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Investigate How Ethanol Production Effect Sugar Industry: A Case Study of UK & Pakistan

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Abstract: This research shows how the ethanol process effect production in the sugar industry in UK & Pakistan. UK follows alcoholic process while Pakistan used a halal mode of production. This is a qualitative study. The data is collected through secondary sources. The primary data is gathered through an open-ended questionnaire. The goal of this project is to collect feedback from the targeted group in order to improve the feedback stage of the analysis model. Most of the quantitative data collected by the various organizations involved in the sugar industry are published by the World Bank, FAO, and research firms. The findings of the research show that the UK has more demand but less supply and imports is an alternative. But in Pakistan excess supply balance demand so exports of sugar can take place. But the difference in profitability is subject to lack of market information.

Key Words: Sugar Industry, Ethanol Process, UK, Pakistan

JEL Classification:

Introduction

Ethanol has incredible fuel properties for flash start interior ignition motors; for instance, its high octane and high warmth of vaporization make the liquor more proficient as an unadulterated fuel than gas. Since ethanol is less unpredictable than gas (Bailey, 1996) and has a low photochemical reactivity in the air, brown haze arrangement from evaporative discharges of unadulterated ethanol can be not exactly for gas. Ethanol can likewise be mixed with gas to lessen gas utilization, improve octane, and advance increasingly total ignition. Be that as it may, non-perfect

communications with gas cause the vapor strain to expand some for low-dimension ethanol mixes (about 10%), yet the vapor weight of the mixing gas could be decreased to make up for this impact. Ethanol has a low danger, especially in contrast with different energizes, and is promptly biodegradable in water and soils, lessening entrance of tufts from holes and results of spills thought about to oil based powers.

In this examination, the generation of ethanol from sweet sorghum was explored as a pathway to a couple utilization of new and built-up innovations for conceivable

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application to the developing ethanol advertise in UK and Pakistan. Specifically, a situation was assessed to mature the sugar new and set up advancements for conceivable application to the developing ethanol advertise in China. Specifically, a situation was assessed to age the sugar the leftover sorghum bagasse cellulosic portion to ethanol while consuming the residuals (for the most part lignin) for warmth and power. This methodology was contrasted with customary strategies which is polished in Pakistan for separating sugar available to be purchased or transformation to ethanol and consuming the bagasse for warmth and capacity to decide whether ethanol creation from the two parts offered a potential financial favorable position. Also, another situation was considered of selling the sugar from sorghum squeeze and changing over the bagasse to ethanol with the leftover lignin again consumed for warmth and power. Cellulosic ethanol innovation as portrayed by the National Renewable Energy Laboratory

So there are various chemical process used in making sugar in sugar industries how the difference in operations leads to change in production and what are the factors effecting sugar production and ethanol generation?

Literature Review

Sugar Industry in Pakistan

In Pakistan, sugarcane is an essential component of the country's economy. It is ranked 15th in the world in terms of sugar generation and 60th in yield. It is additionally developed over a million hectares, which gives the country's 84 sugar plants the crude materials needed to produce high-quality products. The sugar division accounts for 4.2% of the country's production. The size of the segment dictates the concrete part of the overall structure. The industry has a significant financial impact on the economy, as it is both regressive and forward-linked.

The country's sugar production during the 2007/08 season was evaluated at 61.5 million metric tons, which is 12% higher than the previous year. Due to the increase in the area

under development, the yield also went up. However, during the 2008/09 season, the production of sugar was estimated at 55 million tons, which is 10% lower than the previous year. According to reports, the country's sugar production during the upcoming season is expected to be around 3 million tons. The country's annual sugar utilization rate is estimated to be between 3.6 and 4.2 million tons. Authorities of the industry state that the decline in usage was caused by the high prices and a monetary log jam. Despite this, the region under development for sugarcane has seen a slight decrease in production, but ranchers are expecting a better yield due to the improved variety of seeds. Due to the increasing cost of sugar and the lack of supply, Pakistan has to import the commodity to meet its needs.

Sugar industry UK

Since the UK started importing sugar from other Commonwealth nations, such as Australia, South Africa, and the British West Indies, the country has been able to rely on these countries for a steady supply of refined sugar. With the exception of two, the East African domains have been heavily reliant on the production of crude sugar. They were also very happy to maintain the low prices that had been seen in the advertising for many years. When Britain joined the European Union in 1973, a special import program for sugar was established that was agreed with the conventional producing nations of the EEC and the African, Caribbean, and Pacific (ACP) nations. The protocol, which became known as the "ACP Sugar Protocol," was established based on the 1975 Lomé Convention.

This estimate took into account the special access granted to the EU to advertise 1.3 million tons of suga at a rate that was close to the price of crude sugar. This access has remained a part of the EU's advertise approach, which has changed over time. The special access granted to sugar producers through the protocol has had a significant impact on the speculations about the value of land, HR, and capital in various countries. The profits generated by the protocol have been

used to fund the governments' financial plans. It has also contributed to the exchange rate adjustment and the development of a comprehensive financial exchange. Some of the sugar companies have used the profits generated by the protocol to fund the modernization of their operations. They have

also used the funds for the development of other projects.

Theoretical frame work

Above literature possess the following frame work

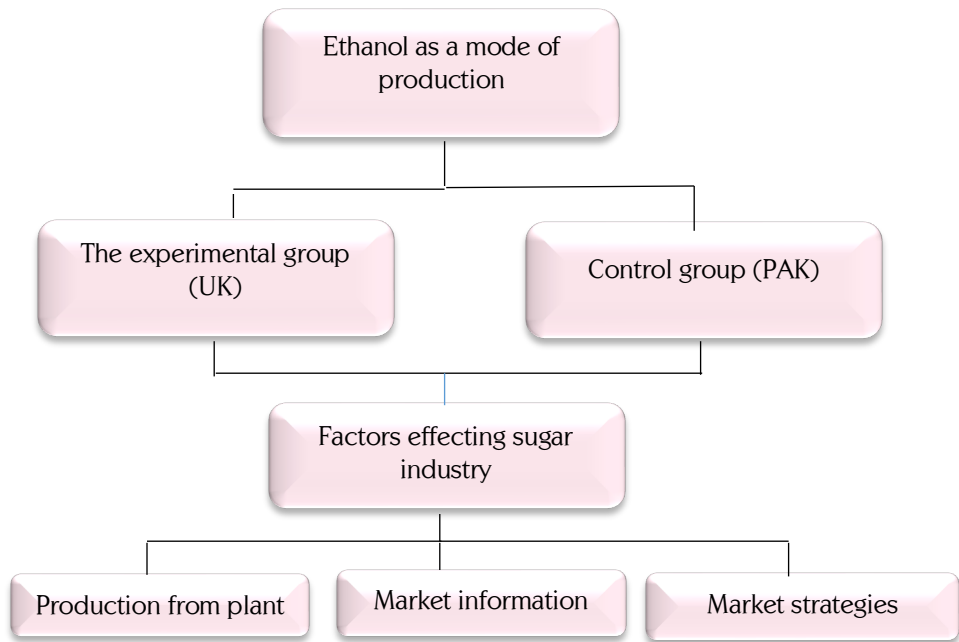


Figure 1: Framework analysis

Methodology

The study is analyzing the impact of ethanol production in the sugar industry of Pakistan and the UK.

Research Design

This exploration is a sort of work area investigate. As depicted by the name Desk Research is the examination framework which is on a very basic level picked up by sitting at a work area. The concept of work area examine is related to the data collected from various sources for social affair analysis. It is regarded as a minimal exertion technique that is usually focused on keeping up with the changes in the status of the situation.

It can be pointless for a specialist to carry out a work area to examine if he or she doesn't have the necessary data to make an informed decision. In the event that the data collected is not sufficient, the procedure can be easily ruined. Work area inquiry about is very effective because it can be driven by the amount of factual looking over that is available in the investigation. There are two sorts of work area inquire about procedures:

- Internal desk research in which research is take place inside of the under-consideration organization.
- External desk research is a type of research in which data or information gathered outside the boundaries of understudy organization such as online data existing governmental policies and

gathering information from different existing research materials.

So, this research follows external or internal desk research. Analysis based on information gathering from industries so we observed industry by taking one experimental group the group of sugar can industries where ethanol is used as a technology of production and the group of industries where ethanol not used and some other alternatives used. Ethanol is considered to be a prohibited commodity (HARAM) in Islam. So sugar-cane industries in all Muslim countries must follow some other alternatives. So we have two groups of industries (1) Experimental group is the group where ethanol technology is used, this group is totally UK based we take a sample of some UK renowned sugar industries where ethanol used as a mode of production and observe the industry profitability cost employee convinces and other factors as well. (2) Control group similarly control group is a sample of sugar-cane industries where ethanol is not used as a mode of production this group is taken from Pakistan.

Experimental & Control Group

A trial bunch is a gathering that gets a test or procedure. It displays the changes in the free factor that has been attempted. The result and the estimations of the poor variable are then recorded. A test can additionally be joined with other test groups at the same time.

A control bunch is made up of individuals who are disinterested in the whole test, and the self-governing factor that was attempted cannot affect the outcome. This prevents the free factor from directly influencing the results.

Research Objective

- i) What are the factors affecting Sugar production in the United Kingdom and Pakistan respectively?
- ii) What are the possible impacts (If any) of Ethanol production on the sugar industry in the UK and Pakistan? And how changed the level of ethanol production will have or will not have

any impact on the sugar industry in the United Kingdom and Pakistan?

- iii) What are the available mitigation alternatives to reduce or eliminate the impact of the Ethanol industry on the sugar industry in the UK and Pakistan and how Ethanol production and sugar production can be made sustainable and viable?

Data collection

In this research, analytical and qualitative methods are used. By the help of previous researches and studies, we can predict a possible future situation. Whereas, the collection of data is done by primary and secondary means. The secondary source of data mostly consists of books, journals, articles, internet sources, and other academic websites were used to collect the relevant data. For the collection of primary data, we have design a questioner that consist of open-ended questions. These questionnaires were filled by the people of the discussed industries, by sorting out them on social media like Facebook. In order to check the feed back stage in both groups' experimental and control analysis model we develop the questionnaire to collect feedback of the targeted group. The most of the sugar cane quantitative data itself or sugar production is published by the research firms, FAO, World Bank and local governments. Qualitative data are often published by a few companies around the globe. The data with regards to Pakistan is somehow limited or out of date but UK data is available through Defra, the UK government. The semi-structured interviews were conducted from sugar cane farmers in Pakistan, Sugar mills in Pakistan, ethanol distilleries in Pakistan, National farmer Union for the UK for sugar beet growers. Sugar producing companies in the UK and Ethanol producers in the UK on the ground for the validation of the publication content. Primary, Official and secondary data was collected to establish and apply an analytical framework finding the major sugar cane producers driver in UK and Pakistan. The framework will explain

the factors affecting sugar industry in UK and Pakistan.

- PSMA- Pakistan Sugar mills association
- NFU- National farmers union UK
- Farmers of Pakistan

Targeted Population/ Sampling

As this research emphasises on studying the impact of Ethanol production on the sugar industry by conducting a comparative analysis between the UK and Pakistan, the sugar industries of both countries were targeted to gather primary data. Furthermore, the ethanol production departments of both the companies were targeted and employees having high level of experience in these production departments were targeted for this research. Interviewees would be conducted by the following companies of the UK and Pakistan and we conduct a survey and collect data:

- UK based Ethanol Industries
- UK based Sugar Industry
- Pakistan Sugar Mills
- Pakistan Ethanol Distilleries
- PEMA - Pakistan Ethanol Manufacturers Association

Methodology of Comparison

The research methodology used in this project involves converting all qualitative data into the quantitative form. Data collected from secondary sources and primary sources is then converted into a single-scale format. The project conducted 47 semi-structured interviews with key stakeholder groups in the sugar cane industry from June 2017 to November 2018. These included managers of sugar mills, the National Farmer Union, the owners of ethanol facilities, and experts in the field. The interviews were focused on various aspects of the industry's potential impact on ethanol production. However, in this case, we will be looking into the factors that influence the sugar production.

The collected data will be used to provide a comprehensive analysis of the current state of the ethanol and sugar markets.

Table 1. Formulation of Liker- scale

Likert-scale	1	2	3	4	5	comparison
Production from your plant	Not effective	Less effective	neutral	effective	Most effective	Experimental/ Control group
Market information	Effective	Less effective	neutral	effective	Most effective	Experimental/ Control group
Management strategies	Effective	Less effective	neutral	effective	Most effective	Experimental/ control group

5 The model

In order to find out the impact of ethanol on the sugar industries of both group experimental (UK based industries) and control group (Pakistan based industries) we run binary logistic regression of Dummy variables and made a binary coding of the two groups.

$$\gamma = PP\beta_1 + MI\beta_2 + MS\beta_3 + \epsilon$$

Y= Sugar industries of both group 1= experimental group (UK) or 0 = if control group (Pakistan)

PP= production plan which we convert in to likert- scale all qualitative information we convert in to numeric by using coding formula.

MI= Market information

MS= Marketing strategies.

Binary Logistic Regression

A Logistic Regression is a statistical method that is used to estimate the relationship between various factors and their explanatory variables. It can be used to supplement the traditional linear regression process. In this method, the connection between the multiple independent variables and the expected variable is then established. For instance, the sex ratio, reaction time, and score are all predicted using Logistic Regression. The requirements for logistic regression are two

independent variables. These can be indicators or IVs, which can be consistent or all out. All of the indicator variables are evaluated in one square to determine their predictive capacity.

Results

This section manages the analysis and understanding of the information. In this chapter the most important steps logical exploration. Without these step generalizations and forecasts can't be made, which is a definitive target of deductive examination. The most important thing is that generalization and conclusion are drawn on the foundation of aspects and disposition of the respondents. At the first section this study explore relationship and difference between the experimental (UK) and control group (pak) by using regression and correlation matrix comparing means techniques later on second section explore the difference in sugar

production which uses ethanol as a mode of production of sugar.

Hypothesis Testing

- H₀= There is no significant impact of ethanol in sugar industry productivity (UK, Pak)
- H₀= There is no significant differences in experimental and control groups
- H₀ = alternative mode (other than ethanol) not have a significant difference.

Pestle' Analysis

To analyse the factors affecting Sugar production in UK and Pakistan, Pestle analysis will be applied on the secondary data and then on the primary data for UK and Pakistan. Two separate sections will be presented and finally the comparative analysis of the both country. Further demand and supply analysis will be applied to predict the future forecast for sugar production by assuming ethanol production to increase by 25%, 50% and 100% respectively.

Table 2. Statistics

		UK and Pakistan	production from your plant	market information	market strategies
N	Valid	259	259	259	259
	Missing	0	0	0	0
	“Mean”		2.52	2.60	2.58
	“Median”		2.00	2.00	2.00
	“Variance”		1.840	2.016	1.811
	“Range”		4	4	4
	“Minimum”		1	1	1
	“Maximum”		5	5	5

Here, the Statistics table demonstrates that there are 256 substantial and 0 missing qualities. It likewise demonstrates the Mode measurement: here, the mode esteem is "1", which is the numeric code for the experimental & control group. Notice that the Mode measurement isn't showing the esteem names, despite the fact that they have been doled out. (Thus, we suggest not mentioning the mode measurement; rather, decide the mode from the recurrence table.)

of recognitions fell into the given arrangement. The precedent contained a total of 259 understudies' sugar ventures. Of those understudies, 104 did not utilize ethanol. The % fragment demonstrates the dimension of recognitions in that industry out everything being equivalent (both missing and nonmissing). You can check the degrees for each social affair by secluding its incorporation into the "recurrence" area by the motivating force in the last segment of the table.

Frequency Table

The Frequency portion indicates what number

- UK industry: 155/259 = 59.8.8%

- Pakistan Industry: $104/259 = 40.1\%$

The Valid % segment shows the level of perceptions in that classification out of the all-out number of non-missing reactions. You can confirm the extents for each gathering by partitioning it's included in the "frequency"

section by the estimation of "All out" that shows up after the last substantial classification . The Cumulative % section is the all-out level of the example that has been represented up to that push; it tends to be figured by including the majority of the numbers in the Valid % segment.

Table 3. UK and Pakistan

		Frequency	%	Valid %	Cumulative %
Valid	UK	155	59.8	59.8	59.8
	Pakistan	104	40.2	40.2	100.0
	Total	259	100.0	100.0	

UK has more production in plant more market information and most accurate market strategies than Pakistan. So the experimental group which is using ethanol as a mode of production is more technically advance than Pakistan which is the control group. Statistics shows that PP plant production is 13% effective Market information is 16% while Market strategies is 12% effective in sugar

industry in control (PAK) or experimental group (UK). So I concluded that Market information is the most important factor to determine the ethanol uses as a mode of production of the sugar industry. It's somehow very important because in Pakistan mostly Muslim community prefer halal items in food nonalcoholic means of production should be preferred usually.

Table 4. Production from your plant

		Frequency	%	Valid %	Cumulative %
Valid	Not effective	73	28.2	28.2	28.2
	Less effective	79	30.5	30.5	58.7
	uncertain	39	15.1	15.1	73.7
	effective	36	13.9	13.9	87.6
	Most effective	32	12.4	12.4	100.0
	Total	259	100.0	100.0	

Table 5. market information

		Frequency	%	Valid %	Cumulative %
Valid	Not effective	72	27.8	27.8	27.8
	Less effective	76	29.3	29.3	57.1
	uncertain	36	13.9	13.9	71.0
	effective	34	13.1	13.1	84.2
	Most effective	41	15.8	15.8	100.0
	Total	259	100.0	100.0	

Table 6. market strategies

		Frequency	%	Valid %	Cumulative %
Valid	Not effective	69	26.6	26.6	26.6
	Less effective	72	27.8	27.8	54.4
	uncertain	49	18.9	18.9	73.4
	effective	37	14.3	14.3	87.6
	Most effective	32	12.4	12.4	100.0
	Total	259	100.0	100.0	

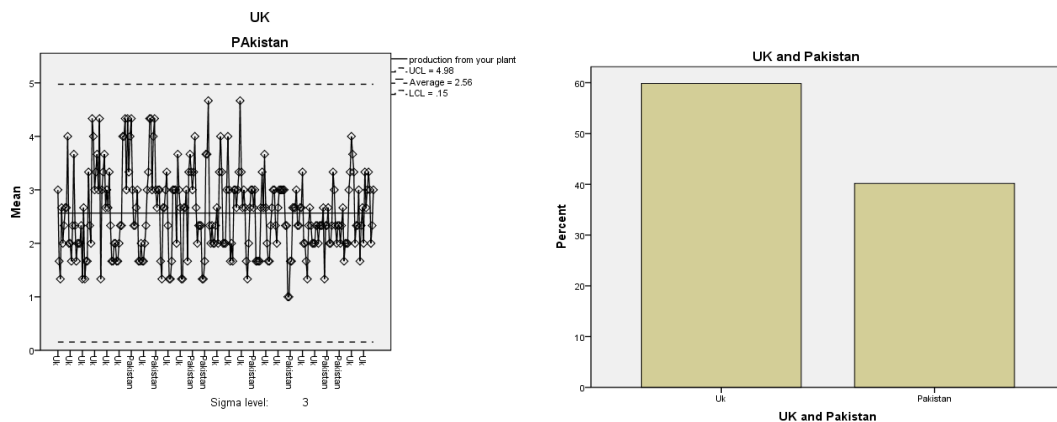


Figure 2

Ordinary Least square

Analysis of possible impacts of ethanol production on the sugar industries of the UK and Pakistan

Once the impacts of ethanol sugar industry are established then further analysis will be applied to validate the claim. If there is no impact then future prediction will be done to predict how the increase production of ethanol will impact the sugar industry in future in UK and Pakistan. The possible scenarios of changing the production portfolio in UK and Pakistan will be considered. Thematic analysis will be done to get the synopsis of the interviews, then regression correlation will be done to understand the linkage between the 2 industries in UK and Pakistan. Value chain analysis will be applied to recognize the factor affecting sugar production in UK and Pakistan. Value chain analysis is a great tool to understand the key abilities and can identify the areas for improvement. An economic Life cycle assessment will be done based on the relation to check the effects of ethanol production on sugar production in UK and Pakistan. A quick LCA environmental Impact will also be carried out assess the environmental impacts to give the outer edge to the research. Scenario based analysis will be done to check possible effects on the future of the sugar industry. Finally Comparative analysis will be conducted for UK and Pakistan.

In order to check the relationship between ethanol on sugar industry we just take OLS method. These methods describe the relationship among factors that affect sugar industry in both countries respectively. We'll try to predict sugar industry production from all other variables by means of a ordinary regression analysis. Therefore, **sugar industry is** our criterion (or dependent variable). Ethanol is our predictors (or independent variables). The model is illustrated below. First, ordinary linear regression involves the association between the independent and dependent variables to be linear. The linearity assumption can be best to test with scatterplots. The subsequent case of ethanol which is an indicator of sugar production illustrates a curvilinear relationship.

The various phases of a relapse investigation require that the mistakes that were watched and anticipated are disseminated. This can be done by taking a look at a histogram or a quantitative quality plot. On the other hand, an integrity of fit test can additionally be utilized to check the typicality of the relapse.

A relapse that is straight is not affected by multi-collinearity. This occurs when the free factors that are connected with one another get too much. In this case, multi-collinearity was tried using the Correlation framework. The

level of correlation coefficients that are related to the free factors was determined to be under 0.80. One of the possible steps in the investigation is to locate the data center.

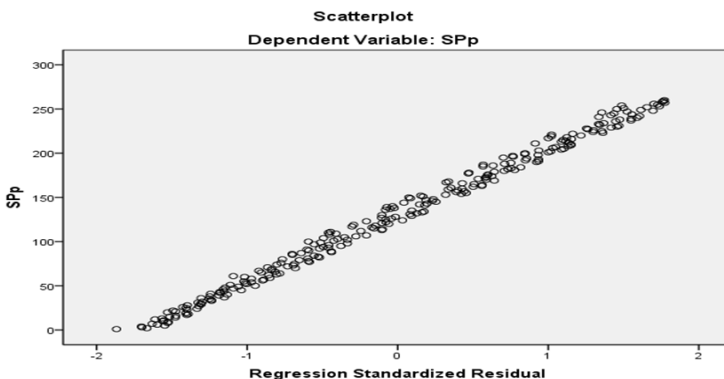


Figure 3

To sum it up, subtract the sum of the free factors' mean score from the total. Analyzing the variables that cause multicollinearity is the most straightforward approach to eliminate them.

The last remaining doubt about the different direct relapse is the

heteroscedasticity of the data. A scatter plot is an extraordinary way to check this. If the data is heteroscedastic, there should be no apparent precedent in the scattering. A non-linear extension of a term or change in the data's structure may settle the issue.

Table 7. Coefficients^a

Model	Un-standardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	167.980	27.081		6.203	.000
ethanol	11.765	8.285	.088	1.420	.157

a. Dependent Variable: SPp

Charts

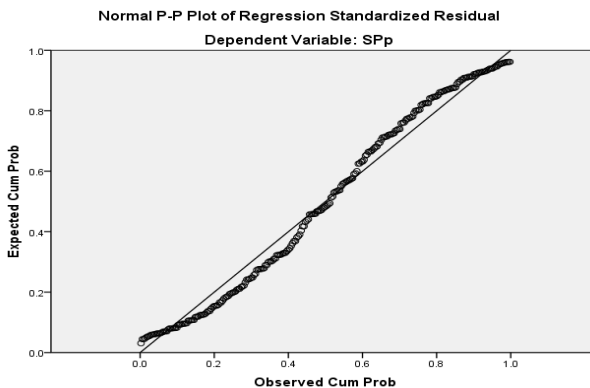


Figure 4

Results of above regression shows that there is very weak degree of association in ethanol and sugar industry that means there are some other mode of sugar production contributing in sugar industry. 1% increase ethanol cause 11% increase in sugar production. Degree of association between ethanol and sugar industry is just 4% and remaining 94% is due to some other factors.so we reject H_0 that ethanol has no role in sugar industry in control or experimental group respectively.

Mitigation Measures to Manage the Potential Impacts

This would follow from the analysis and would try to identify possible measures that could ensure resilience of the sugar industry. The description of the activities associated with ethanol and its potential impact on sugar will be discussed along with the measure which

could be taken to eliminate or decrease the impact of ethanol on sugar industry. Two separate tables will be created: one for UK and one for the Pakistan and in the end comparative analysis will be done to present the outcomes.

Binary Logistic Regression

In order to analyze the impact of ethanol on experimental and control group we used BLR.

Logistic Regression

The yield for Block 0 is derived from the intercept, which is referred to as the steady. Given the two options, 59% of the time the subject chooses to stop the examination, while 41% enable it. The best method is to anticipate that the subject will stop the examination, assuming that there is no other data.

Table 8. Case Processing Summary

Unweighted Cases ^a		N	%
Selected Cases	Included in Analysis	259	100.0
	Missing Cases	0	.0
	Total	259	100.0
Unselected Cases		0	.0
Total		259	100.0

a. If weight is in effect, see classification table for the total number of cases.

Table 9. Classification Table^{a,b}

Observed			Predicted		%age Correct
			UK and Pakistan		
			Uk	Pakistan	
Step 0	UK and Pakistan	Uk	155	0	100.0
		Pakistan	104	0	.0
Overall %age					59.8

a. Constant is included in the model.

b. The cut value is .500

The intercept-only model is shown in the variable section of the equation. If we divide the two sides of this expression into two, we get the predicted odds of the subjects deciding to continue the study. This means

that the odds of the researchers continuing the study are .671. Since 187 of our subjects decided to stop the study, the observed odds are .684.

Table 10. Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.399	.127	9.910	1	.002	.671

Presently take a ethanol at the Block 1 yield. Here SPSS has included the sexual orientation variable as an indicator. Omnibus Tests of Model Coefficients gives us a Chi-Square of 13.349 on 1 df, critical past .001. This is a trial

of the invalid theory that adding the ethanol variable to the model has not essentially expanded our capacity to anticipate the choices made by our subjects.

Table 11. Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	13.349	13	.421
	Block	13.349	13	.421
	Model	13.349	13	.421

Table 12. Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	335.593 ^a	.050	.068

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Table 13. Classification Table^a

	Observed	Predicted			
		UK and Pakistan		%age Correct	
		Uk	Pakistan		
Step 1	UK and Pakistan	Uk	135	20	87.1
		Pakistan	76	28	26.9
	Overall %age				62.9

a. The cut value is .500

Under Model Summary we see that the - 2 Log Likelihood measurement is 335.593. This measurement measures how inadequately the model predicts the choices - the littler the measurement the better the model. In spite of the fact that SPSS does not give us this measurement for the model that had just the intercept, I know it to be 425.666. Including the ethanol variable decreased the - 2 Log Likelihood measurement by 425.666 - 399.913 = 25.653, the χ^2 measurement we just talked about in the past section. The Cox and Snell R2 can be translated like R2 in a different relapse, yet can't achieve a most extreme estimation of 1. The Nagelkerke R2 can achieve a limit of 1. So we concluded that ethanol is 87% effective in UK sugar industries but only 26% effective in Pakistan industries.

you need to outline and compare contrasts in expressive insights crosswise over at least one components, or straight out factors. The Statistics section of the left-hand menu shows the various types of measurements that are available. Some of these include the mean, standard deviations, middle, and gathered middle. Also, some of these measurements are known as standard mistakes, such as skewness, variance, and kurtosis. In the Cell Statistics section, the insights about the yield are delivered through the number of cases and the standard deviation. You can include extra insights by clicking and hauling them from the Statistics section to the Cell Statistics segment. You can likewise snap and drag things in the Cell Statistics segment to change the request they show up in the yield. The Statistics for First Layer region incorporates choices that will perform single direction ANOVA and figure straight fit insights (R, R2, Eta, and Eta Squared), separately.

Comparing Means or comparative analysis of UK and Pakistan

The Compare Means system is valuable when

Means

Ethanol UK and Pakistan SP * production from your plant

Table 14. Report

production from your plant		ethanol	UK and Pakistan	SP
Not effective	Mean	3.2740		124.10
	N	73	73	73
	Std. Deviation	.53111		75.849
	Grouped Median	3.4000		120.00
Less effective	Sum	239.00		9059
	Mean	3.2075		133.10
	N	79	79	79
	Std. Deviation	.58892		74.508
uncertain	Grouped Median	3.3267		138.00
	Sum	253.39		10515
	Mean	3.2128		132.59
	N	39	39	39
effective	Std. Deviation	.53300		76.681
	Grouped Median	3.3300		117.00
	Sum	125.30		5171
	Mean	3.2278		126.44
Most effective	N	36	36	36
	Std. Deviation	.52109		78.283
	Grouped Median	3.2800		122.50
	Sum	116.20		4552
Total	Mean	3.1278		137.44
	N	32	32	32
	Std. Deviation	.66230		72.453
	Grouped Median	3.1600		140.50
Total	Sum	100.09		4398
	Mean	3.2200		130.10
	N	259	259	259
	Std. Deviation	.56294		75.063
Total	Grouped Median	3.3300		130.00
	Sum	833.98		33695

As we compare the means value and standard deviation in UK and Pakistan we noticed that the distribution is not same. Production from plant in Pakistan is mean production different

to mean production in UK. Mean production in UK is high as compare to Pakistan because of large scale industries.

Table 15. Measures of Association

	R	R Squared	Eta	Eta Squared
ethanol * production from your plant	-.064	.004	.078	.006
SP * production from your plant	.037	.001	.063	.004

Ethanol UK and Pakistan SP * market information

Table 16. Measures of Association

	R	R Squared	Eta	Eta Squared
ethanol * market information	-.070	.005	.150	.023
SP * market information	-.003	.000	.100	.010

As we compare the means value and standard deviation in UK and Pakistan we noticed that the distribution is not same. Production from plant in Pakistan is mean market information

different to mean mean market information to in UK. Mean market information in UK is high as compare to Pakistan because of large scale industries.

Table 17. Report

market strategies		ethanol	UK and Pakistan	SP
strongly agree	Mean	3.1745		148.83
	N	69	69	69
	Std. Deviation	.56226		70.207
	Grouped Median	3.3000		156.00
	Sum	219.04		10269
agree	Mean	3.2500		130.24
	N	72	72	72
	Std. Deviation	.52202		77.237
	Grouped Median	3.3380		141.50
	Sum	234.00		9377
uncertain	Mean	3.3357		125.67
	N	49	49	49
	Std. Deviation	.56245		82.604
	Grouped Median	3.4700		128.00
	Sum	163.45		6158
disagree	Mean	3.1689		124.54
	N	37	37	37
	Std. Deviation	.55869		76.072
	Grouped Median	3.2700		125.00
	Sum	117.25		4608
strongly disagree	Mean	3.1325		102.59
	N	32	32	32
	Std. Deviation	.65471		59.185
	Grouped Median	3.3150		94.00
	Sum	100.24		3283
Total	Mean	3.2200		130.10
	N	259	259	259
	Std. Deviation	.56294		75.063
	Grouped Median	3.3300		130.00
	Sum	833.98		33695

Table 18. Measures of correlation

	R	R Squared	Eta	Eta Squared
ethanol * market strategies	-.017	.000	.121	.015
SP * market strategies	-.175	.031	.186	.035

Every individual mean examination strategy is situated on a submenu that is underneath the general Analysis Menu and is characterized as:
 = Means: this component computes singular subgroup means and each related univariate insights for some needy factors inside various classifications = One-Sample T Test: this system tests if the mean of a different variable is unique in relation to a solitary determined consistent number = Independent-Samples T Test: this test compares means for a different pair of cases = Paired-Samples T Test: this verifies whether two variable estimations have similar means for a solitary gathering = One-Way ANOVA: this method examines and gives an examination of change to a solitary treatment factor so as to test a theory including a few distinct means A few clients will finish up depending on General Linear Model highlights or even view the "Non-parametric Tests" menu. Whichever way is an astounding method to compare numerous means SPSS,

however of course the change tests that the One-Way ANOVA menu gives are normally better in any case. By and large the absolute first means setting is the one that will be utilized in any case, so frequently if some other way is being seen it won't really be as essential as it shows up. So we reject our second hypothesis that there is no difference in experimental and control group.

Life Cycle Analysis

The ethanol life cycle from sugarcane in the UK control group case

LCA Pakistan

In sugar industry of Pakistan alcohol is forbidden. Pakistan used totally Halal process of sugar making in sugar industries. This Halal technology process is differing from western sugar industry.

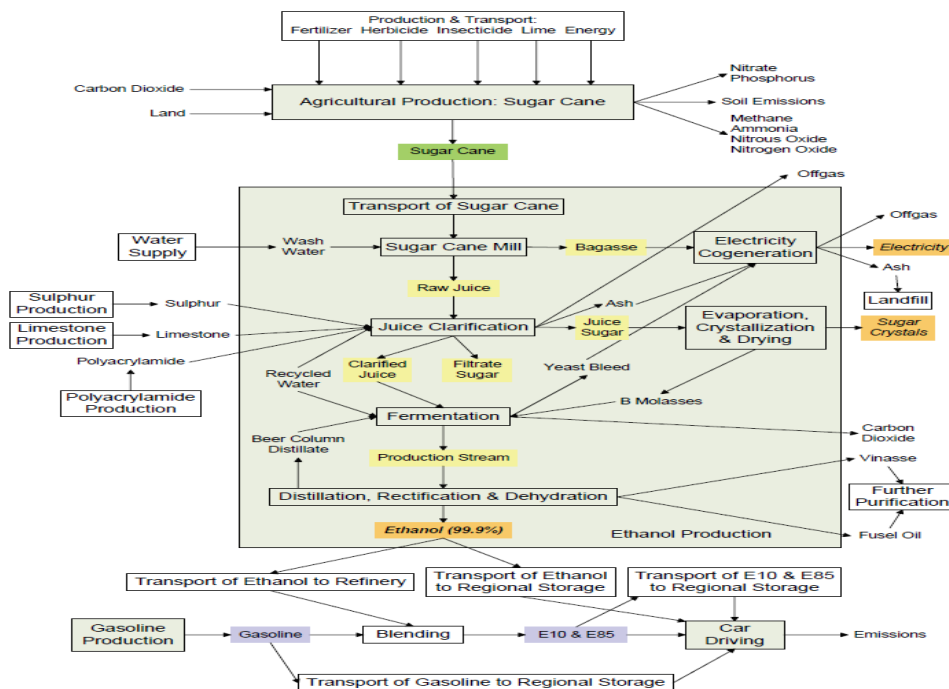


Figure 5

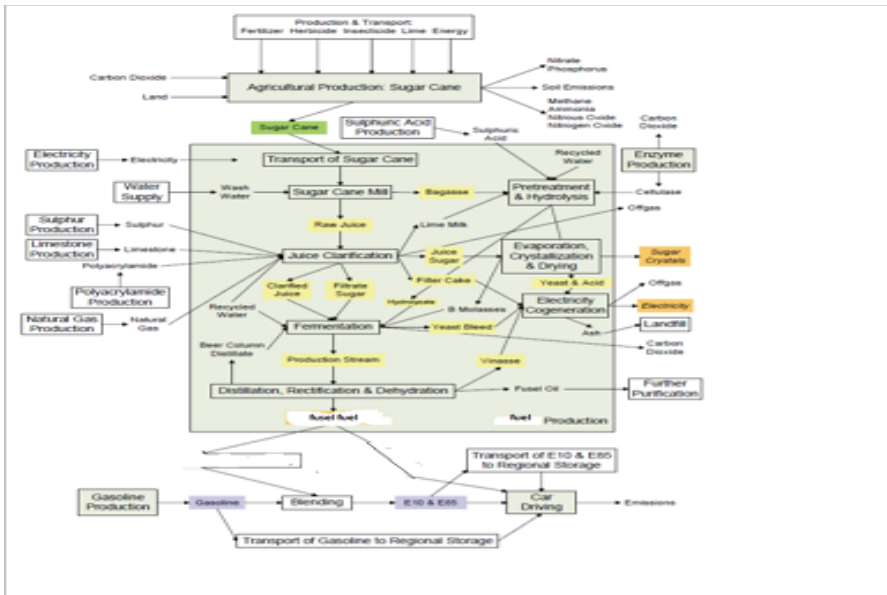


Figure 6

The ethanol produced from sugar cane is a type of liquor-based fuel that's delivered when the molasses and sugarcane juice have already aged. Since it's a low-carbon and spotless biofuel, it has become a main source of transportation fuel.

Ethanol can be utilized two different ways:

1. Mixed with fuel at levels going from 5 to 27.5 % to decrease oil use, help octane evaluations and cut tailpipe outflows

2. Unadulterated ethanol – a fuel made up of 85 to 100 % ethanol relying upon nation particulars – can be utilized in uniquely structured motors

Micro Economic Analysis

Demand Analysis

This analysis includes how supply demand differs in both groups and what are the key factors need to be discussed. Below graph shows that sugar-cane demand for sugar industry in UK is high than Pakistan. So its industrial base demands of sugar-cane.

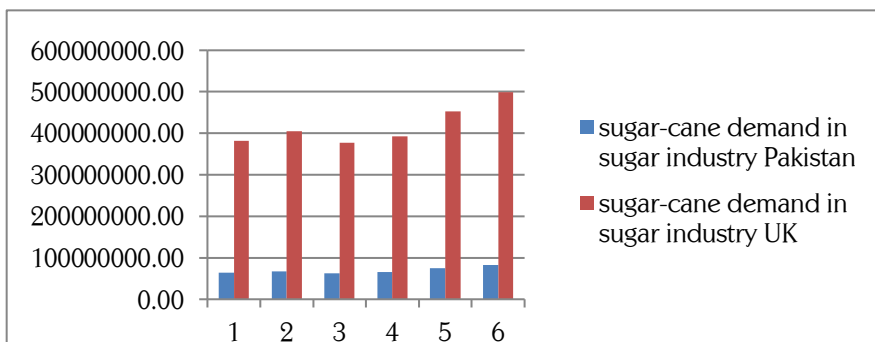


Figure 7

Domestic demand of sugar

Domestic demand of sugar in Pakistan is more than UK. This thing shows a cultural disparities

because Pakistani are more inclined to use sweet dishes than UK.

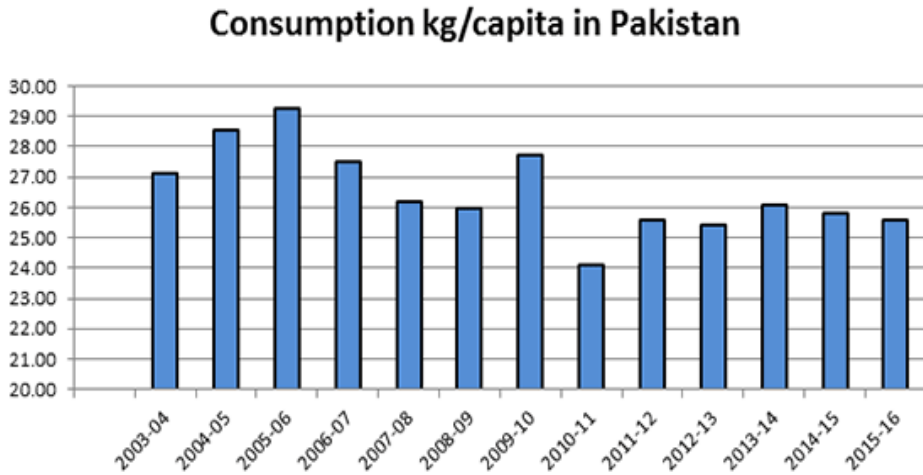


Figure 8

Domestic demand of sugar in UK

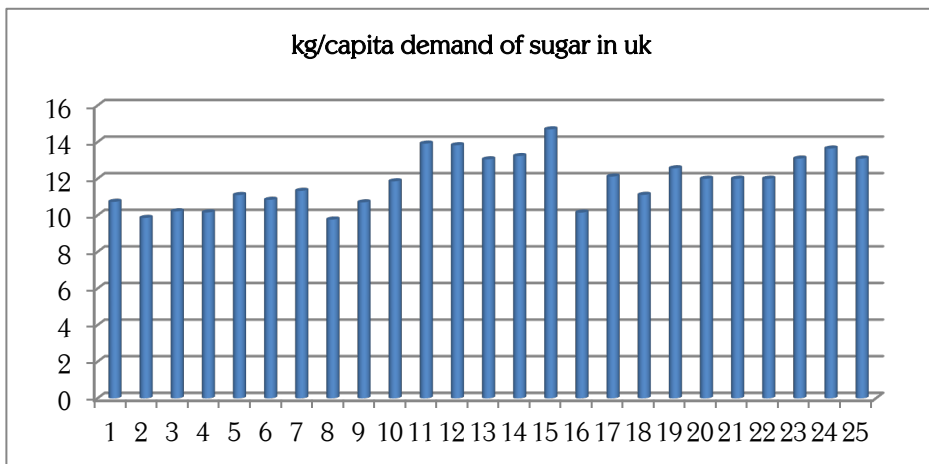


Figure 9

Comparative Analysis of Domestic Demand Of Sugar In Uk & Pakistan

Due to taste effect and traditional disparities of

sweet dishes in eastern culture per capita sugar consumption is high in Pakistan as compared to UK.

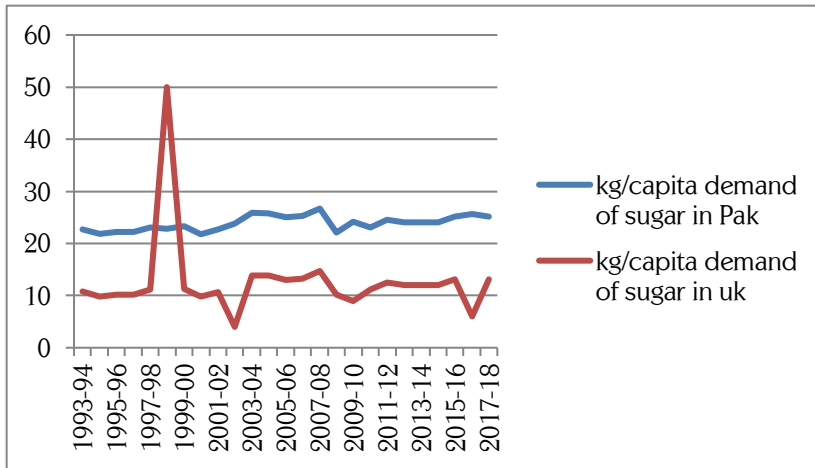
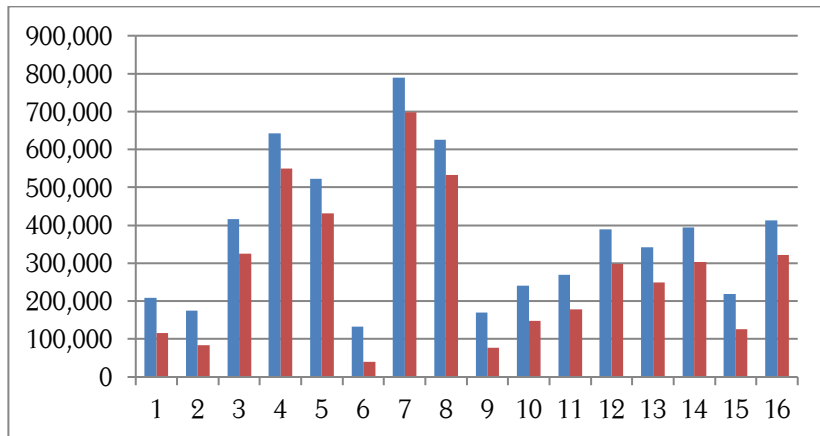


Figure 10

Sugar-cane supply in UK & Pakistan

Sugar production area cultivation in Pakistan is more than uk. UK have to import sugar-cane to fulfill its industrial or domestic demand. But Pakistan export sugar-cane. Although UK have

to imports sugar cane but its industrial unit is faster than Pakistan so sugar production per toned high in UK. UK imports sugar- cane from neighboring countries nut Pakistan is lucky enough because of its agricultural resources.



Conclusion

Findings of the research shows that market information and market strategies are main difference which creating difference in two industries. Ethanol becomes is source of earning in UK which is more inclined to use

alcoholic product. So ethanol increase the profit of sugar industry in UK it have found to be minimal role Pakistan sugar industry. Demand and supply and cultural economic factors creates difference in sugar industry in both countries.

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