Tourism in Kingdom of Saudi Arabia: Facts and Challenges for a Promising Sector

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Abstract: This paper explores a number of tourism variables such as visitor exports services, travel and tourism consumption and demand, tourism gross domestic product (GDP) throughout the period 1988-2011. In addition to, tourism arrivals, tourism expenditure and percentage of Saudi employment in the tourism sector throughout the period 2012-2017 in KSA. Moreover, services related to tourism sector such as numbers of transport and rent a car companies, recreations, restaurants, travel agencies, furnished apartment units and hotels, in addition to, their value added are analyzed as well throughout the period 2007-2011. The pattern of the earlier mentioned variables is investigated by employing data in levels and first differences. It then predicts their future values throughout the next decade (2012-2023) via employing the Double Exponential Smoothing technique. The results suggest that, tourism variables such as visitor exports services, travel and tourism consumption and demand and tourism gross domestic product are estimated throughout the period 2012-2023 at about (US $ billion) 7.1, 18.8, 58.1 and 13.3 (on average) respectively. Whereas, for tourism arrivals (8.5 million arrivals), tourism expenditure (30 US $ billion) and percentage of Saudi employment (29%) throughout the period 2012-2017. In addition, the prediction for services related to tourism sector (during the period 2012-2017) such as numbers of hotels, furnished apartment units, travel agencies, restaurants, rent a car and transport companies and recreations estimated at 1050, 938, 1917, 28284, 533, 2010 and 12983 respectively. Whereas, total value added for accommodation, food services, recreation, travel agencies and transportation estimated at about (US $ billion) 2.9, 5.2, 0.8, 0.2, and 5.6 respectively(during the same period). Moreover, it investigates the main difficulties facing this important industry and the suggested ways to overcome them.

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1. Introduction

As noted by Algahamdi (2007), tourism has been one of the most important and consistent growth industries worldwide, and is currently held to be one of the major service industries (Bansal and Eiselt 2004; Zang *et al*., 2004). Tourism has been a crucial factor in the economic development strategy of many countries (Lea, 1998). As tourism can generate income, employment, tax revenue and foreign exchange earnings, many countries have joined in the competition of attracting foreign tourists. For instance, in almost all the Mediterranean countries, tourism has now become one of the main sources of income (Howells, 2000).

In 2011, the world travel and tourism industry is estimated to contribute about 9.2% (US$5,751 billion) to Gross Domestic Product (GDP), with an estimated increment at (US$11,151 billion) by 2020. Whereas, world travel and tourism economy employment is estimated at 235,758,000 jobs in 2011, representing 8.1% of total employment, or 1 in every 12.3 jobs, and by 2020, there will be 303,019,000 jobs. For visitor exports, world travel and tourism is estimated to generate about 6.1% of total exports (US$1,086 billion) in 2011, and it is predicted that this will rise to US$2,16 0billion (5.2% of total) in 2020. Meanwhile, in 2011, world travel and tourism capital investment is estimated at US$1,241 billion, or 9.2% of total investment, with a projected figure estimated at US$2,757 billion or 9.9% of total investment in 2020 (World Travel and Tourism Council, 2011).

The paper is structured as follows. The next section is devoted to illustrate the aim of the paper. Data collection is the subject of part three of this paper. Section four briefly offers an overview for tourism sector. The fifth section discusses the employed methodology for future prediction. Section six investigates the problems facing tourism sector and suggested ways to overcome them. The seventh and last section is devoted to conclusion.

2.Aim of the Paper

The aim of this paper is twofold. First, it attempts to portrait a picture for the current status of main tourism variables such as tourism expenditure, visitor exports services, travel and tourism consumption and demand, tourism gross domestic product (GDP), tourism arrivals and employment throughout the period 1988-2011 in KSA. In addition to, services related to tourism sector such as numbers of transport and rent a car companies, recreations, restaurants, travel agencies, furnished apartment units

and hotels, as well as their value added throughout the period 2007-2011. Second, to predict the volumes of such variables for the next decade, that might be important for policy advisors.

3.Data

Data covering the period of study was mainly obtained from World Travel and Tourism Council (WTTC) on line statistical database, Tourism Information and Research Centre (MAS) and published data.

4.The Tourism Sector in KSA: An Overview

4.1 Tourism Geographical Locations

Owing to Algahamdi (2007), the area of the kingdom is about 2.240.000 K². It represents 80% of the total area in the Arabian Peninsula. This vast area leads to diversity in the climate, that enable the Saudi to have several kinds of tourism attractions that could meet the diversity of tourists need. The Kingdom of Saudi Arabia is surrounded by the Red Sea in the west, the Arabian Gulf in the east. This unique location determines the level of marketing activities, and facilitates contact with other countries through trading and commerce.

Figure (1): Tourism Locations In Ksa

The kingdom's climate varies from one area to another; the western region, for instance, is characterized by hot summers and humidity with moderate winter and little rain. The eastern region has a hot summer with high humidity. The central region has very high and dry temperatures in summer and a dry cold in winter. The southern region is characterized by a moderate climate in the summer and severe cold in winter (see Figure 1). This explains why most tourists tend to go to moderate regions in the summer and leave the hottest regions. They favour Asir and Al-Baha areas. Moreover, the kingdom is distinguished internationally with wide deserts, high mountains, hills, and plains, like Alrubel Khali desert, Alduhna and Alnofooz. The highest mountains are found all through the part of the kingdom nearest to the western coast, and hills are found on the eastern and southern coasts, Algahamdi (2007).

4.2 Tourism Patterns for Number of Arrivals, Tourism Expenditure, Numbers of Tourism Establishments, Gross Domestic Product (GDP), Tourism Value Added (TVA) by Sector Activities and the Percentage of Saudis Employment in Tourism Sector.

Total Number of Arrivals and Tourism Expenditure in the Country

Figure 1A shows the ranking of Arab countries compared to main world tourism destinations concerning the total number of arrivals throughout the period 1995-2011 (on average). Saudi Arabia is ranked the first (8.9 million arrivals) among Arab countries next come Egypt (7.5 million arrivals) whereas Oman and Lebanon reached the lowest number of arrivals (1 million arrivals). However, total arrivals for other Arab countries vary between 2.7 and 5.7 million arrivals (on average).

Moreover, the number of tourism arrivals to the Arab countries is relatively low if compared to other countries such as Greece and Turkey (15.6 million arrivals on average), the UK (28 million arrivals) and Spain (53.2 million arrivals). It is worth mentioning that the number of tourism arrivals to France (76.8 million arrivals) is double that recorded for all Arab counties (39 million arrivals) during the period 1995-2011 (on average). These results mirrors tourism expenditure illustrated in Figure 2A, in which Egypt and Saudi Arabia achieved the highest tourism expenditure in the country estimated at about US $ 6.65 billion (on average) throughout the period 1995-2011. For other leading destinations such as France, it is obvious that tourism expenditure there is estimated at about 150% of what is devoted for all Arab countries. The same picture could be seen in Spain.

However, the total number of arrivals to the Kingdom increased significantly from about 4439,000 arrivals during the period 1995-2000 (on average) to 7641,000 arrivals during the period 1996-2005 (on average) and further to 11636,000 arrivals during the period 1996-2011 (on average) see Figure 2C. For tourism expenditure throughout the period 2003-2008, Figure 2D depicts gradual increase estimated at 27%, 29% and 44% during the periods 2003-2004, 2005-2006 and 2007-2011 (on average) respectively.

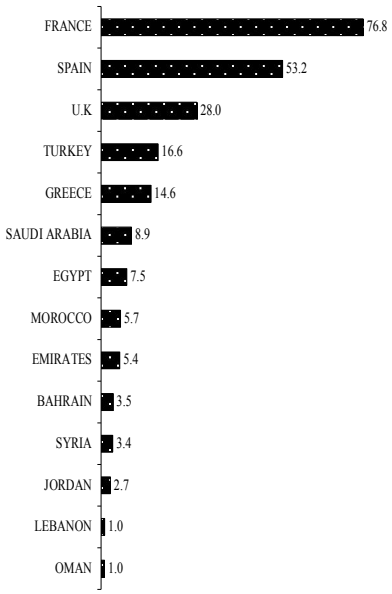


Figure (2A): Total Number Of Arrivals (In Millions) During The Period 1995-2011(On Average)

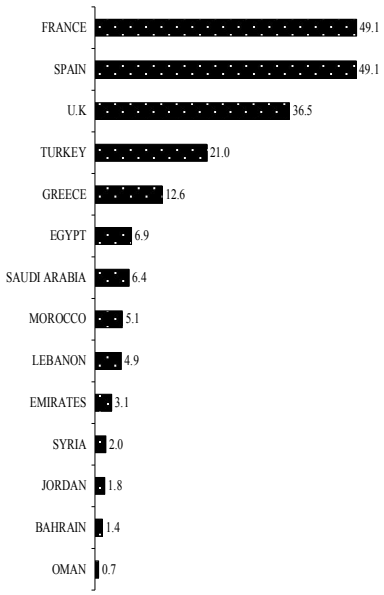


Figure (2B): Tourism Expenditure In The Country (In Billion US.$) During The Period 1995-2011 (On Average)

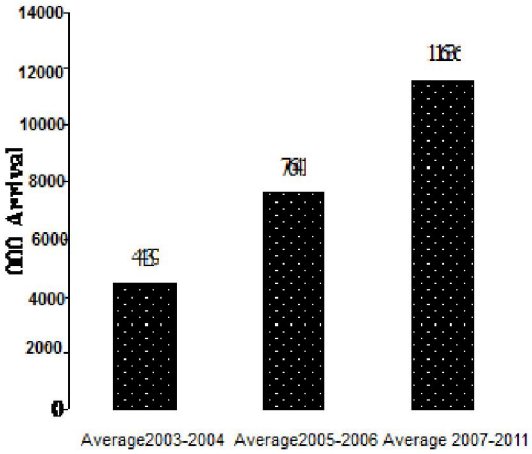


Figure (2C): KSA Tourism Arrival Pattern throughout the period 2003-2011

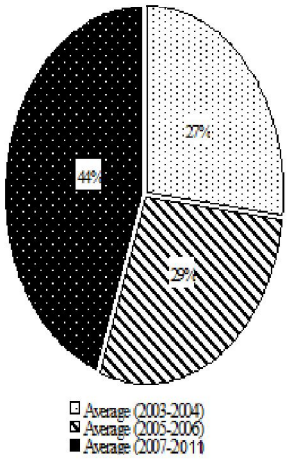


Figure (2D): KSA Expenditure Pattern throughout the period 2003-2011

Source: Compiled and calculated by authors from MAS publications.

Tourism Establishments

Table 1 shows the trend of tourism establishments during the period 2007-2011. relying on the percentage change that happened in the second period (2010-2011) compared to the first period, recreation sector is ranked the first, as it increased significantly from 429 (on average) during the first period to about 6846 (on average) throughout the second period 2010-2011. In other words, there is an increment of nearly 1496% during the second period compared to the first period. Next come the number of transport companies with a percentage change 180% during the same periods. Followed by the number of furnished apartments and apartments (about 61% each), travel agencies (41%), rooms (13%). For tourist restaurants, hotels and rent a car company (about 10% each). These results are well mirrored and portrayed in Figure 3.

Table (1): Tourism Establishments over the period 2004-2008 in KSA

Tourism Establishment	2007	2008	2009	2010	2011	Average (2007-08) I	Average (2010-011) II	Change II-I	% Change
Tourist Restaurants	23654	23654	24600	25584	26266	23654	25925	2271	**10**
Furnished Apartments	2204	2204	2437	2806	4342	2204	3574	1370	**62**
Hotels	953	1049	1070	1165	1063	1001	1114	113	**11**
Travel Agencies	1174	816	1045	1320	1488	995	1404	409	**41**
Rent a Car Company	444	444	462	480	493	444	487	43	**10**
Recreation	429	429	446	6708	6984	429	6846	6417	**1496**
Transport Company	297	297	309	687	976	297	832	535	**180**
Youth Hostels	20	20	20	20	20	20	20	0	**0**
Student Hostels	21	21	21	21	21	21	21	0	**0**
Rooms	96144	104093	108428	124662	102319	100119	113491	13372	**13**
Apartments	51768	51768	58238	67988	98242	51768	83115	31347	**61**

Source: Compiled and calculated by authors from MAS publications.

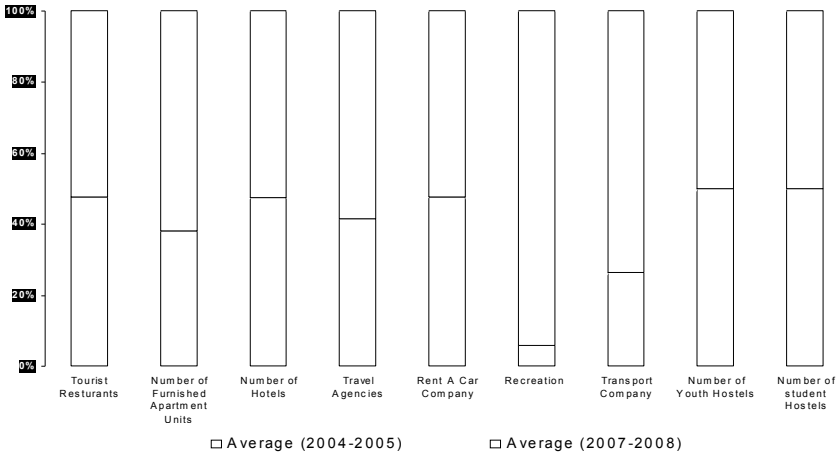


Figure (3): Number of Tourism Establishments during the period 2007-2008 compared to 2010-2011 (on average)
Source: Compiled and calculated by authors from MAS publications.

Tourism Gross Domestic Product (GDP)

Figure 4 depicts a gradual increase in tourism GDP in KSA increased from about 3.8 billion US$ during the period (1988-1995 on average) to nearly 4.7 billion US$ throughout the period (1996-2000 on average) and further to 8.1 and 11.1 billion US$ during the periods 2001-2005 and 2006-2011 (on average) respectively.

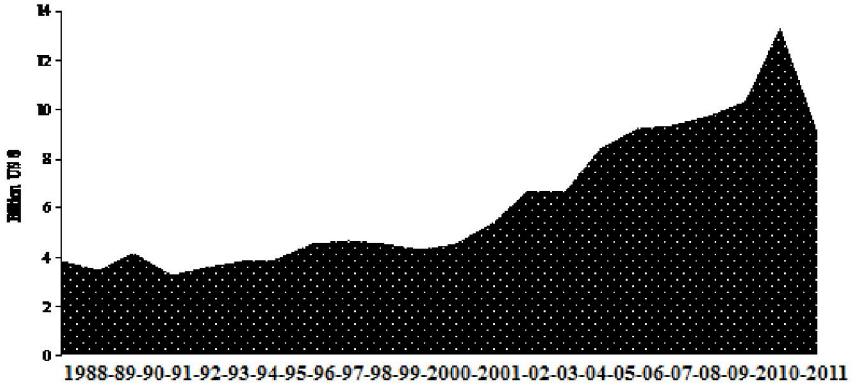


Figure (4): Tourism GDP in KSA during the period 1988-2011
Source: Calculated from MAS publications.

Tourism Value Added by Sector

Table 2 and Figure 5 illustrate the trend of total value added induced by tourism over the period 2007-2011. They depict that the total value added for all sectors (except travel agencies) have increased during the period 2010-2011 compared to their original level (2007-2008) on average. Not surprisingly, the total value added contributed by recreation services showed a remarkable increasing trend throughout the period 2004-2008, in other words, it increased during the period 2010-2011 compared to 2007-2008 by about 200%. This result could be explained by the significant increase in the number of recreations by about 1496% during the same periods (see Table 1 and Figure 3). Next come, the percentage change for transport services (62.3%), accommodation (9.3%) and food services (6.1%).

However, it is worth mentioning that food and transport services are ranked the first in their contribution to tourism total value added estimated at 16.5 billion US$ (relying on 2010-2011 on average). Then comes the accommodation sector (9.4 billion US$), recreation sector (2.8 billion US$) and travel agencies sector (1 billion US$) during the same period.

Percentage of Saudis Employment in Tourism

Figure 6 shows an increasingly trend of the percentage of Saudis employment in the tourism sector. In which it raised from nearly 20% in 2007 and 2008 to 22% in 2009 and 2010 and further to 24.4% in 2011. This result mirrors the success in achieving the national goal of Saudization the economic activities.

Table (2): Tourism Total Value Added (TVA) According To Tourism Activities During The Period (2007-2011)

Tourism Value Added (Billion S$)	TVA Accommodation	TVA Food Services	TVA Recreation Services	TVA Travel Agencies	TVA Transport Services
2007	8.5	16.7	-	1.4	9.7
2008	8.7	14.2	0.9	1.5	11
2009	8.6	12.8	0.9	1.4	11.7
2010	9.2	16.1	2.7	1.0	16.5
2011	9.6	16.7	2.8	1.0	17.1
Average (2007-08) I	8.6	15.5	0.9	1.5	10.4
Average (2010-011) II	9.4	16.4	2.8	1.0	16.8
Change II-I	0.8	0.9	1.8	-0.5	6.5
%Change	9.3	6.1	199.6	-33.3	62.3

Source: Calculated from MAS publications.

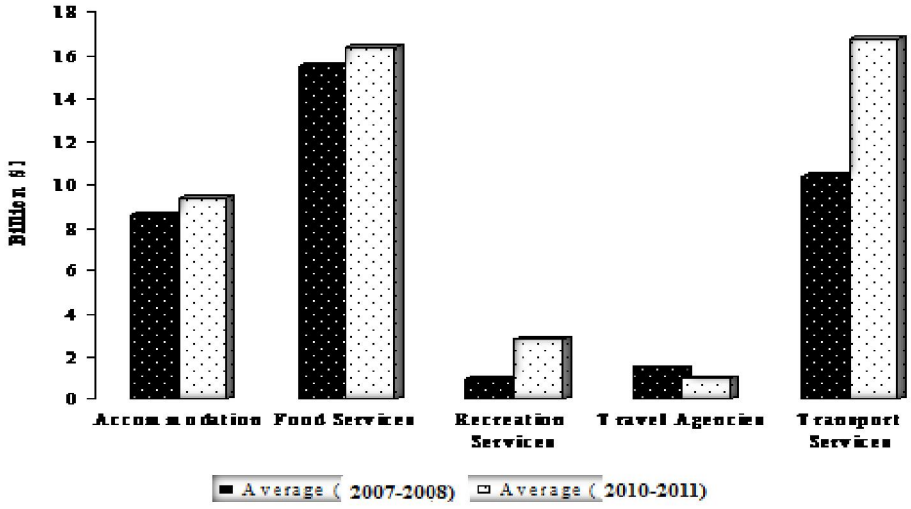


Figure (5): Tourism Total Value Added (Tva) During The Period 2007-2008 Versus The Period 2010-2011 (On Average)

Source: Calculated from MAS publications.

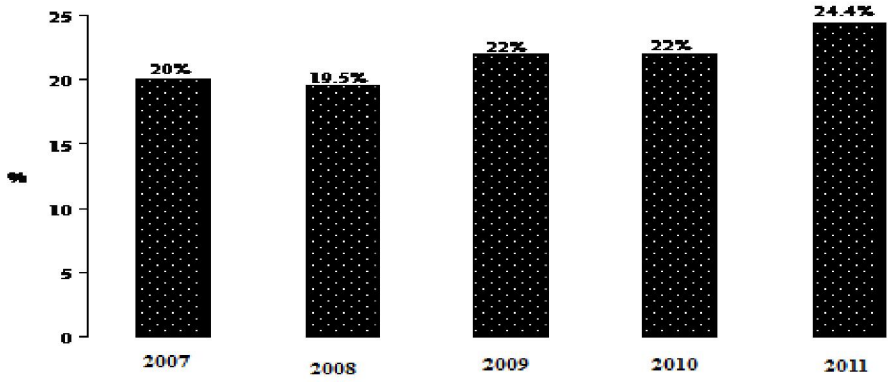


Figure (6): Percentage of Saudis Employment in Tourism Sector throughout the period 2007-2011
Source: Calculated from MAS publications.

4.3 Testing Data in Levels and First Differences

In this section we simply attempt to describe the pattern for a number of tourism variables such as visitor exports services, travel and tourism consumption and demand, tourism gross domestic product (GDP), tourism arrivals and employment throughout the period 1988-2011. Regardless the limited available data series (2007-2011), the paper carried out a regression analysis for services related to tourism sector (such as numbers of transport and rent a car companies, recreations, restaurants, travel agencies, furnished apartment units and hotels, in addition to, their value added, tourism expenditure and percentage of Saudi employment). Anyhow, there is no other option to have a preliminary picture for such tourism variables, thus we expect to have statistically insignificant *t ratios* for either (or both) α *and* β.

Testing Data in Levels

The paper assumes that (GDP for example) of tourism Y_t may be described by simple linear trend model $Y_t = \alpha + \beta T + \mu_t$ where the slope is given by β, T is a time trend and μ_t is a random variable of zero mean and constant variance. Consequently we can recover the underlying trend by regressing the variable (GDP) on the time trend *(T)*.

Table (3) show the modelling of the regression analyses (using level data) for visitor exports services, travel and tourism consumption and demand, tourism gross domestic product (GDP), tourism arrivals and employment throughout the period 1988-2009. The results depicts that all of the series appear to have a rising trend over time.

Results from the *t* test results (at 1% level of significant), depicts an evidence of statistical significance in both slope and intercept coefficients for the majority of investigated variables. Figure (7) shows the plotting of the actual values and regression results (estimated in Table 3) for visitor exports services, travel and tourism consumption and demand, tourism gross domestic product (GDP), tourism arrivals and employment models. For example, the sign and magnitude of the slope and intercept coefficients for travel and tourism consumption, tourism GDP, tourism arrivals and tourism employment are significantly confirming the gradual increase in their trend. Whereas, visitor exports services, travel and tourism demand is also confirmed by the rise in its slope. These results were also confirmed by *F* test results (at 1% level of significant) see Table 3.

As expected, most other variables including total value added for tourism sectors show an evidence of statistical insignificance in slope or/and intercept coefficients except for rent a car company, restaurants and total value added for tourism sector (see Tables 4 and 5). As mentioned earlier, this result is presumably due to the few observations available for the regression analysis.

Testing data in first differences

Plosser and Schwert (1987) argued that with most economic time series it is always best to work with differenced data rather than data in levels. The reason is that the errors in the levels equation will have variances increasing over time and consequently the properties of the least squares estimators (*OLS*) as well as the tests of significance are invalid.

Granger and Newbold (1976) showed using artificially generated data where *y, x* and the error u are each generated independently so that there is no relationship between *y* and *x,* that the correlation between y_t and y_{t-1} and x_t and x_{t-1} are very high and u_t and u_{t-1} are very high. Although there is no relationship between *y* and *x* the regression of *y* on *x* gives a high R^2 but a low DW Statistic. When the regression is run in first differences, the R^2 is close to zero and the DW statistic is close to 2, thus demonstrating that there is indeed no relationship

between y and x and that the R^2 obtained earlier (level analysis) is spurious. Thus regression in first differences might often reveal the true nature of the relationship between y and x. On the other hand, suppose that the level equation is correctly specified. Then all differencing will do is produce a moving average error and, at worst, ignoring it will give inefficient (but unbiased) estimates. Estimating the first difference equation by least squares gives us consistent estimates. Therefore it is better to use differencing and regressions in first differences, rather than regressions in levels with time as an extra explanatory variable (Maddala, 2001).

Table (3): Estimated Coefficients for Travel and Tourism Trends for Export Visitors Services, Consumption, Demand, GDP, Employment and Arrivals in KSA Using Level and First Differences Data during 1980-2011

Coefficients				*SE*	*T ratio*	*P value*	*F (Calculated)*
Exports (Visitors) Services	***Levels***	**α**	-0.0048	0.50	-0.0095	0.9925	45.3
		β	0.26	0.038	6.73	1.51E-06	
		R^2	0.70				
	First Differences	**γ**	-0.1	0.41	-0.22	0.8276	0.50
		Ω	0.02	0.03	0.70	0.4925	
		R^2	0.25				
Travel and Tourism Consumption	***Levels***	**α**	3.25	0.58	5.55	1.95E-05	105.2
		β	0.46	0.045	10.26	2.06E-09	
		R^2	0.84				
	First Differences	**γ**	0.06	0.54	0.12	0.9087	0.50
		Ω	0.03	0.04	0.68	0.5039	
		R^2	0.20				
Travel and Tourism Demand	***Levels***	**α**	4.12	2.91	1.42	0.1724	46.6
		β	1.51	0.22	6.83	1.23E-06	
		R^2	0.70				
	First Differences	**γ**	0.85	3.01	0.28	0.7801	0.91
		Ω	0.03	0.23	0.10	0.9146	
		R^2	0.10				
Tourism GDP	***Levels***	**α**	1.67	0.56	2.98	0.0073	86.39
		β	0.39	0.043	9.29	1.07E-08	
		R^2	0.81				
	First Differences	**γ**	0.18	0.61	0.30	0.7641	0.90
		Ω	0.005	0.05	0.12	0.9083	
		R^2	0.10				
Tourism Arrivals	***Levels***	**α**	1709.4	665.2	2.57	0.0045	85.4
		β	722.0	78.1	9.24	8.34E-07	
		R^2	0.88				
	First Differences	**γ**	-152.3	586.4	-0.25	0.7998	0.70
		Ω	147.3	73.8	1.99	0.0714	
		R^2	0.36				
Tourism Employment	***Levels***	**α**	208.9	17.11	12.21	9.94E-11	42.7
		β	4.65	1.30	3.57	0.0019	
		R^2	0.83				
	First Differences	**γ**	-1.85	15.1	-0.12	0.9036	0.88
		Ω	0.17	1.20	0.14	0.8885	
		R^2	0.09				

Source: Calculated from FAO online database; * Significant at 5% level of significance, ** Significant at 1% level of significance

Given that the levels data are characterised by some form of trending behaviour, it will look quite different to the data in differenced form. However, while the parameters are theoretically the same, their standard errors are not and hence statistical significance of the parameters may be quite different from that obtained using the data in levels. Since the levels data is trending, this will tend to over-state the statistical significance of any relationship using levels data. In essence, estimation of the parameters using differenced data is likely to lead to fewer statistically significant coefficients. For instance suppose that we have the model defined above.

$$Y_t = \alpha + \beta T + U_t$$

where u_t are independent with mean zero and common variance σ^2. If we difference the above equation, we get

$$(Y_t - Y_{t-1}) = \alpha + \beta (T_t - T_{t-1}) + (u_t - u_{t-1})$$

$$\Delta Y_t = \alpha + \beta \Delta T_t + \Delta u_t$$

which can be written as,

$$\Delta Y_t = \gamma + \Omega T_t^* + v_t$$

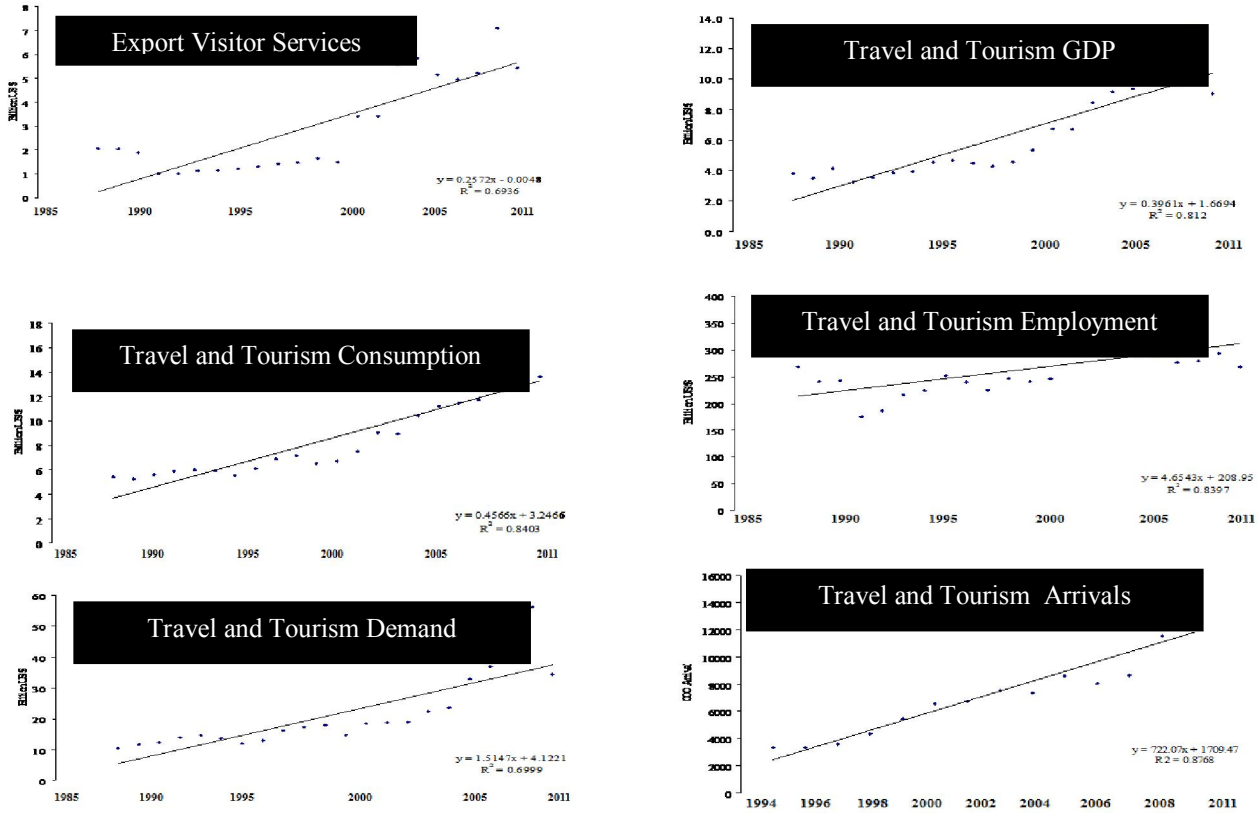


FIGURE (7): Travel and Tourism Trends for Export Visitors Services, Consumption, Demand, GDP, Employment and Arrivals in KSA (*Using Data in Levels*) during the period 1988-2011
Source: MicroFit4 Computer Software.

Table (4): Estimated Coefficients For Travel And Tourism Services In KSA Using Level Data During 2007-11

Coefficients			*SE*	*T ratio*	*P value*	*F (Calculated)*
Transport Companies	**α**	-11.2	164.75	-0.07	0.9500	12.38
	β	174.8	49.67	3.51	0.0389	
	R^2	0.80				
Rent a Car Company	**α**	424.4	6.16	68.86	6.75E-06	51.99
	β	13.4	1.86	7.21	0.0004	
	R^2	0.94				
Recreations	**α**	-2817.5	2077.52	-1.35	0.2680	9.58
	β	1938.9	626.39	3.09	0.0534	
	R^2	0.76				
Restaurants	**α**	22605.4	332.08	68.07	6.99E-06	51.05
	β	715.4	100.13	7.14	0.0006	
	R^2	0.94				
Travel Agencies	**α**	829.0	223.66	3.71	0.0341	2.81
	β	113.2	67.44	1.68	0.1918	
	R^2	0.48				
Furnished Apartment Units	**α**	1335.2	555.14	2.41	0.0954	8.50
	β	487.8	167.38	2.91	0.0617	
	R^2	0.74				
Hotels	**α**	959.2	64.70	14.83	0.0006	2.70
	β	33.6	19.51	1.722	0.1834	
	R^2	0.50				
Travel Tourism Services	**α**	23365.5	2843.04	8.21	0.0037	16.45
	β	3477.1	857.20	4.05	0.0270	
	R^2	0.85				

Table (5): Estimated Coefficients For Tourism Total Value Added In KSA Using Level Data During 2007-11

Coefficients			*SE*	*T ratio*	*P value*	*F (Calculated)*
TVA Accommodation	**α**	8.11	0.26	36.0	5E-05	15.74
	β	0.27	0.07	4.01	0.0286	
	R^2	***0.84***				
TVA Food Services	**α**	14.73	2.07	7.1	0.0057	0.09
	β	0.19	0.62	0.30	0.7805	
	R^2	0.03				
TVA Recreation Services	**α**	-0.02	0.66	-0.02	0.9835	9.37
	β	0.74	0.24	3.06	0.0922	
	R^2	0.82				
TVA Travel Agencies	**α**	1.65	0.16	10.07	0.0021	7.29
	β	-0.13	0.049	-2.70	0.0738	
	R^2	0.71				
TVA Transportation Services	**α**	7.11	1.25	5.71	0.0107	29.21
	β	2.03	0.38	5.41	0.0124	
	R^2	0.90				
TVA For Tourism Services	**α**	30.86	3.53	8.75	0.0031	8.46
	β	3.09	1.061	2.91	0.0062	
	R^2	0.73				

Where the slope is given by Ω, T is a time trend and v_t is a random variable of zero mean and constant variance

Table 3 shows the parameter's coefficients estimated by regressions in the first differences model. The results for visitor exports services, travel and tourism consumption and demand, tourism gross domestic product (GDP), tourism arrivals and employment throughout the period 1988-2009, the same variables that previously presented in Figure 7, but now in differences. The results show that the estimated coefficients of the regressors γ and Ω are similar (to large extent) in magnitude and signs to those estimated in levels data.

For example, the estimated coefficients for travel and tourism consumption in levels, α and β, are 3.25 and 0.46 respectively and they are "statistically significant" at the 1% level, whereas when the difference model is used to estimate those parameters, they are estimated at 0.06 and 0.03 respectively, but are not statistically significant at either at 5% or 10%. Therefore, the results indicate that there is not enough evidence to detect the presence of tourism consumption trend at conventional levels of confidence using the differenced data. The exercise of estimation in both levels and first differences is instructive since it highlights the effect that trending data has on significance levels.

5.Double Exponential Smoothing: Methodology and Results for Future Prediction.

5.1 Methodology

Exponential smoothing is a very popular scheme to produce a smoothed Time Series. Exponential Smoothing assigns exponentially decreasing weights as the observations get older. In other words, recent observations are given relatively more weight in forecasting than the older observations. Double exponential smoothing is defined as Exponential smoothing of Exponential smoothing. If the trend as well as the mean is varying slowly over time, a higher-order smoothing model is needed to track the varying trend. The simplest time-varying trend model is Brown's linear exponential smoothing (LES) model, which uses two different smoothed series that are centered at different points in time. The forecasting formula is based on an extrapolation of a line through the two centers.

The algebraic form of the linear exponential smoothing model, like that of the simple exponential smoothing model, can be expressed in a number of different but equivalent forms. The "standard" form of this model is usually expressed as follows: Let S' denote the singly-smoothed series obtained by applying simple exponential smoothing to series Y. That is, the value of S' at period t is given by:

$S'_{(t)} = \alpha Y_{(t)} + (1-\alpha)S'_{(t-1)}$

(Recall that, under simple exponential smoothing, we would just let $\acute{Y}(t+1) = S'(t)$ at this point.) Then let S" denote the doubly-smoothed series obtained by applying simple exponential smoothing (using the same α) to series S':

$S''_{(t)} = \alpha S'_{(t)} + (1-\alpha)S''_{(t-1)}$

Finally, the forecast $\acute{Y}(t+1)$ is given by:

$\acute{Y}_{(t+1)} = a_{(t)} + b_{(t)}$ where:

$a_{(t)} = 2S'_{(t)} - S''_{(t)}$ ...the estimated level at period t

$b_{(t)} = (\alpha/(1-\alpha))(S'_{(t)} - S''_{(t)})$ ...the estimated trend at period t.

Forecasts with longer lead times made at period t are obtained by adding multiples of the trend term. For example, the k-period-ahead forecast (i.e., the forecast for $Y_{(t+k)}$ made at period t) would be equal to $a_{(t)} + kb_{(t)}$. For purposes of model-fitting (i.e., calculating forecasts, residuals, and residual statistics over the estimation period), the model can be started

up by setting $S'_{(1)}=S''_{(1)}=Y_{(1)}$, i.e., set both smoothed series equal to the observed value at t=1.

The double exponential smoothing technique has been widely used by many researchers in various aspects. For example, in Saudi Arabia, the effect of development of date production and consumption was assessed via employing such tool by Al-Obaid (1991). Whereas, exchange rate forecasting was assessed by Moosa (2000). In addition, agricultural drought for the Canadian prairies using climatic and satellite data was predicted by Kumar (1999). In the United States of America, the attendance for three major national parks was forecasted (Chen, 2008). A more recent study by Stefani (2009) predicted the score difference versus score total in rugby and soccer.

5.2 Results

The prediction analyses in this section aim to quantify the volumes of production consumption, Imports and exports, in addition to, the expected cultivated area and productivity during the next decade. The predicted results presented in Table 9 and plotted in Figure 8 may help policy advisors to be aware of possible patterns.

However, the results suggest that: (a) an increase in exports (visitors) services during the next decade by 26% than its level during the period (2008-2011 on average), that amounts about 1.4 billion US$; (b) an increase in travel and tourism consumption by only 46%, accounting an increase from 12.8 billion US$ to 18.8 billion US$ (during the same earlier mentioned periods); (c) a rise in travel and tourism demand by about 50%; (d) an increase of tourism GDP during the next decade than its level during the period (2008-2011 on average) by 28%% accounting about 2.9%; (e) a rise in the number of arrivals, tourism expenditure in the country and percentage of Saudi employment in tourism during the period 2012-2017 by nearly 26%, 326% and 33% respectively than its level during the period (2008-2011 on average); (f) an increase in tourism total value added during the period 2009-2014 than its level during the period (2008-2011 on average) for accommodation, food services, recreation and transportation by about 20%, 28%, 63% and 47% respectively accounting in total about 3.8 US$ billion, whereas, a fall in TVA for travel agencies by about 50% accounting 0.16 US$ billion; (g) the numbers furnished apartment units and transport companies are estimated to increase by about 2 times, while for travel agencies 64%, tourist restaurants 13%, recreations 89% and finally a fall in the numbers of hotels by about 37 hotels.

6. Problems and Ways to Enhance the Tourism Sector in KSA.

Owing to Sadi and Henderson (2005), the service sector is the backbone of tourism, yet there is room for great improvement in standards. While tourism traffic and revenue have grown substantially, the quality of service provided by hotels, restaurants, and travel agencies often remain disappointing. It is therefore imperative that initiatives be launched to raise standards and this is linked to the provision of education and training. There is an urgent need for vocational and executive training in the hospitality and tourism areas. Both panels agreed that new colleges to prepare management and technical staff should be opened. Major universities could offer hospitality and tourism courses incorporated into their existing business curriculum, or even create new departments to run specialized programs. Leading hotels, restaurants and travel agencies should also encourage their staff to register for professional certification and upgrade their skills and competences.

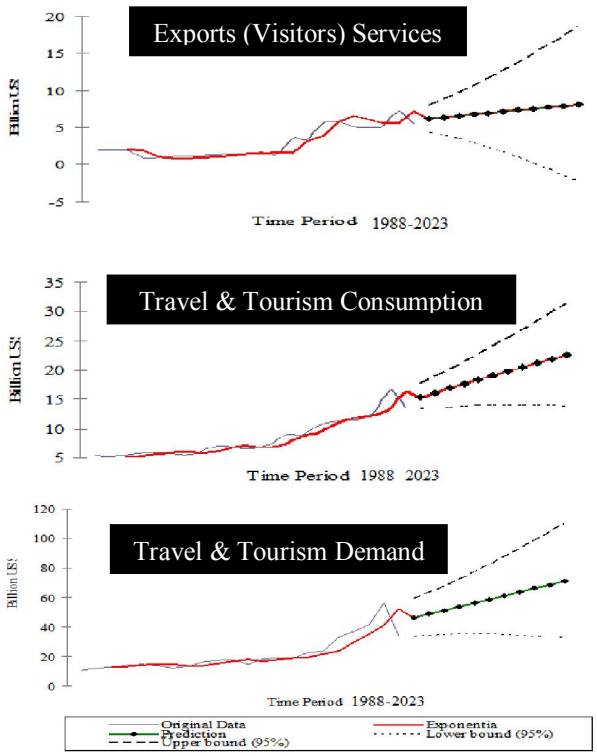
Other study developed by Dabour (2003), suggests a lack of consistent tourism strategies and policies. In other words, there are difficulties in getting an integrated tourism policy. Thus, there is policy conflict between the government departments and the tourism private agencies, in addition to the lack of effective administration, regulation and institutional frameworks of tourism activity.

However, tourism heritage assets alone cannot make a successful tourism industry, thus this heritage should be supported by awareness, knowledge, professional administration and effective framework for the tourism industry.

7.Recommendations

As cited by Razaghi and Alinejad (2012), the paper argues the following recommendation:

1. Upgrading the qualitative and quantitative capacities for touristic facilities, especially the number of foreign and domestic tours.
2. Developing and improving of advertising programs in order to introduce KSA tourism.
3. Providing the conditions for the self-sufficiency in the tourism industry.
4. Reforming the regulations of importing and deporting foreigners, especially the available rules on the input ports of country.
5. Activating the private sector.
6. Educating manpower to train specialized personnel.
7. Creating the credit card network for the welfare of foreign tourists.
8. Creating information base and touristic data base.
9. Taking into account tourism development strategies as indicated in Table 10



Source: MicroFit4 Computer Software.

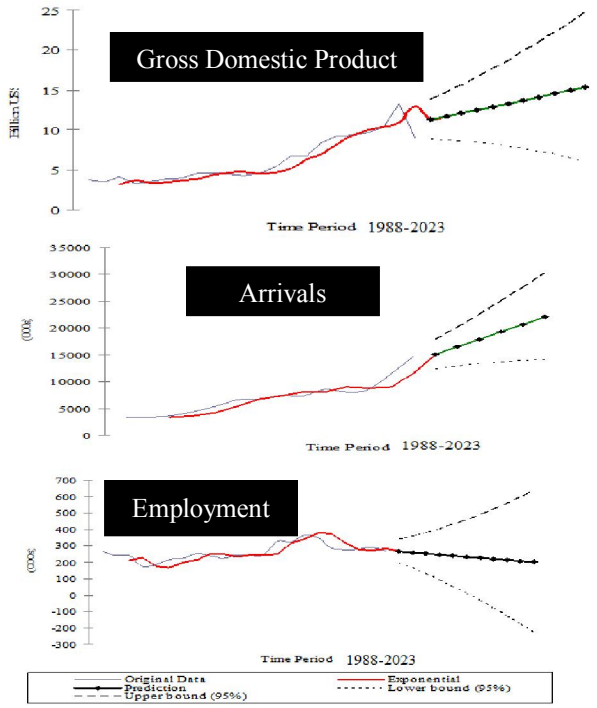
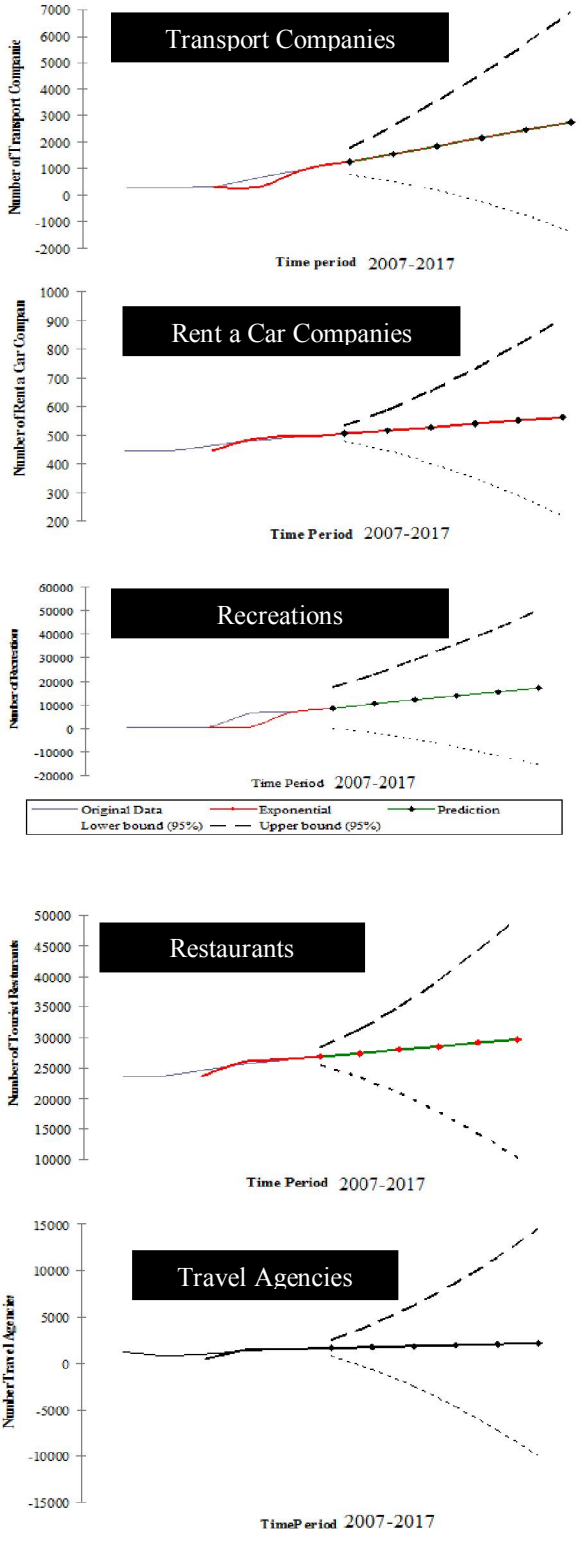
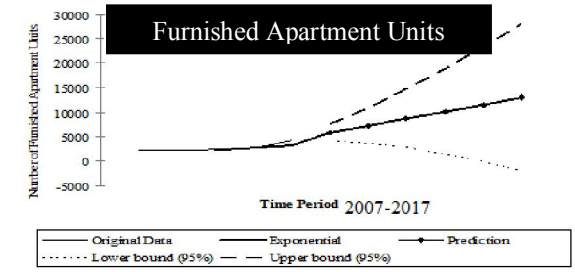
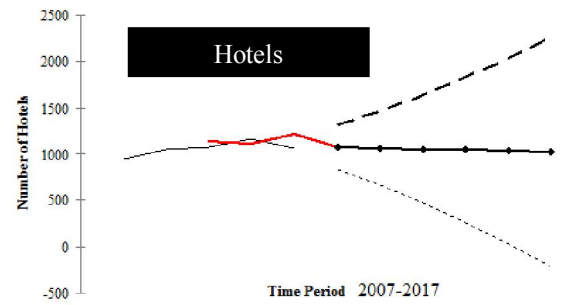


FIGURE (8A): Predictions for Travel and Tourism Trends for Export Visitors Services, Consumption, Demand, GDP, Employment and Arrivals (Using Double Exponential Smoothing) during the period 1988-2023







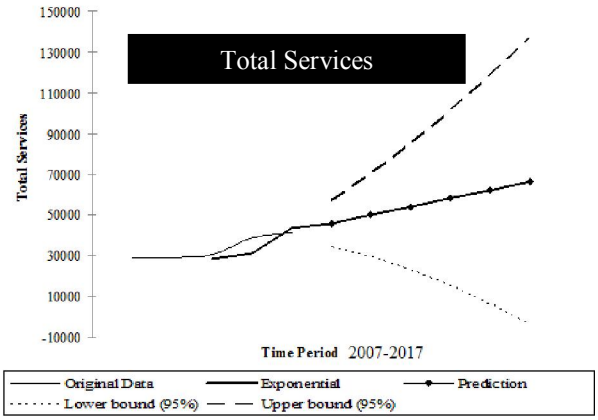
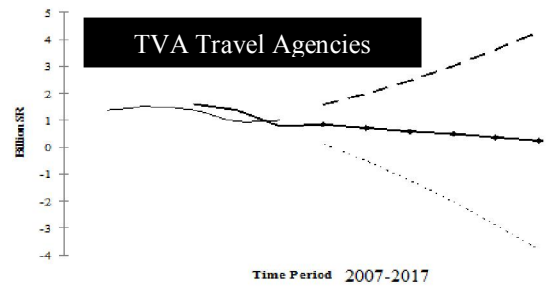
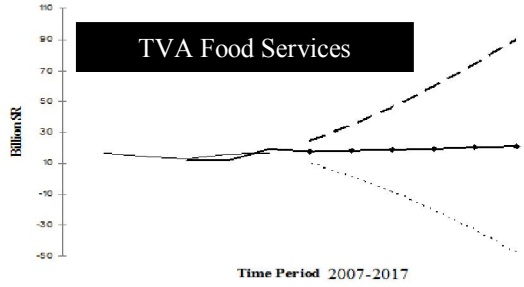
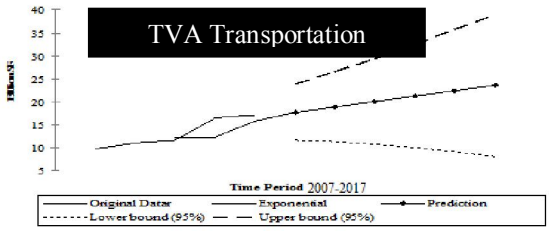
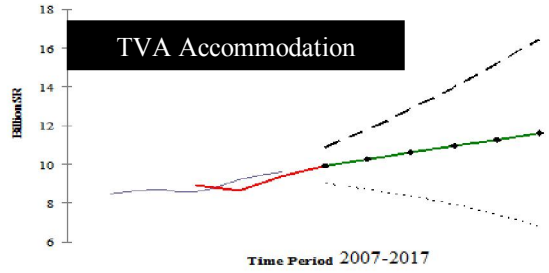


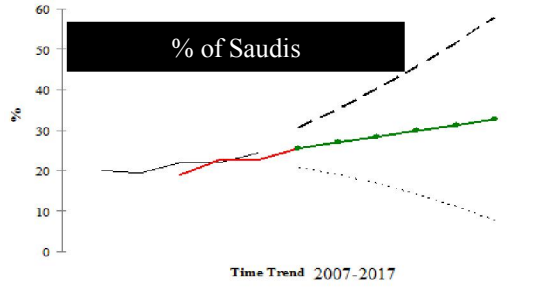
FIGURE (8B): Predictions for Transport and Rent a Car Companies, Recreations, Restaurants, Travel Agencies, Furnished Apartment Units, Hotels and Total Tourism Services (Using Double Exponential Smoothing) during the period 2007-2017











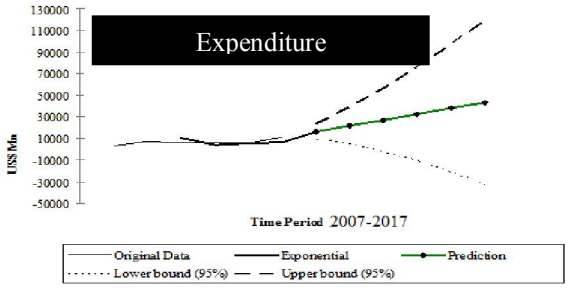


FIGURE (8C): Predictions for Total value Added Trends for Travel Agencies, Food Services, Transportation, Accommodation, Percentage of Saudis Employment in Tourism and Expenditure (Using Double Exponential Smoothing) during the period 2007-2017

Table (9): Estimated Values throughout the next Decade for Tourism Variables (Using Double Exponential Smoothing Technique)

year	Exports (Visitors) Services	Travel & Tourism Consumption	Travel & Tourism Demand	Gross Domestic Product	year	Arrivals - Thousands	Tourism Expenditure in the Country - US$ Mn	% of Saudis	Total Value Added (Billion $US)					Numbers						
									Accommodation	Food services	Recreation	Travel Agencies	Transportation	Number of Hotels	Number of Furnished Apartments Units	Travel Agencies	Tourist Restaurants	Rent a Car Company	Transport Company	Recreation
2012	7.1	16.2	52.2	13.0	**2012**	15084	16415	25.6	2.68	4.70	0.35	0.24	4.81	1072	5781	1613	26849	505	1272	8701
2013	6.2	15.5	46.2	11.3	**2013**	16486	21801	27.0	2.78	4.89	0.48	0.19	5.11	1063	7221	1735	27423	516	1567	10413
2014	6.4	16.2	48.7	11.7	**2014**	17888	27188	28.5	2.86	5.11	0.67	0.16	5.43	1054	8662	1856	27997	528	1862	12126
2015	6.6	16.9	51.2	12.1	**2015**	19290	32574	29.9	2.95	5.30	0.89	0.14	5.73	1045	10103	1978	28570	539	2158	13839
2016	6.7	17.6	53.7	12.5	**2016**	20692	37960	31.3	3.05	5.49	1.08	0.11	6.05	1036	11543	2100	29144	550	2453	15552
2017	6.9	18.3	56.2	12.9	**2017**	22094	43346	32.7	3.14	5.68	1.29	0.05	6.38	1027	12984	2221	29718	562	2749	17265
2018	7.1	19.0	58.6	13.3	***Average Predicted Values (2012-2017)***	**18589**	**29881**	**29.2**	**2.92**	**5.19**	**0.79**	**0.16**	**5.59**	**1050**	**9382**	**1917**	**28284**	**533**	**2010**	**12983**
2019	7.3	19.7	61.1	13.7																
2020	7.5	20.5	63.6	14.1																
2021	7.7	21.2	66.1	14.5																
2022	7.9	21.9	68.6	14.9																
2023	8.1	22.6	71.1	15.4																
Average Predicted Values (2009-2020)	**7.1**	**18.8**	**58.1**	**13.3**	***Average Actual Values (2008-2011)***	**10736**	**7018**	**22.0**	**2.43**	**4.05**	**0.49**	**0.32**	**3.81**	**1087**	**2947**	**1167.3**	**25026**	**470**	**567**	**6864**
Average Actual Values (2005-2008)	**5.7**	**12.8**	**38.3**	**10.4**																
% Change	**26**	**46**	**52**	**28**	**% Change**	**73.1**	**325.7**	**32.7**	**20.0**	**28.0**	**63.3**	**-50.0**	**46.8**	**-3.4**	**218.3**	**64.2**	**13.0**	**13.5**	**254.3**	**89.1**

Table (10): Tourism development strategies

Structure and system of tourism	Analysis subjects	Structure and system of tourism	Analysis subjects
- Expansion of tourist facilities - Paying attention to tourism by constructing respective centers - Attempting to determine the value of tourism for the inhabitants and culture-making, and creating academically tourism-oriented majors. - Creating space for cultural exchange and social interaction, particularly dialogue with different cultures - Strengthening and developing the field of direct and indirect employment	Opportunities strategy (S-T)	- Growing demand for tourism due to the change in attitude and style to spare - The presence of many tourists who are the highest in almost three seasons of the year - Comprehensive city plans in the Persian Gulf basin with an approach to attract tourists -Tendency of private sector to invest in tourism sector, particularly in KSA. - Expanding communication and information, advertising and holding meetings and seminars with the aim of further developing economic and commercial tourism - Planning for further communication with the other poles of tourism and the use of their experiences	Strengths strategy (S-O)
- Creating of projects in development and interactions with other tourist centers -Holding the training courses for staff - Creating the Tourism Policy Council	Strategy to avoid the threat (W-T)	- Community empowerment and development of infrastructure and facilities for the welfare of tourists -Integrated development planning to direct targeted participation of the private sector -Creating an emphasized viewpoint on commercial tourism in Urban Development in South - Information system development and promotion of tourism resources in commercial - Formation of specific activities and human skills in regard with tourists' special needs - Creating an independent unit called commercial tourism as the Tourism Authority	Strategy to minimize the weaknesses (W-O)

Source: Razaghi and Alinejad (2012)

The most important solution of developing tourism inside the country is to encourage the tourists in different ways and improve the motivation for travelling in them. Touristic advertisements play the

main role in saving and expanding domestic and foreign tourism markets. It is vital to find a solution for informing and improving the quality of recreational programs.

8.Conclusion

International Tourism has become one of the most important economic activities for many countries and one of the main sources of their foreign exchange revenues and employment opportunities. Thus, it has gained more great importance in the development strategies of many developing countries. Besides, it has been included in the working agenda of numerous international conferences organized recently on the subject of sustainable development. Yet, the failure to include tourism in these strategies is not more than a negligence of its role as one of the major economic activities and, no doubt, most ever diversified and innovative one (Anonymous, 2009).

In terms of the geography, Saudi Arabia itself has some unique characteristics and climatic conditions. The terrain comprises coasts, highlands, and deserts and this makes the Saudi climate diverse. In the Sorat highlands, for example, the temperature is moderate in summer and cold in winter, while the internal valleys are hotter in summer and warm in winter. This variety of climates has combined to make Saudi Arabia attractive to many tourists.

The results suggest that, tourism variables such as visitor exports services, travel and tourism consumption and demand and tourism gross domestic product are estimated throughout the period 2012-2023 at about (US $ billion) 7.1, 18.8, 58.1 and 13.3 (on average) respectively. Whereas, for tourism arrivals (8.5 million arrivals), tourism expenditure 30 US $ billion and percentage of Saudi employment (29%) throughout the period 2012-2017. In addition, the prediction for services related to tourism sector (during the period 2012-2017) such as numbers of hotels, furnished apartment units, travel agencies, restaurants, rent a car and transport companies and recreations estimated at 1050, 938, 1917, 28284, 533, 2010 and 12983 respectively. Whereas, total value added for accommodation, food services, recreation, travel agencies and transportation estimated at about (US $ billion) 2.9, 5.2, 0.8, 0.2, and 5.6 respectively (during the same period).

References

1. Alghamdi, Abdulraheem., (2007). “Explicit and Implicit Motivation Towards Outbound Tourism: A Study Of Saudi Tourists, School of Business and Management University of Glasgow, UK.
2. Al-Obaid., (1991) "The Effect of Development on the Present and Future Status of Date Production and Consumption in Saudi Arabia.". Agricultural Research, King Saud University, 3 (1), pp. 3-27.
3. Anonymous. (2009). Report On The Workshop On Tourism Statistics. Damascus, 12-15 October 2009, Available on Line at: http://www.sesrtcic.org/imgs/news/image/Report_Tourism_Stat.pdf , Accessed on 11 March 2010.
4. Bansal, H., and Eiselt, H. A., (2004), 'Exploratory Research of Tourist Motivations and Planning', Tourism Management, 25, 387-396.
5. Chen Rachel., (2008). "Comparing Forecasting Models in Tourism." Journal of Hospitality & Tourism Research, Vol. 32, No. 1, p.p 3-21.
6. Dabour, N., (2003) "Problems and Prospects of Sustainable Tourism Development in the OIC Countries: Ecotourism", Journal of Economic Cooperation, Vol 24, (1), pp 25-64.
7. Granger C. and Newbold N., (1976). " Forecasting Transformed Series." Journal of the Royal Statistical Society, Series B (Methodological), 38(2), pp 189-203.
8. Howells, S. B. (2000) Social and Cultural Impacts of Tourism and the Tourist Motivation: TRNC as Case Study, A thesis submitted to the University of Exeter of the requirements for the degree of doctor of philosophy, U.K: The University of Exeter.
9. Kumar Vijendra., (1999). "Prediction of Agricultural Drought for The Canadian Prairies Using Climatic and Satellite Data." PhD Thesis, Department of Geography, University of Manitoba, Winnipeg, Manitoba.
10. Lea, J., (1988), Tourism and Development in the third world, (London: Routledge).
11. Maddala, G S., (2001) "Introduction to Econometrics", 3rd ed, John Willey and Sons Inc.
12. Moosa Imad., (2000). "Exchange rate forecasting: techniques and applications." Ed 2, Palgrave Macmillan .
13. Plosser, C.I. and Schwert, G.W., (1978). "Money, Income and Sunspots: Measuring Economic Relationships and the Effects of Differencing." Journal of Monetary Economics, (4), pp 637-660.
14. Sadi Muhammad Asad, Henderson Joan C., (2005). "*Tourism In Saudi Arabia And Its Future Development*", Journal of Business and Economics, Vol. 11, Pages 94-11.
15. Stefani Raymond (2008). "Predicting Score Difference Versus Score Total in Rugby and Soccer", IMA Journal of Management Mathematics, Oxford University Press, Vol. 20, pp 147-158.
16. The Supreme Commission for Tourism, (2004), Tourism Statistics, (MAS Centre, Information and Statistical Tourism Department).
17. World Travel & Tourism Council, (2010). Available Online at: http://www.wttc.org/eng/Tourism_Research, Accessed on 21/2/2010.
18. Zahra Razaghi, Mohammad Ebrahim Alinejad , (2012) "The role of tourism in economic development", Journal of American Science, 8 (8), pp.139-144.
19. Zhang, H. Q., Qu, H., and Tang, V. M. Y.,(2004), 'A Case Study of Hong Kong Residents’ Leisure Travel', Tourism Management, 25, 267-373.

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