

A Case Study on Sustainable Business Trend of Temi Tea Estate in Sikkim

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ABSTRACT

This article attempts to underline and spell out the significance of the traditional knowledge in making Temi Tea, a most distinct and unique tea in the world. The global reputation in sale of Temi Tea (Organic Tea) rapidly expanding and fulfilling the desirable needs of the customer across the globe from last four decades. It also explores the marketing strategy of Temi Tea Estate during Third Flush or Rain's Flush (August 2016), through its various distribution channel and the demand for the Organic Tea market in Sikkim. This is an empirical study of packet tea sold by Temi Tea Estate. The Tea Estate needs to popularise and increased its market dimension, participation in trade fair nationally and globally. There is the need of hour to technologically upgrade the packaging unit of the factory as well as expansion of factory processing unit. Provision of proper transportation mechanism for delivery of the finished goods to the dealers in Sikkim and nearby areas. Authority should put additional local tea sale center at Singtam and in other parts of Sikkim.

Keywords: Organic Tea, Quality, Demand, Distribution Channels

INTRODUCTION

Temi Tea is an exceptional quality grown in the Himalayan state of Sikkim. Since 1977, Temi Tea Estate has been engaged in the business of production and marketing of Orthodox Black Tea. Till date, 500 acres of land has been covered by Tea plantation. Annual production ranges to 100 tonnes. The tea crop constitutes Tea Research Association certified clones and *Camellia sinensis* var. *sinensis* which are ideal for the manufacture of flavoured teas. The elevation of the garden ranges from 4800 ft. to 6400 ft. above sea level. Temi Tea has been certified 100 per cent Organic by Institute for Marketecology, and a member group of Institute for Marketecology Switzerland since 2008. Temi Tea Estate is also Hazard Analysis of Critically Controlled Points certified as per ISO 22000 standards under Food Safety Management System since 2010 onwards.

Temi Tea Estate has created national as well as global reputation in sale of organic tea of different categories during last 4 decades. Recently the Temi Tea started cultivation of organic tea under the State Organic policy.

The market demand of the Temi Tea has been increased several fold. To understand the business market strategies of tea sold from Temi Tea Estate and gain its space in the organic tea market is the main objective of present study.

OBJECTIVES

Present study was done for fluctuations of 3rd Flush or Rain's Flush (for the month of August 2016) quantity sold, total revenue of packet tea etc. The objectives of the study were as following:

- To study the trend in quantity sold, price of tea, total revenue earned, VAT imposed and discount offered in all varieties of packet tea sold from Temi Tea Estate during August 2016.
- To study the impact of quantity sold on the amount of revenue earned from sale of packet tea during August 2016.
- To study the impact of price of tea on the amount of revenue earned from sale of packet tea during August 2016.

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- To study the joint influence of VAT and discount offered on the total sales of tea packet tea during August 2016.
- To study the individual influence of the discount offered on the total sales of tea packet tea during August 2016.

METHODOLOGY

Present study is based on primary data collected through the filed survey. The study relates to sale of packet tea of different varieties from Temi Tea Estate. The sample for the present study is collected by conducting interview with buyers and sellers at Temi Tea Estate during August 2016. The period of the study was August 1st till 31st, 2016. Primary data was collected on various aspects of packet tea supplied from Temi Tea Estate. The collected data has been analysed using graphical method (line diagram) and using descriptive statistics {Mean, standard deviation, coefficient of variation, skewness and kurtosis}. Econometric regression analysis also has been done for understanding the causality of different variables associated with sale of packet tea at Temi Tea Estate during August 2016. The estimated regression lines have been analysed with statistical logic in mind.

In Temi Tea garden the nursery is located in between the lower and mid elevation area and centre of the garden, which make it convenient to supervise the nursery constantly. The site is located near a perennial water sources and planted with evergreen trees like *Acacia auriculiformis*, *Cassia siamea*, *Melia azadirachta* (Ghora Neem) etc. to protect from dry wind.

In the nursery selected plants are planted with using two techniques viz. vegetative propagation and seed propagation. Under vegetative propagation, the single node cutting is adopted to balance its economic condition as well as yield per unit of area. The seed propagation method is not used in large scale.

Replacement of tea bush is not needed in the garden because many of the tea bushes are newly planted; the age of tea bushes is between 20 and 25 years. Seedling section may have some problem in productivity as well as quality of tea leaves with the increase in the age of the tea bushes. It would be better option to use clonal sections as these plants have high yield potential. The Guatemala grass and

Pusa Giant Hybrid Napier grass (*Pennisetum purpureum* Schum.) have been used extensively as rehabilitation crops in almost every sections of Temi Tea Garden. The Citronella grass (*Cymbopogon winterianus*), Mana grass (*Cymbopogon confertiflorus*), legume (*Desmodium uncinatum*) and Weeping Love grass (*Eragrostis curvula*) have also been used widely in the garden for soil improvement and pest protection.

In Temi Tea Garden there is less requirement of shade tree or artificial shade because the climate condition of the area. Almost every time there is clouds and fogs are covering the total garden. Because of the favourable temperature and other suitable climatic condition in the garden, there is production of high quality leaves which has gain high demand in international market like Germany, Japan, London and some regions of European Union.

The study was done on the basis of following parameters:

- Average sale (amount of tea) per day.
- Average sale (price of tea) per day.
- Average revenue earned per day from packet tea.
- Average total discount offered on packet tea of total sales.

The average trend of all variables under present study is being fluctuating trend. From the present study the following data has been observed.

Table 1

<i>Sr. No.</i>	<i>Observation Head</i>	<i>Quantity (in kgs)/ Amount (in Rs.) (per day)</i>
01	Overall range of tea sale	0-100
02	Overall range of tea price	500-1000
03	Overall range of tea revenue earn	0-70000
04	Overall range of discount offered	0-45000
05	Overall range of VAT imposed	1000-7000

Source: Self-Estimate based on field survey data (August 2019).

The regression line fitted for presenting the sales pattern of different varieties of tea (Temi Tea Estate) during August 2016:

$$TR_t = \beta_0 + \beta_1 Q_t + U_t \dots\dots\dots (I)$$

$$TR_t = \beta_0 + \beta_1 P_t + U_t \dots\dots\dots (II)$$

Where,

TR_t is the total revenue earned from sale of different varieties of tea at Temi Tea Estate during August 2016.

Q_t is the quantity of tea sold (different varieties) at Temi Tea Estate during August 2016 β₀ is the intercept of the revenue function.

β₁ is the slope of the revenue function.

U_t is well behaved error term, $U_t \sim (0, \sigma_u^2)$.

The estimated result for equation (I) is presented as follows:

Table 2

Dependent Variable: TR				
Method: Least Squares				
TR=C(1)+C(2)*Q				
	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	3472.616	2144.141	1.619584	0.1091
C(2)	784.6785	23.67891	33.13829	0.0000
R-squared	0.928943	Mean dependent var		38438.71
F-statistic	1098.146	Durbin-Watson (DW-d)		0.894158
Prob (F-statistic)	0.000000			

Source: Based on field survey data (August 2019).

Refer to Table 2 it can be observed that a unit change in intercept of sales of tea during August 2016 results in 3472.616 unit increase in TR of Temi Tea Estate. Again if the rate of change in sales of tea by 1% results 784.68 unit increase in sales of Temi Tea during August 2016. The regression line shows good fit to the data as 92 % variation in sales of tea (Temi Tea) is explained by the model and the rest 8% is unexplained. The overall significance is established and found to be highly significant at 99% confidence interval. The Dw – d reflect presence of low degree of positive auto correlation indicating there is some sort of influence of error term on the data during the study period.

Again the fitted regression line for understanding the impact of price on sales revenue the regression line will be;

Where,

TR_t is the total revenue earned from sale of Temi Tea (all varieties) during August 2016. P_t is the price of packet tea (all varieties).

β₀ is the intercept of the revenue function. β₁ is the slope of the revenue function.

U_t is well behaved error term, $U_t \sim (0, \sigma_u^2)$.

The estimated regression line fitted in equation (II) is presented as follows:

Table 3

Dependent Variable: TR				
Method: Least Squares				
TR=C(1)+C(2)*P				
	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-22021.48	17961.39	-1.226045	0.2236
C(2)	78.30181	21.67780	3.612074	0.0005
R-squared	0.134441	Mean dependent var		38438.71
Adjusted R-squared	0.124136	S.D. dependent var		64552.54
F-statistic	13.04708	Durbin-Watson (DW-d)		1.622473
Prob(F-statistic)	0.000516			

Source: Based on field survey data (August 2016).

From Table 3 it can be observed that the regression line for impact of price sales income (sales revenue) has been found to be weakly fit. The intercept term of the model has not been found to be statistically significant but the slope coefficient has been observed to be highly significant at 0.01% level. A unit change in price of all varieties of tea by 1% results 78.30 unit increase in TR during August 2016. The overall significance is established and found to be highly significant. The model represents low auto correlation in terms of the value of the Dw – d.

After fitting a regression line following was observed:

$$TR_t = \beta_0 + \beta_1 TSt + U_t \dots\dots\dots (III)$$

TR_t is the total revenue earned from sale of packet of Temi Tea (all varieties) during August 2016.

TSt is sale of packet tea in Temi Tea (all varieties) during August 2016.

β_0 is the intercept of the revenue function. β_1 is the slope of the revenue function.

Ut is well behaved error term, $U_t \sim (0, \sigma_u^2)$.

The estimated result for the fitted regression line (III) is present in following table:

Table 4

Dependent Variable: TR				
Method: Least Squares				
TR=C(1)+C(2)* TS				
	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-111623.0	53068.38	-2.103380	0.0449
C(2)	2.449954	0.240280	10.19624	0.0000
R-squared	0.793835	Mean dependent var		167649.0
Adjusted R-squared	0.786200	S.D. dependent var		529377.9
F-statistic	103.9632	Durbin-Watson stat		2.367445
Prob(F-statistic)	0.000000			

Source: Based on field survey data (August 2016).

From the Table 4 it can be observed that the intercept and slope coefficient statistically significant at 0.05% and 0.01% level, respectively. A unit change in the sales of tea will result in 2.44 unit increase in total revenue of the Temi Tea Estate during study period. The regression line explains good fit in terms of the R^2 value, about 79% variation in total revenue is explained by the model and rest 21% variation remains unexplained. The overall significance is established and found to be highly significant. The model shows low auto correction in terms of Dw – d value. Another 3 variable has been fitted as in equation to understand the impact of discount and VAT on total sales (Rs). The model fitted was as follows:

$$TSt = \beta_0 + \beta_1 DIS_t + \beta_2 VAT_t + U_t \dots\dots\dots (IV)$$

In Temi Tea Estate (all varieties) during August 2016. β_0 is the intercept of the sale function.

β_1, β_2 are the slope of the sale function.

DIS_t is the discount rate of different varieties of packet tea at Temi Tea Estate during August 2016.

VAT_t is the Value added tax of sale of packet tea at Temi Tea Estate during August 2016. Ut is well behaved error term, $U_t \sim (0, \sigma_u^2)$.

The estimated regression line for the fitted model in equation (IV) is presented in following table:

Table 5

Dependent Variable: TS				
Method: Least Squares				
TS=C(1)+C(2)*DIS+C(3)*VAT				
	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	20.71677	19.18924	1.079604	0.2902
C(2)	0.999897	0.000532	1881.051	0.0000
C(3)	24.99904	0.003193	7829.451	0.0000
R-squared	1.000000	Mean dependent var		113990.7
Adjusted R-squared	1.000000	S.D. dependent var		192518.8
F-statistic	66453700	Durbin-Watson stat		2.115217
Prob(F-statistic)	0.000000			

Source: Based on field survey data (August 2019).

From the Table 5 it can be observed that both the slope coefficient is statistically significant at 0.01 per cent. A unit change in discount by 1 unit results in 99 unit increase in total sales of tea in Temi Tea Estate during August 2016. Again a unit change in VAT in Temi Tea will result in 24.99 unit increase in total sales of tea. The model is best fit in terms of R^2 value. The overall significance is established and found to be highly significant. The Dw – d expresses that this is no auto correlation.

Again for understanding the impact of discount of total sales income we fit the model.

The fitted regression line equation (V) is as following:

$$TSt = \beta_0 + \beta_1 DIS_t + U_t \dots\dots\dots (V)$$

TSt is total sale of packet tea in Temi Tea Estate (all varieties) during August 2016. β_0 is the intercept of the sale function.

β_1 is the slope of the sale function.

DIS_t is the discount rate of different varieties of packet tea at Temi Tea Estate during August 2016.

Ut is well behaved error term, $U_t \sim (0, \sigma_u^2)$.

The result of the model is presented in equation (V) is presented in Table 6; it can be observed both intercept and slope coefficients are statistically significant 0.01 per cent level.

Table 6

Dependent Variable: TS				
Method: Least Squares				
TS=C(1)+C(2)*DIS				
	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	46173.31	27515.90	1.678060	0.1049
C(2)	3.552629	0.632588	5.616019	0.0000
R-squared	0.538774	Mean dependent var		113990.7
Adjusted R-squared	0.521692	S.D. dependent var		192518.8
F-statistic	31.53967	Durbin-Watson stat		1.677747
Prob (F-statistic)	0.000006			

Source: Based on field survey data (August 2019).

To study the impact of VAT on total sales of tea in Temi Tea Estate during August 2016 another regression line fitting (VI) was done and following equation was derived.

$$TS = \beta_0 + \beta_1VATt + Ut \dots\dots\dots (VI)$$

TSt is total sale of tea packet in Temi Tea Estate (all varieties) during August 2016. β_0 is the intercept of the sale function .

β_1 is the slope of the sale function.

VATt is the Value Added Tax of sale of packet tea at Temi Tea Estate during August 2016. Ut is well behaved error term, $Ut \sim (0, \sigma_u^2)$.

The estimated regression line for the fitted equation (VI) is presented in following Table 7.

Table 7

Dependent Variable: TS				
Method: Least Squares				
TS=C(1)+C(2)*VAT				
	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	5125.929	6876.860	0.745388	0.4625
C(2)	28.68297	0.912913	31.41919	0.0000
R-squared	0.973377	Mean dependent var		113990.7
Adjusted R-squared	0.972391	S.D. dependent var		192518.8
F-statistic	987.1653	Durbin-Watson stat		2.058698
Prob (F-statistic)	0.000000			

Source: Self-Estimate based on field survey data (August 2019).

From the table it can be remarked that the regression line fit the data well. About 97% variation in endogeneities variable is explained by the model and rest 3% is unexplained. The slope coefficient of the model has been found to be significant at 0.01% level. A unit change in rate of VAT resulted, 28.68 unit increases in total sales of Temi Tea during August 2016. The overall significance is established and found to be highly significant. The Dw – d expresses presence of no auto correction in the data.

CONCLUSIONS

- Almost all the variables (Quantity of packet tea sold, price of packet tea sold, total revenue earned, discount offered on sale, VAT imposed) of the study has maintained nonlinear trend for the period of study.
- There has been gradual rise and fall in all the different variables of the study. In most cases the variables have reached sudden peak towards the end of the study period.
- The quantity sold, price of tea sold have positively influenced revenue earned from tea sold from Temi Tea Estate.
- The imposition of VAT and discount rate has also been observed to positively influence the sale of packet tea from Temi Tea Estate during August 2016.
- The increase in total sales has helped to increase the revenue of packet tea in during August 2016.
- The average quantity of tea sold in Temi Tea Estate and the revenue earned from sale of packet tea has been found to high during the period of study.
- The oscillation level on different variables of present study has maintained common trend around the mean value.
- Hence from the present study it may be inferred that the marketing of packed tea from Temi Tea Estate has remained favourable from the supplier point of view for the period of study (August 2016).

WAY FORWARD

- On the basis of the present study observation following recommendation can be taken by the management of the estate.

- Temi Tea Estate should take major steps for increasing the average sales margin through better discovery of market, sales promotion measures like advertising, campaigning, media coverage, publicity, etc.
- The Tea Estate needs to popularize and increased its market dimension, participation in trade fair nationally and globally.
- There is the need of hour to technologically upgrade the packaging unit of the factory as well as expansion of factory processing unit.
- Provision of proper transportation mechanism for delivery of the finished goods to the dealers in Sikkim and nearby areas.
- Authority should put additional local tea sale centre at Singtam and in other parts of Sikkim.
- Tea garden workers need to be provided with additional health care facility and provision of proper education in the area.
- Renovation of the tea estate factory and labourers quarter damaged by earthquake etc.
- A fair price canteen for the tea garden workers and visitors to the tea estate needs to be managed by the workers union.

- Awareness program about its eco-friendly organic farming.

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Note: The Literature is very scanty with respect to this paper. This study is based on extensive field study being done by the author and his team on behalf of Indian Institute of Plantation Management Bangalore.