# The Effect of the Egyptian Pound Exchange Rate Change on the International Tourist Demand to Egypt

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### Abstract

Despite the importance of the international tourist demand and affected extent by daily changes of exchange rate, there are a few and inadequate studies that have addressed the measurement of the impact of exchange rate change on the international tourism demand for Egypt. therefore, this study aims to measure the effect of the Egyptian pound Exchange Rate change on the international tourist demand to Egypt from 2010 to 2017. For this purpose, field researches conducted using questionnaires for sample of international tourists and interviews with tourism and Economic experts. This study is based on an exploratory approach to achieve its goals.

The main results of this study indicate that there is some countries are affected by the change of the Egyptian Pound exchange rate and others who are not affected by it. It was found that the most sensitive countries to changes of Egyptian Pound exchange rate are Russia, China and India. In contrast, USA and Germany are the less sensitive countries to the changes of Egyptian pound exchange rate.

In addition, there is an inverse relationship between the international tourist demand to Egypt and the change of the exchange rate. When the floating system for the Egyptian pound exchange rate was applied, it reduced the value of the Egyptian pound exchange rate in 2016. It also resulted in an increase in the number of international tourists, to 8.3 million tourists in 2017 compared to 5.4 million tourists in 2016. Moreover, the Tourism revenues were about 7.6 billion in 2017, compared to 2.6 billion in 2016. Besides applying the floating system for the Egyptian pound exchange rate which led to the increase in the international tourist demand, there were other factors that led to these increases such as political stability in Egypt.

**Key words:** International Tourism Demand, Egyptian Pound exchange rate, Egypt.

### Introduction

It is vital to understand that fluctuations in the exchange rate affect the price of international travel and tourism. Other important price factors include the cost of living, tourism services in the destination and the cost of transportation between the origin and destination (Geoffrey, 1993). Thus, it is important for the Travel & and Tourism sector to monitor, track, and predict exchange rate movements (WTTC, 2016). Consequently, some studies that attempted to determine the effect of exchange rates on tourist demand, showed varying results. In some studies, the demand for international tourism was found that the exchange rate was highly elastic, yet in other studies it was less elastic. Furthermore, the statistical significance of exchange rates as a determinant of tourism demand has been found to be highly variable (Millington, 2007). Hence, it is important to noted that the importance of this study that summed in the following points; Offer some suggestions and recommendations that reduce the negative impact of exchange rate change on international tourism demand, find out if flexibility of the exchange rate on the tourist demands, high or low, identifying the factors that affect international tourism as well as to know the relationship between economic factors and the decision to travel among tourists and benefit from the experiences of other countries that the international tourist demand have affected from the exchange rate change.

As well as highlight the objectives of the study which lie in; measuring the impact of exchange rate change on international tourism demand, identifying the most important

variables that effect on international tourism demand to Egypt, identifying the impact of exchange rate change on tourists, the number of tourist nights and tourist expenditure, and reaching a some proposals and recommendations that reduce the impact of exchange rate changes on international tourism demand.

Table 1. International Tourist Arrivals to Egypt (2010-2017)

Year	2010	2011	2012	2013	2014	2015	2016	2017
Tourists (million )	14.7	9.8	11.5	9.5	9.9	9.3	5.4	8.3
Tourist nights(million)	147.4	114.2	137.8	94.4	97.3	84.1	32.7	10.86
Revenues (Billion)	12.5	8.8	9.9	5.9	7.5	6.1	2.6	7.6

Source: (Ministry of Tourism, 2018).

According to the statistics above, the numbers of international tourist's arrivals to Egypt reached high levels in 2010 and 2017, 8.3 million tourists in 2017 and 14.7 million in 2010. In contrast, the numbers of international tourist demand reached to 5.4 in 2016 while it was 9.3 in 2015. It also should pointed out that the number of tourists from 2011 to 2015 was not fixed due to the political instability after the 25-January-2011 revolution and the terrorist attacks in Egypt.

Likewise, the Tourism revenues achieved high levels in 2010 and 2017 compared to 12.5 billion in 2010 and 7.6 billion in 2017. To add, there was an increase in the number of tourist nights in the Egyptian tourist destination in 2010 and 2017; from 147.4 million nights tourist in 2010 to 10.864 million nights tourist in 2017 to compared to other years of the study period. Generally, Egypt kept on increasing in number of international tourists in overall period average, except the period which was influenced by the Egyptian security events and political instability in Egypt. It is important to note that the reasons of increase in the international tourist numbers in 2017 lie in applying a floating system of the Egyptian Pound exchange rate as well as the political and security stability in Egypt.

Figure 1. The Numbers of International Tourists

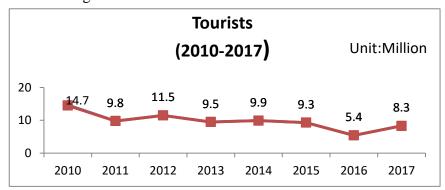
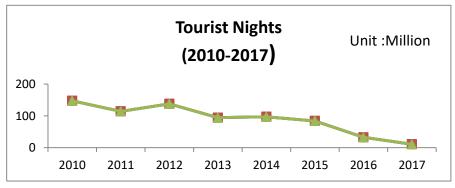


Figure 2. The Number of Tourist Nights



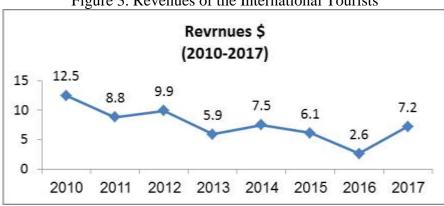


Figure 3. Revenues of the International Tourists

### 2. Tourism Demand

#### 2.1. Tourism Demand Definition

Tourism demand is defined as, the total number of persons who travel or wish to travel to use tourist facilities and services at places away from their places of work and residence (Cidroypaes, 2016, p. 3). Likewise, it is defined as the amount of a set of foreign tourist products that consumers are willing to acquire during a specific period of time. Under certain conditions, it is controlled by the explanatory factors used in demand theory and it tends to follow the law of demand. Therefore, an increase in tourism prices tends to reduce international tourism demand. Tourism prices include transport costs, the cost of accessing tourism facilities and the cost of commodities consumed by tourists during the tourism experience (Bashagi & Muchapondwa, 2009, p. 1).

Wanjiru (2014, p. 4) pointed out that, Tourism demand is the relationship between individuals' motivation to travel and their ability to do so. Consequently, Sharpley (2006) explained that, demand is the outcome of motivation. Considering that tourist motivations are characteristics of individuals that influence destination choice as they act as push factors leading to the realization of tourist travel (Nicolau, 2010). On the other hand, UNWTO-(2008) suggested that the tourism demand also comprises the tourism consumption by the residents' outbound trips before leaving the country of reference and after returning to the country of reference.

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It is vital to understand the components of tourism demand; thus, Wong (2014) pointed out these components in the following points:-

- 1) Effective demand (actual demand), those who are actually traveling. Most commonly and easily measured, making up the bulk of tourist statistics.
- 2) Suppressed demand, those who do not travel for some reason. There are two types of suppressed demand:
- a) Potential demand, those who will travel at some future date if they experience a change in circumstances, e.g. increase in income.
- b) Deferred demand, those who will postpone travelling because of a problem in the supply environment, e.g. scarcity of goods or services.

### 2.2. Factors that influence the international tourism demand

It is vital to understand the economic variables that effect international tourist demand. Typically, they are divided to a Dependent Variable (The international tourism demand is often measured either in terms of the number of tourist arrivals,

tourist expenditure, or the number of tourist nights in the destination country) and Independent Variables (The most generally tested independent variables are income, population, relative prices, exchange rates, transportation costs, Trade Openness and marketing expenditure) (Mohamed, 2011).

2.2.1. Price, Tourism consumption prices refer to the prices of goods and services bought by tourists either at their destination or at their region of origin, such as hotels and restaurants, food, transport and leisure (Espinet, et al, 2011). The Influential factors in prices lie in Seasonality Fluctuations, Operating costs, Competition and Demand (tourism excellence, 2014). Thus, the variable price is a central element in the tourist market, since it is a flexible tool that permits rapid changes (as a reaction to a rival's action) and a powerful competitive element (as individuals can make direct comparisons among different alternatives (Masiero, &Nicolau, 2001).

Masiero and Nlcolau (2012) noted that price and demand are inversely related. An interesting finding was that tourists who perceived the destination to be expensive tend to spend more money than those who did not(Wang et al,2010). Therefore, to complete the Price Competitive Index, one must adjust for the effects of exchange rate variations in PPPs (Partnerships between the public and private sectors), so as to obtain an objective index standard for comparing relative prices among countries (Brakke, 2004). Basically, there were three elements constituting the price of tourism, the cost of travel to the destination, the exchange rate between the tourist's country of origin and that of the destination country, and the cost of goods and services incurred after arrival (Walsh, 1996).

### 2.2.2. Income

Income has been one of the most important explanatory variables in the theory of tourism demand (Larson, 2008) as it was used to measure how the traveling habits of people in an origin country responded to changes in their wealth. Tourism was also identified as a luxury good and the consumption of luxury goods were expected to increase substantially with an increase in income (Creel, 2007). Therefore, the increase in a tourist's income was expected to increase international tourism demands (Tavares & Leitao, 2016).

2.2.3. Exchange Rate, It is necessary to highlight on it where Changing costs in particular destinations relative to others, and adjusted for exchange rate variations, are regarded as the most important economic influence on destination shares of total travel abroad (Dwyer etal, 2001). It was found that exchange rate could have a significant effect on the extent of international travel if the price of foreign currency would influence tourists (Eruy & Crompton, 1984). Furthermore, the tourists have more precise knowledge of the values of exchange rates than they had of the prices in their planned destination while making the decision. However, the information on price changes was generally not known in advance; therefore, the tourists' only indicator of the destination's price level was what they remember it to be at the last time they visited that particular destination (Vencovsk, 2014). Consequently, the exchange rate has proven to be a relevant factor in the consumer's decision making process (Berkhout, 2007). Namely, if the price of foreign currency declines, tourists are likely to demand more services and other things being equal.

## 2.3. Measurement of Tourism Demand

According to Song and Li (2010), tourism demand could be measured in a variety of ways. The measurement criteria for all types of travel and tourism demand were categorized into four groups:-

- 1) A doer criterion: such as the number of tourist arrivals, the number of tourist visits and the visit rate.
- 2) A pecuniary criterion: for example the level of tourist expenditure (receipts) and share of expenditure (receipts) in income.
- 3) A time-consumed criterion: such as tourist-nights.
- 4) A distance-travelled criterion: for instance, the distance travelled in miles or kilometers. Among the above four categories, the doer criterion and pecuniary criterion dominate international tourism demand studies.

## 3. Exchange Rate

# 3.1. Definition of Exchange Rate

An exchange rate was the price of one currency in terms of another – in other words, the purchasing power of one currency against another (Riley, 2015).

## 3.2. Currency Encoding

The International Standardization Organization has introduced a coding system which assigned a three-character currency code (Alphabetic code) for each currency by taking the two-character country code and appending a single letter symbolizing the name of the currency (e.g., Egyptian Pound EG+P =EGP) (UBC, 2011). In addition, the three-digit numeric code (Numeric code) was useful when currency codes need to be understood in countries that do not use Latin scripts and also for computerized systems. Where possible the three digit numeric code was the same as the numeric country code (ISO, 2017).

## 3.3. Currency Value

The currency value of the Special Drawing Rights (SDR) determined by summing the values in U.S. dollars, based on market exchange rates, of a basket of major currencies (the U.S. Dollar, Euro, Japanese Yen, Pound Sterling and the Chinese Renminbi). The SDR currency value is calculated daily (except on IMF holidays or whenever the IMF is closed for business) and the valuation basket was reviewed and adjusted every five years (IMF, 2018).

## 3.4. Currency Pricing

In most countries, the exchange rate was expressed using the foreign currency as the base currency (Direct exchange rate). On the other hand, in some countries, the exchange rate was expressed using the home currency as the base currency (indirect exchange rate) (Ebrary, 2015). Consequently, direct exchange rate the cost of one unit of foreign currency was given in units of local currency, whereas indirect exchange rate the cost of one unit of local currency was given in units of foreign currency. For Example, local currency was EGP: 1USD =17.6597 EGP (Direct) and 1 EGP =0.0566 USD (Indirect).

## 3.5. Exchange Rate Systems (Regimes)

An exchange rate system or regime was a description of the conditions under which national governments allowed exchange rates to be determined. The aim of a regime of floating or flexible exchange rates was to solve the problem of an imbalance between exports and imports, by allowing exchange rates to fluctuate freely (Tagher et al, 2013). Every country adopting a fixed exchange rate enjoys certain benefits and cannot be excluded from its inherent limitations. There were not any need to change the existing exchange rate regime a country adopts without making a great shock in economy, extreme depreciation or appreciation of a currency (Sharma, 2014).

Therefore, there were two basic systems that could be used to determine the exchange rate between one country's currency and another's: a floating exchange rate system and a fixed exchange rate system.

# 4. The relationship between exchange rate changes and international tourism demand

The exchange rate played a vital role in international tourism demand. Evidences suggested that a higher exchange rate was negatively correlated with the international tourism arrivals. Countries with a higher exchange rate were less favorable destinations for international tourists (Khandaker & Islam, 2017). Hence, the exchange rate was an important independent variable to discuss the correlation with the prices and travelling demand (Gan, 2015).

Tourism literature mainly argued that exchange rate volatility signals risk associated with a destination, which could cause tourists to refrain from visiting the destination and/or cancel their trips (Saayman & Saayman, 2013). It is vital to understand, that the effects of exchange rate volatility on tourist arrivals depended on whether tourists were risk-averse or risk-lovers. Exchange rate volatility has a negative impact on the decision to travel for risk-averse tourists and, due to lower arrivals, has a positive impact on risk-seeking tourists because it is seen as a chance for making some profits; therefore, leads to higher arrivals (Agiomirgianakis et al, 2014).

Table 2. The Exchange Rate of Egyptian pound VS Dollar from 2010 to 2018

Year	Dollar price
2010	5.8149
2011	6.0419
2012	6.329
2013	6.9486
2014	7.1501
2015	7.7401
2016	18.4108
2017	17.7927
2018	17.7027

Source (CAPMAS, 2018).

In 2016, the value of Egyptian Pound VS US Dollar, following a floating system, dropped rapidly whereas the value of one Dollar reached to 18.410 EGP compared to 5.814 EGP in 2010. Therefore, the prices levels of goods and services became higher (High of inflation rate) in Egypt and also the price of Egyptian tourist product was decreased. Therefore, the international tourist demand to Egypt has increased as the Egyptian tourist destination became the cheapest compared to other tourist destinations in the world. When the currency value of the destination dropped, the demand of their goods and products would increase. However, from 2011 to 2015, the value of the Egyptian Pound was higher as the system of Egyptian Pound exchange rate in that period was a fixed system. On the other hand, in 2017 and 2018, the value of Egyptian Pound raised slowly.

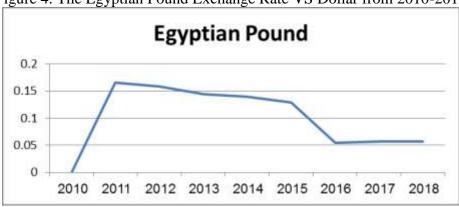


Figure 4. The Egyptian Pound Exchange Rate VS Dollar from 2010-2018

# Methodology

### 5.1.Data collection

This study aims to measure the Effect of the Egyptian Pound Exchange Rate change on the International Tourist Demand to Egypt from 2010 to 2017. Therefore, a field study was conducted through distribution of a questionnaire to sample of international tourists in some Egyptian destinations (Cairo- Sharm El-Shaikh) and in some tourist websites to know the views of the tourists about these changes. The questionnaire consisted of two parts. The first part was about personal data, the purpose of the visit and the tourist facilities and services in the Egyptian tourist destination. The other part was about evaluating the effect of the Egyptian Pound exchange rate change on the international tourist demand to Egypt in the present and future. For the second part, a 5-point Likert scale was used within the questionnaire, ranking as follows strongly disagree (1), disagree (2) neutral (3) strongly agree (4) agree (5) for positive statement and vice for negative to positive statements respectively.

The data were collected from a sample of five different nationalities (U.S.A – Germany – Russia – China – India) where we choose these selected nationalities according to the most sensitive tourist markets for prices also the least sensitive tourist markets for prices. A total of 120 questionnaires were collected between April and July, 2018. Secondly, interviews were conducted with some tourism experts and economists, with open-ended questions. The interviewees were asked to answer 12 questions about the extent of the Egyptian Pound Exchange Rate Change effect on the international tourist demand.

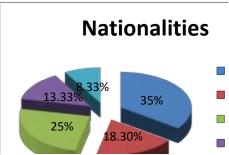
### 5.2. Data Analysis

### 5.2.1. Questionnaire analysis

Figure (5) below explained the percentage of nationalities used in the sample of this research. Germany and China represented the highest Rate of the sample as, Germany was 35% of the sample and China was 25% of the sample. However, Russia and India represented the lowest rate of the sample as Russia represented 13.33% of the sample and India was 8.33%. On the other hand, USA represented 18.5% of the sample. Consequently, China, Russia and India was the most sensitive markets to prices change. China jumped to the fifth place in the top ten list coming to Egypt from all over the world in 2016 compared to the eighth place in 2016 as achieved a high number of tourists in 2017 as circa 278.000 tourists came to Egypt compared to 180567 in 2016. Due to the decline of value of Egyptian Pound in 2016 as well as other factors such as political stability and security in Egypt destination in this period also may be high level income of the tourists, the numbers of Indian tourists was 66536. In the first nine months of 2017, the percentage increased to 43% compared to

the same period of the past year (2016). Although there was an absence of Russian tourists in Egypt after the Russian plane crash in Sharm El-Shaikh in 2015, the numbers of Russian tourists was 100.000 tourists in 2017 compared to 53862 in 2016. That increase was due to changes in Egyptian Pound of exchange rate.

Figure 5. The Nationalities of the Sample



Likewise, Figure (6) explained the percentages of income levels. It showed a difference between the individuals of the sample. Less than half of the sample earned monthly between 1000-3000\$ and 26.66% of the sample individuals earned monthly between 3000-6000\$, whileas 16.66% of the sample earned 6000-9000\$ monthly. However, the lowest percentage was for the segment that earned monthly more than 9000\$, representing 15% of the sample. Namely, while the decline the Egyptian Pound value in 2016 lead to the increase of the international tourist demand to Egypt; it attracted the low-income tourist segments.

Figure 6. Levels of Income

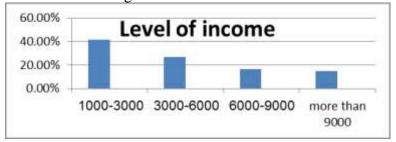


Figure 7. The Purpose of Egyptian Tourist Destination Visit

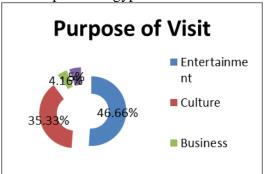


Figure (7) showed that Entertainment purpose represented 50.83% of the sample of this study, while the culture represented 40.00 % of the sample of the study. Conversely, the other types of tourism were represented by few percentages of the sample of the study; the business type was 4.16% of the sample and the medical type represented 5% of the sample, as these types are not affected by changes of exchange rate.

Table 3. The Services and Facilities affected by Changing in the Rate of Exchange

	3 0	8
Items	Numbers	Percentage
Transport	38	31.66%

Tourist gifts	10	8.33%
Hotel services	32	26.66%
Tourist sightseeing	40	33.33%
Total	120	100%

To evaluate the tourism services and facilities provided to tourists, Table (3) explained that all these services and facilities were affected by these changes in varying percentages. For example, sightseeing was affected by 33.33%, while the percentage of hotel services reached 26.66%. In addition, transportation affected by these changes of reached 31.66% and tourist gifts was 8.33%. These services and facilities were affected by the changes of Egyptian Pound of exchange rate as these changes affect all goods and services prices.

Table 4. The most essential services and facilities that affected the tourist's decision to visit Egypt

Items	Numbers	Percentage
Transport	35	29.16%
Tourist gifts	3	2.5%
Hotel services	39	32.5%
Tourist sightseeing	43	35.83%
Total	120	100%

Table (4) found that the sightseeing, hotel services and transport were the most services that effected on the tourist's decision to visit Egyptian tourist destination. The percentage of Tourist sightseeing reached 80%, while the Hotel services percentage reached 35.83% as well as the Transport which reached 29.16%.

It is important to note that; researcher has analyzed the data of questionnaire by using the Statistical Package for Social Science (SPSS) analysis system. Hence, we utilize the correlation and regression methodology to investigate the impact of changing the Egyptian Pound exchange rate on the international tourist demand.

We move to the reliability analysis through the Cronbach's alpha which is a measure of internal consistency, that is, how closely related a research items are as a group. It is considered to be a measure of scale reliability. A "high" value for alpha above 0.6 will be acceptable, values below that will be bad. A measure is said to have a high reliability if it produces similar results under consistent conditions.

Table 5. Reliability Statistics

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Cronbach's Alpha	N of Items
.817	10

We found that the value is normal which an indicator for higher internal consistency is; the following table examines the value of Cronbach Alpha if of the item.

Table 6. Cronbach Alpha

Question	Cronbach's Alpha
I see the price is one of the effective factors to travel	.789
I keep my eyes on the change of exchange rate	.778
The Egyptian tourist destination is considered the cheapest	.707
The prices of tourist items and facilities have changed slightly	.816
due to the change of exchange rate.	
I observe that the change of exchange rate will remarkably	.781
affect the quality of tourist facilities and items	
I think the period of stay will be affected by the change of	.732
exchange rate	

The rate of spending will be affected by the change of	.768
exchange rate	
The change of the Egyptian exchange rate always affect my	.784
confidence in the Egyptian tourist destination	
I think the change of exchange rate will greatly affect the	.866
repetition of my visits to Egypt	
I think the international tourist demand to Egypt will	.881
remarkably increase due to the change of exchange rate	

## **Split-Half**

The split-half method assesses the internal consistency of the questionnaires. There, it measures the extent to which all parts of the test contribute equally to what is being measured. This is done by comparing the results of one half of a test with the results from the other half. A test can be split in half in several ways, e.g. first half and second half, or by odd and even numbers. If the two halves of the test provide similar results this would suggest that the test has internal reliability. The reliability of a test could be improved through using this method.

Table 7. Split-Half Method

	~ r		
Reliability Statistics			
Cronbach's Alpha	Part 1	Value	.128
		N of Items	5 <sup>a</sup>
	Part 2	Value	.226
		N of Items	5 <sup>b</sup>
	Total N of	Items	10
Correlation Between Forms	·		.199
Spearman-Brown Coefficient	Equal Leng	gth	.832
	Unequal Le	ength	.832
Guttman Split-Half Coefficient			.832

- a. The items are: I see the price is one of the effective factors to travel, The Egyptian tourist destination is considered the cheapest, I observe that the change of exchange rate will remarkably affect the quality of tourist facilities and items, The rate of spending will be affected by the change of exchange rate, I think the change of exchange rate will greatly affect the repetition of my visits to Egypt.
- b. The items are: I keep my eyes on the change of exchange rate, The prices of tourist items and facilities have changed slightly due to the change of exchange rate., I think the period of stay will be affected by the change of exchange rate, The change of the Egyptian exchange rate always affect my confidence in the Egyptian tourist destination, I think the international tourist demand to Egypt will remarkably increase due to the change of exchange rate.

Table 8. Correlations (Spearman's rho)

		Nationality	Income	q2	q3	q4
Nationality	Correlation Coefficient	1.000	464**	018	.029	.251**
	Sig. (2-tailed)		.000	.845	.753	.006
	N	120	120	120	120	120
Income	Correlation Coefficient	464**	1.000	.008	.017	074
	Sig. (2-tailed)	.000		.927	.856	.422
	N	120	120	120	120	120
q2	Correlation Coefficient	018	.008	1.000	007	.086
	Sig. (2-tailed)	.845	.927		.939	.353
	N	120	120	120	120	120

q3	Correlation Coefficient	.029	.017	007	1.000	.021
	Sig. (2-tailed)	.753	.856	.939		.816
	N	120	120	120	120	120
q4	Correlation Coefficient	.251**	074	.086	.021	1.000
	Sig. (2-tailed)	.006	.422	.353	.816	
	N	120	120	120	120	120

Table 8 shows Spearman's rho correlations between each pair of variables. These correlation coefficients range between -1 and +1 and measure the strength of the linear relationship between the variables. The second row of the table is a P-value which tests the statistical significance of the estimated correlations. P-values below 0.05 indicate statistically significant non-zero correlations at the 95.0% confidence level. Also shown in the third row the number of pairs of data values used to compute each coefficient. The Nationality has a statistically significant relationship with both the Income and essential facilities that affect the decision to visit Egypt as a tourist destination.

Table 9. Correlations (Pearson)

Exchange Rate  1	Tourist Demand .276***
1	.276***
1	
	000
	.002
120	120
.276**	1
.002	
120	120
	.002

Table 9 shows Pearson product moment correlations between Exchange Rate and Tourist Demand. The correlation coefficient is about 0.3 which indicates a moderate relationship between Exchange Rate and Tourist Demand. The p-value indicates that there is a statistically significant relationship between both variables.

## Regression

Table 10. Descriptive Statistics

	Tuese To: Besett	per to Statistics	
	Mean	Std. Deviation	N
Tourist Demand	2.8530	.50368	120
Exchange Rate	3.4882	.26887	120

Table 10 provides the summary statistics for Tourist Demand which is the dependent variable and Exchange Rate which is the independent variable

Table 11. Regression Model Summary

R Square	Adjusted R Square	F	Sig.
.076	.068	9.695	.002

Since the P-value in the ANOVA table is less than 0.05, there is a statistically significant relationship between Tourist Demand and Exchange Rate at the 95.0% confidence level.

The R-Squared statistic indicates that the model as fitted explains 7.59214% of the variability in Tourist Demand.

Table 12. Regression Coefficient

Coefficients				
	В	Т	Sig.	
(Constant)	1.052	1.815	.072	
Exchange Rate	.516	3.114	.002	
Dependent Variable: Tourist Demand				

Dependent Variable: Tourist Demand

The output shows the results of fitting a linear model to describe the relationship between Tourist Demand and Exchange Rate. The equation of the fitted model is Tourist Demand = 1.05249 + 0.516177\*Exchange Rate

Factor Analysis (From Q5 : Q14)

Table 13. Factorability tests

KMO and Bartlett's Test				
Kaiser-Meyer-Olkin Measure	.510			
Bartlett's Test of Sphericity	Approx. Chi-Square	104.021		
	Df	45		
	Sig.	.000		

The factorability tests provide indications of whether or not it is likely to be worthwhile attempting to extract factors from a set of variables. The KMO statistic provides an indication of how much common variance is present. For factorization to be worthwhile, Since KMO = 0.510131, factorization is somehow acceptable.

Bartlett's test for sphericity tests the hypothesis that the correlation matrix amongst the variables is an identity matrix, indicating that they share no common variance. Since the P-value is < 0.05, that hypothesis is rejected.

Table 14. Communalities

	- **** - ** * * * * * * * * * * * * * *			
	Initial	Extraction		
<b>q</b> 5	1.000	.611		
q6	1.000	.622		
q7	1.000	.691		
q8	1.000	.639		
q9	1.000	.576		
q10	1.000	.465		
q11	1.000	.710		
q12	1.000	.482		
q13	1.000	.468		
q14	1.000	.591		
Extraction Method: Principal Component Analysis.				

Communalities used to examine the proportion of each variable's variance that can be explained by the principal components. The initial value of the communality in a principal components analysis is 1. The values in extraction indicate the proportion of each variable's variance that can be explained by the principal components. Variables with high values are well represented in the common factor space, while variables with low values are not well represented. (In this example, we don't have any particularly low values.) They are the reproduced variances from the number of components that you have saved. You can find these values on the diagonal of the reproduced correlation matri

Table 15. Total Variance Explained

Ħ	Initial Eigenvalues					of Squared	Rotat	ion Sums o	of Squared	
Component				Loadin	Loadings			Loadings		
odı	Total	%of	Cumulat	Total	%of	Cumulative	Tota	% of	Cumulati	
ОШО		Varianc	ive %		Variance	%	1	Variance	ve %	
$\mathcal{C}$		e								
1	1.757	17.572	17.572	1.757	17.572	17.572	1.57	15.677	15.677	
2	1.582	15.821	33.393	1.582	15.821	33.393	1.52	15.162	30.839	
3	1.367	13.670	47.063	1.367	13.670	47.063	1.45	14.525	.364	
4	1.148	11.481	58.544	1.148	11.481	58.544	1.32	13.180	58.544	
5	.894	8.936	67.480							
6	.801	8.007	75.487							
7	.770	7.701	83.187							
8	.661	6.614	89.802							
9	.586	5.861	95.663							
10	.434	4.337	100.000							
Extra	action Me	ethod: Prin	cipal Comp	onent A	nalysis.					

This procedure performs a principal components analysis. The purpose of the analysis is to obtain a small number of linear combinations of the 10 variables which account for most of the variability in the data. In this case, 4 components have been extracted, since 4 components had eigenvalues greater than or equal to 1.0. Together they account for 58.5443% of the variability in the original data.

Table 16. Component Matrix<sup>a</sup>

	Compo	nent		
	1	2	3	4
I keep my eyes on the change of exchange rate	633	.174	009	437
I observe that the change of exchange rate will remarkably	.612	.194	.098	392
affect the quality of tourist facilities and items				
I think the international tourist demand to Egypt will	.602	.434	195	.052
remarkably increase due to the change of exchange rate				
The Egyptian tourist destination is considered the cheapest	.589	265	.422	.308
I think the period of stay will be affected by the change of	.016	.621	.252	123
exchange rate				
The change of the Egyptian exchange rate always affect my	318	.571	166	.166
confidence in the Egyptian tourist destination				
I see the price is one of the effective factors to travel	.261	.533	483	.159
The prices of tourist items and facilities have changed	002	.170	.723	296
slightly due to the change of exchange rate.				
I think the change of exchange rate will greatly affect the	094	.464	.471	.147
repetition of my visits to Egypt				
The rate of spending will be affected by the change of	306	.124	.268	.728
exchange rate				
Extraction Method: Principal Component Analysis.				
a. 4 components extracted.				

Table 16 contains component loadings, which are the correlations between the variable and the component. Because these are correlations, possible values range from -1 to +1.

Table 17. Rotated Component Matrix<sup>a</sup>

Table 17. Rotated Component W				
	Compo	nent	,	1
	1	2	3	4
The Egyptian tourist destination is considered the cheapest	.816	115	.107	027
I keep my eyes on the change of exchange rate	737	225	.163	029
I see the price is one of the effective factors to travel	060	.778	044	014
I think the international tourist demand to Egypt will remarkably increase due to the change of exchange rate	.280	.654	.121	264
The change of the Egyptian exchange rate always affect my confidence in the Egyptian tourist destination	399	.409	.223	.325
The prices of tourist items and facilities have changed slightly due to the change of exchange rate.	.059	353	.692	178
I think the change of exchange rate will greatly affect the repetition of my visits to Egypt	.014	.065	.637	.240
I think the period of stay will be affected by the change of exchange rate	150	.271	.605	057
The rate of spending will be affected by the change of exchange rate	.153	.002	.195	.805
I observe that the change of exchange rate will remarkably affect the quality of tourist facilities and items	.261	.220	.243	633

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

## a. Rotation converged in 5 iterations.

The idea of rotation is to reduce the number factors on which the variables under investigation have high loadings. Rotation does not actually change anything but makes the interpretation of the analysis easier. Looking at Table 26, we can see that q7 and q9 are substantially loaded on Factor (Component) 1, while, q5, q13, and q14 are substantially loaded on Factor 2. Also q6, q8, q10, and q12 are substantially loaded on Factor 2. All the remaining variables are substantially loaded on Factor 4. These factors can be used as variables for further analysis.

factor Analysis From Q5 : Q11 (exchange rate) independent variable Table 18. Factorability tests

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.

Bartlett's Test of Sphericity

Approx. Chi-Square

Df

Sig.

.000

Since KMO = .446, factorization is somehow acceptable. Bartlett's test for sphericity tests the hypothesis that the correlation matrix amongst the variables is an identity matrix, indicating that they share no common variance. Since the P-value is < 0.05, that hypothesis is rejected.

Table 19. Communalities

	Initial	Extraction		
q5	1.000	.802		
q6	1.000	.644		
q7	1.000	.753		
q8	1.000	.684		
<b>q</b> 9	1.000	.675		
q10	1.000	.672		
q11	1.000	.785		
Extraction Method: Principal Component Analysis.				

Variables with high values are well represented in the common factor space, while variables with low values are not well represented.

Table (20): Total Variance Explained

	Total Variance Explained								
	Initial Eigenvalues		Extraction Sums of Squared		Rotation Sums of Squared		Squared		
Lt.					Loadings		Loadings		
Component	Total	% of Variance	Cumulati ve %	Total	% of Variance	Cumulati ve %	Total	% of Variance	Cumulati ve %
<b>Z</b> 1	1.516	21.653	21.653	1.516	21.653	21.653	1.436	20.518	20.518
<b>Z</b> 2	1.245	17.783	39.436	1.245	17.783	39.436	1.235	17.642	38.160
<b>Z</b> 3	1.199	17.135	56.571	1.199	17.135	56.571	1.224	17.492	55.653
<b>Z</b> 4	1.055	15.074	71.645	1.055	15.074	71.645	1.119	15.992	71.645
<b>Z</b> 5	.788	11.262	82.907						
<b>Z</b> 6	.703	10.047	92.954						
<b>Z</b> 7	.493	7.046	100.000						
Extr	action M	lethod: Pri	incipal Com	ponent A	nalysis.				

Eigenvalues in table 29 are the variances of the factors. Because we conducted our factor analysis on the correlation matrix, the variables are standardized, which means that the each variable has a variance of 1, and the total variance is equal to the number of variables used in the analysis, in this case, 7. The first factor (Z1) will always account for the most variance (and hence have the highest eigenvalue), and the next factor will account for as much of the left over variance as it can, and so on. Hence, each successive factor will account for less and less variance. % of Variance column contains the percent of total variance accounted for by each factor. Cumulative % column contains the cumulative percentage of variance accounted for by the current and all preceding factors.

For example, the third row shows a value of 71.645. This means that the first three factors together account for 71.645% of the total variance.

Table 21. Component Matrix

	1 4010	21. Compe	onen iviati	121		
	Component Matrix <sup>a</sup>					
	Component					
	1 2 3 4					
Q7	.764	002	.403	.084		
Q6	670	.307	140	285		
Q9	.635	.328	365	175		

Q8.	.067	.764	.289	111	
Q10	074	.672	158	.436	
Q11	256	010	.626	.572	
Q5	.066	090	619	.638	
Extraction Method: Principal Component Analysis.					
a 4 components extracted					

Table 21 contains component loadings, which are the correlations between the variable and the component. Because these are correlations, possible values range from -1 to +1.

Table 22. Rotated Component Matrix<sup>a</sup>

	Component				
	1	2	3	4	
q5	.842	.100	046	178	
q6	762	.183	.005	173	
q7	.021	.748	048	349	
q8	108	.727	.053	.359	
q9	.153	.179	.854	.011	
q10	.332	.268	696	.093	
q11	.014	007	058	.893	
The state of the s					

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

We can conclude from Table 31, that q5 is substantially loaded on Factor (Component) 1, while, q5, q7, q8, and q10 are substantially loaded on Factor 2. Also q9 is substantially loaded on Factor 3. Finally q11 is substantially loaded on Factor 4. These factors can be used as variables for further analysis.

Table 23. Correlation between the new factors and the dependent variable

Correlations						
		tourism	<b>Z</b> 1	<b>Z</b> 2	Z3	Z4
		demand				
tourism	Pearson Correlation	1	013	.242**	.033	.307**
demand	Sig. (2-tailed)		.884	.008	.723	.001
	N	120	120	120	120	120
Z1	Pearson Correlation	013	1	.000	.000	.000
	Sig. (2-tailed)	.884		1.000	1.000	1.000
	N	120	120	120	120	120
Z2	Pearson Correlation	.242**	.000	1	.000	.000
	Sig. (2-tailed)	.008	1.000		1.000	1.000
	N	120	120	120	120	120
Z3	Pearson Correlation	.033	.000	.000	1	.000
	Sig. (2-tailed)	.723	1.000	1.000		1.000
	N	120	120	120	120	120
Z4	Pearson Correlation	.307**	.000	.000	.000	1
	Sig. (2-tailed)	.001	1.000	1.000	1.000	
	N	120	120	120	120	120
**. Correlation is significant at the 0.01 level (2-tailed).						

Table 23 gives us the Pearson multiple correlation between the new factors and the dependent variable, we can see that there is a statistically significant relationship between tourism demand and factors 2 and 4. And there is non-statistically significance relationship between tourism demand and factors 1 and 3.

Table 24. Regression between the new factors and the dependent variable

Model Summary					
R	R Square	Adjusted R Square	F <sup>a</sup>	Sig.	
.393	.154	.125	5.244	.001 <sup>b</sup>	
a. Dependent Variable: tourism demand					
b. Predictors: (Constant), Z4, Z3, Z2, Z1					

Since the P-value in the ANOVA table is less than 0.05, there is a statistically significant relationship between Tourist Demand and the new factors at the 95.0% confidence level.

The R-Squared statistic indicates that the model as fitted explains 15.4% of the variability in Tourist Demand.

Table 25. Regression analysis

			J		
Coefficients					
	В	T	Sig.		
(Constant)	2.869	69.188	.000		
Z1	007	157	.876		
Z2	.118	2.822	.006		
Z3	.016	.382	.703		
Z4	.149	3.584	.000		
Dependent Variable: Tourist Demand					

The output shows the results of fitting a linear model to describe the relationship between Tourist Demand and the new factors. The equation of the fitted model is Tourist Demand = 2.869 + .118\*Z2 + .149\*Z4.

## 5.2.2. Interview Analysis

An interview was made with 15 experts in tourism and economists in Egypt; face to face, via internet and via telephone. The interview consisted of 12 questions chosen carefully. Arguably, after these questions had been discussed, 55 % of the interviewees pointed out that there was a positive effect of the Egyptian Pound value decline facing other currencies on the flow of the international tourists to Egypt. Conversely, when the value of the Egyptian pound facing other currencies was high, the number of tourist was low. Namely, the adoption of the floating system of Egyptian Pound exchange rate in 2016 lead to an increase of numbers of international tourists to Egypt.

On the other hand, less than 26% of the interviewees indicated that there was a negative effect of the decline of the Egyptian pound value facing other currencies on the flow of the international tourists to Egypt as it attracted a low-income segment, reduced the level of expenditure as well as the length the tourists' stay. In contrast, less than 21% of the interviewees said that there was no effect of the changing of Egyptian exchange rate on the international tourist demand to Egypt. However, they highlighted the effect of other factors on the international tourist demand such as security and political factors, the inefficiency of the human resources, the lack of tourist culture in the Egyptian society and the lack of promotion to Egyptian tourist destination abroad.

Most interviewees focused on the importance of exchange rate as an influential factor on the international tourist demand to Egypt. The adoption of a floating system in 2016 helps to stimulate the international tourist demand to Egypt because the Egyptian tourist destination became the cheapest compared to other international destinations.

#### Results

According to the above analysis, the study results, proved that the income and the exchange rate are considered the most important economic factors that had an effect on the international tourist demand to Egypt. This was similar to a study (Mohamed, 2011) conducted to measure the impact of the main determinants of the international tourism flows to Egypt. However, the results of this study showed that the real effective exchange rate had a significant effect on changes in the number of tourist arrivals. In addition, there were some incoming tourist markets to Egypt affected by the change of the Egyptian pound exchange rate and others were not affected by it. It was also found that the most sensitive markets to the changes of the Egyptian pound exchange rate were Russia, China and India as the tourists from those countries looked for the cheapest destination due to the low standard of living of individuals in those countries.

Hence, the numbers of tourists that come from those markets to Egypt increased after the decline of Egyptian pound value in 2016. On the other hand, it was also found that the insensitive markets to the changes of Egyptian pound exchange rate, were Swiss, Germany and America, due to the high incomes of individuals in those countries. Likewise, Nosier (2012) examined the factors that determined the international tourist inflows from all origins, as well as individual regions of origin (Europe, Arab, and the Americas) to Egypt. The study as well indicated that Price is an important determinant with a different effect in each originating region. It is important to note that there was an inverse relationship between international tourist demand to Egypt and the changes of the Egyptian pound exchange rate With the application of the floating system for the Egyptian pound exchange rate which led to reduce the value of the Egyptian pound exchange rate in 2016, there was an increase in the number of international tourists to Egypt, reaching 8.3 million tourists in 2017 compared to 5.4 million tourists in 2016. Additionally, the Tourism revenues were about 7.6 billion in 2017, compared to 2.6 billion in 2016. Moreover, the changes in the Egyptian pound exchange rate had an effect on some tourist services and facilities such as the length of stay as the decline in the exchange rate of the Egyptian pound in 2016, led to an increase in the number of tourist nights in the Egyptian tourist destination; 10.864 million nights tourist in August 2017 compared to 3.488 million tourist nights in August 2016. The transportations cost also increased inside the Egyptian tourist destination the prices of tourist gifts. The last but not the least, tourist sightseeing raised because the value of Egyptian pound decline.

It was necessary to highlight the hotel services as the most essential tourist services that had an effect on the tourist decision to visit Egypt tourist destination. Probably, the increase of Egyptian pound exchange rate value could attract the segment of high-income tourism market. Conversely, the drop in the Egyptian pound exchange rate value attracted the ssegment of low-income tourism market. There were other factors that affected international tourist demand to Egypt in the selected period of the study (2010-2017) such as security factors, human resources inefficiency, lack of tourist culture in the Egyptian society and lack of promotion to Egyptian tourist destination abroad. Between 1995 and 2014, Soliman (2017) researched the tourism demand

function using the dynamic panel data approach in the case of Egypt. Soliman confirmed that the price had no effect on the international tourist demand to Egypt as the real effect related to political factors.

It was obvious that tourist services and facilities provided to the tourist in the Egyptian tourist destination were affected (about 65%) by changes of the Egyptian pound exchange rate such as hotel services, tourist sightseeing and tourist gifts It was also found that these services had an important effect on the tourist decision to visit the Egyptian tourist destination.

Furthermore, it was concluded that international tourist demand to Egypt was affected by several factors it's among Egyptian Pound exchange rate changes. Consequently, it was necessary to take into consideration other selected factors effects on the international tourist demand. Hence, during the period of the present study (2010-2017) the international tourist demand to Egypt was affected by other factors other than the Egyptian Pound exchange rate changes such as security events and political instability in the Egyptian tourist destination. Another factor was the income of the coming tourists from origin to Egypt as the income was considered a very important factor that had an effect on international tourist demand to Egypt.

In short, it was important to note the Egyptian Pound exchange rate regimes in the selected period of the study. From 2010-2015, the regimes of Egyptian Pound exchange rate were fixed so that the value of Egyptian Pound was stable. In 2016, the adoption of floating system of Egyptian Pound led to the drop in the value of Egyptian Pound.

### Recommendations

After the review of literature and the field study results, we can put a set of recommendations that reduce the negative effects of Egyptian Pound exchange rate change on international tourist demand and benefit from positive effects of Egyptian Pound exchange rate change on international tourist demand to attract more tourists to Egypt .The study recommendation are:

- Dealing with Chinese currencies as all trip items should paid by Yuan for Chinese tourists as because of the little negative impact of Chinese Yuan currency on Chinese outbound travel market to Egypt.
- Dependence on tourist patterns was not influenced by the changes in the exchange rates of the Egyptian pound such as businessmen tourism, conferences tourism and medical tourism. As a result of that, the Sam-Day tourism to Egyptian tourist destination would be activated.
- Dependence on segment was not influenced by the changes in the exchange rates of the Egyptian pound such as elderly segment. To attract this segment, programs should be created to meet their needs and take care of the most popular types of tourism they prefer such as Green tourism and cultural tourism.
- Imposing the forced pricing upon tourism goods and services and together with setting up a profit margin to the parties of trading of these goods and services. Namely, determining the prices of tourism goods and services in the Egyptian tourist destination to control the prices drop in Egypt. Consequently, avoiding dunning the guest to pay more than the specified prices and providing the services to for the guest by these specified prices.
- Lowering customs and tax exemption on floating hotels and cruise ships to avoid the negative effect of changes Egyptian pound exchange rate on the international tourist demand.

- Taking action responding to the decision of the Egyptian pound floating by raising the interest rates to control the rise in prices of services and goods; thus, reducing the negative effects of the Egyptian pound floating.
- Announcing the customs dollar (the customs dollar is a price determined by the ministry of finance to face price fluctuations to enable companies and ministries to pay their obligations at affixed price for specified period) in order to reduce the shock of importers and to stabilize the Egyptian pound exchange.

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