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PROJECT WORK: TREND ANALYSIS

DATA ANALYSIS AND MODELING - II

Mr. Prabhat Upreti

By: Ashish Singh



Tourism Economics of Nepal: Analysis & forecasting

Ashish Singh

EMBA, Ace Institute of Management

The purpose of this assignment¹ is to perform trend analysis, cyclical variation and forecasting of various tourism related economic indicators of Nepal. The time series data² ranges from the year 2002 to 2015 and forecasting is done for the subsequent three years using the secular trend line. Variables used are *Total Foreign Exchange Reserves*, *Number of Tourist Arrival*, *Gross Foreign Earnings from Tourism*, *Average Length of Stay* and *Travel & Tourism Direct Contribution to Employment*. Linear trend line is fitted using the Least Square Method and the subsequent equation is used for forecasting. Cyclical variation is measured using Percent of Trend and Relative Cyclical Residual.

Chapter 1: Introduction

Impact of Tourism

Generating US\$7.6 trillion (10% of global GDP) and 277 million jobs (1 in 11 jobs) for the global economy in 2014, Travel & Tourism is an important economic activity in most countries around the world. As well as its direct economic impact, the sector has significant indirect and induced impacts. Recent years have seen Travel & Tourism growing at a

faster rate than both the wider economy and other significant sectors such as automotive, financial services and health care. Last year was no exception.

International tourist arrivals also surged, reaching nearly 1.14 billion and visitor spending more than matched that growth. Visitors

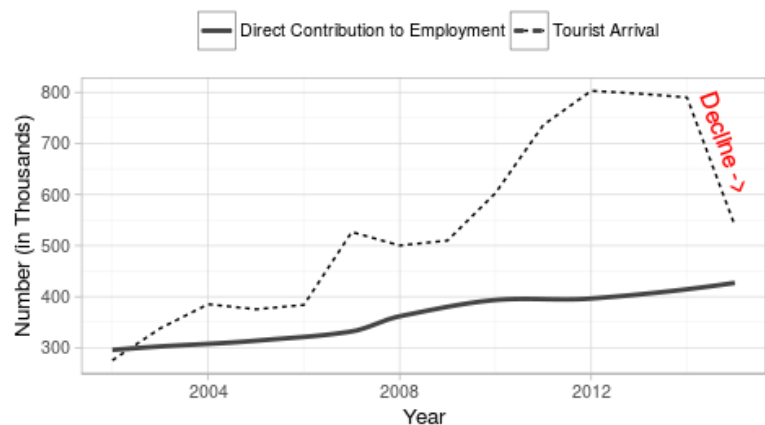


Fig 1. Even with sudden decline of number of tourists after 2015 earthquake, we can see that there was a steady growth in the number of employment directly contributed by the tourism industry.

¹ Reproducible research in R markdown format of this project can be downloaded from <https://github.com/thethakuri/tourism-forecasting-model/blob/master/Project.Rmd>

² Data gleaned from Nepal Tourism Statistics 2015, Ministry of Culture, Tourism & Civil Aviation, Government of Nepal and other sources which are mentioned in the citation section.

from emerging economies now represent a 46% share of these international arrivals (up from 38% in 2000), proving the growth and increased opportunities for travel from those in these new markets (Turner, 2015, pg. 2).

Tourism in Nepal

Nepal Tourism Policy 2009 identifies tourism sector as an important vehicle for economic and social development. Following directions set by the policy effort has been put for development and expansion of tourism activities, quality improvement of tourism services, increasing revenue and expansion of employment opportunities to improve the living standard of Nepalese people. Vision 2020 of tourism envisions increasing tourist arrival to two million and tourism related employment to one million (Ministry of Culture, Tourism & Civil Aviation, 2016).

Trend of tourist arrival was in increased order up to 2012 which declined thereafter. After the 7.8 magnitude earthquake that rocked Nepal, we saw a sharp decline of almost 32% fewer tourists than the previous year. However, the growth in the direct employment contributed by travel and tourism industry maintained a steady growth. In this report, we will try to analyze the times series Nepal Tourism data starting from the year 2002 up till 2015. The variables used for analysis are:

1. **TFXR** : Total Foreign Exchange Reserves
2. Number of **Tourist Arrival**
3. **GFXE** : Gross Foreign Exchange Earnings From Tourism
4. **ALS** : Average Length of Stay
5. **TDCE** : Travel & Tourism Direct Contribution to Employment

Chapter 2: Data Analysis

For data analysis part we will do following trend analyses:

- **Trend line**

$$\hat{Y} = b_0 + b_1x$$

where

\hat{Y} = estimate of the dependent variable

x = coded value of the time variable

$$b_1 = \text{slope} = \frac{\sum xY}{\sum x^2}$$

$$b_0 = \text{intercept} = \frac{\sum Y}{n}$$

- **Cyclical Variation using percentages of the trend**

- **Percent of Trend**

$$\text{We have } \textit{Percent of Trend} = \frac{Y}{\hat{Y}} \times 100$$

where

Y = actual time-series value

\hat{Y} = estimated trend value from the same point in the time series

baseline = 100

- **Relative Cyclical Residual**

$$\text{We have } \textit{Relative Cyclical Residual} = \frac{Y - \hat{Y}}{\hat{Y}} \times 100$$

baseline = 0

- **Forecasting** for the next three years, i.e. 2016, 2017, 2018

As our series contains data from 2002 to 2015, $n = 14$

$$\bar{X} = \frac{\sum X^{CODED}}{n} = \frac{105}{14} = 7.5$$

Transferring X into x :

$$\text{Since } n \text{ is even, } x = 2(X - \bar{X})$$

2.1: Trend analysis of Total Foreign Exchange Reserves (TFXR)

	Year (X)	TFXR (Y)			
	CODED	in million Rs.	x	xY	x^2
1	2002	105901.20	-13	-1376715.60	169
2	2003	108229.40	-11	-1190523.40	121
3	2004	130205.10	-9	-1171845.90	81
4	2005	129896.40	-7	-909274.80	49
5	2006	165033.00	-5	-825165.00	25
6	2007	165126.00	-3	-495378.00	9
7	2008	212623.50	-1	-212623.50	1
8	2009	284260.70	1	284260.70	1
9	2010	268888.70	3	806666.10	9
10	2011	272153.10	5	1360765.50	25
11	2012	439456.70	7	3076196.90	49
12	2013	533297.00	9	4799673.00	81
13	2014	665407.00	11	7319477.00	121
14	2015	847679.00	13	11019827.00	169
Σ	105	28119	4328156.80	22485340.00	910

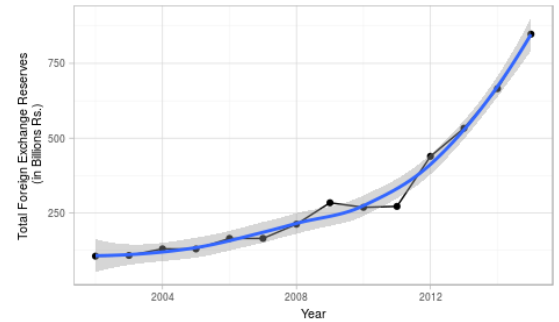


Fig 2. Data plot of Total Foreign Exchange Reserves augmented with LOESS regression curve with 95% confidence interval range

Trend Line

- Linear Trend**

We have

$$\hat{Y} = b_0 + b_1X$$

where

$$b_1 = \frac{\Sigma xY}{\Sigma x^2} = \frac{22485340.00}{910} = 24709.16$$

$$b_0 = \frac{\Sigma Y}{n} = \frac{4328156.80}{14} = 309154.06$$

$$\text{So, } \hat{Y} = b_0 + b_1X = 309154.06 + 24709.16x$$

$$\hat{Y} = 309154.06 + 24709.16x$$

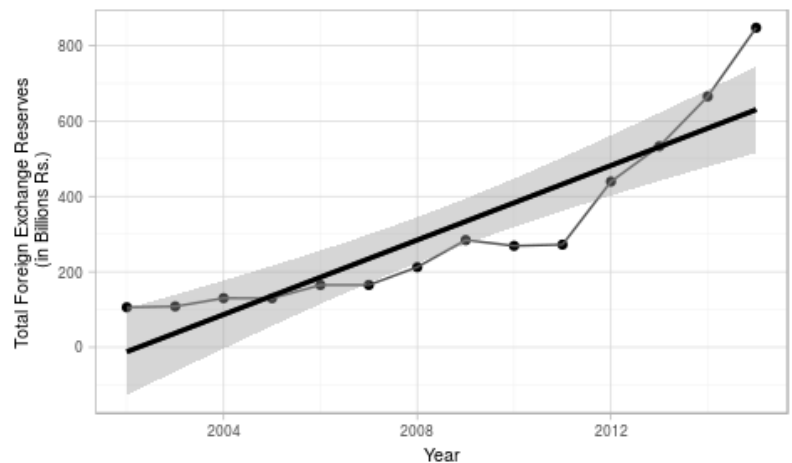


Fig 3. Linear trend line of Total Foreign Exchange Reserves with 95% confidence interval range

Cyclical Variation of *Total Foreign Exchange Reserves*

Year (X)	TFXR (Y) <i>in million Rs.</i>	x	\hat{Y}	$\frac{Y}{\hat{Y}} \times 100$	$\frac{Y - \hat{Y}}{\hat{Y}} \times 100$
2002	105901.20	-13	-12065.09	-877.75	-977.75
2003	108229.40	-11	37353.24	289.75	189.75
2004	130205.10	-9	86771.57	150.06	50.06
2005	129896.40	-7	136189.90	95.38	-4.62
2006	165033.00	-5	185608.23	88.91	-11.09
2007	165126.00	-3	235026.56	70.26	-29.74
2008	212623.50	-1	284444.89	74.75	-25.25
2009	284260.70	1	333863.22	85.14	-14.86
2010	268888.70	3	383281.55	70.15	-29.85
2011	272153.10	5	432699.88	62.90	-37.10
2012	439456.70	7	482118.21	91.15	-8.85
2013	533297.00	9	531536.54	100.33	0.33
2014	665407.00	11	580954.87	114.54	14.54
2015	847679.00	13	630373.20	134.47	34.47

For both measure of variation, the highest fluctuation occurred in the year 2002 where the *percent of trend* indicated the actual *Total Foreign Exchange Reserves* was about 878% of the expected value that year. For the same year, the *relative cyclical residual* indicated that the actual value was about 978% excess of the expected value.

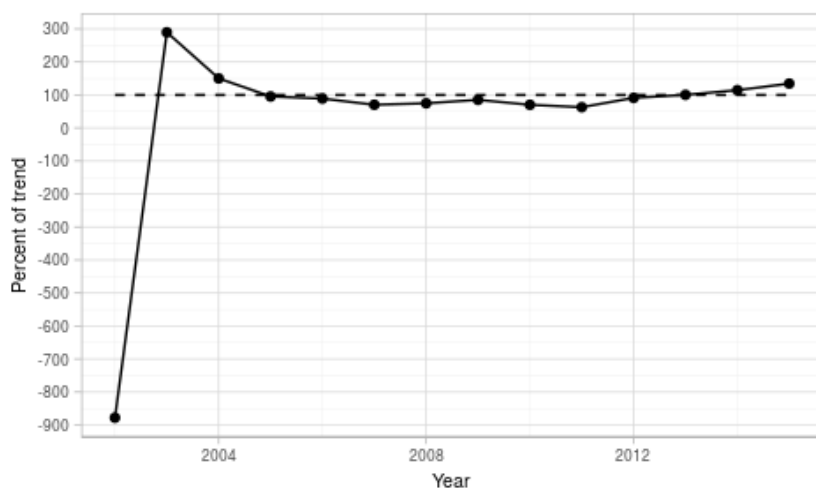


Fig 4. *Percent of trend around the trend line for Total Foreign Exchange Reserves*

Forecasting: *Total Foreign Exchange Reserves* for the years 2016, 2017, 2018

- **2016**

Here $X = 15$,

$$\therefore x = 2(15 - 7.5) = 15$$

$$\text{So, } \hat{Y} = 309154.06 + 24709.16 * 15 = \underline{\text{Rs. 679791.53 million}}$$

- **2017**

Here $X = 16$,

$$\therefore x = 2(17 - 7.5) = 17$$

$$\text{So, } \hat{Y} = 309154.06 + 24709.16 * 17 = \underline{\text{Rs. 729209.86 million}}$$

- **2018**

Here $X = 17$,

$$\therefore x = 2(19 - 7.5) = 19$$

$$\text{So, } \hat{Y} = 309154.06 + 24709.16 * 19 = \underline{\text{Rs. 778628.19 million}}$$

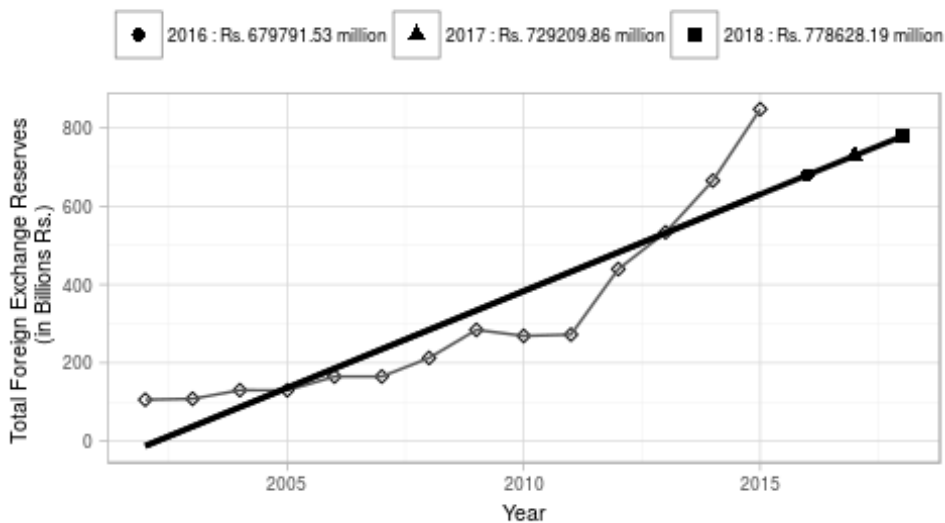


Fig 5. Forecasting of *Total Foreign Exchange Reserves* for the year 2016, 2017, 2018 using the linear trend line

2.2: Trend analysis of Tourist Arrival

Year (X)		Tourist Arrival	x	xY	x^2
<i>CODED</i>		(Y)			
1	2002	275468	-13	-3581084	169
2	2003	338132	-11	-3719452	121
3	2004	385297	-9	-3467673	81
4	2005	375398	-7	-2627786	49
5	2006	383926	-5	-1919630	25
6	2007	526705	-3	-1580115	9
7	2008	500277	-1	-500277	1
8	2009	509956	1	509956	1
9	2010	602867	3	1808601	9
10	2011	736215	5	3681075	25
11	2012	803092	7	5621644	49
12	2013	797616	9	7178544	81
13	2014	790118	11	8691298	121
14	2015	538970	13	7006610	169
Σ 105	28119	7564037	0	17101711	910

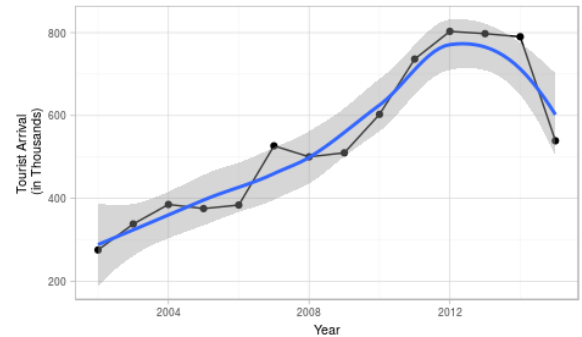


Fig 6. Data plot of Tourist Arrival augmented with LOESS regression curve with 95% confidence interval range

Trend Line

- Linear Trend**

We have

$$\hat{Y} = b_0 + b_1X$$

where

$$b_1 = \frac{\Sigma xY}{\Sigma x^2} = \frac{17101711}{910} = 18793.09$$

$$b_0 = \frac{\Sigma Y}{n} = \frac{7564037}{14} = 540288.36$$

$$\text{So, } \hat{Y} = b_0 + b_1X = 540288.36 + 18793.09x$$

$$\hat{Y} = 540288.36 + 18793.09x$$

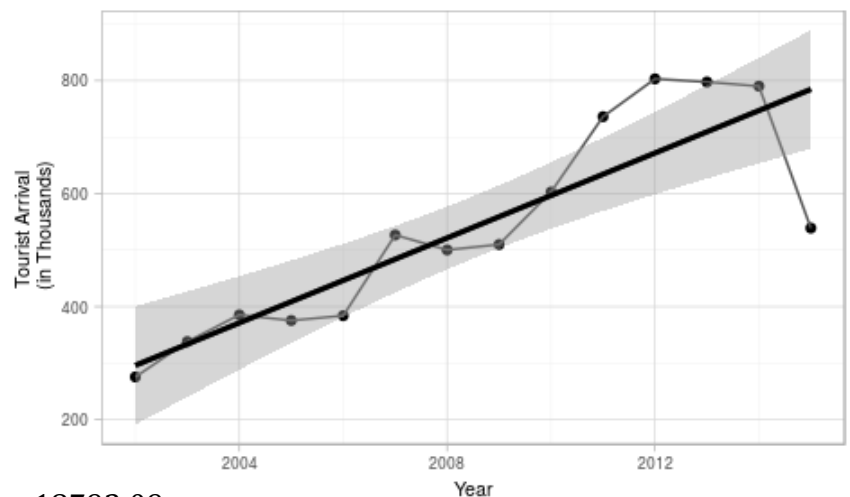


Fig 7. Linear trend line of Tourist Arrival with 95% confidence interval range

Cyclical Variation of *Tourist Arrival*

Year (X)	Tourist Arrival (Y)	x	\hat{Y}	$\frac{Y}{\hat{Y}} \times 100$	$\frac{Y - \hat{Y}}{\hat{Y}} \times 100$
2002	275468	-13	295978	93	-6.9
2003	338132	-11	333564	101	1.4
2004	385297	-9	371151	104	3.8
2005	375398	-7	408737	92	-8.2
2006	383926	-5	446323	86	-14.0
2007	526705	-3	483909	109	8.8
2008	500277	-1	521495	96	-4.1
2009	509956	1	559081	91	-8.8
2010	602867	3	596668	101	1.0
2011	736215	5	634254	116	16.1
2012	803092	7	671840	120	19.5
2013	797616	9	709426	112	12.4
2014	790118	11	747012	106	5.8
2015	538970	13	784599	69	-31.3

For both measure of variation, the highest fluctuation occurred in the year 2015 where the *percent of trend* indicated the actual total *Tourist Arrival* was about 69% of the expected value that year. For the same year, the *relative cyclical residual* indicated that the actual value was about 31% short of the expected value.

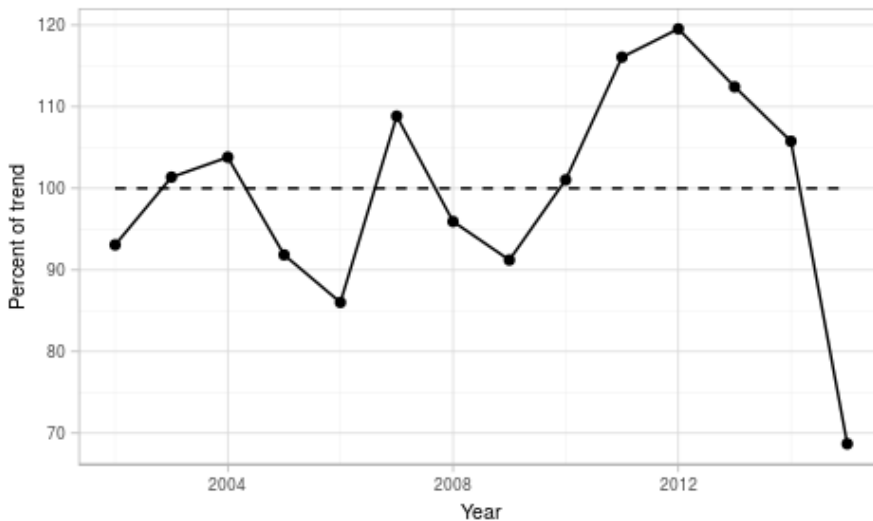


Fig 8. *Percent of trend around the trend line for Tourist Arrival*

Forecasting: *Tourist Arrival* for the years 2016, 2017, 2018

- **2016**

Here $X = 15$,

$$\therefore x = 2(15 - 7.5) = 15$$

$$\text{So, } \hat{Y} = b_0 + b_1x = 540288.36 + 18793.09 * 15 \simeq \underline{822185}$$

- **2017**

Here $X = 16$,

$$\therefore x = 2(17 - 7.5) = 17$$

$$\text{So, } \hat{Y} = b_0 + b_1x = 540288.36 + 18793.09 * 17 \simeq \underline{859771}$$

- **2018**

Here $X = 17$,

$$\therefore x = 2(19 - 7.5) = 19$$

$$\text{So, } \hat{Y} = b_0 + b_1x = 540288.36 + 18793.09 * 19 \simeq \underline{897357}$$

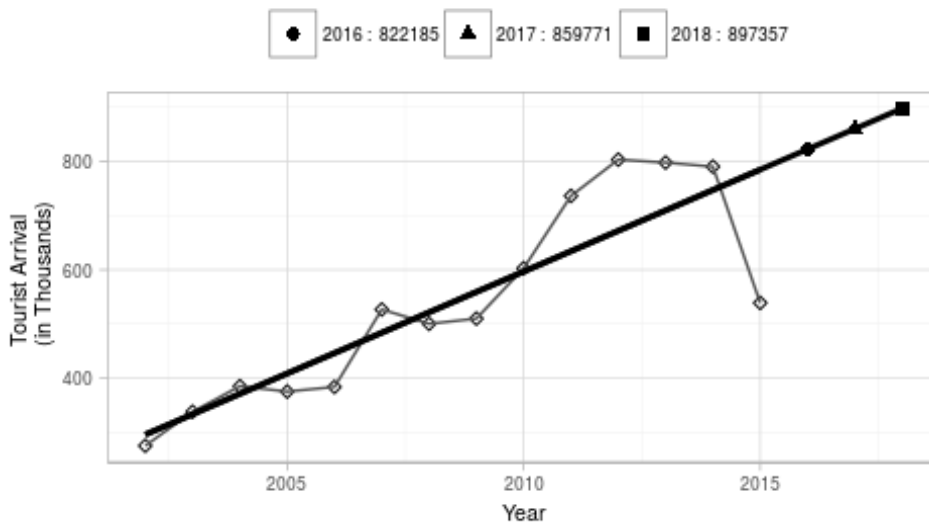


Fig 9. Forecasting of *Tourist Arrival* for the years 2016, 2017, 2018 using the linear trend line

2.3: Trend analysis of Gross Foreign Exchange Earnings from Tourism (GFXE)

Year (X)		GFXE (Y)	x	xy	x^2
CODED		in million Rs.			
1	2002	7798.535	-13	-101380.955	169
2	2003	10369.409	-11	-114063.499	121
3	2004	12337.977	-9	-111041.793	81
4	2005	11814.853	-7	-82703.971	49
5	2006	11710.893	-5	-58554.465	25
6	2007	12645.761	-3	-37937.283	9
7	2008	20339.890	-1	-20339.890	1
8	2009	27959.800	1	27959.800	1
9	2010	28138.600	3	84415.800	9
10	2011	24610.800	5	123054.000	25
11	2012	30703.820	7	214926.740	49
12	2013	34210.576	9	307895.184	81
13	2014	46374.900	11	510123.900	121
14	2015	49783.840	13	647189.920	169
Σ 105	28119	328799.654	0	1389543.488	910

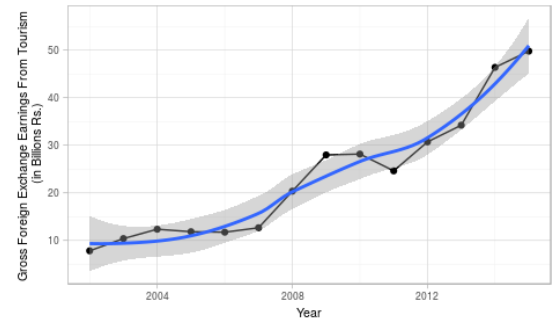


Fig 10. Data plot of Gross Foreign Exchange Earnings from Tourism augmented with LOESS regression curve with 95% confidence interval range

Trend Line

- Linear Trend**

We have

$$\hat{Y} = b_0 + b_1X$$

where

$$b_1 = \frac{\Sigma xY}{\Sigma x^2} = \frac{1389543.488}{910} = 1526.971$$

$$b_0 = \frac{\Sigma Y}{n} = \frac{328799.654}{14} = 23485.690$$

$$\text{So, } \hat{Y} = b_0 + b_1X = 23485.690 + 1526.971x$$

$$\hat{Y} = 23485.690 + 1526.971x$$

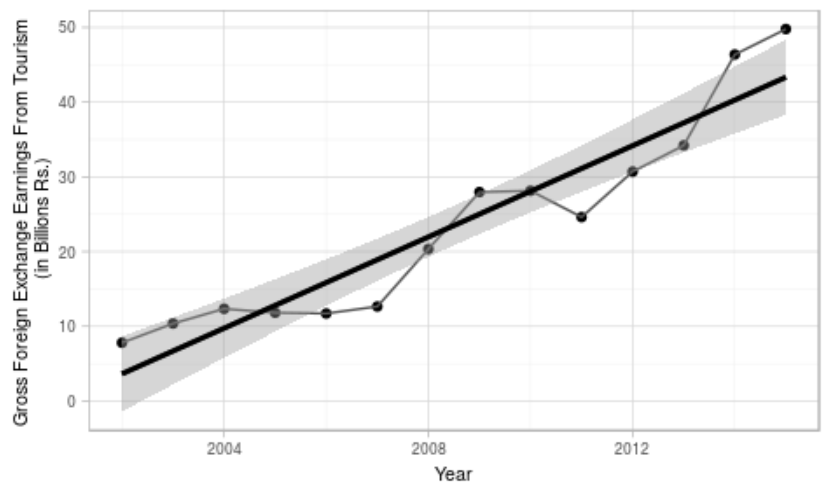


Fig 11. Linear trend line of Gross Foreign Exchange Earnings from Tourism with 95% confidence interval range

Cyclical Variation of *Gross Foreign Exchange Earnings from Tourism*

Year (X)	GFXE (Y) <i>in million Rs.</i>	x	\hat{Y}	$\frac{Y}{\hat{Y}} \times 100$	$\frac{Y - \hat{Y}}{\hat{Y}} \times 100$
2002	7798.535	-13	3635.068	214.536	114.536
2003	10369.409	-11	6689.010	155.022	55.022
2004	12337.977	-9	9742.952	126.635	26.635
2005	11814.853	-7	12796.894	92.326	-7.674
2006	11710.893	-5	15850.835	73.882	-26.118
2007	12645.761	-3	18904.777	66.892	-33.108
2008	20339.890	-1	21958.719	92.628	-7.372
2009	27959.800	1	25012.660	111.783	11.783
2010	28138.600	3	28066.602	100.257	0.257
2011	24610.800	5	31120.544	79.082	-20.918
2012	30703.820	7	34174.486	89.844	-10.156
2013	34210.576	9	37228.427	91.894	-8.106
2014	46374.900	11	40282.369	115.125	15.125
2015	49783.840	13	43336.311	114.878	14.878

For both measure of variation, the highest fluctuation occurred in the year 2002 where the *percent of trend* indicated the actual *Gross Foreign Exchange Earnings from Tourism* was about 215% of the expected value that year. For the same year, the *relative cyclical residual* indicated that the actual value was about 115% excess of the expected value.

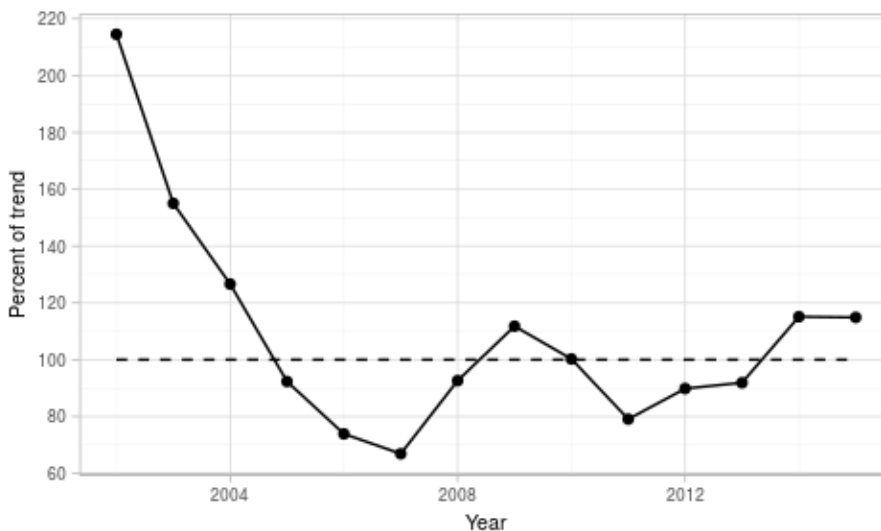


Fig 12. *Percent of trend around the trend line for Gross Foreign Exchange Earnings from Tourism*

Forecasting: Gross Foreign Exchange Earnings from Tourism for the years 2016, 2017, 2018

- **2016**

Here $X = 15$,

$$\therefore x = 2(15 - 7.5) = 15$$

$$\text{So, } \hat{Y} = b_0 + b_1x = 23485.690 + 1526.971 * 15 = \underline{\text{Rs. 46390.253 million}}$$

- **2017**

Here $X = 16$,

$$\therefore x = 2(17 - 7.5) = 17$$

$$\text{So, } \hat{Y} = b_0 + b_1x = 23485.690 + 1526.971 * 17 = \underline{\text{Rs. 49444.194 million}}$$

- **2018**

Here $X = 17$,

$$\therefore x = 2(19 - 7.5) = 19$$

$$\text{So, } \hat{Y} = b_0 + b_1x = 23485.690 + 1526.971 * 19 = \underline{\text{Rs. 52498.136 million}}$$

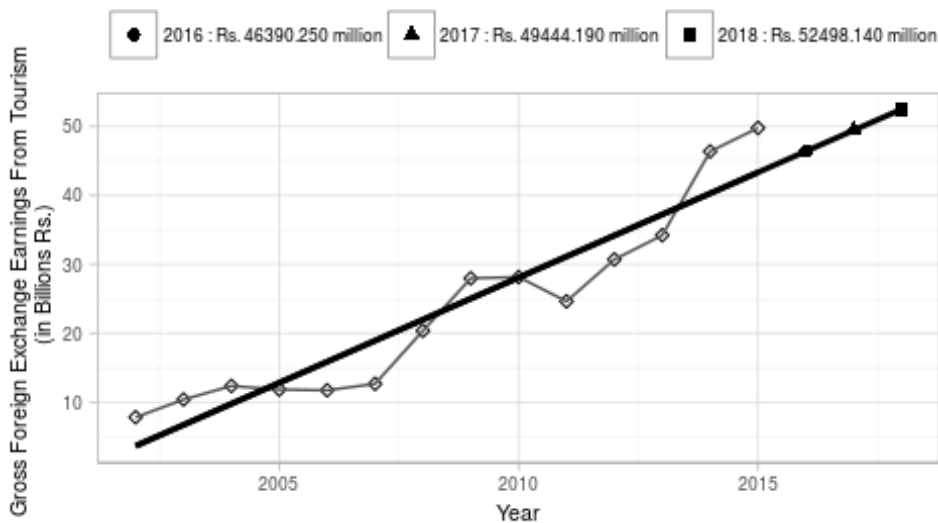


Fig 13. Forecasting of Gross Foreign Exchange Earnings from Tourism for the years 2016, 2017, 2018 using the linear trend line

2.4: Average Length of Stay (ALS)

Year (X)		ALS (Y)	x	xY	x^2
<i>CODED</i>		<i>days</i>			
1	2002	7.9	-13	-103	169
2	2003	9.6	-11	-106	121
3	2004	13.5	-9	-122	81
4	2005	9.1	-7	-64	49
5	2006	10.2	-5	-51	25
6	2007	12.0	-3	-36	9
7	2008	11.8	-1	-12	1
8	2009	11.3	1	11	1
9	2010	12.7	3	38	9
10	2011	13.1	5	66	25
11	2012	12.2	7	85	49
12	2013	12.6	9	113	81
13	2014	12.4	11	137	121
14	2015	13.2	13	171	169
Σ 105	28119	161.5	0	129	910

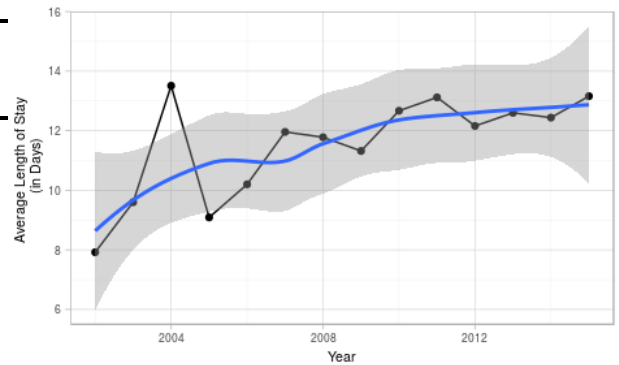


Fig 14. Data plot for Average Length of Stay augmented with LOESS regression curve with 95% confidence interval range

Trend Line

- Linear Trend**

We have

$$\hat{Y} = b_0 + b_1X$$

where

$$b_1 = \frac{\Sigma xY}{\Sigma x^2} = \frac{128.93}{910} = 0.14$$

$$b_0 = \frac{\Sigma Y}{n} = \frac{161.53}{14} = 11.54$$

$$\text{So, } \hat{Y} = b_0 + b_1X = 11.54 + 0.14x$$

$$\hat{Y} = 11.54 + 0.14x$$

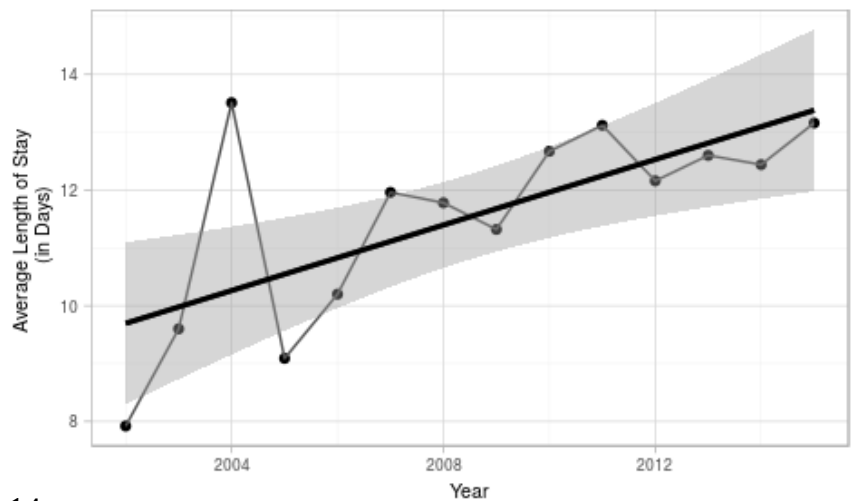


Fig 15. Linear trend line of Average Length of Stay with 95% confidence interval range

Cyclical Variation of *Average Length of Stay*

Year (X)	ALS (Y) <i>days</i>	x	\hat{Y}	$\frac{Y}{\hat{Y}} \times 100$	$\frac{Y - \hat{Y}}{\hat{Y}} \times 100$
2002	7.9	-13	9.7	82	-18.3
2003	9.6	-11	10.0	96	-3.8
2004	13.5	-9	10.3	132	31.6
2005	9.1	-7	10.6	86	-13.8
2006	10.2	-5	10.8	94	-5.8
2007	12.0	-3	11.1	108	7.6
2008	11.8	-1	11.4	103	3.4
2009	11.3	1	11.7	97	-3.1
2010	12.7	3	12.0	106	5.9
2011	13.1	5	12.2	107	7.1
2012	12.2	7	12.5	97	-3.0
2013	12.6	9	12.8	98	-1.7
2014	12.4	11	13.1	95	-5.0
2015	13.2	13	13.4	98	-1.6

For both measure of variation, the highest fluctuation occurred in the year 2004 where the *percent of trend* indicated the actual *Average Length of Stay* was about 132% of the expected value that year. For the same year, the *relative cyclical residual* indicated that the actual value was about 32% excess of the expected value.

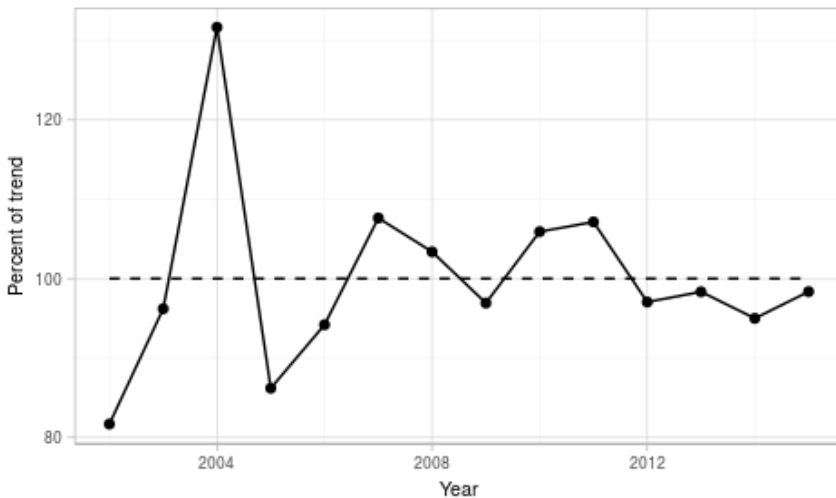


Fig 16. Percent of trend around the trend line for *Average Length of Stay*

Forecasting: *Average Length of Stay* for the years 2016, 2017, 2018

- **2016**

Here $X = 15$,

$$\therefore x = 2(15 - 7.5) = 15$$

$$\text{So, } \hat{Y} = b_0 + b_1x = 11.54 + 0.14 * 15 \approx \underline{13.66 \text{ days}}$$

- **2017**

Here $X = 16$,

$$\therefore x = 2(17 - 7.5) = 17$$

$$\text{So, } \hat{Y} = b_0 + b_1x = 11.54 + 0.14 * 17 \approx \underline{13.95 \text{ days}}$$

- **2018**

Here $X = 17$,

$$\therefore x = 2(19 - 7.5) = 19$$

$$\text{So, } \hat{Y} = b_0 + b_1x = 11.54 + 0.14 * 19 \approx \underline{14.23 \text{ days}}$$

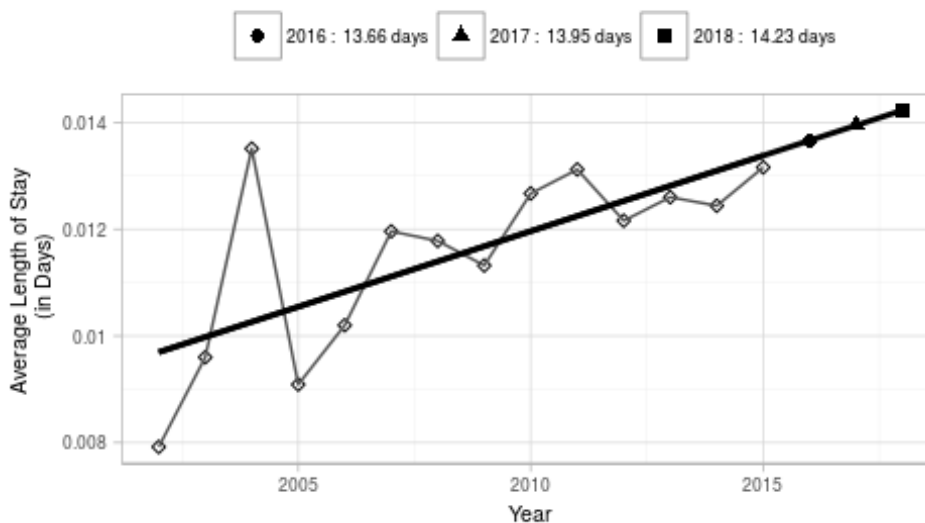


Fig 17. Forecasting of Average Length of Stay for the years 2016, 2017, 2018 using the linear trend line

2.5: Travel & Tourism Direct Contribution to Employment (TDCE)

	Year (X)	TDCE (Y)	x	xY	x^2	
1	2002	257800	-13	-3351400	169	
2	2003	336900	-11	-3705900	121	
3	2004	373000	-9	-3357000	81	
4	2005	285900	-7	-2001300	49	
5	2006	281000	-5	-1405000	25	
6	2007	326200	-3	-978600	9	
7	2008	389900	-1	-389900	1	
8	2009	412900	1	412900	1	
9	2010	347400	3	1042200	9	
10	2011	416400	5	2082000	25	
11	2012	386800	7	2707600	49	
12	2013	402900	9	3626100	81	
13	2014	417100	11	4588100	121	
14	2015	426400	13	5543200	169	
Σ	105	28119	5060600	0	4813000	910

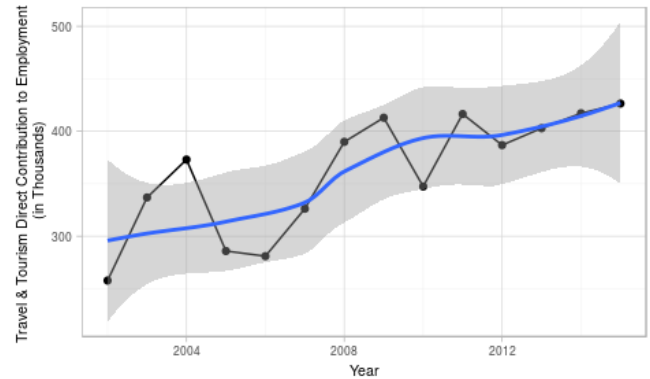


Fig 18. Data plot of Travel & Tourism Direct Contribution to Employment augmented with LOESS regression curve with 95% confidence interval range

Trend Line

- Linear Trend**

We have

$$\hat{Y} = b_0 + b_1X$$

where

$$b_1 = \frac{\Sigma xY}{\Sigma x^2} = \frac{4813000}{910} = 5289.01$$

$$b_0 = \frac{\Sigma Y}{n} = \frac{5060600}{14} = 361471.43$$

$$\text{So, } \hat{Y} = b_0 + b_1X = 361471.43 + 5289.01x$$

$$\hat{Y} = 361471.43 + 5289.01x$$

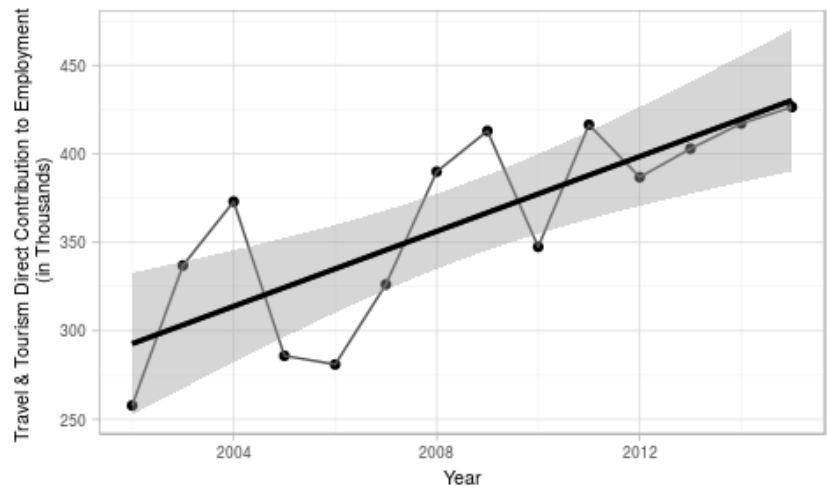


Fig 19. Linear trend line of Travel & Tourism Direct Contribution to Employment with 95% confidence interval range

Cyclical Variation of *Travel & Tourism Direct Contribution to Employment*

Year (X)	TDCE (Y)	x	\hat{Y}	$\frac{Y}{\hat{Y}} \times 100$	$\frac{Y - \hat{Y}}{\hat{Y}} \times 100$
2002	257800	-13	292714	88	-11.93
2003	336900	-11	303292	111	11.08
2004	373000	-9	313870	119	18.84
2005	285900	-7	324448	88	-11.88
2006	281000	-5	335026	84	-16.13
2007	326200	-3	345604	94	-5.61
2008	389900	-1	356182	109	9.47
2009	412900	1	366760	113	12.58
2010	347400	3	377338	92	-7.93
2011	416400	5	387916	107	7.34
2012	386800	7	398495	97	-2.93
2013	402900	9	409073	98	-1.51
2014	417100	11	419651	99	-0.61
2015	426400	13	430229	99	-0.89

For both measure of variation, the highest fluctuation occurred in the year 2004 where the *percent of trend* indicated the actual *Travel & Tourism Direct Contribution to Employment* was about 119% of the expected value that year. For the same year, the *relative cyclical residual* indicated that the actual value was about 19% excess of the expected value.

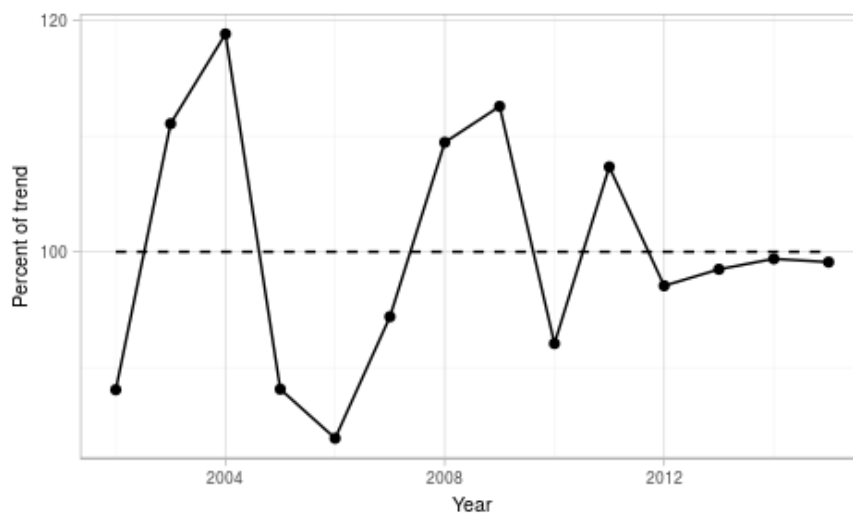


Fig 20. Percent of trend around the trend line for *Travel & Tourism Direct Contribution to Employment*

Forecasting: *Travel & Tourism Direct Contribution to Employment* for the years 2016, 2017, 2018

- **2016**

Here $X = 15$,

$$\therefore x = 2(15 - 7.5) = 15$$

$$\text{So, } \hat{Y} = b_0 + b_1x = 361471.43 + 5289.01 * 15 \simeq \underline{440807}$$

- **2017**

Here $X = 16$,

$$\therefore x = 2(17 - 7.5) = 17$$

$$\text{So, } \hat{Y} = b_0 + b_1x = 361471.43 + 5289.01 * 17 \simeq \underline{451385}$$

- **2018**

Here $X = 17$,

$$\therefore x = 2(19 - 7.5) = 19$$

$$\text{So, } \hat{Y} = b_0 + b_1x = 361471.43 + 5289.01 * 19 \simeq \underline{461963}$$

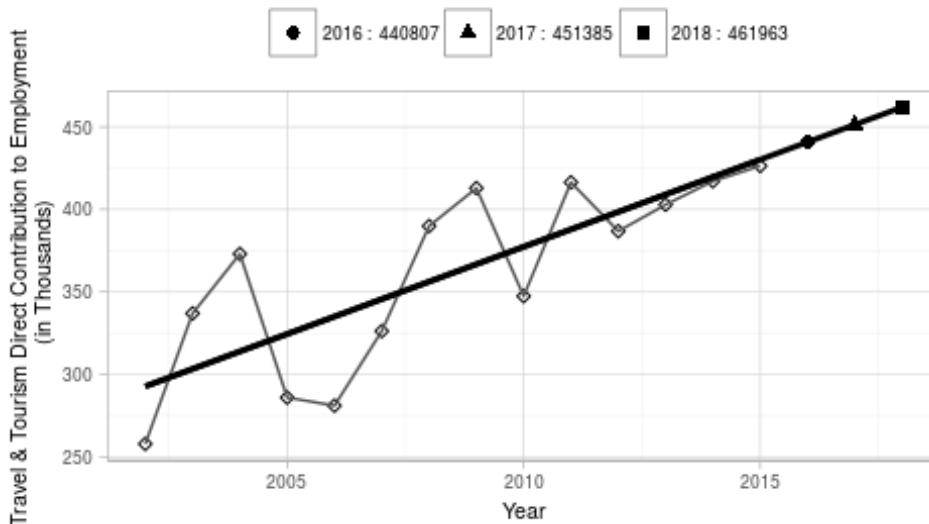


Fig 21. Forecasting of *Travel & Tourism Direct Contribution to Employment* for the years 2016, 2017, 2018 using the linear trend line

Citation

Turner, R. (2015). *Travel & Tourism: Economic Impact 2015(Nepal)*. Retrieved from World Travel & Tourism Council Website: <http://sp.wttc.org/-/media/files/reports/economic-impact-research/countries-2015/nepal2015.pdf>

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Annexure

Table 1: Various indicators of tourism economy of Nepal

Year	Total Foreign Exchange Reserves (TFXR) <i>in million Rs.</i>	Tourist Arrival	Gross Foreign Exchange Earnings From Tourism (GFXE) <i>in million Rs.</i>	Average Length of Stay (ALS) <i>In days</i>	Travel & Tourism Direct Contribution to Employment (TDCE)
2002	105901.20	275468	7798.535	7.9	257800
2003	108229.40	338132	10369.409	9.6	336900
2004	130205.10	385297	12337.977	13.5	373000
2005	129896.40	375398	11814.853	9.1	285900
2006	165033.00	383926	11710.893	10.2	281000
2007	165126.00	526705	12645.761	12.0	326200
2008	212623.50	500277	20339.890	11.8	389900
2009	284260.70	509956	27959.800	11.3	412900
2010	268888.70	602867	28138.600	12.7	347400
2011	272153.10	736215	24610.800	13.1	416400
2012	439456.70	803092	30703.820	12.2	386800
2013	533297.00	797616	34210.576	12.6	402900
2014	665407.00	790118	46374.900	12.4	417100
2015	847679.00	538970	49783.840	13.2	426400

Note. Retrieved from *NEPAL TOURISM STATISTICS 2015*, Ministry of Culture, Tourism & Civil Aviation, Government of Nepal and Nepal - Travel & Tourism Direct Contribution to Employment.