



A STUDY ON TRENDS IN SUGAR PRODUCTION IN ASIAN COUNTRIES

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ABSTRACT

Sugar production has occupied a major place in the world's market as other commodities. Many of the farmers are completely depending on the sugarcane production for their livelihood. There is a significant difference in the production of sugar in different countries of world. The present study has attempted to examine the level of sugar production in the selected Asian countries and also examined the trends in the sugar production for the period 2010-2016.

KEYWORDS: World Market, sugarcane production, trends in sugar production.

INTRODUCTION

Due to health factors and suffering from the obesity the total demand for sugar has significantly decreased in the world's sugar market. If we looking into the condition of sugar production nearly 80 percent of the sugar produced by the sugarcane and approximately 30 percent of it is produced from the sugar beet. It is clear from the statistical data that, 10 countries are producing the sugar from both sugar beet and sugarcane, 40 countries are producing sugar from the sugar beet and 70 countries are still producing sugar from the sugarcane. The top 5 countries in sugar production at the world level are Brazil with 38.9 million metric tons, India with 33 million metric tons, and European Union with 21 million metric tons, Thailand with 15 million metric tons and China with 10 million metric tons.

OBJECTIVES:

1. To assess the trends in rankings in the sugar production among the selected Asian countries during 2010-2016.
2. To examine the trends in sugar production in each selected Asian countries during 2010-2016.

METHODOLOGY:

The study has used the secondary data collected from the Annual Reports published from the Ministry of Statistics and Programme Implementations. The data was collected for the period of 7 years from 2010 to 2016 on sugar production related to the Asian Continent. In order to analyze the data the Kruskal-Wallis Test has used to identify the ranks of the countries in sugar production. As well as the Curve Estimation has used for examine the trends in sugar production.

TRENDS IN SUGAR PRODUCTION IN SELECTED COUNTRIES OF ASIAN CONTINENT:

Table-1: Sugar Production in Selected Asian Countries:

Year	China	India	Iran	Nepal	Bangladesh
	Sugar Production (in tonnes)	Sugar Production (in tonnes)	Sugar Production (in tonnes)	Sugar Production (in tonnes)	Sugar Production (in tonnes)
2010	952000	19176996	602000	120000	87000
2011	907200	25849248	552000	125000	101000
2012	1011960	26857253	532000	129000	87000
2013	1085557	22971000	547000	135000	110000
2014	757500	26028000	565000	145000	110000
2015	770100	28871000	615000	160000	70000
2016	910100	24794000	610000	140000	75000

Source: Annual Reports, Ministry of Statistics and Programme Implementations.

Table-2: Kruskal-Wallis Test for Sugar Production:

Ranks

	Country	N	Mean Rank
Sugar Production	China	7	25.00
	India	7	32.00
	Iran	7	18.00
	Nepal	7	11.00
	Bangladesh	7	4.00
	Total	35	

Table-3: Test Statistics (a,b):

	Sugar Production
Chi-Square	32.676
df	4
Asymp. Sig.	.000

a Kruskal Wallis Test

b Grouping Variable: Country

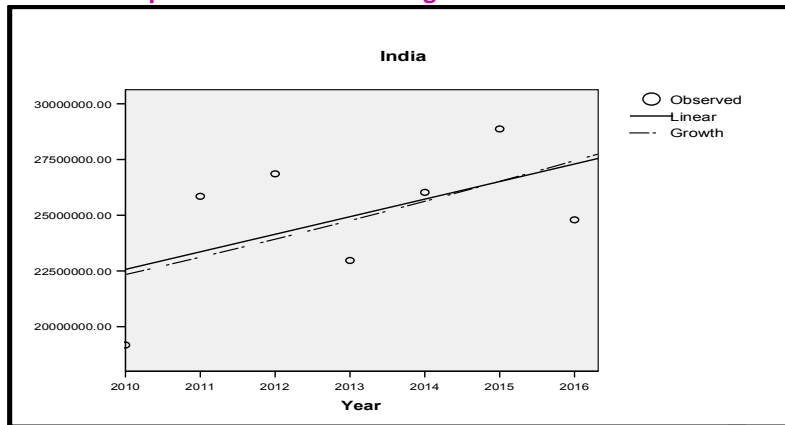
The Chi-Square value $X^2(df=4, N=35) = 32.676, p < 0.05$ designates that the sugar production fluctuate significantly across five Asian Countries. The county India has produced large amount of Sugar and Bangladesh has produced very less sugar during the observed time period from 2010 to 2016. The second, third and fourth rank was occupied by China, Iran and Nepal in the Sugar production respectively during the same period of time.

Table-4: Model Summary and Parameter Estimates for India:

Equation	Model Summary					Parameter Estimates	
	R Square	F	df1	df2	Sig.	Constant	b1
Linear	.299	2.128	1	5	.204	-	788045.10
Growth	.312	2.271	1	5	.192	1561399443.964	7
						-52.023	.034

The independent variable is Year.
Dependent Variable: India

Graph-1: Growth Rate of Sugar Production of India:



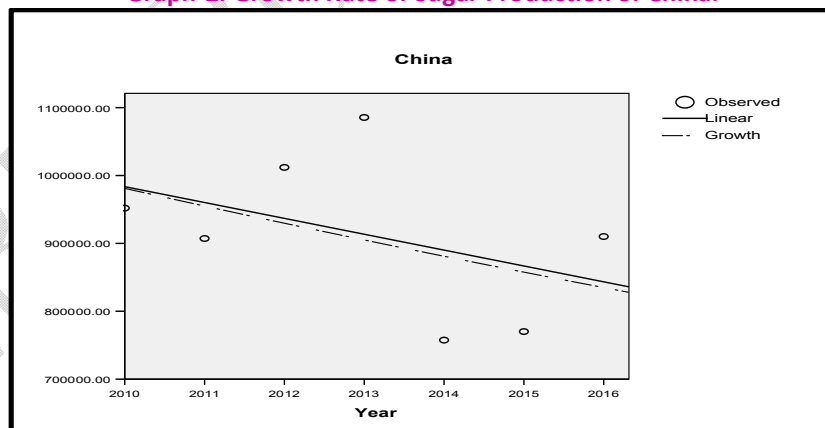
It is very perfect from the table-4, and graph-1 that, the sugar production in India for the period from 2010-2016 was progressively rising at the speed of 788045.107 tonnes every year. The study has explored that India has flourished to put strength to upturn its sugar production during the experimental period of time.

Table-5: Summary and Parameter Estimates for China:

Equation	Model Summary					Parameter Estimates	
	R Square	F	df1	df2	Sig.	Constant	b1
Linear	.178	1.086	1	5	.345	47957298.14 3	-23370.000
Growth	.191	1.180	1	5	.327	67.805	-.027

The independent variable is Year.
Dependent Variable: China

Graph-2: Growth Rate of Sugar Production of China:



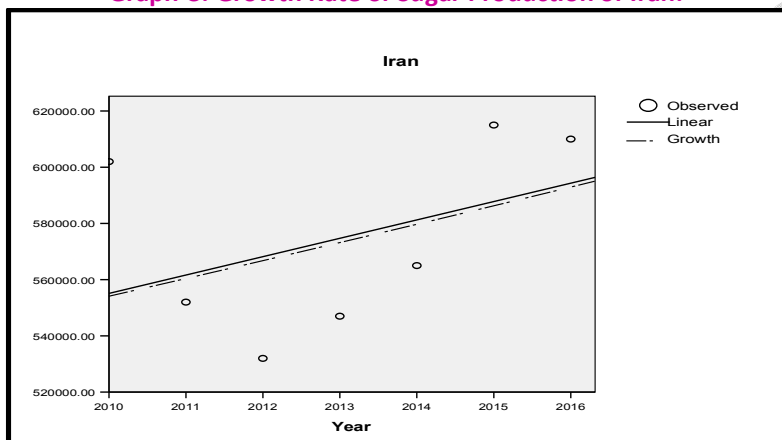
It is evident from the table-5, and graph-2 that, the sugar production in India for the period from 2010-2016 was deteriorating at the amount of -23370.000 tonnes every year. The study has discovered that China has disappointment to put strength to raise its sugar production during this period of time.

Table-6: Model Summary and Parameter Estimates for Iran:

Equation	Model Summary					Parameter Estimates	
	R Square	F	df1	df2	Sig.	Constant	b1
Linear	.175	1.064	1	5	.350	-	6535.714
Growth	.173	1.046	1	5	.353	12581678.571	-9.453

The independent variable is Year.
Dependent Variable: Iran

Graph-3: Growth Rate of Sugar Production of Iran:



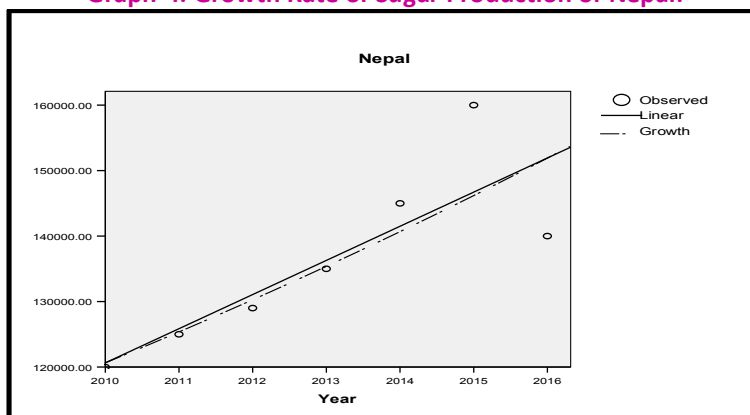
It is identical from the table-6, and graph-3 that, the sugar production in Iran for the period from 2010-2016 was gradually rising at the speed of 6535.714 tonnes every year. The study has reconnoitered that Iran has succeeded to put forte to improvement its sugar production during the experimental period of time.

Table-7: Model Summary and Parameter Estimates for Nepal:

Equation	Model Summary					Parameter Estimates	
	R Square	F	df1	df2	Sig.	Constant	b1
Linear	.692	11.257	1	5	.020	-	5214.286
Growth	.722	12.990	1	5	.015	10360071.429	-65.329

The independent variable is Year.
Dependent Variable: Nepal

Graph-4: Growth Rate of Sugar Production of Nepal:



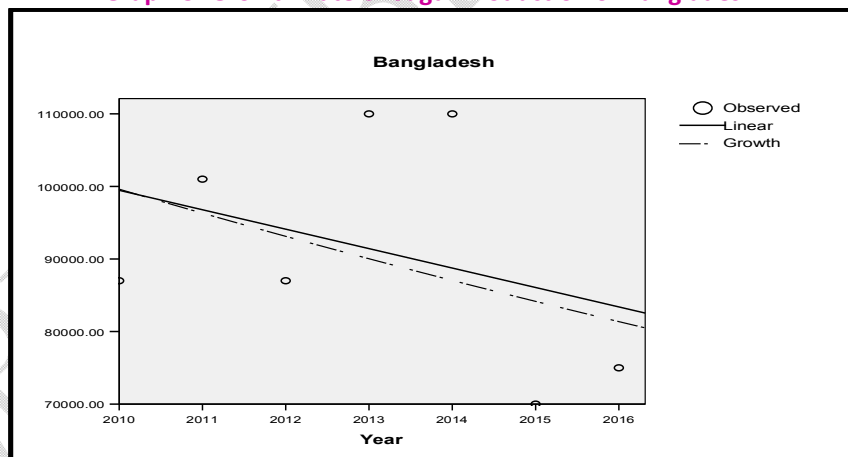
It is set aside from the table-7, and graph-4 that, the sugar production in Nepal for the period from 2010-2016 was ever more rising at the rapidity of 5214.286 tonnes every year. The study has scouted that Nepal has thrived to placedpower to expansion its sugar production during the experimental period of time.

Table-8: Model Summary and Parameter Estimates for Bangladesh:

Equation	Model Summary					Parameter Estimates	
	R Square	F	df1	df2	Sig.	Constant	b1
Linear	.130	.745	1	5	.428	5483392.857	-2678.571
Growth	.165	.990	1	5	.365	79.272	-.034

The independent variable is Year.
Dependent Variable: Bangladesh

Graph-5: Growth Rate of Sugar Production of Bangladesh:



It is also understanding from the table-8, and graph-5 that, the sugar production in Bangladesh for the period from 2010-2016 was suddenlydecreasing at the speed of -2678.571 tonnes every year. The study has discovered that Bangladesh has letdown to put strength to increase its sugar production during the experimental period of time.

FINDINGS OF THE STUDY:

1. The sugar production fluctuates significantly across five Asian Countries.

2. The county India has produced large amount of Sugar and Bangladesh has produced very less sugar during the observed time period from 2010 to 2016.
3. The second, third and fourth rank was occupied by China, Iran and Nepal in the Sugar production respectively during the same period of time.
4. India has flourished to put strength to upturn its sugar production during the experimental period of time.
5. China has disappointment to put strength to raise its sugar production during this period of time.
6. Iran has succeeded to put forte to improvement its sugar production during the period of time.
7. Nepal has thrived to placed power to expansion its sugar production during the period of time.
8. Bangladesh has letdown to put strength to increase its sugar production during the period of time.

CONCLUSION:

It is observed from the study that, there were greater fluctuations in the production of sugar in the Asian countries which are selected during the study period. These unequal production capacities in sugar the countries have to face shortages and all these counties are suffering from inflation. The two countries namely Bangladesh and Iran were failure to increase their sugar production in this period of time. But there is a progressive growth in the sugar production in three countries such as India, Iran and Nepal.

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