the occupancy increases as the political stability increases; the value of (R^2) was 0.633 as seen through Fig. (4.B).

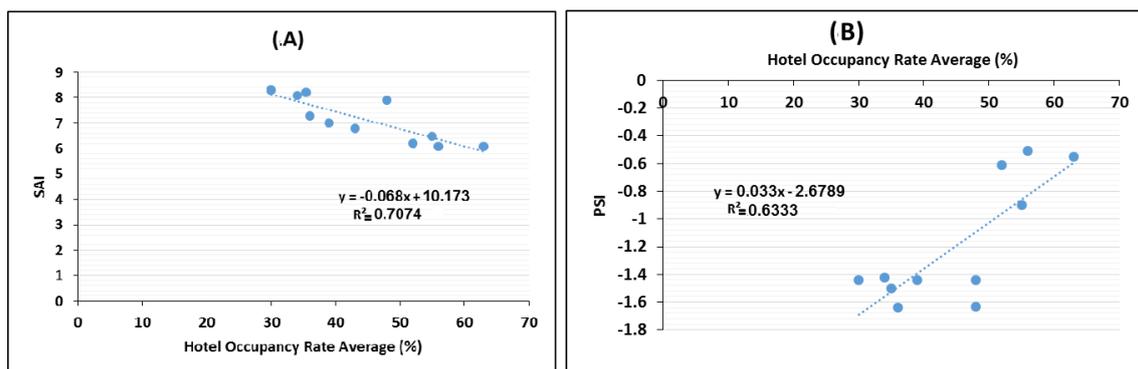


Fig. 4: The relationship between the political, security instability and hotel occupancy
Source: by Authors based on tables; 1, 4.

6.3. The Changes of Egyptian Tourism Revenues

There is a close correlation between tourism revenues and the state of political and security stability in Egypt. The value of the correlation coefficient between the (SAI)

index and tourism revenues reached -0.97, as the correlation coefficient reached 0.9 between the (PSI) and tourism revenue.

More evidence can be detected in Fig.5, where the Egyptian tourism revenues witnessed a sharp general decline after 2011. The years 2014, 2016, 2017, and 2018 are unprecedented years in decline; the proportion of tourism contribution to the GDP decreased to 1.7% in 2014, then to 1.1%, in 2016, and amounted to 1.9% of GDP in 2017 and to 1.65% in 2018. This is undoubtedly due to the security and political turmoil that Egypt witnessed during the years after the 2011 revolution in general and during the previous years. We can additionally see the clear reflection of the security measures taken by Egypt later in 2018 on the activity of the tourism industry and the noticeable increase in the contribution of tourism to GDP, as the ratio began to return to what it was before 2014. The percentage increased in 2019 to reach 2.8% of GDP.

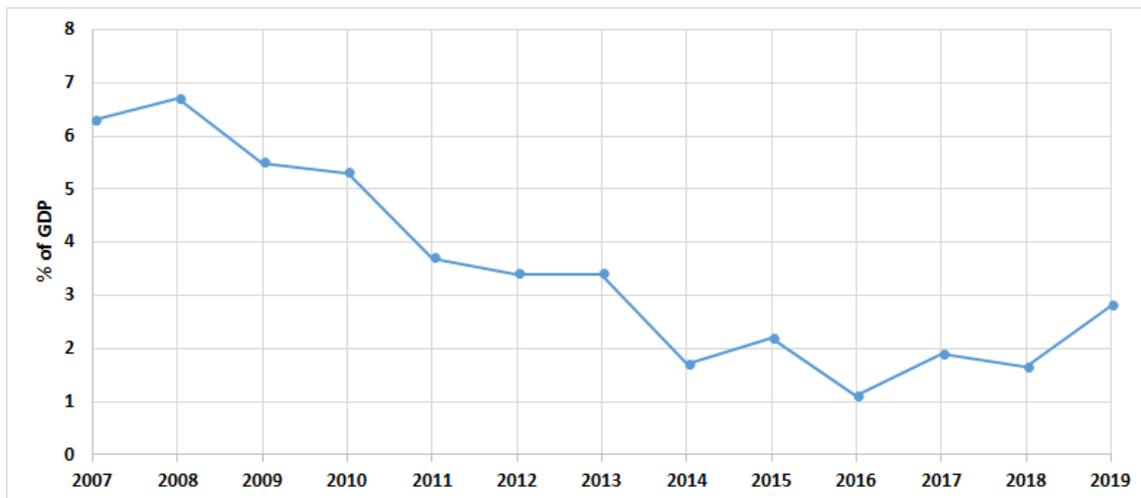


Fig. 5, the changes of tourism contribution in Egyptian GDP.

Source; Table 1.

The impact of political and security disturbances on tourism revenues results from complex relations, where it is found that the decrease in tourism revenues because of security and political turmoil is a direct result of four axes:

- The first axis: Political and security instability leads to fewer visitors, lower hotel occupancy rates and, hence, tourism receipts. This is a positive relationship between the PSI and the number of visitors as well as an inverse relationship between the SAI and the number of visitors and hotel occupancy rates.
- The second axis: The decrease in the number of visitors and the hotel occupancy rate reduces the tourism workforce to a minimum. For example, the percentage of workers in the tourism sector, which has reached 2.2% of the total Egyptian workforce in 2013, decreased to only 0.8% in 2014; the reduction of workers leads to a general recession in the level of GDP. This confirms the inverse relationship between the number of visitors and hotel occupancy rates on the one hand and tourism employment on the other hand.
- The third axis: The weak demand for tourism services leads to a decrease in tourism investments, as the correlation is positive between the number of visitors, the hotel occupancy rate and the tourism investments. The volume of tourism

investments reached 2.6% of the volume of investments in 2012, which fell to 0.53% in 2014/2015.

- The fourth axis: This axis relates to the "opportunity cost" premise that could be achieved in the tourism sector if there were no security and political turmoil inside the country. The number of visitors, hotel occupancy rates, and the number of tourist nights were clearly growing before 2011. For example, Egyptian tourism has lost between 2010-2011 around \$ 2.22 billion, as an opportunity cost due to the instability during 2011 (Ministry of Planning, 2011).

Conclusion

It is clear that there is a strong relationship between political and security stability and tourism, and this agreed with many of the literature such as; Mansfeld&Winckler, 2015; Neumayer, E., 2004; Abahre&Raddad, 2016; Nassar, Mohamed A., 2012 and Neagu, 2018.

Differently, the present paper concluded that Egypt, as a tourist country with a variety of tourism resources, possesses an individual advantage over the rest of the tourist countries in the region, which is the multiplicity of tourist regions within Egypt. Through measuring the spatial variations in the state of security stability, and measuring the relationship between terrorist incidents and tourism variables in each region, we identified the tourist safe areas that can maintain tourism activity even in the most difficult circumstances such as the Red Sea region, the Northwestern Coast region, and Southern Egypt.

It was additionally clear that insecurity led to significant declines in tourism traffic to Egypt during the period 2007-2019. However, what can be pointed out is that this change was negative for the traffic of tourism coming from Europe and positive for the incoming tourism traffic from the countries of the Middle East, Africa, and Southeast Asia. This confirms the need to expand the Egyptian tourism marketing to focus on new markets, because the focus on the previous traditional markets led to the collapse of Egyptian tourism more than once during the study period. The most severe decline was what happened because of the fall of the Russian tourists 'plane in 2015 when Egypt lost more than 2 million tourists from Russia only due to this accident.

Tourism revenues are affected by the state of political and security stability through a set of complex relationships. Security and political turmoil negatively affects the number of visitors and occupancy rates, which leads to a decrease in tourism employment and a reduction in investments in the tourism sector, and thus reducing tourism revenues. Of course, achieving security and political stability, no matter how relatively, leads to a revival of the tourism sector and an increase in its revenues.

Recommendations

It has become clear that political and security stability has an explicit impact on Egyptian tourism. Therefore, the following can be suggested:

- Egypt has come a long way in fighting terrorism, but more effective measures must be taken to control terrorism and secure tourism, in addition to supporting and encouraging all means of achieving political stability.
- One of the lessons learned from the crisis experienced by Egyptian tourism is that there are new markets to which efforts must be directed, namely the Middle East, Southeast Asia, and Latin America, which are regions with high population densities.
- It is possible to encourage and support flights to the safer Egyptian tourist regions, especially in the event of disturbances, and to secure the airports in these areas, especially the Red Sea region, South Sinai, the Northwest Coast, and Southern Egypt.
- The Egyptian tourism product must be diversified, and all types of Egyptian tourism must be promoted equitably to achieve commercial operation of tourism services in all regions of Egypt and to achieve high hotel occupancy rates in all Egyptian tourist regions.

- We need to complete studies at this point and expand the scope of application to countries suffering from security and political turmoil so that a model can be developed to assess the expected impact of any disturbance on the tourism sector in those countries.

References;

1. Abahre, J. S. S., & Raddad, S. H. (2016). Impact of political factor on the tourism development in Palestine: Case study of Sabastiya Village. *American Journal of Tourism Management*, 5(2), 29-35.
2. Ali, A., Arifin, Z., and Hasi, M. (2012). The challenges of tourism in the countries of the Arab Spring Revolutions. *Advances in Natural and Applied Sciences*, 6(7), 1162-1171
3. Ayman Aqeel. (2019). *Terrorism in Egypt: A reading of the historical development, stats, influences, and challenges*, Maat for Peace, Development, and Human Rights, Cairo.
4. BBC. Russian plane crash: What we know?. (2015, November 15th). the BBC. Retrieved April 4, 2020, from <https://www.bbc.com/news/world-middle-east-34687990>.
5. Brown, D. O. (2000). Political risk and other barriers to tourism promotion in Africa: Perceptions of US-based travel intermediaries. *Journal of Vacation Marketing*, 6(3), 197-210.
6. Causevic, S., & Lynch, P. (2013). Political (in) stability and its influence on tourism development. *Tourism Management*, 34, 145-157.
7. Census and Economic Information Center (CEIC), Egypt Data, Retrieved January 8, 2020, from <https://www.ceicdata.com/en/country/egypt>.
8. Central Agency for Public Mobilization and Statistics (CAPMAS) .2019. *Statistical Yearbook 2019*, September, Cairo.
9. Central Bank of Egypt (CEB), The Monthly Statistical Bulletin, Various Months, Retrieved November 20, 2019, from <https://www.cbe.org.eg/ar/EconomicResearch/Publications/Pages/MonthlyBulletinHistorical.aspx>. (in Arabic).
10. Egyptian Holding Company for Airports and Air Navigation, (EHCAAN). The annual statistics of the Egyptian air traffic movement, different years, Retrieved November 10, 2020, from: <http://www.ehcaan.com/statistics.aspx#year>.
11. Elshaer, I. A., & Saad, S. K. (2017). Political instability and tourism in Egypt: Exploring survivors' attitudes after downsizing. *Journal of Policy Research in Tourism, Leisure and Events*, 9(1), 3-22.
12. Esmail, H. A. H. (2016). Impact of Terrorism and instability on the tourism industry in Egypt and Tunisia after Revolution. *The Business & Management Review*, 7(5), 469.
13. Ferreira, S. L. (1999). Crime: A threat to tourism in South Africa. *Tourism Geographies*, 1(3), 313-324.
14. Fund for Peace (FFP). (2017). *Fragile States index methodology and cast framework*, Washington, D.C. Retrieved Jan. 10, 2021, from <https://fragilestatesindex.org/wp-content/uploads/2017/05/FSI-Methodology.pdf>.
15. Kraay, A., Kaufmann, D., & Mastruzzi, M. (2010). The worldwide governance indicators: methodology and analytical issues, World Bank Policy Research Working Paper No. 5430 The World Bank.
16. Mansfeld, Y., & Winckler, O. (2015). Can this be spring? Assessing the impact of the "Arab Spring" on the Arab tourism industry. *Turizam: međunarodniznanstveno-stručničasopis*, 63(2), 205-223.
17. Mihalič, T., Šegota, T., Knežević Cvelbar, L., & Kuščer, K. (2016). The influence of the political environment and destination governance on sustainable tourism

- development: a study of Bled, Slovenia. *Journal of Sustainable Tourism*, 24(11), 1489-1505.
18. Ministry of Finance (MOF).(2019). Monthly Financial Report, June 2019, volume 14, number 8. (in Arabic).
 19. Ministry of Planning and Economic Development, Annual Follow-up Report 2011, Retrieved February 6, 2020, from http://mpmar.gov.eg/Economic_Performance.aspx(in Arabic).
 20. Mohammad, A. A. A., Jones, E., Dawood, A. A. A., &Sayed, H. A. (2012). The Impact of the Egyptian Political Events during 2011 on Hotel Occupancy in Cairo. *Tourism Res Hospitality journal*, 1: 3. of, 8, 2.
 21. Nassar, M. A. (2012). Political unrest costs Egyptian tourism dearly: An ethnographical study. *International Business Research*, 5(10), 166.
 22. Neagu, F. S. (2018, May). The influence of geopolitical events on tourism in Egypt. In *Proceedings of the International Conference on Business Excellence* (Vol. 12, No. 1, pp. 661-670). Sciendo.
 23. Neumayer, E. (2004). The impact of political violence on tourism: Dynamic cross-national estimation. *Journal of conflict resolution*, 48(2), 259-281.
 24. The global economy; Egypt; Retrieved Dismember 10, 2021, from <https://www.theglobaleconomy.com/Egypt/>.
 25. Tomazos, K. (2017). Egypt's tourism industry and the Arab Spring. In R. Butler, & W. Suntikul (Eds.), *Tourism and Political Change*. (2nd ed.). Woodeaton, Oxford: Goodfellow.
 26. UNWTO (2018) Yearbook of Tourism Statistics Data 2012 – 2016 Edition 2018, Retrieved August 11, 2020, from https://d253pvgap36xx8.cloudfront.net/challenges/resources/eb05e574538111e88b1f0242ac110002/Yearbook_of_Tourism_St...2016_2018_Edition.pdf
 27. Wendt, J. A. (2016). Changes in the Tourist Air Transport in Egypt in 2005–2014. *PraceKomisjiGeografiiPrzemysłuPolskiegoTowarzystwaGeograficznego*, 92.(in Polish)